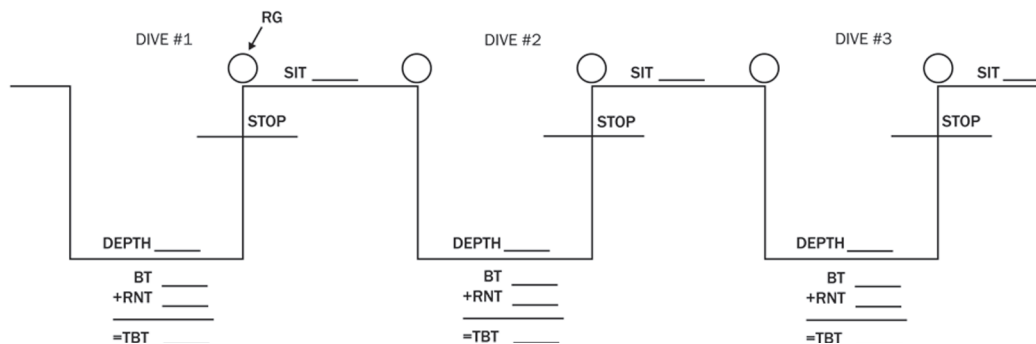


REPETITIVE DIVE PROFILES



Definitions

Bottom Time (BT). The elapsed time in minutes starts when the diver leaves the surface in descent and stops when the diver begins safety stop or surfaces (round up to next whole minute). On repetitive dives, this is Actual Bottom Time (ABT).

Depth. The depth of a dive; use the maximum depth attained during the dive in feet or meters of seawater. When depth is not indicated on the table, use the next greater depth available.

No Decompression Stop Limit. The longest amount of time a diver can spend at depth without requiring a decompression stop. Table A lists these for all depths. For repetitive dives, the Residual Nitrogen Time (RNT) must be added to the Bottom Time (BT) and the total bottom time (TBT) must not exceed the No Decompression Stop Limit.

Repetitive Dive. Any dive conducted within the time period specified by the surface interval table (Table B) of a previous dive with a minimum surface interval of 10 minutes. For repetitive dives of less than 35 feet, use the RNT (Table C) values for 35 feet to calculate Total Bottom Time (TBT).

Repetitive Group Designation (RG). Letters that relate to the amount of residual nitrogen in a diver's tissues for the time specified in the Surface Interval Table.

Residual Nitrogen Time (RNT). Located in Table C, an amount of time, in minutes, which must be added to the Bottom Time (BT) of a repetitive dive to calculate Total Bottom Time (TBT). Represents residual nitrogen still in a diver's tissues from previous dives.

Safety Stop. A 3-minute minimum safety stop at 15-25 feet is recommended at the end of all dives.

Surface Interval Time (SIT). Located in Table B, the elapsed time from when a diver surfaces following a dive to the time (next whole minute) that diver starts the descent of the next dive. SIT must be a minimum of 10 minutes.

Total Bottom Time (TBT). Calculated by adding the Bottom Time (BT) and the Residual Nitrogen Time (RNT). For times not indicated at a particular depth, use the next longer time available for that depth.

Rules

Ascent Rate. Divers should ascent at 30 feet per minute or slower.

Dives Less Than 25 Feet. Dives less than 25 feet do not have a specific No Decompression Stop Limit. However, if conducted as repetitive dives, they must be calculated as a 35 foot dive for Residual Nitrogen Times (RNT), Table C.

Exceeding the No Decompression Stop Limits. If divers err and stay longer than the times allowed on the No Decompression Stop Limit, Table A, the divers have exposed themselves to an increased decompression requirement and must refer to the Decompression Stops Table, Table D, for required decompression stops to complete the dive. Once on the surface, these divers should not dive again for at least 12 hours or fly for at least 24 hours.

Flying After Diving. The longer the surface interval before flying, the less likely a diver will experience decompression sickness. A minimum surface interval of 12 hours is required before ascent to altitude in a pressurized aircraft (or a ground altitude of 1000 feet above sea level). Divers who plan to make multiple dives for several days or computer-assisted dives should take extra precaution and wait an extended surface interval of greater than 12 hours before flying or ascending to altitude. Divers who have made dives requiring decompression stops should wait a minimum of 24 hours before flying or ascending to altitude.

High Altitude Diving. These Air Diving Tables are not to be used for diving at altitudes greater than 1000 feet above sea level without calculating altitude adjustments.

Order of Dives. All repetitive dives should be conducted with each successive dive equal in depth or shallower than the previous dive.

Sport Diving Maximum Depth. Sport divers should not exceed 100 feet of depth.

Sport Diving Time Limit. On any dive, the Total Bottom Time (TBT) should not exceed the No Decompression Stop Limit. Dives requiring mandatory decompression stops should not be planned.

Table D

DECOMPRESSION STOPS TABLE

Depth Feet Meters	Bottom Time (min.)	Time to First Stop (min:sec)	Decompression Stops (min.) @20 Ft.	Total Ascent (min:sec)	Repetitive Group
40 12.1	135		0		M
	150	0:40	6	7:20	O
	160	0:40	14	15:20	Z
	170	0:40	21	22:20	Z
	180	0:40	27	28:20	Z
50 15.2	80		0		K
	90	1:00	2	3:40	M
	95	1:00	4	5:40	N
	100	1:00	8	9:40	O
60 18.3	110	1:00	21	22:40	O
	51		0		I
	60	1:20	2	4:00	L
	65	1:20	7	9:00	L
70 21.3	70	1:20	14	16:00	N
	80	1:20	23	25:00	O
	42		0		I
	50	1:40	9	11:20	L
80 24.3	55	1:40	14	16:20	M
	60	1:40	24	26:20	N
	70	1:40	44	46:20	O
	32		0		H
90 28.7	35	2:00	1	3:40	J
	40	2:00	10	12:40	K
	45	2:00	17	19:40	M
	50	2:00	24	26:40	M
	24		0		C
100 30.4	10		0		D
	15	3:20	2	6:00	H
	20	3:20	8	12:00	J
	25	3:20	24	28:00	L
	30	3:20	38	42:00	N
110 33.1	6		0		C
	15	3:40	1	5:20	G
	15	3:40	4	8:20	I
	20	3:40	17	21:20	K
	25	3:20	34	38:20	M
120 36.5	16		0		F
	20	3:00	3	6:40	I
	25	3:00	14	17:40	K
	30	3:00	27	30:40	M
	35	3:00	39	42:40	N
130 39.6	18		0		F
	25	2:40	3	6:20	J
	30	2:40	15	18:20	L
	35	2:40	26	29:20	M
	40	2:40	36	39:20	N

Courtesy of Scuba Educators International.

for each depth. This residual nitrogen time (RNT) must be added to your actual dive time to obtain the total bottom time (TBT) for the repetitive dive.

Table D, the decompression stops table, provides the amount of time that you must decompress if your total bottom time (actual dive time plus residual nitrogen time) exceeds the maximum no-stop time (NDSL) limit.

Now you are ready to learn how to plan dives using the air diving tables. Use table A to determine the maximum no-stop time (NDSL) for a dive. This is the maximum time you can spend underwater for the deepest depth you reach during a dive. If your total bottom time exceeds the NDSL time, you must complete mandatory decompression using table D (this will be discussed later). Your goal is to avoid exceeding the NDSL.

Rows are horizontal, and columns are vertical. Enter table A on the row corresponding to the deepest depth you plan to reach during a dive, and then move across to the end of the row to find your maximum NDSL. After your dive, reenter the row and find the first number (in minutes) that does not exceed your actual dive time. Proceed downward on the column containing your dive time and locate the repetitive group designation letter (from A to M) for your dive. For example, a dive of 50 feet (15 m) for 30 minutes assigns you to group E. Remember that whenever the depth or duration of your dive exceeds a listed number in the table, you must use the next larger number.

Next, you use table B, the surface interval table, to determine your letter group for a repetitive dive. Your group designation depends on the amount of time that you remain at the surface until you dive again. The longer your surface interval, the closer to the beginning of the alphabet your letter group will be.

Enter table B using the group designation you obtained from table A. Move downward along the column until you find the time range (expressed as hours:minutes; for example, 1:26 is 1 hour and 26 minutes) that your surface interval time (SIT) falls into. Remember that when you exceed a number on the dive tables, you must use the next larger number. Follow the row to the left to find your ending letter group designation. For example, if your letter group was E at the beginning of a 2:00 surface interval, you would be in group C at the end of the surface interval. You would be in group C after a surface interval ranging from 1:45 to 2:39.

Use table C, the residual nitrogen time (RNT) table, to determine both your adjusted maximum no-stop time for a repetitive dive and your residual nitrogen time (which must be added to your actual dive time) for your planned depth. For example, if your repetitive group letter from a previous dive is C and your planned depth for your next dive is 50 feet, your actual bottom time (the smaller, lower number for the depth column coordinate) must not exceed

Table A

DEPTH		TOTAL BOTTOM TIME (TBT) IN MINUTES																	
Meters	Feet	No Decompression Stop Limit																	
3	10	57	101	158	245	426													
4.6	15	36	60	88	121	163	217	297	449										
6.1	20	26	43	61	82	106	133	165	205	256	330	461							
7.6	25	354	20	33	47	62	78	97	117	140	166	198	236	285	354				
9.1	30	223	17	27	38	50	62	76	91	107	125	145	167	193	223				
10.7	35	168	14	23	32	42	52	63	74	87	100	115	131	148	168				
12.2	40	135	12	20	27	36	44	53	63	73	84	95	108	121	135				
13.7	45	102	11	17	24	31	39	46	55	63	72	82	92	102					
15.2	50	80	9	15	21	28	34	41	48	56	63	71	80						
16.7	55	63	8	14	19	25	31	37	43	50	56	63							
18.3	60	51	7	12	17	22	28	33	39	45	51								
21.3	70	42	6	10	14	19	23	28	32	37	42								
24.4	80	32	5	9	12	16	20	24	28	32									
27.4	90	24	4	7	11	14	17	21	24										
30.5	100	18	4	6	9	12	15	18											
33.5	110	16	3	6	8	11	14	16											
36.6	120	10	3	5	7	10													
39.6	130	6	2	4	6														

Dive table courtesy of Scuba Educators International.

Table B

Repetitive Group Designation	Repetitive Dive Depth in Feet/Meters	SURFACE INTERVAL TIME (SIT) IN HOURS AND MINUTES																		
		A	B	C	D	E	F	G	H	I	J	K	L	M						
130	39																			
4	2	← A	2:20	3:36	4:31	5:23	6:15	7:08	8:00	8:52	9:44	10:36	11:29	12:21	13:13					
6	2	← B	1:16	2:11	3:03	3:56	4:49	5:41	6:33	7:25	8:17	9:10	10:02	10:54						
9	2	← C	0:10	0:56	1:48	2:40	3:32	4:24	5:17	6:09	7:01	7:53	8:45	9:37						
11	2	← D	0:55	1:47	2:39	3:31	4:23	5:16	6:08	7:00	7:52	8:44	9:37							
13	2	← E	0:10	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43							
15	2	← F	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42								
18	2	← G	0:10	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43							
20	2	← H	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42								
22	2	← I	0:10	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43							
25	2	← J	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42								
27	2	← K	0:10	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43							
30	2	← L	0:52	1:44	2:37	3:29	4:21	5:13	6:06	6:58	7:50	8:42								
	2	← M	0:10	0:53	1:45	2:38	3:30	4:22	5:14	6:07	6:59	7:51	8:43							

Dive table courtesy of Scuba Educators International.

Table C

RESIDUAL NITROGEN TIME (RNT) IN MINUTES

RESIDUAL NITROGEN TIME (RNT) IN MINUTES													Repetitive Dive Depth in Feet/Meters	
35	40	45	50	55	60	70	80	90	100	110	120	130		
11	12	14	15	17	18	21	24	27	30	33	36	39		
15	13	12	11	10	9	8	7	6	5	5	5	4	A-	
153	122	90	69	53	42	34	25	18	13	11	5	2	B-	
24	21	18	17	15	14	12	10	9	8	8	7	6	C-	
144	114	84	63	48	37	30	22	15	10	8	3	9	D-	
33	29	25	23	20	19	16	14	12	11	10	9	9	E-	
135	106	77	57	43	32	26	18	12	7	6	1	11	F-	
43	37	32	29	26	24	20	18	16	14	13	12	11	G-	
125	98	70	51	37	27	22	14	8	4	3	1	13	H-	
53	45	40	35	32	29	25	22	19	17	16	14	13	I-	
115	90	62	45	31	22	17	10	5	1	1	1	15	J-	
64	55	48	42	38	35	29	25	22	20	18	17	15	K-	
104	80	54	38	25	16	13	7	2	2	2	2	18	L-	
75	64	56	49	44	40	34	29	26	23	21	19	18	M-	
93	71	46	31	19	11	8	3	26	23	21	19	18		
88	74	64	57	51	46	39	33	29	26	24	22	20		
80	61	38	23	12	5	3	3	29	26	24	22	20		
101	85	73	65	58	5	52	44	38	33	30	27	24	22	
67	50	29	15	5										
116	97	83	73	65	58	49	42	37	33	30	27	25		
52	38	19	7											
132	109	93	81	72	65	54	46	41	36	33	30	27		
36	26	9												
149	122	104	90	80	72	59	51	44	40	36	32	30		
19	13													
169	136	115	99	88	79	65	55	48	43	39	35	32		

Note: For repetitive dives less than 35 feet use the RNT values for 35 feet

NEW REPETITIVE GROUP

Dive table courtesy of Scuba Educators International.

57 minutes. Additionally, the residual nitrogen time (RNT) for the depth (the larger, upper number for the depth column coordinate) must be added to your actual bottom time. If you dived to 50 feet for 40 minutes as a group C diver, you would add 23 minutes of RNT to your actual bottom time to obtain a total bottom time (TBT) of 63 minutes.

After a repetitive dive, you return to table A and use your total bottom time (TBT) to obtain a new repetitive group designation. For example, your dive to 50 feet for 40 minutes as a group C diver yielded a TBT of 63 minutes. According to table A, 63 minutes of TBT at a maximum depth of 50 feet would assign you to repetitive group I at the beginning of your next surface interval.

Table D is for emergency use only when you exceed the maximum no-stop time (NDSL) for a depth. Avoid dives that require planned decompression. If you unintentionally allowed your total bottom time (TBT) to exceed the NDSL, you would refer to table D to determine the required decompression. For example, if your TBT for a depth of 60 feet (18 m) was more than 51 minutes (the NDSL), but less than 61 minutes, you would need to decompress at a depth of 20 feet (6 m) for 2 minutes. Your total ascent time, including the decompression, would require 4 minutes. Your repetitive group after the decompression dive would be L. This example is for emergency purposes only. You should *never* plan a decompression dive unless you complete specialty training and meet every requirement for safety.

Table D

DECOMPRESSION STOPS TABLE

Depth Feet	Bottom Time (min.)	Time to First Stop (min:sec)	Decompression Stops (min.) @20 Ft.	Total Ascent (min:sec)	Repetitive Group	Depth Feet	Bottom Time (min.)	Time to First Stop (min:sec)	Decompression Stops (min.) @20 Ft.	Total Ascent (min:sec)	Repetitive Group
40	135		0		M	90	24		0		G
	150	0:40	6	7:20	O		30	2:20	4	7:00	J
	160	0:40	14	15:20	Z		35	2:20	14	17:00	L
	170	0:40	21	22:20	Z		40	2:20	23	26:00	M
12.1	180	0:40	27	28:20	Z	45	2:20	31	34:00	N	
	80		0		K	18		0		F	
	90	1:00	2	3:40	M	25	2:40	3	6:20	J	
	95	1:00	4	5:40	N	30	2:40	15	18:20	L	
50	100	1:00	8	9:40	O	35	2:40	26	29:20	M	
	110	1:00	21	22:40	O	40	2:40	36	39:20	N	
	51		0		I	16		0		F	
	60	1:20	2	4:00	L	20	3:00	3	6:40	I	
18.3	65	1:20	7	9:00	L	25	3:00	14	17:40	K	
	70	1:20	14	16:00	N	30	3:00	27	30:40	M	
	80	1:20	23	25:00	O	35	3:00	39	42:40	N	
	42		0		I	10		0		D	
70	50	1:40	9	11:20	L	15	3:20	2	6:00	H	
	55	1:40	14	16:20	M	20	3:20	8	12:00	J	
	60	1:40	24	26:20	N	25	3:20	24	28:00	L	
	70	1:40	44	46:20	O	30	3:20	38	42:00	N	
21.3	32		0		H	6		0		C	
	35	2:00	1	3:40	J	10	3:40	1	5:20	G	
	40	2:00	10	12:40	K	15	3:40	4	8:20	I	
	45	2:00	17	19:40	M	20	3:40	17	21:20	K	
80	50	2:00	24	26:40	M	25	3:20	34	38:20	M	
	24.3										

Dive table courtesy of Scuba Educators International.