NEW AIR DIVING TABLES (1968)

PADI INSTRUCTOR 33913 Albrecht Salm
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INTRODUCTION

As a result of testing present R.N. and other air decompression tables at depths in excess of 100 feet and for bottom times in excess of 15 minutes, it has been realised that these schedules yield a higher number of bends than is desirable, in some instances over 20% in a group of healthy young divers. Selection of resistant men can reduce this value, but the only known means of selection is by diving and discovering. Such a testing procedure will bring back the higher bends rates. Further, there is considerable evidence that whereas some men are resistant for long dives at shallow depths this may not be true when the diving changes to short periods at deep depths. The desirable solution to the problem in the light of these unresolved complexities is to evolve decompression schedules which markedly reduce the overall bends incidence.

Caisson and tunnel work in compressed air has encountered similar difficulties and minor modifications of their schedules have failed to influence the situation. Accordingly entirely new decompression procedures were requested from Royal Naval Physiological Laboratory. These tables have been called 'The Blackpool Trial Tables' because they were first tested on compressed air work at a sewage outfall at Blackpool. A certificate of exemption to enable contractors legally to employ these new Tables has been granted by H.M. Factory Inspectorate, and most major compressed air work in this country, and Denmark for the past year, has been carried out using them. Their true worth, in avoiding the more serious forms of decompression sickness, will not be known for at least another year, when all the relevant experimental data will have been analysed, but results so far are very promising. Over 40,000 entries into compressed air in caissons and tunnels have been made at pressures in excess of 30 feet of sea water, including some working times in excess of 4 hours at pressures of nearly 100 feet of sea water. To date there have been no fatalities, only two cases of serious acute decompression sickness, and a low incidence of bends. Further, as regards bone necrosis, the indications are that the incidence has been lowered, provided the total time spent in compression and decompression with the new tables has not exceeded about 8 hours daily.

Thus by adopting a more conservative decompression schedule there is a good basis for believing that diving may be conducted more safely and for longer periods at depth than hitherto. Accordingly new Air Diving Tables,

as given in Table I, have been calculated on exactly the same principles as those of the Blackpool Trial Tables. Naturally, the pressure units have been changed from the pounds per square inch used by the compressed air industry to the feet of sea water employed by the divers. Further it has been decided, after consultation with the Superintendent of Diving R.N. to surface the diver from 20 feet and not 10 feet as has been standard practice up to now, one reason being that the divers often have difficulty in maintaining good depth keeping when very shallow.

A change which is not a direct calculated extension of the Blackpool Trials Tables concerns the use of oxygen for shortening the decompression time (Table 2). The prolonged breathing of pure oxygen at high pressures is harmful and there is a limit to the time at which it can be used at each depth. Recently it has been found that breathing pure oxygen during decompression can, with safety, permit a halving of the air decompression time, and thus allow the new major benefits to be achieved without the penalty of a much longer total decompression time.

These Tables must be regarded as provisional in the sense that they have not been fully tested over the range of pressures, times, water conditions, and numbers of different men that are necessary to establish their reliability. Experimental dives to establish their validity are being undertaken in the R.N., but the new tables are not yet in operational use.

Nevertheless, it is reasonably certain that the new tables will be less liable to provoke attacks of decompression sickness than those presently in use, and this view has been endorsed by the R.N. Personnel Research Committee of the Medical Research Council. In response to requests it has, therefore, been decided to make the tables available, without liability, to industrial concerns employing experienced divers, who wish to use them. It is hoped that all who use the tables will keep accurate and complete records of all dives, thus assisting in their more rapid validation.

USING THE TABLES

These Tables should only be used in association with a good general code of diving practice such as that published in the Royal Navy Diving Manual B.R. 155.

Adequate recompression facilities should be close at hand.

The maximum bottom duration given in the Tables should not be exceeded for regular diving.

For exceptional use in emergencies, if the normal maximum bottom time is exceeded, an additional decompression schedule has been given (Extreme Duration Exposure). Under no circumstances should this extreme bottom time be exceeded.

The bottom time is taken as the time between leaving the surface and leaving the bottom.

All descents to depth are to be not faster than 100 feet per minute.

All ascents from depth to the first stop are at 50 feet per minute.

All ascents between stops at 10 feet per minute.

All time spent moving from one stop to another to be included in the stop time, except for the final pressure change from 20 feet to the surface.

Table 2, with the benefits derived from pure oxygen breathing, should be used whenever possible, but the recommended breathing time of pure oxygen must not be exceeded.

APPENDIX 'A' containing the current R.N. Recompression procedures is included.

DOUBLE DIVES

A very complex system of presentation is needed for all possible combinations of 1st dive, surface interval and 2nd dive. These systems are very liable to confuse and cause errors of interpretation, and, except when performing very dissimilar depths and times in the first and second dives have no major advantage over the following simple rules.

For regular diving no more than 8 hours in any period of 24 hours must be spent under pressure, (Bottom times plus Decompression times).

If the surface interval between two dives is 2 hours or less, add the bottom times of the two dives together, and decompress for this bottom time at the deeper of the two dive depths.

If the surface interval between two dives is greater than 2 hours but less than 4 hours, add one half of the bottom time of the first dive to the bottom time of the second dive, and decompress for this bottom time, and the deeper of the two dive depths.

If the surface interval is greater than 4 hours but less than 8 hours, add one quarter of the bottom time of the first dive to the bottom time of the second dive, and decompress for this bottom time, and the deeper of the two dive depths.

If the surface interval is greater than 8 hours but less than 16 hours, add one eighth of the bottom time of the first dive to the bottom time of the second dive, and decompress for this bottom time and the deeper of the two dive depths.

After a 16 hours surface interval the diver need not take any account of the previous dive.

TABLE 1.

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTH (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'-0'	
30'	-	-	-	- NO LIMIT			-	-	-
40'	102	0.8	-	-	-	-	-	-	0.8
	120	0.4	-	-	-	-	5	2	7
	150	0.4	-	-	-	-	15	2	17
	180	0.4	-	-	-	-	30	2	32
	240	0.4	-	-	-	-	45	2	47
	420	0.4	-	-	-	-	55	2	57

EXTREME DURATION EXPOSURE

40'	UNLIMITED	0.4							
STOPPAGES - FT.			60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.			-	-	-	-	60	2	62

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP (MINS.)	STOPPAGES AT DIFFERENT DEPTHS (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'-0'	
50'	60	1.0	-	-	-	-	-	-	1.0
	75	0.6	-	-	-	-	5	2	7
	90	0.6	-	-	-	-	15	2	17
	105	0.6	-	-	-	-	30	2	32
	120	0.6	-	-	-	-	45	2	47
	135	0.6	-	-	-	-	60	2	62
	150	0.6	-	-	-	-	70	2	72
	180	0.6	-	-	-	-	80	2	82
	240	0.6	-	-	-	-	95	2	97
	370	0.6	-	-	-	-	105	2	107

EXTREME DURATION EXPOSURE

50'	UNLIMITED	0.6							
STOPPAGES - FT.			60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.			-	-	-	-	110	2	112

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AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'-0'	
60'	41	1.2	-	-	-	-	-	-	1.2
	45	0.8	-	-	-	-	5	2	7
	60	0.8	-	-	-	-	10	2	12
	65	0.8	-	-	-	-	15	2	17
	70	0.8	-	-	-	-	25	2	27
	75	0.8	-	-	-	-	30	2	32
	90	0.8	-	-	-	-	55	2	57
	105	0.8	-	-	-	-	75	2	77
	120	0.8	-	-	-	-	90	2	92
	150	0.8	-	-	-	-	110	2	112
	180	0.8	-	-	-	-	120	2	122
	240	0.8	-	-	-	-	135	2	137
	330	0.8	-	-	-	-	145	2	147

EXTREME DURATION EXPOSURE

60'	18 HRS.	0.6							
STOPPAGES - FT.			60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.			-	-	-	25	145	2	172

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP (MINS.)	STOPPAGES AT DIFFERENT DEPTHS (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'-0'	
70'	30	1.4	-	-	-	-	-	-	1.4
	40	1.0	-	-	-	-	5	2	7
	45	1.0	-	-	-	-	10	2	12
	50	0.8	-	-	-	5	15	2	22
	55	0.8	-	-	-	5	25	2	32
	60	0.8	-	-	-	5	35	2	42
	65	0.8	-	-	-	5	45	2	52
	70	0.8	-	-	-	5	55	2	62
	75	0.8	-	-	-	5	65	2	72
	80	0.8	-	-	-	5	75	2	82
	90	0.6	-	-	5	-	90	2	97
	105	0.6	-	-	5	-	110	2	117
	120	0.6	-	-	5	-	125	2	132
	150	0.6	-	-	5	-	140	2	147
	180	0.6	-	-	5	5	150	2	162
	240	0.6	-	-	5	5	160	2	172
	295	0.6	-	-	5	10	165	2	182

EXTREME DURATION EXPOSURE

70'	13 Hrs.	0.6							
STOPPAGES -		FT.	60'	50'	40'	30'	20'	20'-0'	
TIME -		MINS.	-	-	25	25	165	2	217

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'-0'	
80'	23	1.6	-	-	-	-	-	-	1.6
	30	1.2	-	-	-	-	5	2	7
	35	1.2	-	-	-	-	10	2	12
	40	1.0	-	-	-	5	15	2	22
	45	1.0	-	-	-	5	25	2	32
	50	1.0	-	-	-	5	35	2	42
	55	1.0	-	-	-	5	50	2	57
	60	1.0	-	-	-	5	65	2	72
	65	0.8	-	-	5	-	75	2	82
	70	0.8	-	-	5	-	85	2	92
	75	0.8	-	-	5	-	95	2	102
	80	0.8	-	-	5	-	105	2	112
	90	0.8	-	-	5	-	120	2	127
	105	0.8	-	-	5	-	130	2	137
	120	0.6	-	5	-	5	145	2	157
	150	0.6	-	5	-	10	155	2	172
	180	0.6	-	5	-	15	165	2	187
	240	0.6	-	5	-	25	165	2	197
	270	0.6	-	5	5	25	170	2	207

EXTREME DURATION EXPOSURE

80'	11 HRS.	0.6							
STOPPAGES -		FT.	60'	50'	40'	30'	20'	20'-0'	
TIME -		MINS.	-	25	25	30	170	2	252

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP (MINS.)	STOPPAGES AT DIFFERENT DEPTHS (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'-0'	
90'	18	1.8	-	-	-	-	-	-	1.8
	20	1.4	-	-	-	-	5	2	7
	30	1.4	-	-	-	5	5	2	12
	35	1.2	-	-	-	5	15	2	22
	40	1.2	-	-	-	5	30	2	37
	45	1.2	-	-	-	5	45	2	52
	50	1.2	-	-	-	5	60	2	67
	55	1.0	-	-	5	-	75	2	82
	60	1.0	-	-	5	-	90	2	97
	65	1.0	-	-	5	-	100	2	107
	70	1.0	-	-	5	-	110	2	117
	75	1.0	-	-	5	-	120	2	127
	80	0.8	-	5	-	-	130	2	137
	90	0.8	-	5	-	5	140	2	152
	105	0.8	-	5	-	5	155	2	167
	120	0.8	-	5	-	10	160	2	177
	150	0.6	5	-	5	20	165	2	197
	180	0.6	5	-	5	30	170	2	212
	240	0.6	5	-	10	35	170	2	222
	250	0.6	5	-	15	35	170	2	227

EXTREME DURATION EXPOSURE

90'	9 Hrs.	0.6							
STOPPAGES - FT.			60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.			25	25	30	35	170	2	287

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)							TOTAL TIME FOR DECOMPRESSION (MINS.)
			70'	60'	50'	40'	30'	20'	20'- 0'	
100'	15	2.0	-	-	-	-	-	-	-	2
	20	1.6	-	-	-	-	-	5	2	7
	25	1.4	-	-	-	-	5	5	2	12
	30	1.4	-	-	-	-	5	15	2	22
	35	1.4	-	-	-	-	5	30	2	37
	40	1.4	-	-	-	-	5	50	2	57
	45	1.2	-	-	-	5	-	70	2	77
	50	1.2	-	-	-	5	-	85	2	92
	55	1.2	-	-	-	5	-	100	2	107
	60	1.2	-	-	-	5	-	115	2	122
	75	1.0	-	-	5	-	5	140	2	152
	90	1.0	-	-	5	-	10	155	2	172
	120	0.8	-	5	-	5	20	170	2	202
	180	0.6	5	-	-	15	40	170	2	232
	230	0.6	5	-	5	25	40	170	2	247

EXTREME DURATION EXPOSURE

100'	480	0.6								
STOPPAGES	- FT.		70'	60'	50'	40'	30'	20'	20-0	
TIME	- MINS.		25	25	30	35	45	170	2	332

100'

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)									TOTAL TIME FOR DECOMPRESSION (MINS.)
			90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
120'	10	2.4	-	-	-	-	-	-	-	-	-	2.4
	15	2.0	-	-	-	-	-	-	-	10	2	12
	20	1.8	-	-	-	-	-	-	5	10	2	17
	25	1.8	-	-	-	-	-	-	5	20	2	27
	30	1.6	-	-	-	-	-	5	-	40	2	47
	35	1.6	-	-	-	-	-	5	-	65	2	72
	40	1.6	-	-	-	-	-	5	-	90	2	97
	45	1.4	-	-	-	-	5	-	5	105	2	117
	50	1.4	-	-	-	-	5	-	5	120	2	132
	55	1.4	-	-	-	-	5	-	5	135	2	147
	60	1.4	-	-	-	-	5	-	5	145	2	157
	75	1.2	-	-	-	5	-	5	15	160	2	187
	90	1.0	-	-	5	-	-	5	30	165	2	207
	120	0.8	-	5	-	-	5	20	40	170	2	242
	180	0.6	5	-	-	5	15	35	40	170	2	272
	195	0.6	5	-	-	5	20	35	45	170	2	282

EXTREME DURATION EXPOSURE

120'	420	0.6

STOPPAGES	-	FT.	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME	-	MINS.	25	25	30	35	40	50	55	200	2	462

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)											TOTAL TIME FOR DECOMPRESSION (MINS.)
			110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
140'	7.5	2.8	-	-	-	-	-	-	-	-	-	-	2	2.8
	10	2.4	-	-	-	-	-	-	-	-	-	5	2	7
	15	2.2	-	-	-	-	-	-	-	-	5	5	2	12
	20	2.2	-	-	-	-	-	-	-	-	5	15	2	22
	25	2.0	-	-	-	-	-	-	-	5	-	40	2	47
	30	2.0	-	-	-	-	-	-	-	5	-	70	2	77
	35	1.8	-	-	-	-	-	-	5	-	5	95	2	107
	40	1.8	-	-	-	-	-	-	5	-	5	120	2	132
	45	1.6	-	-	-	-	-	5	-	-	5	135	2	147
	50	1.6	-	-	-	-	-	5	-	-	10	145	2	162
	55	1.6	-	-	-	-	-	5	-	5	10	155	2	177
	60	1.4	-	-	-	-	5	-	-	5	15	165	2	192
	75	1.4	-	-	-	-	5	-	5	10	30	170	2	222
	90	1.2	-	-	-	5	-	-	5	20	40	170	2	242
	120	1.0	-	-	5	-	-	5	20	30	45	170	2	277
	165	0.6	5	-	-	-	5	20	30	35	45	170	2	312

EXTREME DURATION EXPOSURE

140'	360	0.6

STOPPAGES - FT.	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.	25	25	30	35	40	50	55	60	70	240	2	632

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)											TOTAL TIME FOR DECOMPRESSION (MINS.)
			110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
160'	5.5	3.2	-	-	-	-	-	-	-	-	-	-	-	3.2
	10	2.6	-	-	-	-	-	-	-	-	5	5	2	12
	15	2.6	-	-	-	-	-	-	-	-	5	10	2	17
	20	2.4	-	-	-	-	-	-	-	5	-	30	2	37
	25	2.2	-	-	-	-	-	-	5	-	5	65	2	77
	30	2.2	-	-	-	-	-	-	5	-	5	100	2	112
	35	2.0	-	-	-	-	-	5	-	-	5	125	2	137
	40	2.0	-	-	-	-	-	5	-	5	5	140	2	157
	45	1.8	-	-	-	-	5	-	-	5	10	155	2	177
	50	1.8	-	-	-	-	5	-	-	5	15	165	2	192
	55	1.8	-	-	-	-	5	-	5	5	20	170	2	207
	60	1.6	-	-	-	5	-	-	5	10	25	170	2	217
	75	1.4	-	-	5	-	-	5	5	20	40	170	2	247
	90	1.2	-	5	-	-	-	5	15	35	40	170	2	272
	120	1.0	5	-	-	-	5	20	25	35	45	170	2	307
	130	1.0	5	-	-	5	15	25	30	35	50	180	2	347

EXTREME DURATION EXPOSURE

160'	300	0.6													
STOPPAGES - FT.		130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.		25	25	30	35	40	50	55	60	70	75	80	275	2	822

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AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)													TOTAL TIME FOR DECOMPRESSION (MINS.)
			130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
180'	4.5	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6
	10	3.0	-	-	-	-	-	-	-	-	-	-	5	5	2	12
	15	2.8	-	-	-	-	-	-	-	-	-	5	-	20	2	27
	20	2.6	-	-	-	-	-	-	-	-	5	-	5	50	2	62
	25	2.6	-	-	-	-	-	-	-	-	5	-	5	90	2	102
	30	2.4	-	-	-	-	-	-	-	5	-	5	-	125	2	137
	35	2.4	-	-	-	-	-	-	-	5	-	5	5	145	2	162
	40	2.2	-	-	-	-	-	-	5	-	-	5	15	155	2	182
	45	2.0	-	-	-	-	-	5	-	-	5	5	20	165	2	202
	50	2.0	-	-	-	-	-	5	-	-	5	10	25	170	2	217
	55	1.8	-	-	-	-	5	-	-	-	5	15	35	170	2	232
	60	1.8	-	-	-	-	5	-	-	5	5	20	35	170	2	242
	75	1.6	-	-	-	5	-	-	5	5	15	30	45	180	2	287
	90	1.4	-	-	5	-	-	-	5	15	25	35	50	190	2	327
	105	1.2	-	5	-	-	-	5	10	25	30	35	55	205	2	372

EXTREME DURATION EXPOSURE

180'	240	0.6

STOPPAGES - FT.	150'	140'	130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.	15	20	25	30	35	45	50	55	60	70	75	80	90	295	2	947

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP (MINS.)	STOPPAGES AT DIFFERENT DEPTHS (MINS.)												TOTAL TIME FOR DECOMPRESSION (MINS.)
			130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
200'	3.5	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0
	10	3.4	-	-	-	-	-	-	-	-	-	-	5	10	2	17
	15	3.2	-	-	-	-	-	-	-	-	-	5	-	30	2	37
	20	3.0	-	-	-	-	-	-	-	-	5	-	5	70	2	82
	25	2.8	-	-	-	-	-	-	-	5	-	5	-	115	2	127
	30	2.6	-	-	-	-	-	-	5	-	-	5	5	140	2	157
	35	2.6	-	-	-	-	-	-	5	-	5	-	15	155	2	182
	40	2.4	-	-	-	-	-	5	-	-	5	5	20	165	2	202
	45	2.2	-	-	-	-	5	-	-	5	-	10	30	170	2	222
	50	2.2	-	-	-	-	5	-	-	5	5	15	35	170	2	237
	55	2.0	-	-	-	5	-	-	-	5	10	20	40	175	2	257
	60	2.0	-	-	-	5	-	-	5	5	10	35	45	180	2	287
	75	1.6	-	5	-	-	-	5	5	10	25	40	50	200	2	342
	80	1.6	-	5	-	-	-	5	5	20	25	45	55	205	2	367

EXTREME DURATION EXPOSURE

200'	180	0.6

STOPPAGES - FT.	170'	160'	150'	140'	130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.	5	10	15	25	30	35	40	50	55	60	70	75	80	85	95	315	2	1047

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)												TOTAL TIME FOR DECOMPRESSION (MINS.)
			130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
220'	3	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4
	10	3.6	-	-	-	-	-	-	-	-	-	5	-	10	2	17
	15	3.4	-	-	-	-	-	-	-	-	5	-	5	40	2	52
	20	3.2	-	-	-	-	-	-	-	5	-	40	-	95	2	107
	25	3.0	-	-	-	-	-	-	5	-	-	5	5	130	2	147
	30	2.8	-	-	-	-	-	5	-	-	5	-	15	150	2	177
	35	2.8	-	-	-	-	-	5	-	-	5	5	20	165	2	202
	40	2.6	-	-	-	-	5	-	-	5	-	15	30	170	2	227
	45	2.4	-	-	-	5	-	-	-	5	5	20	35	180	2	252
	50	2.4	-	-	-	5	-	-	5	-	15	25	40	190	2	282
	55	2.2	-	-	5	-	-	-	5	5	15	30	45	200	2	307
	60	2.0	-	5	-	-	-	5	-	10	20	35	50	210	2	337
	70	1.8	5	-	-	-	5	5	10	20	30	35	60	235	2	407

EXTREME DURATION EXPOSURE

220'	120	1.0

STOPPAGES - FT.	170'	160'	150'	140'	130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.	5	5	15	20	25	35	40	45	50	60	65	75	80	85	90	310	2	1007

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP (MINS.)	STOPPAGES AT DIFFERENT DEPTHS (MINS.)												TOTAL TIME FOR DECOMPRESSION (MINS.)
			130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
240'	2.5	4.8	-	-	-	-	-	-	-	-	-	-	-	-	2	4.8
	10	4.0	-	-	-	-	-	-	-	-	-	5	-	15	2	22
	15	3.8	-	-	-	-	-	-	-	-	5	-	5	55	2	67
	20	3.4	-	-	-	-	-	-	5	-	-	5	-	110	2	122
	25	3.4	-	-	-	-	-	-	5	-	5	-	10	140	2	162
	30	3.2	-	-	-	-	-	5	-	-	5	5	15	160	2	192
	35	3.0	-	-	-	-	5	-	-	5	-	15	25	170	2	222
	40	2.8	-	-	-	5	-	-	5	-	5	20	35	185	2	257
	45	2.6	-	-	5	-	-	-	5	5	10	25	40	195	2	287
	60	2.2	5	-	-	-	5	-	10	15	25	40	55	230	2	387

EXTREME DURATION EXPOSURE

240'	90	1.6

STOPPAGES - FT.	160'	150'	140'	130'	120'	110'	100'	90'	80'	70'	60'	50'	40'	30'	20'	20'-0'	
TIME - MINS.	5	15	20	25	30	40	45	50	55	65	70	75	80	90	300	2	967

240'

TABLE I

AIR DECOMPRESSION : SURFACING FROM 20'

DEPTH NOT EXCEEDING (FT.)	DURATION TIME OF LEAVING SURFACE TO BEGINNING OF ASCENT (MINS.)	TIME TO FIRST STOP MINS.	STOPPAGES AT DIFFERENT DEPTHS (MINS.)						TOTAL TIME FOR DECOMPRESSION (MINS.)
			60'	50'	40'	30'	20'	20'- 0'	
250'	10	4.0	-	5	-	-	20	2	27
	15	3.8	5	-	-	5	65	2	77