DIVING INCIDENTS REPORT

Chris Allen - NDC Incidents Adviser

"Good morning everyone.

As has become customary over the last few years I would like to begin my review of the 1991 incident statistics by considering briefly the background against which the information has been collected. This is important when we are making comparisons with previous years' performances and trying to highlight trends because variations in the number of dives carried out or in the quality of data capture can have a big effect on the statistics.

For example, a long period of very good weather, with lots of sunshine and calm sea conditions, inevitably leads to an increased amount of diving. Not only does this mean that numerically more incidents are likely to occur, but it can also affect the statistics in more subtle ways, with fewer boating/surface incidents because of the good conditions, but more decompression sickness cases due to increased amounts of deeper diving and repeat diving. Similarly any change in the effectiveness of our data capture for whatever reason, can bring about large swings in the statistics which are open to misinterpretation.

In actual fact, 1991 has turned out to be a fairly normal year, with average weather conditions and typical levels of diving being carried out. We know from our surveys and membership data that both the number of divers in the UK and the number of dives they are doing has increased over the last few years, something you will hear more about later in the weekend from Deric Ellerby. My estimate is that sports divers in the UK performed more than 1.5 million dives in 1991.

As far as our data collection is concerned, those of you who heard or read my 1990 report will know that last year we had a shortfall in our collection of data on decompression sickness cases. This year we have received good data from the Institute of Naval Medicine, which means the figures are higher but more accurate. More of that later when we look in detail at the decompression sickness cases.

Before we turn to the statistics themselves I would also like to give you my standard reminder. Please keep in mind that whilst the purpose of this presentation is to concentrate on those dives in which something went wrong, these are the minority. The vast majority of dives, in fact some 99.9%, pass off safely and successfully. However, as you will hear, many of the small number of accidents which did occur could and should have been prevented and it is to try and highlight the lessons to be learnt from those incidents that we are looking at them closely today.

Let's look first at the general pattern of incidents. All of the charts and figures for this talk are as listed in the 1991 Incident Report.

Figure 1 shows the breakdown of incidents by type. In 1991 a total of 199 incident reports were received and analysed, this compares with 207 reports in 1990 and 244 in 1989. Breaking these down into their categories shows that 17 were fatalities - an increase from 9 last year, 100 were decompression sickness cases - an apparent increase from 80 last year, and 29 were boating/surface - compared with 34 reports in that category in 1990.

The monthly breakdown of incidents is shown by *Figure 5* and this shows a typical seasonal pattern with most incidents occurring in May through to August. May, with two bank holiday weekends, is always well up in the statistics and this year takes the top spot by some distance.

If we look next at the depth range of incident occurrence (*Figure 6*) we again see a fairly typical pattern. A significant number of incidents occur at the surface. Underwater most incidents occur in the 21-30 metre range, probably reflecting the fact that more dives are done in this depth range. From the analysis of individual incident reports there continue to be signs that many divers underestimate the risks and overestimate their own ability to cope with 40m+ dives. Such dives are the province of the experienced diver who is fit, well prepared and properly organised because the margin for error is so much less at such depths.

Having looked at breakdown by type, month and depth, let's now look at breakdown by qualification. *Figure 9* shows the

details of the 97 divers whose qualifications were accurately known. Once more the pattern is pretty typical and probably reflects the numbers of divers in each grade. No trainees were involved in incidents in 1991 otherwise every level of qualification was represented.

The final illustration in this part of my presentation is *Figure 12*, which shows Divers' Use of Emergency Services in 1991. This shows that there were rather fewer incidents involving the Coast guard, helicopters and lifeboats than in 1990. There were in fact 42 Helicopter rescues of divers this year.

Hopefully that gives you a feel for the overall pattern of incidents in 1991. I would now like to look in more detail at the individual categories.

As I said earlier we have recorded 17 fatalities this year, up from 9 last year. This is disappointing and the contrast is much sharper because last year's figures were some of the best for many years. Of those 17 fatalities, 8 were BSAC members. If we compare the number of fatalities with our membership figures (Fig. 4) we will see that BSAC membership has increased steadily over the last 3 years achieving a growth of around 30%. Unfortunately the downward trend in the number of fatal accidents over the same period has not been maintained this year. Although we should not try to analyse this too closely as we are talking about variations in very small numbers, it is still a disappointing total.

Looking at the circumstances of those Fatal Accidents we find that separation was a factor in 6 cases and 2 others involved solo dives, something which underlines the crucial importance of the buddy system. A particularly worrying aspect for me this year is that 4 fatalities occurred on training courses or events organised by commercially operated dive schools. Indeed, two divers died on their first open water dives as part of an Open Water Diver Course. Obviously this is not good for the sports' image and I take no satisfaction from the fact that none of those cases involved the BSAC. We have over many years established a pattern of responsible self regulation within our sport, and this has produced good standards of safety. I would hate this position to be undermined in front of the authorities, by the activities of other organisations with much less experience of the UK diving scene.

When we examine Decompression Sickness cases (Fig. 10) we see first of all that there has been an apparent increase from the 80 cases reported in 1990 to 100 cases in 1991. This is not in fact a true increase at all. As I have already mentioned, last year the Institute of Naval Medicine were unable to supply me with any data in time for inclusion in my report. This year, for the first time ever, they have been operating a central database of decompression sickness cases to which all treatment centres have been encouraged to contribute. This has made it easier for them to supply us with much better information and, although the system is not yet perfect, we are certainly as close to 100% data capture as we have ever been. I am grateful to them for their assistance in supplying us with this information.

Those of you who saw last year's incidents presentation may recall that, recognising this shortfall in data, I predicted that the true number of cases of DCS in 1990 was probably nearer 100. This year's figures have confirmed that was an accurate estimate. More importantly, both years' figures together demonstrate beyond doubt, that the peak figure of 137 cases recorded in 1989 was indeed due to the increased amounts of diving being done in an exceptional summer and was not part of a continuing upward trend as some claimed. 100 cases of DCS gives us an incidence rate of around 1 case in every 15,000 dives. Rather better than would be classically predicted. This risk is however not evenly distributed. The risk increases for deep dives and for repeat dives.

When we look at the breakdown of the cases of DCS we find a large proportion (65% this year) occur on dives below 30m. Some 43% occur within established decompression tables and we know from previous years' information and work carried out by our Medical Adviser, Dr Peter Wilmshurst, that there is often a medical explanation for these cases.

As I have highlighted before, problems on decompression dives such as missed stops or running short of air, often occur as a result of inadequate planning and this is still an area where improvements can be made, particularly in the provision of backup equipment and procedures, a theme I would like to develop further later in my presentation.

This is also reflected when we examine the Boating/Surface incidents. Cases of lost divers always tend to attract publicity and media attention and that was certainly the case this year. Although the actual number of cases was not particularly high, there were some dramatic examples. Such cases inevitably impose a significant demand on available search and rescue resources and do nothing at all to enhance the reputation of the sport.

The most extreme example involved two divers who were reported missing in the Farne Islands. An extensive air and sea search was mounted, involving helicopters, lifeboats, Coast guard units and other vessels. After seven hours of searching the search was suspended overnight and resumed at first light the following day. The two divers, who were adrift for more than 23 hours, were not located until they managed to get themselves ashore several miles down the coast where they made contact with the Coast guard.

Another pair of divers, who surfaced earlier than expected, were unable to attract the attention of their cover boat even though it was only about 100 metres away. They drifted away quickly on the surface and in spite of an extensive air and sea search and the fact that they fired several "mini flares", they were not picked up for more than 6 hours. They were eventually found well outside the designated search area.

When looking at the location of such incidents, the Skomer area seems to have experienced more that its fair share this year and it seems clear that many visiting divers to this area are seriously underestimating the local tidal conditions. It was there, for example, that another pair of divers also drifted on the surface for 6 hours, during which time they covered a distance of more than 10 miles, after they had surfaced out of sight of their cover boat. Surface Marker Buoys had not been used because the water was calm and there was no obvious current. However, the divers encountered strong currents towards the end of their dive and these swept them rapidly out to sea when they surfaced.

The remedy for the majority of such cases is obvious - use a Surface Marker Buoy. Although you will hear people complain about the inconvenience of using an SMB, this usually means that they either haven't thought their equipment through adequately, or have simply not mastered the required skills. Providing a proper reel and buoy arrangement is used, there should be little or no effect on the diver. Unless you are diving in a very localised area such as on a wreck, or there is a particular risk of the buoy line becoming entangled, then the benefits to the cover boat in knowing exactly where the divers are, far outweigh any slight inconvenience to the divers themselves.

Also in the Boating/Surface category is a report involving a party of divers on a hard boat who all entered the water together because the tide was increasing too rapidly to allow time for two "shifts". The very last diver in the party became entangled with the ladder as he jumped in and, unseen by the boat's skipper, was then dragged along underwater as the boat moved off. The force of the wash ripped his mask and mouthpiece off and he very nearly drowned. When the skipper's attention was drawn to the problem he was unable to do anything on his own. Fortunately two divers from another party nearby came to the rescue and were

able to get the casualty free and lift him back into the boat where he was successfully resuscitated. The importance of maintaining sufficient cover in the boat to react to an emergency and, if necessary, to effect a rescue, cannot be over emphasised.

Still on the surface, an unusual incident occurred to a branch carrying out some boat handling instruction in a rigid hulled inflatable. Some time after they had set off the boat was observed returning to the beach in a somewhat erratic fashion with no-one on board. One of the students had made a sudden turn, ejecting all the occupants out of the boat, which had then continued on its own, returning ashore just a short distance from the launch site. Happily all those involved were picked up safely.

The BSAC Incident Reporting Scheme receives reports, not just from the UK, but also from our branches overseas. Reports of shark attack are fortunately extremely rare, but this year two BSAC members in Kenya suffered serious injury when they were attacked by a shark whilst performing a circular search in low visibility. Neither of them saw the shark before they were hit and both sustained serious leg injuries. Unfortunately one subsequently had to have his leg amputated below the knee.

In similar vein, but on a much lighter note, I have received details of a diver in Australia, not a BSAC member I hasten to add, who was attacked by a large moray eel. It appears that this intrepid fellow was taking pictures of the moray and decided to return to the boat for some food with which to tempt the eel into a better position. He opted for a piece of chicken loaf which he thought the eel would find tasty and, because he had his hands full of camera equipment, tucked it inside the neck of his long john. Descending again he relocated the eel and prepared to set up his picture, whereupon, in true Hollywood fashion, it shot out of its hole and grabbed him by the throat. Although he suffered lacerations, his injuries were fortunately not serious.

Nearer to home, two divers in the UK also had a nasty shock when they were attacked by a four foot long conger eel whilst performing a lifting exercise. The eel seized one diver's octopus mouthpiece and refused to let go, shaking it vigorously. Both divers were bruised by the thrashing eel which eventually had to be stabbed to make it let go. It is thought that the eel may have been attracted by the day-glo green colour of the mouthpiece, a colour which is apparently favoured by the manufacturers of artificial conger bait. The only advice I can offer is that if yours happens to be day-glo green, be careful where you dangle it!

Amongst the incident reports involving equipment are two which emphasise the need not to underestimate the risk from handling compressed air cylinders. We tend to take them for granted because they rarely give problems, but the consequences of failure can be dramatic. In the early part of this year, a diver's pony cylinder exploded whilst being filled, causing severe damage to the compressor room and injuring three people. It had last been tested four years previously and on examination was found to be severely corroded.

The second incident involved a cylinder which was overcharged at a dive shop. The cylinder had a working pressure of just 135 bars. It was charged to 240 bars by a fellow customer who was "helping out". The cylinder's test pressure was only 180 bars and a serious accident could easily have occurred. The lesson is clear, cylinders should only be filled by competent operators who ensure that they only fill cylinders which have a current test certificate.

Still with equipment, an incident occurred when a diver lost his knife overboard from the inflatable during the trip to the dive site. It didn't go far though because it was attached by one of those curly telephone cords and it bounced along behind the boat, puncturing one of the tubes before re-entering the boat and striking two of the divers. Although no serious injury or damage resulted, there have been a number of incidents over the years caused by these cords and they are of dubious benefit.

When analysing Incident Reports I am often struck by the number of times that an incident has occurred, or the consequences of an incident have been made more severe, by the absence of suitable backup equipment or an appropriate contingency plan. Often in such cases the original planning and conduct of the dive was perfectly acceptable, but when something went wrong, usually only a small thing, there was inadequate provision to deal with the situation.

Another lost diver case illustrates just how easily things can go wrong when something unexpected happens. A pair of divers ascending up the shot line after a dive to 48 metres found that the shot rope buoy had been pulled under, and had collapsed and sunk to 25 metres. Consequently they were forced to perform their required decompression stops in mid-water and whilst doing so, drifted a significant distance in the tide. When they surfaced they were unable to attract the attention of their cover boat and drifted away. A large scale search involving 4 lifeboats and two helicopters ensued and they were eventually picked up about 3½ hours later. In this case, for instance, if the divers had been carrying a delayed surface marker buoy, they would have been able to perform their correct decompression stops, whilst at the same time indicating to their surface cover exactly where they were. Once on the surface, had they had an alternative means of attracting attention such as a flag or a flare, it might have made all the difference.

Planning for such contingencies is really only an extension of good dive planning practice and something which experienced divers do, almost without thinking. A simple way to test whether your equipment and dive plan can cope with an unexpected problem is to pose a few "What if" questions. For example : What if I surface a long way from the cover boat - how will I attract their attention? What if I do not find my way back to the shot rope for some reason, how will I control my decompression stops effectively? What if we need to recall the divers/contact the Coast guard/administer oxygen/change a spark plug - do we have the necessary equipment?

Ideally every diver should have a secondary air supply, own an SMB and carry a backup means of attracting attention on the surface. Every dive boat should have a VHF radio and carry oxygen. On every planned decompression stop dive spare air should be available and each pair should carry a delayed SMB.

Many of those directly involved in this year's incidents have learnt their lessons the hard way. They now know how to prevent them recurring or how to deal more effectively with the situation should it arise again. By studying the full 1991 Diving Incidents Report, a copy of which is in every delegate folder as usual, hopefully the rest of us can also learn from their experiences and implement the solutions - before we encounter the problems.

This has been my fourth year as BSAC Incidents Adviser and it is also to be my last as I feel that in the interests of developing the scheme it is time to let someone else bring some different views and perhaps a fresh approach to it. In closing I would like to thank everyone who has helped and supported me during that time, in particular Robin Eccles at BSAC HQ, Roly Gough-Allen and the staff at DDRC, Jim Sykes at the Institute of Naval Medicine and the various Coast guard Liaison Officers I have worked with.

Thank you all for your attention this morning. Safe Diving!"

APPENDIX A - Diving Incidents Report

The majority of statistical information given in this Report is given in graphical form. Relevant statistics, not shown in the form of a graph are appended to the end of the booklet.

Incidents have been grouped according to type under eight categories:

Fatalities, Decompression Sickness, Boating/Surface Incidents, Ascents, Technique, Equipment, Illness, and a **Miscellaneous** section dealing with False Alarms, Ear Problems, etc.

Within each category the incidents are listed in the numerical order of their allocated reference number. The nature of many diving incidents, of course, involves a situation with more than one cause. For example, a bend may have been the result of a buoyant ascent which may, in turn, have been the result of a regulator malfunction. In such cases the incident will have been classified under the most appropriate category e.g. 'Decompression Sickness'.

Wherever possible each report is identified by date as well as by reference number. The depth is given in the report only where relevant, as is other information such as the qualification of the diver, location etc. The letter code at the end of each entry relates only to membership:

B=BSAC Member I=Member of Independent Club or Non-BSAC Diver U=Membership Unknown.

Although most of the reports involve BSAC Members, it should be remembered that with some 44,000 members, the BSAC has within its membership the overwhelming majority of sports divers in the U.K.

FATALITIES/INJURIES/ ILLNESS		1987	1988	1989	1990	1991
01	Fatality	8	16	12	9	17
02	Embolism	6	7	12	9	5
03	Decompression Sickness	69	89	137	80	100
04	Injury caused	9	13	8	12	14
05	Illness involved	5	9	7	3	4
06	Ear problems/damage	4	8	8	5	6
07	Hypothermia	4	2	0	1	2
08	Unconsciousness	5	10	7	12	7
09	Resuscitation	5	7	6	4	8
10	Breathlessness	6	6	11	5	1
11	Narcosis	4	2	2	1	2
TECHNIQUE						
12	Aborted dive	7	9	15	14	31
13	Assisted ascent	8	7	16	17	13
14	Buoyant ascent	12	12	19	12	22
15	Free Ascent	1	6	2	2	7
16	Other Ascent	1	1	4	5	1
17	Lost diver(s)	34	24	15	21	15
18	Buoyancy/weight	8	8	8	10	9
19	Carelessness	35	13	11	16	29
20	Ignorance	24	4	4	8	8
21	Disregard of rules	28	13	10	7	10
22	Malice	0	2	1	0	1
23	Out of air	8	12	35	17	19
24	Pre-dive check	2	4	2	4	1
25	Rough water	9	10	6	6	2
26	Bad seamanship	4	10	4	9	11
27	Good seamanship	0	1	0	0	0
28	Good practice	7	5	3	0	5
29	Separation	6	14	6	5	13
30	Trio diving	3	9	9	8	8
31	Training drill	9	5	7	8	6
32	Training inadequate	5	4	5	2	6
33	Sharing involved	6	7	13	14	10
34	Deep dive (30m+)	51	54	40	41	41
35	Low U.W. vis.	3	2	3	2	7
36	Low surface vis.	1	0	0	1	1
37	False alarm	2	2	2	1	1
38	Solo dive	6	4	0	3	3
39	Divers underwater	109	37	50	59	56
40	Divers on surface	44	54	35	46	38
41	Nets	1	1	1	2	0
42	Cold water	7	4	8	2	9

EQUIPMENT		1987	1988	1989	1990	1991
43	Boat problems	3	8	2	5	8
44	Motor problems	4	7	0	7	5
45	Regulator performance	7	7	11	9	7
46	Equipment faulty	19	12	17	12	9
47	Equipment fitting	6	7	7	5	4
48	Equipment use	6	7	3	3	7
49	Equipment wear	2	0	0	3	2
50	Equipment inadequate	5	3	2	2	1
51	Ropes	5	1	2	1	4
52	SMB Absent	7	0	3	1	3
53	SMB inadequate	3	2	1	1	1
54	SMB contributed	6	5	4	1	4
55	Propellor	0	2	2	1	5
56	ABLJ/BC/Stabjacket	3	0	4	1	5
57	Dry suit	4	8	5	5	2
CHANCE						
58	Fire/explosion	3	0	0	1	1
59	Foul air	1	0	0	5	1
RESCUE SERVICES						
60	Ambulance	26	30	20	26	29
61	Police	15	19	10	14	16
62	Helicopter	42	58	45	50	42
63	Coastguard	66	69	50	74	60
64	Lifeboat	29	29	16	27	16
DECOMPRESSION SICKNESS ANALYSIS						
65	Recompression chamber	63	81	152	91	115
66	Recompression U.W.	3	3	2	0	2
67	Within tables/computers	29	21	56	41	47
68	Rapid ascent	6	9	28	20	14
69	Repeat diving	12	27	39	15	14
70	Deep diving (40m+)	20	15	32	19	19
71	BSAC/RNPL Tables	25	13	10	5	3
72	Inaccurate use	11	15	23	12	9
73	Computers	11	30	50	27	29
74	BSAC '88 Tables		1	43	22	25
75	Flying or ascent to alt.		5	4	2	1
76	US Navy Tables			8	2	0
77	Buhlmann Tables			9	0	2
78	Missed stops			25	14	11
79	RN11 Tables			2	4	0
80	Type 1				19	20
81	Type 2				43	59
82	Type 1 & 2				5	3

INCIDENT REPORTS

If you would like to add to, correct or place a different interpretation on any of these incidents, please put the details in writing and send them to: **The British Sub-Aqua Club, Telfords Quay, Ellesmere Port, South Wirral, Cheshire, L65 4FY.**

For new incidents, the minimum amount of information that is of use consists of: **Date of Incident, Name of Subject(s), Location of Incident, Nature of Incident.** All of this information can be briefly stated on a Preliminary Incident Report Card, available from BSAC HQ. Much more useful is the greater detail that can be set out on an Incident Report Form. A Form is automatically sent out to all those who send in a Preliminary Incident Report Card. Forms and Cards should be sent to **BSAC HQ** at the address shown.

NAMING NAMES

Information obtained on incidents is always treated confidentially and names are never quoted. The only exception to this is where an act of rescue or life saving merits recognition.

Figure 1
DIVING INCIDENTS BREAKDOWN - 1991

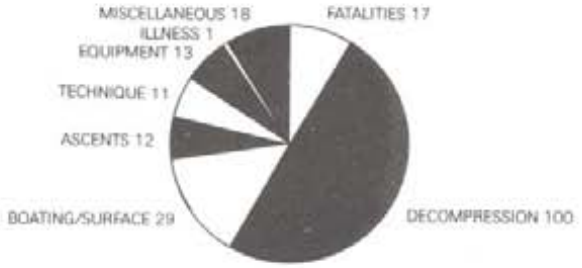


Figure 2
INCIDENTS ANALYSIS - 1991

Figure 3
INCIDENTS BREAKDOWN - 1991

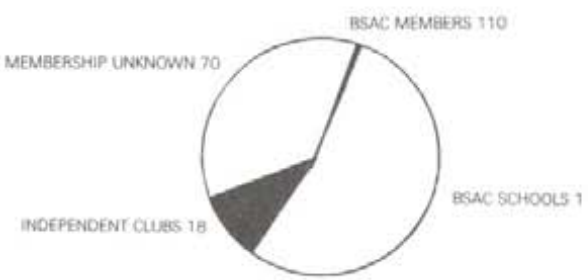


Figure 4
BSAC FATALITIES AND MEMBERSHIP 1982-1991

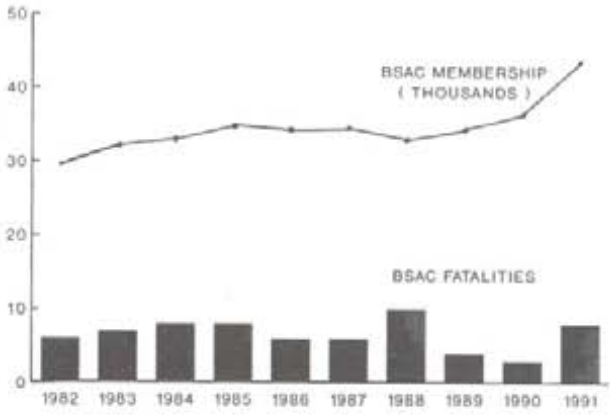


Figure 5
MONTHLY BREAKDOWN OF ALL INCIDENTS-1991

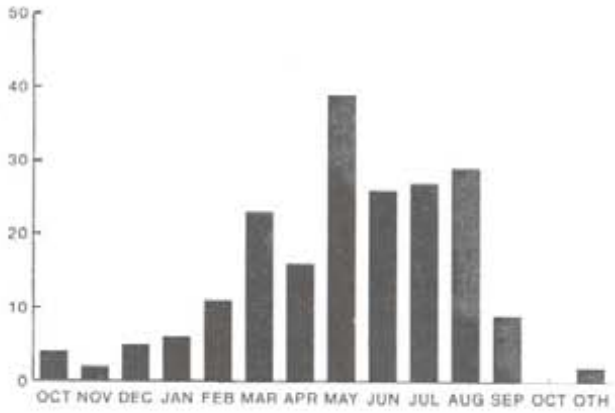


Figure 6
DEPTH RANGES & INCIDENT OCCURRENCE-1991

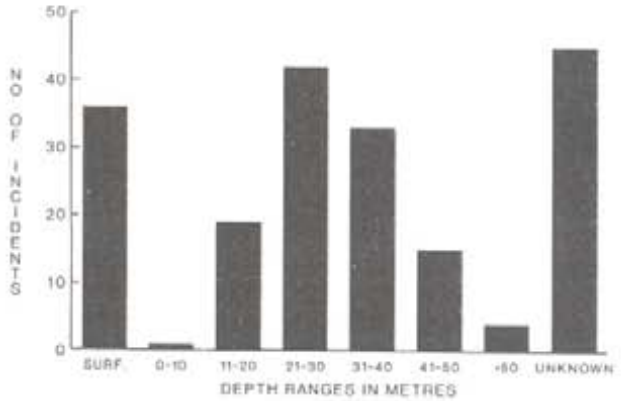


Figure 7
DECOMPRESSION SICKNESS
MONTHLY BREAKDOWN - 1991

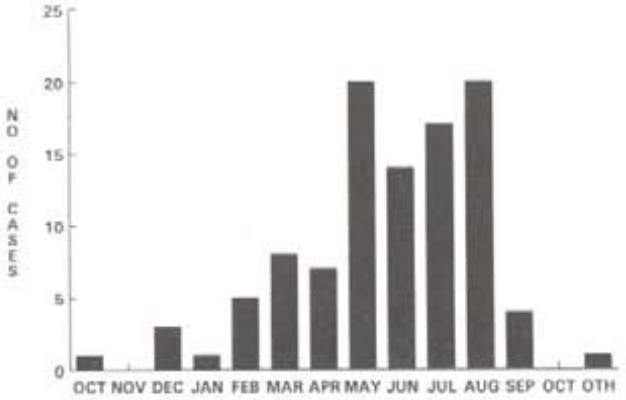


Figure 8
FATALITIES - MONTHLY BREAKDOWN - 1991

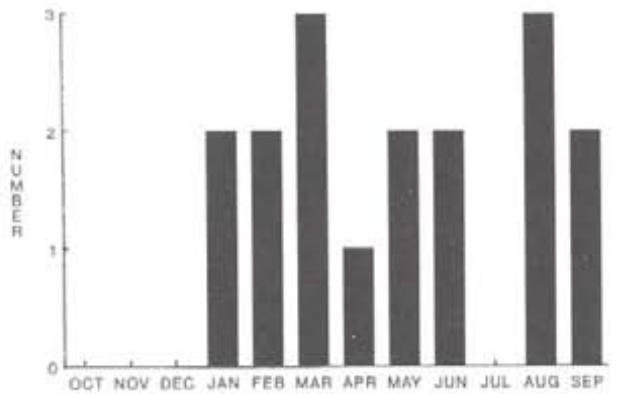


Figure 9
QUALIFICATION OF DIVERS

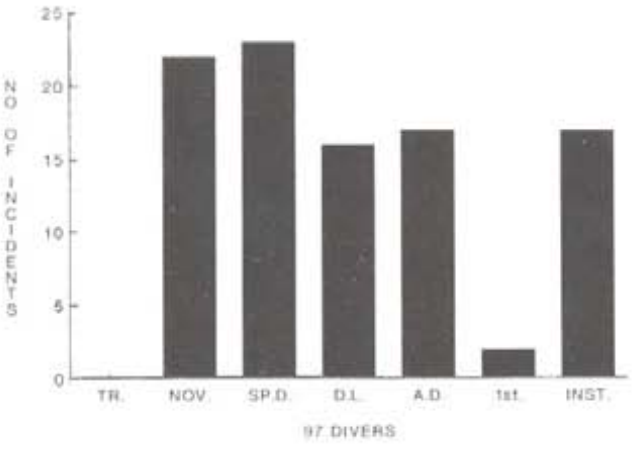
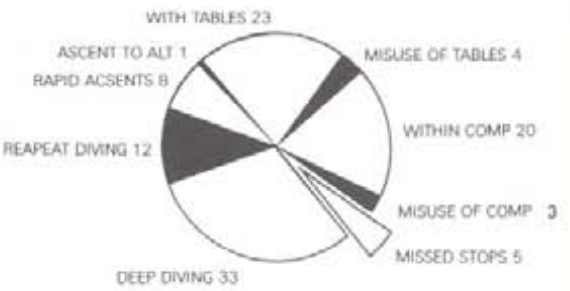


Figure 10
DECOMPRESSION SICKNESS ANALYSIS - 1991



TOTAL NO. OF CASES = 100

Figure 11
LOCATION OF INCIDENTS - 1991

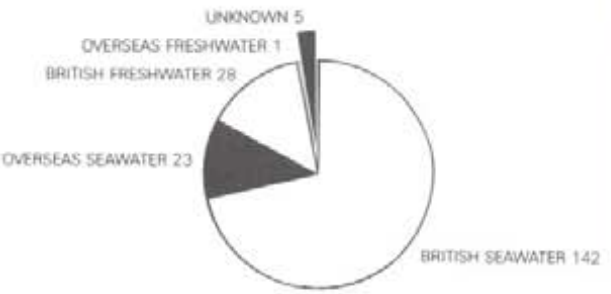
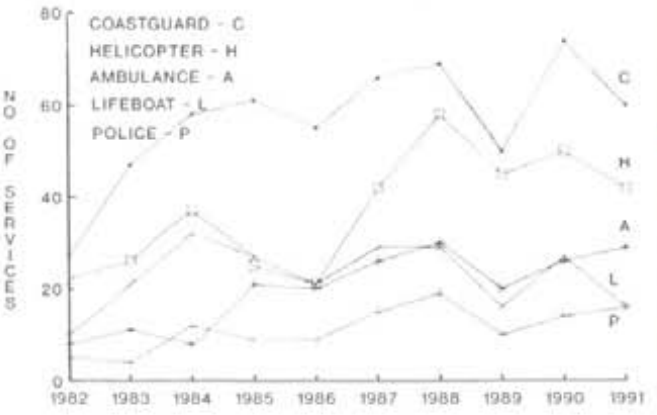


Figure 12
DIVERS' USE OF EMERGENCY SERVICES



FATALITIES

6/91 Jan. 1991. A trainee on an Open Water Diver course drowned on his first open water dive, after he apparently ran out of air. Attempted sharing and first attempts at rescue were unsuccessful and the victim sank out of sight. He was recovered soon afterwards but lengthy attempts at resuscitation on the surface failed to revive him. **I.**

7/91 Jan. 1991. Two young sports divers got into difficulties and became separated during a dive in an inland fresh water site. One of them failed to surface and was drowned. The water was cold and at least one of their regulators went into freeflow, causing the victim's buddy to make a rapid ascent to the surface. The exact details remain unclear. **B.**

10/91 Feb. 1991. A diver died when she failed to surface from a dive in the Lake District. Verbal report only. No further details. **B.**

11/91 March 1991. Two divers died when they failed to surface from a dive to 30m. The dive had begun as a threesome but due to poor underwater visibility the dive leader became separated from the other two and surfaced. The bodies were not recovered in spite of extensive searches and no other details are available. **B.**

12/91 Feb. 1991. During a dive in a dock, a diver had problems with her bouyancy and became inverted. After several attempts to right herself she became unconscious. Her buddy attempted to rescue her and summoned assistance from the shore, but in doing so sank from the surface herself, probably as a result of her suit venting. The inverted diver was recovered and successfully resuscitated, but although the victim was also recovered and taken to hospital, she later died after being on a life support machine. **B.**

35/91 March 1991. Report of a visiting Belgian diver drowning whilst carrying out a solo dive. No further details. **I.**

60/91 June 1991. A diver on an Advanced Open Water Diver course drowned when he failed to surface from a dive to 36m. He appears to have become separated from the other divers in the party during the ascent and when his body was recovered he had no air. No further details. **I.**

61/91 June 1991. A diver died on a wreck dive to 29m. He had become separated from his buddy on descent in poor visibility. When his buddy relocated him he was signalling ``out of air''. Attempted sharing and rescue were unsuccessful and the pair became separated again. The victim was quickly located by other members of the party, and brought to the surface, but lengthy attempts at resuscitation were unsuccessful. **B.**

84/91 April 1991. A trainee on an Open Water Diver course drowned on his first open water dive when he became separated. Attempted sharing with another member of the party was unsuccessful and the victim sank. His body was later recovered from 35m. **I.**

119/91 Aug. 1991. An extensive search was mounted when a diver failed to surface from a solo dive. His body was recovered 18 hours later. There are no further details as to the cause of the accident. **B.**

121/91 Aug. 1991. A diver died when he became separated from his buddy during a dive into a tunnel system. Other divers on the site mounted a search and found his body at a depth of 30m, but although resuscitation was attempted it was too late. **I.**

132/91 Sept. 1991. A diver died after having had a series of problems on a wreck dive. The divers appear to have missed slack water and during the dive the victim ran out of air and made an assisted ascent. On the surface he had difficulty swimming back to the boat against the tide and by the time he reached the boat's ladder he was exhausted. He fell off the ladder and drowned. Attempted resuscitation was unsuccessful. **I.**

184/91 May 1991. Two divers died after a dive to 52m. They surfaced, having apparently missed stops, and re-entered the water with fresh cylinders to perform re-entry decompression. Their boat moved away from the shot to pick up other divers and when they returned they could see no bubbles. Assistance was called for and a Navy diver found both victims tangled in the shot rope at 10m. No further details. **I.**

185/91 Sept. 1991. A diver failed to return from a dive and his body was recovered several days later. Press reports only. No further details. **I.**

186/91 Aug. 1991. A diver died whilst snorkelling overseas. He had apparently snorkelled down to 22m but blacked out on the ascent, sank and drowned. No further details. **B.**

DECOMPRESSION SICKNESS

3/91 Dec. 1990. A diver was recompressed for Type II decompression sickness following a dive to 40m with a dive time of 43 minutes. Earlier the same day he had dived to 25m for 45 minutes. He awoke the next morning with tingling and discomfort in the right leg and was recompressed in the Barbados Defence Force recompression facility. **B.**

14/91 March 1991. A diver appears to have experienced symptoms of Type II decompression sickness after a ``pot dive'' to a depth of 10m. He was later recompressed 3 times at Whipp's Cross before his symptoms were relieved. **B.**

19/91 March 1991. Preliminary report of diver with Type II decompression sickness after a 30m first dive. **U.**

20/91 March 1991. After a dive to 31m inside a dive computer, a diver experienced severe Type II DCS including paralysis in both arms and legs. He was given oxygen on-site and airlifted for recompression treatment at DDRC. Excessive alcohol consumption the previous night may have been a factor. **B.**

22/91 March 1991. Preliminary report of a diver with Type II DCS being recompressed at DDRC. **U.**

24/91 Sept. 1990. A diver was recompressed at USAF Alconbury for apparent symptoms of Type II DCS following a dive to 15m for 39 minutes. **B.**

26/91 Oct. 1990. A diver experienced symptoms of Type I decompression sickness 2 hours after a dive to 48m for 22 mins with stops at 9 and 6 metres. A similar dive had been performed the previous day. Pains in his shoulder and elbow were reduced after the first

recompression treatment in the Barbados Defence Force chamber, and disappeared following a second treatment. **B.**

31/91 Dec. 1990. A diver experienced back pain and leg paralysis following a dive to 28m but attributed this to an old back injury. The symptoms improved somewhat and he did not seek treatment until two days later when he was recompressed. It later turned out he had experienced similar symptoms earlier in the year but had not sought treatment. **U.**

32/91 Dec. 1990. Some three hours after a dive to 48m for 20 minutes with relevant stops, a diver experienced a stiff shoulder. This was diagnosed as being decompression sickness and he was recompressed in the Barbados Defence Force chamber. **B.**

38/91 March 1991. The day after a dive to 18m well inside the tables, a diver complained of various unusual sensations and, though no neurological abnormalities could be detected on examination, he was recompressed. The symptoms appeared to respond to the treatment but later returned as a result of which two further treatments were undertaken. **B.**

45/91 April 1991. A diver appears to have suffered Type II decompression sickness after two dives with a 1 hour 45 minute surface interval. The first dive was to 18m for 50 minutes and the second to 13m for 36 minutes. Although within the tables, back pain was experienced shortly after diving and momentary giddiness 40 hours later. The diver was recompressed in Malaysia and the symptoms largely disappeared. **B.**

47/91 April 1991. Forty-four hours after a pair of dives to 51m and 25m within tables, a diver experienced pain in his knee. He was later recompressed at DDRC with full resolution of symptoms. **B.**

49/91 May 1991. Following two dives to 30m within a dive computer, a diver experienced shoulder pain and was airlifted to Poole where he was recompressed for Type I decompression sickness. A previous injury to the affected shoulder may have been a factor. **U.**

50/91 May 1991. During a week's diving expedition, an experienced diver suffered vague symptoms which at first were not attributed to diving, but he was eventually diagnosed as having sustained a vestibular bend and was recompressed, apparently with full resolution. During the week's diving he was relying on his buddy's dive computer to indicate any decompression requirements. **B.**

52/91 May 1991. A diver experienced tingling in her hand following dives to 15m and 18m. On the second dive the divers had misread their maximum depth and had missed 8 minutes of stops. She was recompressed at Alverstoke, apparently with full resolution. **B.**

59/91 May 1991. Several days after a week's diving expedition a diver noticed a pain in her left knee. She was recompressed at Stoney Cove and the symptoms were resolved. During the week's diving the diver had performed twelve dives with a maximum depth of 38m. There may have been a slight excursion to altitude during the journey home but no obvious cause is apparent. **B.**

64/91 May 1991. During a dive to 21m a novice's weightbelt came undone and he made a feet first uncontrolled buoyant ascent to the surface. He felt unwell and was given oxygen and taken to hospital. ``Mild decompression sickness'' was diagnosed, but he was not recompressed. **B.**

67/91 June 1991. At the end of a week's diving, following a dive to 31m, a diver complained of back pain and numbness in his right thigh. He was taken to the Guernsey recompression chamber by ambulance and both he and his buddy (who had no symptoms) were recompressed. The symptoms were apparently resolved. **B.**

68/91 June 1991. In trying to adjust his weightbelt underwater, a novice diver dropped it and made an uncontrolled buoyant ascent to the surface. Although at that time he exhibited no symptoms, he was evacuated by helicopter to Poole and recompressed. During his recompression he appears to have shown symptoms of Type II decompression sickness. **B.**

73/91 June 1991. At the end of a decompression dive to 38m a diver had problems as he commenced his ascent. His contents gauge became fast in the wreckage, severing the high pressure hose. He quickly ran out of air, so dropped his weightbelt and inflated his ABLJ, making a rapid ascent to the surface and omitting some 12 minutes of stops. Over the next 3 hours he developed serious Type II symptoms and was flown to Great Yarmouth for recompression treatment. Residual symptoms still remain. **B.**

74/91 July 1991. A diver made the first dive of a week's expedition, and his first dive for a month, to 47m for 28 minutes. He performed 41 minutes of decompression stops. Thirty minutes after surfacing he experienced dizziness, vomiting, disturbances of vision and impaired speech. He was recompressed on Guernsey and diagnosed as having a vestibular bend. An additional factor was that he had been severely seasick during the journey to Guernsey and the following day. **B.**

82/91 July 1991. Following a gentle dive to 26m for 23 minutes with a slow ascent, a diver was observed to be behaving strangely in the boat. Although he insisted that he was OK his companions noticed that his vision and left side were affected. In spite of the patient's lack of co-operation and uncharacteristically agressive behaviour, oxygen was forcibly administered and his condition improved rapidly. He was flown to Gt. Yarmouth and recompressed for Type II DCS/Air Embolism. **B.**

87/91 April 1991. Coastguard report of a diver with symptoms of decompression sickness being flown to Alverstoke for recompression treatment. No further details. **U.**

89/91 May 1991. A diver with suspected mild decompression sickness, following a dive to 44m, was flown by helicopter to DDRC for recompression treatment. No further details. **B.**

91/91 May 1991. Report of a diver with symptoms of decompression sickness following a dive to 32m. He and his buddy were evacuated by helicopter from South Uist and flown to Aberdeen for recompression treatment. **B.**

93/91 May 1991. Coastguard report of a request from a diving vessel for a doctor to meet them on arrival

onshore as they had a suspected case of decompression sickness on board. The doctor confirmed recompression treatment was required and the diver was recompressed at Seaton. No further details. U.

99/91 June 1991. Coastguard report of a diver with symptoms of decompression sickness following an emergency ascent. The diver was airlifted by helicopter and flown to Great Yarmouth for recompression. No further details. U.

101/91 July 1991. After a gentle, uneventful dive to 28m, a very experienced diver suffered immediate symptoms of Type II decompression sickness, including pins and needles and numbness in his legs. Oxygen was administered on-site and he was evacuated by helicopter for recompression treatment at DDRC. After three subsequent treatments, some residual symptoms remained, but a full recovery is predicted. B.

104/91 May 1991. Eight minutes into a planned decompression stop dive to 42m a pair of divers ran short of air. At 25m on ascent one ran out of air and they commenced sharing. At 15m, with the second diver's supply down to 20 bars, the first diver made a free ascent to the surface. At this point the second diver found he was tangled in the shot line. He lost his mouthpiece, dropped his weightbelt, ditched his stab jacket and made a rapid ascent. Type I symptoms, both recompressed at Alverstoke. B.

106/91 July 1991. Following a decompression dive to 45m a diver experienced symptoms of Type II decompression sickness during the boat journey back to shore. She had disturbances of vision and tingling fingers. She was taken by road to DDRC with oxygen being administered en route and was recompressed. B.

108/91 July 1991. A diver was recompressed at Faslane after having developed ankle pains following a dive to 27m. Although using a dive computer, there is confusion over the actual dive time. Other complicating factors were that the diver concerned was stung by a jellyfish as the ascent was commenced and was suffering from inflamed ankles due to insect bites. B.

109/91 July 1991. During a drift dive with a maximum depth of 32m, a diver had a headache which became more painful on ascent. On the surface she was violently sick and ''felt wobbly''. She was driven to DDRC with oxygen being administered en route and was recompressed with full resolution of symptoms. B.

112/91 July 1991. Following an uneventful dive to 30m a diver complained of neck ache, pins and needles and vomiting. She was taken to DDRC and examined but was not recompressed. B.

113/91 July 1991. Ten minutes after a dive to 36m within tables, a diver experienced severe stomach pains. The Coastguard were contacted and the casualty was flown by helicopter to Poole and recompressed. Type II DCS was diagnosed. B.

114/91 July 1991. Two to three hours after an uneventful dive to 19m, a diver felt pain in her right elbow, accompanied by tingling and numbness in her fingers. She was recompressed at DDRC and the majority of the symptoms were resolved. B.

117/91 Aug. 1991. Minor problems on ascent resulted in a pair of divers exceeding their planned dive time. They subsequently also had difficulties in performing their stops as the shot rope buoy pulled under the surface and they were unable to maintain the correct depth. That evening one of the pair exhibited symptoms of Type II decompression sickness and was flown to DDRC for recompression treatment. B.

118/91 Aug. 1991. The day after a 17m dive a diver complained of headaches, double vision and weakness in the legs. He was recompressed at DDRC apparently with full resolution of symptoms. B.

122/91 Aug. 1991. Shortly after a dive to 32m, a diver complained of severe nausea, lack of balance and impaired vision. Similar symptoms had been experienced on two previous occasions. He was flown to DDRC and recompressed, though some symptoms remained. During subsequent medical examination he was found to have a PFO. B.

124/91 Aug. 1991. Report of a diver with Type I decompression sickness following dives to 36m for 22 minutes and 42m for 15 minutes with a 1 hour surface interval. He was recompressed at Ellesmere Port. B.

125/91 Aug. 1991. Following a dive to 18m for 31 minutes, a diver was nauseous on surfacing and complained of stiffness in his hands and arms. He was given oxygen in the ambulance and taken to Sunderland for recompression treatment. All symptoms appear to have been resolved on treatment. B.

126/91 Aug. 1991. A diver began to feel unwell during the boat trip back to shore following a dive to 64m. He complained of dizziness, and oxygen was administered. He was recompressed at DDRC, after which he felt completely well. This diver had previously been recompressed for decompression sickness several years ago. B.

131/91 Sept. 1991. Two divers and an instructor performing an assisted ascent training drill, ascended too quickly and were unable to stop at 6m as planned. Although, with the exception of the fast ascent, the dive was within tables, a short while later the instructor complained of a pain in his elbow and was recompressed at Dunstaffnage. U.

133/91 Aug. 1991. Report of a diver with severe Type II decompression sickness following a week's diving expedition. No further details. B.

134/91 July 1991. On the fifth day of a week's diving expedition a diver experienced symptoms of Type II decompression sickness. Two hours after his last dive he developed chest pains, dizziness and pins and needles. He was given oxygen and flown to Aberdeen for recompression treatment. B.

136/91 June 1991. A diver experienced a pain in his elbow after surfacing from the fourth dive of a week's diving expedition. This soon passed, but later the same evening he felt generally unwell and the discomfort returned. He was flown to Aberdeen and recompressed. B.

137/91 May 1991. Approximately 24 hours after an uneventful dive to 19m, a diver experienced tingling in his legs and lower back. He was examined at Alverstoke, by which time the tingling had stopped and his reflexes

were normal but he was recompressed as a precaution. **B.**

138/91 Jan. 1991. Recompression chamber report of diver being recompressed for decompression sickness. No further details. **U.**

139/91 Feb. 1991. Recompression chamber report of diver with Type II decompression sickness. No further details. **U.**

140/91 Feb. 1991. Report of a diver being recompressed at Ellesmere Port for Type II decompression sickness. No further details. **U.**

141/91 Feb. 1991. Recompression chamber report of diver being recompressed at Stoney Cove for Type II decompression sickness. No further details. **U.**

142/91 Feb. 1991. Report of a diver being recompressed at Preston for Type I decompression sickness. No further details. **U.**

143/91 March 1991. Recompression chamber report of a diver being treated at Ellesmere Port for decompression sickness. No further details. **U.**

144/91 April 1991. Report of diver being treated at Alverstoke for Type II decompression sickness. No further details. **U.**

145/91 May 1991. Report of diver being treated at Alverstoke for Type II decompression sickness. No further details. **U.**

146/91 May 1991. Recompression chamber report of diver being treated for Type II decompression sickness. No further details. **U.**

147/91 May 1991. Report of diver being recompressed at Poole for Type I and Type II decompression sickness. No further details. **U.**

148/91 May 1991. Report of a diver being treated at Alverstoke for Type I and Type II decompression sickness. No further details. **U.**

149/91 May 1991. Report of a diver with Type II decompression sickness being treated at Whipp's Cross. No further details. **U.**

150/91 May 1991. Report of a diver being recompressed at Alverstoke for Type I decompression sickness on return from Majorca. No further details. **U.**

151/91 May 1991. Report of a diver being treated at Alverstoke for Type I decompression sickness. No further details. **U.**

152/91 May 1991. Report of diver being treated at Alverstoke for Type II decompression sickness on return from Majorca. No further details. **U.**

153/91 June 1991. Report of diver with Type II decompression sickness being treated at Poole. It appears that the diver may have pulled a muscle in his neck whilst removing his dry suit and that, as the symptoms persisted after treatment, the cause may not have been decompression sickness. **B.**

154/91 June 1991. Report of diver with Type I decompression sickness being recompressed at Stoney Cove. No further details. **U.**

155/91 June 1991. Report of diver with Type II decompression sickness being treated at Alverstoke. No further details. **U.**

156/91 June 1991. Report of a diver with Type II decompression sickness being treated at Stoney Cove. No further details. **U.**

157/91 July 1991. Report of a diver with Type II decompression sickness being treated at Preston. No further details. **U.**

158/91 July 1991. Report of diver with Type I and Type II decompression sickness being recompressed at Whipp's Cross. No further details. **U.**

159/91 July 1991. Report of a diver being treated at Whipp's Cross for decompression sickness. No further details. **U.**

160/91 July 1991. Report of a diver with Type II decompression sickness being treated at Alverstoke. No further details. **U.**

161/91 Aug. 1991. Report of a diver with Type II decompression sickness being recompressed at Preston. No further details. **U.**

162/91 Aug. 1991. A diver experienced tingling fingers after a dive to 35m. He was recompressed at Stoney Cove but the symptoms persisted and it is not completely clear whether or not the cause was decompression sickness. **B.**

163/91 Aug. 1991. Report of a diver being treated at Stoney Cove for Type II decompression sickness. No further details. **U.**

164/91 Aug. 1991. Report of a diver being treated at Ellesmere Port for Type II decompression sickness. No further details. **U.**

166/91 Aug. 1991. Report of a diver being treated at Whipp's Cross for decompression sickness. No further details. **U.**

167/91 Aug. 1991. Report of a diver being treated at Alverstoke for Type II decompression sickness. No further details. **U.**

168/91 Aug. 1991. Report of a diver with Type II deompression sickness being treated at Alverstoke. No further details. **U.**

169/91 March 1991. Report of diver being treated for Type II decompression sickness after a dive to 20m for 28 minutes. No further details. **U.**

170/91 April 1991. Report of a diver with Type I decompression sickness following a dive to 33m. No further details. **U.**

171/91 April 1991. Report of a diver being treated for Type II decompression sickness at DDRC following a dive to 22m within tables. No further details. **U.**

172/91 April 1991. Report of a diver being treated for Type II decompression sickness at DDRC. She had flown home from Malta following a dive to 41m. No further details. **I.**

173/91 May 1991. Report of a diver being recompressed for Type II decompression sickness at DDRC following dives to 25m and 23m. No further details. **U.**

174/91 May 1991. Report of a diver being treated at DDRC for Type II decompression sickness following a dive to 37m. No further details. **U.**

175/91 June 1991. Report of a diver being treated for Type II decompression sickness at DDRC following a dive to 33m. No further details. **U.**

176/91 June 1991. Report of a diver being treated for Type II decompression sickness at DDRC following a dive to 28m. No further details. **I.**

177/91 June 1991. Report of a diver being treated for

Type I decompression sickness at DDRC after a dive to 50m with 20 minutes of decompression stops. No further details. I.

178/91 June 1991. Report of a diver with symptoms of Type II decompression sickness following two dives. On the first dive the diver ran out of air and missed stops, but dived again later the same day. He was recompressed at DDRC. No further details. I.

179/91 July 1991. Report of a diver being treated for Type II decompression sickness at DDRC following a dive to 31m. No further details. U.

180/91 July 1991. Report of a diver being treated for Type I decompression sickness at DDRC following a dive to 44m. No further details. U.

181/91 Aug. 1991. Report of a diver being treated for Type I decompression sickness at DDRC following a dive to 26m. No further details. I.

182/91 Aug. 1991. Report of a diver being treated for Type II decompression sickness at DDRC following a dive to 24m. No further details. U.

183/91 Sept. 1991. Report of a diver being treated for Type I decompression sickness at DDRC following a dive to 31m. No further details. U.

189/91 Sept. 1991. Newspaper report of a diver with decompression sickness being flown to Aberdeen for recompression treatment. No further details. U.

190/91 June 1991. On a planned no-stop dive to 30m, a diver became confused and had difficulties with his breathing. He was brought to the surface by his buddy at a controlled rate and was found to have difficulty speaking, and had tingling and numbness in his hands and feet. He was flown to San Pedro and recompressed. Type I decompression sickness was diagnosed. I.

193/91 March 1991. Report of a diver with Type II decompression sickness being treated at DDRC. No further details. U.

194/91 July 1991. Report of a diver with decompression sickness being treated at Whipp's Cross. Recompression chamber report only. No further details. U.

195/91 Aug. 1991. Report of a diver with decompression sickness following a diving holiday in the Red Sea. Treated at Whipp's Cross. No further details. U.

196/91 Aug. 1991. Report of a diver being treated at Craigavon for Type II decompression sickness following dives in Mauritius. No further details. U.

197/91 Aug. 1991. Report of a diver with Type II decompression sickness being treated at Craigavon. No further details. U.

198/91 Aug. 1991. Report of a diver with Type II decompression sickness being treated at Craigavon. No further details. U.

199/91 Sept. 1991. An experienced diver had serious symptoms of Type II decompression sickness immediately after a dive to 42m within tables. He was nauseous and unco-ordinated, experienced pain in his legs, arms and torso and lost the use of his legs. He was recompressed at Larnaca, initially with good results, but his symptoms recurred and he still has residual damage after a number of subsequent treatments. The diver reports sneezing and repeated ear clearing during his ascent, which may be a factor. B.

BOATING/SURFACE

2/91 Dec. 1990. During a dive on a site approximately one mile offshore, a party of divers experienced engine failure. It was foggy with only about 500 yards visibility and the boat was out of sight of the shore party. When the boat was overdue by two hours the Coastguard were alerted and a search initiated. Meanwhile the divers had rowed ashore to a point about two miles away from the initial launch site and three members of the party walked back to make contact and call off the search. B.

4/91 Jan. 1991. A member of the public reported two divers in a sinking dory and a police launch was despatched to the scene. On arrival they found that the divers had made their way ashore unaided. The boat had been swamped by rough water and the engine would not start. U.

5/91 Jan. 1991. An inflatable suffered engine failure and lost contact with the divers being covered. After about 30 minutes the engine was repaired but the divers could not be located. The Coastguard were alerted and an SAR helicopter and lifeboat began searching along with the dive boat. Both divers were found to be safe and well, having swum ashore. B.

13/91 March 1991. A diver became separated from two companions and was swept offshore by the current. His shouts for help were heard by the lighthouse keeper who contacted the Coastguard and he was picked up by lifeboat. Coastguard report only, no further details. U.

17/91 March 1991. During a boat handling course, one of the candidates fell out of the boat and was struck by the propellor, sustaining cuts and injuries to her right ear and arm. First aid treatment was administered promptly and the casualty taken to hospital by ambulance. B.

23/91 April 1991. A diver sustained concussion when she hit her head on the emergency cylinder of a colleagues stab jacket during boathandling practice in rough water. B.

42/91 March 1991. An inflatable dive boat was unable to pick up its divers when the anchor line and buoy became entangled around the boat's propellor. Six divers were in the water at the time. The Coastguard were contacted by VHF radio and arranged for other vessels in the area to assist. A fishing boat freed the propellor and two other vessels returned four of the divers to their boat. Two divers swam ashore and were picked up by their own boat once it was mobile again. B.

46/91 April 1991. Two divers became separated during their ascent from a 53m dive. They each did lengthy (but different!) decompression stops. On arrival at the surface the first diver could not see the cover boat or his buddy and started to swim ashore. The second diver was unable to attract the boat's attention and fired an orange smoke flare. The Coastguard commenced a search involving neighbouring vessels, the lifeboat and an SAR helicopter and both divers were recovered. B.

51/91 May 1991. During a branch boat handling course one of the students was performing an emergency stop and almost capsized the boat, ejecting all four occupants into

the sea. No cut-out was being used and the throttle was jammed partially open. The boat subsequently continued unmanned and, following an eratic course, arrived back on the beach not far from the launch point. The Coastguard were called but the divers had already been picked up by a ski boat. No injuries or damage resulted. **B.**

54/91 May 1991. During transit to the dive site, a diver's knife came out of its sheath and fell overboard. Being attached to the diver by a spiral cord, the knife was dragged along. It punctured one of the tubes of the inflatable before bouncing back into the boat and striking two divers, fortunately without injury. **B.**

58/91 May 1991. Two divers on a shore dive became separated and surfaced some distance apart. Both signalled OK and began to swim to the shore but unfortunately one of them was caught in the current and swept around the headland. The shore party located him safe and well on a ledge on the cliffs but were unable to retrieve him. The Coastguard were contacted and he was rescued by the Cliff Rescue Team. **B.**

75/91 June 1991. A diver suffered severe lacerations to his right leg when he was struck by the propellor of his cover boat whilst alongside it at the end of a dive. The divers had surfaced near rocks in a current and an attempt was first made to tow them away to safety. After a short while they stopped and attempted to de-kit, but whilst doing this the boat was moved forward again and the injured diver was carried underneath. He was rescued by helicopter from nearby rocks and taken to hospital. **B.**

79/91 July 1991. Two divers found themselves drifting in a strong current and surfaced, but were unable to attract the attention of their boat. The Coastguard were contacted when the divers were overdue and a search involving other vessels, the lifeboat
and an SAR helicopter was initiated. The two divers were picked up unharmed by another party of divers in a rigid hulled inflatable who had joined the search. **U.**

80/91 March 1991. Shortly after commencing their dive and at a depth of about 2m, a pair of divers heard a large vessel approaching. The dive leader felt his SMB catch, and found that the vessel was immediately above him, pulling him back. The SMB then came free. As he had become separated from his buddy, he surfaced. The vessel concerned was the local ferry which the dive boat had tried to contact by radio but had been ignored. **B.**

81/91 May 1991. A pair of divers on a drift dive strayed deeper than planned which resulted in the need for decompression stops. Before they could ascend their SMB line snagged and they were unable to release it in the strong tide. The SMB was ditched and the divers performed in-water stops, all the while drifting in the tide. When the divers surfaced they were out of sight of the boat which was covering the SMB. The Coastguard were informed but the divers were picked up by their own boat. **B.**

85/91 April 1991. Coastguard report of two divers in difficulties underneath the pier. They had swum out from the beach but were unable to get back. The inshore lifeboat, which was on exercise nearby, was alerted and picked them up safely. **U.**

90/91 May 1991. Coastguard report of a dive boat which had broken down and drifted on to the beach leaving four divers stranded 200 yards offshore. A Coastguard launch recovered the divers and returned them to shore. No further details. **U.**

94/91 May 1991. An auxiliary Coastguard reported two divers in difficulty in the water and the local lifeboat and SAR helicopter were put on stand-by. A general call was made on channel 16 VHF to which several vessels responded. Shortly afterwards a diving inflatable called in to report that they were diving in the area and that two of their divers had been swept out by a strong tide but had now been recovered. All rescue units were then stood down. No further details. **U.**

95/91 May 1991. A member of the public reported seeing a red hand held flare and the local inshore lifeboat was despatched to investigate. An SAR helicopter exercising in the area also proceeded but was not required. A diving inflatable with three divers onboard was found to have broken down and they were towed back by the lifeboat. No further details. Coastguard report only. **U.**

96/91 June 1991. Following a report of two missing divers, an extensive air and sea search was mounted involving helicopters, lifeboats, Coastguard units and other vessels. After 7 hours of searching the search was suspended due to failing light and was resumed at first light the next day. The divers, who were adrift for more than 23 hours, eventually came ashore several miles down the coast and made contact with the Coastguard. **U.**

97/91 June 1991. Coastguard report of an incident involving a diver who was swept out to sea. The diver was one of a party who were trying to walk back to shore over a causeway which had been covered by the incoming tide. He appears to have lost his footing and was swept out to sea. He was recovered by the local inshore lifeboat and required no medical attention. No further details. **U.**

105/91 May 1991. Report of a pleasure boat ignoring the ``A'' flag and warnings of divers below, and deliberately driving at three diving boats. The boat then drove directly over a surface marker buoy. The divers attached to the buoy were ascending and the boat's hull passed directly overhead. They were at only 3m depth at the time. The incident was reported to the police and the Department of Transport. **B.**

110/91 July 1991. A pair of divers, who surfaced earlier than expected, were unable to attract the attention of their cover boat about 100m away. They drifted away and in spite of an extensive search and the fact that they fired numerous flares, they were not picked up for more than six hours. They were eventually picked up by a sailing vessel well outside the search area. **B.**

111/91 July 1991. The last diver of a party to enter the water from a hardboat became entangled with the ladder, unseen by the boat's skipper. The boat began to move and the force of the wash removed his mask and DV and he began to take in water. Fortunately a second party of divers nearby saw what had happened and two of them entered the water to free the casualty and subsequently resuscitate him. **B.**

116/91 Aug. 1991. Whilst surfacing from a dive to 48m, a pair of divers found the shot rope buoy had collapsed and had sunk to 25m. Consequently they were forced to perform their decompression stops in mid-water and drifted

a significant distance in the tide. When they surfaced they were unable to attract the attention of their cover boat and drifted away. A large scale search involving 4 lifeboats and 2 helicopters was mounted and they were picked up safe and well about three and a half hours later. **B.**

120/91 Aug. 1991. A pair of divers drifted on the surface for 6 hours, travelling more than 10 miles, when they surfaced out of sight of their cover boat. SMBs had not been used because the water was calm and there was no obvious current. However, the divers encountered strong currents towards the end of their dive which rapidly swept them out to sea when they surfaced. They eventually attracted the attention of a small boat and were picked up. **B.**

130/91 Sept. 1991. A club's rigid hulled inflatable was damaged when it was swept onto a reef. The divers were attempting to recover a shot line when the line fouled the propellor. Without power the boat was pushed onto the reef by the swell. Significant hull and engine damage resulted but the boat was able to return safely under its own power. **B.**

187/91 June 1991. Report of divers drifting away from their moored boat. Extensive search including five boats, two lifeboats and an SAR helicopter was launched and they were eventually picked up by a pleasure boat, having been spotted by an auxiliary Coastguard. **U.**

188/91 June 1991. Two rigid hulled inflatables, which were attempting to cross to the Scilly Isles, reported that they were lost and shipping water, and requested ``a bearing to the Scillies''. They were located and towed in by the local lifeboat. The weather forecast was force 5 to 6, 8 later. **U.**

ASCENTS

28/91 Nov. 1990. Two BSAC divers on holiday were ascending at the end of their dive when they were approached by two Belgian divers who had both run out of air on a dive to 60m! Assisted ascents to the surface were made safely, including decompression stops at 5m. It later transpired that the Belgian divers had dived as a three, all of whom had run out of air simultaneously. The third diver had found another group with whom to share! **B.**

30/91 Nov. 1990. On a dive to 44m in an inland freshwater site a diver's regulator began to freeflow. There is evidence that he was also suffering from nitrogen narcosis. Sharing was attempted, but on reaching 30m the diver made an uncontrolled buoyant ascent using the emergency cartridge on his stab jacket. Although he made a rapid ascent no subsequent ill effects were experienced. **B.**

33/91 Feb. 1991. A diver became unconscious underwater and was lifted to the surface by his buddy following an attempted mask clearing exercise at 21m. The casualty appears to have had problems following the sudden shock of cold water on his face and was unable to breathe properly. He was given oxygen and taken to hospital by ambulance but does not appear to have suffered any significant ill effects. **B.**

34/91 Feb. 1991. While diving in a strong current the dive leader of a trio of divers ran out of air, and while breathing from the octopus of a second diver, both made a rapid ascent to 3m missing a 1 minute stop. Their joint air supply then ran out. The third diver made a normal ascent. Both divers involved in the incident suffered severe headaches and were recompressed as a precaution, though this brought no relief from the symptoms. **B.**

62/91 June 1991. Two divers were collecting bits of lead and putting it in a goody bag. The diver holding the bag compensated by putting air into his suit. At the end of the dive the second diver took over the carrying of the bag and his buddy made an uncontrolled buoyant ascent to the surface. The second diver also made an erratic ascent but managed to slow down near to the surface. Both divers were distressed and taken to DDRC where the second diver was recompressed for an air embolism. **B.**

65/91 May 1991. During a dive to 23m a novice diver got into difficulties with his weightbelt which came undone but was tangled with his equipment. The dive leader used a buoyant lift to get him to the surface where he was given oxygen but was found to have suffered no other ill effects. **B.**

66/91 May 1991. Brief report of divers performing a buoyant ascent after running out of air, followed by a return to the water to perform in-water decompression stops. No further details. **B.**

69/91 May 1991. At the end of a dive a group were unable to retrieve the shot weight. The dive marshall borrowed equipment and made a solo dive to 27m with a cylinder which contained only 80 bars. He ran out of air, made a free ascent to 15m and then a buoyant ascent to the surface. He reports surfacing dizzy, shaken and much wiser! **B.**

70/91 June 1991. A novice diver ran very short on air on a dive to 32m and an assisted ascent was made. There was a strong swell and this caused his buddy's dive computer to register a fast ascent warning. Both divers arrived safely at the surface, but
shortly afterwards the novice complained of being dizzy, lost his balance and then lapsed into unconsciousness. He was given oxygen on the return journey and then flown to Aberdeen where he was recompressed and an air embolism diagnosed. **B.**

102/91 July 1991. A diver who made a rapid ascent from 30m following equipment problems, was distressed on the surface and was flown by helicopter to Ellesmere Port for recompression treatment. An air embolism was suspected, but an existing cracked rib injury was a complicating factor. Coastguard and press reports only. No further details. **U.**

103/91 April 1991. A diver had problems controlling his buoyancy and made a feet first buoyant ascent towards the surface. He managed to halt the ascent at about 9m and rejoin his buddy. Afterwards he experienced some shoulder pain and was taken to DDRC where he was recompressed. However, there was no change in his symptoms and decompression sickness does not appear to be involved. **B.**

192/91 Aug. 1991. A diver ran out of air on a drift dive to 30m. Attempted sharing was unsuccessful and he became unconscious underwater. His buddy inflated his stab jacket

and he made a buoyant ascent to the surface, where he was found not to be breathing. EAR and oxygen were administered immediately and he was successfully resuscitated. He was then taken by ambulance to Dunstaffnage for recompression treatment. **I.**

TECHNIQUE

1/91 Dec. 1990. Fourteen minutes into a dive to 34m using an underwater scooter a diver suddenly ran out of air. A successful assisted ascent was made to the surface without problem. It subsequently transpired that the propellor of the scooter was drawing air out of the diver's octopus mouthpiece, which was hanging close to the propellor guard, thereby exhausting the air supply prematurely. **B.**

36/91 March 1991. Report of a diver continuing a solo dive having entered the water as a three, all of whom became separated. He recorded a maximum depth of 55.5m but he did not consider his dive practice to be unsafe! **B.**

43/91 April 1991. A novice diver had problems with her mask flooding on descent and disappeared to the surface using her ABLJ. She recommenced the dive, but again had problems, this time at 20m. The dive leader tried to lift her to the surface but her ABLJ cylinder was now empty. She was lifted using the dive leader's stab jacket but swallowed water on the surface and panicked. She was assisted ashore and sustained no apparent injuries. **B.**

44/91 April 1991. During a wreck dive at 27m a diver ``lost'' his regulator and was unable to recover it. Air sharing was attempted but at 15m the diver broke away from his buddy, dropped his weight belt and made a rapid ascent to the surface. He reached the surface safely and suffered no apparent ill effects. **I.**

55/91 May 1991. A pair of divers went deeper than originally planned and one of them ran short of air. On ascent he ran out and they shared for a short while before problems occurred. At this point one made a free ascent from 15m to the surface, and the other also surfaced quickly behind him. Both missed approximately 13 minutes of decompression stops, but no ill effects were reported. **B.**

71/91 May 1991. After a dive to 40m a diver had insufficient air remaining to complete the decompression stops required by his dive computer. Approximately 20 minutes after surfacing he experienced tingling in his hands and a tightness in his chest. Oxygen was administered and he was evacuated by helicopter to DDRC. On examination it was concluded that there were no symptoms of decompression sickness and he was allowed home after a period of observation. **B.**

78/91 July 1991. A diver was ascending from a dive to 35m which required a 1 minute decompression stop at 6m. As he reached 9m he lost his weightbelt and shot to the surface. He was recompressed on-site at Stoney Cove as a precaution. **B.**

92/91 May 1991. A diver began to have problems on descent when the SMB line became tangled with her snorkel, causing her mask to flood. Her problems were compounded by not having a direct feed and not being able to adjust her buoyancy. She was finning rapidly to slow her descent and lost a fin. On the bottom she appears to have blacked out and lost her DV. Her buddy lifted her to the surface with a buoyant lift and she was resuscitated and flown by helicopter to hospital. **I.**

107/91 July 1991. A novice diver ran short of air towards the end of a dive. The problem was compounded by the divers being unable to locate their anchor line prior to surfacing. They surfaced free and performed a planned safety stop at 6m, at which point the novice ran out of air. A successful assisted ascent was made to the surface. **B.**

115/91 July 1991. Two pairs of divers had problems when they entered the water off the wreck with the tide still running. The first pair became separated and one of them could not surface because of a faulty dump valve on his BC. The second pair arrived on the bottom and joined this diver but then one of them also became separated from the group. All divers surfaced safely, though not without problems due to the first diver's lack of buoyancy. **B.**

165/91 Aug. 1991. Report of two divers being treated at Pembroke Dock for omitted decompression stops. No further details. **U.**

EQUIPMENT

8/91 Jan. 1991. During a dive to 28m at an inland freshwater site a party of three divers had regulator freeflow problems. The first diver shared successfully using his buddy's octopus, but during the ascent the third diver's regulator also began to freeflow and he was forced to make a free ascent to the surface. All reached the surface safely and without injury. **B.**

9/91 Feb. 1991. During a dive at an inland freshwater site, a diver's regulator began to freeflow and both divers began to surface. At approximately 10m both divers lost control of their ascent because of difficulty dumping air from unfamiliar ABLJs. Although they made rapid ascents, both divers reached the surface safely and without injury. **B.**

15/91 March 1991. Two divers on a dive to 23m at an inland freshwater site both experienced regulator freeflow. They both made a rapid ascent to the surface and neither suffered any injury. **B.**

18/91 March 1991. During an inland cave dive a diver's dump valve on her stab jacket stuck in the open position, venting all the air from the jacket and allowing water to enter. Her buddy assisted her to the surface using his own buoyancy compensator. It was found that grains of sand had caused her deflation button to stick in the open position. **B.**

21/91 March 1991. A diver's pony cylinder exploded whilst being filled causing severe damage to the compressor room and injuring three people. The cylinder had previously been tested four years before and was severely corroded internally. **B.**

25/91 Oct. 1990. Shortly after commencing his dive, at a depth of 25m, a diver found difficulty in breathing when he attempted to put air into his ABLJ via his direct feed. His contents gauge registered just 50 bars and shortly

diver experienced shoulder pain. Having previously knocked the shoulder whilst launching the boat, no immediate action was taken. By the next day when the pain had increased, the diver suspected decompression sickness and was recompressed. Symptoms remained unaffected by recompression treatment and were thought to be due only to bruising. **B.**

76/91 July 1991. Whilst carrying out a lifting exercise, a diver was attacked by a four foot conger eel. The eel grabbed the diver's octopus and shook it vigorously and both he and his buddy were bruised by the thrashing eel. The eel would not release its grip and was eventually stabbed with a knife. The octopus second stage was day-glo green in colour, which may have attracted the eel. **B.**

77/91 July 1991. Following two dives to 16m a diver later experienced a pain in her leg. She was recompressed at Gosport but the symptoms remained and it was concluded that it was not a decompression sickness case. **U.**

83/91 Feb. 1991. Shortly after commencing his dive, a diver appears to have blacked out underwater at a depth of about 15m. He was lifted to the surface with a controlled buoyant lift and regained consciousness shortly before arriving at the surface. Subsequently he complained of feeling giddy, having disturbed vision and numb extremities. He was flown to Ellesmere Port and recompressed. Medical investigations are continuing to establish a cause. **B.**

86/91 April 1991. Report of two divers surfacing from a dive to 32m having missed 30 minutes of stops. They were flown to Poole and recompressed as a precaution but neither exhibited any symptoms of decompression sickness at any time. **B.**

88/91 April 1991. A diver with apparent symptoms of decompression sickness was taken to the nearest recompression facility by ambulance. On examination he was found to be suffering only from the effects of hypothermia and no recompression treatment was necessary. **I.**

98/91 June 1991. Coastguard report of a diving vessel requesting an ambulance to meet them on their return to shore. It appears that the boat had struck some rocks and, although the boat was OK, one of the divers had slipped and hurt his back. The casualty was taken to hospital by the ambulance. No further details. **U.**

100/91 June 1991. The Coastguard received a report of an overdue diver. On investigation the local MRU located the diver safe and well ashore by his car. **U.**

123/91 Aug. 1991. Following a dive to 35m a diver was very nauseous. He was examined at DDRC where he was found to have ruptured the oval window in his inner ear. **B.**

129/91 Sept. 1991. A diver slipped and fell down a flight of stairs on board a charter boat and broke his leg. **B.**

135/91 July 1991. On the fifth day of a week's diving expedition a diver experienced a pain in his left shoulder and a slight rash. He was given oxygen and was put under observation, but no further symptoms developed and he was not recompressed. Another member of the same party had developed Type II DCS the same day. **B.**

STATISTICAL SUMMARY OF ACCIDENTS AND INCIDENTS

ITEM	1987	1988	1989	1990	1991
Incidents Reported	162	197	244	207	199
Incidents Analysed	162	197	244	207	199
British Incidents	142	173	170	189	170
Incidents Abroad	16	15	14	14	24
Location Unknown	4	9	60	4	5
BSAC Members	110	117	128	123	111
Non-BSAC Members	5	13	12	16	18
Membership Unknown	47	67	104	68	70

All the above reports are based on information received between October 13th 1990 and September 30th 1991.

HISTORY OF DIVING FATALITIES

YEAR	MEMBERSHIP	DEATHS BSAC	DEATHS NON-BSAC
1965	6,813	3	(0)
1966	7,979	1	(4)
1967	8,350	1	(6)
1968	9,241	2	(1)
1969	11,299	2	(8)
1970	13,721	4	(4)
1971	14,898	0	(4)
1972	17,041	10	(31)
1973	19,332	9	(20)
1974	22,150	3	(11)
1975	23,204	2	
1976	25,310	4	
1977	25,342	3	
1978	27,510	8	(4)
1979	30,579	5	(8)
1980	24,900	6	(7)
1981	27,834	5	(7)
1982	29,590	6	(3)
1983	32,177	7	(2)
1984	32,950	8	(5)
1985	34,861	8	(6)
1986	34,210	6	(9)
1987	34,500	6	(2)
1988	32,960	10	(6)
1989	34,422	4	(8)
1990	36,434	3	(6)
1991	43,475	8	(9)