

**US NAVY Air/O<sub>2</sub> Decompression Tables  
Rev.07 - DEC 2016**

**جدول برداشت فشارغواصی هوا / اکسیژن**

برگرفته از هند بوک غواصی نیروی دریایی آمریکا  
ورژن هفت - ویرایش دسامبر 2016



تدوین شرکت ایراتک

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## جدول غواصی بدون نیاز به برداشت فشار نیروی دریایی آمریکا ورژن هفت - دسامبر 2016

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

Depth (msw)	Depth (fsw)	No-Stop Limit	Repetitive Group Designation																
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z	
3	10	Unlimited	57	101	158	245	426	*											
4.5	15	Unlimited	36	60	88	121	163	217	297	449	*								
6	20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*					
7.5	25	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102	
9	30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371	
10.5	35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232	
12	40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163		
13.5	45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125			
15	50	92	9	15	21	28	34	41	48	56	63	71	80	89	92				
16.5	55	74	8	14	19	25	31	37	43	50	56	63	71	74					
18	60	63	7	12	17	22	28	33	39	45	51	57	63						
21	70	48	6	10	14	19	23	28	32	37	42	47	48						
24	80	39	5	9	12	16	20	24	28	32	36	39							
27	90	33	4	7	11	14	17	21	24	28	31	33							
30	100	25	4	6	9	12	15	18	21	25									
33	110	20	3	6	8	11	14	16	19	20									
36	120	15	3	5	7	10	12	15											
40	130	12	2	4	6	9	11	12											
43	140	10	2	4	6	8	10												
46	150	8		3	5	7	8												
49	160	7		3	5	6	7												
52	170	6			4	6													
55	180	6			4	5	6												
58	190	5			3	5													

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

# جدول محاسبه مقدار نیتروژن باقی مانده در خون برای محاسبه غوص تکرار با استفاده از هوا

**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
Dive Depth msw fsw	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A	
	3 10	**	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101
4.5 15	**	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
6 20	**	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
7.5 25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	21	
9 30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18	
10.5 35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15	
12 40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13	
13.5 45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12	
15 50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11	
16.5 55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	10	
18 60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	9	
21 70	83	77	71	65	59	54	49	44	39	34	29	25	20	16	12	8	
24 80	70	65	60	55	51	46	42	38	33	29	25	22	18	14	10	7	
27 90	61	57	52	48	44	41	37	33	29	26	22	19	16	12	9	6	
30 100	54	50	47	43	40	36	33	30	26	23	20	17	14	11	8	5	
33 110	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5	
36 120	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5	
40 130	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4	
43 140	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4	
46 150	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4	
49 160	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4	
52 170	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3	
55 180	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3	
58 190	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.

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW/MSW) Stop times (min) include travel time, except first air and first O <sub>2</sub> stop								Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group	
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m	30 9m				20 6m
<b>9 MSW / 30 FSW</b>														
371	1:00	AIR									0	1:00	0	Z
		AIR/O <sub>2</sub>									0	1:00		
380	0:20	AIR									5	6:00	0.5	Z
		AIR/O <sub>2</sub>									1	2:00		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
420	0:20	AIR									22	23:00	0.5	Z
		AIR/O <sub>2</sub>									5	6:00		
480	0:20	AIR									42	43:00	0.5	
		AIR/O <sub>2</sub>									9	10:00		
540	0:20	AIR									71	72:00	1	
		AIR/O <sub>2</sub>									14	15:00		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
600	0:20	AIR									92	93:00	1	
		AIR/O <sub>2</sub>									19	20:00		
660	0:20	AIR									120	121:00	1	
		AIR/O <sub>2</sub>									22	23:00		
720	0:20	AIR									158	159:00	1	
		AIR/O <sub>2</sub>									27	28:00		
<b>10.5 MSW / 35 FSW</b>														
232	1:10	AIR									0	1:10	0	Z
		AIR/O <sub>2</sub>									0	1:10		
240	0:30	AIR									4	5:10	0.5	Z
		AIR/O <sub>2</sub>									2	3:10		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
270	0:30	AIR									28	29:10	0.5	Z
		AIR/O <sub>2</sub>									7	8:10		
300	0:30	AIR									53	54:10	0.5	Z
		AIR/O <sub>2</sub>									13	14:10		
330	0:30	AIR									71	72:10	1	Z
		AIR/O <sub>2</sub>									18	19:10		
360	0:30	AIR									88	89:10	1	
		AIR/O <sub>2</sub>									22	23:10		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
420	0:30	AIR									134	135:10	1.5	
		AIR/O <sub>2</sub>									29	30:10		
480	0:30	AIR									173	174:10	1.5	
		AIR/O <sub>2</sub>									38	44:10		
540	0:30	AIR									228	229:10	2	
		AIR/O <sub>2</sub>									45	51:10		
600	0:30	AIR									277	278:10	2	
		AIR/O <sub>2</sub>									53	59:10		
660	0:30	AIR									314	315:10	2.5	
		AIR/O <sub>2</sub>									63	69:10		
720	0:30	AIR									342	343:10	3	
		AIR/O <sub>2</sub>									71	82:10		

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**.Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)								Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group	
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m	30 9m				20 6m
<b>12 MSW / 40 FSW</b>														
163	1:20	AIR									0	1:20	0	O
		AIR/O <sub>2</sub>									0	1:20		
170	0:40	AIR									6	7:20	0.5	O
		AIR/O <sub>2</sub>									2	3:20		
180	0:40	AIR									14	15:20	0.5	Z
		AIR/O <sub>2</sub>									5	6:20		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
190	0:40	AIR									21	22:20	0.5	Z
		AIR/O <sub>2</sub>									7	8:20		
200	0:40	AIR									27	28:20	0.5	Z
		AIR/O <sub>2</sub>									9	10:20		
210	0:40	AIR									39	40:20	0.5	Z
		AIR/O <sub>2</sub>									11	12:20		
220	0:40	AIR									52	53:20	0.5	Z
		AIR/O <sub>2</sub>									12	13:20		
230	0:40	AIR									64	65:20	1	Z
		AIR/O <sub>2</sub>									16	17:20		
240	0:40	AIR									75	76:20	1	Z
		AIR/O <sub>2</sub>									19	20:20		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
270	0:40	AIR									101	102:20	1	Z
		AIR/O <sub>2</sub>									26	27:20		
300	0:40	AIR									128	129:20	1.5	
		AIR/O <sub>2</sub>									33	34:20		
330	0:40	AIR									160	161:20	1.5	
		AIR/O <sub>2</sub>									38	44:20		
360	0:40	AIR									184	185:20	2	
		AIR/O <sub>2</sub>									44	50:20		
420	0:40	AIR									248	249:20	2.5	
		AIR/O <sub>2</sub>									56	62:20		
480	0:40	AIR									321	322:20	2.5	
		AIR/O <sub>2</sub>									68	79:20		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----														
540	0:40	AIR									372	373:20	3	
		AIR/O <sub>2</sub>									80	91:20		
600	0:40	AIR									410	411:20	3.5	
		AIR/O <sub>2</sub>									93	104:20		
660	0:40	AIR									439	440:20	4	
		AIR/O <sub>2</sub>									103	119:20		
Exceptional Exposure: SurDO <sub>2</sub> -----														
720	0:40	AIR									461	462:20	4.5	
		AIR/O <sub>2</sub>									112	128:20		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group	
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m
<b>13.5 MSW / 45 FSW</b>													
125	1:30	AIR								0	1:30	0	N
		AIR/O <sub>2</sub>								0	1:30		
130	0:50	AIR								2	3:30	0.5	O
		AIR/O <sub>2</sub>								1	2:30		
140	0:50	AIR								14	15:30	0.5	O
		AIR/O <sub>2</sub>								5	6:30		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----													
150	0:50	AIR								25	26:30	0.5	Z
		AIR/O <sub>2</sub>								8	9:30		
160	0:50	AIR								34	35:30	0.5	Z
		AIR/O <sub>2</sub>								11	12:30		
170	0:50	AIR								41	42:30	1	Z
		AIR/O <sub>2</sub>								14	15:30		
180	0:50	AIR								59	60:30	1	Z
		AIR/O <sub>2</sub>								17	18:30		
190	0:50	AIR								75	76:30	1	Z
		AIR/O <sub>2</sub>								19	20:30		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----													
200	0:50	AIR								89	90:30	1	Z
		AIR/O <sub>2</sub>								23	24:30		
210	0:50	AIR								101	102:30	1	Z
		AIR/O <sub>2</sub>								27	28:30		
220	0:50	AIR								112	113:30	1.5	Z
		AIR/O <sub>2</sub>								30	31:30		
230	0:50	AIR								121	122:30	1.5	Z
		AIR/O <sub>2</sub>								33	34:30		
240	0:50	AIR								130	131:30	1.5	Z
		AIR/O <sub>2</sub>								37	43:30		
270	0:50	AIR								173	174:30	2	
		AIR/O <sub>2</sub>								45	51:30		
300	0:50	AIR								206	207:30	2	
		AIR/O <sub>2</sub>								51	57:30		
330	0:50	AIR								243	244:30	2.5	
		AIR/O <sub>2</sub>								61	67:30		
360	0:50	AIR								288	289:30	3	
		AIR/O <sub>2</sub>								69	80:30		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----													
420	0:50	AIR								373	374:30	3.5	
		AIR/O <sub>2</sub>								84	95:30		
480	0:50	AIR								431	432:30	4	
		AIR/O <sub>2</sub>								101	117:30		
Exceptional Exposure: SurDO <sub>2</sub> -----													
540	0:50	AIR								473	474:30	4.5	
		AIR/O <sub>2</sub>								117	133:30		

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**Table 9-9. Air Decompression Table (Continued).**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group	
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m
<b>15 MSW / 50 FSW</b>													
92	1:40	AIR								0	1:40	0	M
		AIR/O <sub>2</sub>								0	1:40		
95	1:00	AIR								2	3:40	0.5	M
		AIR/O <sub>2</sub>								1	2:40		
100	1:00	AIR								4	5:40	0.5	N
		AIR/O <sub>2</sub>								2	3:40		
110	1:00	AIR								8	9:40	0.5	O
		AIR/O <sub>2</sub>								4	5:40		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----													
120	1:00	AIR								21	22:40	0.5	O
		AIR/O <sub>2</sub>								7	8:40		
130	1:00	AIR								34	35:40	0.5	Z
		AIR/O <sub>2</sub>								12	13:40		
140	1:00	AIR								45	46:40	1	Z
		AIR/O <sub>2</sub>								16	17:40		
150	1:00	AIR								56	57:40	1	Z
		AIR/O <sub>2</sub>								19	20:40		
160	1:00	AIR								78	79:40	1	Z
		AIR/O <sub>2</sub>								23	24:40		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----													
170	1:00	AIR								96	97:40	1	Z
		AIR/O <sub>2</sub>								26	27:40		
180	1:00	AIR								111	112:40	1.5	Z
		AIR/O <sub>2</sub>								30	31:40		
190	1:00	AIR								125	126:40	1.5	Z
		AIR/O <sub>2</sub>								35	36:40		
200	1:00	AIR								136	137:40	1.5	Z
		AIR/O <sub>2</sub>								39	45:40		
210	1:00	AIR								147	148:40	2	
		AIR/O <sub>2</sub>								43	49:40		
220	1:00	AIR								166	167:40	2	
		AIR/O <sub>2</sub>								47	53:40		
230	1:00	AIR								183	184:40	2	
		AIR/O <sub>2</sub>								50	56:40		
240	1:00	AIR								198	199:40	2	
		AIR/O <sub>2</sub>								53	59:40		
270	1:00	AIR								236	237:40	2.5	
		AIR/O <sub>2</sub>								62	68:40		
300	1:00	AIR								285	286:40	3	
		AIR/O <sub>2</sub>								74	85:40		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----													
330	1:00	AIR								345	346:40	3.5	
		AIR/O <sub>2</sub>								83	94:40		
360	1:00	AIR								393	394:40	3.5	
		AIR/O <sub>2</sub>								92	103:40		
Exceptional Exposure: SurDO <sub>2</sub> -----													
420	1:00	AIR								464	465:40	4.5	
		AIR/O <sub>2</sub>								113	129:40		

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**.Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)									Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group
			100	90	80	70	60	50	40	30	20			
<b>16.5 MSW / 55 FSW</b>			30m	27m	24m	21m	18m	15m	12m	9m	6m			
74	1:50	AIR									0	1:50	0	L
		AIR/O <sub>2</sub>									0	1:50		
75	1:10	AIR									1	2:50	0.5	L
		AIR/O <sub>2</sub>									1	2:50		
80	1:10	AIR									4	5:50	0.5	M
		AIR/O <sub>2</sub>									2	3:50		
90	1:10	AIR									10	11:50	0.5	N
		AIR/O <sub>2</sub>									5	6:50		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
100	1:10	AIR									17	18:50	0.5	O
		AIR/O <sub>2</sub>									8	9:50		
110	1:10	AIR									34	35:50	0.5	O
		AIR/O <sub>2</sub>									12	13:50		
120	1:10	AIR									48	49:50	1	Z
		AIR/O <sub>2</sub>									17	18:50		
130	1:10	AIR									59	60:50	1	Z
		AIR/O <sub>2</sub>									22	23:50		
140	1:10	AIR									84	85:50	1	Z
		AIR/O <sub>2</sub>									26	27:50		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
150	1:10	AIR									105	106:50	1.5	Z
		AIR/O <sub>2</sub>									30	31:50		
160	1:10	AIR									123	124:50	1.5	Z
		AIR/O <sub>2</sub>									34	35:50		
170	1:10	AIR									138	139:50	1.5	Z
		AIR/O <sub>2</sub>									40	46:50		
180	1:10	AIR									151	152:50	2	Z
		AIR/O <sub>2</sub>									45	51:50		
190	1:10	AIR									169	170:50	2	
		AIR/O <sub>2</sub>									50	56:50		
200	1:10	AIR									190	191:50	2	
		AIR/O <sub>2</sub>									54	60:50		
210	1:10	AIR									208	209:50	2.5	
		AIR/O <sub>2</sub>									58	64:50		
220	1:10	AIR									224	225:50	2.5	
		AIR/O <sub>2</sub>									62	68:50		
230	1:10	AIR									239	240:50	2.5	
		AIR/O <sub>2</sub>									66	77:50		
240	1:10	AIR									254	255:50	3	
		AIR/O <sub>2</sub>									69	80:50		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----														
270	1:10	AIR									313	314:50	3.5	
		AIR/O <sub>2</sub>									83	94:50		
300	1:10	AIR									380	381:50	3.5	
		AIR/O <sub>2</sub>									94	105:50		
330	1:10	AIR									432	433:50	4	
		AIR/O <sub>2</sub>									106	122:50		
Exceptional Exposure: SurDO <sub>2</sub> -----														
360	1:10	AIR									474	475:50	4.5	
											118	134:50		



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**.Table 9-9. Air Decompression Table**  
(DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group	
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m
<b>18 MSW / 60 FSW</b>													
63	2:00	AIR								0	2:00	0	K
		AIR/O <sub>2</sub>								<b>0</b>	2:00		
65	1:20	AIR								2	4:00	0.5	L
		AIR/O <sub>2</sub>								<b>1</b>	3:00		
70	1:20	AIR								7	9:00	0.5	L
		AIR/O <sub>2</sub>								<b>4</b>	6:00		
80	1:20	AIR								14	16:00	0.5	N
		AIR/O <sub>2</sub>								<b>7</b>	9:00		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----													
90	1:20	AIR								23	25:00	0.5	O
		AIR/O <sub>2</sub>								<b>10</b>	12:00		
100	1:20	AIR								42	44:00	1	Z
		AIR/O <sub>2</sub>								<b>15</b>	17:00		
110	1:20	AIR								57	59:00	1	Z
		AIR/O <sub>2</sub>								<b>21</b>	23:00		
120	1:20	AIR								75	77:00	1	Z
		AIR/O <sub>2</sub>								<b>26</b>	28:00		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----													
130	1:20	AIR								102	104:00	1.5	Z
		AIR/O <sub>2</sub>								<b>31</b>	33:00		
140	1:20	AIR								124	126:00	1.5	Z
		AIR/O <sub>2</sub>								<b>35</b>	37:00		
150	1:20	AIR								143	145:00	2	Z
		AIR/O <sub>2</sub>								<b>41</b>	48:00		
160	1:20	AIR								158	160:00	2	Z
		AIR/O <sub>2</sub>								<b>48</b>	55:00		
170	1:20	AIR								178	180:00	2	
		AIR/O <sub>2</sub>								<b>53</b>	60:00		
180	1:20	AIR								201	203:00	2.5	
		AIR/O <sub>2</sub>								<b>59</b>	66:00		
190	1:20	AIR								222	224:00	2.5	
		AIR/O <sub>2</sub>								<b>64</b>	71:00		
200	1:20	AIR								240	242:00	2.5	
		AIR/O <sub>2</sub>								<b>68</b>	80:00		
210	1:20	AIR								256	258:00	3	
		AIR/O <sub>2</sub>								<b>73</b>	85:00		
220	1:20	AIR								278	280:00	3	
		AIR/O <sub>2</sub>								<b>77</b>	89:00		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----													
230	1:20	AIR								300	302:00	3.5	
		AIR/O <sub>2</sub>								<b>82</b>	94:00		
240	1:20	AIR								321	323:00	3.5	
		AIR/O <sub>2</sub>								<b>88</b>	100:00		
270	1:20	AIR								398	400:00	4	
		AIR/O <sub>2</sub>								<b>102</b>	119:00		
Exceptional Exposure: SurDO <sub>2</sub> -----													
300	1:20	AIR								456	458:00	4.5	
		AIR/O <sub>2</sub>								<b>115</b>	132:00		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)									Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group
			100	90	80	70	60	50	40	30	20			
<b>21 MSW / 70 FSW</b>			30m	27m	24m	21m	18m	15m	12m	9m	6m			
48	2:20	AIR									0	2:20	0	K
		AIR/O <sub>2</sub>									0	2:20		
50	1:40	AIR									2	4:20	0.5	K
		AIR/O <sub>2</sub>									1	3:20		
55	1:40	AIR									9	11:20	0.5	L
		AIR/O <sub>2</sub>									5	7:20		
60	1:40	AIR									14	16:20	0.5	M
		AIR/O <sub>2</sub>									8	10:20		
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
70	1:40	AIR									24	26:20	0.5	N
		AIR/O <sub>2</sub>									13	15:20		
80	1:40	AIR									44	46:20	1	O
		AIR/O <sub>2</sub>									17	19:20		
90	1:40	AIR									64	66:20	1	Z
		AIR/O <sub>2</sub>									24	26:20		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
100	1:40	AIR									88	90:20	1.5	Z
		AIR/O <sub>2</sub>									31	33:20		
110	1:40	AIR									120	122:20	1.5	Z
		AIR/O <sub>2</sub>									38	45:20		
120	1:40	AIR									145	147:20	2	Z
		AIR/O <sub>2</sub>									44	51:20		
130	1:40	AIR									167	169:20	2	Z
		AIR/O <sub>2</sub>									51	58:20		
140	1:40	AIR									189	191:20	2.5	
		AIR/O <sub>2</sub>									59	66:20		
150	1:40	AIR									219	221:20	2.5	
		AIR/O <sub>2</sub>									66	78:20		
160	1:20	AIR								1	244	247:00	3	
		AIR/O <sub>2</sub>								1	72	85:00		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----														
170	1:20	AIR								2	265	269:00	3	
		AIR/O <sub>2</sub>								1	78	91:00		
180	1:20	AIR								4	289	295:00	3.5	
		AIR/O <sub>2</sub>								2	83	97:00		
190	1:20	AIR								5	316	323:00	3.5	
		AIR/O <sub>2</sub>								3	88	103:00		
200	1:20	AIR								9	345	356:00	4	
		AIR/O <sub>2</sub>								5	93	115:00		
210	1:20	AIR								13	378	393:00	4	
		AIR/O <sub>2</sub>								7	98	122:00		
Exceptional Exposure: SurDO <sub>2</sub> -----														
240	1:20	AIR								25	454	481:00	5	
		AIR/O <sub>2</sub>								13	110	140:00		

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**.Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group		
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m
<b>24 MSW / 80 FSW</b>														
39	2:40	AIR								0	2:40	0	J	
		AIR/O <sub>2</sub>								0	2:40			
40	2:00	AIR								1	3:40	0.5	J	
		AIR/O <sub>2</sub>								1	3:40			
45	2:00	AIR								10	12:40	0.5	K	
		AIR/O <sub>2</sub>								5	7:40			
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
50	2:00	AIR								17	19:40	0.5	M	
		AIR/O <sub>2</sub>								9	11:40			
55	2:00	AIR								24	26:40	0.5	M	
		AIR/O <sub>2</sub>								13	15:40			
60	2:00	AIR								30	32:40	1	N	
		AIR/O <sub>2</sub>								16	18:40			
70	2:00	AIR								54	56:40	1	O	
		AIR/O <sub>2</sub>								22	24:40			
80	2:00	AIR								77	79:40	1.5	Z	
		AIR/O <sub>2</sub>								30	32:40			
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
90	2:00	AIR								114	116:40	1.5	Z	
		AIR/O <sub>2</sub>								39	46:40			
100	1:40	AIR								1	147	150:20	2	Z
		AIR/O <sub>2</sub>								1	46	54:20		
110	1:40	AIR								6	171	179:20	2	Z
		AIR/O <sub>2</sub>								3	51	61:20		
120	1:40	AIR								10	200	212:20	2.5	
		AIR/O <sub>2</sub>								5	59	71:20		
130	1:40	AIR								14	232	248:20	3	
		AIR/O <sub>2</sub>								7	67	86:20		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----														
140	1:40	AIR								17	258	277:20	3.5	
		AIR/O <sub>2</sub>								9	73	94:20		
150	1:40	AIR								19	285	306:20	3.5	
		AIR/O <sub>2</sub>								10	80	102:20		
160	1:40	AIR								21	318	341:20	4	
		AIR/O <sub>2</sub>								11	86	114:20		
170	1:40	AIR								27	354	383:20	4	
		AIR/O <sub>2</sub>								14	90	121:20		
Exceptional Exposure: SurDO <sub>2</sub> -----														
180	1:40	AIR								33	391	426:20	4.5	
		AIR/O <sub>2</sub>								17	96	130:20		
210	1:40	AIR								51	473	526:20	5	
		AIR/O <sub>2</sub>								26	110	158:20		

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**Table 9-9. Air Decompression Table**  
(DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group			
			100	90	80	70	60	50	40				30	20	
<b>27 MSW / 90 FSW</b>			30m	27m	24m	21m	18m	15m	12m	9m	6m				
33	3:00	AIR									0	3:00	0	J	
		AIR/O <sub>2</sub>									<b>0</b>	3:00			
35	2:20	AIR									4	7:00	0.5	J	
		AIR/O <sub>2</sub>									<b>2</b>	5:00			
40	2:20	AIR									14	17:00	0.5	L	
		AIR/O <sub>2</sub>									<b>7</b>	10:00			
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----															
45	2:20	AIR									23	26:00	0.5	M	
		AIR/O <sub>2</sub>									<b>12</b>	15:00			
50	2:20	AIR									31	34:00	1	N	
		AIR/O <sub>2</sub>									<b>17</b>	20:00			
55	2:20	AIR									39	42:00	1	O	
		AIR/O <sub>2</sub>									<b>21</b>	24:00			
60	2:20	AIR									56	59:00	1	O	
		AIR/O <sub>2</sub>									<b>24</b>	27:00			
70	2:20	AIR									83	86:00	1.5	Z	
		AIR/O <sub>2</sub>									<b>32</b>	35:00			
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----															
80	2:00	AIR									5	125	132:40	2	Z
		AIR/O <sub>2</sub>									<b>3</b>	<b>40</b>	50:40		
90	2:00	AIR									13	158	173:40	2	Z
		AIR/O <sub>2</sub>									<b>7</b>	<b>46</b>	60:40		
100	2:00	AIR									19	185	206:40	2.5	
		AIR/O <sub>2</sub>									<b>10</b>	<b>53</b>	70:40		
110	2:00	AIR									25	224	251:40	3	
		AIR/O <sub>2</sub>									<b>13</b>	<b>61</b>	86:40		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----															
120	1:40	AIR									2	28	256	288:20	3.5
		AIR/O <sub>2</sub>									2	<b>14</b>	<b>70</b>	98:40	
130	1:40	AIR									5	28	291	326:20	3.5
		AIR/O <sub>2</sub>									5	<b>14</b>	<b>79</b>	110:40	
140	1:40	AIR									8	28	330	368:20	4
		AIR/O <sub>2</sub>									8	<b>14</b>	<b>87</b>	126:40	
Exceptional Exposure: SurDO <sub>2</sub> -----															
150	1:40	AIR									11	34	378	425:20	4.5
		AIR/O <sub>2</sub>									11	<b>17</b>	<b>94</b>	139:40	
160	1:40	AIR									13	40	418	473:20	4.5
		AIR/O <sub>2</sub>									13	<b>20</b>	<b>101</b>	151:40	
170	1:40	AIR									15	45	451	513:20	5
		AIR/O <sub>2</sub>									15	<b>23</b>	<b>106</b>	166:40	
180	1:40	AIR									16	51	479	548:20	5.5
		AIR/O <sub>2</sub>									16	<b>26</b>	<b>112</b>	176:40	
240	1:40	AIR									42	68	592	704:20	7.5
		AIR/O <sub>2</sub>									42	<b>34</b>	<b>159</b>	267:40	

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**.Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW) Stop times (min) include travel time, except first air and first O <sub>2</sub> stop							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group			
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m	
<b>30 MSW / 100 FSW</b>															
25	3:20	AIR								0	3:20	0	H		
		AIR/O <sub>2</sub>								0	3:20				
30	2:40	AIR								3	6:20	0.5	J		
		AIR/O <sub>2</sub>								2	5:20				
35	2:40	AIR								15	18:20	0.5	L		
		AIR/O <sub>2</sub>								8	11:20				
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----															
40	2:40	AIR								26	29:20	1	M		
		AIR/O <sub>2</sub>								14	17:20				
45	2:40	AIR								36	39:20	1	N		
		AIR/O <sub>2</sub>								19	22:20				
50	2:40	AIR								47	50:20	1	O		
		AIR/O <sub>2</sub>								24	27:20				
55	2:40	AIR								65	68:20	1.5	Z		
		AIR/O <sub>2</sub>								28	31:20				
60	2:40	AIR								81	84:20	1.5	Z		
		AIR/O <sub>2</sub>								33	36:20				
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----															
70	2:20	AIR								11	124	138:00	2	Z	
		AIR/O <sub>2</sub>								6	39	53:00			
80	2:20	AIR								21	160	184:00	2.5	Z	
		AIR/O <sub>2</sub>								11	45	64:00			
90	2:00	AIR								2	28	196	228:40	2.5	
		AIR/O <sub>2</sub>								2	14	53	82:00		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----															
100	2:00	AIR								9	28	241	280:40	3	
		AIR/O <sub>2</sub>								9	14	66	102:00		
110	2:00	AIR								14	28	278	322:40	3.5	
		AIR/O <sub>2</sub>								14	14	76	117:00		
120	2:00	AIR								19	28	324	373:40	4	
		AIR/O <sub>2</sub>								19	14	85	136:00		
Exceptional Exposure: SurDO <sub>2</sub> -----															
150	1:40	AIR								3	26	46	461	538:20	5
		AIR/O <sub>2</sub>								3	26	23	109	183:40	

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**Table 9-9. Air Decompression Table**  
(DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)								Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group		
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m	30 9m				20 6m	
<b>33 MSW / 110 FSW</b>															
20	3:40	AIR									0	3:40	0	H	
		AIR/O <sub>2</sub>									<b>0</b>	3:40			
25	3:00	AIR									5	8:40	0.5	I	
		AIR/O <sub>2</sub>									<b>3</b>	6:40			
30	3:00	AIR									14	17:40	0.5	K	
		AIR/O <sub>2</sub>									<b>7</b>	10:40			
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----															
35	3:00	AIR									27	30:40	1	M	
		AIR/O <sub>2</sub>									<b>14</b>	17:40			
40	3:00	AIR									39	42:40	1	N	
		AIR/O <sub>2</sub>									<b>20</b>	23:40			
45	3:00	AIR									50	53:40	1	O	
		AIR/O <sub>2</sub>									<b>26</b>	29:40			
50	3:00	AIR									71	74:40	1.5	Z	
		AIR/O <sub>2</sub>									<b>32</b>	35:40			
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----															
55	2:40	AIR									5	85	93:20	1.5	Z
		AIR/O <sub>2</sub>									<b>3</b>	<b>33</b>	44:20		
60	2:40	AIR									13	111	127:20	2	Z
		AIR/O <sub>2</sub>									<b>7</b>	<b>36</b>	51:20		
70	2:40	AIR									26	155	184:20	2.5	Z
		AIR/O <sub>2</sub>									<b>14</b>	<b>42</b>	64:20		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----															
80	2:20	AIR							9	28	200	240:00	2.5		
		AIR/O <sub>2</sub>							9	<b>14</b>	<b>54</b>	90:20			
90	2:20	AIR							18	28	249	298:00	3.5		
		AIR/O <sub>2</sub>							18	<b>14</b>	<b>68</b>	113:20			
100	2:20	AIR							25	28	295	351:00	3.5		
		AIR/O <sub>2</sub>							25	<b>14</b>	<b>79</b>	131:20			
110	2:00	AIR							5	26	28	353	414:40	4	
		AIR/O <sub>2</sub>							5	26	<b>14</b>	<b>91</b>	154:00		
Exceptional Exposure: SurDO <sub>2</sub> -----															
120	2:00	AIR							10	26	35	413	486:40	4.5	
		AIR/O <sub>2</sub>							10	26	<b>18</b>	<b>101</b>	173:00		
180	1:40	AIR							3	23	47	68	593	736:20	7.5
		AIR/O <sub>2</sub>							3	23	47	<b>34</b>	<b>159</b>	298:40	

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**. Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group				
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m		
<b>36 MSW / 120 FSW</b>																
15	4:00	AIR								0	4:00	0	F			
		AIR/O <sub>2</sub>								0	4:00					
20	3:20	AIR								4	8:00	0.5	H			
		AIR/O <sub>2</sub>								2	6:00					
25	3:20	AIR								9	13:00	0.5	J			
		AIR/O <sub>2</sub>								5	9:00					
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----																
30	3:20	AIR								24	28:00	0.5	L			
		AIR/O <sub>2</sub>								13	17:00					
35	3:20	AIR								38	42:00	1	N			
		AIR/O <sub>2</sub>								20	24:00					
40	3:00	AIR								2	49	54:40	1	O		
		AIR/O <sub>2</sub>								1	26	30:40				
45	3:00	AIR								3	71	77:40	1.5	Z		
		AIR/O <sub>2</sub>								2	31	36:40				
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----																
50	3:00	AIR								10	85	98:40	1.5	Z		
		AIR/O <sub>2</sub>								5	33	46:40				
55	3:00	AIR								19	116	138:40	2	Z		
		AIR/O <sub>2</sub>								10	35	53:40				
60	3:00	AIR								27	142	172:40	2	Z		
		AIR/O <sub>2</sub>								14	39	61:40				
70	2:40	AIR								13	28	190	234:20	2.5		
		AIR/O <sub>2</sub>								13	14	51	86:40			
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----																
80	2:40	AIR								24	28	246	301:20	3		
		AIR/O <sub>2</sub>								24	14	67	118:40			
90	2:20	AIR								7	26	28	303	367:00	3.5	
		AIR/O <sub>2</sub>								7	26	14	80	140:20		
100	2:20	AIR								15	25	28	372	443:00	4	
		AIR/O <sub>2</sub>								15	25	14	95	167:20		
Exceptional Exposure: SurDO <sub>2</sub> -----																
110	2:20	AIR								21	25	38	433	520:00	5	
		AIR/O <sub>2</sub>								21	25	19	105	188:20		
120	2:00	AIR								3	23	25	47	480	580:40	5.5
		AIR/O <sub>2</sub>								3	23	25	24	113	211:00	

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**Table 9-9. Air Decompression Table**  
(DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group					
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m			
<b>40 MSW / 130 FSW</b>																	
12	4:20	AIR								0	4:20	0	F				
		AIR/O <sub>2</sub>								0	4:20						
15	3:40	AIR								3	7:20	0.5	G				
		AIR/O <sub>2</sub>								2	6:20						
20	3:40	AIR								8	12:20	0.5	I				
		AIR/O <sub>2</sub>								5	9:20						
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----																	
25	3:40	AIR								17	21:20	0.5	K				
		AIR/O <sub>2</sub>								9	13:20						
30	3:20	AIR								2	32	1	M				
		AIR/O <sub>2</sub>								1	17						
35	3:20	AIR								5	44	1	O				
		AIR/O <sub>2</sub>								3	23						
40	3:20	AIR								6	66	1.5	Z				
		AIR/O <sub>2</sub>								3	30						
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----																	
45	3:00	AIR								1	11	84	99:40	1.5	Z		
		AIR/O <sub>2</sub>								1	6	33	49:00				
50	3:00	AIR								2	20	118	143:40	2	Z		
		AIR/O <sub>2</sub>								2	10	36	57:00				
55	3:00	AIR								4	28	146	181:40	2	Z		
		AIR/O <sub>2</sub>								4	14	40	67:00				
60	3:00	AIR								12	28	170	213:40	2.5	Z		
		AIR/O <sub>2</sub>								12	14	46	81:00				
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----																	
70	2:40	AIR								1	26	28	235	293:20	3		
		AIR/O <sub>2</sub>								1	26	14	63	117:40			
80	2:40	AIR								12	26	28	297	366:20	3.5		
		AIR/O <sub>2</sub>								12	26	14	79	144:40			
90	2:40	AIR								22	25	28	375	453:20	4		
		AIR/O <sub>2</sub>								22	25	14	95	174:40			
Exceptional Exposure: SurDO <sub>2</sub> -----																	
100	2:20	AIR								6	23	26	38	444	540:00	5	
		AIR/O <sub>2</sub>								6	23	26	20	106	204:20		
120	2:20	AIR								17	24	27	57	534	662:00	6	
		AIR/O <sub>2</sub>								17	24	27	29	130	255:20		
180	2:00	AIR								13	21	45	57	94	658	890:40	9
		AIR/O <sub>2</sub>								13	21	45	57	46	198	418:00	



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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group					
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m			
<b>43 MSW / 140 FSW</b>																	
10	4:40	AIR								0	4:40	0	E				
		AIR/O <sub>2</sub>								<b>0</b>	4:40						
15	4:00	AIR								5	9:40	0.5	H				
		AIR/O <sub>2</sub>								<b>3</b>	7:40						
20	4:00	AIR								13	17:40	0.5	J				
		AIR/O <sub>2</sub>								<b>7</b>	11:40						
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----																	
25	3:40	AIR								3	24	31:20	1	L			
		AIR/O <sub>2</sub>								<b>2</b>	<b>12</b>	18:20					
30	3:40	AIR								7	37	48:20	1	N			
		AIR/O <sub>2</sub>								<b>4</b>	<b>19</b>	27:20					
35	3:20	AIR								2	7	58	71:00	1.5	O		
		AIR/O <sub>2</sub>								<b>2</b>	<b>4</b>	<b>26</b>	36:20				
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----																	
40	3:20	AIR								4	7	82	97:00	1.5	Z		
		AIR/O <sub>2</sub>								<b>4</b>	<b>4</b>	<b>33</b>	50:20				
45	3:20	AIR								5	18	114	141:00	2	Z		
		AIR/O <sub>2</sub>								<b>5</b>	<b>9</b>	<b>36</b>	59:20				
50	3:20	AIR								8	27	145	184:00	2	Z		
		AIR/O <sub>2</sub>								<b>8</b>	<b>14</b>	<b>39</b>	70:20				
55	3:00	AIR								1	15	29	171	219:40	2.5	Z	
		AIR/O <sub>2</sub>								<b>1</b>	<b>15</b>	<b>15</b>	<b>45</b>	85:00			
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----																	
60	3:00	AIR								2	23	28	209	265:40	3		
		AIR/O <sub>2</sub>								<b>2</b>	<b>23</b>	<b>14</b>	<b>56</b>	109:00			
70	3:00	AIR								14	25	29	276	347:40	3.5		
		AIR/O <sub>2</sub>								<b>14</b>	<b>25</b>	<b>15</b>	<b>74</b>	142:00			
80	2:40	AIR								2	24	25	29	362	445:20	4	
		AIR/O <sub>2</sub>								<b>2</b>	<b>24</b>	<b>25</b>	<b>15</b>	<b>91</b>	175:40		
Exceptional Exposure: SurDO <sub>2</sub> -----																	
90	2:40	AIR								12	23	26	38	443	545:20	5	
		AIR/O <sub>2</sub>								<b>12</b>	<b>23</b>	<b>26</b>	<b>19</b>	<b>107</b>	210:40		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group								
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m						
<b>46 MSW / 150 FSW</b>																				
8	5:00	AIR								0	5:00	0	E							
		AIR/O <sub>2</sub>								0	5:00									
10	4:20	AIR								2	7:00	0.5	F							
		AIR/O <sub>2</sub>								1	6:00									
15	4:20	AIR								8	13:00	0.5	H							
		AIR/O <sub>2</sub>								5	10:00									
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----																				
20	4:00	AIR								2	15	21:40	0.5	K						
		AIR/O <sub>2</sub>								1	8	13:40								
25	4:00	AIR								7	29	40:40	1	M						
		AIR/O <sub>2</sub>								4	14	22:40								
30	3:40	AIR								4	7	45	60:20	1.5	O					
		AIR/O <sub>2</sub>								4	4	22	34:40							
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----																				
35	3:40	AIR								6	7	74	91:20	1.5	Z					
		AIR/O <sub>2</sub>								6	4	30	44:40							
40	3:20	AIR								2	6	14	106	132:00	2	Z				
		AIR/O <sub>2</sub>								2	6	7	35	59:20						
45	3:20	AIR								3	8	24	142	181:00	2	Z				
		AIR/O <sub>2</sub>								3	8	12	40	72:20						
50	3:20	AIR								4	14	28	170	220:00	2.5	Z				
		AIR/O <sub>2</sub>								4	14	14	46	87:20						
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----																				
55	3:20	AIR								7	21	28	212	272:00	3					
		AIR/O <sub>2</sub>								7	21	14	57	113:20						
60	3:20	AIR								11	26	28	248	317:00	3					
		AIR/O <sub>2</sub>								11	26	14	67	132:20						
70	3:00	AIR								3	24	25	28	330	413:40	4				
		AIR/O <sub>2</sub>								3	24	25	14	85	170:00					
Exceptional Exposure: SurDO <sub>2</sub> -----																				
80	3:00	AIR								15	23	26	35	430	532:40	4.5				
		AIR/O <sub>2</sub>								15	23	26	18	104	205:00					
90	2:40	AIR								3	22	23	26	47	496	620:20	5.5			
		AIR/O <sub>2</sub>								3	22	23	26	24	118	239:40				
120	2:20	AIR								3	20	22	23	50	75	608	804:00	8		
		AIR/O <sub>2</sub>								3	20	22	23	50	37	168	356:20			
180	2:00	AIR								2	19	20	42	48	79	121	694	1027:40	10.5	
		AIR/O <sub>2</sub>								2	19	20	42	48	79	58	222	538:00		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group						
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m				
<b>49 MSW / 160 FSW</b>																		
7	5:20	AIR								0	5:20	0	E					
		AIR/O <sub>2</sub>								0	5:20							
10	4:40	AIR								4	9:20	0.5	F					
		AIR/O <sub>2</sub>								2	7:20							
15	4:20	AIR								2	17:00	0.5	I					
		AIR/O <sub>2</sub>								1	12:00							
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----																		
20	4:00	AIR								1	4	19	28:40	0.5	L			
		AIR/O <sub>2</sub>								1	2	10	18:00					
25	4:00	AIR								4	7	35	50:40	1	N			
		AIR/O <sub>2</sub>								4	4	17	30:00					
30	3:40	AIR								2	6	7	62	81:20	1.5	Z		
		AIR/O <sub>2</sub>								2	6	4	26	42:40				
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----																		
35	3:40	AIR								4	6	8	89	111:20	1.5	Z		
		AIR/O <sub>2</sub>								4	6	4	34	57:40				
40	3:40	AIR								6	6	21	134	171:20	2	Z		
		AIR/O <sub>2</sub>								6	6	11	38	70:40				
45	3:20	AIR								2	5	11	28	166	216:00	2.5	Z	
		AIR/O <sub>2</sub>								2	5	11	14	45	86:20			
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----																		
50	3:20	AIR								2	8	19	28	207	268:00	3		
		AIR/O <sub>2</sub>								2	8	19	15	55	113:20			
55	3:20	AIR								3	11	26	28	248	320:00	3		
		AIR/O <sub>2</sub>								3	11	26	14	67	135:20			
60	3:20	AIR								6	17	25	29	291	372:00	3.5		
		AIR/O <sub>2</sub>								6	17	25	15	77	154:20			
Exceptional Exposure: SurDO <sub>2</sub> -----																		
70	3:20	AIR								15	23	26	29	399	496:00	4.5		
		AIR/O <sub>2</sub>								15	23	26	15	99	197:20			
80	3:00	AIR								6	21	24	25	44	482	605:40	5.5	
		AIR/O <sub>2</sub>								6	21	24	25	23	114	237:00		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group								
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m						
<b>52 MSW / 170 FSW</b>																				
6	5:40	AIR								0	5:40	0	D							
		AIR/O <sub>2</sub>								0	5:40									
10	5:00	AIR								6	11:40	0.5	G							
		AIR/O <sub>2</sub>								3	8:40									
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----																				
15	4:40	AIR								3	13	21:20	0.5	J						
		AIR/O <sub>2</sub>								2	6	13:20								
20	4:20	AIR								3	6	24	38:00	1	M					
		AIR/O <sub>2</sub>								3	3	12	23:20							
25	4:00	AIR								1	7	7	41	60:40	1	O				
		AIR/O <sub>2</sub>								1	7	4	20	37:00						
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----																				
30	4:00	AIR								5	7	7	77	100:40	1.5	Z				
		AIR/O <sub>2</sub>								5	7	3	30	50:00						
35	3:40	AIR								2	6	6	15	120	153:20	2	Z			
		AIR/O <sub>2</sub>								2	6	6	8	37	68:40					
40	3:40	AIR								4	6	9	25	158	206:20	2.5	Z			
		AIR/O <sub>2</sub>								4	6	9	12	44	84:40					
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----																				
45	3:40	AIR								5	7	16	28	197	257:20	2.5	Z			
		AIR/O <sub>2</sub>								5	7	16	14	53	109:40					
50	3:20	AIR								1	5	11	23	28	244	316:00	3			
		AIR/O <sub>2</sub>								1	5	11	23	14	66	134:20				
55	3:20	AIR								2	7	16	26	28	289	372:00	3.5			
		AIR/O <sub>2</sub>								2	7	16	26	14	77	156:20				
60	3:20	AIR								2	11	21	26	28	344	436:00	4			
		AIR/O <sub>2</sub>								2	11	21	26	14	88	181:20				
Exceptional Exposure: SurDO <sub>2</sub> -----																				
70	3:20	AIR								7	19	24	25	39	454	572:00	5			
		AIR/O <sub>2</sub>								7	19	24	25	20	109	228:20				
80	3:20	AIR								17	22	23	26	53	525	670:00	6			
		AIR/O <sub>2</sub>								17	22	23	26	27	128	267:20				
90	3:00	AIR								8	19	22	23	37	66	574	752:40	7		
		AIR/O <sub>2</sub>								8	19	22	23	37	33	148	319:00			
120	2:40	AIR								9	19	20	22	42	60	94	659	928:20	9	
		AIR/O <sub>2</sub>								9	19	20	22	42	60	46	198	454:40		
180	2:20	AIR	10	18	19	40	43	70	97	156	703	1159:00	11.5							
		AIR/O <sub>2</sub>	10	18	19	40	43	70	97	74	229	648:00								

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group		
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m
<b>55 MSW / 180 FSW</b>														
6	6:00	AIR								0	6:00	0	E	
		AIR/O <sub>2</sub>								0	6:00			
10	5:20	AIR								8	14:00	0.5	G	
		AIR/O <sub>2</sub>								4	10:00			
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
15	4:40	AIR						2	3	14	24:20	0.5	K	
		AIR/O <sub>2</sub>						2	2	7	16:40			
20	4:20	AIR						1	5	7	29	47:00	1	M
		AIR/O <sub>2</sub>						1	5	3	15	29:20		
25	4:20	AIR						5	6	7	57	80:00	1.5	O
		AIR/O <sub>2</sub>						5	6	4	24	44:20		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
30	4:00	AIR					3	6	6	7	95	121:40	1.5	Z
		AIR/O <sub>2</sub>					3	6	6	4	34	63:00		
35	3:40	AIR			1	5	6	6	6	22	144	188:20	2	Z
		AIR/O <sub>2</sub>			1	5	6	6	11	41	79:40			
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----														
40	3:40	AIR			2	6	5	13	28	178	236:20	2.5		
		AIR/O <sub>2</sub>			2	6	5	13	14	48	97:40			
45	3:40	AIR			4	5	10	20	28	235	306:20	3		
		AIR/O <sub>2</sub>			4	5	10	20	14	63	130:40			
50	3:40	AIR			4	8	13	25	29	277	360:20	3.5		
		AIR/O <sub>2</sub>			4	8	13	25	15	75	154:40			
55	3:40	AIR			5	11	19	26	28	336	429:20	4		
		AIR/O <sub>2</sub>			5	11	19	26	14	87	181:40			
Exceptional Exposure: SurDO <sub>2</sub> -----														
60	3:20	AIR			1	8	13	23	25	31	406	511:00	4.5	
		AIR/O <sub>2</sub>			1	8	13	23	25	16	100	205:20		
70	3:20	AIR			4	12	21	24	25	48	499	637:00	5.5	
		AIR/O <sub>2</sub>			4	12	21	24	25	24	119	253:20		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group		
			100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m				30 9m	20 6m
<b>58 MSW / 190 FSW</b>														
5	6:20	AIR								0	6:20	0	D	
		AIR/O <sub>2</sub>								0	6:20			
10	5:20	AIR							2	8	16:00	0.5	H	
		AIR/O <sub>2</sub>							1	4	11:00			
In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Recommended -----														
15	4:40	AIR						1	3	3	16	28:20	0.5	K
		AIR/O <sub>2</sub>							1	3	2	8	19:40	
20	4:20	AIR					1	2	6	7	34	55:00	1	N
		AIR/O <sub>2</sub>					1	2	6	4	17	35:20		
Exceptional Exposure: In-Water Air Decompression ----- In-Water Air/O <sub>2</sub> Decompression or SurDO <sub>2</sub> Required -----														
25	4:20	AIR					2	6	7	7	72	99:00	1.5	Z
		AIR/O <sub>2</sub>					2	6	7	3	28	51:20		
30	4:00	AIR				1	6	5	7	13	122	158:40	2	Z
		AIR/O <sub>2</sub>				1	6	5	7	7	38	74:00		
Exceptional Exposure: In-Water Air/O <sub>2</sub> Decompression ----- SurDO <sub>2</sub> Required-----														
35	4:00	AIR				4	5	6	8	26	165	218:40	2.5	Z
		AIR/O <sub>2</sub>				4	5	6	8	13	45	91:00		
40	3:40	AIR		1	5	5	8	17	28	217	285:20	3		
		AIR/O <sub>2</sub>		1	5	5	8	17	15	58	123:40			
45	3:40	AIR		2	5	6	12	24	29	264	346:20	3.5		
		AIR/O <sub>2</sub>		2	5	6	12	24	15	71	149:40			
50	3:40	AIR		3	5	10	17	26	28	324	417:20	4		
		AIR/O <sub>2</sub>		3	5	10	17	26	14	85	179:40			
Exceptional Exposure: SurDO <sub>2</sub> -----														
55	3:40	AIR			4	8	10	24	25	30	397	502:20	4.5	
		AIR/O <sub>2</sub>			4	8	10	24	25	15	99	204:40		
60	3:40	AIR			5	10	16	24	25	40	454	578:20	5	
		AIR/O <sub>2</sub>			5	10	16	24	25	20	109	233:40		
90	3:20	AIR		11	19	20	21	28	51	83	626	863:00	8.5	
		AIR/O <sub>2</sub>		11	19	20	21	28	51	41	178	408:20		
120	3:00	AIR	15	17	19	20	37	46	79	113	691	1040:40	10.5	
		AIR/O <sub>2</sub>	15	17	19	20	37	46	79	55	219	551:00		

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**.Table 9-9. Air Decompression Table**  
(DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)							Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group			
			100	90	80	70	60	50	40				30	20	
<b>61 MSW / 200 FSW</b>			30m	27m	24m	21m	18m	15m	12m	9m	6m				
Exceptional Exposure -----															
5	6:40	AIR									0	6:40	0	E	
		AIR/O <sub>2</sub>									0	6:40			
10	5:40	AIR								3	8	17:20	0.5	H	
		AIR/O <sub>2</sub>								2	4	12:20			
15	5:00	AIR						2	3	5	19	34:40	0.5	L	
		AIR/O <sub>2</sub>						2	3	3	9	23:00			
20	4:40	AIR					2	4	6	7	43	67:20	1	O	
		AIR/O <sub>2</sub>					2	4	6	4	20	41:40			
25	4:20	AIR				1	5	6	6	7	85	115:00	1.5	Z	
		AIR/O <sub>2</sub>				1	5	6	6	4	32	64:20			
30	4:20	AIR				4	6	5	7	19	145	191:00	2	Z	
		AIR/O <sub>2</sub>				4	6	5	7	10	42	84:20			
35	4:00	AIR			2	5	5	6	13	28	188	251:40	2.5		
		AIR/O <sub>2</sub>			2	5	5	6	13	14	51	106:00			
40	4:00	AIR			4	5	5	11	21	28	249	327:40	3.5		
		AIR/O <sub>2</sub>			4	5	5	11	21	14	68	143:00			
45	3:40	AIR		1	4	5	10	14	25	28	306	397:20	3.5		
		AIR/O <sub>2</sub>		1	4	5	10	14	25	14	81	168:40			
50	3:40	AIR		2	4	8	10	21	26	28	382	485:20	4.5		
		AIR/O <sub>2</sub>		2	4	8	10	21	26	14	97	201:40			
<b>64 MSW / 210 FSW</b>															
Exceptional Exposure -----															
4	7:00	AIR									0	7:00	0	D	
		AIR/O <sub>2</sub>									0	7:00			
5	6:20	AIR									2	9:00	0.5	E	
		AIR/O <sub>2</sub>									1	8:00			
10	5:40	AIR							2	3	9	20:20	0.5	I	
		AIR/O <sub>2</sub>							2	2	4	14:40			
15	5:00	AIR					1	3	3	6	24	42:40	1	M	
		AIR/O <sub>2</sub>					1	3	3	3	12	28:00			
20	4:40	AIR				1	3	5	6	7	57	84:20	1	O	
		AIR/O <sub>2</sub>				1	3	5	6	4	23	47:40			
25	4:40	AIR				3	6	5	7	8	110	144:20	2	Z	
		AIR/O <sub>2</sub>				3	6	5	7	4	38	73:40			
30	4:20	AIR			2	5	6	6	6	26	163	219:00	2.5	Z	
		AIR/O <sub>2</sub>			2	5	6	6	6	13	45	93:20			
35	4:00	AIR		1	4	5	6	7	18	28	223	296:40	3		
		AIR/O <sub>2</sub>		1	4	5	6	7	18	14	60	130:00			
40	4:00	AIR		2	5	5	7	11	26	28	278	366:40	3.5		
		AIR/O <sub>2</sub>		2	5	5	7	11	26	14	76	161:00			
45	4:00	AIR		4	4	6	11	18	26	28	355	456:40	4		
		AIR/O <sub>2</sub>		4	4	6	11	18	26	14	91	194:00			
50	3:40	AIR		1	4	5	10	12	23	26	36	432	553:20	5	
		AIR/O <sub>2</sub>		1	4	5	10	12	23	26	18	105	223:40		

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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW)											Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group	
			130	120	110	100	90	80	70	60	50	40	30				20
<b>67 MSW / 220 FSW</b>			40m	36m	33m	30m	27m	24m	21m	18m	15m	12m	9m	6m			
Exceptional Exposure -----																	
4	7:20	AIR												0	7:20	0	E
		AIR/O <sub>2</sub>												<b>0</b>	7:20		
5	6:40	AIR												3	10:20	0.5	E
		AIR/O <sub>2</sub>												<b>2</b>	9:20		
10	6:00	AIR										3	4	10	23:40	0.5	J
		AIR/O <sub>2</sub>										3	<b>2</b>	<b>5</b>	17:00		
15	5:20	AIR								3	2	4	7	28	50:00	1	N
		AIR/O <sub>2</sub>								3	2	4	<b>4</b>	<b>14</b>	33:20		
20	5:00	AIR							2	4	6	6	7	70	100:40	1.5	Z
		AIR/O <sub>2</sub>							2	4	6	6	<b>4</b>	<b>26</b>	54:00		
25	4:40	AIR					1	5	6	6	6	6	14	133	176:20	2	Z
		AIR/O <sub>2</sub>					1	5	6	6	6	<b>7</b>	<b>41</b>	82:40			
30	4:20	AIR				1	4	5	6	6	10	28	183	248:00	2.5		
		AIR/O <sub>2</sub>				1	4	5	6	6	10	<b>14</b>	<b>50</b>	106:20			
35	4:20	AIR				3	5	5	5	10	22	28	251	334:00	3.5		
		AIR/O <sub>2</sub>				3	5	5	5	10	22	<b>14</b>	<b>68</b>	147:20			
40	4:00	AIR			1	4	5	5	9	15	26	28	319	416:40	4		
		AIR/O <sub>2</sub>			1	4	5	5	9	15	26	<b>14</b>	<b>84</b>	183:00			

**76 MSW / 250 FSW**

Exceptional Exposure -----																	
4	7:40	AIR												4	12:20	0.5	F
		AIR/O <sub>2</sub>												<b>2</b>	10:20		
5	7:40	AIR												7	15:20	0.5	G
		AIR/O <sub>2</sub>												<b>4</b>	12:20		
10	6:20	AIR						2	2	4	3	15	33:00	0.5	L		
		AIR/O <sub>2</sub>						2	2	4	<b>2</b>	<b>7</b>	24:20				
15	5:40	AIR				2	2	3	4	6	7	53	83:20	1	O		
		AIR/O <sub>2</sub>				2	2	3	4	6	<b>4</b>	<b>22</b>	49:40				
20	5:20	AIR			2	2	4	6	6	6	11	125	168:00	2	Z		
		AIR/O <sub>2</sub>			2	2	4	6	6	6	<b>6</b>	<b>39</b>	82:20				
25	5:00	AIR		1	4	4	5	6	6	10	28	189	258:40	2.5			
		AIR/O <sub>2</sub>		1	4	4	5	6	6	10	<b>14</b>	<b>51</b>	112:00				
30	4:40	AIR		1	4	4	4	5	6	9	25	28	267	358:20	3.5		
		AIR/O <sub>2</sub>		1	4	4	4	5	6	9	25	<b>15</b>	<b>72</b>	160:40			
35	4:40	AIR		3	4	4	5	5	10	19	26	28	363	472:20	4		
		AIR/O <sub>2</sub>		3	4	4	5	5	10	19	26	<b>14</b>	<b>93</b>	203:40			



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**Table 9-9. Air Decompression Table**  
 (DESCENT RATE 75 FPM—ASCENT RATE 30 FPM)

Bottom Time (min)	Time to First Stop (M:S)	Gas Mix	DECOMPRESSION STOPS (FSW) Stop times (min) include travel time, except first air and first O <sub>2</sub> stop											Total Ascent Time (M:S)	Chamber O <sub>2</sub> Periods	Repet Group			
			130 40m	120 36m	110 33m	100 30m	90 27m	80 24m	70 21m	60 18m	50 15m	40 12m	30 9m				20 6m		
Exceptional Exposure -----																			
4	9:00	AIR												3	7	19:40	0.5	G	
		AIR/O <sub>2</sub>												2	4	15:40			
5	8:40	AIR												3	3	8	23:20	0.5	I
		AIR/O <sub>2</sub>												3	2	4	18:40		
10	7:20	AIR						2	3	2	3	4	7	35	64:00	1	N		
		AIR/O <sub>2</sub>						2	3	2	3	4	4	18	44:20				
15	6:20	AIR			1	2	2	3	3	5	6	7	11	125	172:00	2	Z		
		AIR/O <sub>2</sub>			1	2	2	3	3	5	6	7	6	39	86:20				
20	6:00	AIR			2	2	2	4	5	5	5	6	16	28	219	300:40	3		
		AIR/O <sub>2</sub>			2	2	2	4	5	5	5	6	16	14	59	137:00			
25	5:40	AIR	1	3	4	4	4	4	5	5	5	18	26	28	324	433:20	4		
		AIR/O <sub>2</sub>	1	3	4	4	4	4	5	5	5	18	26	14	85	195:40			

## جدول زمان مورد نیاز برای استراحت بعد از غواصی قبل از رفتن به ارتفاع یا پرواز

### بر اساس گروه نیتروژن باقیمانده در خون - نیروی دریایی آمریکا دسامبر 2016

**Table 9-6.** Required Surface Interval Before Ascent to Altitude After Diving.

Repetitive Group Designator	Increase in Altitude (feet / meters)									
	1000 ft 300 m	2000 ft 600 m	3000 ft 900 m	4000 ft 1200m	5000 ft 1500m	6000 ft 1800m	7000 ft 2100m	8000 ft 2400m	9000 ft 2700m	10000 ft 3000 m
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>0:00</b>	0:00	0:00
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>0:00</b>	0:00	1:42
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>0:00</b>	1:48	6:23
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>1:45</b>	5:24	9:59
E	0:00	0:00	0:00	0:00	0:00	0:00	1:37	<b>4:39</b>	8:18	12:54
F	0:00	0:00	0:00	0:00	0:00	1:32	4:04	<b>7:06</b>	10:45	15:20
G	0:00	0:00	0:00	0:00	1:19	3:38	6:10	<b>9:13</b>	12:52	17:27
H	0:00	0:00	0:00	1:06	3:10	5:29	8:02	<b>11:04</b>	14:43	19:18
I	0:00	0:00	0:56	2:45	4:50	7:09	9:41	<b>12:44</b>	16:22	20:58
J	0:00	0:41	2:25	4:15	6:19	8:39	11:11	<b>14:13</b>	17:52	22:27
K	0:30	2:03	3:47	5:37	7:41	10:00	12:33	<b>15:35</b>	19:14	23:49
L	1:45	3:18	5:02	6:52	8:56	11:15	13:48	<b>16:50</b>	20:29	25:04
M	2:54	4:28	6:12	8:01	10:06	12:25	14:57	<b>18:00</b>	21:38	26:14
N	3:59	5:32	7:16	9:06	11:10	13:29	16:02	<b>19:04</b>	22:43	27:18
O	4:59	6:33	8:17	10:06	12:11	14:30	17:02	<b>20:05</b>	23:43	28:19
Z	5:56	7:29	9:13	11:03	13:07	15:26	17:59	<b>21:01</b>	24:40	29:15

Exceptional Exposure

Wait 48 hours before ascent

**NOTE 1** When using [Table 9-6](#), use the highest repetitive group designator obtained in the previous 24-hour period.

**NOTE 2** [Table 9-6](#) may only be used when the maximum altitude achieved is 10,000 feet or less. For ascents above 10,000 feet, consult NAVSEA 00C for guidance.

**NOTE 3** The cabin pressure in commercial aircraft is maintained at a constant value regardless of the actual altitude of the flight. Though cabin pressure varies somewhat with aircraft type, the nominal value is 8,000 feet. For commercial flights use a final altitude of 8,000 feet to compute the required surface interval before flying.

**NOTE 4** No surface interval is required before taking a commercial flight if the dive site is at 8,000 feet or higher. In this case, flying results in an increase in atmospheric pressure rather than a decrease.

**NOTE 5** For ascent to altitude following a non-saturation helium-oxygen dive, wait 12 hours if the dive was a no-decompression dive. Wait 24 hours if the dive was a decompression dive.

## جداول مفیدشامل

### جدول غواصی در ارتفاعات

جدول زمان های استراحت مورد نیاز قبل از پرواز / صعود به ارتفاعات  
جدول غواصی در آب های کم عمق بدون نیاز به ایستگاه برداشت فشار  
معادل سازی جداول غواصی با هوا به جداول غواصی نیتروکس

دقت کنید این جداول بر حسب سیستم ایمپریال (فوت) تعریف شده اند

## EXTRA USEFUL TABLES

From US NAVY DIVING MANUAL Rev. 07 (Dec 2016)

**SHALLOW WATER NO DECO LIMITS,  
NITROX to AIR EQUIVALENT,  
ALTITUDE DIVING TABLES,  
SURFACE INTERVAL, ...**

*US Navy Deco Dive Tables Rev.07 (Imperial) Dec 2016- IRATECH SUB SYSTEMS*  
جدول برداشت فشار غواصی نیروی دریایی آمریکا (ایمپریال) ورژن هفت - دسامبر 2016

# جدول غواصی در آب های کم عمق بدون نیاز به ایستگاه برداشت فشار

## SHALLOW WATER DIVING

### No-Decompression Limits & Repetitive Group for Shallow Air Diving

**Table 2A-1.** No-Decompression Limits and Repetitive Group Designators for Shallow Water Air No-Decompression Dives.

Depth (fsw)	No-Stop Limit (min)	Repetitive Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
31	334	16	26	37	48	60	73	87	102	119	138	158	182	209	242	282	334
32	304	15	25	35	46	58	70	83	98	114	131	150	172	197	226	261	304
33	281	15	24	34	45	56	67	80	94	109	125	143	163	186	212	243	281
34	256	14	23	33	43	54	65	77	90	104	120	137	155	176	200	228	256
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
36	212	14	22	31	40	50	61	72	84	97	110	125	142	160	180	204	212
37	197	13	21	30	39	49	59	69	81	93	106	120	136	153	172	193	197
38	184	13	21	29	38	47	57	67	78	90	102	116	131	147	164	184	
39	173	12	20	28	37	46	55	65	76	87	99	112	126	141	157	173	
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
41	155	12	19	27	35	43	52	61	71	81	92	104	117	130	145	155	
42	147	11	19	26	34	42	50	59	69	79	89	101	113	126	140	147	
43	140	11	18	25	33	41	49	58	67	76	87	98	109	122	135	140	
44	134	11	18	25	32	40	48	56	65	74	84	95	106	118	130	134	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
46	116	10	17	23	30	38	45	53	61	70	79	89	99	110	116		
47	109	10	16	23	30	37	44	52	60	68	77	87	97	107	109		
48	102	10	16	22	29	36	43	51	58	67	75	84	94	102			
49	97	10	16	22	28	35	42	49	57	65	73	82	91	97			
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			

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جدول برداشت فشار غواصی نیروی دریایی آمریکا (ایمپریال) ورژن هفت - دسامبر 2016

# جدول محاسبه گروه نیتروژن باقی مانده در خون برای غوص تکرار در عمق های کم

## SHALLOW WATER DIVING

### Residual Nitrogen Time for Repetitive Shallow Water Air Dives

Table 2A-2. Residual Nitrogen Time Table for Repetitive Shallow Water 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 Beginning of Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	18
31	334	282	243	210	183	159	139	120	103	88	74	61	49	38	27	17
32	305	262	227	198	173	151	132	115	99	85	71	59	47	36	26	17
33	282	244	213	187	164	144	126	110	95	81	69	57	46	35	25	16
34	262	229	201	177	156	138	121	105	91	78	66	55	44	34	25	16
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	15
36	231	204	181	161	143	126	111	98	85	73	62	51	41	32	23	15
37	218	194	173	154	137	122	107	94	82	70	60	50	40	31	23	14
38	207	185	165	148	132	117	103	91	79	68	58	48	39	30	22	14
39	197	177	158	142	127	113	100	88	77	66	56	47	38	29	21	14
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	13
41	180	163	146	132	118	105	93	82	72	62	53	44	36	28	20	13
42	173	156	141	127	114	102	91	80	70	61	52	43	35	27	20	13
43	166	150	136	123	110	99	88	78	68	59	50	42	34	26	19	12
44	160	145	131	119	107	96	85	75	66	57	49	41	33	26	19	12
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	12
46	149	136	123	111	101	90	81	71	63	54	46	39	32	25	18	12
47	144	131	119	108	98	88	78	70	61	53	45	38	31	24	18	11
48	139	127	116	105	95	85	76	68	60	52	44	37	30	24	17	11
49	135	123	112	102	92	83	74	66	58	51	43	36	30	23	17	11
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	11

Residual Nitrogen Times (Minutes)

## ALTITUDE DIVING

### Repetitive Groups Associated with Initial Ascent to Altitude

**Equilibration at Altitude.** Upon ascent to altitude, two things happen. The body off-gases excess nitrogen to come into equilibrium with the lower partial pressure of nitrogen in the atmosphere. It also begins a series of complicated adjustments to the lower partial pressure of oxygen. The first process is called equilibration; the second is called acclimatization. Approximately twelve hours at altitude is required for equilibration. A longer period is required for full acclimatization.

If a diver begins a dive at altitude within 12 hours of arrival, the residual nitrogen left over from sea level must be taken into account. In effect, the initial dive at altitude can be considered a repetitive dive, with the first dive being the ascent from sea level to altitude.

Table 9-5 gives the repetitive group associated with an initial ascent to altitude. Using this group and time at altitude before diving, enter the Residual Nitrogen Timetable for Repetitive Air Dives (Table 9-8) to determine the new repetitive group designator associated with that period of equilibration. Determine the sea level equivalent depth for your planned dive using Table 9-4. From your new repetitive group and sea level equivalent depth, determine the residual nitrogen time associated with the dive. Add this time to the actual bottom time of the dive. If the diver has spent enough time at altitude to desaturate beyond repetitive group A in Table 9-8, no addition of residual nitrogen time to bottom time is needed. The diver is "clean."

**Table 9-5.** Repetitive Groups Associated with Initial Ascent to Altitude.

Altitude (feet)	Altitude (Meters)	Repetitive Group
1000	305	A
2000	610	A
3000	915	B
4000	1220	C
5000	1525	D
6000	1830	E
7000	2135	F
8000	2440	G
9000	2745	H
10000	3050	I

**WARNING** Altitudes above 10,000 feet can impose serious stress on the body resulting in significant medical problems while the acclimatization process takes place. Ascents to these altitudes must be slow to allow acclimatization to occur and prophylactic drugs may be required to prevent the occurrence of altitude sickness. These exposures should always be planned in consultation with a Diving Medical Officer. Commands conducting diving operations above 10,000 feet may obtain the appropriate decompression procedures from NAVSEA 00C.

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جداول برداشت فشار غواصی نیروی دریایی آمریکا (ایمپریال) ورژن هفت - دسامبر 2016

# جدول غواصی در ارتفاعات - برابر سازی عمق با توجه به فشار و ارتفاع از سطح دریا

## ALTITUDE DIVING

### Altitude to Sea Level Equivalent Depth (fsw)

Table 9-4. Sea Level Equivalent Depth (fsw).

Actual Depth (fsw)	Altitude (feet)									
	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
10	10	15	15	15	15	15	15	15	15	15
15	15	20	20	20	20	20	20	25	25	25
20	20	25	25	25	25	25	30	30	30	30
25	25	30	30	30	35	35	35	35	35	40
30	30	35	35	35	40	40	40	45	45	45
35	35	40	40	45	45	45	50	50	50	60
40	40	45	45	50	50	50	55	55	60	60
45	45	50	55	55	55	60	60	70	70	70
50	50	55	60	60	70	70	70	70	70	80
55	55	60	70	70	70	70	80	80	80	80
60	60	70	70	70	80	80	80	90	90	90
65	65	70	80	80	80	90	90	90	100	100
70	70	80	80	90	90	90	100	100	100	110
75	75	90	90	90	100	100	100	110	110	110
80	80	90	90	100	100	100	110	110	120	120
85	85	100	100	100	110	110	120	120	120	130
90	90	100	110	110	110	120	120	130	130	140
95	95	110	110	110	120	120	130	130	140	140
100	100	110	120	120	130	130	130	140	140	150
105	105	120	120	130	130	140	140	150	150	160
110	110	120	130	130	140	140	150	150	160	160
115	115	130	130	140	140	150	150	160	170	170
120	120	130	140	140	150	150	160	170	170	180
125	125	140	140	150	160	160	170	170	180	190
130	130	140	150	160	160	170	170	180	190	190
135	135	150	160	160	170	170	180	190	190	200
140	140	160	160	170	170	180	190	190	200	210
145	145	160	170	170	180	190	190	200	210	
150	160	170	170	180	190	190	200	210		
155	170	170	180	180	190	200	210			
160	170	180	180	190	200	200				
165	180	180	190	200	200					
170	180	190	190	200						
175	190	190	200							
180	190	200	210							
185	200	200								
190	200									
<b>Table Water Stops</b>	<b>Equivalent Stop Depths (fsw)</b>									
10	10	9	9	9	8	8	8	7	7	7
20	19	19	18	17	17	16	15	15	14	14
30	29	28	27	26	25	24	23	22	21	21
40	39	37	36	35	33	32	31	30	29	28
50	48	47	45	43	42	40	39	37	36	34
60	58	56	54	52	50	48	46	45	43	41

Note: — = Exceptional Exposure Limit

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# جدول برابر سازی نایتروکس به هوا

## NITROX DIVING

Using Air Tables for Nitrox Diving (up to 40% O<sub>2</sub>)

Table 10-1. Equivalent Air Depth Table.

Diver's Actual Depth (fsw)	EAD Feet															
	25% O <sub>2</sub>	26% O <sub>2</sub>	27% O <sub>2</sub>	28% O <sub>2</sub>	29% O <sub>2</sub>	30% O <sub>2</sub>	31% O <sub>2</sub>	32% O <sub>2</sub>	33% O <sub>2</sub>	34% O <sub>2</sub>	35% O <sub>2</sub>	36% O <sub>2</sub>	37% O <sub>2</sub>	38% O <sub>2</sub>	39% O <sub>2</sub>	40% O <sub>2</sub>
20	20	20	20	20	20	20	20	15	15	15	15	15	10	10	10	10
30	30	30	30	30	30	30	30	25	25	25	20	20	20	20	20	20
40	40	40	40	40	40	40	40	35	30	30	30	30	30	30	25	25
50	50	50	50	50	50	50	50	40	40	40	40	40	35	35	35	35
60	60	60	60	60	60	60	50	50	50	50	50	50	50	50	40	40
70	70	70	70	70	70	60	60	60	60	60	60	60	50	50	50	50
80	80	80	80	80	70	70	70	70	70	70	70	60	60	60	60	60
90	90	90	90	90	80	80	80	80	80	80	70	70	70	70	70	70
100	100	100	100	90	90	90	90	90	90	80	80	80	80	80	80	70
110	110	110	110	100	100	100	100	100	100	90	90	90	90	90	90	90
120	120	120	120	110	110	110	110	110	100	100	100	100	90	90	90	90
130	130	130	120	120	120	120	120	110	110	100	100	100	90	90	90	90
140	140	140	130	130	130	130	130	110	110	100	100	100	90	90	90	90
150	150	150	140	140	140	140	140	110	110	100	100	100	90	90	90	90
160	160	160	140	140	140	140	140	110	110	100	100	100	90	90	90	90

**EAD** = Equivalent Air Depth - For Decompression Table Selection Only Rounded to Next Greater Depth  
 = 1.4 ata Normal working limit.  
 = Depth exceeds the normal working limit, requires the Commanding Officer's authorization and surface-supplied equipment. Repetitive dives are not authorized. Times listed in parentheses indicate maximum allowable exposure.

**Note<sup>1</sup>:** Depths not listed are considered beyond the safe limits of NITROX diving.  
**Note<sup>2</sup>:** The EAD, 1.4 ata Normal Working Limit Line and Maximum Allowable Exposure Time for dives deeper than the Normal Working Limit Line are calculated assuming the diver rounds the oxygen percentage in the gas mixture using the standard rounding rule discussed in paragraph 10-4.1. The calculations also take into account the allowable ± 0.5 percent error in gas analysis.

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جداول برداشت فشار غواصی نیروی دریایی آمریکا (ایمپریال) ورژن هفت - دسامبر 2016



جدول زمان مورد نیاز برای استراحت بعد از غواصی قبل از رفتن به ارتفاع یا پرواز

بر اساس گروه نیتروژن باقیمانده در خون - نیروی دریایی آمریکا دسامبر 2016

## ***SURFACE INTERVAL***

Mandatory Surface Interval before Ascent to Altitude (Flying) After Diving

**Table 9-6.** Required Surface Interval Before Ascent to Altitude After Diving.

Repetitive Group Designator	Increase in Altitude (feet)									
	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
A	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>0:00</b>	0:00	0:00
B	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>0:00</b>	0:00	1:42
C	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>0:00</b>	1:48	6:23
D	0:00	0:00	0:00	0:00	0:00	0:00	0:00	<b>1:45</b>	5:24	9:59
E	0:00	0:00	0:00	0:00	0:00	0:00	1:37	<b>4:39</b>	8:18	12:54
F	0:00	0:00	0:00	0:00	0:00	1:32	4:04	<b>7:06</b>	10:45	15:20
G	0:00	0:00	0:00	0:00	1:19	3:38	6:10	<b>9:13</b>	12:52	17:27
H	0:00	0:00	0:00	1:06	3:10	5:29	8:02	<b>11:04</b>	14:43	19:18
I	0:00	0:00	0:56	2:45	4:50	7:09	9:41	<b>12:44</b>	16:22	20:58
J	0:00	0:41	2:25	4:15	6:19	8:39	11:11	<b>14:13</b>	17:52	22:27
K	0:30	2:03	3:47	5:37	7:41	10:00	12:33	<b>15:35</b>	19:14	23:49
L	1:45	3:18	5:02	6:52	8:56	11:15	13:48	<b>16:50</b>	20:29	25:04
M	2:54	4:28	6:12	8:01	10:06	12:25	14:57	<b>18:00</b>	21:38	26:14
N	3:59	5:32	7:16	9:06	11:10	13:29	16:02	<b>19:04</b>	22:43	27:18
O	4:59	6:33	8:17	10:06	12:11	14:30	17:02	<b>20:05</b>	23:43	28:19
Z	5:56	7:29	9:13	11:03	13:07	15:26	17:59	<b>21:01</b>	24:40	29:15

Exceptional Exposure

Wait 48 hours before ascent

**NOTE 1** When using **Table 9-6**, use the highest repetitive group designator obtained in the previous 24-hour period.

**NOTE 2** **Table 9-6** may only be used when the maximum altitude achieved is 10,000 feet or less. For ascents above 10,000 feet, consult NAVSEA 00C for guidance.

**NOTE 3** The cabin pressure in commercial aircraft is maintained at a constant value regardless of the actual altitude of the flight. Though cabin pressure varies somewhat with aircraft type, the nominal value is 8,000 feet. For commercial flights, use a final altitude of 8,000 feet to compute the required surface interval before flying.

**NOTE 4** No surface interval is required before taking a commercial flight if the dive site is at 8,000 feet or higher. In this case, flying results in an increase in atmospheric pressure rather than a decrease.

**NOTE 5** For ascent to altitude following a non-saturation helium-oxygen dive, wait 12 hours if the dive was a no-decompression dive. Wait 24 hours if the dive was a decompression dive.