US Navy Decompression Tables and Procedures, Part Two

Presented by the NOAA Diving Center

Seattle, Washington

Global View

- Standard air decompression tables
- Minimum surface interval
- Surface interval special rule
- Dive sequencing

USN Decompression Tables-1

- Purpose: Provides decompression schedule information for dives that require staged decompression

U. S. Navy Air Decompression Table - 1999

Bottom Time	*Time 1st Stop*	*20' Stop*	*10' Stop*	*Total Time*	*Repet. Group*
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L
100 Mins.	(1:40)		14	16:00	M
120 Mins.	(1:40)		26	28:00	N
140 Mins.	(1:40)		39	41:00	O
160 Mins.	(1:40)		48	50:00	Z
180 Mins.	(1:40)		56	58:00	Z
200 Mins.	(1:20)	1	69	72:00	Z
240 Mins.	(1:20)	2	79	83:00	**
360 Mins.	(1:20)	20	119	141:00	**
480 Mins.	(1:20)	44	148	194:00	**
720 Mins.	(1:20)	78	187	267:00	**

USN Decompression Tables-2

- Description:
  - Dives <40 feet and/or bottom times less than the first bottom time listed for the depth are considered no-decompression dives
  - Dives listed as exceptional exposure are potentially dangerous and should only be conducted in a life and death emergency.
  - No repetitive dives following exceptional exposures
  - Use of exceptional exposure schedules must be fully justified and thoroughly documented and immediately reported to the DNDP

USN Decompression Tables-3

- Description, cont.
  - Far left column lists depths from 40 to 300 fsw
  - Next column to right is the bottom time in minutes that range from 5 to 270 minutes depending on the depth
  - Next column to right is the time (minutes) to reach the first decompression stop from depth

60

Bottom Time	*Time 1st Stop*	*20' Stop*	*10' Stop*	*Total Time*	*Repet. Group*
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L

USN Decompression Tables-4

- Description, cont.
  - Next set of columns to right are depths of decompression stops that range from 10 to 200 fsw, and decompression times that range from 1 to 187 minutes.

60

Bottom Time	*Time 1st Stop*	*20' Stop*	*10' Stop*	*Total Time*	*Repet. Group*
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L

USN Decompression Tables-5

- Description, cont.
  - Next column to right is the total decompression time (time from leaving bottom until reaching surface) in minutes and seconds
  - The far right column is the RGD, which ranges from C to Z

Bottom Time	*Time 1st Stop*	*20' Stop*	*10' Stop*	*Total Time*	*Repet. Group*
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L

USN Decompression Tables- 6

- Application: (60 foot table)

60

Bottom Time	Time 1st Stop	20' Stop	10' Stop	Total Time	Repet. Group
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L
100 Mins.	(1:40)		14	16:00	M
120 Mins.	(1:40)		26	28:00	N

  - Locate exact or next greater depth of dive from vertical column on far left
  - Move horizontally to locate exact or next greater bottom time
  - Move horizontally on the same line, and read RGD from the far right column

USN Decompression Tables-7

- Question #1 :
  - What is the schedule, decompression requirement, and RGD for a dive to 60 fsw for 80 minutes?

60

Bottom Time	Time 1st Stop	20' Stop	10' Stop	Total Time	Repet. Group
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L
100 Mins.	(1:40)		14	16:00	M

USN Decompression Tables-8

- Answer to question #1:

60

Bottom Time	Time 1st Stop	20' Stop	10' Stop	Total Time	Repet. Group
60 Mins.			0	2:00	*
70 Mins.	(1:40)		2	4:00	K
80 Mins.	(1:40)		7	9:00	L
100 Mins.	(1:40)		14	16:00	M

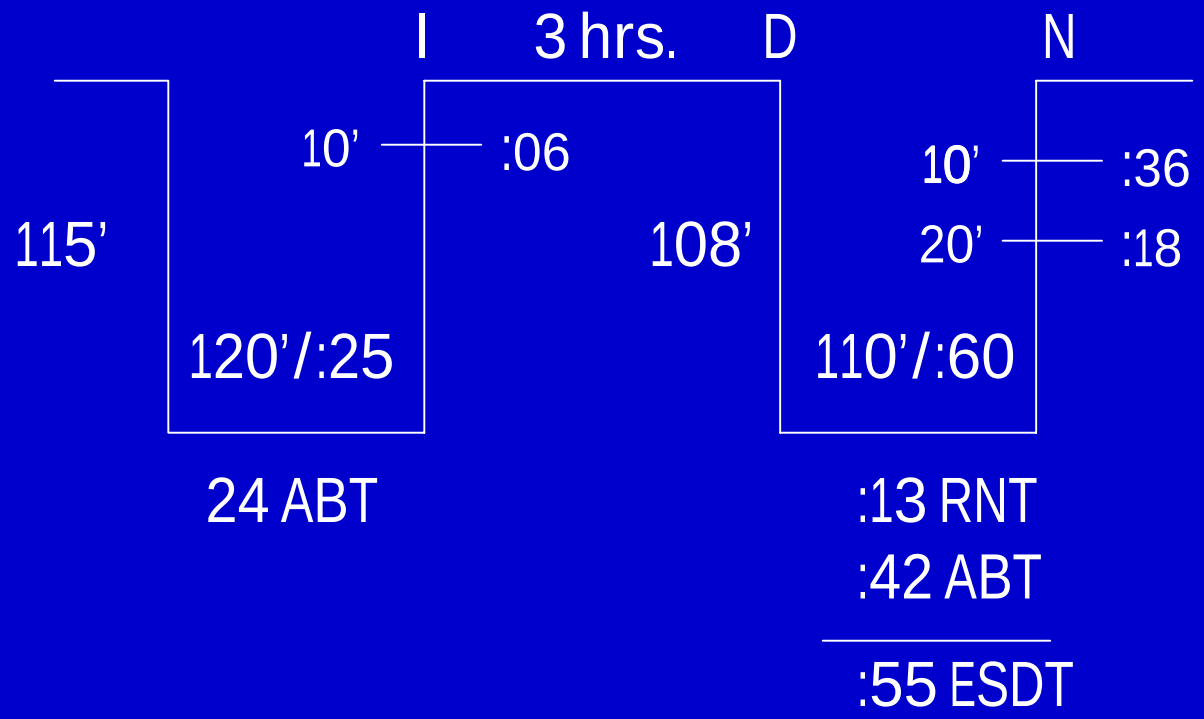
  - 60'/80, 10'/7, Group L

USN Decompression Tables-9

- Question #2:
  - A diver makes a dive to 115 fsw for 24 minutes. Following a 3 hour surface interval, the diver makes another dive to 108’ for 42 minutes.
  - What will be the diver’s RGD at the end of the second dive?

USN Decompression Tables-10

- Answer question #2:



Calculating Minimum SIT-1

- Step 1: Determine RGD from previous dive
- Step 2: Determine ABT for repetitive dive
- Step 3: Subtract planned dive time (ABT) from maximum ESDT for planned depth to find the maximum RNT allowable for repetitive dive
- Step 4: Find RNT # maximum RNT allowed for dive and note RGD for that RNT at planned depth
- Step 5: Find minimum SIT to move from current RGD to required RGD

Minimum SIT-2

- Question: A diver plans to dive for 35 minutes to 60 fsw after a 12 minute dive to 92 fsw. What is the minimum SIT to make the second dive without stage decompression?

Minimum SIT-3

- Answer:
  - Step 1: Find RGD for the first dive. 92’/12 = 100’/15 = E
  - Step 2: Find NDL for repetitive dive depth. 60 fsw = 60 mins.
  - Step 3: Subtract ABT from NDL to get maximum RNT allowed
  - Step 4: Find RNT = or < 25 on 60’ line of RNT table = 24 mins.
  - Step 5: Find new RGD at top of 24 mins. Column = D

15	18	22	25	28	31	34	37	40	GROUP
50	60	70	80	90	100	110	120	130	Letter
6 94	5 55	4 46	4 36	3 27	3 22	3 17	3 12	3 7	A
13 87	11 49	9 41	8 32	7 23	7 18	6 14	6 9	6 4	B
21 79	17 43	15 35	13 27	11 19	10 15	10 10	9 6	8 2	C
29 71	24 36	20 30	18 22	16 14	14 11	13 7	12 3		D
38 62	30 30	26 24	23 17	20 10	18 7	16 4			E

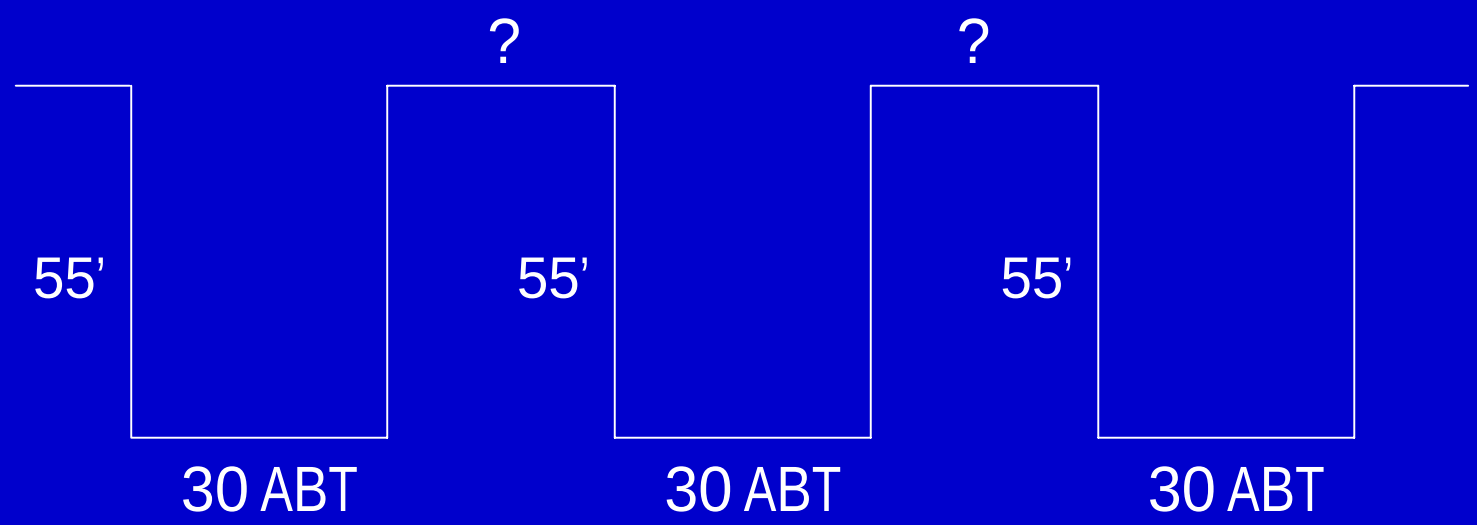
Minimum SIT-4

– Step 6: Use SIT Table to determine minimum time to change from RGD “E” to RGD “D” = 55 minutes

GROUP Letter	A	B	C	D	E	F
A	12:00 0:10	12:00 3:21	12:00 4:50	12:00 5:49	12:00 6:35	12:00 7:06
B		3:20 0:10	4:49 1:40	5:48 2:39	6:34 3:25	7:05 3:58
C			1:39 0:10	2:38 1:10	3:24 1:58	3:57 2:29
D				1:09 0:10	1:57 0:55	2:28 1:30
E					0:54 0:10	1:29 0:46

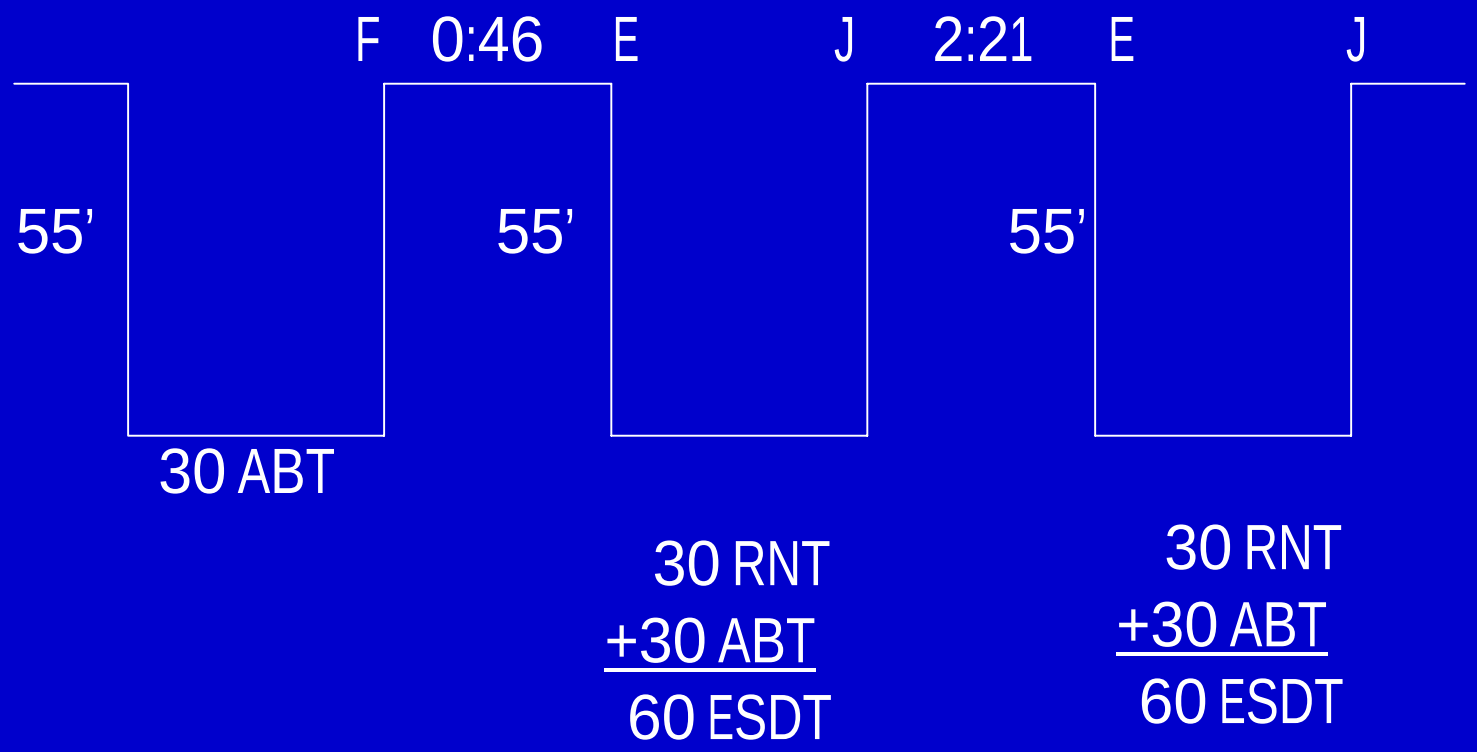
Minimum SIT-5

- Question #1: A diver wants to make three, 30 minute No-D dives to 55 fsw. What is the minimum SIT between dives?



Minimum SIT-6

- Answer to question #1:

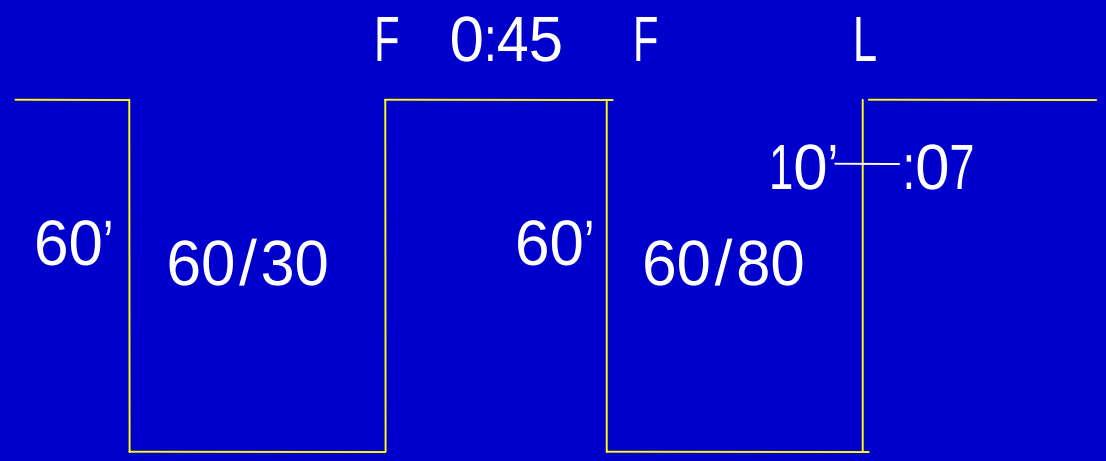


SI Special Rule-1

- Special table rule:
  - If a repetitive dive is to the same or greater depth than the previous dive and the RNT from the RNT timetable is greater than the ABT or ESDT, you may compute the repetitive dive using the ABT or ESDT time
  - Example: 60’/30 = Group F. Up to 45 min. SIT = Group F. Group F to 60’ before 46 minutes SIT = 36 minutes RNT. Use 30 minutes for RNT

SI Special Rule-2

- Example



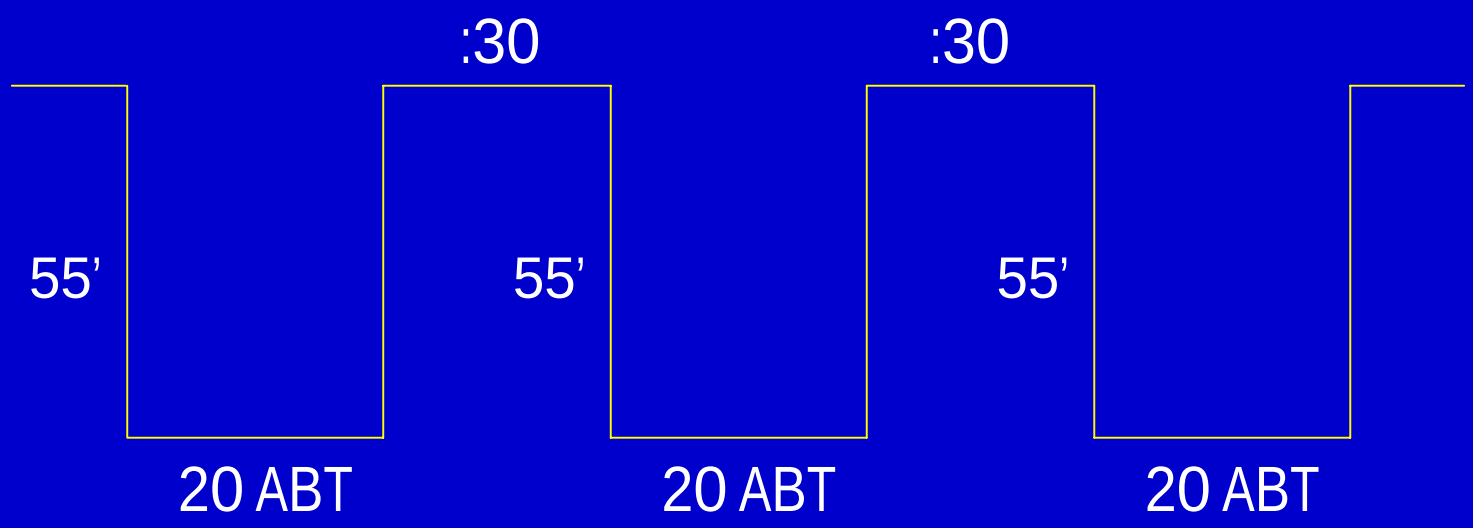
30 ABT → 30 ~~36~~ RNT

+46 ABT

76 ~~82~~ ESDT

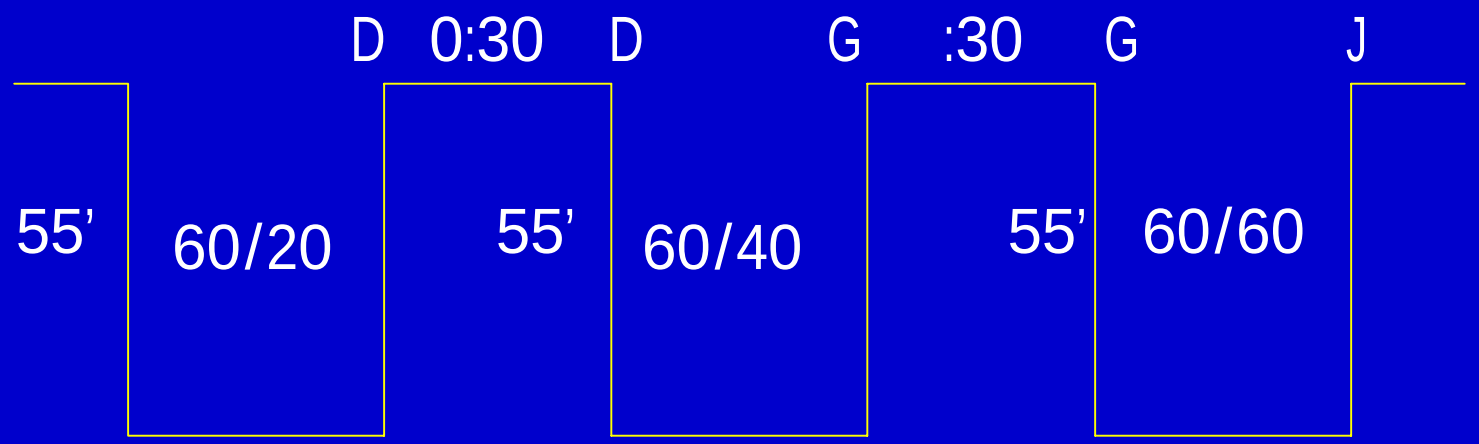
SI Special Rule-3

- Question #1: A diver wants to make the following three, 20 minute dives to the depths indicated. Can all three dives be made using the no-decompression tables?



SI Special Rule-4

- Answer question #1: Yes, using the special rule!

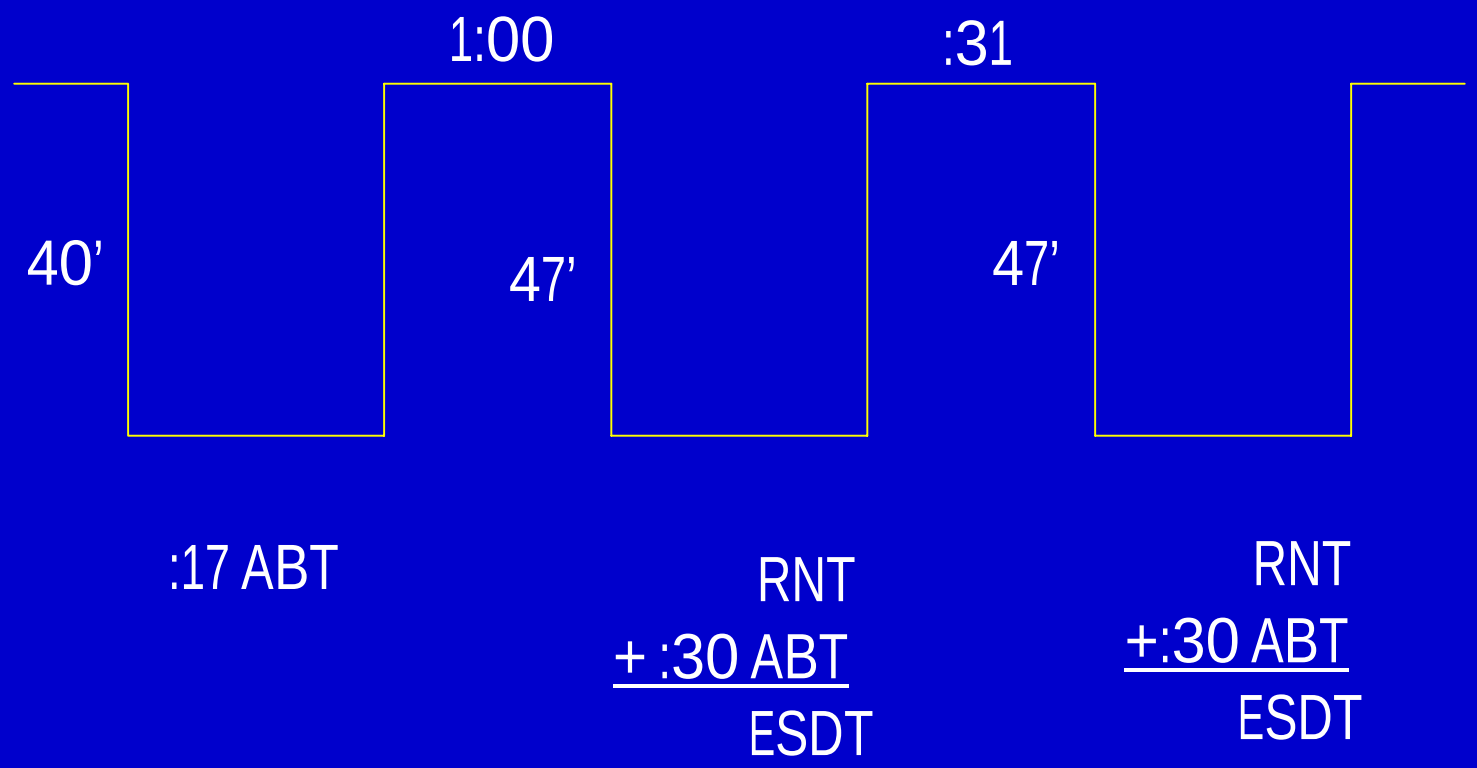


20 ABT → 20 ~~24~~ RNT
+20 ABT
40 ~~44~~ ESDT

→ 40 ~~44~~ RNT
+20 ABT
60 ~~64~~ ESDT

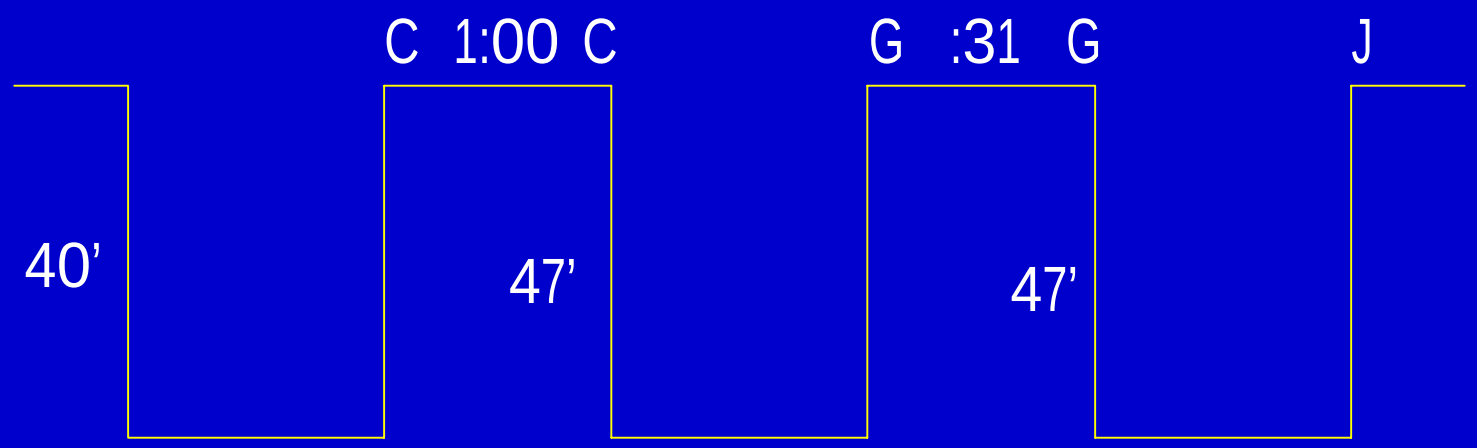
SI Special Rule-5

- Question #2 : Solve using Special Rule



SI Special Rule-6

- Answer question #2 : Using Special Rule

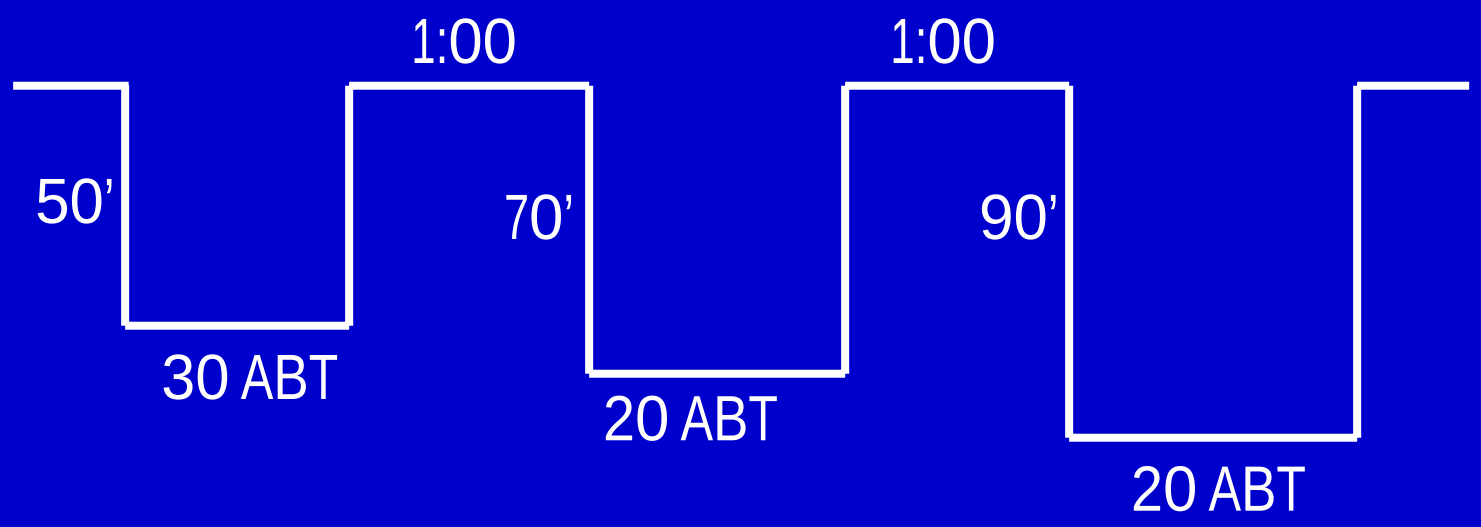


:17 ABT → :17 ~~:21~~ RNT
+ :30 ABT
:47 ESDT

:47 ~~:56~~ RNT
+:30 ABT
:77 ESDT

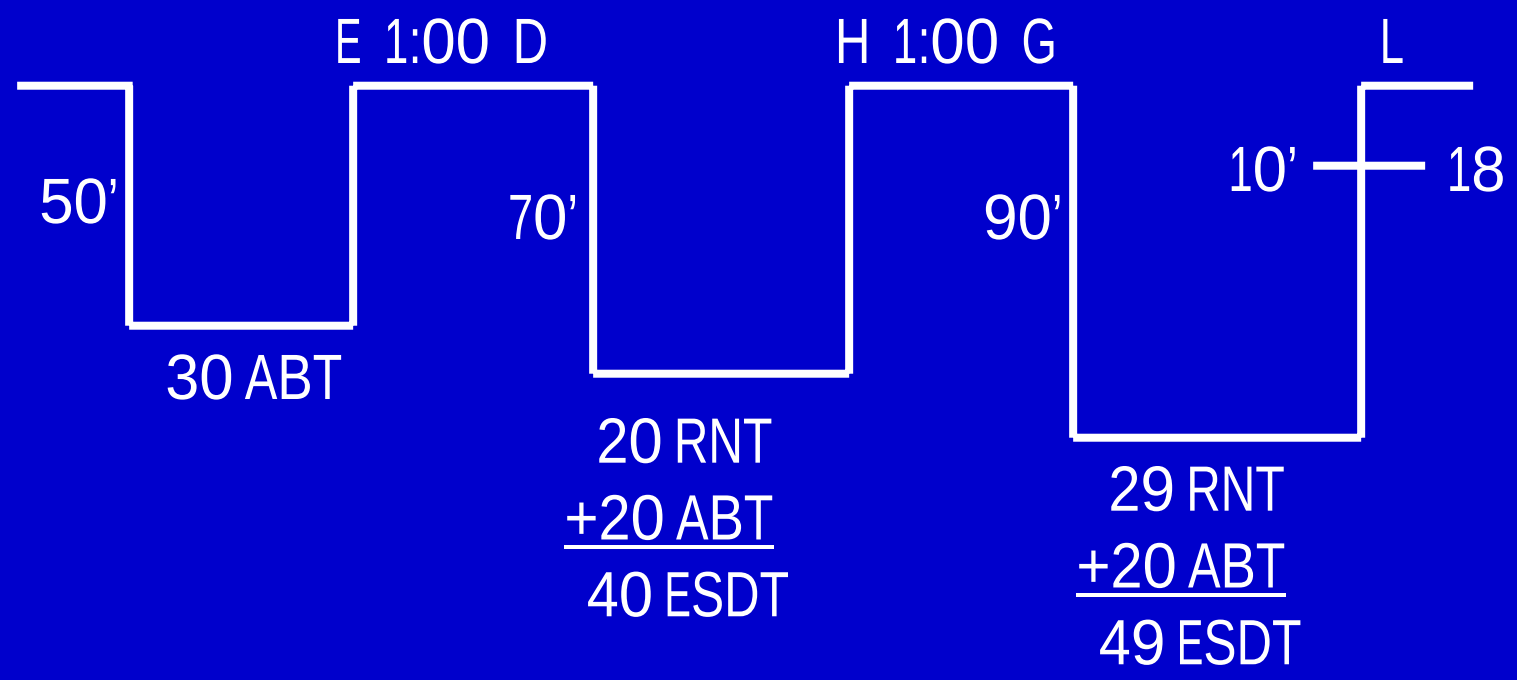
Dive Sequencing-1

- Always make the deepest dive first. Make repetitive dives progressively shallower (Example: Deeper dives <u>last)</u>



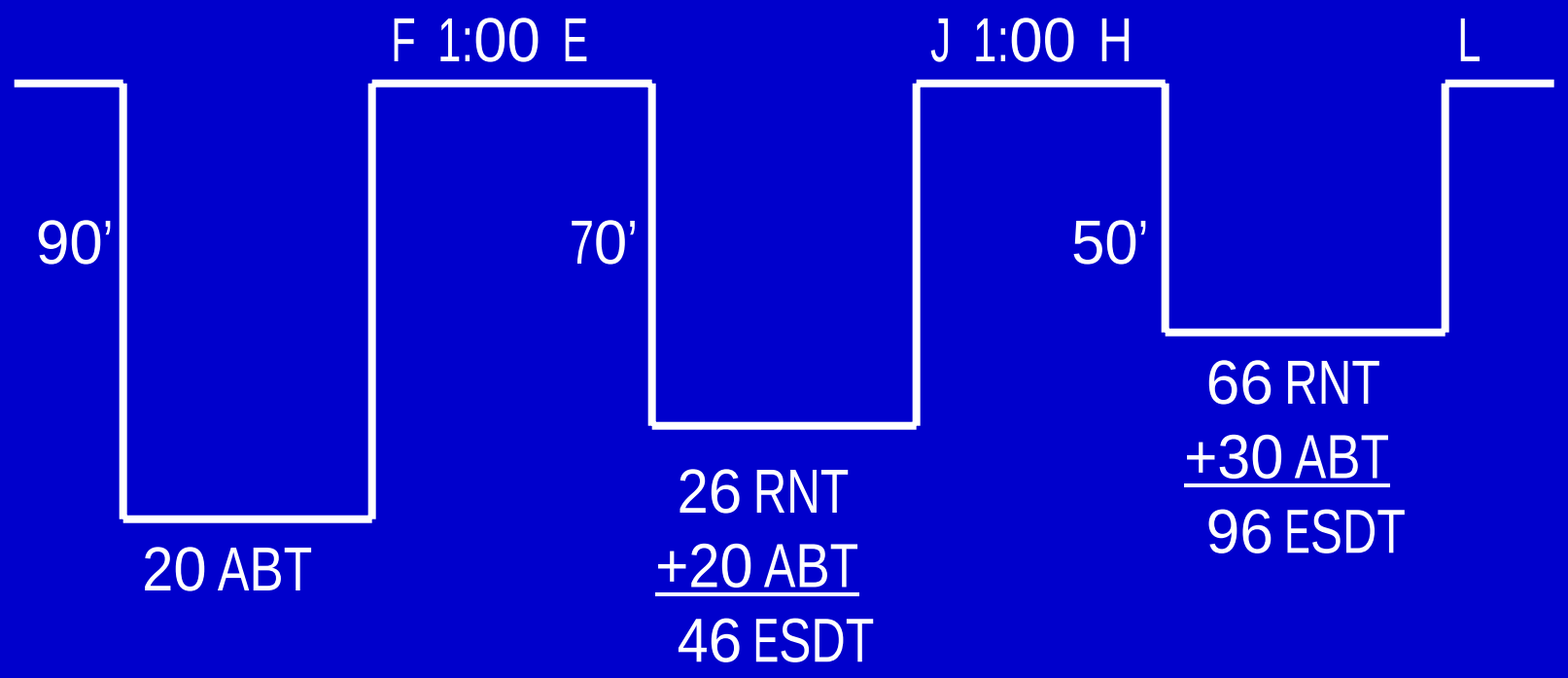
Dive Sequencing-2

- Always make the deepest dive first. Make repetitive dives progressively shallower (Example: Deeper dives last)



Dive Sequencing-3

- Example: Deeper dives first



Key Points

- Learn when to use which dive table
- Avoid exceptional exposures and decompression diving
- Ascend no faster than 30 fpm
- Use Special Rule whenever appropriate
- Always do deeper dive first whenever possible