

Decompression Tables Workshop

Gregory Barefoot, PA-C

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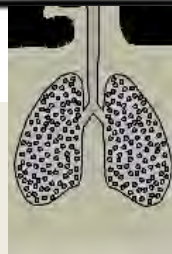
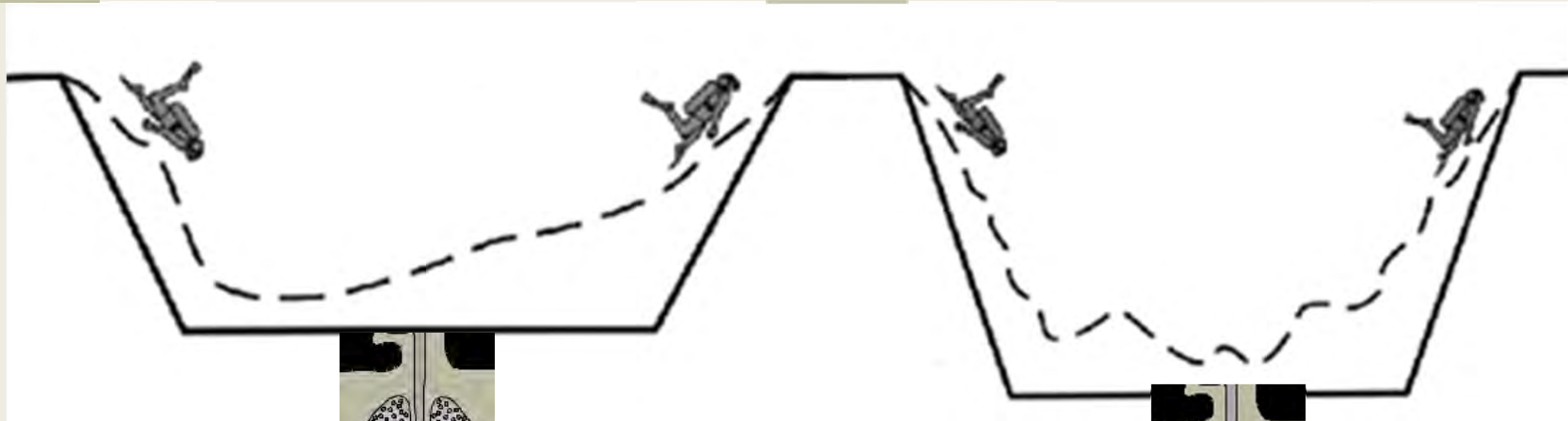
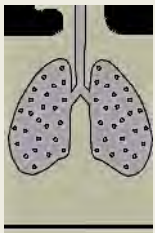
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Why are the tables important?

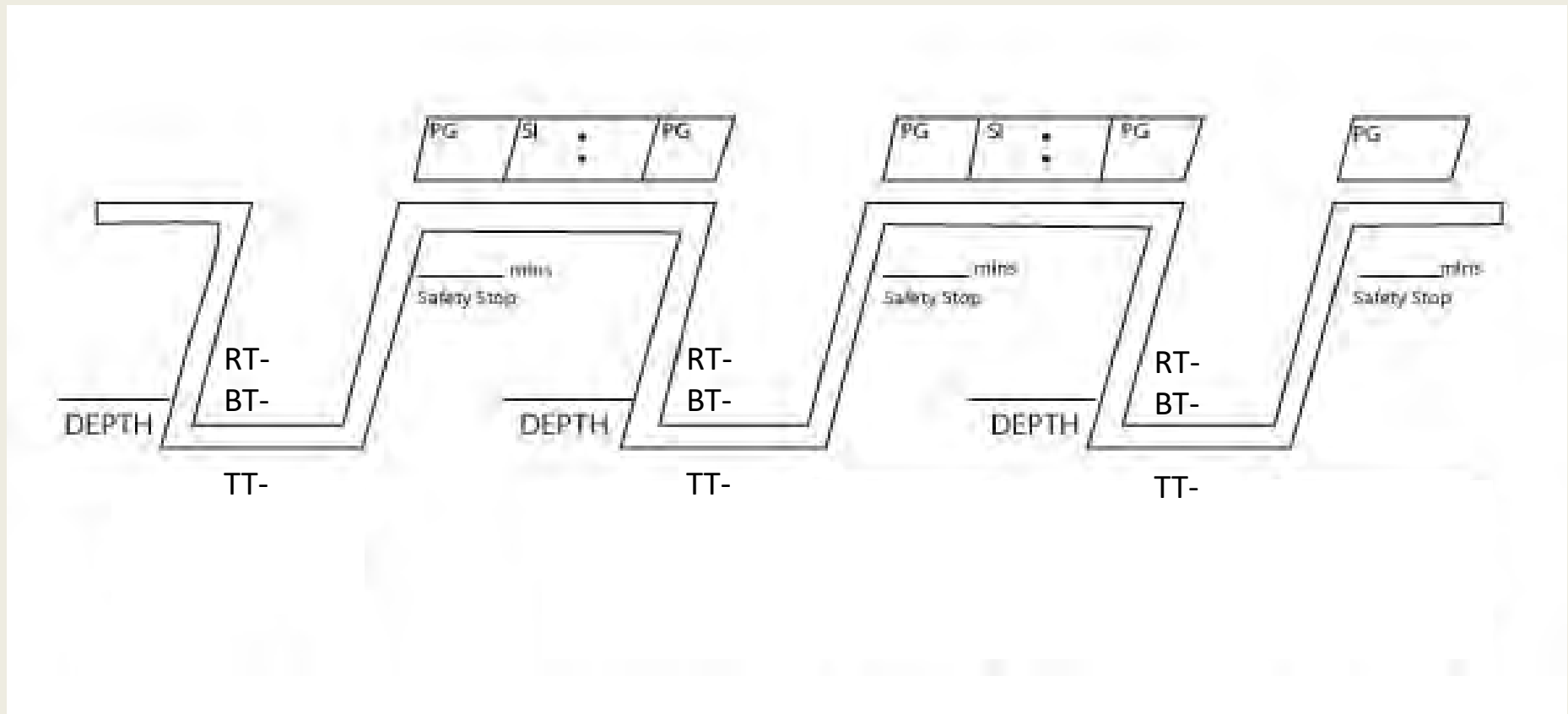


Nitrogen Absorption

-Nitrogen absorption is depth (i.e., pressure)/time dependent



Dive Profile Template



Key

RT – Residual Time- theoretical amount of nitrogen remaining in the body prior to starting a dive expressed in minutes.

BT – Bottom Time- the amount of time that begins when the diver leaves the surface and ends when the diver begins ascent expressed in minutes.

TT- RT+BT, this time should not exceed the No Decompression Limits for that depth as per Table 9-7.

Decompression Theory in Practice

- Dive tables and computers are used to predict the amount of inert gas that is absorbed for any given time/depth profile and to regulate the desaturation process on ascent



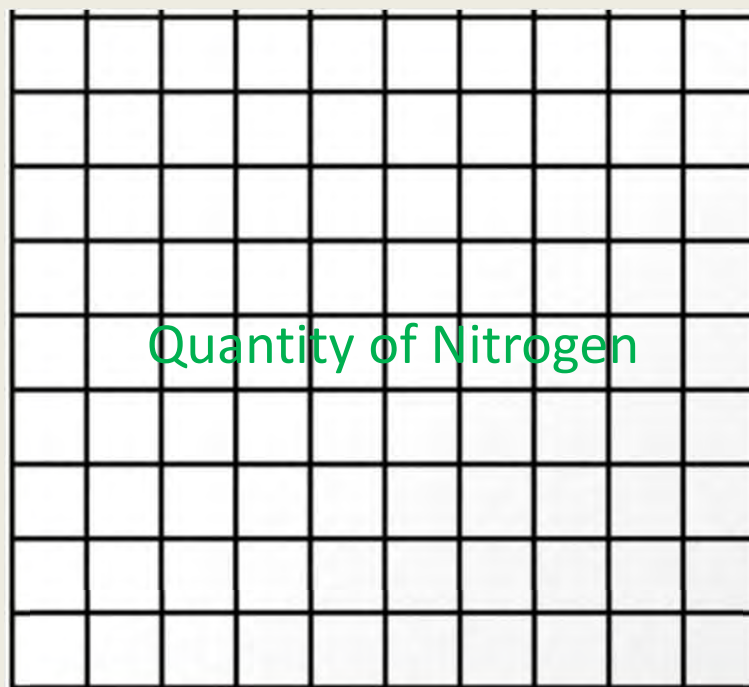
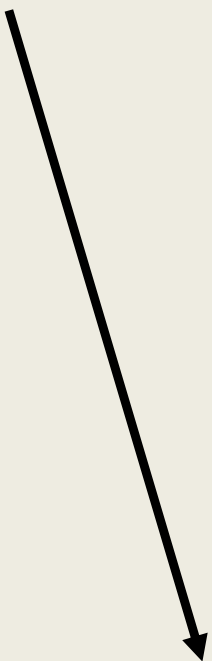
What really matters

- How does a diver get back to the surface without decompression sickness?
- How much nitrogen is in the body?

How much Nitrogen is there?

Total Bottom Time

Surface



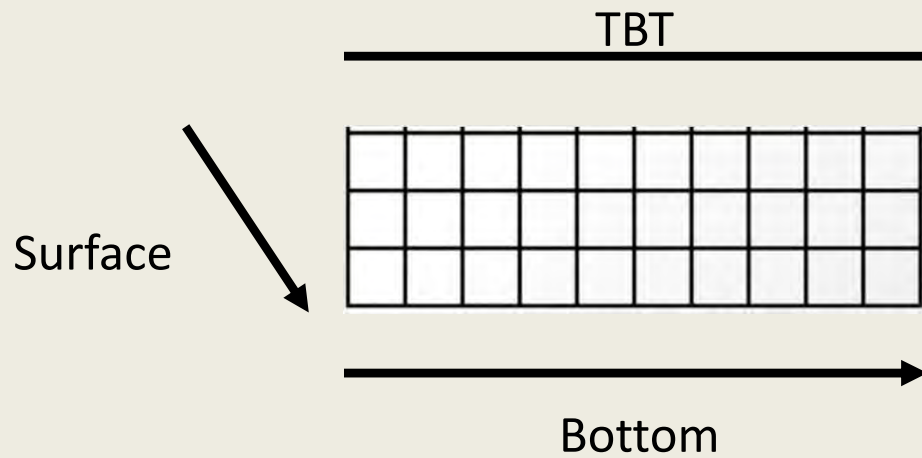
Quantity of Nitrogen

Depth and TBT determine how much Nitrogen has been added to the body

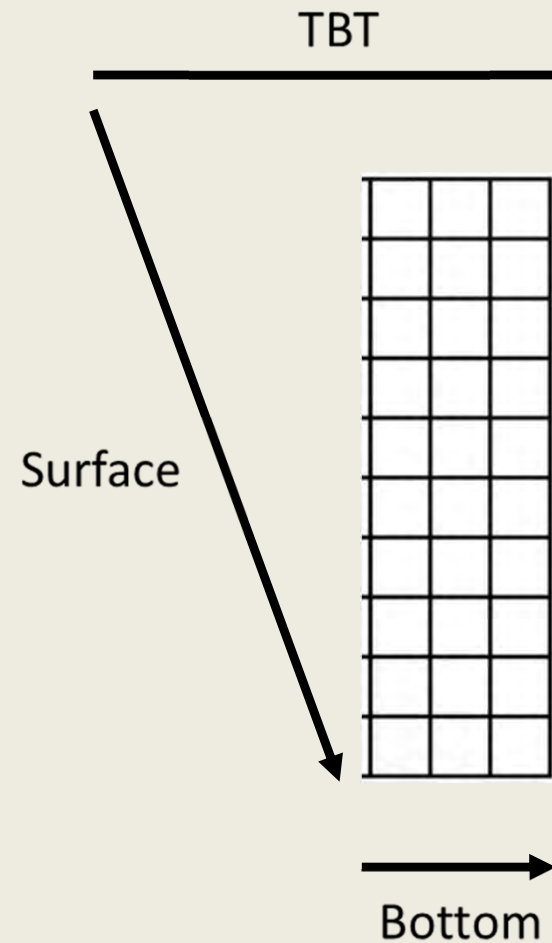
Bottom (depth)



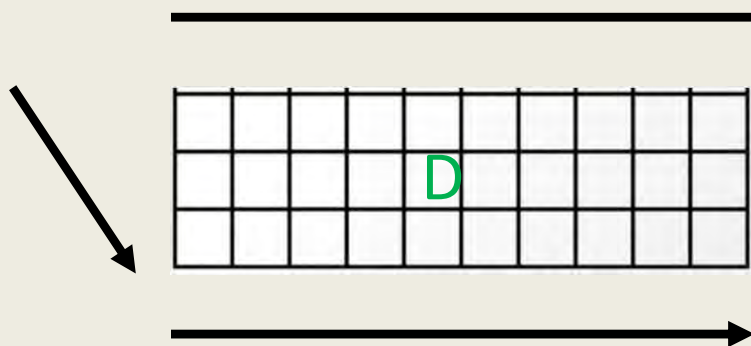
How much Nitrogen is there?



Same amount in both examples



How is Nitrogen measured?



- A letter (A-Z) is assigned to a specific amount of Nitrogen
- The letter is determined by the depth and TBT
- It is referred to as a “Repetitive Group Designator”

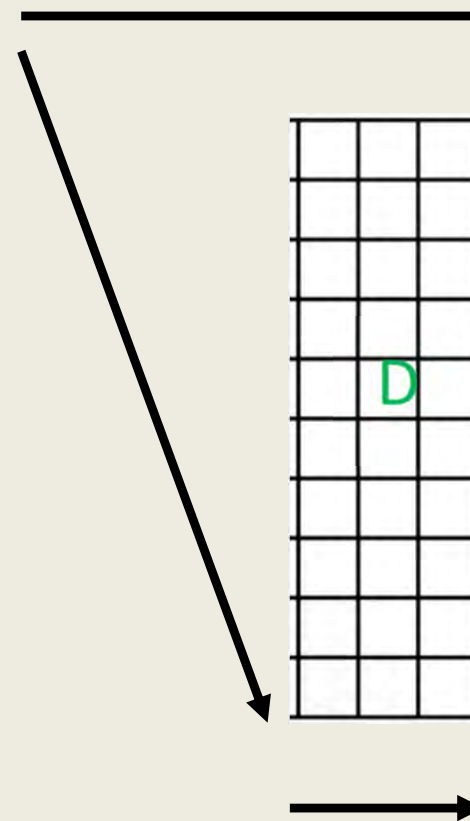


Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

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	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102	
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371	
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232	
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163		
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125			
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92				
55	74	8	14	19	25	31	37	43	50	56	63	71	74					
60	63	7	12	17	22	28	33	39	45	51	57	63						
70	48	6	10	14	19	23	28	32	37	42	47	48						
80	39	5	9	12	16	20	24	28	32	36	39							
90	33	4	7	11	14	17	21	24	28	31	33							
100	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	12	2	4	6	9	11	12											
140	10	2	4	6	8	10												
150	8		3	5	7	8												
160	7		3	5	6	7												
170	6			4	6													
180	6			4	5	6												
190	5			3	5													

TBT

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

What does "D" mean?

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

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		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
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35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
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45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	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	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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

What if I stay at 35 fsw longer?

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
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45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
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110	20	3	6	8	11	14	16	19	20								
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140	10	2	4	6	8	10											
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160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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

How do I get back to the surface and limit my risk of developing DCS?

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

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80	39	5	9	12	16	20	24	28	32	36	39						
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Ascent rate 30 foot/ min.

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

Single Dive Problem I

Diver makes a single dive to a depth of 85 fsw for 20 minutes.
What is the pressure group after the dive?

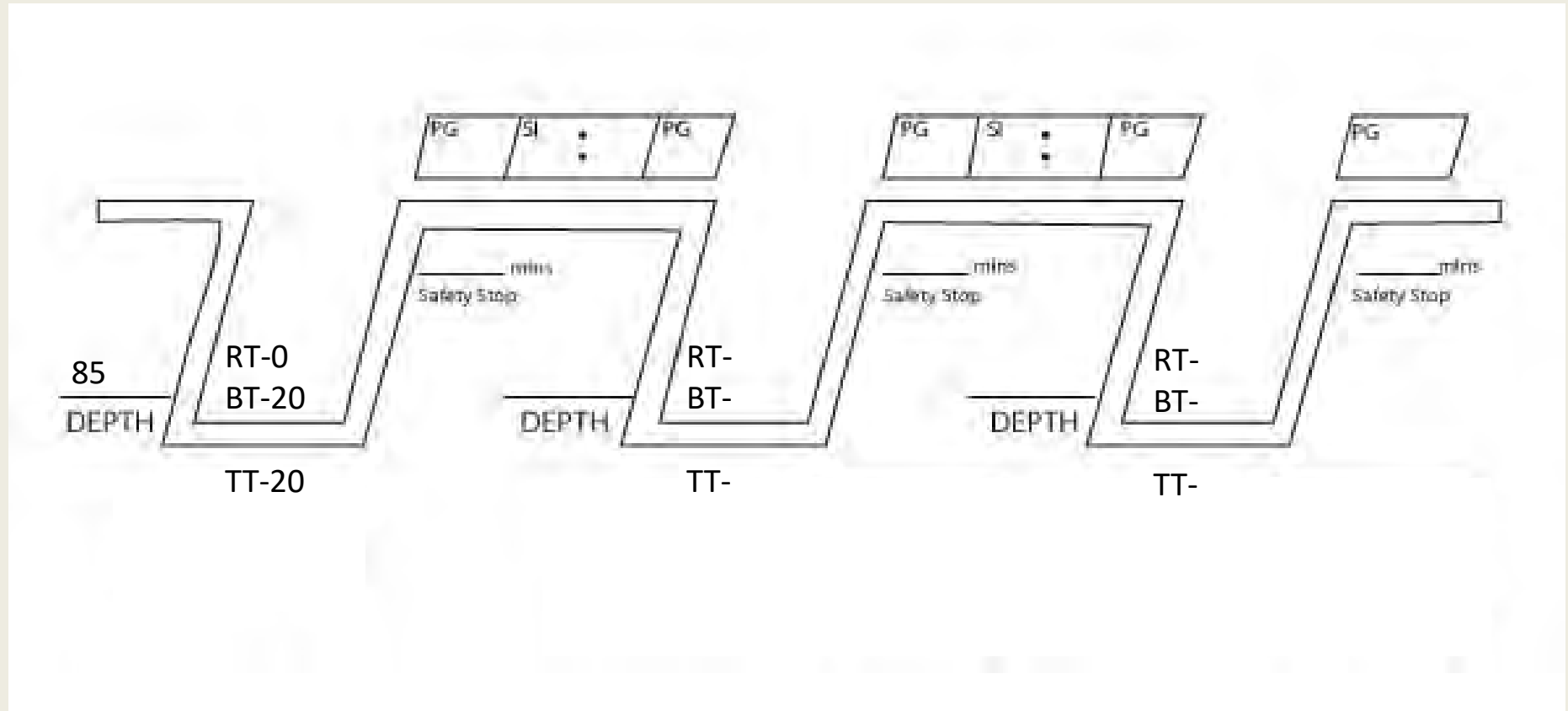
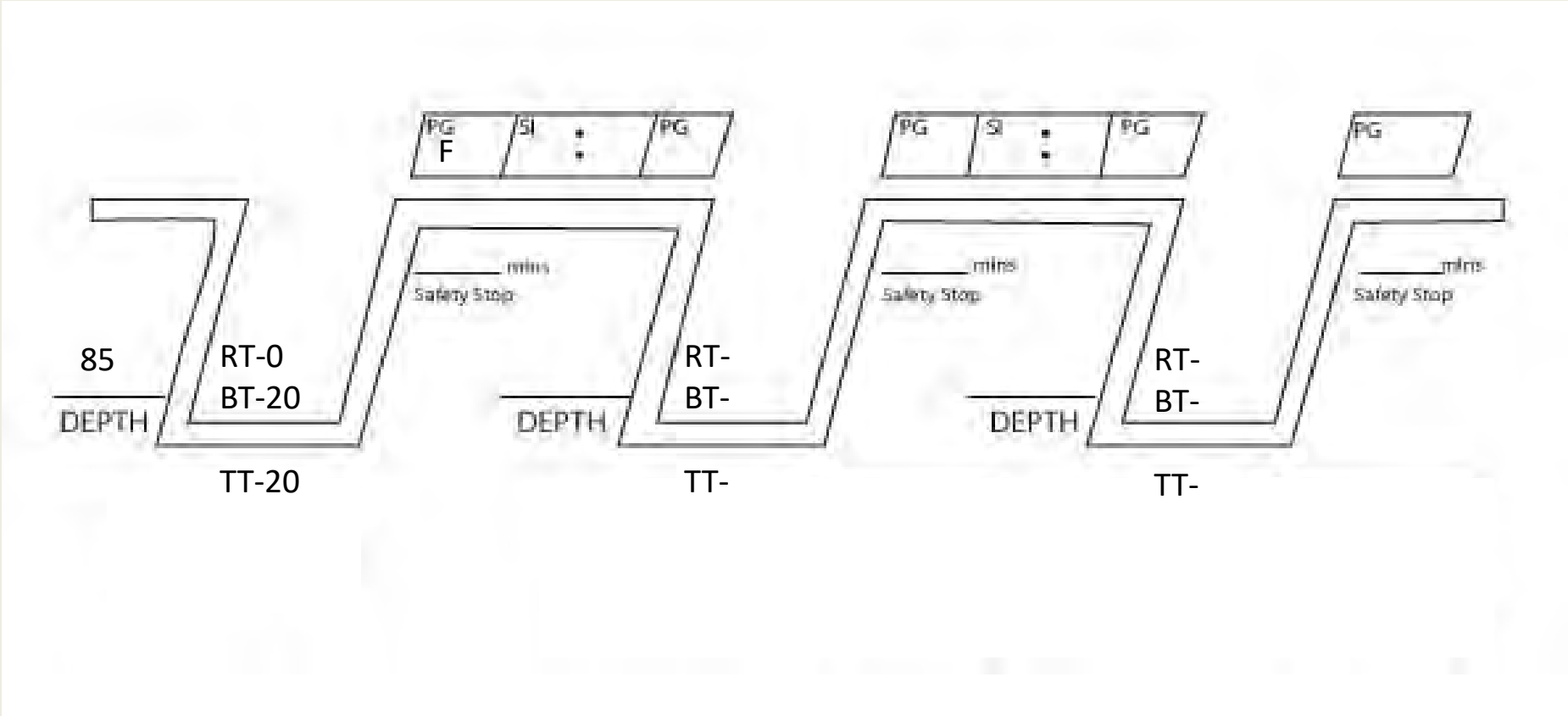


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130	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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

Single Dive Problem I



Single Dive Problem II

Diver makes a single dive to 47 fsw for 60 minutes. What is the pressure group after the dive?

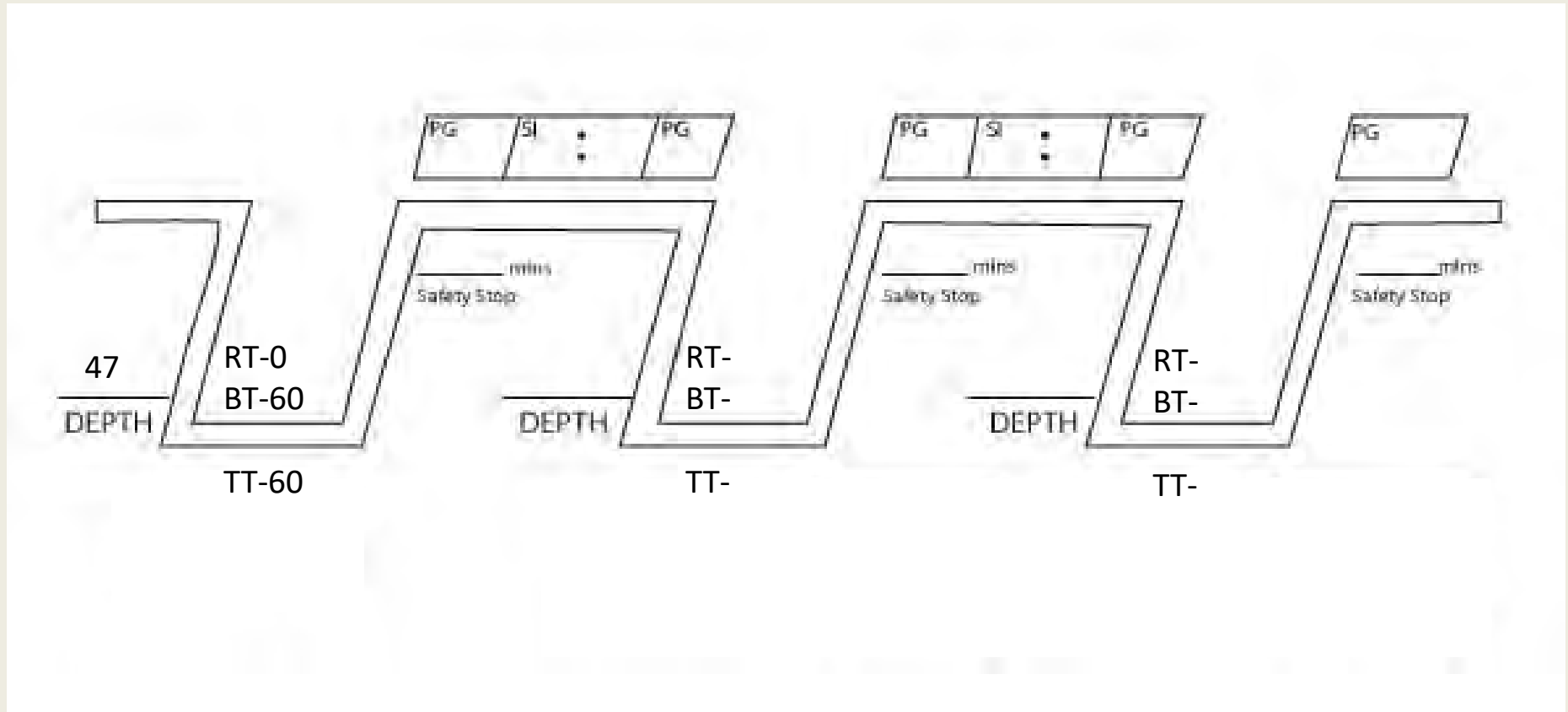
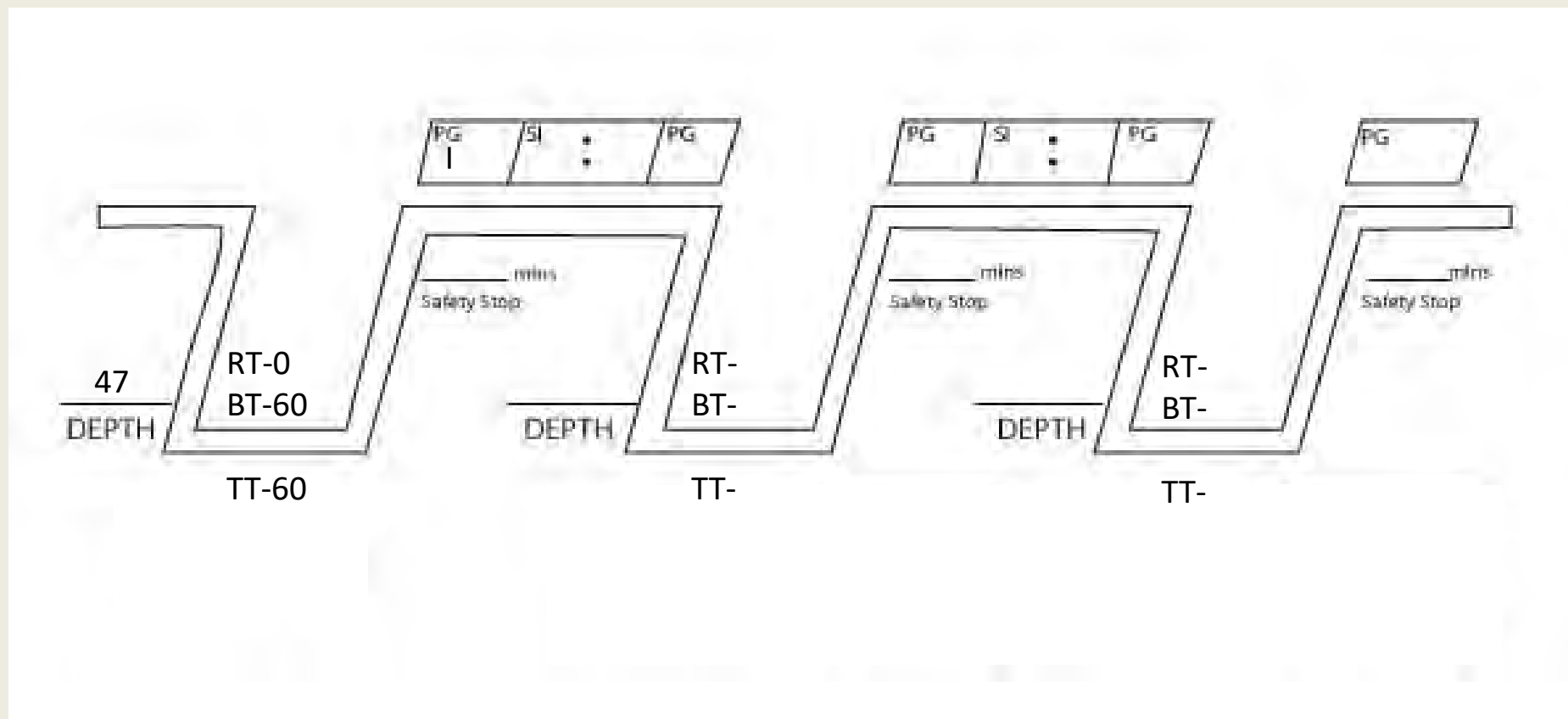


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45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	58	63	71	74				
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70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	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	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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

Sample Dive Problem II



Single Dive Problem III

Diver makes a single dive to 115 fsw for 11 minutes. What is the pressure group after the dive?

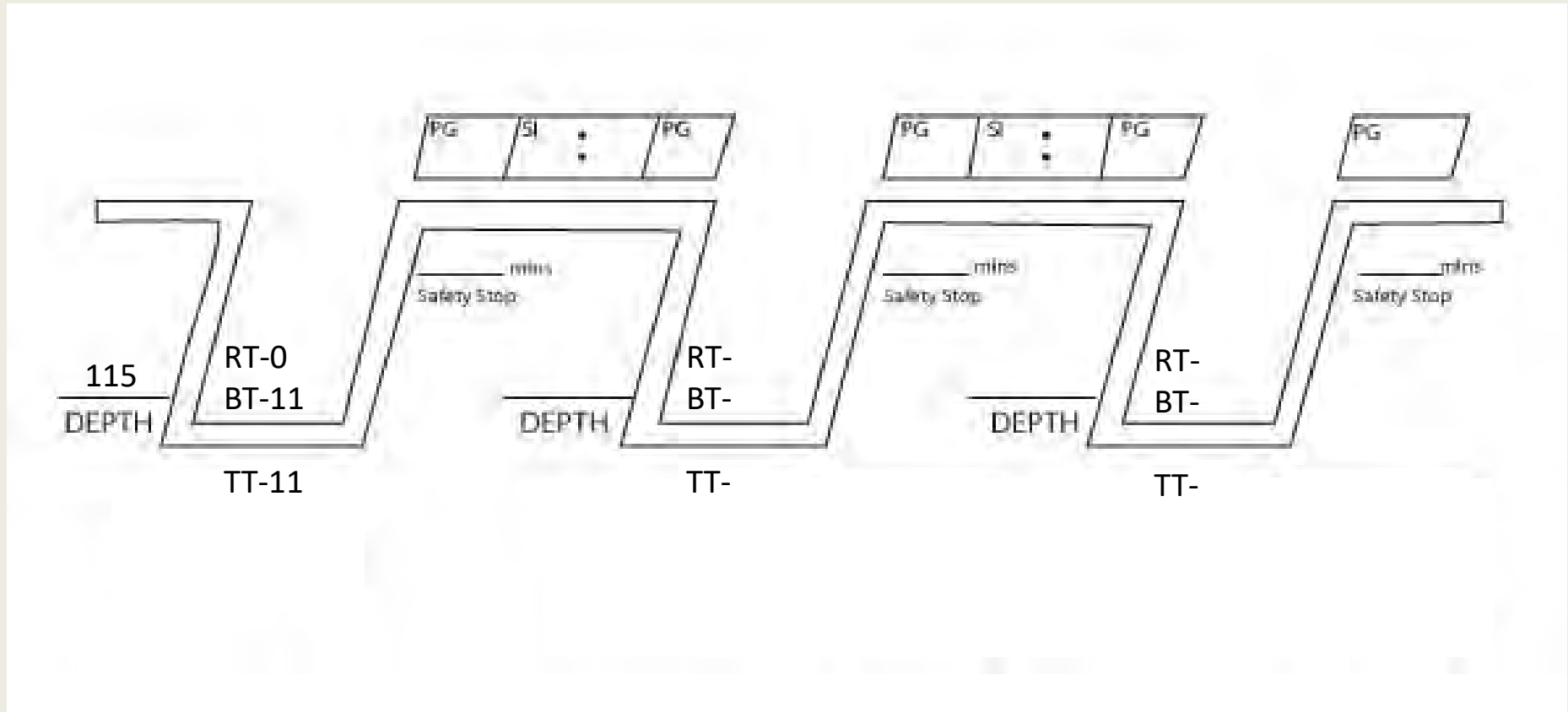
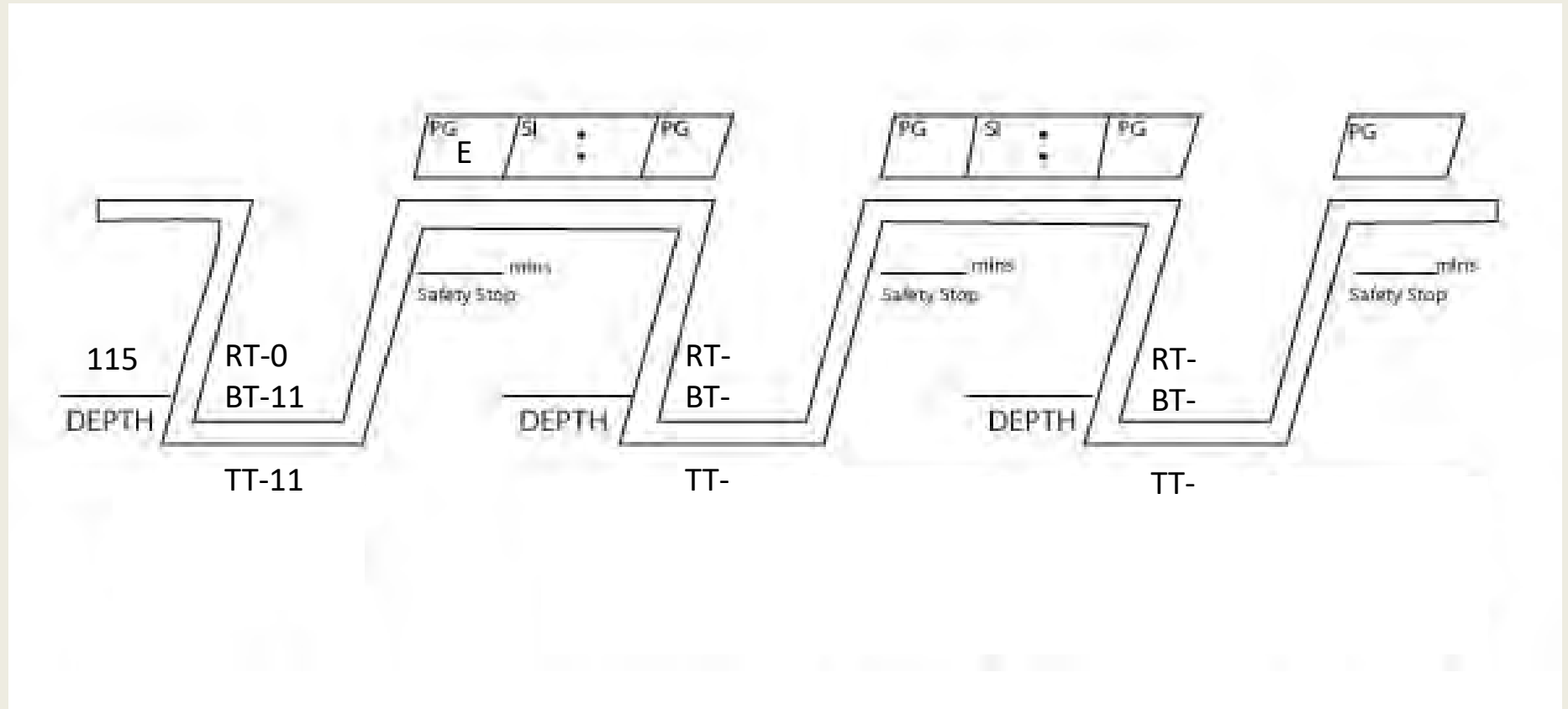


Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

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		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Z
10	Unlimited	57	101	158	245	398	*										
15	Unlimited	36	60	88	121	183	217	297	449	*							
20	Unlimited	26	43	61	82	116	133	165	205	256	330	461	*				
25	1102	20	33	47	62	88	97	117	140	166	198	236	285	354	469	992	1102
30	371	17	27	38	50	72	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	62	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	54	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	49	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	44	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	41	37	43	50	56	63	71	74				
60	63	7	12	17	22	38	33	39	45	51	57	63					
70	48	6	10	14	19	33	28	32	37	42	47	48					
80	39	5	9	12	16	30	24	28	32	36	39						
90	33	4	7	11	14	27	21	24	28	31	33						
100	25	4	6	9	12	25	18	21	25								
110	20	3	6	8	11	24	16	19	20								
120	15	3	5	7	10	23	12	15									
130	12	2	4	6	9	21	11	12									
140	10	2	4	6	8	20	10										
150	8		3	5	7	19	8										
160	7		3	5	6	18	7										
170	6			4	6	17											
180	6			4	5	16	6										
190	5			3	5	15											

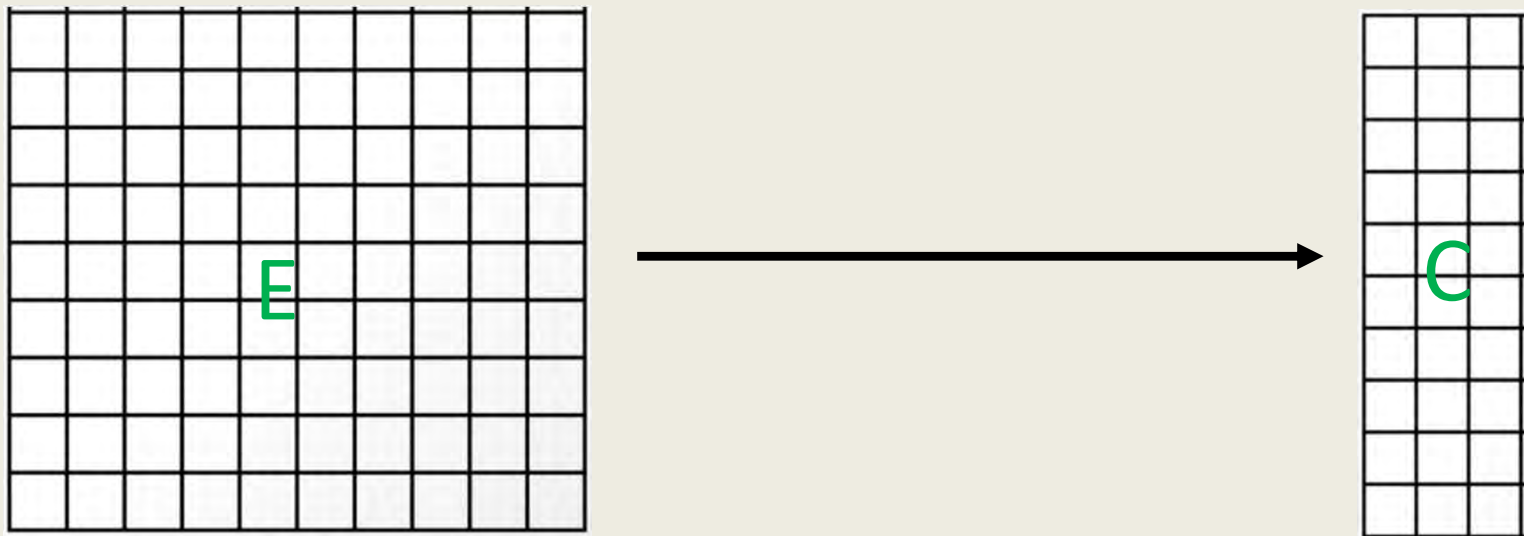
* Highest repetitive group that can be achieved at this depth regardless of bottom time.

Single Dive Problem III



What happens to the Nitrogen at the end of the dive?

- The amount of excess Nitrogen left at the end of the dive is called “Residual Nitrogen”
- Residual Nitrogen is off-gassed (breathed off) over time



Single Dive Problem III

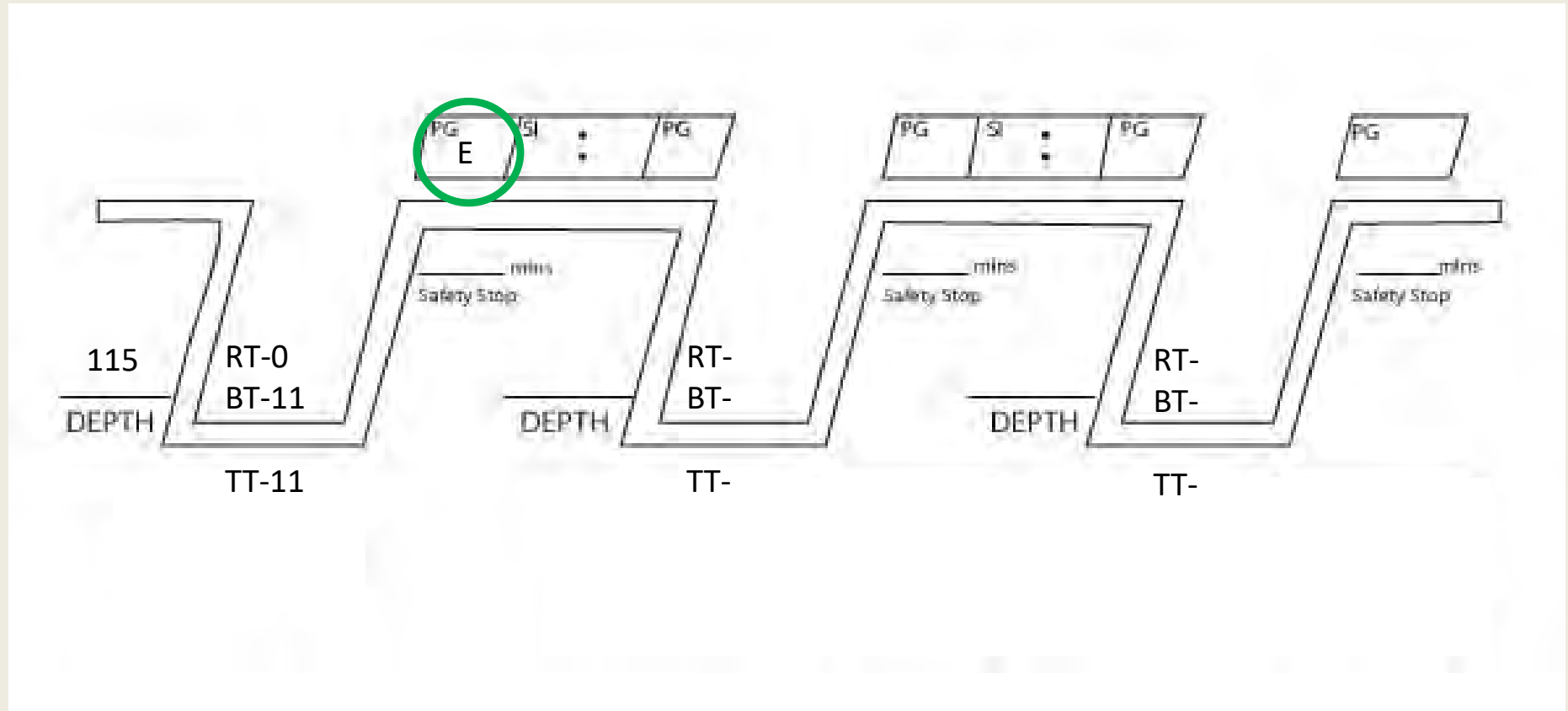


Table 9-8. Residual Nitrogen Time Table for Repetitive Air Dives.

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.

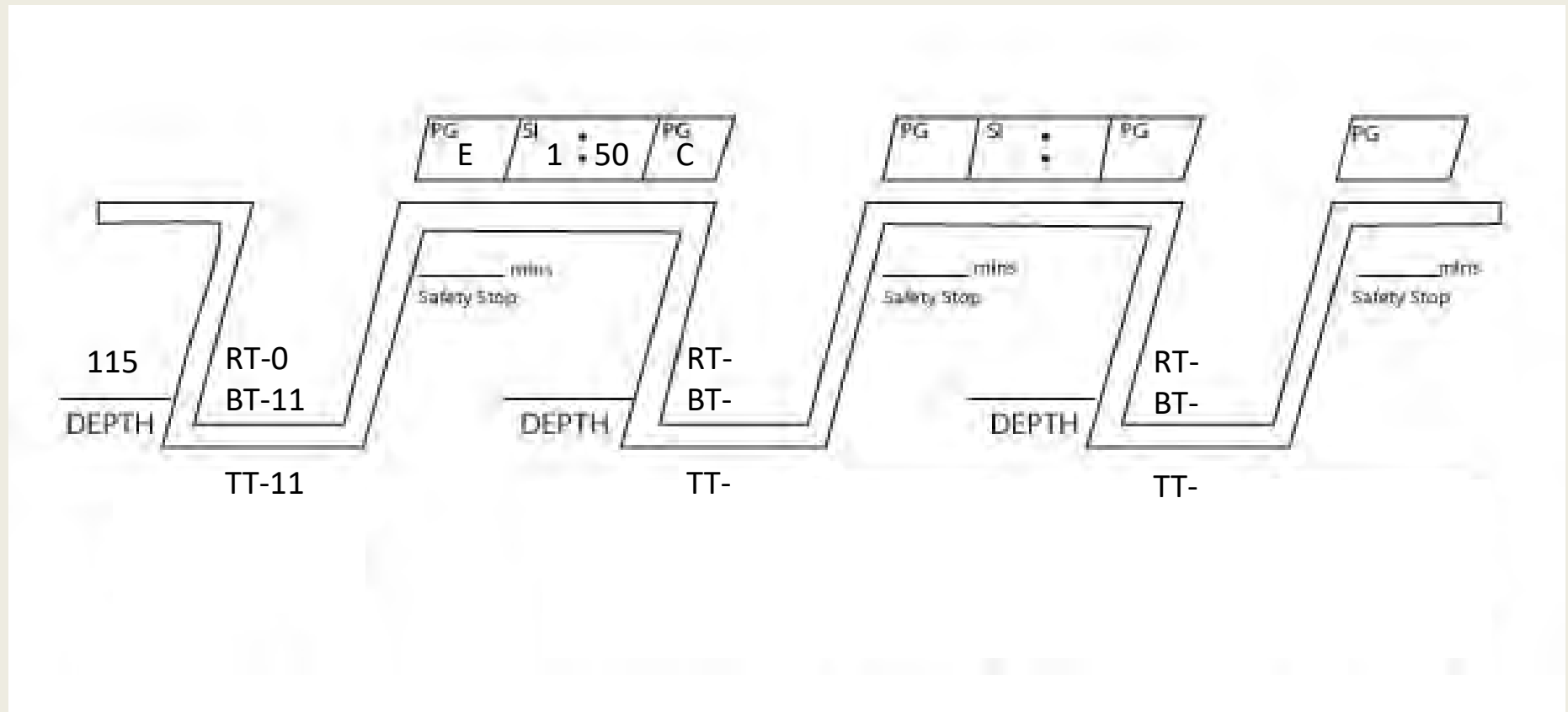
		Repetitive Group at Beginning of Surface Interval																
		Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A	
Dive Depth	10	**	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
	15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37	
	20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27	
	25	†	†	470	354	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.

Single Dive Problem III

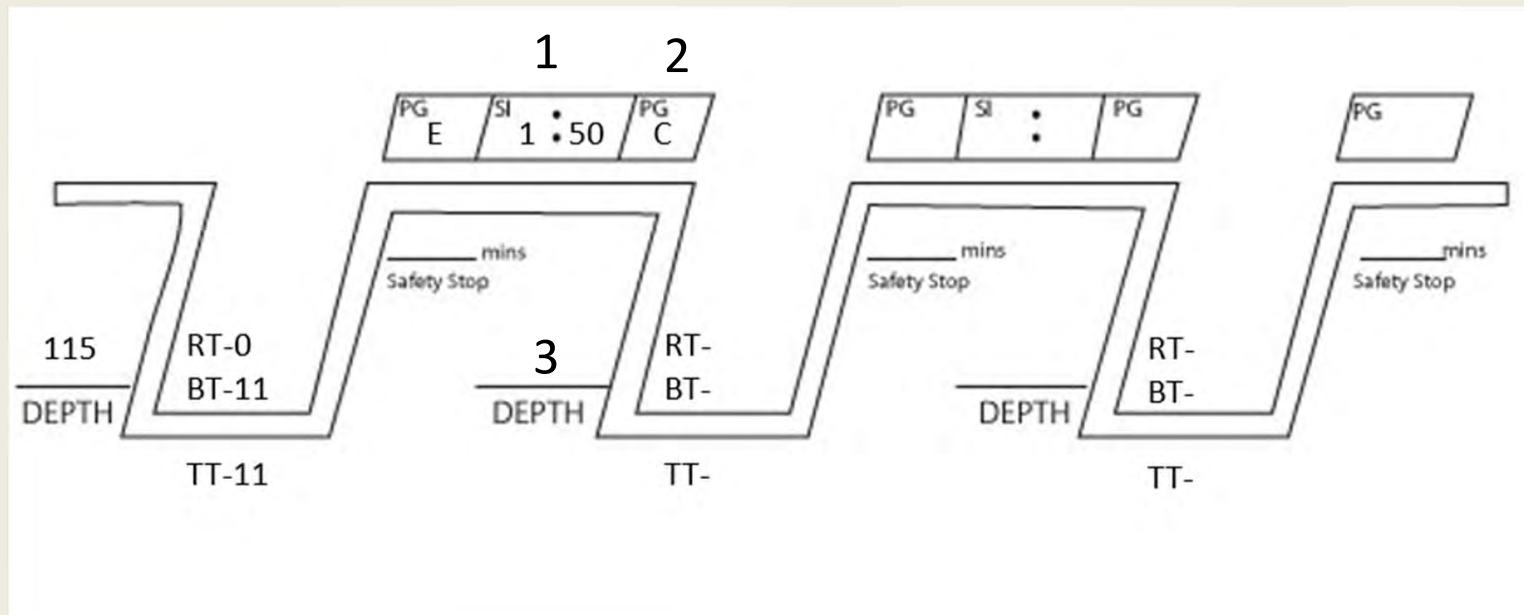


Why do we care about Residual Nitrogen?

- If another dive is made before all the nitrogen is gone, then it must be accounted for
- How do we account for Residual Nitrogen?
 - It must be added to the TBT in order to select the appropriate ascent procedure
 - TBT is measured in minutes so the residual nitrogen time must be in minutes as well
 - This is called “Residual Nitrogen Time”

What is needed to determine RNT?

- 1-Surface interval time (hrs:min)
- 2-RGD from previous dive
- 3- Depth of repetitive dive



Repetitive Dive Problem I

Diver makes a dive to 75 fsw for 30 minutes. Then surfaces and plans the next dive to a depth of 55 fsw. The diver is on the surface for 2 hours and makes the second dive for 36 minutes. What is the pressure group after the second dive?

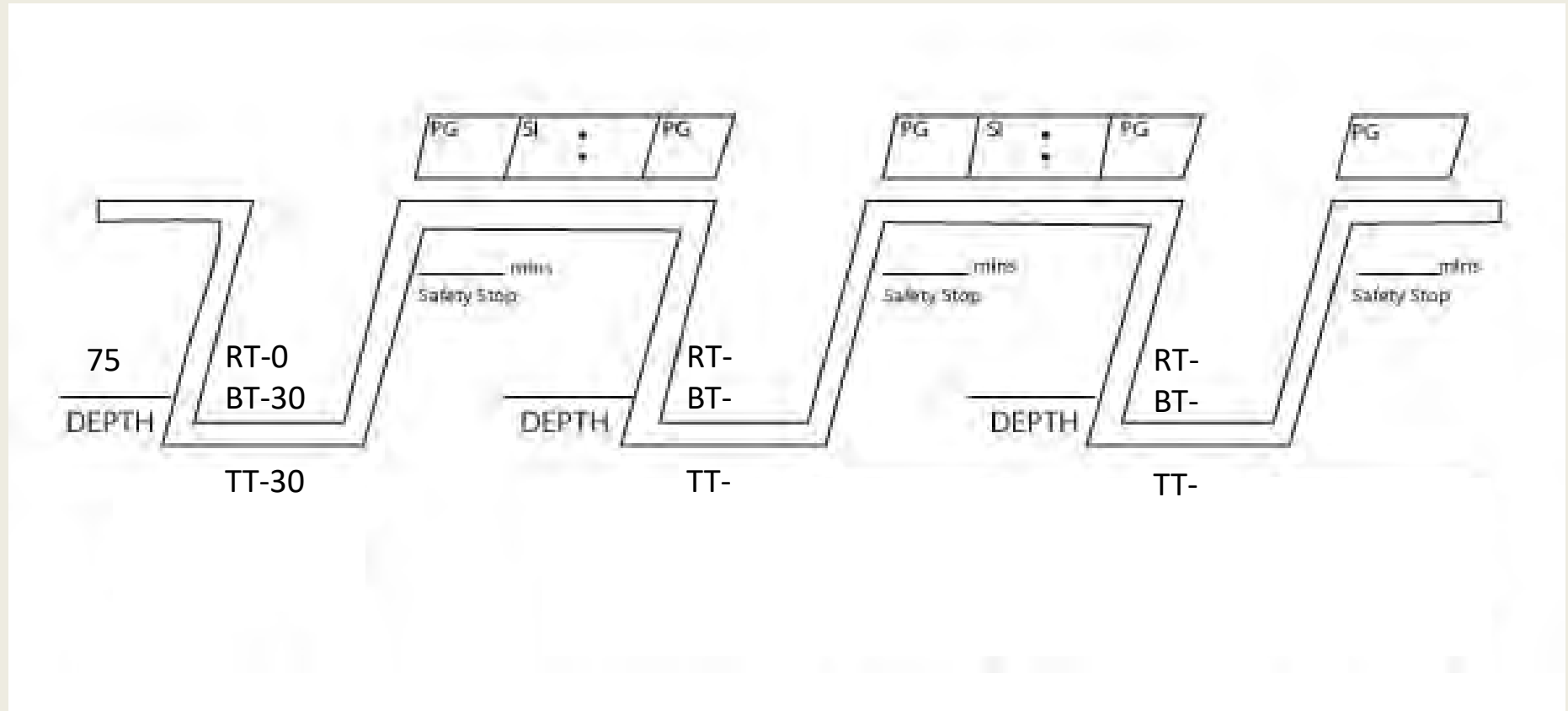


Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

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	1102	20	33	47	62	78	97	117	149	166	198	236	285	354	469	992	1102
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	55	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	32	5	8	10	13	16	20	24	28	32	36	39					
90	25	4	7	11	14	17	21	24	28	31	33						
100	20	4	6	9	12	15	18	21	25								
110	15	3	6	8	11	14	16	19	20								
120	12	3	5	7	10	12	15										
130	10	2	4	6	9	11	12										
140	8	2	4	6	8	10											
150	7		3	5	7	8											
160	6		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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

Repetitive Dive Problem I

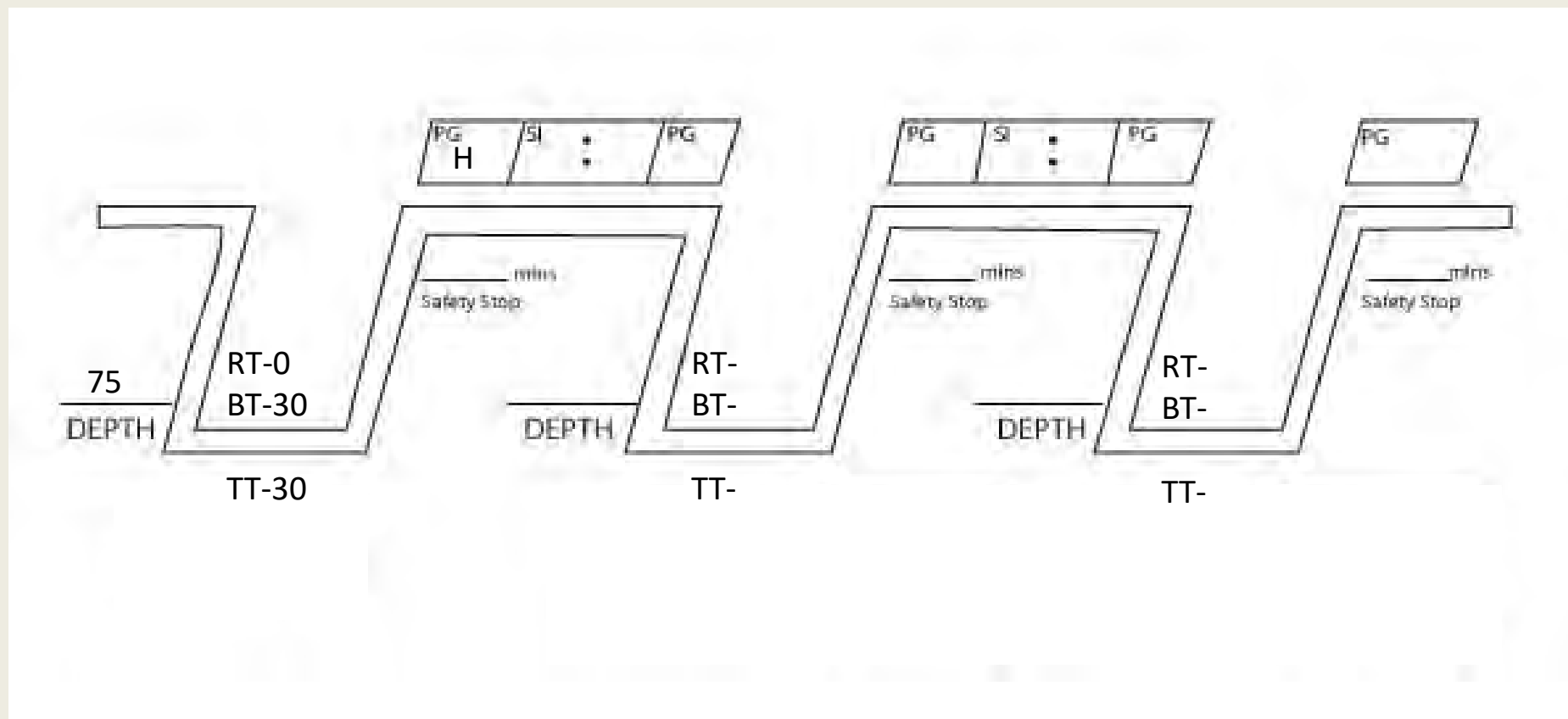


Table 9-8. Residual Nitrogen Time Table for Repetitive Air Dives.

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.

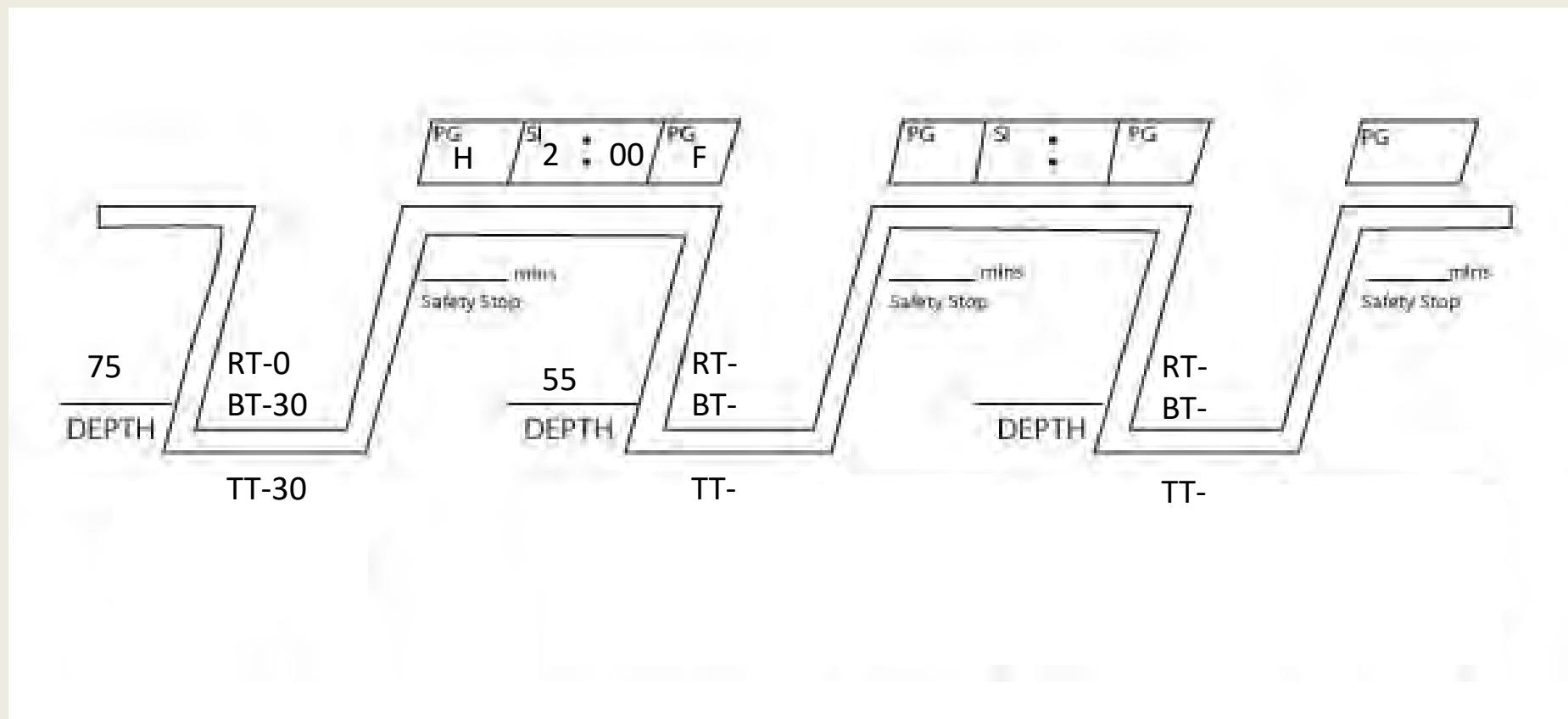
Dive Depth	Repetitive Group at the End of the Surface Interval															
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	58
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	37
20	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	27
25	†	†	470	354	286	237	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)

** 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.

Repetitive Dive Problem I



Repetitive Dive Problem I

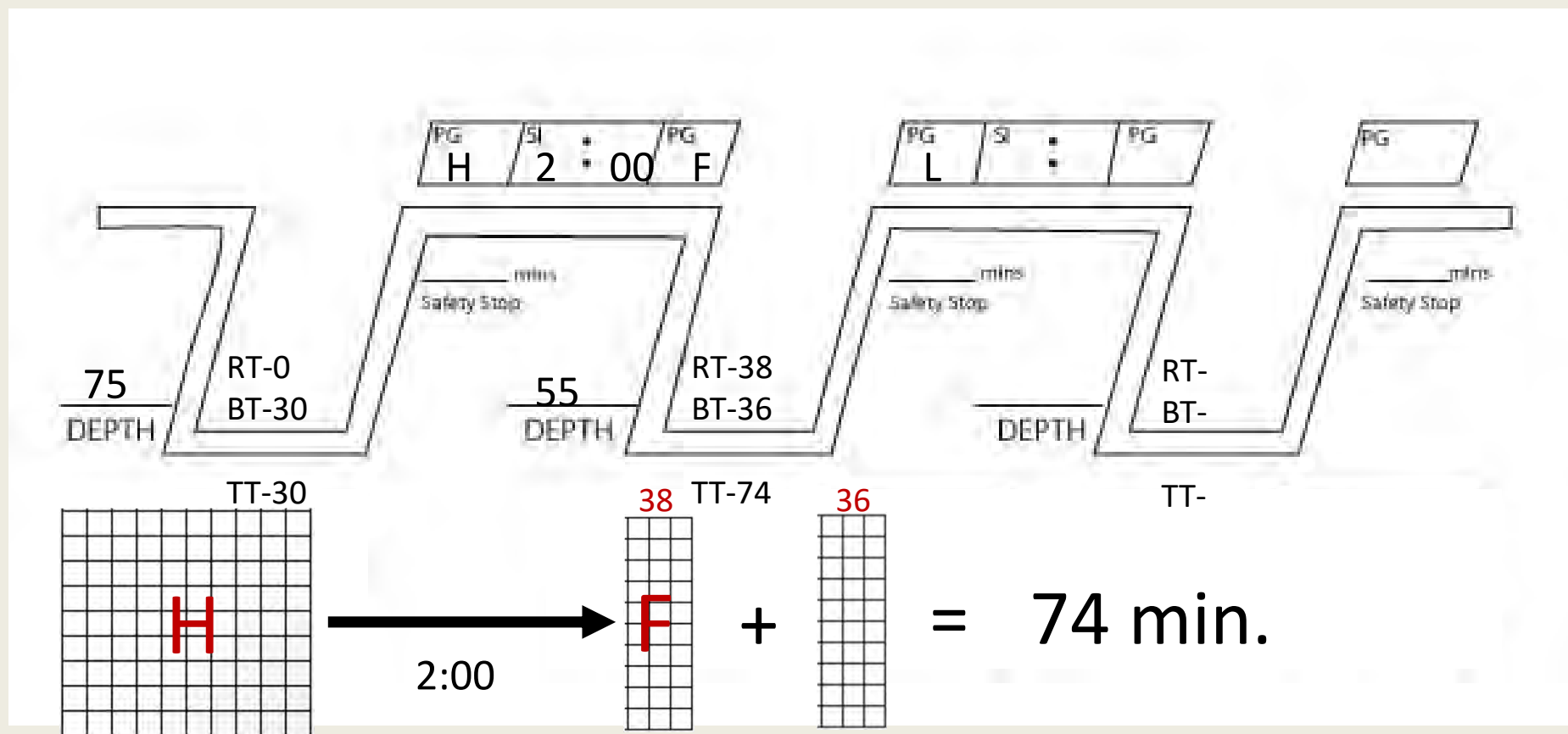
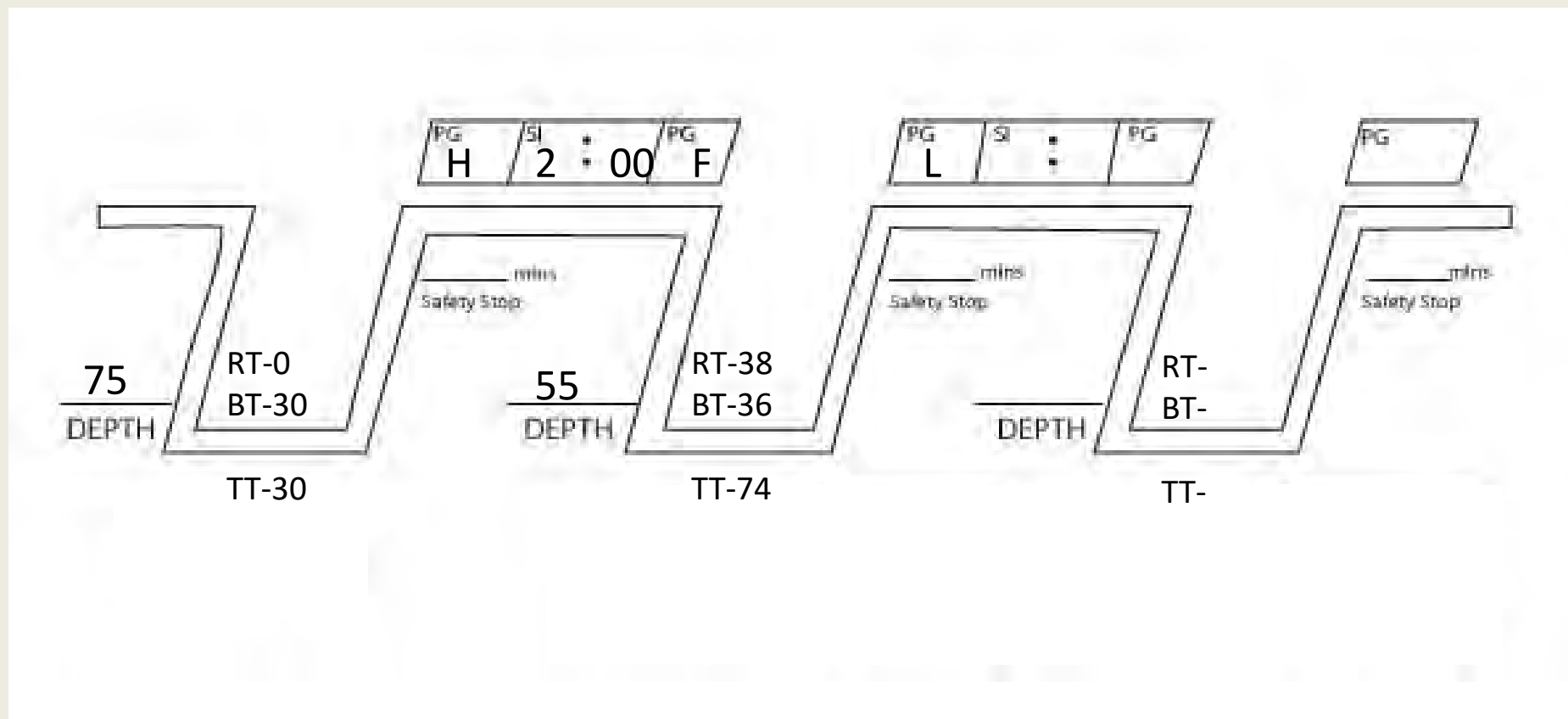


Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

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	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102	
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	158	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	58	66	74	74					
60	63	7	12	17	22	28	33	39	45	51	57	63						
70	48	6	10	14	19	23	28	32	37	42	47	48						
80	39	5	9	12	16	20	24	28	32	36	39							
90	33	4	7	11	14	17	21	24	28	31	33							
100	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	12	2	4	6	9	11	12											
140	10	2	4	6	8	10												
150	8		3	5	7	8												
160	7		3	5	6	7												
170	6			4	6													
180	6			4	5	6												
190	5			3	5													

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

Repetitive Dive Problem I



Dive Profile: Fill in the template for Dive 1- 125 fsw for 9 minutes, Dive 2- 88 fsw for 20 minutes following a 3 hour 25-minute (3:25) Surface Interval. What is your pressure group at the end of the second dive?

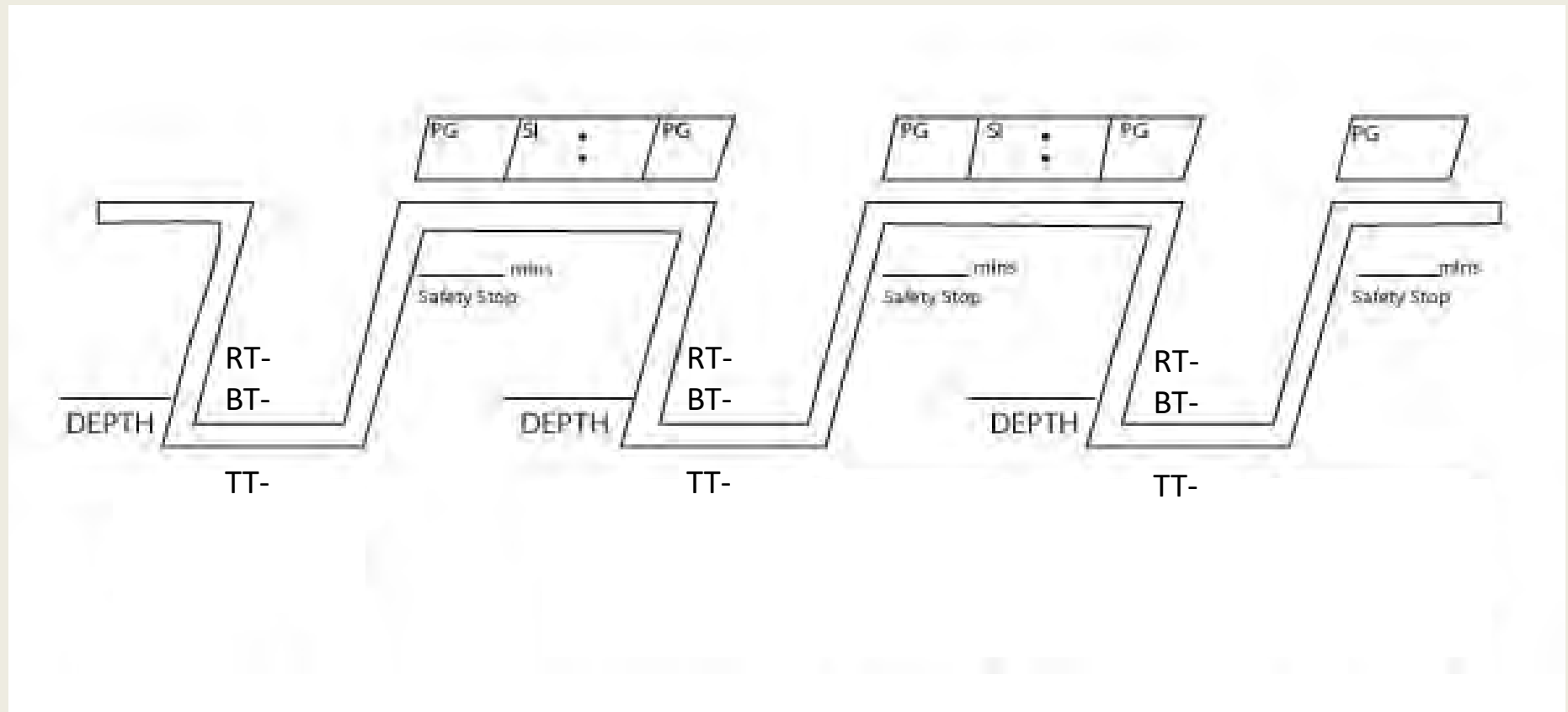


Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

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	215	272	329	*									
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	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	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
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.

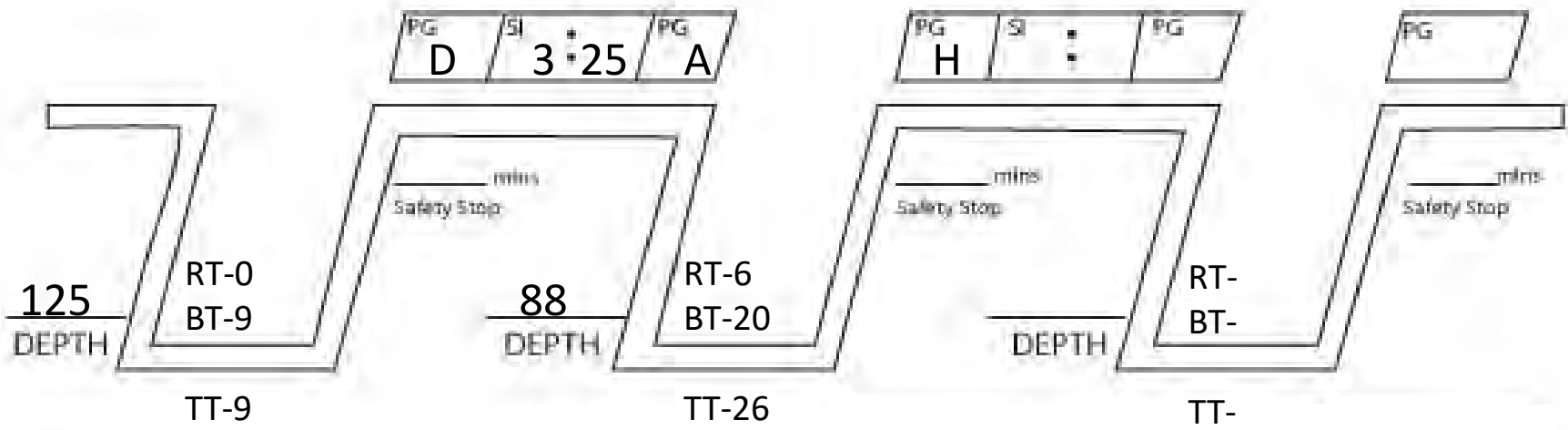
Dive Depth	Repetitive Group at the End of the Surface Interval															A
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	8
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	7
20	**	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	1
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	8
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	5
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	3
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	2
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	1
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	0
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	0
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	54	50	47	43	40	36	33	30	27	24	21	18	14	11	8	6
100	48	45	42	39	36	33	30	27	24	21	18	16	13	10	8	5
110	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5
120	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4
130	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4
140	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4
150	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4
160	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3
170	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3
180	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3

** 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.

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	1102	20	33	47	62	78	97	117	149	166	198	236	285	354	469	992	1102
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	55	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	5	7	11	14	17	21	24	28	31	33						
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	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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



Dive Profile- Dive 1- 125 fsw for 9 minutes, after a 3 hour and 25 minute surface interval a dive to 110 fsw for 20 minutes is completed. What is the pressure group after the second dive?

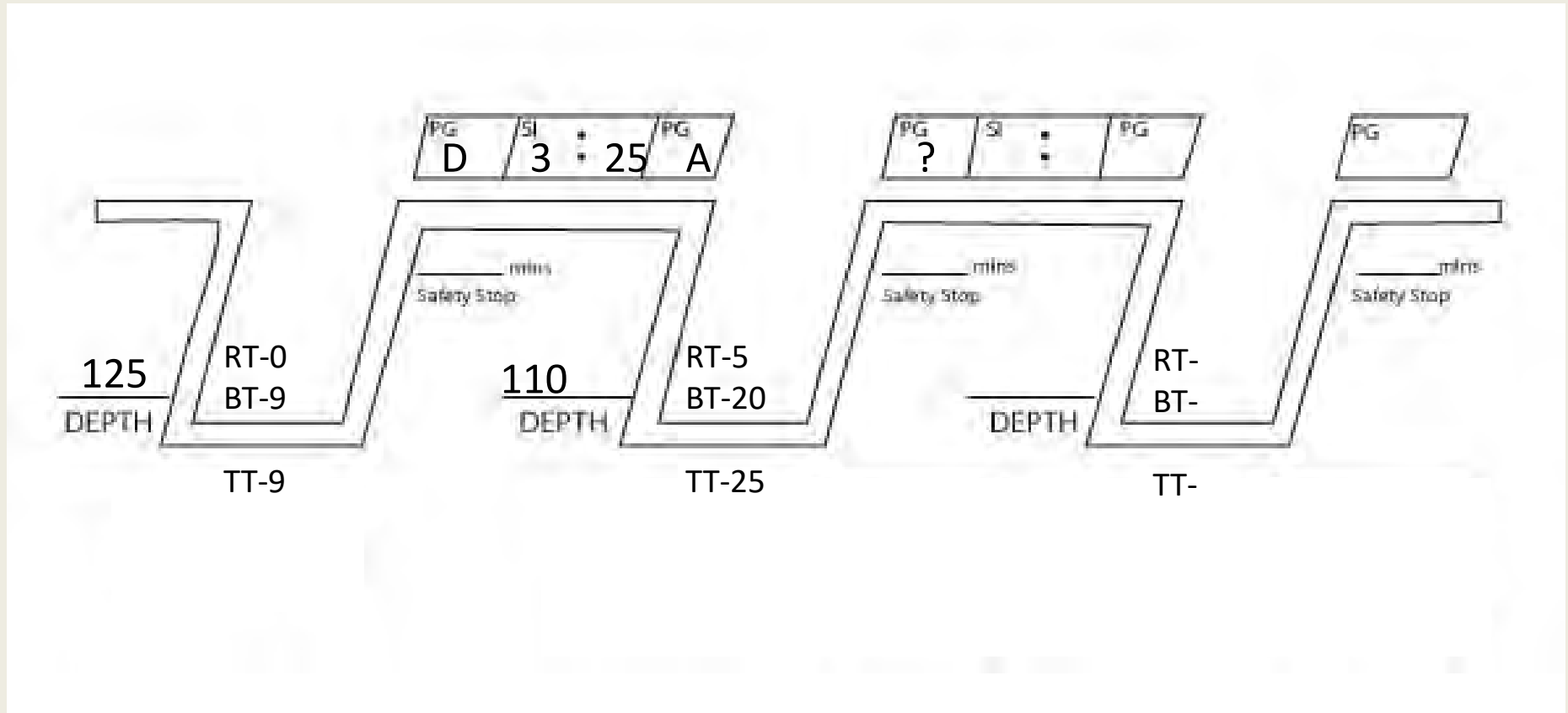


Table 9-7. No-Decompression Limits and Repetitive Group Designators for No-Decompression Air Dives.

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	215	272	329	*									
15	Unlimited	36	60	88	121	163	217	297	449	*							
20	Unlimited	26	43	61	82	106	133	165	205	256	330	461	*				
25	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	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	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
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.

Dive Depth	Repetitive Group at the End of the Surface Interval															A	
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B		
10	**	**	**	**	**	**	**	**	**	**	**	427	246	159	101	8	
15	**	**	**	**	**	**	**	**	450	298	218	164	122	89	61	7	
20	**	**	**	**	**	**	462	331	257	206	166	134	106	83	62	44	7
25	†	†	470	354	286	237	198	167	141	118	98	79	63	48	34	1	
30	372	308	261	224	194	168	146	126	108	92	77	63	51	39	28	8	
35	245	216	191	169	149	132	116	101	88	75	64	53	43	33	24	5	
40	188	169	152	136	122	109	97	85	74	64	55	45	37	29	21	3	
45	154	140	127	115	104	93	83	73	64	56	48	40	32	25	18	2	
50	131	120	109	99	90	81	73	65	57	49	42	35	29	23	17	1	
55	114	105	96	88	80	72	65	58	51	44	38	32	26	20	15	0	
60	101	93	86	79	72	65	58	52	46	40	35	29	24	19	14	0	
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	44	41	38	35	32	30	27	24	22	19	17	14	12	9	7	5	
120	40	37	35	32	30	27	25	22	20	18	15	13	11	9	6	4	
130	37	34	32	30	27	25	23	21	19	16	14	12	10	8	6	4	
140	34	32	30	28	26	23	21	19	17	15	13	11	9	8	6	4	
150	32	30	28	26	24	22	20	18	16	14	13	11	9	7	5	4	
160	30	28	26	24	22	21	19	17	15	14	12	10	8	7	5	3	
170	28	26	25	23	21	19	18	16	14	13	11	10	8	6	5	3	
180	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3	
190	26	25	23	22	20	18	17	15	14	12	11	9	8	6	5	3	

** 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.

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	1102	20	33	47	62	78	97	117	140	166	198	236	285	354	469	992	1102
30	371	17	27	38	50	62	76	91	107	125	145	167	193	223	260	307	371
35	232	14	23	32	42	52	63	74	87	100	115	131	148	168	190	215	232
40	163	12	20	27	36	44	53	63	73	84	95	108	121	135	151	163	
45	125	11	17	24	31	39	46	55	63	72	82	92	102	114	125		
50	92	9	15	21	28	34	41	48	56	63	71	80	89	92			
55	74	8	14	19	25	31	37	43	50	56	63	71	74				
60	63	7	12	17	22	28	33	39	45	51	57	63					
70	48	6	10	14	19	23	28	32	37	42	47	48					
80	39	5	9	12	16	20	24	28	32	36	39						
90	33	4	7	11	14	17	21	24	28	31	33						
100	25	4	6	9	12	15	18	21	25								
110	20	3	5	8	11	14	17	20	23								
120	15	3	5	7	10	12	15										
130	12	2	4	6	9	11	12										
140	10	2	4	6	8	10											
150	8		3	5	7	8											
160	7		3	5	6	7											
170	6			4	6												
180	6			4	5	6											
190	5			3	5												

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

Wait, what?

Violation of the table =
increased risk of DCI



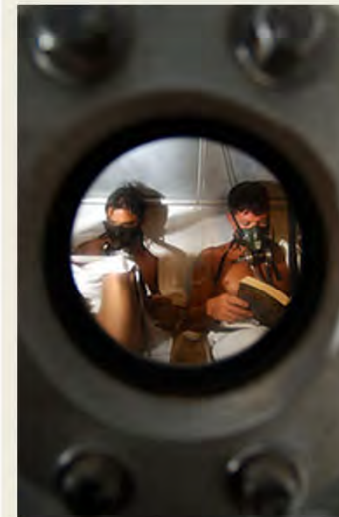
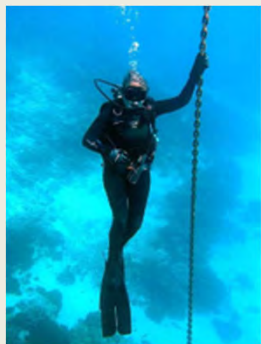
The Diver can either decompress on :

1. Air
2. Air/O₂
3. SurDO₂

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 ₂ Periods	Repet Group					
			100	90	80	70	60	50	40	30				20				
130 FSW																		
12	4:20	AIR								0	4:20	0	F					
		AIR/O ₂								0	4:20							
15	3:40	AIR								3	7:20	0.5	G					
		AIR/O ₂								2	6:20							
20	3:40	AIR								8	12:20	0.5	I					
		AIR/O ₂								5	9:20							
In-Water Air/O ₂ Decompression or SurDO ₂ Recommended -----																		
25	3:40	AIR								17	21:20	0.5	J					
		AIR/O ₂								9	13:20							
30	3:20	AIR								2	38:00	1	M					
		AIR/O ₂								1	22:00							
35	3:20	AIR								5	53:00	1	O					
		AIR/O ₂								3	30:00							
40	3:20	AIR								6	66:00	1.5	Z					
		AIR/O ₂								3	37:00							
Exceptional Exposure: In-Water Air/O ₂ Decompression ----- In-Water Air/O ₂ Decompression or SurDO ₂ Required -----																		
45	3:00	AIR								1	11	84	99:40	1.5	Z			
		AIR/O ₂								1	6	33	49:00					
50	3:00	AIR								2	20	118	143:40	2	Z			
		AIR/O ₂								2	10	36	57:00					
55	3:00	AIR								4	28	146	181:40	2	Z			
		AIR/O ₂								4	14	40	67:00					
60	3:00	AIR								12	28	170	213:40	2.5	Z			
		AIR/O ₂								12	14	46	81:00					
Exceptional Exposure: In-Water Air/O ₂ Decompression ----- SurDO ₂ Required -----																		
70	2:40	AIR								1	26	28	235	293:20	3			
		AIR/O ₂								1	26	14	63	117:40				
80	2:40	AIR								12	26	28	297	366:20	3.5			
		AIR/O ₂								12	26	14	79	144:40				
90	2:40	AIR								22	25	28	375	453:20	4			
		AIR/O ₂								22	25	14	95	174:40				
Exceptional Exposure: SurDO ₂ -----																		
100	2:20	AIR								6	23	26	38	444	540:00	5		
		AIR/O ₂								6	23	26	20	106	204:20			
120	2:20	AIR								17	24	27	57	534	662:00	6		
		AIR/O ₂								17	24	27	29	130	255:20			
180	2:00	AIR								13	21	45	57	94	658	890:40	9	
		AIR/O ₂								13	21	45	57	46	198	418:00		

SurDO₂- O₂ chamber periods is another way to decrease time in water. Each period is 30minutes. The first 15 minutes is spent at 50 fsw, the remainder is either at 40 fsw or 30 fsw.



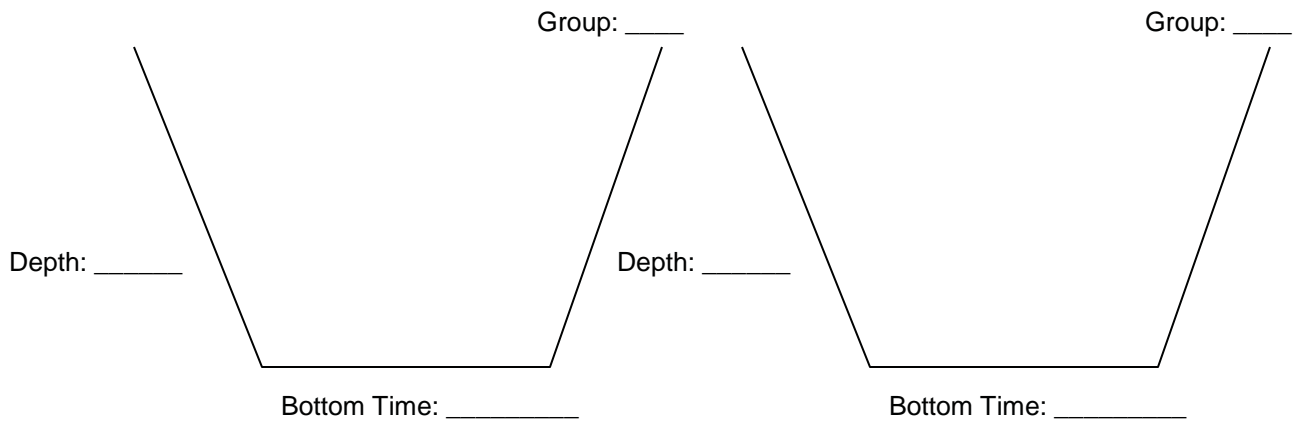
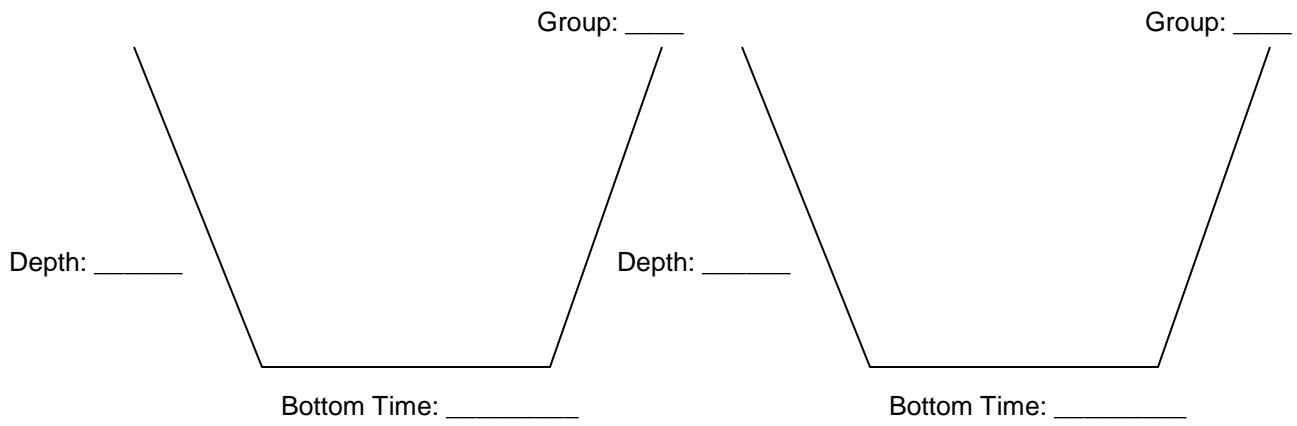
DECOMPRESSION TABLE WORKSHOP DEFINITIONS

The following terms are frequently used when conducting compressed gas operations and hyperbaric oxygen therapy.

1. Decompression table: A structured set of depth and time limits that the diver follows to reduce the risk of decompression sickness while SCUBA diving.
2. Bottom time: Bottom time begins when the diver leaves the surface and ends when he leaves the bottom for his ascent to the surface. Bottom time is measured in minutes.
3. No decompression limit: The maximum amount of time that a diver can spend at a given depth and still ascend directly to the surface without taking decompression stops.
4. Decompression stop: A specified depth at which the diver stops for a specified amount of time during ascent to allow elimination of excess nitrogen from a dive that exceeds the no decompression limit.
5. Residual nitrogen: Excess nitrogen that remains dissolved in the divers tissues after surfacing from a dive.
6. Repetitive group designator: A letter used to indicate the amount of residual nitrogen that remains dissolved in a divers tissues after surfacing from a dive
7. Surface interval: The time a diver spends on the surface between dives. The time begins as soon as he surfaces and ends when he begins his next descent.
8. Repetitive dive Any dive conducted while the divers tissues still contain residual nitrogen from a previous dive.
9. Residual nitrogen time: The time in minutes that must be added to the actual bottom time of a repetitive dive to compensate for the residual nitrogen that remains dissolved in the divers tissues from a previous dive.
10. Equivalent single dive time: A physiologic bottom time that is the sum of the residual nitrogen time plus the actual bottom time of a repetitive dive.

Dive-Decompression Profiles

1. No Stage Decompression Dive



Dive-Decompression Profiles

2. Repetitive Dive: No Staged Decompression

