DIVING INCIDENTS REPORT

Chris Allen – NDC Incident Adviser

"This is the first time I have presented the Diving Incidents Report having taken over the role of Incidents Adviser from Dave Shaw at the beginning of this year. As such I think it is appropriate, first of all, for me to thank Dave for his work over the previous 3 years with the incidents and in particular for dragging us into the computer age which has transformed the style of the report and this presentation.

An essential part of any statistical analysis of incidents and accidents is to draw comparisons with past performance in order to identify trends and highlight areas of concern or lessons to be learned. In producing the 1988 report I have, therefore, largely retained the style and format of previous reports. Inevitably some small changes have had to be made in the number categories to cope with changing circumstances. A copy of the Report is contained in every delegate folder as usual.

Two things very quickly became clear to me on taking over the job. The first was just how crucial it is for us to have a good quality incidents reporting system so that we may refute allegations made against us by people who seek to regulate our sport or simply generate bad publicity against sports divers. Secondly, it was obvious how essential it is to keep a balanced view of the overall safety record of the sport.

Naturally, my report this morning will concentrate on those dives where something went wrong, sometimes with tragic or fatal results. However it must be emphasised that each year most dives – in fact over 99.9% – are conducted safely and without problem. We should all, therefore, keep this fact in mind so as to view the accident reports from a proper perspective.

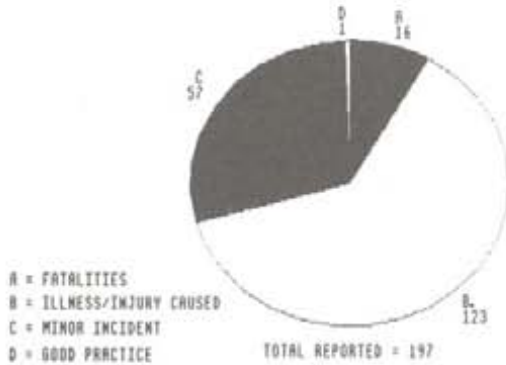
What I would like to do in the first part of my report is to give you some idea of the overall pattern of incidents in 1988. I will then move on to discuss relevant cases from each of the 8 categories into which the reports are divided in the hope that we can draw some conclusions and highlight any lessons to be learned.

The first chart (Fig. 1) shows the breakdown of incidents by type. In 1988 a total of 197 reports were received and analysed, an increase from the 162 reports in 1987.

I should say straight away that this does not necessarily mean that 1988 was any worse than 1987; it may simply reflect either better reporting or an increased level of diving being done. I can certainly say that this year we have received more decompression sickness reports directly from recompression chambers, and that this is probably partly responsible for the increase.

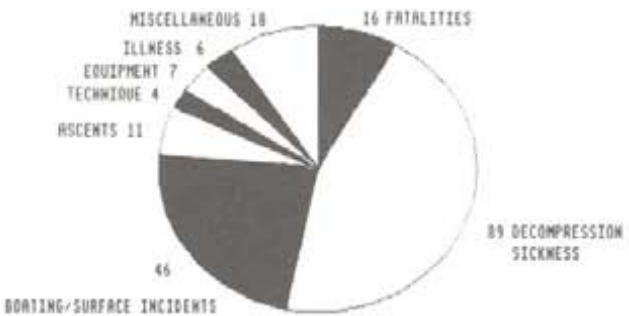
Of 197 incidents analysed, 16 were Fatalities, 123 Illness/injury, 57 Minor incidents, and 1 Good Practice. Of course, only one incident categorised as "Good Practice" does not mean that no good practice was shown elsewhere. Many incidents involved good practice by rescuing divers as the safety awards later this morning will demonstrate. It simply means that there was just one incident which was considered solely to involve Good Practice.

Fig. 1 INCIDENTS ANALYSIS – 1988



If we now break the incidents down into the 8 separate categories used for compiling the report we see the following pattern emerge (Fig. 2).

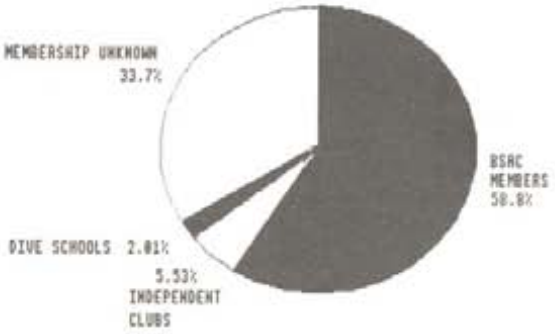
Fig. 2 DIVING INCIDENTS BREAKDOWN – 1988



Fatalities at 16 have increased; last year the total was 8. Although this is a large increase it is, in fact, because last year was much better than average; the two previous years the figures were 14 and 15 respectively. Also, as one of this year's fatalities was a late report from 1987 and 3, perhaps 4, were people who died as a result of heart attacks whilst diving, rather than directly as a result of a diving accident, the picture is not as bad as it first seems, though it is always disappointing to have to report an increase in the number of deaths.

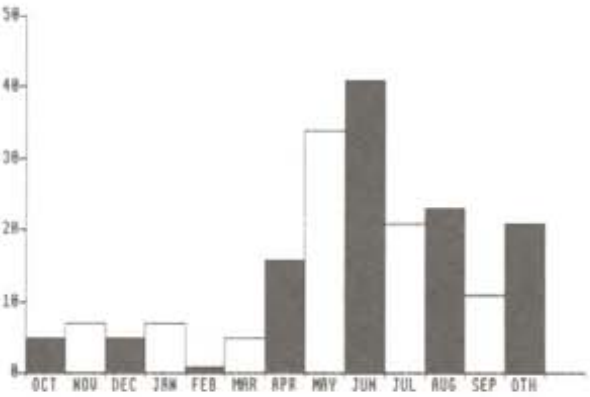
The two largest categories of incident are Decompression Sickness (89) and Boating/Surface (46). You are still most likely to become one of my statistics in these two categories!

Fig. 3 INCIDENTS BREAKDOWN – 1988



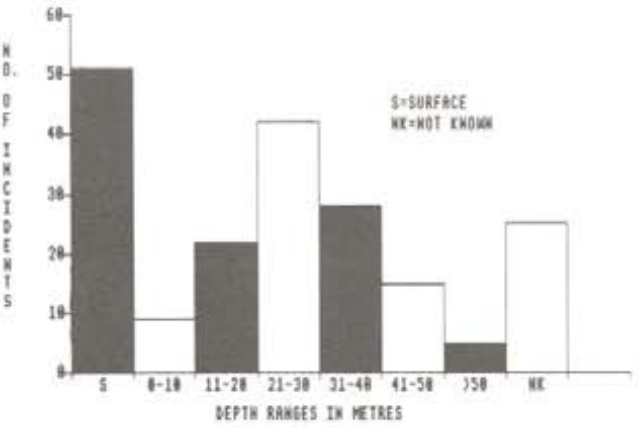
If we look at the breakdown of reports by membership (Fig. 3) we see that the majority of reports, in fact 59%, involve BSAC members, whilst only 6% relate to independent clubs. This is because we rarely receive reports from independent clubs except in very serious cases. The proportion of reports concerning independent divers is, in fact, well up on last year – probably also a feature of better direct reporting from recompression chambers facilities and from HM Coastguard.

Fig. 4 MONTHLY BREAKDOWN OF ALL INCIDENTS – 1988



If we break the incidents down by month of occurrence (Fig. 4), we see the seasonal variation you might expect which coincides with the main diving season between April and September. Interestingly, we also see weather variations reflected too.

Fig. 5 DEPTH RANGES AND INCIDENT OCCURRENCE – 1988



If, in the same way, we analyse the depth range at which incidents occurred (Fig. 5), you will see that the surface is statistically the most likely place where you will get into trouble. Otherwise, this graph probably only reflects the relative numbers of dives done in each depth range.

The incidents reporting scheme covers BSAC members worldwide and all divers within the UK. When we look at location of reported incidents we see that, not unexpectedly, reports from British Seawater sites dominate (Fig. 6).

Fig. 6 LOCATION OF INCIDENTS – 1988

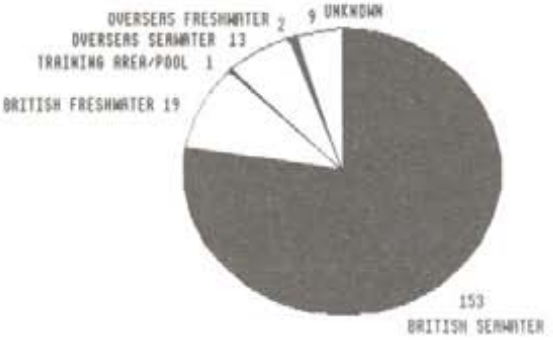
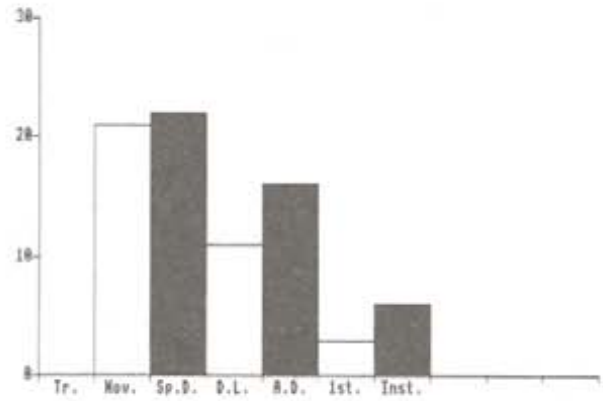


Fig. 7 shows the breakdown of incidents by qualification of divers (79 reports). A First Class Diver still seems a good bet if you are going to be selective in choosing a buddy! Interestingly, Advanced Divers appear to have had a better year in 1988.

Fig. 7 QUALIFICATION OF DIVERS (79 REPORTS)



The final graph (Fig. 8) in the first part of my presentation shows divers' use of Emergency Services. The most dramatic thing to note here is the steep climb in the number of helicopter callouts over the past 2 years. The involvement of other emergency services by contrast has remained at more or less the same level.

Fig. 8 DIVERS' USE OF EMERGENCY SERVICES

I am not sure why this should be, though I wonder whether the increasing use of VHF radios by divers plays a part. One thing is certain, rescues involving helicopters are high profile and liable to attract a great deal of publicity.

So that is the overall pattern for 1988. Now let's look in more detail at the individual categories.

As I said earlier, this year we have recorded 16 fatalities, 10 of whom were BSAC members.

One strong message which comes across from these incidents is the difficulty of sharing effectively in an emergency. In one case a buddy pair died during a dive to 50m. They were both found on the bottom with air in their tanks but with their mouthpieces out. From the evidence available it would appear that the accident probably resulted from unsuccessful attempts at sharing after the rubber mouthpiece of one of the diver's demand valves became detached.

Each year we seem to have cases of untrained divers getting into difficulties. This year the first recorded fatality was an inexperienced diver who lost his mouthpiece. He attempted sharing with his equally inexperienced buddy but this was unsuccessful and they became separated. Neither diver apparently had any formal qualifications nor were they members of any club as far as I could tell.

This year there were two deaths when divers had run low on air and then experienced problems of some sort during the ascent. In one of those cases a diver ran short of air during a dive to 30m and started to ascend. He then became tangled in a line from an SMB reel and had to be cut free by his buddy. They recommenced their ascent but at 20m he ran out of air, once again attempted sharing was unsuccessful and the diver was lost when they became separated.

In actual fact, 6 of this year's fatalities involved running low on air or a failure to share effectively during an emergency – a clear message to us all of the importance of carrying an octopus or other secondary breathing system on all dives. It is also worth remembering that previous incidents show it is often the rescuing buddy who becomes the victim when things go wrong.

My concern over sharing is backed up when we look at the *Ascents* category. Although only a relatively small number of reports appear in this category (11 in total), half of them involve failure to share properly in an emergency and four cases resulted in burst lung and/or embolism.

The *Ascents* category also contains a couple of classic examples of the "Incidents Pit" where a small problem quickly becomes compounded by other small problems until the situation is suddenly and dangerously out of control.

In the first case a pair of divers on a hard boat found that a mix up on the quayside had resulted in some of their equipment being loaded on to the wrong boat. Not wishing to miss the dive, they waited until last and went in as the last pair using equipment borrowed from other members of the party who had already dived. During the dive one of the pair had constant trouble with her borrowed mask which did not fit well and kept flooding. On the ascent she became tangled in the shot rope, her mask flooded and she started to make a rapid ascent. As she was unfamiliar with the controls of her borrowed lifejacket she was unable to control her rate of ascent which became increasingly buoyant. The result was an embolism.

The second case involved another lady diver who had a larger neck seal fitted to her drysuit after finding the previous one uncomfortably tight. On the first dive afterwards, her suit flooded because the seal was too loose. She did not notice this until she came to ascend at the end of the dive when she found it difficult to ascend due to lack of buoyancy. She was already low on air and more air was wasted via the seal in vainly trying to inflate the suit. She ran out of air and became unconscious. Fortunately her buddy successfully brought her to the surface where she quickly recovered.

Technique is another small category with only 4 cases this year. One of these cases again emphasises the problems which lines can cause underwater and the need to always have an adequate reserve of air to cope with problems which can occur on the ascent. In this case a diver who had used a distance line to explore a wreck, found he could not reel it in fast enough to keep up with his buddy. He therefore collected it in armfuls. Shortly after starting his ascent he became completely entangled and had to be cut free by his buddy. By now he had run out of air and the two divers made an assisted ascent to 12m where a spare set was positioned on the line. By this time the second diver was also out of air and both had to use the spare set to decompress.

As you will remember from my earlier breakdowns, *Boating and Surface Incidents* are one of the most popular categories. Once again lost diver cases figure prominently, although this year I am happy to say we have actually seen a reduction in the number of cases reported. One case which again illustrates the "Incident Pit" occurred when two divers noticed that their SMB had become detached. They surfaced quite quickly and were within sight of their boat but were not seen by the boat party who were following the SMB very closely. They tried to attract attention by using a whistle but found that the whistle had become detached during the dive and could not be located. The divers then tried their personal flares but these failed to work and they gradually drifted further and further away. Eventually the boat party realised what had happened but when they tried to contact the Coastguard for assistance their VHF radio would not work. Fortunately a red flare did work, the Coastguard was alerted, and the divers were located by an SAR helicopter and picked up by the local lifeboat.

Another diver was not so lucky and had to spend 12 hours in the water before being picked up. He had become separated from his boat and was swept out to sea. Although an extensive search was organised the failing light made search conditions difficult and he was not picked up until the next morning. By that time he was more than 7 miles from his original position. Ironically the fishing boat which picked him up was called, appropriately, the '*Bit Late*'.

Amongst the *Boating/Incidents* each year there are always a number involving charter vessels. However, I cannot ever remember seeing a previous report of a dive charter boat sunk by a submarine! Although it may sound amusing it was in fact potentially a very serious incident. The diving party concerned were moored over the chosen wreck site in their 16ft open charter boat when it was swamped by the bow wave of a passing submarine and promptly sank. Three people trapped in the front cabin had to be pulled to safety and a significant quantity of gear was lost.

Within the *Equipment* category no particular trends are apparent. This year however, two divers were apparently misled by faulty contents gauges as a result of which they ran out of air.

The *Miscellaneous* category is also quite small but one incident in particular stands out. It involved a pair of divers doing a wreck dive in Scapa Flow when one of them became trapped. A heavy gun turret door fell on to him as a result of which his leg was badly broken and he was pinned down. His buddy struggled to release him without success, suffering cramp in the process. With great presence of mind, and knowing his buddy had insufficient air to allow him to return to the surface for help, he swam away to stretch his leg and let the silt settle, then returned and managed to shift the door enough to free his friend. He then assisted him to ascend, stopping on the way to carry out their required decompression stops, before surfacing and seeking medical assistance.

I have deliberately left until last the section of my report dealing with *Decompression Sickness*.

This year we have had unprecedented publicity over the number of cases of decompression sickness and there have been some lurid headlines in the press often accompanied with grossly inaccurate reports. So what are the facts?

The facts are that this year has seen an increase in the number of cases of decompression sickness from 69 cases in 1987 to

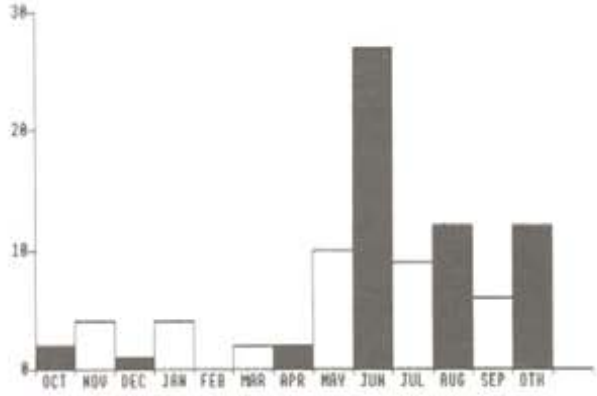
89 cases in 1988. This has been described variously as "an explosion" and "a situation out of control". It in fact represents an increase of 22% – very much in line with the overall increase in total incidents which are 18% up.

And as I have already said, we have had much better incidents reporting direct from recompression chambers which could itself be the cause of the apparent increase in numbers. So why the hysteria?

It largely seems to stem from the criticism by some individuals of dive computers and the media attention that this has attracted.

As the time allowed for the incidents report does not permit me to analyse these figures in sufficient detail, I will be sharing a second presentation with the NDO later this morning when we will look much more closely at the incidents involving computers. So with that in mind let's have a brief look at how the 1988 decompression sickness incidents breakdown.

Fig. 9 DECOMPRESSION SICKNESS MONTHLY BREAKDOWN – 1988

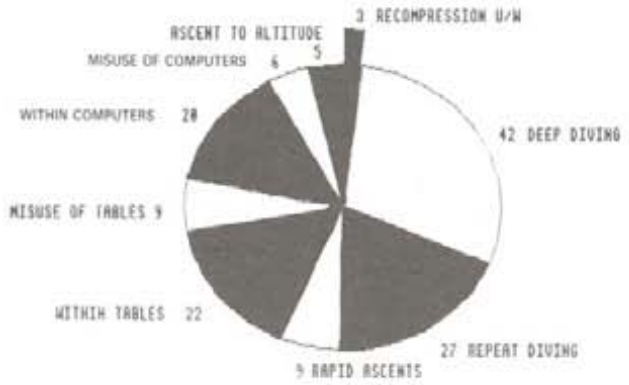


First of all, I want to look at the monthly breakdown (Fig. 9). You will remember the previous graph of all incidents showed the same seasonal pattern, though here the peak in June is even more pronounced and is evidence that we get more DCS when the weather is good.

The point I am trying to make is that the biggest influence on the number of cases of DCS is the number of dives done. I think it is worth saying again that sports divers each year perform more than 1,000,000 man-dives and less than 1 in 10,000 dives gives rise to a case of DCS.

Fig. 10

DECOMPRESSION SICKNESS ANALYSIS – 1988



If we look at the breakdown we will see how the various factors are involved (Fig. 10). Deep diving was involved in 42 cases, repeat diving in 27 cases, rapid ascents in 9 cases; 22 cases were apparently within the tables and 20 cases were apparently within diving computers. Needless to say that is not the whole story because identifiable factors were present in many of those cases, both within the tables and computers, about which I will have more to say later this morning.

One extremely worrying statistic is the 3 cases of attempted in-water recompression carried out this year. How many times does it have to be said that in the UK, in-water recompression is neither practical or desirable? This year two of these cases transformed people with relatively minor symptoms into wheelchair cases.

I'd like to finish now with a plea for your co-operation, both immediately this weekend and over the next 12 months.

When our sport is subject to criticism from outside, one of our best defences is that we do collect and analyse statistics on accidents and incidents in a disciplined way and we can counter rumour and innuendo with facts and figures. This weekend you can help by completing and returning the short questionnaires on your diving habits which you will find in your delegate folders.

Over the next 12 months I hope you will enjoy safe and incident-free diving, but if you or anyone in your Branch should be involved in an incident, please report it through the Incidents Scheme, as soon as possible, and let me have as much detail as you can.

Thank you all for your attention this morning."

APPENDIX A—Diving Incidents Report

FOREWORD

The Diving Incidents Report is produced annually by the British Sub-Aqua Club in the interests of promoting diving safety.

Within the period 16th December 1987 to 15th October 1988 **197** reports were received via the BSAC Incidents Reporting Scheme. These have been analysed and summarised in this Report, with the intention of highlighting any lessons which may be learnt for the benefit of all divers, and particularly for those concerned with the organisation and conduct of diving activities.

During 1988 it is estimated that more than 1,000,000 dives were performed by sports divers in the UK. The vast majority (in fact more than 99.9%) are carried out safely and successfully and hence attract little publicity. Diving is therefore already a very safe sport and has a record which compares favourably with most others.

When reviewing the incidents contained in the Report we therefore urge that the reader should keep them in proper perspective and consider them against this background.

Incidents have been grouped according to type under **eight** categories: **Fatalities, Decompression Sickness, Boating/ Surface Incidents, Ascents, Technique, Equipment, Illness** and a **Miscellaneous** Section containing 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 an 'Incident Pit' 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 this example you will find the incident listed under 'Decompression Sickness'.

Wherever possible each report is identified by date as well as reference number. The depth is given in the report, only when it is relevant, as is other information such as qualification of the diver, location, etc. The only 'Letter Code' attached to each incident report, relates to membership.

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

FATALITIES

13/88 Dec. 1987. An inexperienced diver died when he got into difficulties and lost his mouthpiece. Attempted sharing with his equally inexperienced buddy was unsuccessful and they became separated. Neither diver had any formal qualifications and were not apparently members of any club. **U.**

21/88 Sept. 1987. A 56 year old diver had a heart attack on the surface at the end of a dive. He was towed ashore by his buddy but was dead on arrival at hospital. **I.**

23/88 Feb. 1988. Two divers who had failed to surface after a dive to 50m were found drowned on the bottom. Both divers had air remaining in their cylinders. From the evidence available it would appear that the accident probably resulted from unsuccessful attempts at sharing after the rubber mouthpiece on one diver's demand valve became detached. **B.**

38/88 April 1988. A diver drowned after getting into difficulties on the surface shortly after entering the water from a hard boat. He appeared back on the surface without mask or mouthpiece and the boat party tried to assist him back on board. Although he was successfully pulled to the diving ladder with a rope he lost his grip and drifted away. Another diver entered the water and towed him back to the boat but in the rough sea conditions contact was lost and the victim sank. The victim's ABLJ cylinder was later found to have been connected incorrectly. **B.**

42/88 May 1988. A diver drowned on a 30m wreck dive after he ran short of air. Having started to ascend the victim appears to have become tangled in line from an SMB reel. He was cut free by his buddy and they recommenced their ascent but at 20m he ran out of air. Attempts to share using his buddy's octopus rig failed and the diver was lost when they became separated. **I.**

48/88 May 1988. A diver died when he became separated from his buddy inside a wreck and was apparently unable to regain the entry point when disturbed silt reduced the visibility. An immediate search failed to locate him and the body was recovered later the same day after the visibility had improved. **I.**

49/88 May 1988. During a wreck dive to 44m a diver became separated from his buddy and failed to surface. In spite of a thorough surface search by the rescue services and a subsequent underwater search of the wreck the body was not located. **I.**

50/88 May 1988. A diver died on a wreck dive to 25m. His buddy surfaced alone indicating a problem and other divers from the party immediately descended and found the victim at the bottom of the shot-line tangled in line from a reel and with his mouthpiece out. **B.**

62/88 May 1988. A 50 year old diver suffered a heart attack during a dive from a charter boat. He was winched off and flown to hospital but was found to be dead on arrival. **B.**

71/88 June 1988. A diver died after apparently running out of air during his ascent to the surface. Having run low on air, difficulties were experienced in ascending as the diver appears to have been overweight. Attempts to gain buoyancy using his direct feed were unsuccessful and he lost consciousness at 15m. His buddy brought him to the surface by inflating his own lifejacket but attempts at resuscitation were unsuccessful. **B.**

106/88 July 1988. A group of three divers entered the water to dive on a wreck in approximately 50m. When they arrived at the bottom at 63m and found the shot was not on the wreck they returned to the surface. The shot was re-set and the divers made a second dive after a surface interval of 47 mins. Once again they found themselves at 63m and off the wreck. The wreck was located after a brief search but the dive was aborted and the divers began to surface. At approximately 45m on the ascent the victim appeared to convulse and quickly became unconscious. He was brought to the surface where all possible efforts were made to resuscitate him but he was declared dead on arrival at the recompression chamber. The buddy who had performed the rescue had missed decompression stops and was recompressed but exhibited no symptoms. **B.**

116/88 May 1988. A pair of divers were swept away at the end of a dive in a 4m deep mountain pool. The first diver was caught in the current and his buddy followed to try and give assistance. They were both swept through fierce rapids and a waterfall, one finally being able to escape into an area of calmer water 2km downstream. The body of the deceased was eventually recovered a further 1km downstream. **B.**

117/88 July 1988. A novice on his first open water dive died after suffering a heart attack on the surface at the end of the dive. **B.**

134/88 Sept. 1988. During a holiday abroad following a dive from a local charter boat, a diver attempted to snorkel down to retrieve the anchor of a nearby boat. He failed to surface and his body was recovered from near the anchor shortly afterwards. **B.**

162/88 Aug. 1988. A diver died having apparently run out of air on a dive to 24m. However when the body was recovered soon afterwards, it is understood that air remained in the cylinder. A leaking first stage may have been a factor. **U.**

DECOMPRESSION SICKNESS

1/88 Sept. 1987. Type 2 bend after dive to 46m with no accurate recording of bottom time, surface to surface time was noted as 22 mins. Due to separation from buddy, diver had ascended to 30m and then re-descended. Five minutes after surfacing he began to experience symptoms and had difficulty walking. Recompressed with apparent full recovery. **B.**

2/88 Oct. 1987. Scallop diver suffered from Type 2 bend after two dives to 36m. He lost feeling in his legs and had a tingling sensation in both arms. No accurate dive times as he had no watch! No formal training but 20 years' experience! Fortunately he made a full recovery after recompression. **I.**

4/88 August 1987. After dive to 25m for 31 mins diver had suspected bend. The diver was stung by a jellyfish during the dive which made diagnosis difficult. He was recompressed. Diver was relying on his buddy's dive computer, but spent more time deeper than his buddy. **B.**

10/88 Oct. 1987. On a dive to 50m two divers experienced problems as a result of being overweight. On commencing their ascent they sank to 54m and had to fin hard to make progress. They ran short of air and arrived at the surface partially entangled in a marker buoy line and having missed decompression stops. Re-entry decompression was then performed! They were later recompressed in a chamber though no symptoms were evident. **I.**

14/88 Nov. 1987. A diver sustained a Type 1 bend after two dives (36m and 26m) using a dive computer. The dives were right to the no-stop limit and an existing shoulder injury appears to have been a pre-disposing factor. **B.**

17/88 Jan. 1988. A diver suffered a Type 2 bend after a dive to 20m using a dive computer. The dive was within the no-stop time for both the computer and BSAC/RNPL table. A previous back injury may have been implicated. **B.**

19/88 Nov. 1987. A diver sustained a Type 2 bend after a dive to 26m for 23 mins. A fast ascent appears to have been a factor. The diver suffered from slurred speech and lack of co-ordination and was recompressed. **B.**

20/88 April 1987. After a dive to 26m for 26 mins a diver exhibited symptoms of a Type 2 bend. Dive was within the tables with nothing abnormal noted and the diver was reported to be very fit. **B**

26/88 Dec. 1987. Diver reported as suffering from decompression sickness and was transferred by ambulance to the local decompression chamber. Adverse weather conditions prevented helicopter transfer to the first choice recompression facility. Coastguard Report only. **U.**

28/88 Dec. 1987. After a dive to 30m at altitude a diver experienced symptoms of decompression sickness. US Navy Tables were being used and the dive was apparently within the tables. The symptoms disappeared during the 3 hour journey to the nearest recompression chamber and after recompression no symptoms persisted. **B.**

34/88 March 1988. During a dive to 35m diver became snagged on a wire rope. In trying to ascend be admitted too much air into his drysuit. When the rope was released he began to make

a rapid ascent to the surface. Too much air was dumped and he began to descend again. After adding/dumping air four or five times he reached the surface after a rapid ascent. Thirty hours later he exhibited symptoms of Type 2 decompression sickness and was recompressed. **B.**

36/88 April 1988. A diver exhibited symptoms of Type 2 decompression sickness after a dive to 30m close to the no-stop limit. This was the individual's first dive following a previous episode of decompression sickness. He was winched off the dive boat and flown to the nearest recompression chamber where he was recompressed with only partial resolution of symptoms. **B.**

37/88 Sept. 1988. A diver dived to 42m for 27 mins using a dive computer and 5 hours 30 mins later made a second dive to 35m for 26 mins. The diver was working salvaging propellors from a wreck. He exhibited serious neurological symptoms 5 mins after surfacing from the second dive. The symptoms resolved spontaneously but he was recompressed along with his buddy who had no symptoms. **U.**

54/88 May 1988. Diver recompressed after 12 min dive to 38m. No further details. **B.**

56/88 May 1988. A diver sustained a spinal bend on a dive to 30m. Although close to the no-stop time the dive appears to have been within the tables with a normal ascent. His symptoms were initially slight and there was some delay in seeking treatment. **B.**

57/88 June 1988. After a dive to 45m for 20 mins using a dive computer a diver began to experience symptoms of Type 1 decompression sickness whilst decompressing at 3m. He was given oxygen on board the charter boat and recompressed later with full resolution of symptoms. **B.**

63/88 May 1988. After a dive to 30m for 20 mins a diver sustained symptoms of Type 2 decompression sickness. Initially she complained of a burning sensation around her midriff and then lost feeling in the lower half of her body. She was evacuated by helicopter for recompression. Residual symptoms gradually cleared during the following week. **B.**

69/99 May 1988. Following a call to the Coastguard a diver with suspected decompression sickness was taken off a charter boat and transferred to a nearby recompression chamber by inflatable. No further details. **U.**

79/88 March 1988. A diver suffered a Type 1 bend after two dives (34m and 29m) using a dive computer. He was recompressed the following day with full resolution of symptoms. **B.**

81/88 June 1988. Following a dive to 19m for 32 mins a diver began to experience symptoms of Type 2 decompression sickness during the boat trip to shore. By the time of arrival on the beach he had lost the use of both legs. Oxygen was administered at the site and during helicopter transfer to the recompression chamber. Repeated decompression treatments were required. **B.**

82/88 June 1988. A diver made a dive to 41m for 25 mins and approximately 5 hrs 30 mins later made a second dive to 43m. He was using a dive computer. He experienced a shoulder 'niggle' on the boat but returned home and slept OK. The next morning he felt alright but during the day the pain in his shoulder returned and worsened. He was recompressed late the same evening. **B.**

84/88 June 1988. A diver made a dive to 49m followed two hours later by a dive to 10m. He was using a dive computer and had performed 19 mins of decompression after the first dive. The next day he was recompressed having experienced pins and needles in his feet. **B.**

85-89/88 June 1988. During a diving expedition five members of the same party required recompression over a period of days. Excellent weather conditions had allowed two or three dives per day continuously for a period of up to nine days. Other factors included performing deeper dives second, fast ascents, performing ascent training at the end of a day's diving and dehydration. **B.**

92/88 June 1988. A diver made a dive to 33m using a decompression computer. Following the dive she experienced back pain and numbness in her legs but this was diagnosed by a local doctor as being unrelated to decompression sickness. Symptoms persisted and after a further medical examination she was recompressed. Type 2 decompression sickness was diagnosed. Residual symptoms remained after treatment. **B.**

96/88 June 1988. A diver was recompressed after suffering ear problems following a dive to 20m for 46 mins. No further details. **B.**

98/88 June 1988. A diver suffered a cerebral bend and was flown by helicopter to the nearest recompression chamber for treatment. No further details, preliminary report card only. **B.**

99/88 June 1988. After dives to 16m and 24m a diver felt dizzy and unsteady. He was given oxygen and flown to the nearest recompression chamber where he was recompressed for Type 2 decompression sickness. The dives were within the tables but the ascent rate on the second dive appears to have been fast. The second dive was also the deeper of the two. **B.**

103/88 June 1988. A diver is reported as being treated for decompression sickness. No further details available. **U.**

104/88 June 1988. A diver was treated for decompression sickness after a dive to 31m for 15 mins. No further details available. **U.**

105/88 May 1988. A diver reported back pains and numbness in his legs after a dive to 31m for 21 mins using a dive computer. Recompressed for Type 2 decompression sickness. **B.**

107/88 July 1988. Report received of a diver being treated for suspected decompression sickness. No further details. **B.**

111/88 May 1988. A party of four divers planned to dive to 40m in a quarry. The dive leader who was using a dive computer appears to have suffered from narcosis and continued down beyond the planned depth. At approximately 65m he was caught by his buddy who subsequently made a buoyant ascent to the surface during which she blacked out. One of the other pair of divers had become breathless at about 55m and had also made a buoyant ascent. Because of the depths involved and the rapid ascents the divers contacted the nearest recompression chamber and were recompressed. **B.**

114/88 July 1988. A member of a police diving team suffered a Type 1 bend during a dive to 49m to recover the body of a diver who had been missing for two years. He was recompressed successfully. Possible contributory factors were inaccurate time-keeping, fast ascent or over-exertion. **I.**

115/88 July 1988. Coastguard report of a diver with symptoms of decompression sickness being winched from a fishing boat and flown to the nearest recompression chamber. No further details. **U.**

119/88 June 1988. Twenty-four hours after a dive to 26m for 31 mins a diver had vague symptoms including confusion and aching shoulders. Thirty-six hours later he contacted the re-compression chamber for advice. He was diagnosed as having Type 2 decompression sickness and was recompressed. Although the dive was not strenuous and was within the tables, the diver was taking medication which could have been a factor. **B.**

120/88 June 1988. A diver suffered Type 2 decompression sickness after a dive to 44m using a dive computer. During the previous 5 days he had made eight dives to >30m (incl. five to >40m), and had been performing significant amounts of decompression stops. The dive in question was described as a 'working dive' though not strenuous. The first symptoms appeared 24 hours later but were very slight. A further 24 hours later he contacted the recompression chamber and was recompressed. **B.**

122/88 Aug. 1988. A diver suffered Type 1 decompression sickness after a dive to 28m for 23 mins. Earlier the same day she had dived to 25m for 24 mins. Pains in her upper arm and elbow were first thought to be a strain but symptoms cleared during recompression treatment. **B.**

125/88 Aug. 1988. After a dive to 32m a diver using a dive computer missed stops when he found himself too buoyant at 3m. Subsequently he was recompressed for Type 2 decompression sickness. **B.**

126/88 Aug. 1988. After a series of three dives using a dive computer a diver suffered Type 2 decompression sickness and was recompressed. He had dived to 35m, 22m and 28m over a period of about 4 hours. The first dive involved a re-ascent to the surface as his buddy had ear problems. His vision and balance became affected half an hour after surfacing from the last dive. A cerebral bend was diagnosed. **B.**

127/88 Aug. 1988. A diver was recompressed after a dive apparently within the tables. No further details. **U.**

129/88 Aug. 1988. A diver suffered Type 2 decompression sickness after a dive to 30m for 20 mins. He experienced back pain and a pain in his leg, followed by numbness. He was recompressed and made a full recovery. **B.**

132/88 Aug. 1988. A diver dived to 28m for a total duration of 34 mins spending most of the time at 17–20m. After the dive he experienced some back pain, a mild headache and slight difficulty with eyesight but did not consider decompression sickness. He made a shallow dive the following day with no problem, but two days later after a dive to 18m he had serious Type 2 symptoms. He was eventually recompressed, but without full success. He has since made a slow but full recovery. **B.**

135/88 Aug. 1988. Two days after a series of ten dives in seven days, a diver reported a general feeling of lethargy and aches across his neck and shoulders. He also had slight tingling in the tips of three fingers. After a delay of a further 36 hours he was recompressed. To the surprise of the medical staff, after such a long delay, his symptoms were resolved. **U.**

136/88 April 1988. After a dive for 34 mins with a maximum depth of 34m using a dive computer, a diver experienced Type 2 decompression sickness. He was transferred to the nearest recompression chamber by helicopter and recompressed. A previous back injury may have been a predisposing factor. **B.**

140/88 Sept. 1988. During a week's diving holiday a diver suffered Type 1 and 2 decompression sickness. On the previous evening he had been drinking very heavily and the following day made a dive to 20m for 25 mins with a hangover. Although well within the tables and the dive computer he was using, he developed a shoulder pain, followed by neurological symptoms. He was recompressed successfully. **U.**

142/88 Aug. 1988. After a dive to 24m for 24 mins a diver experienced symptoms of Type 2 decompression sickness. The symptoms resolved spontaneously over the next couple of hours and no recompression was carried out. **B.**

147/88 Sept. 1988. A diver was recompressed after complaining of pains in his back and kidney area. He had previously dived to 36m that day. After recompression it was concluded that a bend was unlikely. The cause appears to have been a combinaton of indigestion and a pulled muscle. **B.**

149/88 June 1988. A diver suffered Type 2 decompression sickness after two dives to around 60m using a dive computer. Symptoms were initially slight but recompression treatment was sought the next morning. Some slight residual symptoms remained after treatment. The diver had exerted himself during the dive and this may have been a factor. **B.**

150/88 Nov. 1987. A diver exhibited symptoms of decompression sickness at the end of a diving holiday and the symptoms worsened during the flight home. A total of 13 dives had been made in 6 days, all supervised by an instructor using a decompression computer. There was evidence of having spent some time deeper than the instructor and of having made fast ascents on certain dives due to poor buoyancy control. **B.**

152/88 June 1988. During a holiday abroad a diver made a series of four dives over six days. After a dive to 26m for 14 mins he felt unsteady but this sensation resolved. During the flight home he felt unwell and had a marked swaying sensation. He was referred to hospital on his return to the UK. **U.**

154/88 Aug. 1988. A diver with a previous history of decompression problems became dizzy, disorientated and had difficulty in standing after a dive to 24m for 26 mins. After long and repeated recompression treatments he was allowed home but had significant residual symptoms. **U.**

155/88 June 1988. Having performed a dive to 29m for 30 mins with no stops or use of tables, a diver experienced symptoms of DCS but did not recognise them. He made a second dive two hours later and had difficulty in walking soon afterwards. He was diagnosed as having suffered a Type 2 spinal bend and required repeated recompression treatments. Some residual symptoms remained. **U.**

156/88 July 1988. An instructor carrying out emergency ascent training spent 3–4 hrs at a depth of 7m and performed 15 ascents to the surface. That evening he felt unduly tired and had an ache in his elbow. He dived again twice the following day and the symptoms persisted. He was diagnosed as suffering from Type 1 decompression sickness and was recompressed. **U.**

157/88 June 1988. Two days after two dives to 30m, close to no-stop times, a diver complained of hip pain and numbness in his leg. He was referred to a recompression chamber with a suspected bend. **U.**

158/88 Sept. 1988. Four members of a party of seven divers suffered symptoms of DCS after a week's holiday in France. Regular dives in excess of 50m appear to have been carried out. **B.**

159/88 June 1988. A diver made three dives to 36m to "test" a dive computer. Two days earlier he had made two dives to 52m in his capacity as a professional diver. He suffered a Type 1 bend and was recompressed. **B.**

160/88 June 1988. A diver who experienced symptoms of DCS after a dive to around 36m (no accurate recording of time or depth) performed re-entry decompression. His symptoms worsened and he was eventually recompressed but was left paraplegic after treatment. **I.**

161/88 May 1988. Twelve hours after a dive to 38m, followed 90 minutes later by a second dive to 9m, a diver experienced symptoms of Type 2 DCS. She was recompressed with full recovery. **U.**

163/88 May 1988. A diver using US Navy Tables suffered DCS after two dives to 18m. He had consumed 4 or 5 pints of beer in the previous 24 hours, and this may have been a factor. **U.**

165/88 Nov. 1987. The day after she had made 5 dives to a max. depth of 20m, a diver made 3 ascents from 15m carrying out training drills. She later suffered Type 2 DCS and was recompressed. Heavy drinking at a party in between the two sets of dives probably made things even worse!! **B.**

166/88 ? Mth. 1988. Type 2 bend after 49m dive using dive computer. No further details. **U.**

168/88 ?Mth. 1988. A visiting diver from Sweden suffered Type 2 decompression sickness after dives to 50m and 32m. His decompression requirement after the first dive was 51 mins! **U.**

169/88 ?Mth. 1988. Following a dive to 52m using US Navy tables, a diver ran out of air and had to share during his decompression stops. He suffered Type 1 DCS and was recompressed. **U.**

170/88 June 1988. A diver using a dive computer ran out of air and missed stops. He was later recompressed for Type 2 DCS. **U.**

171/88 June 1988. After a series of four dives to 32m, three of which required decompression stops, a diver experienced symptoms of Type 2 DCS and was recompressed. **B.**

172/88 June 1988. Following a holiday abroad, a diver experienced symptoms of DCS during the flight home. No further details. **U.**

173/88 July 1988. Following a diving holiday abroad a diver experienced serious Type 2 decompression sickness during the flight home. The symptoms were not recognised in hospital and she was not recompressed until several days later. Partial paralysis remained even after repeated treatments. **U.**

174/88 ?Mth. 1988. After a series of three dives, of which the shallowest was first, a diver suffered Type 1 DCS. No further details. **U.**

175/88 Jan. 1988. After two deep dives abroad a diver had symptoms of Type 2 decompression sickness. He flew home and the symptoms became worse during the flight. **U.**

176/88 June 1988. A diver performed a series of nine dives in nine days. The dives were mostly deeper than 40m and involved exertion and significant decompression as indicated by his dive computer. A mild joint pain was not recognised as DCS and after a subsequent dive he had Type 2 symptoms and was recompressed. **B.**

177/88 July 1988. A diver with suspected Type 1 decompression sickness was advised to dive again by the boat skipper and other members of the party. As a result he became paraplegic. Part of the original problem appears to be that tables were being mixed. **U.**

178/88 ?Mth. 1988. A 16 year old girl suffered a skin bend following two dives to 18m. No further details. **U.**

179/88 June 1988. A diver was treated for decompression sickness after a dive in Worbarrow Bay. No other details available. **U.**

180/88 May 1988. The day following two dives, of which the deepest dive was performed second and involved repeated ascents to the surface, a diver had marked Type 2 symptoms. Heavy drinking may have been a factor. **U.**

183/88 ?Mth. 1988. A diver suffered Type 2 decompression sickness after a series of dives on holiday abroad. She was given inadequate treatment abroad and had further treatment on return to the UK. Some residual symptoms remained. **U.**

184/88 ?Mth. 1988. After undertaking a three day diving course, a diver developed Type 1 symptoms. These were not recognised on attendance at hospital and he later developed Type 2 DCS. **U.**

185/88 Jan. 1988. Following a dive at altitude to 32m, a diver suffered Type 1 DCS. No further details. **U.**

186/88 Sept. 1988. After a series of twelve dives in six days using BSAC '88 tables, a diver suffered a minor bend in his right arm. It was not thought necessary to treat it and it resolved within 18 hrs. **B.**

187/88 Jan. 1988. A diver appears to have suffered Type 2 decompression sickness after a dive to 26m for 12 mins. No further details available. **U.**

188/88 July 1988. Whilst returning home by coach from a diving holiday, a diver complained of decompression sickness symptoms in a motorway service area. A police escort was provided to the nearest recompression chamber where he was recompressed. **U.**

189/88 Aug. 1988. A visiting Swedish diver dived to 45m in Loch Ness (hoping to catch sight of the monster!). He was using a metric depth gauge, which he knew to be faulty, in conjunction with US Navy tables which are in feet! As he had no copy of the tables underwater, he "guessed" the stops required. Needless to say he guessed wrong and was subsequently recompressed for Type 1 DCS. **U.**

190/88 Sept. 1988. A diver reported a loss of feeling in his arm and tingling in his fingertips and was recompressed. He had dived to only 6m that day, but had made two dives the previous day, both apparently within the tables. **B.**

191/88 Aug. 1988. A Coastguard helicopter was scrambled to recover a diver from a diving vessel who was reported to be suffering from decompression sickness. Coastguard report only. no further details. **U.**

197/88 July 1988. A diver was winched off a fishing vessel by helicopter and flown to the nearest recompression chamber for treatment, after complaining of pains in his chest and legs. No further details. **U.**

198/88 Aug. 1988. A diver with suspected decompression sickness was airlifted by helicopter from a fishing vessel, directly to the nearest recompression chamber. No further details. **U.**

BOATING/SURFACE INCIDENTS

16/88 Dec. 1987. Engine failure as a result of a faulty fuel line caused a dive boat to drift away just as a pair of divers arrived back at the surface. Fortunately the boat drifted inshore and the spare fuel line, which was back on the beach, was fitted. The divers who had been hanging on to a buoy were picked up by the dive boat just as a rescue helicopter arrived. **B.**

22/88 Oct. 1987. Inflatable lost contact with diver's SMB and on surfacing the diver was unable to attract their attention. The boat returned to shore to alert the Coastguard as they had no VHF radio. The diver was spotted by the rescue helicopter attempting to climb a nearby cliff and was recovered by his own boat. **U.**

25/88 Jan. 1988. A novice diver had to be towed ashore after experiencing difficulty swimming on the surface at the end of a dive. Preliminary Incident Report Card only. No further details. **B.**

31/88 Jan. 1988. A novice diver on his first dive became breathless on the surface at the end of the dive and had to be towed ashore. A lack of fitness and a tight-fitting wetsuit appear to have been contributory factors. **B.**

32/88 April 1988. A diver sustained head and arm injuries when he was struck by the propellor of a diving inflatable as he neared the surface. The diver was surfacing as he had become separated from his buddy who was controlling their SMB, consequently he was surfacing some distance away from the buoy. **B.**

35/88 April 1988. Whilst attempting to enter the water from a hard boat with a high gunnel a diver caught his leg and entered the water head first, dislodging his mask and mouthpiece. He appears to have lost consciousness and begun to sink but was recovered from 5m depth by his buddy. **B.**

43/88 April 1988. A candidate on a boat handling course was injured when he fell out of the boat during a manoeuvre being performed by a fellow candidate. The injured person held on to the boat and was dragged underneath. His left foot was badly lacerated by the propellor. **B.**

45/88 May 1988. A rigid hulled inflatable with six divers on board experienced engine failure shortly after arrival on the dive site which was approximately 6 miles from the launch point. The auxiliary motor was started but became fouled with a rope breaking the shear pin. The shear pin was replaced but as little headway was being made in the strong tide, cylinders and weight-belts were ditched. The return trip was completed in darkness after a journey of more than 6 hours. **B.**

46/88 April 1988. Inshore lifeboat launched in response to report of divers in difficulties. On arrival at scene the crew found the divers had been assisted ashore by local fishermen. Coastguard Report only. **U.**

51/88 May 1988. Engine failure as a result of lack of oil in auto-lube system. Bypass of auto-lube system allowed the boat to return to shore. **B.**

52/88 May 1988. A diver in some difficulties on the surface had to be assisted on board a hard boat moored above a wreck. The diver was a member of a party diving from inflatables nearby. His buddy was nowhere to be seen. He was eventually collected by one of the inflatables. **U.**

55/88 May 1988. On approaching a wreck-site a group of divers in a small boat found a hard boat already moored on the site and were told by the skipper that they could not dive. When they tied up to the buoyline they had left on the wreck the previous day two divers from the large boat went down the line and cut it free. The large boat then made as if to ram the smaller boat. **B.**

59/88 May 1988. Two divers who had become stranded on some cliffs during a shore dive were rescued by a party of BSAC divers in an inflatable. **U.**

60/88 May 1988. Two divers in a speed boat were rescued after their boat was swamped. Their distress flare was seen by another party of divers nearby who came to their assistance and towed the boat ashore. **B.**

61/88 May 1988. A dive boat covering four divers was approached by an SAR helicopter and asked to give assistance to a large inflatable with engine failure. The divers were recovered and the disabled boat with 6 divers on board was towed to shore. **B.**

65/88 April 1988. Two divers swam ashore after being swept away from the yacht they were diving from. The one member of the party left on board was inexperienced and did not know how to use the radio. The Coastguard tried to contact the yacht without success but it was eventually brought safely into harbour without assistance. **U.**

66/88 April 1988. A diving inflatable ran out of fuel and lost contact with its three divers. The local Port Control were alerted by radio and a search was commenced. This involved the lifeboat, a police launch, two helicopters, two inflatables and a Coastguard Mobile Rescue Unit. The divers were located safe and well ashore. **U.**

67/88 April 1988. A party of five divers were reported to the Coastguard as being overdue from a shore dive. Shortly after the inshore lifeboat had commenced a search a fishing boat reported it had picked four divers up and the fifth was safe ashore. **U.**

66/88 May 1988. A lone diver in difficulties was recovered by a fishing vessel. Coastguard Report only. No further details. **U.**

70/88 May 1988. Two divers were reported missing by a light-house keeper. After a search by lifeboat, inshore lifeboat and helicopter they were picked up approximately half a mile away. **U.**

75/88 May 1988. A diver was rescued by helicopter after being dashed against the rocks whilst assisting his buddy out of the water. His suit was punctured and his hands badly lacerated and he quickly became exhausted and was swept out to sea again. **U.**

76/88 May 1988. A diver was reported missing by his cover boat and a helicopter and lifeboat commenced a search. The helicopter located the diver's SMB and when the diver surfaced shortly afterwards the helicopter was able to direct the boat to pick him up safely. **U.**

77/88 May 1988. Three divers got into difficulties and climbed out on to the rocks. Their inflatable was unable to pick them up due to adverse sea conditions. One diver eventually swam back to the boat but the other two had to be winched off by helicopter. **U.**

78/88 May 1988. The Coastguard received a 999 call reporting two divers missing. Shortly afterwards they were observed walking back to the beach having exited some distance away. A rescue helicopter had been scrambled and attended just as the divers were located. **U.**

93/88 June 1988. The Coastguard were alerted to search for a missing diver by his cover boat. A search by lifeboat and SAR helicopter was commenced but 20 mins later the diver was recovered by his own boat. He had been on the surface some time but had not been seen due to the swell. **U.**

95/88 May 1988. A party of three divers were observed to be in difficulties a short way off-shore. They were rescued by the inshore lifeboat which reported that one of the divers had been suffering badly from cramp. **I.**

97/88 June 1988. Two divers returned to the surface having become separated during a dive to 20m. Their cover boat initially spotted them but lost them in worsening sea conditions and the Coastguard were alerted. An immediate search was instigated utilising two lifeboats, two helicopters and numerous small craft. The divers were located by one of the helicopters and safely winched aboard. **I.**

108/88 July 1988. Two large diving inflatables with 75hp engines were taken to the coast for the first time after engine repairs. On launching one boat failed to start. Diving was rescheduled with the remaining boat, but whilst the second party of divers was underwater the cox allowed the boat to drift too far away and was then unable to restart the engine. All the divers were recovered with the assistance of another group of divers and the boat towed to shore. **B.**

113/88 June 1988. An inshore lifeboat and SAR helicopter commenced searching after the Coastguard received a report of a diver 3 hrs overdue. Shortly afterwards he was discovered safe and well on the beach and the rescue units stood down. **U.**

118/88 July 1988. After a small cruiser had fired a red flare, a dive charter boat rushed to her assistance leaving two divers in the water, although there were other boats in the area which could have responded. The two divers were picked up safely by another diving boat. **U.**

121/88 July 1988. On arriving at a wreck site a dive boat was subjected to abusive language via the VHF radio from a fishing boat already on the site. Having tried unsuccessfully to reason with the skipper the dive boat put divers in on the wreck from a position some 100m away. **B.**

123/88 July 1988. Following receipt of a 999 call the Coastguard despatched an inshore lifeboat to go to the assistance of a lone diver in difficulties. On arrival at the scene they found the diver safe on the beach having reached the shore unaided. The diver claimed to be a professional canal diver and blamed a faulty compass which had led him too far out to sea. **U.**

124/88 June 1988. Two divers on a drift dive became separated from their cover boat and each other. The Coastguard were alerted and were in the process of mobilising an SAR helicopter when both divers were reported safely recovered by their own boat. **U.**

130/88 Aug. 1988. Two divers became separated from their cover boat and drifted away on the tide. They were located after a search by two lifeboats and a SAR helicopter. **U.**

133/88 Aug. 1988. During a drift dive an SMB came detached. Although the divers noticed quite quickly and surfaced within sight of the boat they could not attract their attention. Personal flares carried by the divers failed to operate. When the boat crew realised what had happened they tried to radio for assistance but found their VHF radio was not working. A red flare was fired and seen by the Coastguard. The divers were located by an SAR helicopter and picked up by the lifeboat. **B.**

137/88 Aug. 1988. A party of six divers in a 16' open charter boat were preparing to make a wreck dive when the charter boat sank!! The boat was swamped by a bow-wave of a passing submarine and quickly went under. Two divers and the skipper were trapped in an air pocket in the front cabin but were pulled out safely by other members of the party. **B.**

138/88 Aug. 1988. A group of divers on a hard boat rescued three people from a sinking speedboat. The boat sank just as the dive boat came alongside and the three occupants, one of whom was a non-swimmer, were thrown into the water. All three were rescued safely. **B.**

145/88 Aug. 1988. A party of three dive boats set off for their dive site. One of the boats was known to be low on fuel and had no spare but relied on spare fuel available in the other boats. On the way to the site the boat ran out of fuel. Neither of the other boats returned to assist until alerted by the lifeboat which was passing on exercise. The boat was anchored waiting for assistance for 90 mins. **B.**

146/88 Sept. 1988. During a drift dive with two pairs of divers in the water, the cox noticed one SMB moving into an area of overfalls. He recovered the first pair of divers and then realised that the SMB had become detached. The emergency services were alerted and the divers were located 1.5 miles from their first position. **B.**

181/88 Sept. 1988. The rescue services were alerted that a diver was being swept out to sea. The local lifeboat and an SAR helicopter were requested to assist, but soon afterwards the diver managed to make his own way ashore. **U.**

193/88 Aug. 1988. The Coastguard received a 999 call reporting a diver missing and requested assistance from a nearby SAR helicopter and the local lifeboat. Shortly afterwards the diver surfaced safe and well. The lifeboat launch was cancelled and the helicopter returned to its exercise. **U.**

194/88 July 1988. A diver was recovered safely after being missing at sea for more than twelve hours. He had become

separated from his boat and swept out to sea. Evening was falling and though an extensive search was made he was not found. The following morning at first light he was spotted by a fishing boat seven miles from his original position. **U.**

195/88 July 1988. Two divers who were swimming in their wetsuits near a harbour entrance got into difficulties in rough seas. They were rescued by the local lifeboat. **U.**

196/88 July 1988. A dive boat reported two divers missing and requested assistance from the Coastguard. Shortly afterwards the position of the missing divers was independently reported by a passing yacht and a member of the public. They were picked up by their own boat just as the rescue helicopter arrived on the scene. **U.**

199/88 Aug. 1988. A dive boat reported two divers missing. The lifeboat was launched and a rescue helicopter summoned, but shortly afterwards the divers were recovered by their own boat. **U.**

200/88 Aug. 1988. Two divers reported missing from their dive boat were recovered by a rescue helicopter and returned to their vessel. **U.**

ASCENTS

8/88 Nov. 1987. After a drift dive to 21m, a pair of divers began their ascent from 18m. At about 9 or 10m one of the divers felt stiffness in his left shoulder. Quickly after surfacing he became paralysed and unconscious. He was treated promptly at a nearby recompression chamber and was diagnosed as having a severe air embolism. **B.**

41/88 April 1988. During a dive to 36m a diver's demand valve first let in water and then became tight and failed to supply air. He began to share with his buddy but at 20m they became separated. The buddy's demand valve hose had become twisted and the defective DV now began to freeflow. Both divers successfully made their way to the surface independently from 20m. **B.**

72/88 May 1988. A diver made an assisted ascent after running out of air at 30m. Part way up he panicked and ascended rapidly to the surface where he lost consciousness. He was air lifted by helicopter to the nearest recompression chamber where he was recompressed for possible embolism and made a full recovery. **U.**

80/88 June 1988. After an apparently normal dive to 17m a diver appears to have lost consciousness close to the surface during the ascent. His buddy turned to see him sinking towards the bottom and dived down to rescue him. They made a buoyant ascent to the surface and the injured diver was taken back to shore and then transferred by helicopter to the nearest recompression chamber. He sustained a burst lung and embolism and did not regain consciousness for a long period. **I.**

83/88 June 1988. Two divers on a hard boat dive found themselves without much of their own equipment which had been loaded on to another boat in error. They still managed to dive by going in last and borrowing the equipment they needed from other members of the party. During the dive one of the divers had continual trouble with her borrowed mask which kept flooding. During the ascent she became tangled in the shot rope with a flooded mask and then made a rapid ascent to the surface, being unfamiliar with the controls of her borrowed lifejacket. On the surface she began to exhibit symptoms of an embolism and was winched off by helicopter. She was diagnosed as having suffered cerebral arterial gas embolism and required repeated recompression treatments. **B.**

100/88 June 1988. As a result of a faulty suit inflation valve, a diver became inverted at 30m and was unable to right herself. Her buddy gave assistance and ascended with her to the surface, but in spite of his efforts to control the situation the ascent was very rapid. Both divers were shaken but uninjured. **B.**

109/88 May 1988. Whilst performing an assisted ascent during a rescue skills test, the donor lost control of his buoyancy and made an uncontrolled ascent from 10m to the surface. His buddy, being unable to find his own regulator, was forced to make a free ascent. **B.**

141/88 Sept. 1988. During a wreck dive to 28m, a diver had problems with his demand valve. He and his buddy tried to share unsuccessfully and both became unconscious. A trio of divers following close behind gave assistance. Being unable to share with the unconscious divers two of the rescuing group untangled one of the divers and made a buoyant ascent to the surface. The remaining diver eventually managed to lift the other casualty to the surface, though they became separated on the way up. Both casualties had apparently stopped breathing but were resuscitated at the surface by in-water EAR. They had both suffered burst-lungs and were flown by helicopter for treatment at the nearest recompression chamber where they made a good recovery. **B.**

143/88 Sept. 1988. Following a dive to 30m a diver ascended too quickly from about 6m to the surface. Shortly after surfacing he complained of dizziness, slurred speech and pins and needles in his right cheek. He was taken by boat to the nearest recompression chamber but his symptoms resolved on the journey. He was later diagnosed as having suffered a cerebral embolism. Recompression was not carried out. **B.**

144/88 Aug. 1988. As a result of his mouthpiece becoming detached from his DV a diver began to share with his buddy at 25m depth. They made an assisted ascent towards the surface but at 10m the ascent became buoyant. It was initially feared that one of the divers had suffered a burst lung but after hospital examination this proved not to be the case. **B.**

201/88 May 1988. A diver made a buoyant ascent from 20m after his demand valve started to freeflow. He experienced chest problems for a few days afterwards. This may have been due to mild pulmonary barotrauma or inhaled water. **B.**

TECHNIQUE

7/88 Oct. 1987. A novice diver was attempting a navigation exercise. Her buddy had an SMB with a 5m long line to restrict depth to 5m. The pair became separated during the dive when the novice performing the drill went too deep and the buddy was unable to follow due to the SMB attached to his wrist. Suddenly finding herself alone at 20m the novice tried unsuccessfully to inflate her ABLJ with the direct feed and used the emergency cylinder to make a buoyant ascent. The direct feed was subsequently found to have been fitted to the demand valve with a high pressure fitting incorporating a restrictor. **B.**

40/88 April 1988. An inexperienced diver panicked at approximately 15m and the dive leader aborted the dive. On the surface the novice was in a great deal of distress, hyperventilating and unable to swim due to leg cramp. He was towed ashore without further incident. **I.**

53/88 May 1988. During a descent down the anchor chain a diver at about 12m depth found his demand valve was 'tight'. On checking his contents gauge the needle was descending to zero with each breath. He made a free ascent to the surface and began to drift away in the current. His buddy also surfaced and managed to tow him to the boat with the assistance of the dive marshal who entered the water. On inspection it was found that the diver's pillar valve had not been fully opened. Buddy check was inadequate. **B.**

110/88 Sept. 1987. Having used a distance line to explore a wreck at 50m a diver found he could not reel it in fast enough to keep up with his buddy and collected it in armfuls. Shortly after starting his ascent he became entangled in the line. He was cut free by his buddy but had by now run out of air. The two divers made an assisted ascent to 12m where a spare set had been positioned on the line. The second diver was now out of air and both had to use the spare set to decompress. **B.**

EQUIPMENT

6/88 August 1987. A faulty contents gauge caused a diver to run out of air at 25m and make a free ascent to the surface. On examination afterwards the gauge was found to be reading 550psi when the cylinder was empty. **B.**

29/88 Jan. 1988. During a dive to 36m a diver's regulator started to freeflow. He and his buddy made a successful, but rapid, ascent to the surface. **B.**

47/88 March 1988. During a dive to 11m a diver experienced problems when her suit inflation valve jammed open and continued to feed air into her suit. After trying to hold on to the bottom for a short while she was eventually forced to let go and made a buoyant ascent to the surface. She was recompressed as a precautionary measure due to a pain in her shoulder but as this brought about no improvement it appears she had simply strained a muscle. **B.**

58/88 June 1988. A diver's high pressure hose burst suddenly during a dive to 13m. No further details. **B.**

64/88 April 1988. A diver ran out of air during his ascent to the surface as a result of a faulty contents gauge. He made a free ascent to the surface where he was obviously cyanosed and close to unconsciousness. He had also swallowed a large amount of water. He was resuscitated and evacuated to hospital by air-ambulance where he made a full recovery. **B.**

101/88 April 1988. A diver reported finding water in a cylinder due to failure of a bursting disc. No further details. **U.**

148/88 July 1988. Having experienced problems with too tight a neck seal in her drysuit, a diver had a larger seal fitted. On the first dive with the new seal her suit flooded. This was not recognised until difficulty in ascending was experienced at the end of the dive. Air was wasted trying to inflate the suit and ABLJ and the diver ran out of air and became unconscious. She was successfully brought to the surface by her buddy. **B.**

ILLNESS

30/88 March 1988. Following a dive to 21m a diver began to experience ear pain several hours later. This worsened until the eardrum ruptured, approximately 8 hours after the dive. On examination it was found that a pre-existing infection in both ears had been the cause. **B.**

33/88 March 1988. Following a dive to 10m for 20 mins a diver suffered from sever headache, listlessness and some lack of mobility in his legs. His buddy who had previously dived to 33m had no symptoms. Medical investigation inconclusive. No recompression carried out. **B.**

90/88 May 1988. After a dive to 18m for 12 mins a diver complained of being sick and dizzy. He was seen by a doctor and subsequently recompressed but the cause remains unknown. It appears it may be connected to a pre-existing medical condition. **B.**

131/88 July 1988. A diver had an epileptic fit whilst underwater. He was rescued by the Coastguard and taken to hospital in an ambulance. No further details available. **U.**

153/88 June 1988. After a decompression dive to 22m using US Navy tables a diver felt unwell and contacted the nearest recompression chamber. He was medically examined and diagnosed as suffering from a migraine. **U.**

182/88 ?Mth. 1988. A diver had convulsions 5hrs after a dive to 35m. He was recompressed but the symptoms were later thought to be unrelated to diving. **U.**

MISCELLANEOUS

3/88 Aug. 1987. Whilst launching a boat, the last diver, who was being helped on board, fell heavily into boat landing on the injured party's diving knife. The knife was forced through the sheath and caused a wound 1.5" deep which required two stitches. **B.**

11/88 Nov. 1987. A diver sustained two perforated ear drums during a dive to 22m wearing a drysuit fitted with a thin latex rubber dry hood with a loose liner inside. The diver only became aware of his injuries after the dive on discovering his liner was soaked with blood. **B.**

12/88 Nov. 1987. A novice diver had difficulty breathing at 6m towards the end of his second dive of the day. Attempted sharing was unsuccessful and he made a free ascent to the surface. On the surface he was still struggling for breath and was taken to hospital. He was diagnosed as being hypothermic. He had spent a total of 55mins in the water and was wearing a wet suit. A faulty first stage on his regulator was a contributory factor. **B.**

15/88 Dec. 1987. A diver burst a blood vessel in his ear as a result of "reversed ear" which occurred on the first occasion he had used a new drysuit which had a thin latex rubber dry hood. **B.**

18/88 Sept. 1987. Whilst exploring a wreck at 26m a diver was trapped when a gun turret door shifted and fell across his leg. The leg was badly broken and he was unable to move. With some difficulty his buddy released him and they ascended to carry out the required decompression stops before surfacing to seek medical attention. **B.**

27/88 Dec. 1987. After receipt of a report from a concerned friend the Coastguard and Police initiated a search for two divers who were apparently overdue. They were located safe and well ashore. **U.**

44/88 Oct. 1987. During a dive to 15m a diver suddenly gripped his buddy's arm with both hands. Although there was no obvious problem he did not respond to signals. His buddy carried out a controlled buoyant lift to the surface and assisted him into the boat. It transpired that he had suddenly become very dizzy as a result of a small rupture in his eardrum. He had been aware only that he was holding onto something to regain his balance. **B.**

73/88 June 1988. Whilst recovering the shot rope to move it clear of the wreck at the end of a dive two divers were surprised when a lone diver from another party came down the line very fast and collided with them. He appeared very nervous and unsure of himself and was escorted to the surface by the first pair. His buddy was apparently already back on board his own boat. **U.**

74/88 May 1988. A charter boat requested medical assistance via the Coastguard for a diver who had swallowed a large amount of sea water due to a faulty regulator. A doctor was alerted and during passage to port the vessel reported that a second diver who had made a rapid ascent with the first diver was displaying symptoms which could be decompression sickness. A diving specialist was consulted by VHF. Both patients were subsequently taken to hospital for observation. **U.**

91/88 Sept. 1987. A swimmer at a branch training session was found unconscious on the bottom of the pool. He was rescued and given EAR and ECM by branch members and successfully resuscitated. It is not known whether he collided with the pool side and was knocked unconscious or whether he blacked out during breath-holding. **B.**

94/88 June 1988. The Coastguard were alerted and arranged for a doctor and ambulance to meet a dive boat with a diver on board suffering from severe chest pains after a dive to 30m for 20mins. On examination the doctor diagnosed a muscle strain only. **U.**

102/88 June 1988. Ten minutes after surfacing from a dive to 35m a diver suffered giddiness and vomiting. He was taken to the nearest recompression chamber but not recompressed. A vestibular bend was considered but final diagnosis was an inner ear problem. **B.**

112/88 July 1988. A novice diver suffered a perforated ear drum and became disorientated on a dive to 8m. His buddy performed a controlled buoyant lift to bring him to the surface. A previous perforated ear drum many years before, and unconnected with diving, may have been a factor. **B.**

128/88 Aug. 1988. A diver suffered a broken leg on some rocks in a swell. Preliminary incident report only. No further details. **B.**

139/88 Aug. 1988. A diver appears to have blacked out during a dive to 33m. He was lifted to the surface by his buddy and brought back on board the boat. It was a very warm day and the divers had been waiting on deck in their drysuits for a substantial period prior to the dive, this may have been a factor. **B.**

151/88 April 1988. After a dive to 14m a diver complained of breathlessness and a tight chest. After medical examination

he was diagnosed as having a heart problem and referred to the Cardiac Monitoring Unit. **U.**

164/88 April 1988. A diver was recompressed for suspected DCS but was found to be suffering only from a strained muscle. He explained that he did not need to use tables or a computer as "he does not do demanding depths or times"!!! **U.**

167/88 ?Mth. 1988. A diver suffered an air embolism from 3m depth and was recompressed. No further details. **U.**

APPENDIX B—Diving Incidents Report

STATISTICAL SUMMARY OF ACCIDENTS AND INCIDENTS

ITEM	1984	1985	1986	1987	1988
Incidents reported	213	165	154	162	197
Incidents analysed	211	164	154	162	197
British incidents	200	160	146	142	173
Incidents abroad	11	5	8	16	15
Location unknown	10	0	0	4	9
BSAC Members	138	118	107	110	117
Non-BSAC Members	15	17	19	5	13
Membership unknown	74	29	28	47	67

All the above reports are based on information received between October 16th 1987 and October 15th 1988.

HISTORY OF DIVING FATALITIES

YEAR	MEMBERSHIP	DEATHS BSAC	DEATHS NON-BSAC
1959	2,615	1	
1962	5,023	1	
1963	5,255	1	
1964	5,571	2	
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)