APPENDIX 16—THE BEAUFORT WIND SCALE

NOTE: Mariners never use the term 'Gale' for winds of less than Force 8. Gale warnings are only issued and cones hoisted for winds of Force 8 upwards.

Beaufort International Number	As used by Mariners				As used by Landsmen		
	Wind	Units of Speed		Indications at sea	Wind	Unit of Speed	Indications on land
		Nautical miles per hours (knots)	Feet per second			Statute m.p.h. recorded at 33 ft. above ground level	
0	Calm	Less than 1	Less than 2	Sea mirror smooth	Calm	Less than 1	Smoke rises vertically.
1	Light air	1–3	2–5	Small wavelets like scales, no foam crests	Light air	1–3	Direction shown by smoke but not by wind vanes.
2	Light breeze	4–6	6–11	Waves short and more pronounced; crests begin to break; foam has glassy appearance—not yet white	Light breeze	4–7	Wind felt on face; leaves rustle, ordinary vanes moved by wind.
3	Gentle breeze	7–10	12–18		Gentle breeze	8–12	Leaves and small twigs in constant motion; wind extends light flag.
4	Moderate breeze	11–16	19–27	Waves are longer; many white horses	Moderate breeze	13–18	Raises dust and waste paper; small branches are moved.
5	Fresh breeze	17–21	28–36	Waves now pronounced and long; white foam crests everywhere	Fresh breeze	19–24	Small trees in leaf begin to sway; crested wavelets form on inland waters.
6	Strong breeze	22–27	37–46	Larger waves form; white foam crests more extensive	Strong breeze	25–31	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.
7	Strong wind	28–33	47–56	Sea heaps up; wind starts to blow the foam in streaks	Moderate gale (see note)	32–38	Whole trees in motion; inconvenience felt when walking against wind.
8	Fresh gale	34–40	57–68	Height of waves increases visibly; also height of crests; much foam is blown in dense streaks	Fresh gale	39–46	Breaks twigs off trees; greatly impedes progress.
9	Strong gale	41–47	69–80		Strong gale	47–54	Slight structural damage occurs (chimney pots and slates removed)
10	Whole gale	48–55	81–93	High waves with long overhanging crests; great foam patches	Whole gale	55–63	Seldom experienced inland; trees uprooted; considerable structural damage occurs.
11	Storm	56–65	94–110	Waves so high that ships within sight are hidden in the troughs; sea covered with streaky foam; air filled with spray.	Storm	64–75	Very rarely experienced; accompanied by widespread damage.
12	Hurricane	Above 65	Above 110		Hurricane	Above 75	—

APPENDIX 17—DECOMPRESSION TABLES

Introduction

The following metricated decompression tables are a necessary part of the metrication of the Diving Manual; and it is recommended that divers, whenever possible, should use them. Branches should also encourage the use of 'metricated decompression' so that the changeover to the new units is as swift as possible.

However, it is recognised that some divers already practising decompression diving may find some difficulty in effecting a smooth transition. In some circumstances to do so too quickly could even be dangerous. For this reason the metricated tables are followed by tables in the old units, but it must be stressed that future editions of this manual will include only metricated tables.

DECOMPRESSION

SECOND AND SUBSEQUENT DIVES WITHIN 12 HOURS. A diver carrying out a dive on Table 1 above the limiting line, may carry out a second and subsequent dives to depths not greater than 9 m, without time restriction or further decompression. If, however, he is required to dive again to a depth exceeding 9 m within 4 hours of a previous dive to 9 m or less, or within 12 hours of a previous dive to more than 9 m, he may do so only if he is given the stops for a combined dive. A diver who has carried out a dive below the limiting line is not to carry out a further dive within 12 hours.

STOPS FOR A COMBINED DIVE. The stops for a combined dive are obtained by adding together the duration of the first and each subsequent dive to obtain a Total Time for the combined dives. This total time and the depth of the deepest dive made are used to obtain the stops in the relevant table as for a single dive. The total time of the combined dives, except that dives carried out using pure oxygen should not be considered for calculation of a combined dive, is to be limited so that the Total Time for Decompression (column 4 or 6 as applicable to the table in use) does not exceed 75 minutes.

PROCEDURE AFTER DIVING TO 37 M OR MORE. Any man who has carried out a dive to a depth of 37 m or more for a period above the limiting line in Table 1, is to remain within 4 hours travelling time of a compression chamber for 12 hours after completing the dive.

Any man who has carried out a dive of 37 m or more for a period below the limiting line in Table 1 must remain in the immediate vicinity (i.e. on board) of a compression chamber for a period of 4 hours after completing the dive, and within 4 hours travelling time of a chamber for a further 12 hours.

TERMS USED AND METHODS AVAILABLE

1. Definition of Terms

STOPPAGE. A calculated pause at a specific depth in the diver's ascent to allow the dispersion of excess nitrogen absorbed by the body.

DECOMPRESSION. A series of stoppages and decrease in pressure to allow the diver to surface safely.

2. Methods Available. The following methods of decompression are available:

AIR DECOMPRESSION. Decompression carried out—

While the diver is in the water breathing air and being surfaced in accordance with Table 1.

SURFACE DECOMPRESSION. Decompression carried out in a compression chamber on the surface—

With the diver breathing air and being surfaced in accordance with Table 1.

THERAPEUTIC DECOMPRESSION. The recompression of a diver suffering from decompression sickness and his subsequent decompression at a slower rate than normal.

GENERAL INSTRUCTIONS. Any diver who dives to a depth and to a period covered by the decompression tables is to carry out decompression strictly in accordance with the appropriate decompression table, except on the advice of a trained diving Medical Officer or in extreme emergency.

Maximum Depth of Dive. The decompression tables in this Chapter provide for a maximum dive of 61 m, but the present maximum permissible depth of dive is 55 m.

Hard Work—Use of Decompression Tables. When a diver exerts himself unduly, his body absorbs more gas than usual and he will require a longer period of decompression to eliminate this gas. *On all occasions when hard physical work is carried out by a diver the decompression routine for the dive is to be taken as that for the next longer time increment for the dive.* Fin-swimming is rated as "Hard Physical Work".

AIR DECOMPRESSION—TABLE 1. Table 1 is used to obtain the times for the diver's stops in water.

DEPTH IN METRES (COLUMN 1). This column is entered with—
When breathing air, the actual deepest depth of dive.

Column 1 of Table 1 is divided into sections which contain increments of 3 m. The section used is that which immediately exceeds the depth obtained, but if there is any doubt about the accuracy of this figure, the next deeper section is to be used, e.g. if the depth obtained was 14 m and the accuracy of this depth was in doubt, the 18 m section would be used.

DURATION (COLUMN 2). This is the interval of time in minutes between the time of the diver leaving the surface and the time that he leaves the bottom to commence the ascent. Where the actual duration does not coincide with one of the figures in the table, the nearest higher figure is to be taken, e.g. if the actual duration was 27 min. at 43 m, the stops would be taken for 30 min. Where there is any doubt about the accuracy of the duration, the next higher figure is to be taken and in the example quoted would be 35 min.

LIMITING LINE. The part of each depth section above the limiting line is the ordinary working table where the risk of decompression sickness is negligible; diving for periods below the line carries a greater risk of decompression sickness and this risk increases with an increase of duration below the line. Intentional diving below the limiting line should only be undertaken when a compression chamber is immediately available on the site and then only when circumstances justify the risk.

RATE OF ASCENT. The rate of ascent from the bottom to the first stop, between stops, and from the last stop to surface should be as near as possible (18 m per minute), a steady rate of ascent is however more important than the precise time taken to complete it. Where the diver's exhaust bubbles can be seen the correct speed of ascent is best obtained by keeping pace with the smaller bubbles.

METHOD OF TIMING STOPS. The time for the first stop commences when the diver leaves the sea bed and the time for each subsequent stop commences when the diver leaves the preceding stop.

TABLE 1 METRICATED

RN AIR DECOMPRESSION TABLES

by kind permission of the Admiralty

(1) Depth not exceeding (Metres)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min)					(4) Total time for Decompression (min)
		15 m	12 m	9 m	6 m	3 m	
3	No limit	—	—	—	—	—	—
12	135	—	—	—	—	—	—
	165	—	—	—	—	5	5
	195	—	—	—	—	10	10
	225	—	—	—	—	15	15
	255	—	—	—	—	20	20
	330	—	—	—	—	25	25
	390	—	—	—	—	30	30
	660	—	—	—	—	35	35
	Limiting Line						
	over 660	—	—	—	—	40	40
15	85	—	—	—	—	—	—
	105	—	—	—	—	5	5
	120	—	—	—	—	10	10
	135	—	—	—	—	15	15
	145	—	—	—	—	20	20
	160	—	—	—	—	25	25
	170	—	—	—	5	25	30
	190	—	—	—	5	30	35
	Limiting Line						
	240	—	—	—	10	40	50
	360	—	—	—	30	40	70
	450	—	—	—	35	40	75
	over 450	—	—	—	35	45	80
18	60	—	—	—	—	—	—
	70	—	—	—	—	5	5
	80	—	—	—	5	5	10
	90	—	—	—	5	10	15
	100	—	—	—	5	15	20
	110	—	—	—	5	20	25
	120	—	—	—	5	25	30
	130	—	—	—	5	30	35
	Limiting Line						
	140	—	—	—	10	30	40
	150	—	—	—	10	40	50
	160	—	—	—	15	40	55
	180	—	—	—	20	40	60
	200	—	—	5	30	40	75
	255	—	—	10	35	45	90
	325	—	—	20	40	45	105
	495	—	—	35	40	45	120
	over 495	—	—	35	40	50	125
21	40	—	—	—	—	—	—
	55	—	—	—	—	5	5
	60	—	—	—	5	5	10
	70	—	—	—	5	10	15
	75	—	—	—	5	15	20
	85	—	—	—	5	20	25
	90	—	—	—	5	25	30
	95	—	—	5	5	25	35
	Limiting Line						
	105	—	—	5	5	35	45
	120	—	—	5	10	40	55
	135	—	—	5	20	45	70
	150	—	—	5	30	45	80
	165	—	—	10	30	50	90
	180	—	—	15	35	50	100
	210	—	—	25	40	50	115
	240	—	5	30	40	50	125

(1) Depth not exceeding (Metres)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 15 m	12 m	9 m	6 m	3 m	(4) Total time for Decompression (min)
24	30	—	—	—	—	—	—
	40	—	—	—	—	5	5
	50	—	—	—	5	5	10
	55	—	—	—	5	10	15
	60	—	—	—	5	15	20
	70	—	—	—	5	20	25
	75	—	—	—	5	25	30
	Limiting Line						
	80	—	—	5	5	30	40
	90	—	—	5	10	35	50
	105	—	—	5	20	40	65
	120	—	5	5	30	45	85
	140	—	5	10	35	50	100
	160	—	10	30	40	50	130
27	25	—	—	—	—	—	—
	30	—	—	—	—	5	5
	40	—	—	—	5	5	10
	45	—	—	—	5	10	15
	50	—	—	—	5	15	20
	55	—	—	—	5	20	25
	60	—	—	5	5	20	30
	65	—	—	5	5	25	35
	Limiting Line						
	70	—	—	5	10	30	45
	75	—	—	5	15	30	50
	80	—	—	5	20	35	60
	90	—	—	5	25	40	70
	100	—	—	5	30	45	80
	110	—	5	15	35	45	100
	120	—	5	20	35	50	110
	135	5	5	25	40	50	125
	150	5	10	35	40	50	140
30	20	—	—	—	—	—	—
	25	—	—	—	—	5	5
	30	—	—	—	5	5	10
	35	—	—	—	5	10	15
	40	—	—	—	5	15	20
	45	—	—	—	5	20	25
	50	—	—	5	5	20	30
	55	—	—	5	5	25	35
	Limiting Line						
	60	—	—	5	10	30	45
	70	—	—	5	20	35	60
	75	—	5	5	20	40	70
	80	—	5	5	30	40	80
	90	—	5	15	30	45	95
	105	—	5	25	35	50	115
	120	5	10	30	40	50	135

(1) Depth not exceeding (Metres)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 18 m	15 m	12 m	9 m	6 m	3 m	(4) Total time for Decompression (min)
33	17	—	—	—	—	—	—	—
	20	—	—	—	—	—	5	5
	25	—	—	—	—	5	5	10
	30	—	—	—	—	5	10	15
	35	—	—	—	—	5	15	20
	40	—	—	—	—	5	20	25
	45	—	—	—	5	5	20	30
	Limiting Line							
	50	—	—	—	5	10	25	40
	55	—	—	—	5	15	30	50
	60	—	—	—	5	20	35	60
	65	—	—	5	5	20	40	70
	70	—	—	5	10	20	45	80
	75	—	—	5	15	25	45	90
	80	—	—	5	20	30	45	100
	90	—	5	5	20	40	45	115
	100	—	5	10	25	40	50	130
	110	—	5	20	30	45	50	150
	120	5	5	25	40	45	50	170
36	14	—	—	—	—	—	—	—
	20	—	—	—	—	—	5	5
	25	—	—	—	—	5	5	10
	30	—	—	—	—	5	15	20
	35	—	—	—	—	5	20	25
	40	—	—	—	5	5	25	35
	Limiting Line							
	45	—	—	—	5	10	25	40
	50	—	—	—	5	15	30	50
	55	—	—	5	5	20	35	65
	60	—	—	5	10	25	40	80
	70	—	—	5	20	30	45	100
	75	—	5	5	20	35	45	110
	80	—	5	10	25	35	45	120
	90	—	5	15	30	40	50	140
	100	5	5	20	35	45	50	160
	110	5	15	25	40	45	50	180
	120	5	20	30	40	45	50	195
		21m	18m	15m	12m	9 m	6 m	3 m	
39	11	—	—	—	—	—	—	—	—
	15	—	—	—	—	—	—	5	5
	20	—	—	—	—	—	5	5	10
	25	—	—	—	—	—	5	10	15
	30	—	—	—	—	—	5	20	25
	35	—	—	—	—	5	5	20	30
	Limiting Line								
	40	—	—	—	—	5	10	25	40
	45	—	—	—	5	5	15	30	55
	50	—	—	—	5	5	20	35	65

(1) Depth not exceeding (Metres)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 21m	18m	15m	12m	9 m	6 m	3 m	(4) Total time for Decompression (min)
	55	—	—	—	5	10	25	40	80
	60	—	—	—	5	15	30	45	95
	70	—	—	5	10	20	30	50	115
	75	—	—	5	15	25	40	50	135
	80	—	—	5	20	30	45	50	150
	90	—	5	5	25	40	45	50	170
	100	5	5	15	30	40	45	50	190
	110	5	10	25	30	45	45	50	210
	120	5	15	30	40	45	45	50	230
	9	—	—	—	—	—	—	—	—
	10	—	—	—	—	—	—	5	5
	15	—	—	—	—	—	5	5	10
	20	—	—	—	—	—	5	10	15
	25	—	—	—	—	—	5	15	20
	30	—	—	—	—	5	5	20	30
	Limiting Line								
	35	—	—	—	—	5	10	25	40
	40	—	—	—	5	5	15	30	55
42	45	—	—	—	5	10	15	35	65
	50	—	—	—	5	15	20	40	80
	55	—	—	5	5	15	25	45	95
	60	—	—	5	5	20	35	45	110
	65	—	—	5	10	25	40	45	125
	70	—	—	5	15	30	40	50	140
	75	—	5	5	20	30	45	50	155
	80	—	5	10	20	35	45	50	165
	85	—	5	15	25	40	45	50	180
	95	5	5	20	35	40	45	50	200
	105	5	15	25	35	45	45	50	220
	115	5	20	35	40	45	45	50	240
	8	—	—	—	—	—	—	—	—
	10	—	—	—	—	—	—	5	5
	15	—	—	—	—	—	5	5	10
	20	—	—	—	—	—	5	15	20
	25	—	—	—	—	5	5	20	30
	Limiting Line								
	30	—	—	—	—	5	10	25	40
	35	—	—	—	5	5	10	30	50
	40	—	—	—	5	10	15	35	65
45	45	—	—	—	5	15	20	40	80
	50	—	—	5	5	15	25	45	95
	55	—	—	5	10	20	30	50	115
	60	—	—	5	15	25	35	50	130
	65	—	5	5	15	30	40	50	145
	70	—	5	10	20	30	45	50	160
	75	—	5	15	25	35	45	50	175
	80	5	5	20	30	40	45	50	195
	85	5	10	25	35	40	45	50	210
	90	5	15	30	40	45	45	50	230

(1) Depth not exceeding (Metres)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 24m	21m	18m	15m	12m	9 m	6 m	3 m	(4) Total time for Decompression (min)
	10		—	—	—	—	—	5	5	10
	15		—	—	—	—	—	5	10	15
	20		—	—	—	—	5	5	15	25
	25		—	—	—	—	5	10	20	35
	Limiting Line									
	30		—	—	—	5	5	10	25	45
	35		—	—	—	5	10	15	30	60
	40		—	—	—	5	10	20	40	75
48	45		—	—	5	5	15	25	45	95
	50		—	—	5	10	20	30	45	110
	55		—	—	5	15	25	40	45	130
	60		—	5	5	20	25	40	50	145
	65		—	5	10	20	35	45	50	165
	70		—	5	15	25	40	45	50	180
	75		5	5	20	30	40	45	50	195
	80		5	10	25	35	40	45	50	210
	85		5	15	30	40	45	45	50	230
	10	—	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	—	5	10	15
	20	—	—	—	—	—	5	5	15	25
	Limiting Line									
	25	—	—	—	—	—	5	10	25	40
	30	—	—	—	—	5	5	15	30	55
	35	—	—	—	—	5	10	20	35	70
51	40	—	—	—	5	5	15	25	35	85
	45	—	—	—	5	10	20	30	40	105
	50	—	—	5	5	10	25	35	45	125
	55	—	—	5	5	15	30	40	50	145
	60	—	—	5	10	20	35	45	50	165
	65	—	5	5	15	25	35	45	50	180
	70	—	5	10	15	30	40	45	50	195
	75	—	5	15	20	35	45	45	50	215
	80	5	5	20	25	40	45	45	50	235
	10	—	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	5	5	10	20
	20	—	—	—	—	—	5	10	15	30
	Limiting Line									
	25	—	—	—	—	5	5	10	25	45
	30	—	—	—	—	5	10	15	35	65
	35	—	—	—	5	5	15	20	40	85
54	40	—	—	—	5	10	20	25	45	105
	45	—	—	5	5	10	25	35	45	125
	50	—	—	5	5	15	30	40	50	145
	55	—	—	5	10	20	35	45	50	165
	60	—	5	5	15	25	40	45	50	185
	65	—	5	10	20	30	40	45	50	200
	70	—	5	15	25	35	45	45	50	220
	75	5	5	20	30	40	45	45	50	240

(1) Depth not exceeding (Metres)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 24m	21m	18m	15m	12m	9 m	6 m	3 m	(4) Total time for Decompression (min)
57	10	—	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	5	5	15	25
	20	—	—	—	—	—	5	10	20	35
	Limiting Line									
	25	—	—	—	—	5	5	15	25	50
	30	—	—	—	5	5	10	20	35	75
	35	—	—	—	5	5	15	30	45	100
	40	—	—	5	5	10	20	35	45	120
	45	—	—	5	5	15	25	40	50	140
	50	—	—	5	10	20	30	45	50	160
	55	—	5	5	15	25	35	45	50	180
	60	—	5	10	20	30	40	45	50	200
	65	5	5	10	25	35	45	45	50	220
	70	5	10	15	30	40	45	45	50	240
60	10	—	—	—	—	—	—	5	10	15
	15	—	—	—	—	—	5	5	15	25
	Limiting Line									
	20	—	—	—	—	5	5	10	20	40
	25	—	—	—	—	5	10	15	30	60
	30	—	—	—	5	5	15	20	40	85
	35	—	—	—	5	10	20	30	45	110
	40	—	—	5	5	15	25	40	45	135
	45	—	—	5	10	20	30	45	50	160
	50	—	5	5	15	25	35	45	50	180
	55	—	5	10	20	30	40	45	50	200
	60	5	5	10	25	35	45	45	50	220
	65	5	10	15	30	40	45	45	50	240

RN AIR DECOMPRESSION TABLES NON-METRICATED

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
30	No limit	—	—	—	—	—	—
40	135	—	—	—	—	—	—
	165	—	—	—	—	5	5
	195	—	—	—	—	10	10
	225	—	—	—	—	15	15
	255	—	—	—	—	20	20
	330	—	—	—	—	25	25
	390	—	—	—	—	30	30
	660	—	—	—	—	35	35
	Limiting Line						
	over 660	—	—	—	—	40	40

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
50	85	—	—	—	—	—	—
	105	—	—	—	—	5	5
	120	—	—	—	—	10	10
	135	—	—	—	—	15	15
	145	—	—	—	—	20	20
	160	—	—	—	—	25	25
	170	—	—	—	5	25	30
	190	—	—	—	5	30	35
	Limiting Line						
	240	—	—	—	10	40	50
	360	—	—	—	30	40	70
	450	—	—	—	35	40	75
	over 450	—	—	—	35	45	80
60	60	—	—	—	—	—	—
	70	—	—	—	—	5	5
	80	—	—	—	5	5	10
	90	—	—	—	5	10	15
	100	—	—	—	5	15	20
	110	—	—	—	5	20	25
	120	—	—	—	5	25	30
	130	—	—	—	5	30	35
	Limiting Line						
	140	—	—	—	10	30	40
	150	—	—	—	10	40	50
	160	—	—	—	15	40	55
	180	—	—	—	20	40	60
	200	—	—	5	30	40	75
	255	—	—	10	35	45	90
	325	—	—	20	40	45	105
	495	—	—	35	40	45	120
	over 495	—	—	35	40	50	125
70	40	—	—	—	—	—	—
	55	—	—	—	—	5	5
	60	—	—	—	5	5	10
	70	—	—	—	5	10	15
	75	—	—	—	5	15	20
	85	—	—	—	5	20	25
	90	—	—	—	5	25	30
	95	—	—	5	5	25	35
	Limiting Line						
	105	—	—	5	5	35	45
	120	—	—	5	10	40	55
	135	—	—	5	20	45	70
	150	—	—	5	30	45	80
	165	—	—	10	30	50	90
	180	—	—	15	35	50	100
	210	—	—	25	40	50	115
	240	—	5	30	40	50	125

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
80	30	—	—	—	—	—	—
	40	—	—	—	—	5	5
	50	—	—	—	5	5	10
	55	—	—	—	5	10	15
	60	—	—	—	5	15	20
	70	—	—	—	5	20	25
	75	—	—	—	5	25	30
	Limiting Line						
	80	—	—	5	5	30	40
	90	—	—	5	10	35	50
	105	—	—	5	20	40	65
	120	—	5	5	30	45	85
	140	—	5	10	35	50	100
	160	—	10	30	40	50	130
90	25	—	—	—	—	—	—
	30	—	—	—	—	5	5
	40	—	—	—	5	5	10
	45	—	—	—	5	10	15
	50	—	—	—	5	15	20
	55	—	—	—	5	20	25
	60	—	—	5	5	20	30
	65	—	—	5	5	25	35
	Limiting Line						
	70	—	—	5	10	30	45
	75	—	—	5	15	30	50
	80	—	—	5	20	35	60
	90	—	—	5	25	40	70
	100	—	—	5	30	45	80
	110	—	5	15	35	45	100
	120	—	5	20	35	50	110
	135	5	5	25	40	50	125
	150	5	10	35	40	50	140
100	20	—	—	—	—	—	—
	25	—	—	—	—	5	5
	30	—	—	—	5	5	10
	35	—	—	—	5	10	15
	40	—	—	—	5	15	20
	45	—	—	—	5	20	25
	50	—	—	5	5	20	30
	55	—	—	5	5	25	35
	Limiting Line						
	60	—	—	5	10	30	45
	70	—	—	5	20	35	60
	75	—	5	5	20	40	70
	80	—	5	5	30	40	80
	90	—	5	15	30	45	95
	105	—	5	25	35	50	115
	120	5	10	30	40	50	135

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 60 ft	50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
110	17	—	—	—	—	—	—	—
	20	—	—	—	—	—	5	5
	25	—	—	—	—	5	5	10
	30	—	—	—	—	5	10	15
	35	—	—	—	—	5	15	20
	40	—	—	—	—	5	20	25
	45	—	—	—	5	5	20	30
	Limiting Line							
	50	—	—	—	5	10	25	40
	55	—	—	—	5	15	30	50
	60	—	—	—	5	20	35	60
	65	—	—	5	5	20	40	70
	70	—	—	5	10	20	45	80
	75	—	—	5	15	25	45	90
	80	—	—	5	20	30	45	100
	90	—	5	5	20	40	45	115
	100	—	5	10	25	40	50	130
	110	—	5	20	30	45	50	150
	120	5	5	25	40	45	50	170
120	14	—	—	—	—	—	—	—
	20	—	—	—	—	—	5	5
	25	—	—	—	—	5	5	10
	30	—	—	—	—	5	15	20
	35	—	—	—	—	5	20	25
	40	—	—	—	5	5	25	35
	Limiting Line							
	45	—	—	—	5	10	25	40
	50	—	—	—	5	15	30	50
	55	—	—	5	5	20	35	65
	60	—	—	5	10	25	40	80
	70	—	—	5	20	30	45	100
	75	—	5	5	20	35	45	110
	80	—	5	10	25	35	45	120
	90	—	5	15	30	40	50	140
	100	5	5	20	35	45	50	160
	110	5	15	25	40	45	50	180
	120	5	20	30	40	45	50	195

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 70 ft	60 ft	50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
130	11	—	—	—	—	—	—	—	—
	15	—	—	—	—	—	—	5	5
	20	—	—	—	—	—	5	5	10
	25	—	—	—	—	—	5	10	15
	30	—	—	—	—	—	5	20	25
	35	—	—	—	—	5	5	20	30
	Limiting Line								
	40	—	—	—	—	5	10	25	40
	45	—	—	—	5	5	15	30	55
	50	—	—	—	5	5	20	35	65

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 70 ft	60 ft	50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
130	55	—	—	—	5	10	25	40	80
	60	—	—	—	5	15	30	45	95
	70	—	—	5	10	20	30	50	115
	75	—	—	5	15	25	40	50	135
	80	—	—	5	20	30	45	50	150
	90	—	5	5	25	40	45	50	170
	100	5	5	15	30	40	45	50	190
	110	5	10	25	30	45	45	50	210
	120	5	15	30	40	45	45	50	230
140	9	—	—	—	—	—	—	—	—
	10	—	—	—	—	—	—	5	5
	15	—	—	—	—	—	5	5	10
	20	—	—	—	—	—	5	10	15
	25	—	—	—	—	—	5	15	20
	30	—	—	—	—	5	5	20	30
	Limiting Line								
	35	—	—	—	—	5	10	25	40
	40	—	—	—	5	5	15	30	55
	45	—	—	—	5	10	15	35	65
	50	—	—	—	5	15	20	40	80
	55	—	—	5	5	15	25	45	95
	60	—	—	5	5	20	35	45	110
	65	—	—	5	10	25	40	45	125
	70	—	—	5	15	30	40	50	140
	75	—	5	5	20	30	45	50	155
	80	—	5	10	20	35	45	50	165
	85	—	5	15	25	40	45	50	180
	95	5	5	20	35	40	45	50	200
	105	5	15	25	35	45	45	50	220
	115	5	20	35	40	45	45	50	240
150	8	—	—	—	—	—	—	—	—
	10	—	—	—	—	—	—	5	5
	15	—	—	—	—	—	5	5	10
	20	—	—	—	—	—	5	15	20
	25	—	—	—	—	5	5	20	30
	Limiting Line								
	30	—	—	—	—	5	10	25	40
	35	—	—	—	5	5	10	30	50
	40	—	—	—	5	10	15	35	65
	45	—	—	—	5	15	20	40	80
	50	—	—	5	5	15	25	45	95
	55	—	—	5	10	20	30	50	115
	60	—	—	5	15	25	35	50	130
	65	—	5	5	15	30	40	50	145
	70	—	5	10	20	30	45	50	160
	75	—	5	15	25	35	45	50	175
	80	5	5	20	30	40	45	50	195
	85	5	10	25	35	40	45	50	210
	90	5	15	30	40	45	45	50	230

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 70 ft	60 ft	50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
160	10	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	5	10	15
	20	—	—	—	—	5	5	15	25
	25	—	—	—	—	5	10	20	35
	Limiting Line								
	30	—	—	—	5	5	10	25	45
	35	—	—	—	5	10	15	30	60
	40	—	—	—	5	10	20	40	75
	45	—	—	5	5	15	25	45	95
	50	—	—	5	10	20	30	45	110
	55	—	—	5	15	25	40	45	130
	60	—	5	5	20	25	40	50	145
	65	—	5	10	20	35	45	50	165
	70	—	5	15	25	40	45	50	180
	75	5	5	20	30	40	45	50	195
	80	5	10	25	35	40	45	50	210
	85	5	15	30	40	45	45	50	230
(ft)		80 ft	70 ft	60 ft	50 ft	40 ft	30 ft	20 ft	10 ft	(min)
170	10	—	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	—	5	10	15
	20	—	—	—	—	—	5	5	15	25
	Limiting Line									
	25	—	—	—	—	—	5	10	25	40
	30	—	—	—	—	5	5	15	30	55
	35	—	—	—	—	5	10	20	35	70
	40	—	—	—	5	5	15	25	35	85
	45	—	—	—	5	10	20	30	40	105
	50	—	—	5	5	10	25	35	45	125
	55	—	—	5	5	15	30	40	50	145
	60	—	—	5	10	20	35	45	50	165
	65	—	5	5	15	25	35	45	50	180
	70	—	5	10	15	30	40	45	50	195
	75	—	5	15	20	35	45	45	50	215
	80	5	5	20	25	40	45	45	50	235
180	10	—	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	5	5	10	20
	20	—	—	—	—	—	5	10	15	30
	Limiting Line									
	25	—	—	—	—	5	5	10	25	45
	30	—	—	—	—	5	10	15	35	65
	35	—	—	—	5	5	15	20	40	85
	40	—	—	—	5	10	20	25	45	105
	45	—	—	5	5	10	25	35	45	125
	50	—	—	5	5	15	30	40	50	145
	55	—	—	5	10	20	35	45	50	165
	60	—	5	5	15	25	40	45	50	185
	65	—	5	10	20	30	40	45	50	200
	70	—	5	15	25	35	45	45	50	220
	75	5	5	20	30	40	45	45	50	240

(1) Depth not exceeding (ft)	(2) Duration Time leaving surface to beginning of ascent not exceeding (min)	(3) Stoppages at different depths (min) 80 ft	70 ft	60 ft	50 ft	40 ft	30 ft	20 ft	10 ft	(4) Total time for Decompression (min)
	10	—	—	—	—	—	—	5	5	10
	15	—	—	—	—	—	5	5	15	25
	20	—	—	—	—	—	5	10	20	35
	Limiting Line									
	25	—	—	—	—	5	5	15	25	50
	30	—	—	—	5	5	10	20	35	75
190	35	—	—	—	5	5	15	30	45	100
	40	—	—	5	5	10	20	35	45	120
	45	—	—	5	5	15	25	40	50	140
	50	—	—	5	10	20	30	45	50	160
	55	—	5	5	15	25	35	45	50	180
	60	—	5	10	20	30	40	45	50	200
	65	5	5	10	25	35	45	45	50	220
	70	5	10	15	30	40	45	45	50	240
	10	—	—	—	—	—	—	5	10	15
	15	—	—	—	—	—	5	5	15	25
	Limiting Line									
	20	—	—	—	—	5	5	10	20	40
	25	—	—	—	—	5	10	15	30	60
	30	—	—	—	5	5	15	20	40	85
200	35	—	—	—	5	10	20	30	45	110
	40	—	—	5	5	15	25	40	45	135
	45	—	—	5	10	20	30	45	50	160
	50	—	5	5	15	25	35	45	50	180
	55	—	5	10	20	30	40	45	50	200
	60	5	5	10	25	35	45	45	50	220
	65	5	10	15	30	40	45	45	50	240

APPENDIX 18—METRICATION

The decision to issue the Diving Manual in metric units was taken in view of the fact that all branches of science and technology in Britain will shortly be converted to the use of a metric system of units known as SI (System International d'Unités). In this system of units the most important fundamental units are

Unit of mass — kilogramme — kg
Unit of length — metre — m
Unit of time — second — s.

There are other basic units but the ones above are the ones of most use to the diver. All other units of measurement are derived from the basic (or defined) ones.

Eg Unit of area — square metre — m^2
Unit of volume — cubic metre — m^3
Unit of velocity — metres per second — m/s.

When quoting multiples and sub multiples of the basic or derived units the following prefixes may be used :

Factor	Prefix	Symbol
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n

Eg millimetres—mm or thousandths of a metre — m^{-3}.

A better understanding of the units and their use may be facilitated if we go through the types of measurements most used by divers and see how the new units differ from the traditional (or Imperial) units.

Depth

Previously depths have been measured in feet whereas they will now be measured in metres. It is convenient to bear in mind that the pressure at the surface is exactly doubled on descending 10m.

1 m = 3.28 ft (or approx 3.3 ft)
10 m = 33 ft.

Volume

Volumes which were previously quoted in cubic feet (ft^3) should now be measured in cubic metres (m^3), but it is expected that the litre (l) which is already in common use will continue to be acceptable.

1 ft^3 = 0.028m^3 = 28.31 Note : 1m^3 = 1000 l
1 gal = 0.0046m^3 = 4.61

Mass

The SI system differentiates between mass and weight. Previously the pound was used for mass and the pound force was used for weight. For the confused, weight is the result of gravity acting on a mass. The unit of mass is the kilogramme (kg)

1 lb = 0.454 kg
1 kg = 2.21 lb (or approx 2.2 lb).

Force

The unit of force is the Newton (N) which is defined as the force required to cause a unit mass (1 kg) to move with unit acceleration (1 m/s^2)

1 lbf = 4.45N.
1 kgf = 9.81N.

Pressure

Pressure, which is the distribution of force, was previously measured in pounds-force per square inch (lbf/in^2) and should now be measured in Newtons per square metre (N/m^2). It is thought, however, that the bar