Instruction Guide for using Dive Tables (draft)

Revision 1.0
US Navy Tables Rev 6

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Landis Bullock

This guide is intended to supplement the instruction of a qualified SCUBA Instructor, not a stand alone instruction manual. As with all diving activities, the information provided within this manual is intended to be used only by properly instructed and qualified individuals. Do not attempt to use this information provided within this manual without proper instruction.

Acknowledgements:

Erin Walters

Dr. Jack Hall

To be finished when I figure out how.

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Introduction

Using Dive Tables

Diving is a very rewarding activity that more and more people are learning to enjoy every day. Diving allows us access to new worlds and places that have previously only been able to be experienced by a select few people. As with any activity of this nature there are risks involved. Equipment is continually improved to provide ever increasing safety and training continues to evolve to accommodate this new technology and diving practices.

Dive tables are by many divers to be one of the most challenging and complicated aspects of diving to master. The use of personal dive computers and the growing tendency for training agencies to move away from traditional dive tables in favor of dive computers has let a growing void in diver education. While use of dive tables is still commonly practiced in the technical diving world, many recreational divers often never pick up a set of tables after their initial open water diver class. This manual is intended to supplement the instructors teaching and to provide a reference for those divers who may find themselves struggling to remember how to use dive table. It is important to not that this manual is not intended to replace instruction by a qualified scuba instructor, but rather to serve as a supplemental text to the instructors teaching.

For this manual, the US Navy Dive Tables will be used. Because tables from different training agencies vary widely, this section will cover the use of the US Navy Dive Tables. The US Navy Dive Tables have many of the same features as other published dive tables, so making the transition should be relatively easy. First it is important to get acquainted with the US Navy Tables. To make navigation easier, the US Navy Tables are actually composed of three distinct sections. The first section contains the No-Decompression Limits and Repetitive Group Designation for No-Decompression Air Dives. As with all tables, there is no guarantee for a risk free dive. Even when tables or computers are used properly, it is still possible to suffer a decompression injury so it is important to remember to always dive conservatively. A detail of the first section is found below.

Chapter 1:

Section 1 of the US Navy Dive Tables provides information to the diver about single dive ending pressure groups and no-decompression limits. Below are details of what each section of the US Navy Dive tables are used for.

US Navy Dive Tables Revision 6

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	30	4	7	11	14	17	21	24	28	30							
100	25	4	6	9	12	15	18	21	25								
110	20	3	6	8	11	14	16	19	20								
120	15	3	5	7	10	12	15										
130	10	2	4	6	9	10											
140	10	2	4	6	8	10											
150	5	2	3	5													
160	5		3	5													
170	5			4	5												
180	5			4	5												
190	5			3	5												

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

Depth:

For the US Navy Dive Tables depths are measured in feet of salt water. Depths are listed down the far left side of the table. When planning a dive, always round to the next deepest depth.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371

No-Stop Limit:

The No-Stop Limit refers to the maximum allowable bottom time for any single dive. On the US Navy Tables, this is measured in minutes. When planning a dive, it is important to never exceed this time limit,

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371

Repetitive Group Designation:

The repetitive Group Designation serves as an alphabetical representation of the theoretical amount of nitrogen absorbed by your tissues. These designations are based on complex mathematical algorithms that represent theoretical tissue compartments within your body. It is impossible for any mathematical algorithm to take into account every type of tissue within the human body, but as science and computer systems advance, more comprehensive models will continue to be developed.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371

Dive times:

In the middle area, you will notice a lot of numbers. These numbers represent dive times in minutes. Because no model is perfect, times are not measured to the exact minute. When conducting dive panning, if the exact dive time is not available, always round to the next greater time.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371

Times are read left to right along the line corresponding to the depth.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371

Using Section 1:

Using the US Navy Tables is fairly simple after becoming acquainted with them. The first step is to find your depth. Remember, if the exact depth is not available, always round to the next deeper depth. For a dive to 50 fsw, locate the 50 fsw line under the depth column:

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					

Once you have located your desired depth, you need to make sure that your intended dive time is within the maximum allowable bottom time. Immediately to the right of the desired depth is the No-Stop Limit. This is your maximum allowable bottom time in minutes. If your planed bottom time does not exceed this time in minutes, everything should be fine to continue.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					

For a depth of 50 fsw, the maximum allowable bottom time is 92 minutes. So long as the planned dive is within the 92 minute time limit, the diver should not incur a decompression obligation.

After the dive, determining your Ending Pressure Group (EPG) is important, especially if you plan on making subsequent dives. When using the US Navy Dive Tables this is easily accomplished. Just like finding the No-Stop Limit, you move down the depth column until you reach either your exact depth, or if your exact depth is not listed, the next greater depth. Once here, you proceed to the left until you find either the exact dive time in minutes, or the next higher listed time. For example, if you were to dive to 50 fsw for 45 minutes you would round to 45 minutes to 48 minutes since 45 minutes is not specifically listed on the table.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					

To find the ending pressure group for the dive, you simply move straight up the column from the dive time. The letter in the Repetitive Group Designation is you ending pressure group.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				

For this particular dive the ending pressure group is “G.” If this is the only dive you are planning on making for the next 12 hours, then this is all you need to do. However, if you are planning on making subsequent dives, you will need to go further.

Chapter 2:

Planning repetitive dives is a relatively simple process. First, just as before, it is important to become familiar with the tables you will be using. In addition to what we have just discussed, now we will look at the second section of the US Navy Dive Tables. This section of the tables covers surface interval times and new beginning pressure groups (BPG). The second section of the tables is depicted below.

Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

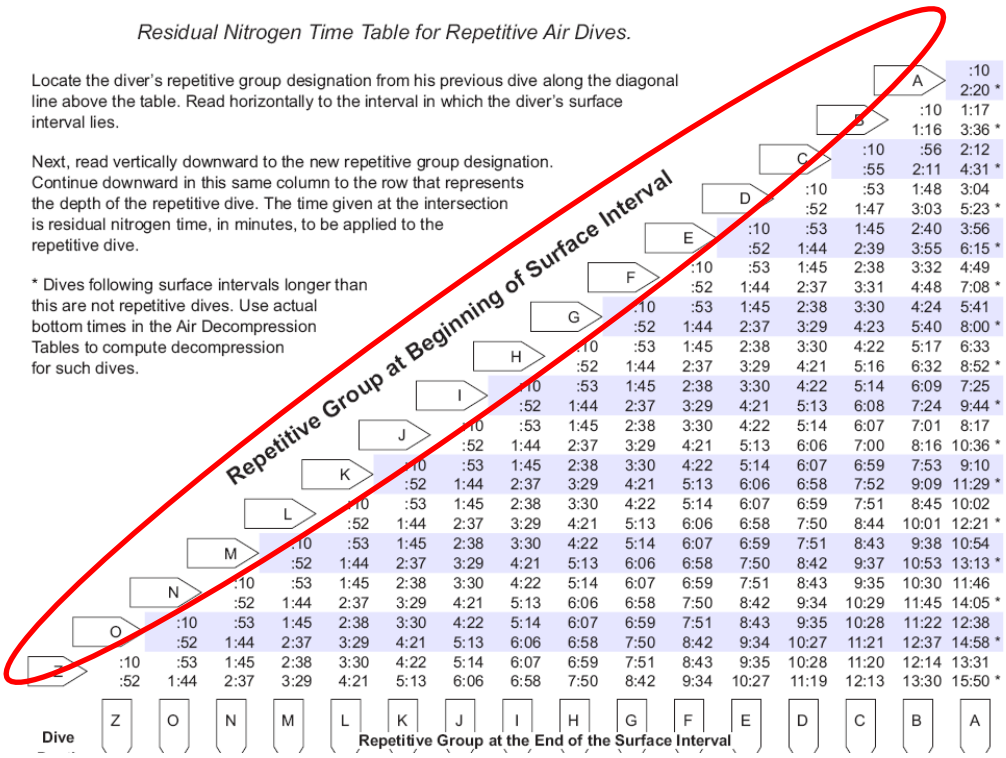
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
A	:10 2:20 *															
B	:10 1:16	1:17 3:36 *														
C	:10 :55	:56 2:11	2:12 4:31 *													
D	:10 :52	:53 1:47	1:48 3:03	3:04 5:23 *												
E	:10 :52	:53 1:44	1:45 2:39	2:40 3:55	3:56 6:15 *											
F	:10 :52	:53 1:44	1:45 2:37	2:38 3:31	3:32 4:48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

Repetitive Group at the End of the Surface Interval

This section of the tables looks and works differently from the first section, so it is important to become familiar with the different parts of the table. Along the top left diagonal is a series of letters. These letters directly correspond to the Repetitive Group Designation, or ending pressure group from the dive immediately prior.

Repetitive Group at Beginning of Surface Interval:

The Repetitive Group at Beginning of Surface Interval refers directly to the Repetitive Group Designation found at the end of the dive. This letter represents a theoretical amount of Nitrogen within the diver's body following a dive.



Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

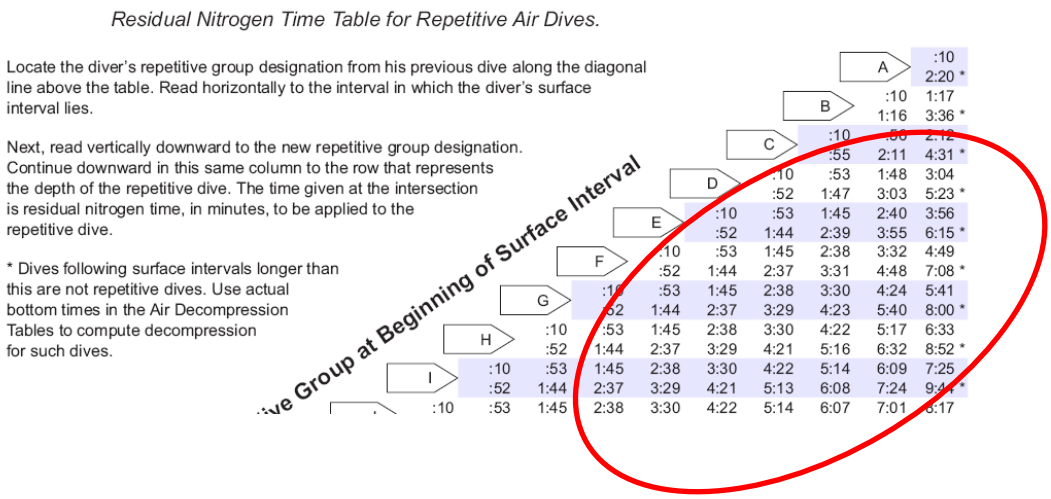
* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

Dive	Repetitive Group at the End of the Surface Interval														
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
Z	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:20	12:14	13:31
O	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:22	12:38	14:58 *
N	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:35	10:28	11:22	12:38	14:05 *
M	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43	9:37	10:53	13:13 *		
L	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:45	10:02				
K	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:53	9:10					
J	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:07	7:01	8:17						
I	:10 :52	:53	1:45	2:38	3:30	4:22	5:14	6:09	7:25							
H	:10 :52	:53	1:45	2:38	3:30	4:22	5:17	6:33								
G	:10 :52	:53	1:45	2:38	3:30	4:24	5:41									
F	:10 :52	:53	1:45	2:38	3:32	4:49										
E	:10 :52	:53	1:45	2:40	3:56											
D	:10 :52	:53	1:48	3:04												
C	:10 :55	:56	2:12													
B	:10 1:16	1:17														
A	:10 2:20 *															

Surface Interval Times:

Directly to the right of the Repetitive Group at Beginning of Surface Interval is a row of times. These times are expressed differently than the times in Section 1. First, you will note that there are actually two different times listed on top of each other within the same row. This indicates a time span with the top number being the beginning and the bottom number being the end. You will also notice that these times are written differently. These times are expressed in hours and minutes, **HOURS : MINUTES**.



Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

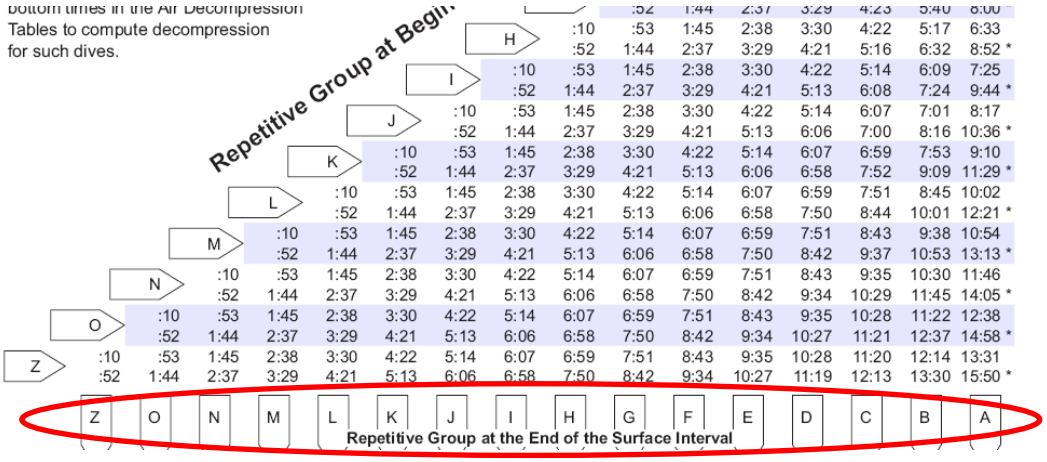
* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

	A	B	C	D	E	F	G	H	I
A	:10 2:20 *								
B	:10 1:16	:10 3:36 *							
C	:10 :55	:56 2:11	2:12 4:31 *						
D	:10 :52	:53 1:47	1:48 3:03	3:04 5:23 *					
E	:10 :52	:53 1:44	1:45 2:39	2:40 3:55	3:56 6:15 *				
F	:10 :52	:53 1:44	1:45 2:37	2:38 3:31	3:32 4:48	4:49 7:08 *			
G	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:23	4:24 5:40	5:41 8:00 *		
H	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:16	5:17 6:32	6:33 8:52 *	
I	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:08	6:09 7:24	7:25 9:44 *
J	:10	:53	1:45	2:38	3:30	4:22	5:14	6:07	7:01

Repetitive Group at End of Surface Interval:

Directly below the surface interval times, there is another row of letters. These letters refer specifically to the Repetitive Group at the End of the Surface Interval. These letters, just as before, represent the theoretical amount of nitrogen remaining in the diver's body at the end of the surface interval. For the purposes of dive planning these are also known as the beginning pressure group for a repetitive dive.



bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Begin

	H	I	J	K	L	M	N	O	Z
H	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:50
I	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:50
J	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51
K	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51
L	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51
M	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51
N	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51
O	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51
Z	:10 :52	:53 1:44	1:45 2:37	2:38 3:29	3:30 4:21	4:22 5:13	5:14 6:06	6:07 6:58	6:59 7:51

	H	G	F	E	D	C	B	A
H	8:52 *							
I	7:25	9:44 *						
J	8:17	10:36 *						
K	9:10	11:29 *						
L	10:02	12:21 *						
M	10:54	13:13 *						
N	11:46	14:05 *						
O	12:38	14:58 *						
Z	13:31	15:50 *						

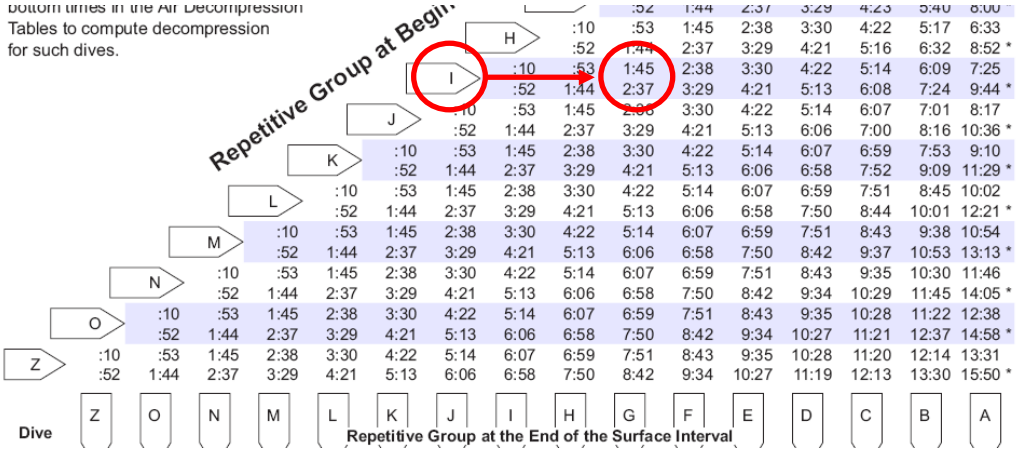
Z O N M L K J I H G F E D C B A

Repetitive Group at the End of the Surface Interval

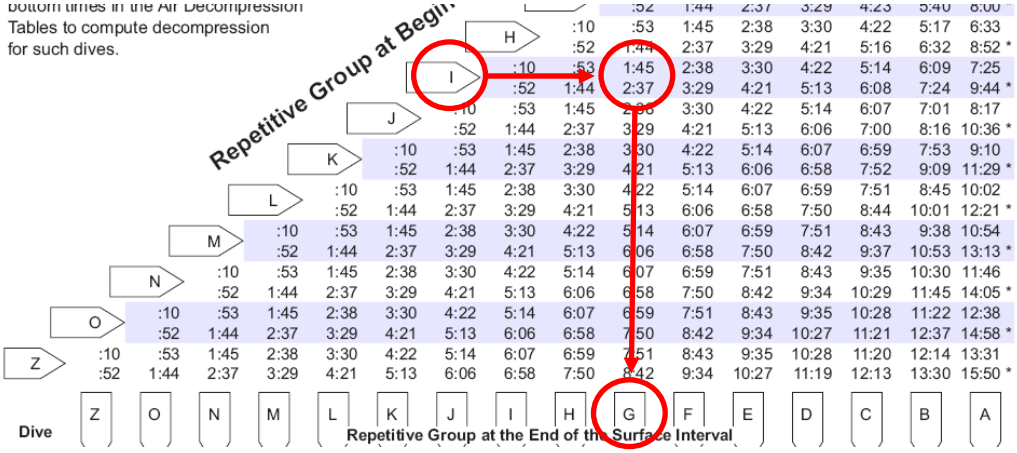
Using the Dive Tables (Section 2):

Using Section 2 of the US Navy Dive Tables

Once you have completed your repetitive dive, there is certain information you will need to determine your new ending pressure group (EPG). The first is your surface interval. This information will allow you to determine the beginning pressure group (BPG) for your dive. To do this you start with the ending pressure group (EPG) of the previous dive. Move across the corresponding row until you locate the time range that you surface interval falls into. For example: if your ending pressure group (EPG) from the previous dive is I, and your surface interval is two hours and thirty minutes (2:30), then you would start at I and move across until you find the time range that 2:30 falls within.



Note that 2:30 is not specifically listed on the table, but it does fall between 1:45 and 2:37. Once you have found the time range that your surface interval falls within, you can determine the beginning pressure group (BPG) of the next dive. You find the beginning pressure group by following the column directly down, at the bottom is a letter; this is your new beginning pressure group for the next dive.



When you follow the column to the bottom of the table you find the new beginning pressure group to be G. Once you have you new beginning pressure group (BPG) you can determine your residual nitrogen time (RNT).

Chapter 3:

Residual Nitrogen Times (RNT)

Residual nitrogen time (RNT) represents the amount of dissolved nitrogen that is remaining in you body tissues after the time. To simplify dive planning, the residual nitrogen calculated in minutes. Residual nitrogen times are found on section 3 of the U.S. Navy Dive Tables.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

The residual nitrogen table has many elements that will be familiar from the previous two tables. Across the top of the table are the group designations for the beginning pressure group (BPG). These are the same beginning pressure groups (BPG) from table 2.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

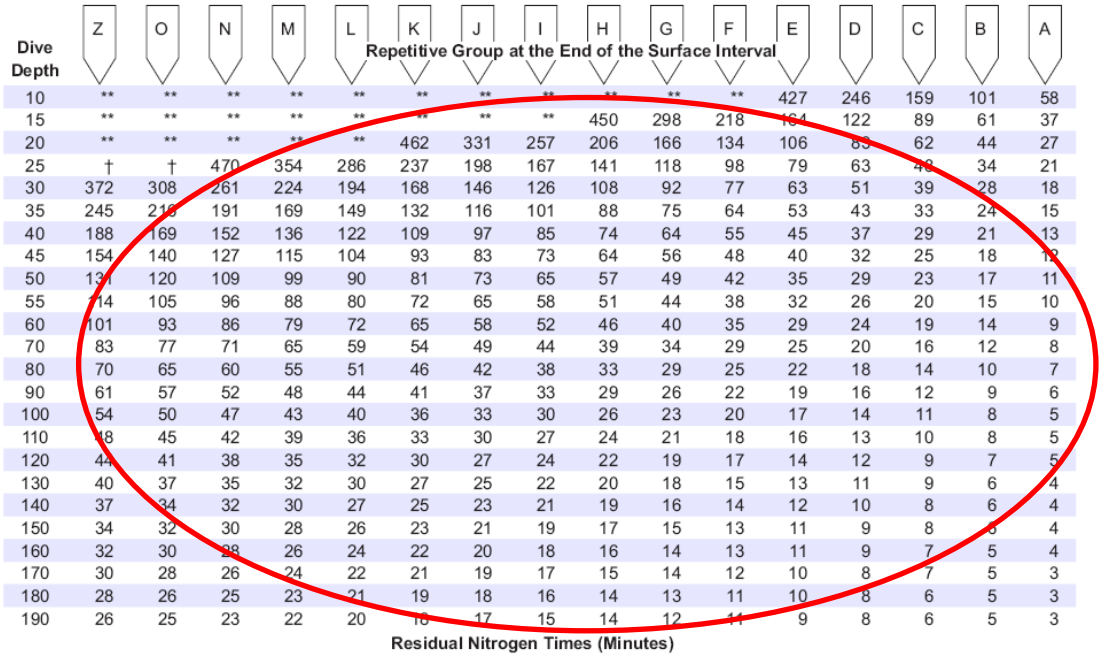
Residual Nitrogen Times (Minutes)

Along the left side of the table are dive depths. These depths represent the rounded depth of the dive you are preparing to conduct. As with the first section of these tables, if the exact depth is not listed, ALWAYS round to the next greater depth. For these tables, all the depths are listed in feet salt water (fsw) unless otherwise stated. Always remember to know what unit of measure the table you are using are written in.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

In the middle of this table there are a lot of numbers. These numbers represent the theoretical amount of nitrogen remaining in your body, which is expressed in minutes.

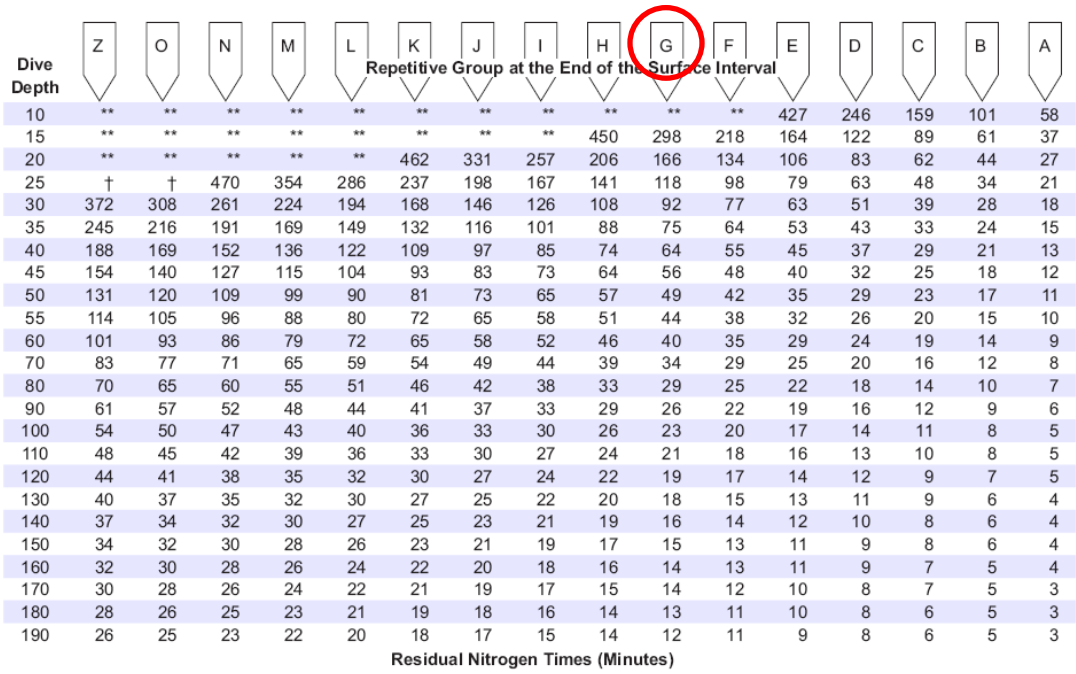


Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	5	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

Using Section 3 of the U.S. Navy Dive Tables

Using Section 3 is very similar to using Sections 1 and 2. The first thing you need to do is locate the Repetitive Group at the End of the Surface Interval (new beginning pressure group) that corresponds to the last dive. If we look at the last example, the new beginning pressure group (BPG) is G.



Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

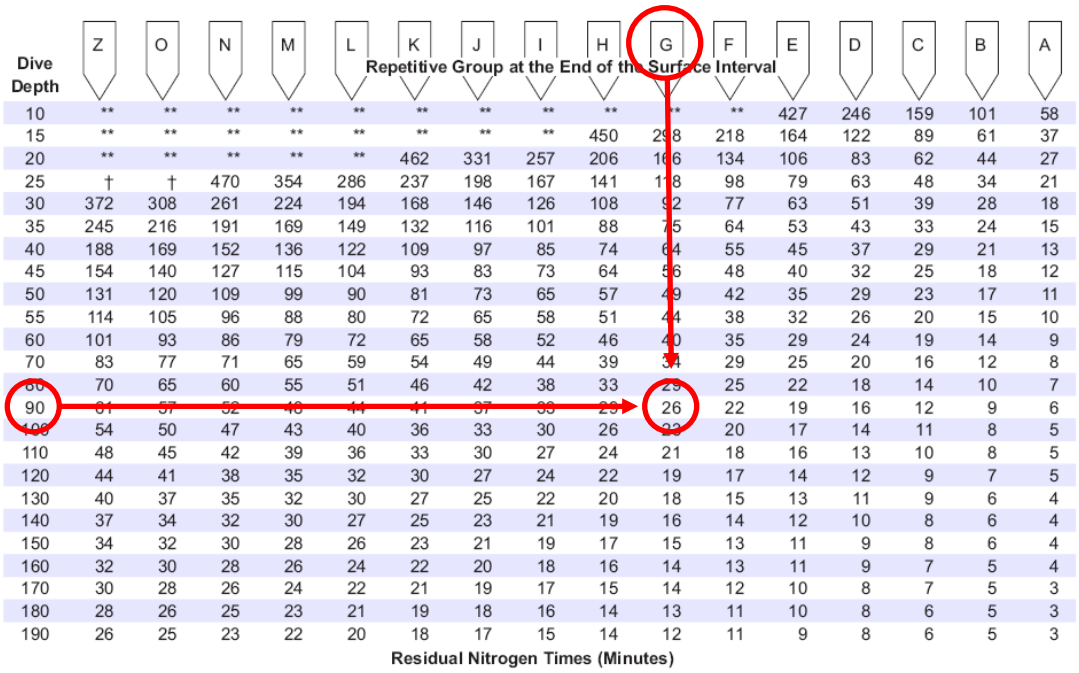
Residual Nitrogen Times (Minutes)

The next step is to determine what depth the next dive is being conducted at. Just as before, if the actual depth does not appear on the table, round to the next greater depth, for example if the next dive is being conducted at 87 fsw, round to 90 fsw.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

Once you have located the depth and the Repetitive Group at the End of the Surface Interval you can determine the residual nitrogen time for the next dive. This is accomplished by following the row for the corresponding depth from left to right, and following the column for the Repetitive Group at the End of the Surface Interval until they intersect. This intersection is the time in minutes used to represent the residual nitrogen time (RNT).



Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

For this example the residual nitrogen time is 26 minutes.

Chapter 4:

Putting It All Together:

Ok, now that you are familiar with the general function of these dive tables, its time to look at how to use them. Before any dive it is important to develop a dive plan. Dive plans allow you to prepare for the upcoming dives and prepare for any problems that may arise.

The first step is to determine where you will be diving and what the maximum depth for that dive site or sites is. This can be found in a variety of ways from consulting reference texts, local dive shops, dive logs from previous dives on the site or any other place that is able to provide reliable information. Once you have this information for you intended dives you can continue the planning process.

As you have seen, there is a lot of information that goes into planning a dive. To keep track of all of this information you will need to develop some sort of planning methodology. Below are two examples of dive planning sheets in common use today. There are certain abbreviations that you will see as go continue through your diving career that are relative common to all agencies when it comes to dive planning.

SI = Surface Interval BPG = Beginning Pressure Group

ABT = Actual Bottom Time RNT = Residual Nitrogen Time

TBT = Theoretical Bottom Time EPG = Ending Pressure Group

Dive Planner A:

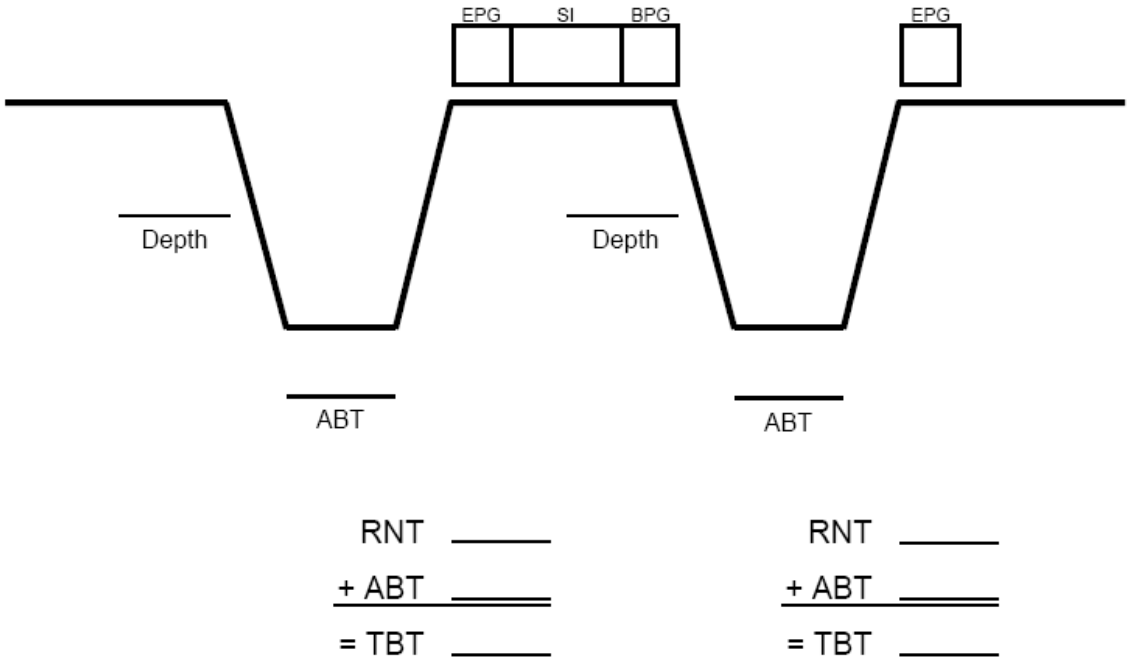
This is a very simple, spreadsheet style dive planning sheet. It tracks all of the basic information required to plan dives in a linear format.

Dive Plan							
Date:				Dive Site:			
Dive Buddy:							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1		:		min	min	min	
2		:		min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	

With this table you simply work from left to right filling in the information as you go.

Dive Planner B:

For those who prefer a more graphical format, this dive planner may be for you. It provides a visual representation of the dive. As with Diver Planner A, you fill in the information as you go.



Example:

You want to make two dives on the same wreck. The first dive will be for 25 minutes and the second dive for 15 minutes with a surface interval of 4:30 between them. The wreck rests at a depth of 87 fsw.

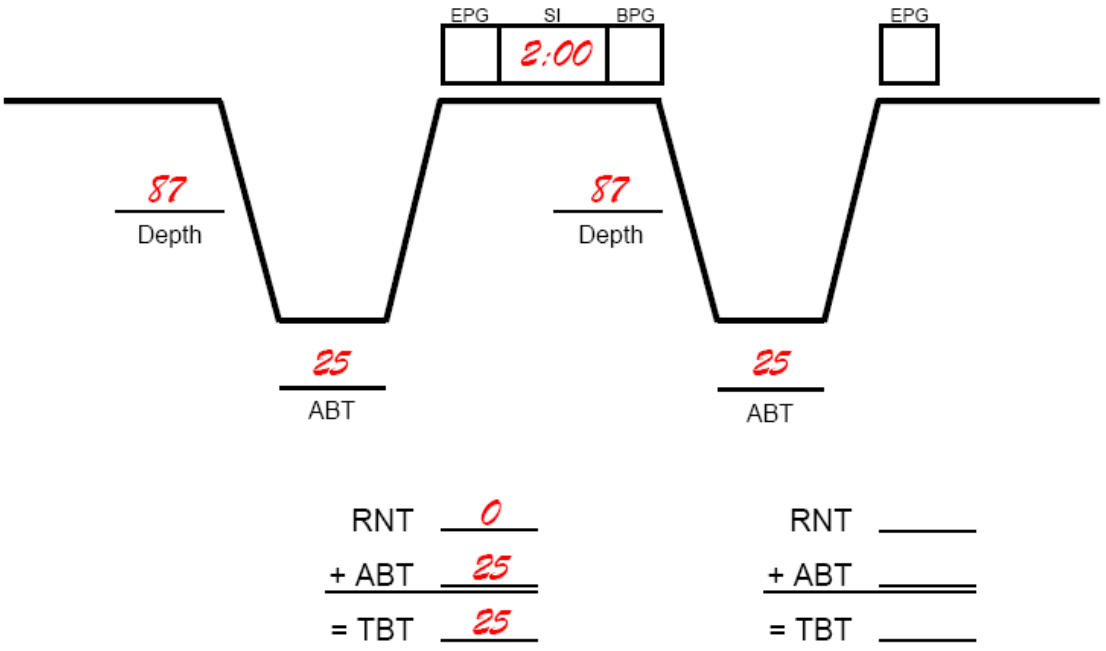
The first step is to establish your maximum allowable bottom time. Because 87 fsw is not specifically listed, round up to 90 fsw.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	30	4	7	11	14	17	21	24	28	30							
100	25	4	6	9	12	15	18	21	25								
110	20	3	6	8	11	14	16	19	20								
120	15	3	5	7	10	12	15										

For any dive to a depth of 87 fsw, the maximum allowable bottom time is 30 minutes. This means that you can conduct the first dive, but you will need to do some more work before the second dive. This is what you know so far:

Dive Plan							
Date: 9 Nov 2009				Dive Site: Hyde			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	87	~ : ~	~	25 min	0 min	25 min	
2	87	4 :30		15 min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	



Since 25 minutes does not appear on the dive tables, you round to the next greater time; in this case 28 minutes.

Table 9-7. *No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.*

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	30	4	7	11	14	17	21	24	28	30							
100	25	4	6	9	12	15	18	21	25								
110	20	3	6	8	11	14	16	19	20								
120	15	3	5	7	10	12	15										

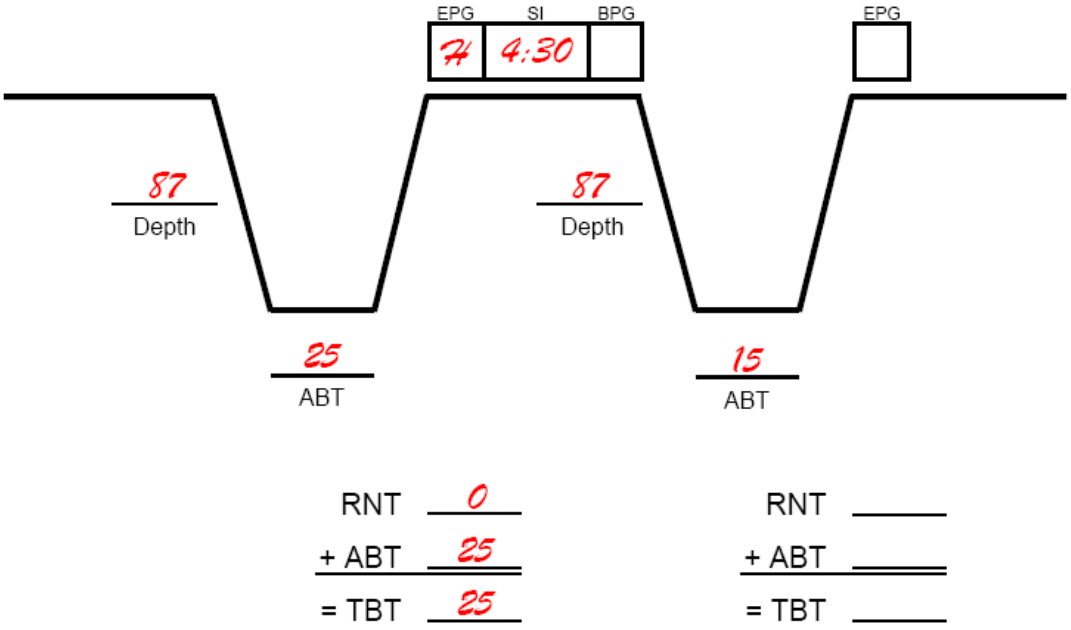
Once you have located the exact dive time, or the next greater list time, follow that column straight up. The letter at the top will be the Ending Pressure Group (EPG) for that dive. In this case the Ending Pressure Group (EPG) is H.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	30	4	7	11	14	17	21	24	28	30							
100	25	4	6	9	12	15	18	21	25								
110	20	3	6	8	11	14	16	19	20								
120	15	3	5	7	10	12	15										

On the dive planning charts this looks like:

Dive Plan							
Date: 9 Nov 2009				Dive Site: Hyde			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	87	- : -	-	25 min	0 min	25 min	H
2	87	4 :30		15 min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	



Now that you have the Ending Pressure Group of the first dive, you can continue to work through the second dive. To do this, you need to find the new Beginning Pressure Group for the second dive. This is accomplished using Section 2 of the dive tables.

Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

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

Repetitive Group at the End of the Surface Interval

As you can see, the new Beginning Pressure Group (BPG) is C. From here using Section 3 of the dive tables you can determine your Residual Nitrogen Time (RNT).

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

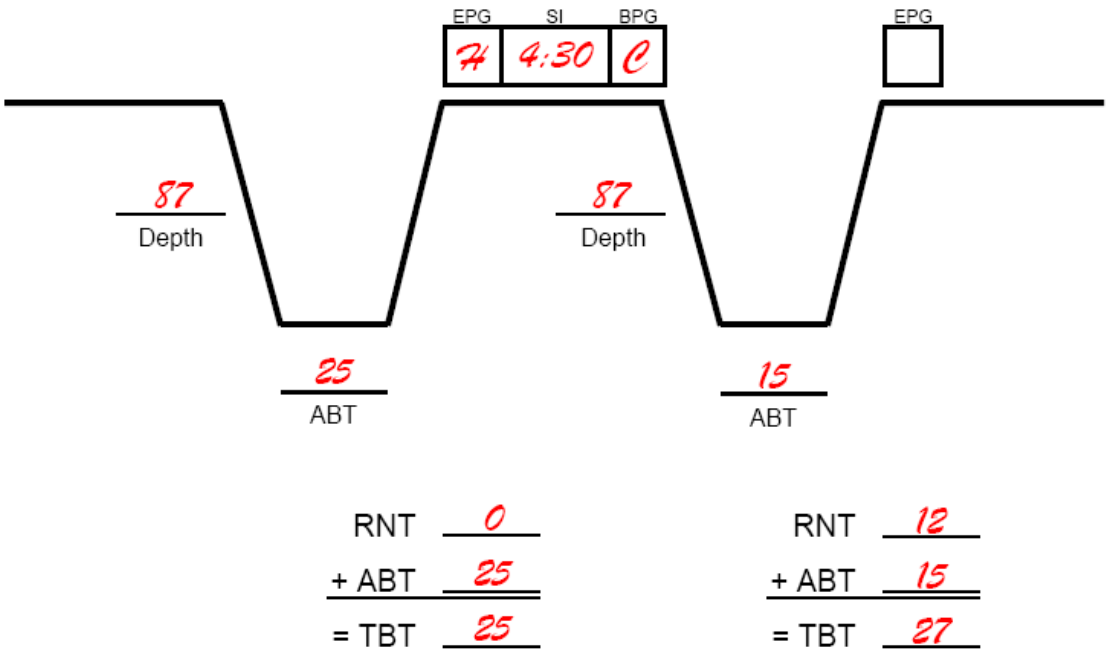
From this table you find that the Residual Nitrogen Time (RNT) for the next dive is 12 minutes. With this information you can plan your second dive. Start by compiling all of the information you have so far:

Dive Plan

Date: 9 Nov 2009 **Dive Site:** Hyde

Dive Buddy: Dive Buddy

Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	87	- : -	-	25 min	0 min	25 min	H
2	87	4 :30	C	15 min	12 min	27 min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	



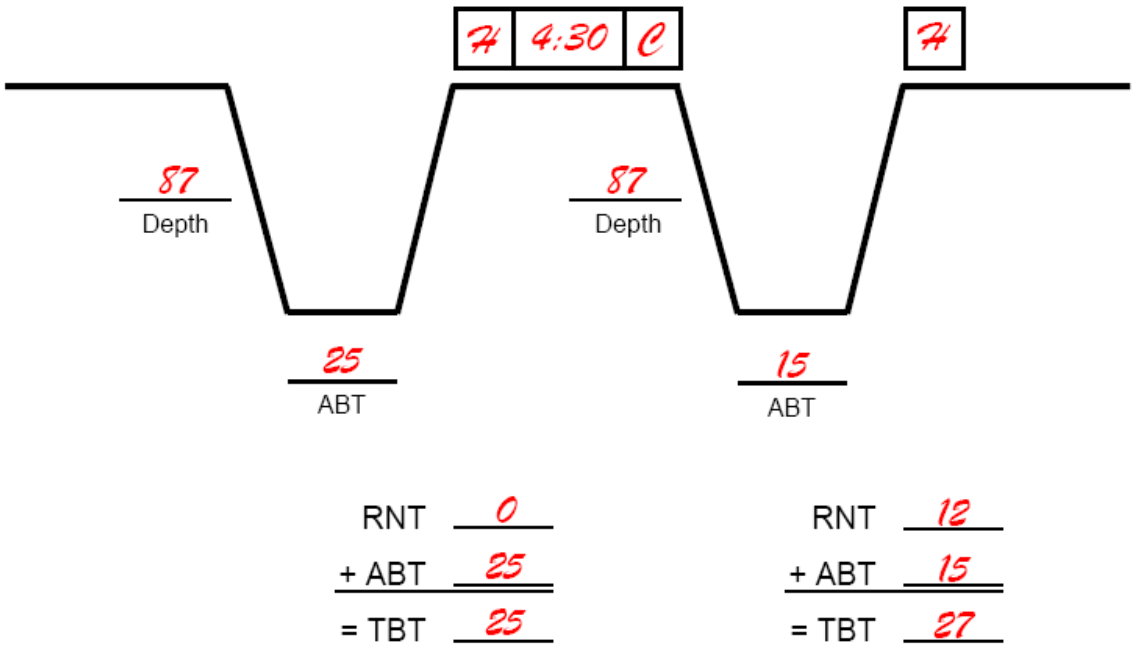
Now that you have compiled all the information you have so far, you can determine the ending pressure group for the second dive. To do this you will need to take the RNT and the ABT and add them together. For this example this gives you a TBT of 27 minutes. This time gives represents the adjusted amount of nitrogen remaining in your body's tissues after the second dive. Once you have the TBT, you will return to Section 1 of the dive tables and use the TBT, in this case 27 minutes, as the time for the second dive. Proceed through the same process as the very first dive using the new TBT and you will find the EPG for the second dive. For this example, the EPG for the second dive id H.

Dive Plan

Date: 9 Nov 2009 **Dive Site:** Hyde

Dive Buddy: Dive Buddy

Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	87	~ : ~	~	25 min	0 min	25 min	H
2	87	4:30	C	15 min	12 min	27 min	H
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	



Example 2:

You plan to make two dives, the first one to 70 fsw for 30 minutes, and the second dive to 42 fsw for 45 minutes with a surface interval of 2:15.

First:

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation																
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						

Dive Plan							
Date: 9 Nov 2009				Dive Site: 5nm ledge / Lib Ship			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	70	~ : ~	~	30 min	0 min	30 min	G
2	42	2 :15		45 min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	

Next, find the new BPG and RNT:

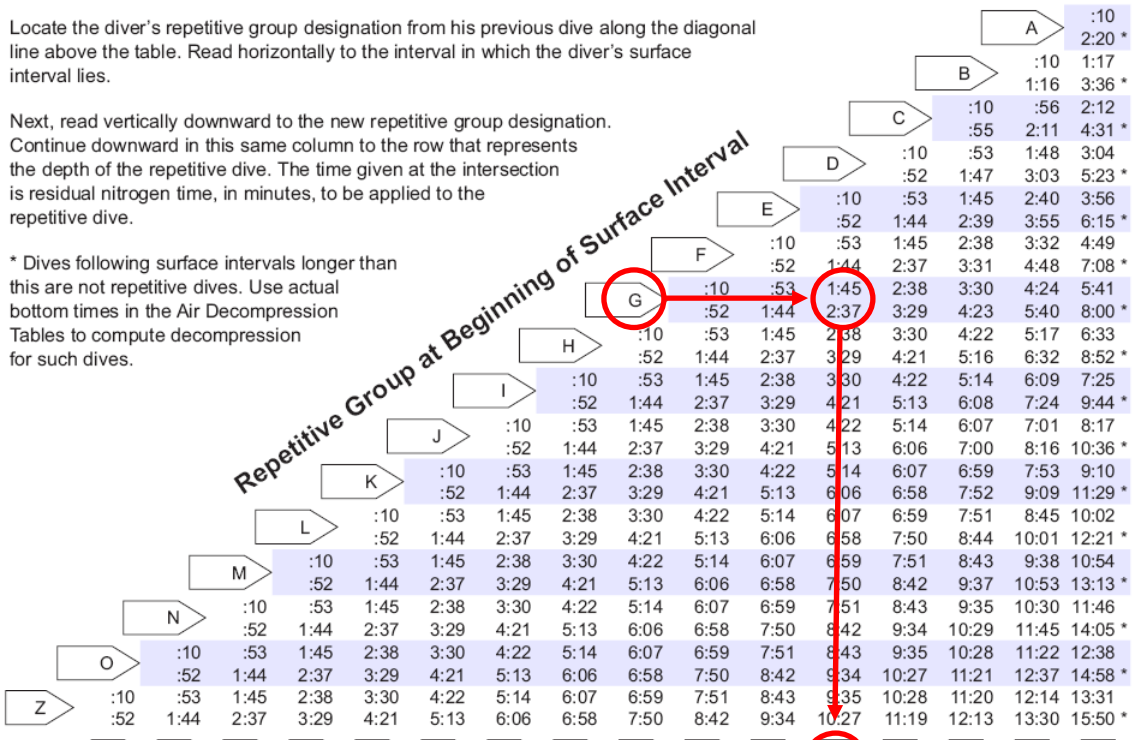
(see next page)

Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.



Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

Dive Plan							
Date: 9 Nov 2009				Dive Site: 5nm ledge / Lib Ship			
Dive Buddy: Dive Buddy							
Dive #	**Depth**	**SI**	**BPG**	**ABT**	**(+) RNT**	**(=) TBT**	**EPG**
1	70	~ : ~	~	30 min	0 min	30 min	G
2	42	2 :15	E	45 min	40 min	85 min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	

Now simply continue back to Section 1 or the tables and find your new Ending Pressure Group (EPG) for the second dive.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			

The Ending Pressure Group (EPG) for this dive is K.

Dive Plan							
Date: 9 Nov 2009				Dive Site: 5nm ledge / Lib Ship			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	70	~ : ~	~	30 min	0 min	30 min	G
2	42	2 :15	E	45 min	40 min	85 min	K
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	

From time to time you may find yourself on a time table for planning dives. This often occurs when scientists are conducting dives and have to pay for the boat by the hour. When this happens you will want to know what the minimum amount of time required between dives to safely conduct all of your dives is. This is known as Minimum Surface Interval. Finding the Minimum Surface Interval is a relatively simple process.

First you need to know what dives you plan to conduct. For instance, you need to conduct three dives for 25 minutes each. The first dive is to 80 fsw, the second dive is to 67 fsw, and the third dive is to 55 fsw. Start with filling in the information that you know:

Dive Plan							
Date: 10 Nov 2009				Dive Site: Markem / 8nm ledge / Saucony			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	80	~ : ~	~	25 min	0 min	25 min	
2	67	:		25 min	min	min	
3	55	:		25 min	min	min	
4		:		min	min	min	
5		:		min	min	min	

At this point, you will need to find the EPG for the first dive. In this case, G.

Dive Plan							
Date: 10 Nov 2009				Dive Site: Markem / 8nm ledge / Saucony			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	80	~ : ~	~	25 min	0 min	25 min	G
2	67	:		25 min	min	min	
3	55	:		25 min	min	min	
4		:		min	min	min	
5		:		min	min	min	

From this point there are several things you will need to look at. The first is the maximum allowable bottom time for the next dive. Since the next dive is to 67 fsw, you will need to round up to 70 fsw. The maximum allowable bottom time for 70 fsw is 48 minutes.

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						

From this point you are going to need to do some math. Since you now know that you only have a maximum of 48 minutes at 70 fsw, you need to know what the maximum amount of residual nitrogen that can be remaining in your tissues at the start of the dive. To find this, subtract the 25 minutes you need to spend on the bottom from the 48 minutes allowed.

48 – 25 = 23 minutes

23 minutes is the maximum amount of Residual Nitrogen Time that you can have to complete the dive.

Now you will need to work backwards. Start on Section 3. Locate the depth for the dive, 70 fsw, and move along the row to the right until you reach 23 minutes, or the next LOWER time. For this dive, that time is 20 minutes.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6

Residual Nitrogen Times (Minutes)

From here, follow the column straight up until you reach the letters across the top of the table, in this case the letter is D.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6

Residual Nitrogen Times (Minutes)

You now have two valuable pieces of information. The D represents the new Beginning Pressure Group for the dive. The 20 minutes represents the Residual Nitrogen Time for the next dive. This is where you are so far:

Dive Plan							
Date: 10 Nov 2009				Dive Site: Markem / 8nm ledge / Saucony			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	80	~ : ~	~	25 min	0 min	25 min	G
2	67	:	D	25 min	20 min	45 min	
3	55	:		25 min	min	min	
4		:		min	min	min	
5		:		min	min	min	

From here, you will move over to Section 2 of the dive tables. You will be working backwards through this table as well. As you remember from earlier Section 2 lists many different surface interval times. Start at the bottom of the table with the new BPG (D) and move up until you reach the intersection of the BPG column and the depth row.

Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

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

Repetitive Group at the End of the Surface Interval

Were they intersect gives you a range of times. For this example it is 2:38 to 3:39. Since you are looking for the minimum amount of time between dives, you will go with the faster time; 2:38.

Dive Plan							
Date: 10 Nov 2009				Dive Site: Markem / 8nm ledge / Saucony			
Dive Buddy: Dive Buddy							
Dive #	**Depth**	**SI**	**BPG**	**ABT**	**(+) RNT**	**(=) TBT**	**EPG**
1	80	- : -	-	25 min	0 min	25 min	G
2	67	2:38	D	25 min	20 min	45 min	
3	55	:		25 min	min	min	
4		:		min	min	min	
5		:		min	min	min	

Now just repeat the same process for the next dive:

First – find the no-deco limit

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					

Second:

Determine what the adjusted no decompression limit is:

74 – 25 = 49 minutes

Third:

Find the BPG that has no more than 49 minutes of RNT for 55 fsw.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6

Dive Plan

Date: 10 Nov 2009	**Dive Site:** Markem / 8nm ledge / Saucony
Dive Buddy: Dive Buddy	

Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	80	- : -	-	25 min	0 min	25 min	G
2	67	2:38	D	25 min	20 min	45 min	J
3	55	:	G	25 min	44 min	69 min	
4		:		min	min	min	
5		:		min	min	min	

Fourth:

Find where the BPG and EPG column and row intersect.

Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

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

Repetitive Group at the End of the Surface Interval

Dive Plan			
Date: 10 Nov 2009		**Dive Site:** Markem / 8nm ledge / Saucony	
Dive Buddy: Dive Buddy			

Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	80	- : -	-	25 min	0 min	25 min	G
2	67	2:38	D	25 min	20 min	45 min	I
3	55	2:38	G	25 min	44 min	69 min	
4		:		min	min	min	
5		:		min	min	min	

Fifth:

Find the EPG for the third dive:

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

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					

Dive Plan							
Date: 10 Nov 2009				Dive Site: Markem / 8nm ledge / Saucony			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	80	- : -	-	25 min	0 min	25 min	G
2	67	2:38	D	25 min	20 min	45 min	J
3	55	2:38	G	25 min	44 min	69 min	K
4		:		min	min	min	
5		:		min	min	min	

Chapter 5:

Special Situations:

From time to time, you will find that there are going to be some abnormalities when planning dives using the US Navy Dive Tables. We will take a look at these below.

Surface Intervals less than 10 minutes:

You will notice that on Section 2 of the Dive Tables, none of the times for surface intervals are below 10 minutes (00:10). The reason for this is that the US Navy does not consider a repetitive dive made within 10 minutes of the previous dive to be a separate dive, but rather a continuation of the previous dive. In the event that you find yourself reentering the water less than 10 minutes from your previous dive, simply add the Actual Bottom Time (ABT) from the previous dive to the Actual Bottom Time (ABT) for the next dive. This total will be the time you use to determine the Ending Pressure Group (EPG).

Abnormal Residual Nitrogen Times (RNT):

On occasion while planning and conducting multiple dives at the same depth, you may find you have correctly calculated a Residual Nitrogen Time (RNT) that is greater than the Actual Bottom time of the previous dive. This may seem improbable to gain nitrogen in your tissues while you are on the surface off gassing. This is due to the US Navy Dive Tables being designed to conduct multiple dives of varying depths. When this occurs, you will essentially be left with two options. The first option is to proceed forward with the times you found on the tables. This will actually add a measure of conservatism to the repetitive dive. The second option is to use the Actual Bottom Time (ABT) from the previous dive as your new Residual Nitrogen Time (RNT).

Long Residual Nitrogen Times (RNT):

Depending on the types of dives you are conducting, you may also find that you will have some rather long Surface Intervals (SI). When using the US Navy Dive Tables, any surface interval designated with an (*) is considered to be a clean wash and the beginning of a new dive series. The longest Surface Interval (SI) listed on the US Navy Dive Tables is 15 hours and 50 minutes (15:50).

Appendix I:

Examples 1:

You plan to make three dives. The first dive is to 110 fsw for 10 minutes followed by a 1 hour surface interval. Your next dive is 89 fsw for 15 minutes. After a 4 hour surface interval you make your third dive to 62 fsw for 25 minutes. What is your ending pressure group after the third dive?

1.

Dive Plan							
Date: 18 Nov 09				Dive Site: Normania / Markem / 8 nm Ledge			
Dive Buddy: Dive Buddy.							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	110	~ : ~	~	10 min	0 min	10 min	
2	89	1 : 00		15 min	min	min	
3	62	4 : 00		25 min	min	min	
4		:		min	min	min	
5		:		min	min	min	

2.

Dive Plan							
Date: 18 Nov 09				Dive Site: Normania / Markem / 8 nm Ledge			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	110	~ : ~	~	10 min	0 min	10 min	D
2	89	1 : 00	C	15 min	12 min	27 min	
3	62	4 : 00		25 min	min	min	
4		:		min	min	min	
5		:		min	min	min	

3.

Dive Plan							
Date: 18 Nov 09				Dive Site: Normania / Markem / 8 nm Ledge			
Dive Buddy: Dive Budy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	110	- : -	-	10 min	0 min	10 min	D
2	89	1 : 00	C	15 min	12 min	27 min	H
3	62	4 : 00	D	25 min	20 min	45 min	
4		:		min	min	min	
5		:		min	min	min	

4.

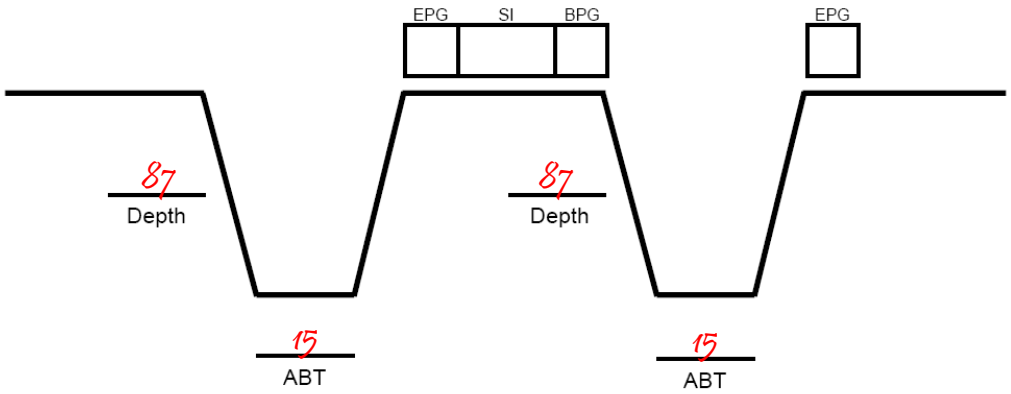
Dive Plan							
Date: 18 Nov 09				Dive Site: Normania / Markem / 8 nm Ledge			
Dive Buddy: Dive Buddy							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1	110	- : -	-	10 min	0 min	10 min	D
2	89	1 : 00	C	15 min	12 min	27 min	H
3	62	4 : 00	D	25 min	20 min	45 min	K
4		:		min	min	min	
5		:		min	min	min	

Dive 3 EPG = K

Example 2:

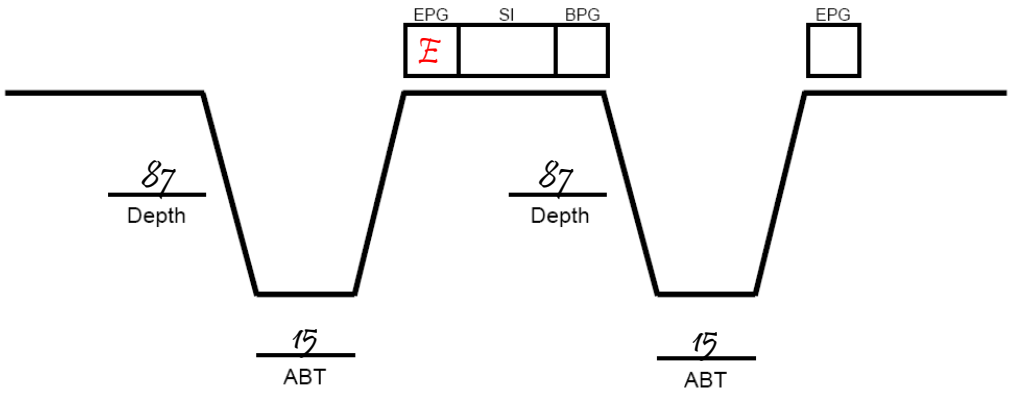
You need to conduct 2 dives to 87 feet for 15 minutes each to change out scientific equipment. What is the minimum surface interval that will allow you to accomplish this mission?

1.



RNT		RNT	
+ ABT	15	+ ABT	15
= TBT		= TBT	

2.



RNT	0	RNT	
+ ABT	15	+ ABT	15
= TBT	15	= TBT	

3.

87 fsw ⟶ 90 fsw

No-deco limit for 90 fsw = 30 minutes

30 – 15 = 15 minutes

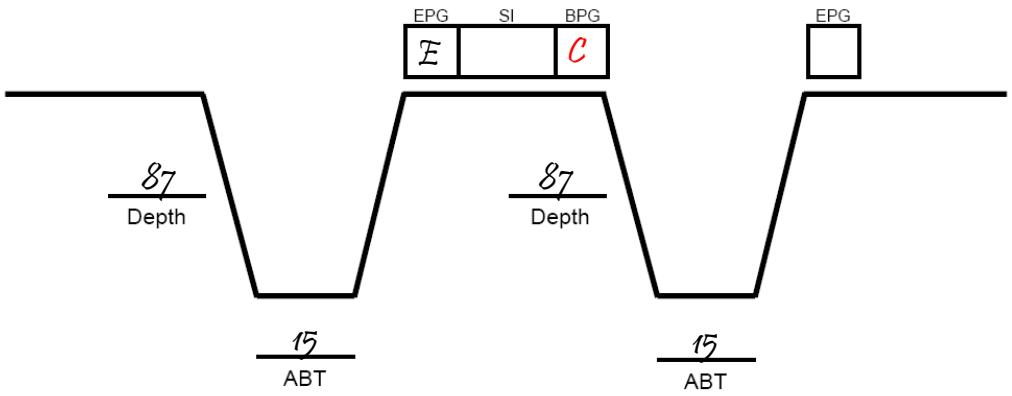
New adjusted no-deco limit is **15 minutes**

4.

Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

5.



RNT	0	RNT	12
+ ABT	15	+ ABT	15
= TBT	15	= TBT	27

6.

Residual Nitrogen Time Table for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

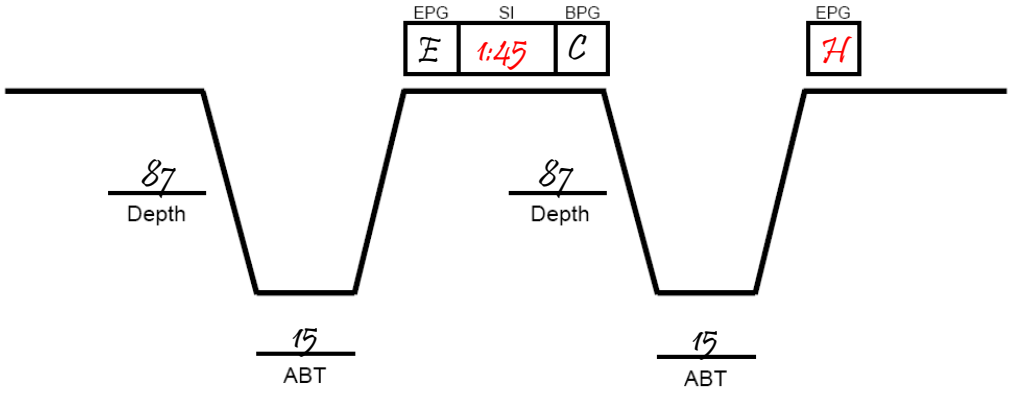
* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

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

Repetitive Group at the End of the Surface Interval

7.



RNT	0	RNT	12
+ ABT	15	+ ABT	15
= TBT	15	= TBT	27

Minimum Surface Interval = **1:45**

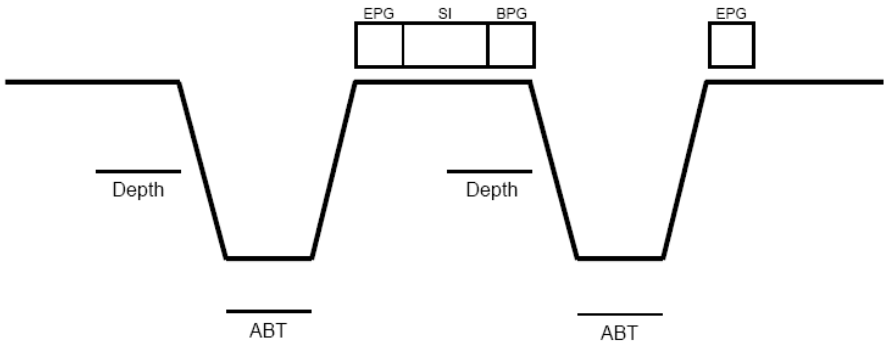
Appendix II

Dive Planners

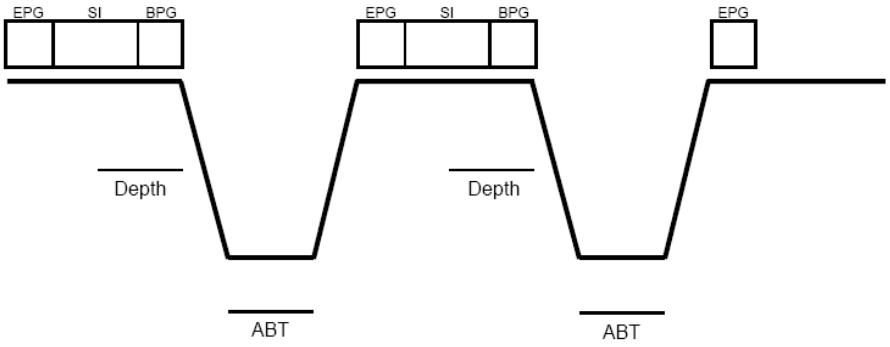
Dive Plan							
Date:				Dive Site:			
Dive Buddy:							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1		:		min	min	min	
2		:		min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	

Dive Plan							
Date:				Dive Site:			
Dive Buddy:							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1		:		min	min	min	
2		:		min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	

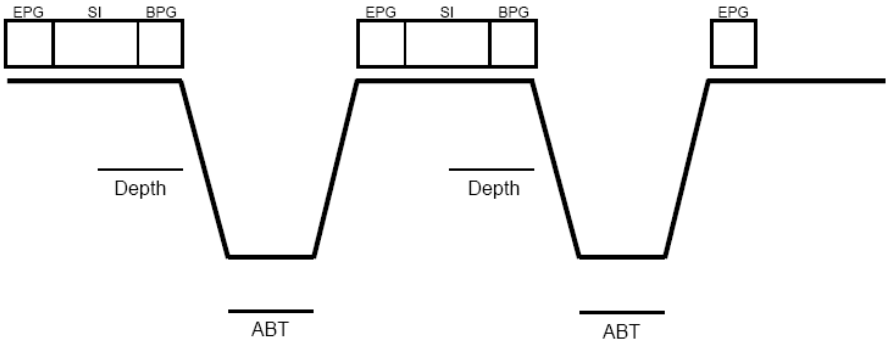
Dive Plan							
Date:				Dive Site:			
Dive Buddy:							
Dive #	Depth	SI	BPG	ABT	(+) RNT	(=) TBT	EPG
1		:		min	min	min	
2		:		min	min	min	
3		:		min	min	min	
4		:		min	min	min	
5		:		min	min	min	



RNT _____ RNT _____
+ ABT _____ + ABT _____
= TBT _____ = TBT _____



RNT _____ RNT _____
+ ABT _____ + ABT _____
= TBT _____ = TBT _____



RNT _____ RNT _____
+ ABT _____ + ABT _____
= TBT _____ = TBT _____

Appendix III

Navy Tables

Table 9-7. *No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.*

Depth (fsw)	No-Stop Limit	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	426	*										
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	595	20	33	47	62	78	97	117	140	166	198	236	285	354	469	595	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	60	7	12	17	22	28	33	39	45	51	57	60					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	30	4	7	11	14	17	21	24	28	30							
100	25	4	6	9	12	15	18	21	25								
110	20	3	6	8	11	14	16	19	20								
120	15	3	5	7	10	12	15										
130	10	2	4	6	9	10											
140	10	2	4	6	8	10											
150	5	2	3	5													
160	5		3	5													
170	5			4	5												
180	5			4	5												
190	5			3	5												

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

Table 9-8. *Residual Nitrogen Time Table for Repetitive Air Dives.*

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next, read vertically downward to the new repetitive group designation. Continue downward in this same column to the row that represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals longer than this are not repetitive dives. Use actual bottom times in the Air Decompression Tables to compute decompression for such dives.

Repetitive Group at Beginning of Surface Interval

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

Dive Depth	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
	Repetitive Group at the End of the Surface Interval															
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9
70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8
80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7
90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6
100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5
110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

Residual Nitrogen Times (Minutes)

** Residual Nitrogen Time cannot be determined using this table (see paragraph 9-9.1 subparagraph 8 for instructions).

† Read vertically downward to the 30 fsw repetitive dive depth. Use the corresponding residual nitrogen times to compute the equivalent single dive time. Decompress using the 30 fsw air decompression table.

Appendix IV

Definitions

ABT
Actual Bottom Time – see "bottom time"

Bottom Time
The duration of elapsed time from leaving the surface to begin a dive until beginning a direct ascent to the surface.

Beginning Pressure Group
Pressure group at the beginning of a repetitive dive representing the amount of residual nitrogen remaining in the diver's body.

BPG
see "Beginning Pressure Group"

Decompression
Releasing from pressure or compression; following a specific decompression table or procedure during ascent; ascending in the water or experiencing decreased pressure in the chamber.

Decompression Dive
Any dive deep enough or long enough to require controlled decompression, i.e., any dive in which an ascent must include decompression stops.

Decompression Schedule
A set depth-time relationships and instructions for controlling pressure reduction.

Decompression Stop
The designated depth and time at which a diver must stop and wait during an ascent from a decompression dive. The depth and time are specified by the decompression table in use.

Decompression Table
A tabulation of decompression schedules.

Depth
The vertical distance from a specified sea level to the sea floor.

Dive
An exposure to increased pressure whether under water or in a hyperbaric chamber.

Ending Pressure Group
Pressure group at the end of a dive representing the amount of nitrogen remaining in a diver's tissues after a dive.

EPG
see "Ending Pressure Group"

Hyperbaric
1. of or having a pressure or specific gravity greater than that within the body tissues of fluids. 2. designating or of a pressurized (usually oxygenated) chamber, used in diving or treatment of various diseases and conditions.

Maximum Allowable Bottom Time
see "No Decompression Limit"

Maximum Depth
The maximum depth achieved during a dive.

No-Decompression Dive
A dive from which a diver can return directly to the surface at a controlled rate without stopping at shallower depths to allow inert gas to be eliminated from the body; also called a no-stop dive.

No-Decompression Limits
Specified times at given depths from which no decompression stops are required on return to the surface; also referred to as a no-stop curve and no-stop limits.

No-Stop Limit
see "No Decompression Limit"

Scuba
Derived from the acronym for self-contained underwater breathing apparatus, now the word used to describe apparatus in which the inspired gas is delivered by demand regulator and exhaled into the surrounding water (open-circuit), and the gas supply is carried on the diver's back.

SI
see "Surface Interval"

Surface Interval
The elapsed time between surfacing from a dive and the moment when the diver leaves the surface for the next dive.

Repetitive Dive
A dive following another dive within 12 mores but more than 10 minutes.

Repetitive Group Designation

A letter that is used in decompression tables to designate the amount of nitrogen remaining in a diver's body for 12 hours after the completion of a dive.

Residual Nitrogen

Denoting a concept which describes the amount of nitrogen remaining in a diver's tissues following a hyperbaric exposure.

Residual Nitrogen Time

Time added to actual bottom time for calculating a decompression schedule for a repetitive dive; based on the concept of residual nitrogen.

RNT

see "Residual Nitrogen Time"

TBT

see "Theoretical Bottom Time"

Theoretical Bottom Time

Also called "Total Bottom Time." The sum of the Actual Bottom and the Residual Nitrogen Time for a specific dive, representing the theoretical amount of Nitrogen remaining in the diver's body.

Appendix V

Quiz

1. Imagine you dive to a depth of 39 feet and stay for 46 minutes. What would your *Ending Pressure Group* (EPG) be on the US Navy Dive Tables?
    a. J
    b. F
    c. P
    d. H

2. Imagine you have made a dive and you have stayed on the surface for a while. After this surface interval your pressure group on the US Navy Dive Tables is G. What is the maximum amount of bottom time you can use doing a repetitive dive to 56 feet?
    a. 17 minutes
    b. 44 minutes
    c. 29 minutes
    d. 26 minutes

3. After a surface interval your pressure group on the US Navy Dive Table is D. You want to do a repetitive (second) dive to 38 feet for 32 minutes. What will be your new pressure group (PG) when you reach the surface?
    a. E
    b. P
    c. J
    d. H

4. You dive to 59 feet for 22 minutes. After a 30 minute surface interval, you plan to dive to 50 feet. Using the US Navy Dive Tables, what is the maximum allowable time for the second dive?
    a. 10 minutes
    b. 63 minutes
    c. 55 minutes
    d. 19 minutes

5. Imagine you are planning to make two dives. The first dive is to 60 feet for 45 minutes, and the second dive is to 60 feet for 35 minutes. How long would you have to stay on the surface (minimum surface interval) to do these two dives safely?
    a. 26 minutes
    b. 1 hour and 4 minutes
    c. 2 hours and 42 minutes
    d. 3 hours and 30 minutes

6. You plan to make two dives. The first dive is on a reef in 90 feet of water for 20 minutes. You then remain on the surface for 1 hour. The second dive is on a wreck in 60 feet of water, with a planned bottom time of 30 minutes. What will the total bottom time be for the second dive?
    a. 16 minutes
    b. 59 minutes
    c. 39 minutes
    d. 30 minutes

7. You plan to do three dives. The first dive is an 80 foot dive for 20 minutes followed by a 42 minute surface interval. The second dive is to 50 feet for 37 minutes followed by a surface interval of one hour. Your third dive is to 50 feet. What would be your maximum allowable bottom time for this third dive?
    a. 90 minutes
    b. 26 minutes
    c. 15 minutes
    d. 63 minutes

8. You plan to make two dives, the first to 130 feet and the second to 40 feet. What is the no decompression limit for the first dive?
    a. 15 minutes
    b. 10 minutes
    c. 8 minutes
    d. 20 minutes

9. You plan to make three dives. The first will be to 95 feet for 15 minutes, followed by a one hour, 45 minute surface interval. The second will be to 67 feet for 20 minutes. If this is followed by a 52 minute surface interval, what is the no decompression limit for a repetitive dive to 67 feet?
    a. 10 minutes
    b. 9 minutes
    c. 13 minutes
    d. 20 minutes

10. You have just made two dives, the first to 57 feet for 51 minutes, and the second to 43 feet for 41 minutes, with a one hour interval between them. What is the minimum required surface interval for another dive to 43 feet for 35 minutes?

    _____

References:

NOAA Diving Manual: Diving for Science and Technology: Fourth Edition: Best Publishing (2001).

PADI Open Water Diving Manual

SDI Open Water Diver Manual

U.S. Navy Diving Manual Revision 6