

# DIVING INCIDENTS REPORT

Dave Shaw - NDC Incident Adviser

"This will be the last time I shall speak to you as Diving Incidents Adviser, as I now feel that it is time to hand the job on to someone else. For those of you out there who have written nasty letters to me following my article in *Diver* on ABLJs and BCs — panic not, I am not about to become the NDC Equipment Adviser!

It has been an interesting 3 years, and during that time I have always tried to approach the job with a balanced view. It is too easy to have a jaundiced view of diving safety when each morning's mail brings reports of things which went wrong.

It is also easy to be convinced by arguments that many divers are acting irresponsibly and involving the expenditure of thousands of pounds of taxpayers' money when costly rescue operations and treatment are necessary. Whilst it is true that we have our share of fools, it is also true that most dives are trouble-free and successful.

With the need to keep a balanced view, the style of the Incidents Report in your delegate's folder has been altered to include a Foreword, which sets out our arguments and convictions. It also contains a list which compares the risks, on the basis of fatalities, of various adventure sports and you will see that diving does not even feature in the top ten. Other adventure sports which attract much less adverse publicity than ours are there for all to see. The Incidents Report, which we produce in the interest of diving safety, has been used in the past as a stick to beat us with, and we hope all who read this year's edition will maintain a balanced view.

Another change in the Report is that the number code section on Page 3 has been rearranged to follow the style and groupings printed on the latest Incident Report forms. Included for the first time is a simple section on decompression sickness analysis. We feel that the format is more logical and easier to follow than that used in previous years.

Fig A  
INCIDENTS ANALYSIS - 1987

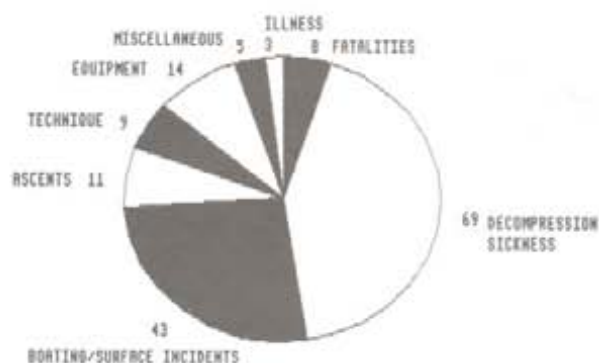


First of all, as in past years, I would like to give you some of the overall patterns for incidents in 1987, and then move on to discussing relevant details in the 8 incident categories which I have used for the past 3 years.

The pie chart (Fig. A) shows a relatively familiar pattern. Of 162 incidents analysed, 8 were in category A (fatalities), 84 in category B (illness/injury), 69 in category C (Minor) and 1 in category D (good practice). This is not to say that good practice has not appeared in more than one incident; as the presentation of Safety Awards later this morning will testify, we often have examples of good practice and rescue techniques which form part of incidents classified in each of the other three categories. This year I have included only the one incident which did not have any other more serious involvement.

Thankfully, diving deaths went down from 15 in 1986 to 8 reported this year, of which 6 were BSAC members. There is a higher proportion of category B incidents, and this is accounted for by the increase this year in the numbers of reported bends.

Fig B  
DIVING INCIDENTS BREAKDOWN - 1987



The breakdown into the 8 types of incident is shown as Fig. B, and I would like to repeat what I said last year about which type a particular incident finds itself in. A bend may have been due to a rapid ascent, or a buoyant ascent may have been caused by a regulator malfunction. In all cases, I have taken the main outcome of the incident before classifying it into bends, ascents, equipment, etc.

The pattern to notice is that decompression sickness and boating/surface incidents still lead the table in terms of numbers, and you are more likely to be a statistic in one of these categories than in the others.

Fig C  
INCIDENTS BREAKDOWN - 1987

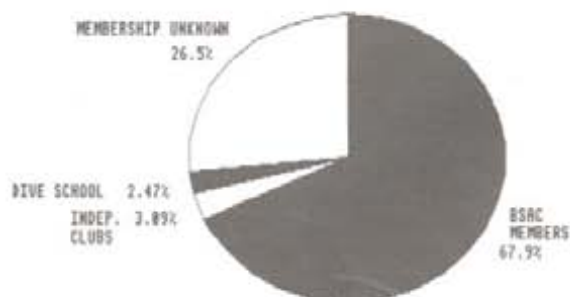
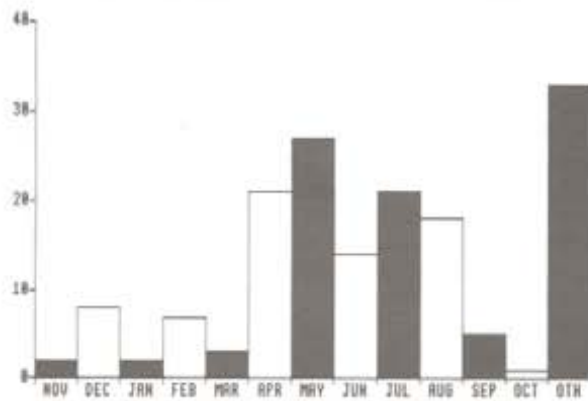


Fig. C shows that our data capture, as in previous years, leads to about 70% of our reports involving BSAC members. The 25.5% membership unknown is made up mainly from HM Coastguard reports where we often have no idea of membership status. We only rarely receive reports from divers from independent clubs, and then usually only of the more serious ones, such as fatalities.

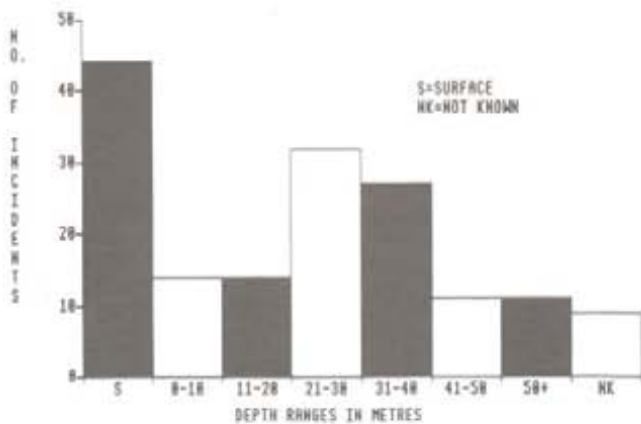
The monthly breakdown (Fig. D) shows the predictable yearly trend with the major peaks coinciding with the main UK diving season, beginning in April. The large column of 'Other' months is the residue of the 1986 incidents which take, in some cases, months to filter through to HQ and then to me. Also, this accounts for the tailing off of incident occurrence in September and October. They are still happening, but do not arrive on my desk in time for compilation of this report.

Fig D  
MONTHLY BREAKDOWN OF ALL INCIDENTS - 1987



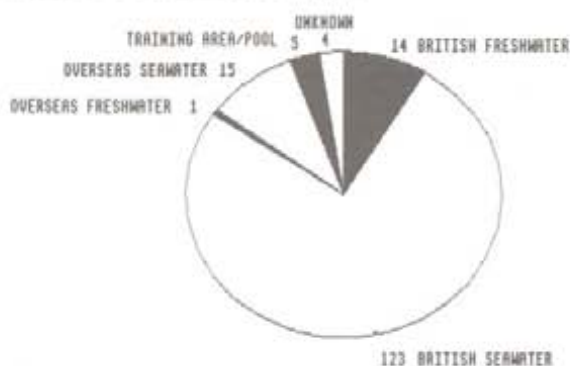
Looking at the depth at which incidents happen (Fig. E), you will see that the surface is where you are most likely to be involved, but it is also the place where the incident may most easily be sorted out. The depth ranges down to 20m appear to be relatively safe, but more evidence has appeared this year of very deep diving - below 50m - and 22 incidents in 1987 which involved dives below 40m.

Fig E  
DEPTH RANGES AND INCIDENT OCCURRENCE - 1987



The pie chart (Fig. F) of locations again reflects the dominance of British seawater as the place where the majority of reported incidents took place although, perhaps as a result of my plea last year for more information, there is a significant rise in those reported in overseas locations.

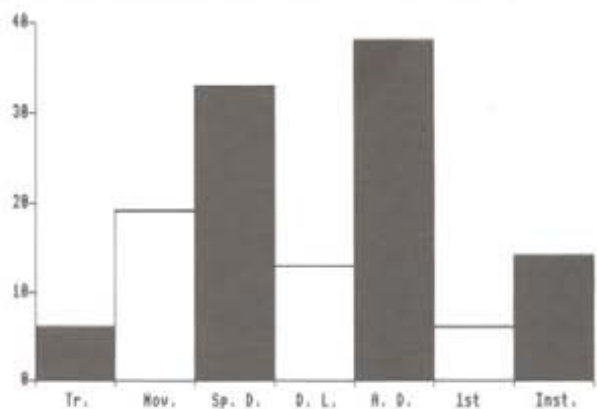
Fig F  
LOCATION OF INCIDENTS - 1987



The South West overtook Scotland as the location where the most incidents took place, with 28% of those reported occurring in Cornwall, Devon and Dorset. This is a testimony to the South West's popularity. Scotland only accounted for 7% of reported incidents this year and Scapa Flow, which gained unjustified notoriety in 1986, only claimed three

incidents this year, only one of which was a bend. Stony Cove produced seven reported incidents in the year.

Fig G  
QUALIFICATION OF DIVERS (107 REPORTS)



The next graph (Fig. G) will be familiar to all who were here in 1985 and 1986, and again shows the dominance of Advanced Diver followed closely by Sports Diver as the diver grades most likely to have a diving incident. As I mentioned last year, before you refuse to dive with an Advanced Diver on the grounds that they are poor risks, please realise that there are probably more Advanced Divers taking part in serious diving in which the list of potential problems is greater. When looking at this graph, you must also remember that some of the instructors were also First Class and Advanced Divers, and so appear in both columns.

Fig H  
DIVERS' USE OF EMERGENCY SERVICES



The last graph (Fig. H) is perhaps the most worrying, as it shows an upward trend in the involvement of HM Coastguard and a sharp increase in the use of helicopters in diver rescue. There were 42 incidents this year in which there was helicopter involvement and, although many of these were precautionary moves by HM Coastguard, we must be concerned at this level of rescue service activity. There is a considerable lobby of those who would make us pay for such services, and the figures do nothing to help us defend ourselves in these arguments.

Now, let me take each of the incident types and try to identify trends and any safety messages they contain.

As I said earlier, I am pleased to be able to report that the total of fatalities of amateur divers reported has fallen this year from 15 to 8, of which 6 were BSAC members. Last year I delivered a very strong message about taking novice divers beyond their limitations, and I am pleased to be able to say that we have had nothing like the same catalogue of errors in this year's diving deaths. There seems to have been an underlying trend of bad luck and mystery connected with this year's fatalities, and not the same degree of bad diving practice.

One of the exceptions to this, however, was the case of the diver who died in 2m of foul river water whilst engaged in illegal commercial activities, employed by a local shipyard to clear debris from a newly-built ferry's propulsion units. This case broke almost every diving safety rule in the book, as well as contravened the *Diving Operations at Work* regulations as formalised by the H&SE. We intend to publish an article in *Diver* shortly, to act as a guide to the legality of 'diving for hire and reward', and to try to clarify some of the myths and half-truths which surround this area of diving operations.

This diver died in 2m of water, and one of the common features of this year's fatalities is that six of them occurred in depths of less than 10m. Three died at the surface, two having drowned in rough surface water, one of these at an overseas location. Difficulty in removing a direct-feed attachment which connected directly into the ABLJ rather than to the breathing hose was one of the contributory causes of one of these surface rough water deaths.

Another death involved a diver who left his novice buddy behind and dived, against advice, inside what was commonly regarded as a dangerous wreck in 9m of water. He had left his own datum line outside the wreck, and it is thought that he followed another line left by someone else on the wreck. He did not reappear, and was found later with empty cylinders, inside the wreck.

Every year we have cases of untrained divers trying out the sport, and this year there was one with tragic results. On this occasion a youth, together with his pals, decided to try out some diving equipment in the sea after a lunchtime drinking session. He was completely untrained, not a member of any diving organisation, and he drowned in very shallow water.

The most mysterious death occurred during a dive in good underwater visibility, when a novice diver became separated from his buddy on the shotline during the descent to a wreck at 31m. Shortly after the dive began the novice was seen to surface, apparently OK, and he seemed to be looking for his buddy. He descended again, with no outward signs of distress, before the cover boat could get to him. Seconds later his buddy appeared at the surface to regroup with him after their separation. The deceased was not seen again until his body was recovered several days after his disappearance.

A husband-and-wife tragedy occurred when a dive went wrong in a deep lake. They were both found in difficulties in 53m of water, with the shotline entangled around the wife's body. It was only through gallant rescue attempts that the wife was brought to the surface — by a diver who lost his air supply during the descent, but still persevered. She survived although her heart was restarted three times during a half-hour spell of CPR by the surface rescue team, and she was reported to have suffered a 'ruptured stomach' as a result of the ascent. The husband failed to surface even though he had been seen breathing normally on the bottom. His body has not been found to date.

'Technique' remains a relatively small category in its own right, with only nine separate incidents classified under this heading. However, as you read through reports in the other categories, you will see examples of poor or doubtful technique being contributory causes. There still seems to be some evidence of divers who become separated and then decide to carry on regardless, rather than waste time in surfacing and regrouping with their buddy — perhaps they assume that their buddy will think the same! In one incident of this nature, the Coastguard was alerted when one of a pair of divers failed to surface shortly after the pair became separated during a 7m dive. He surfaced eventually, after 42 minutes, and later claimed that his buddy had told him "not to bother surfacing if we became separated as it is only 7m deep".

'Boating and surface' incidents remain the second most numerous category, behind decompression sickness. An alarming trend this year has been the upsurge in the number of 'lost divers', some of whom were in the water for several

hours before being picked up. The numbers increased by 50% on last year's total and, if you remember that divers have involved 42 rescue helicopters during 1987, you will understand our concern. I do not have to spell out the adverse publicity such incidents promote . . . publicity which soon wipes out any favourable press we may receive for good deeds. Such is the seriousness of the trend that there will be a presentation on the subject of lost divers later in the programme.

Some divers went missing as the result of bad luck, as in the case of divers who, unbeknown to them, had their SMB deflate and sink, causing their surface boat cover to lose them. In another incident the boat broke down and drifted away in poor surface visibility, and the divers were spotted only after they had fired their personal flares.

As one analyses this category, one soon becomes aware that, in many cases, the incident would not have happened had the dive been planned better, or if the divers had followed some quite simple, commonsense, rules. Consider the divers, without SMBs, who were swept away by the tide after they had surfaced close to the boat. The glare of the evening sun prevented those in the boat from seeing them, and it later transpired that those in the boat had no idea in which way the tide was expected to run, their radio did not work, and only one of the four flares tried actually ignited.

In another case, divers without SMBs ignored advice and swam out to sea, where they were caught in a strong tidal stream. They surfaced 200m from the boat but were not seen, and were picked up only after they had been carried through a tide-race and spotted by a helicopter. On another dive, the boat cox dropped two divers off for a dive and then left for the beach with another pair. When he returned, the first pair could not be seen, and were found later hanging onto some lobster pot buoys after the Coastguard and Lifeboat had been alerted. Using lobster pot buoys for this purpose was not unusual this year, and it must go down as one of their more useful purposes.

An incident which received wide press publicity involved two divers who went on a drift dive, without SMBs, leaving one of their wives and 10-year-old daughter in the boat — neither of whom knew how to start the outboard engine. The anchor failed, the boat drifted from the site, and the divers were lost. They were eventually found after an extensive search, 7 hours later and 2 miles apart.

Another equally unbelievable incident occurred when a charter boat skipper raised the alarm when two of the divers on a planned decompression dive failed to surface. Lifeboats and helicopters were involved in the search and they were found safe and well eventually. The skipper reported that the divers had been decompressing at 5m, but had become bored and had decided to go off for a swim. They were carried off by the tide and did not dare surface for fear of decompression sickness. As with all these incidents, I do wish that commonsense was more common!

Several of the reports contain critical comments from the Coastguard, and it is obvious that simple rules are not being observed. The use of SMBs in any sort of moving water, or where the surface boat may have difficulty in covering the site, must be considered to be essential. Those left in the boat must know the marks to be able to get back on station should the boat drift off the site. Accurate predictions of tidal streams must be acquired in advance and understood, and the Coastguard should be informed not only of your diving intentions but also when you have returned safely to shore. Divers must be aware that surfacing close to the boat does not guarantee being seen, as several divers this year will testify, and boat coxes must keep a careful watch at all times.

Finally in this section, there was one report which made me smile. You may recall that there was a Public Information film which tried to educate the public about water and small boat safety, where a couple picnicking on the cliff watch a dinghy sailor getting into progressively more dangerous positions until his boat finally sinks. When they see him

waving for help, the man makes some comment to his wife such as "Oh, Petunia, look at the nice man waving at us from that boat". The incident which reminded me of that occurred when divers on a shore dive were caught in a tidal stream after they surfaced, and started to wave for assistance to holidaymakers who did not know if the divers were in distress or just waving 'hello'.

Although the 'Equipment' category is quite small in terms of numbers, there were several cases of free-flowing regulators, for example, which contributed to other categories such as 'Ascents'. There were two explosions when cylinders were being filled, one where the compressor HP union blew and the operator narrowly escaped injury. In the other, at an overseas location, the operator was badly injured when the cylinder itself exploded. Another unusual incident occurred when an ABLJ cylinder exploded as it was being charged. It fractured near the junction of the valve and cylinder collar, and was only three months old. The diver's buddy suffered severe bruising to his *gluteous maximus* in the explosion.

There were two cases of structural failure in regulators. In one, the first stage of a year-old regulator sheared completely in half at 25m, and the divers completed a successful assisted ascent. A manufacturing flaw was diagnosed, although the manufacturer refused to accept this, according to the report. In another case, a diver rolled off the boat and found his air supply had failed. Worse, to his annoyance and discomfort, he found he could not regain his posture in the water. A hose had fractured near the union with the first stage, and the escaping air had the effect of jet propelling him under water. He had to use his ABLJ to regain the surface in the correct position, and must be given full marks for coolness in an unusual situation.

The 'Miscellaneous' category remains quite small, with one or two unusual incidents. In one, a diver surfaced with severe stomach pains after a dive to 36m for 14 minutes. A helicopter was called, but at the recompression chamber he was diagnosed as having had a 'lemonade bend', having drunk copious amounts of the fizzy liquid on the way to the dive site.

The year has seen a significant rise in the number of reported cases of decompression sickness, from 52 last year to 69 in 1987. This is not necessarily because more divers have become bent, for we have extended our data capture with comprehensive figures from DDRC at Bovisand. The monthly breakdown reflects the UK diving seasons, as before, and is similar to the last two years. But there are worrying trends this year, with more evidence of diving deeper than the 50m maximum recommended, in some cases to idiotic depths.

Fig 1  
DECOMPRESSION SICKNESS ANALYSIS - 1987

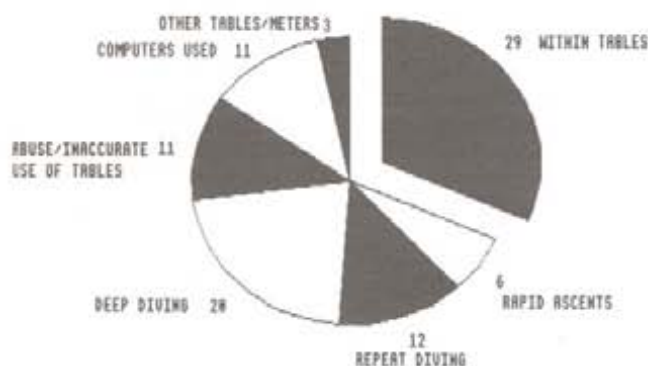


Fig. 1 shows a comparison of the causes of decompression sickness in incidents reported in 1986 and 1987. You can see that there is a significant rise in the number of cases resulting from deep dives, another rise of cases occurring within the tables, and also a rise in the number of incidents involving diving computers — more about these later.

Deep-diving — taken as more than 40m — was involved in 20 of the incidents, 14 of which were below 50m and 6

after dives deeper than 60m. The deepest dive recorded in the DCS reports this year was 70m! The lure of deep wrecks, especially in the South West, accounts for 8 of the cases.

We have spent a considerable amount of time at these Conferences in recent years warning of the dangers of such exposures to depth. There have been articles in the *Bulletin*, *Diver* and in our Manuals, but it seems that we have a minority of members who choose not to listen to advice. Perhaps the greatest concentration of lunacy occurred during an inter-Branch charter during the summer, when a group of divers set out to attack a wreck at 54m. They were diving with large twinsets, and decompressing at 15m, 10m and 5m.

The first bend occurred when one of them ran out of air at the 10m stop, shared with a buddy for 2 minutes and then surfaced to don a charged set and returned to 'finish off' his decompression. There was evidence of excessive alcohol consumption the previous night, and he suffered a Type 2 bend.

Three more of the same group were taken to the chamber for treatment in the next 2 or 3 days. The first sought advice, after a 48-hour delay, after developing pins and needles symptoms. The second made a rapid ascent after 7 minutes at 54m when his SMB line became tangled around him and his mask flooded; he was also treated for a Type 2 bend.

The fourth member of this intrepid band must have a death wish. He had spent 15 minutes at 54m, and had decompressed for a total of 28 minutes at the 3 stops. He had completed the same profile the day before! Only 4 weeks before this incident, he had been treated for a Type 1 bend after diving to 50m, and had been advised to stop diving for a while. He was taken to the chamber in the same helicopter as No. 3 in the group. These four were all treated at the same chamber over a four-day period — and we wonder why divers get bad publicity.

This was not the only report of attempted in-water recompression this year. In another case, a diver completed 19 minutes bottom time at 50m and suffered severe back pains at the surface having carried out stops at 10m and 5m. He donned another set, went back in the water, and decompressed for another 17 minutes. When he surfaced he said "I feel grand now; I think I have beat it". Some 15 minutes later his pains returned and the emergency services were alerted. He had been trying to remove the bridge telegraph from the wreck.

There has been a continuing trend of bends after dives 'within the tables', which highlight that our usage of what was originally a single-dive table for multiple dives was somewhat optimistic. Those of you who heard Dr Hennessey talk at last year's Conference will remember his model of what happens to excess nitrogen in the tissue over a series of dives within a relatively short time span. There is a gas phase of the nitrogen, out of solution, which is not effectively redissolved when under the pressure of a second or subsequent dive. Indeed, this gas phase may last the whole dive in, say, the fourth dive in a series.

The advice which stems from this realisation is to avoid multiple ascents and descents, however short and whether the table 'allows' such activities, for every ascent is a provocative event. This has implications for Branch and Instructor training, where it may be necessary for a supervising instructor to make several ascents. This was borne out by one incident, when an instructor suffered a severe Type 2 bend after an uneventful dive to 36m for 13 minutes. The previous day he had done about 10 ascents from 8m whilst supervising drills.

Finally on DCS, I must mention decompression computers and the lively debate that their increased use has aroused. They are the subject of a later presentation, so I will not say too much.

The 11 incidents reported showed one or two interesting trends. There does seem to be a tendency to ignore basic physiology and depth recommendations, with 5 of the 11 cases occurring on dives below 50m. Some people obviously

think that to strap a computer to their wrist is a passport to repeat diving pleasure, and to do so gives them immunity from bends. However, you cannot ignore the basic physiology that I have described, and you must remember that the algorithms and calculations of the computer are not geared to the individual diver — and it is you who may suffer the bend, not the computer.

I must also stress that a computer is not a shared piece of equipment. The diver who developed DCS following a dive to 70m was using a computer which had been used by other divers on a dive to 12m some 2 hours earlier as, to quote him, "we want to dive on their penalties for increased

safety". I am sure that the subject of computers is a topical one, and the later presentation will raise some interesting points which time does not permit me to develop now.

Lastly, I must mention a photograph which was sent to me after my remarks last year on crocodiles and diving safety. I was eating my breakfast at the time that this photograph of a chewed-up swimmer fell out of the envelope, and it quite spoiled my appetite. But in spite of this kind of possibility, people still go diving in waters where these creatures live!

Thank you for your attention this morning, and thanks to all those who have submitted comprehensive reports to me in the last three years."

## APPENDIX A — Diving Incidents Report

### FOREWORD

When studying the information contained in the British Sub-Aqua Club's annual Diving Incidents Report, produced by the BSAC to promote diving safety, the reader needs to consider that the reported 162 incidents occurred as a result of approximately 1,000,000 dives undertaken between November 1986 and October 1987.

The statistics and descriptions contained in this report are produced in the detail presented in order to educate and guide those running dives in the future and are not to be regarded as highlighting the 'dangers' of what is essentially a very safe sport.

In a recent survey of dangers in sport, entitled 'The Ten Most Dangerous Sports', the following sports made up the list:-

- |                              |                         |
|------------------------------|-------------------------|
| 1. Motor Racing (Car & Bike) | 6. Canoeing/Sailing     |
| 2. Horse Riding              | 7. Soccer/Rugby         |
| 3. Mountain/Rock Climbing    | 8. Athletics (Jogging)  |
| 4. Fishing                   | 9. Cycling              |
| 5. Gliding/Hang Gliding      | 10. Martial Arts/Boxing |

Diving does not appear in the list. It is also true that most insurance companies do not charge extra premiums for amateur divers who take out life insurance.

Although we are aware that the information contained in a comprehensive and detailed annual report of accidents and incidents can be selectively used as ammunition by persons hostile to our sport, we believe we have a duty to all recreational divers to publish that information in full.

We urge the reader to take a balanced view when reading this report and to compare the number of incidents with the number of successful dives which are never given any publicity.

### INTRODUCTION

The format of the annual report was altered last year in an attempt to make analysis of trends easier.

Much of the information which used to be in statistical form is given in graphical form. Relevant statistics, not shown in the form of a graph, are at the end of this appendix.

Incidents have been grouped according to type under eight categories:

**Fatalities, Decompression Sickness, Ascents, Boating/Surface Incidents, Technique, Equipment, Illness and a Miscellaneous Section containing False Alarms, Net Entanglement, Ear Problems, etc.**

The nature of many diving incidents, of course, involves an 'Incident Pit' situation with more than one cause. 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'.

Each report has a date listed, together with its 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

**40/87 Feb. 1987.** Diver died while working to clear debris fouling the propulsion units of a new ferry. Water conditions atrocious in terms of visibility and cleanliness. Deceased's air supply had been turned off accidentally underwater, it is thought by blow(s) against underside of hull of ship but he was also trapped by surface rope and fixed rope around the hull of the vessel. Deceased had been using normal sports diving equipment. **B.**

**49/87 Feb. 1987.** Diver died after snorkelling back to beach after a dive. Sea conditions had deteriorated and she was swamped by a large wave. EAR continued for 5 hrs. before she was pronounced dead. Post mortem found excessive liquid in her lungs. **B.**

**59/87 April 1987.** Young female diver died after she and her buddy surfaced close to the rocks in a swell. Equipment was removed from both of them but rough seas added to the difficulty of this task. The deceased's ABLJ direct feed was of a type which connected to the lifejacket, rather than to the inflation hose, and her buddy could not disconnect it. Eventually he lost his grip on her and she was washed from his grasp. **B.**

**83/87 May 1987.** Diver died on the surface while swimming to the shore, after running out of air at 10m. They were diving in a three and had been submerged for 25 mins. Another member of the group got into difficulties but reached the shore OK. Coastguard report only, no further details. **U.**

**126/87 June 1987.** Diver died after entering shallow 'dangerous' wreck alone. The wreck contained several passages and he was advised not to enter without a rope. He had become separated from his inexperienced buddy but had carried on with the dive. The deceased's bag containing rope was later found and it is thought he followed an existing length of rope into the wreck. The body was later found wedged into the entrance of the engine room. **B.**

**139/87 August 1987.** A novice diver died when he became separated from his buddy shortly after the start of a dive. He was seen to surface but descended again, without obvious signs of distress, before the boat could pick him up. His buddy surfaced seconds later to ask if those in the boat had seen the deceased. He then descended with another diver to complete an unsuccessful search around the shotline. Reports state that the emergency air cylinder on the deceased's stab jacket was difficult to operate, although he had got a direct feed. The buddy diver says he saw the deceased, in good visibility, at about 5m but at the bottom in 31m he wasn't with him. The deceased's body was found several days later. **B.**

**146/87 Sept. 1987.** A husband and wife team dived in a deep lake down a shotline which they became entangled in. The buoy was pulled underneath the surface and another pair of divers went to investigate. One of the rescuing pair had 'free flow' problem with his regulator but pressed on to find first pair in trouble at 53m.

The wife was tangled in rope and in distress with her weightbelt missing. Her ABLJ cylinder had been used and dry suit was inflated. The rescuing diver was out of air but he powered her to the surface after his regulator gave him more air at 30m. He had to hold his breath from 53m. The husband was seen to be breathing on the bottom but did not surface and his body has not yet been found. The wife complained of stomach and chest pains at the surface and collapsed. She was given CPR for 25 mins. during which her heart stopped 3 times and was later taken to hospital suffering from a 'ruptured' stomach and hypothermia. **B.**

**161/87 August 1987.** A completely untrained youth died whilst trying out diving equipment in the sea, following a lunchtime drinking session. **U.**

#### DECOMPRESSION SICKNESS

**5/87 July 1986.** A diver was recompressed after a dive to 62m with gradual ascent and stops at 10m and 5m. He sipped beer after the dive and shortly afterwards complained of stomach pains. He had been receiving hospital treatment for a stomach complaint and was taking morphine based diarrhoea tablets. Some pain still occurred after several hours of recompression. **B.**

**13/87 Oct. 1986.** A diver suffered an air embolism after an inverted buoyant ascent in a dry suit from 25m. **B.**

**14/87 Sept. 1987.** Mild bend after dive to 40m with evidence of inaccurate time recording. This was meant to be a no-stop dive. There was difficulty with treatment as the doctor refused to ring Portsmouth dockyard. **B.**

**18/87 August 1986.** Diver suffered a bend after a dive to 28m for 15 min. followed some 3 hrs. later by 15 min. at 10m. The diver concerned had not eaten properly for two days and had his "Customary two pints" the previous night. **B.**

**20/87 Oct. 1986.** Bend after 23m dive within no stop time although the diver concerned had missed a few minutes of stops the previous day. **B.**

**21/87 Oct. 1986.** Minor bend after a dive to 26m for 27 min. on a wreck. The diver had been working, freeing an anchor line. **B.**

**24/87 Dec. 1986.** A diver suffered excessive tiredness, severe headaches and dull sensation at the back of the head after a dive in a pool to 4m for one hour, followed 5 hours later by 45 min at 12m. The dive was well within the tables but involved hard work in a 2 kn current. **B.**

**25/87 July 1986.** Type 2 bend after a diver, retrieving lobster pots, spent 30 min at 25m followed 15 min. later by dive to same depth for 10 min. He ran out of air on the second dive while decompressing at 5m. **S.**

**28/87 Sept. 1986.** Diver with 'bends' symptoms taken by lifeboat for recompression treatment. Coastguard report only, no further details. **U.**

**29/87 August 1986.** Diver on a beach with 'bends' symptoms was evacuated by helicopter for treatment. Profile stated to be 25 min. at 20m with a normal ascent. Coastguard report only, no further details. **U.**

**35/87 Nov. 1986.** Diver suffered bends symptoms days after a dive to 20m for 27 min. followed 10 min. later by a dive to 25m for at least 15 min., although they "lost track of time" on the second dive. The divers had both been trying out new neoprene dry suits and the diver with the symptoms had lost control of his ascent on the second dive. All this was kept a secret from the other divers. The symptoms disappeared without recompression treatment. **B.**

**37/87 July 1986.** A diver suffered itching on his hands and legs following a dive to 36m for 20 mins. His depth gauge was reading 6m shallow. Although he visited a doctor, no further symptoms occurred. **B.**

**39/87 Jan. 1987.** Bend after dive to 36m for 15 min. by a diver using US Navy tables in a warm water location. Decompression was carried out for 4 min. at 3m. Further shallower dives were carried out over the next two days, although a headache appeared after the dive to 36m. Recompression treatment was required later. Blood tests later revealed a low blood sugar level. **B.**

**48/87 Feb. 1987.** Divers treated for decompression sickness after a dive to 33m with missed stops. Evidence of re-entry decompression and symptoms developed following this. Coastguard report only no further details. **U.**

**52/87 April 1987.** Two divers were treated for decompression sickness/embolism after a dive to 36m for 11 mins. with a faster than normal ascent. They had dived more than once for the previous four days, all dives well within tables. One of the divers was treated with oxygen at his own request, while waiting for transfer to the chamber, his symptoms were less severe and he is completely recovered. The other diver could not walk once the boat reached the shore. **B.**

**66/87 April 1987.** A diver suffered a minor bend after a normal dive to 28m for 22 mins. The previous day he had been to 30m for 18 mins. and then 9m for 47 mins. some time later. **B.**

**67/87 April 1987.** Diver suffered a minor bend after a dive to 55m with a total time, including stage decompression, of 18 mins. He had used a decompression computer and had followed the profile it gave him. **B.**

**68/87 April 1987.** Diver suffered minor bends symptoms which became worse with a delay in treatment and a flight, after an overseas holiday of "heavy" diving using a decompression computer. On his last diving day he dived to 27m maximum depth for 48 mins. duration followed just over 4 hrs. later with a dive to 32.5m maximum depth, for 37 mins. A night of heavy drinking preceded the last day's diving. He did not receive treatment until returning to the UK. **B.**

**69/87 April 1987.** Minor bend after dive to 24m for 28 mins, followed just under 6 hours later with dive to 28m for 18 mins. 2 mins. of no stop time was exceeded on the 1st dive. Pains were felt after dive 1 but this was attributed to muscle strain. **B.**

**70/87 May 1987.** Type 2 bend after dive to 24m for 32 mins, followed by dive to 20m for 38 mins. This occurred on the sixth day of diving. He was treated with oxygen in the boat and made a good apparent recovery. He was recommended to give up diving as the bend occurred while diving within the table and there was considered to be considerable risk of recurrence. **I.**

**72/87 May 1987.** Bend involving an instructor who had a normal dive to 36m for 13 mins. with a normal ascent. Rapid onset of symptoms which included frothing at the mouth and difficulty in speaking. A possible 'stroke' was suspected. Almost immediate recompression saved the situation from becoming worse. The previous day he had taken part in ascent training and had completed about 10 short dives to 8m while acting as an observer on these drills.

**73/87 May 1987.** A diver sought treatment for bends symptoms after returning from a period of diving overseas. She had dived with the same buddy who had been using a decompression computer and had developed symptoms during her stay, but had not told all the details to the group organiser, having confessed to some minor symptoms in the early part of the trip. Type 2 occurrence was diagnosed on her return to the UK and she was recompressed. **B.**

**77/87 May 1987.** A bend occurred after a diver using a decompression computer claims it allowed the following dives:- a. 35m maximum for 32 mins. followed 30 mins. later by:- b. 21m maximum for 34 mins. followed 40 mins. later by:- c. 35m maximum for 27 mins. **B.**

**78/87 May 1987.** Type 1 bend after a dive to 42m with a new gauge which read accurately although he also carried his old one which only read 30m. Other divers in the group suffered severe headaches upon surfacing and a higher than acceptable level of CO<sub>2</sub> was found in the air. **U.**

**80/87 May 1987.** Air embolism after dive by inexperienced diver to 37m for 12 min. He had consumed 6 pints of beer the previous evening, after a day when he was sea sick following a morning dive to 20m for 35 mins. He was advised not to dive again. **B.**

**81/87 May 1987.** After a week of diving deeper than 30m, twice a day, a diver developed symptoms after a dive to 50m within the tables. He was recompressed next day. **B.**

**89/87 May 1987.** A diver suffered a Type 2 bend after a dive to 32m for 18 mins. The dive came near the end of a week of diving twice a day to the limit of no stop times. The bend was probably due to an accumulation of nitrogen after a spell of concentrated diving. **B.**

**90/87 May 1987.** Type 2 bend after a diver dived to 36m for 14 mins. A boat ride in choppy seas caused the subject's ABLJ bottle to hit his ribs, one of which had been broken the previous year. He suffered discomfort and breathlessness, numbness in the left

leg and was recompressed. He became paralysed from the waist down and was transferred to hospital. **B.**

**92/87 May 1987.** A diver was sent for recompression after running out of air and missing decompression stops. Coastguard report only, no further details. **U.**

**95/87 May 1987.** A diver miscalculated depths and times and inadvertently missed stops after a dive to 33m. The gradual onset of symptoms was ignored for several days when one hospital doctor told him he hadn't had a bend. He was eventually recompressed successfully but was recommended not to dive again. **B.**

**96/87 June 1987.** A diver with bends symptoms was evacuated to a recompression chamber by helicopter. Coastguard report only, on further details. **U.**

**97/87 June 1987.** The Coastguard was alerted after one of the divers in the boat was thought to be suffering from a 'burst lung'. He was evacuated by helicopter. Coastguard report only. **U.**

**101/87 June 1987.** Type 2 bend involving an instructor who had dived to 4m for an indeterminate period in the morning and in the afternoon dived to 27m for 24 mins. He carried out a stop at 5m for 2 mins. but developed symptoms 5 mins. after surfacing. **B.**

**102/87 June 1987.** A diver lost use of his left hand and became unco-ordinated after a dive to 8m with evidence of a faster than normal ascent. This was a probable air embolism and the diver was recompressed. **B.**

**103/87 July 1987.** Diver suffered from bends symptoms having returned from a diving holiday. He had flown home but had allowed 21 hrs. interval after his final dive to 25m for 25 mins. When he was eventually recompressed the symptoms were difficult to resolve. **B.**

**104/87 July 1987.** Bend after dive to 25m for 25 mins. One of the divers' gauges was known to be faulty. Other divers carried out cautionary decompression stops. **B.**

**105/87 August 1987.** Bend after a dive within the tables to 18m. The subject had developed early symptoms after a dive to 32m the previous week and the subsequent dive exacerbated the symptoms. The subject had a bend in 1986. **B.**

**107/87 June 1987.** A diver suffered Type 1 skin irritation and stiffness in the shoulder after a dive to 22m for 33 mins. followed 4 hours later by a dive to 16m for 31 mins. The subject was diagnosed as suffering a little known about complaint known as 'Sarcodiosis', which renders him susceptible to decompression sickness. He was advised not to dive again. **B.**

**110/87 July 1987.** A diver was taken to a chamber for recompression after suffering bends symptoms. Coastguard report only, no further details. **U.**

**112/87 July 1987.** A diver suffered from decompression sickness after being accidentally dragged to the surface by a passing boat, which snagged his SMB line. Coastguard report only. **U.**

**114/87 July 1987.** Diver suffered symptoms including weakness in all four limbs with inability to move them, following a dive to 34m for 14 mins. A short time later he had recovered but was treated in the chamber in case of recurring symptoms. Later diagnosis included arterial gas embolism and serious decompression sickness. **B.**

**118/87 July 1987.** A diver suffered from Type 1 bend in the arm and signs of a Type 2 bend following dives to 30m, 15m and 27m on the same day. He had a late night drinking the night before and the previous day had dived to 36m for 14 mins. **B.**

**119/87 July 1987.** Diver suffered from Type 2 decompression sickness after diving on a wreck to 52m. He had decompressed at 15m but ran out of air at the 10m stop. He shared with his buddy for 2 minutes but then surfaced to don a full cylinder to 'finish off' his decompression. Evidence of excess alcohol the previous night. (See also Incident Nos. 152, 153 & 154). **B.**

**123/87 July 1987.** Diver suffered from bends symptoms following dives to 26m for 28 mins., followed 5 hrs 15 mins. later with a dive to 26m for 28 mins. **B.**

**125/87 August 1987.** A diver was stung by a jellyfish during a dive to 25m for 31 mins. Some hours after the dive he developed 'pins and needles' in his arms and thighs and some neck discomfort. A thudding in the left shoulder was also present. Diagnosis included possible marine toxin effect but with the possibility of Type 2 bend symptoms. He was subsequently recompressed. **U.**

**131/87 June 1987.** Bend with delayed symptoms after a dive to 38m for 12 mins. The subject had three dives the two days pre-

viously and it was his first diving trip of the season. Doctors at the recompression chamber regarded the cause as being an accumulation of nitrogen and inadequate decompression, although the dive was within the rules of the BSAC Sport Diving tables. **B.**

**132/87 May 1987.** Diver suffered mild Type 2 bend after a no stop dive to 50m with a normal ascent. He sought treatment when he returned home. **B.**

**133/87 August 1987.** A diver in an overseas location, using French tables, suffered bends symptoms and was treated by a local doctor before being eventually recompressed. He had been to 40m with total bottom time of 20 mins. and stops at 6m and 3m, followed 5 hours later by the same profile. This diving schedule was repeated over two days. **B.**

**134/87 August 1987.** Two pairs of divers descended to a wreck in 36m when one diver became separated and surfaced. The other three carried on with the dive using a distance line from the shotline. After returning to the shot and trying to raise it with a lifting bag they decided to ascend and decompress on the way, having had 20 mins. bottom time. The tide started to run and at 14m they met the collapsed shot buoy so they ascended to the surface. After about 12 hours one pair of divers developed aches and pins and needles in their limbs. All three were later recompressed and confirmed as suffering Type 2 bends symptoms. **B.**

**136/87 August 1987.** A diver suffered a Type 2 bend and was advised not to dive again after 18 mins. at 32m. Much of the time was spent shallower than this. Three recompressions were needed to resolve his symptoms. **B.**

**140/87 August 1987.** A diver suffered neurological decompression sickness after a drift dive to 16m for 40 mins. followed two hours later by a wreck dive to 16m for 32 mins. Symptoms began next day but he did not seek medical advice for a further 24 hrs. **I.**

**141/87 August 1987.** Diver suffered Type 2 bend after a dive down a reef with a maximum depth of 41m with 12 mins. bottom time. Symptoms disappeared at 18m in the chamber. **B.**

**142/87 Sept. 1987.** A diver, in a warm clear water location, suffered a skin bend after diving to 70m for 19 mins. bottom time using a decompression computer. His total duration submerged was 51 mins., including decompression stops. The computer had been used 2 hours previously on a dive to 12m "So we could dive on their penalties!!!!!" **B.**

**143/87 August 1987.** A diver suffered a severe Type 2 bend after spending 19 mins. at 50m trying to remove a trophy from a wreck. He spent a further 30 mins. on his ascent, including stops at 10m and 5m. He suffered back pains only minutes after surfacing and the group decided on re-entry decompression, for a further 17 mins. When he surfaced he said "I feel fine now, I think I have beat it." Some 15 mins. later the pains returned and the emergency services were alerted. **B.**

**144/87 Sept. 1987.** A diver suffered a Type 1 bend after a dive over a shelving bottom to a maximum depth of 29.4m, using a computer. At no time in the dive did the computer give less than 3 mins. no stop time left. **B.**

**147/87 Sept. 1987.** A diver was treated for Decompression Sickness after a dive to 45m for 14 mins. During his ascent, at 30m, he noticed his buddy was missing so he went back to 45m to look for him. He stopped at 9m for about 5 minutes but was using BSAC tables in feet. **U.**

**148/87 April 1987.** A diver suffered a Type 2 bend after a no-stop dive to 22m for 30 mins. He had a slower than normal ascent. **B.**

**149/87 May 1987.** A diver suffered from Type 1 Decompression Sickness after a chamber dive to 45m. After symptoms developed he waited 5 days before seeking treatment. **U.**

**150/87 May 1987.** Diver suffered from Type 2 Decompression Sickness after 20 mins. at 29m with no stops. Symptoms developed within 5 minutes. The subject had suffered a 'left sided stroke' some 11 years before this incident. **B.**

**151/87 June 1987.** After a normal no stop dive to 32m for 16 mins., a diver suffered Type 2 Decompression Sickness and was recompressed. **I.**

**152/87 July 1987.** After a 48 hour delay, a diver sought advice after developing 'pins & needles' following a dive on a wreck to 54m for 20 mins. using a decompression computer. He was recompressed with no residual symptoms. **B.**

**153/87 July 1987.** A diver did a rapid ascent from a wreck at 54m, after 7 minutes, when his SMB line tangled around him and his

mask flooded. He was treated for a Type 2 bend. **B**  
**154/87 July 1987.** A diver was treated for Type 2 Decompression Sickness after spending 15 mins. at 54m on a wreck. He decompressed at 15m, 10m, 5m and 3m for a total of 28 mins. with the same profile the day before. He had been treated four weeks previously for a Type 1 bend after diving to 50m and had then been advised to lay off diving for 2 weeks. Both divers in incidents 153 & 154 were taken by the same helicopter to the chamber. **B.**  
**155/87 August 1987.** A diver was treated for bends symptoms after diving to 61m for 20 mins. with 45 mins. of stops at 20m, 9m, 6m and 3m. **U.**  
**156/87 August 1987.** Type 2 Decompression Sickness occurred after dive to 26m for 19 mins. and a second dive to 9m for 44 mins. Subject had a Type 2 in 1984 but didn't seek treatment. He has been advised to give up diving. **B.**  
**157/87 August 1987.** A 16 year old boy was treated for a Type 2 bend after dives to 32m for 25 mins. and a second dive to 10m for 15 mins. He had been to 45m the day before and had been using USN tables. He was advised not to dive again. **U.**  
**158/87 August 1987.** Two divers suffered from Type 1 bends after diving to 63.5m for 17 mins. on a wreck, using a decompression computer. They had been to 49m the day before. **B.**  
**159/87 Sept. 1987.** A diver using USN tables was treated for Type 1 Decompression Sickness after two days of diving to 60m on a wreck. He had decompressed on oxygen at 12m, 9m, 6m and 3m. He had 23 years diving experience, 6 commercially and had two previous treatments for Type 1 bends. **U.**  
**160/87 Oct. 1987.** A diver suffered Type 1 Decompression Sickness after a chamber dive to 50m. He delayed for 16 hours before seeking medical advice. **U.**

#### BOATING/SURFACE INCIDENTS

**3/87 May 1986.** Divers with SMB missed wreck, which was buoyed, and drifted towards rough water overfalls in a tidal stream. The SMB line broke when attempts to recall them were made. Firing a flare attracted a nearby boat which stopped to pick up the divers, who had surfaced. **B.**  
**10/87 August 1986.** Speedboat drove over dive site with clearly marked 'A' flag and SMB's at a speed of approx. 30 knots. Frantic signalling by the surface cover failed to have any effect. **B.**  
**11/87 May 1986.** Diver's shot line buoy was hit by a passing yacht which appeared to be attracted by the divers' 'A' flag. **B.**  
**15/87 August 1986.** A diver became separated from his buddy, surfaced and was caught in a very strong tidal stream with severe overfalls. His snorkel was impossible to use as it kept filling with water. He was eventually picked up by a helicopter. **B.**  
**17/87 Oct. 1986.** Solo diver surfaced and was swept away from his boat by strong tidal streams. After 1 hour the boat crew alerted the emergency services having decided he was overdue. **I.**  
**19/87 Oct 1986.** A solo diver on a drift dive in a 3 knot tidal stream snagged his SMB. He had to cut the line and his boat cover failed to see him surface as they were watching his SMB. He was eventually picked up by a passing yacht. **B.**  
**23/87 August 1986.** Divers surfaced to find that their cover boat was nowhere to be seen. Their SMB buoy had deflated and the boat had lost them. They were eventually picked up by a passing fishing boat. **B.**  
**26/87 Sept. 1986.** Divers without SMB's were swept away from their boat. They were rescued by helicopter after 6 hours in the water. Critical report by the Coastguard. **B.**  
**27/87 Sept. 1986.** Divers in a trio became separated. Two surfaced but the other stayed down. Emergency services were alerted but the diver later reached the shore unaided and required no medical treatment. **U.**  
**30/87 August 1986.** A diver had difficulty reaching the shore because of heavy swell. The Coastguard was alerted and rescued the diver with a rope. The casualty vomited when landed but refused any medical treatment. Coastguard report only. **U.**  
**31/87 July 1986.** Two divers lost contact with their cover boat. Lifeboats joined the search and eventually the divers were picked up safe and well. **U.**  
**38/87 Feb. 1987.** Divers using SMB were swept away from their cover boat which was attending to two other divers when they surfaced. A 2m swell was present at the time. They were rescued by helicopter after two hours in the water. **B.**

**43/87 Dec. 1986.** False alarm to Coastguard after diver, who planned to surface every 5 mins, failed to keep his appointment with the boat. The diver surfaced safely eventually. **B.**  
**46/87 Feb. 1987.** Two divers surfaced downstream from their cover boat and failed to attract their attention. Wisely, instead of trying to swim against the tide, they swam with it to a nearby island where they spread their equipment on the beach to attract attention. They had not been using a SMB as they were diving in the lee of a submerged rock and in such conditions the buoy could have dragged them away from the site. The divers were praised in the Press and by the Coastguard for their action. **B.**  
**60/87 April 1987.** Divers on a shore dive were swept away when they surfaced and started waving at people on the beach. It was commented that people on the beach did not know whether the divers were in distress or 'just waving hello to people'. The lifeboat eventually picked them up from a rock which was gradually being covered by the rising tide. **B.**  
**62/87 April 1987.** There was total confusion on a dive boat when one of the divers surfaced in distress having experienced ear problems. Lack of clear liaison with the skipper resulted in the boat setting back for the harbour with a pair of divers still in the water. Another dive boat picked them up. **B.**  
**63/87 April 1987.** Divers from a BSAC Branch were approached by the dive marshal of another Branch to pick up some divers who were being swept out to sea by the tide during a shore dive. **B.**  
**64/87 April 1987.** Divers without SMB's ignored instructions and swam out to sea where they were caught in a strong tidal stream. They surfaced 200m from the dive boat but were not seen. They were carried through strong overfalls in a tide race before being picked by an inflatable, after being spotted by helicopter. **B.**  
**65/87 April 1987.** Two divers were found holding the shotline of a wreck by a boat belonging to another branch. Their own boat turned up shortly afterwards, the cox having lost sight of the buoy. **B.**  
**71/87 May 1987.** An outboard motor would not start when a Branch had divers in the water. Those in the boat were forced to fire a flare to attract the attention of nearby boats so that the latter could pick up the divers. **B.**  
**74/87 May 1987.** 3 divers planned to do stage decompression on a dive to 37m. At the end of the no stop time one of them became separated and ascended to the surface. The other two let go of the shotline as they felt it "was pulling them down" and they decompressed for 10 mins. 'free'. The cover boat called 'Mayday' but later cancelled it when the divers were found on the surface safe and well. **B.**  
**75/87 May 1987.** A diver was reported missing when he became separated from his SMB and the cover boat followed that rather than him. Helicopter and lifeboat searches found him. Coastguard report no further details. **U.**  
**76/87 May 1987.** Divers in boat had to fire a flare to attract another boat when their outboard wouldn't start as they were about to collect some divers. **B.**  
**82/87 May 1987.** Solo diver swam out to a wreck and was later swept away by the tidal stream. A local boat picked him up. Coastguard report only. **U.**  
**85/87 May 1987.** Divers returning from a dive lost equipment when their inflatable capsized in heavy surf while attempting to land. There were no injuries. **B.**  
**87/87 April 1987.** Divers' boat broke down and two divers were swept away by the tide. Helicopter and lifeboat involved in the search which was hampered by no one providing an accurate position for the dive. Coastguard report only. **U.**  
**91/87 May 1987.** A helicopter and a lifeboat were involved in searching for a lost diver who was eventually found safe and well. The divers had not informed the Coastguard of their diving intentions. Coastguard report only, no further details. **U.**  
**93/87 May 1987.** Divers had to swim to shore when they surfaced to find their cover boat missing. The boat had broken down and drifted in foggy conditions. Divers fired personal flares, were sighted and subsequently rescued. Coastguard report only. **U.**  
**94/87 May 1987.** A charter vessel radioed the Coastguard that two divers were missing. They were later picked up by another vessel. Coastguard report only. **U.**  
**98/87 June 1987.** Four divers got into difficulty after underestimating the strength of the tidal stream. They were rescued by an inshore rescue craft, unharmed. Coastguard report only. **U.**



**99/87 June 1987.** Two divers were reported as missing when their cover boat broke down and drifted away from the site. They were found safe and well. Coastguard report only. **U.**

**100/87 June 1987.** Two divers were lost at sea and later rescued while hanging on to some lobster pot buoys. Their boatmen had dropped them off to dive while he went to the shore with two other divers. On his return he could not see their SMB and the Coastguard and lifeboat were alerted. The divers had underestimated the strength of the tidal stream. **B.**

**106/87 June 1987.** A charter vessel ran into trouble when the engine failed close to some rocks. Another rescuing vessel fouled rope around its propeller and only the timely cutting of the rope, by a diver aboard, saved a double wrecking. **I.**

**108/87 June 1987.** A charter vessel alerted the Coastguard that a diver was missing. He was later found safe and well hanging onto a lobster pot buoy. **U.**

**111/87 July 1987.** Cover boat fired a flare when they lost contact with divers after the arranged surfacing time. The divers recovered safe and well. **U.**

**113/87 July 1987.** Some divers were rescued by helicopter and lifeboat after their cover boat failed to maintain contact with their SMB's. Considerable equipment was 'lost' from the inshore lifeboat, following this rescue. **B.**

**115/87 July 1987.** Two divers without SMB's were lost at the surface at the end of the dive. The glare of the evening sun prevented the boat cover seeing them. The boat occupants had no ideas which way the tide was running, their radio did not work and only one of the four flares used, actually fired. A passing fishing boat alerted the rescue services. The divers were in the water 3 hours before being rescued. **B.**

**116/87 July 1987.** A shore party raised the alarm when a diving group were 45 mins. late from a dive. They arrived back safe and well. **B.**

**124/87 July 1987.** Divers went on a drift dive with no SMB's and left one of their wives and 10 year old daughter in the boat. Neither knew how to start the outboard. The anchor failed to hold and the boat drifted away. The divers were found 7 hours later, two miles apart. **U.**

**127/87 April 1987.** A party of divers fired flares when two of their divers were missing. They were later recovered safe and well by another diving boat. Coastguard report only. **U.**

**128/87 May 1987.** A charter vessel skipper raised the alarm when two of the divers aboard failed to surface. Lifeboats and a helicopter were involved in the search. The skipper later reported that the divers had been decompressing at 5m, became bored and decided to go for a swim. They were carried off by the tide. Coastguard report only. **U.**

**129/87 May 1987.** A lighthouse keeper observed a small boat firing flares and it was later discovered they had two divers missing. The divers were found safe and well having swum to the shore. Coastguard report only. **U.**

**137/87 August 1987.** The Coastguard was alerted when an outboard failed shortly after the dive left the harbour. A civilian vessel towed them back to safety. **B.**

#### ASCENTS

**4/87 June 1986.** A diver panicked after being caught in fishing line/netting on a wreck at 24m. His buddy slowed down the initial rapid ascent and they did a precautionary decompression stop. 5 to 6 days later diver complained of chest pains and some time later was admitted to hospital for extensive tests. Tests revealed one of his lungs only 60% efficient with bruising of the lung wall and pleural cavity. The diver was banned from diving for 6 months and then told to undergo a thorough medical. **B.**

**6/87 Sept. 1986.** A diver had to undertake an assisted ascent after his regulator second stage diaphragm tore and rendered it inoperable. **I.**

**22/87 August 1986.** A diver did an uncontrolled buoyant ascent from 25m when she lost her weightbelt. A pain in her left side was diagnosed as a suspected pneumothorax but this was later proved incorrect. **B.**

**33/87 Dec. 1986.** A diver escaped unharmed after a buoyant ascent from 18m when the ABLJ inflation button for the direct feed stuck in the open position. The button was later released, using a knife, after they had surfaced. **B.**

**34/87 Dec. 1986.** A diver carried out a successful assisted ascent using an octopus rig, after his regulator went on 'free flow' during a dive to 32m. **B.**

**41/87 Oct. 1986.** An assisted ascent was undertaken successfully, after a diver's mouthpiece became detached from his 2nd stage at a depth of 13m. **B.**

**42/87 Dec. 1986.** A diver was taken to hospital, as a precaution, after a buoyant ascent from 20m following the loss of his mask and mouthpiece. Coastguard report only, no further details. **U.**

**44/87 Jan. 1987.** Assisted ascent using octopus rig after diver ran out of air in very cold water. It is thought his spare mouthpiece went on free flow, unnoticed, resulting in the loss of all his air. **B.**

**84/87 Dec. 1986.** A diver carried out a successful assisted ascent after his regulator went on free flow at 36m. It had been recently serviced. **B.**

**122/87 July 1987.** Divers carried out a successful assisted ascent from 50m when one of their regulators went on free flow and the diver ran out of air. **B.**

**138/87 August 1987.** An Advanced Diver and his novice buddy did a free ascent from 44m when the novice mistook a depth signal to mean 'out of air'. He attempted to share air, which panicked the dive leader, causing him to lose his mouthpiece. Both later admitted the effects of narcosis. **B.**

#### TECHNIQUE

**7/87 Sept. 1986.** 5 divers in an overseas location attempted a night dive in marginal sea conditions. Incidents included being dashed against rocks, bursting an ear drum, a black eye and eventually having to be rescued. **I.**

**8/87 August 1986.** Diver who exceeded his no stop time whilst working was made to do extra decompression. Carelessness with his watch/bottom timer was evident. **B.**

**12/87 Sept. 1986.** Trio were diving on a shallow wreck in poor visibility. Because they had difficulty keeping together they decided to continue with two staying together and the other going solo. There was a half knot tidal stream on site. When the solo diver failed to surface the other two raised the alarm, at which point the solo diver surfaced. **B.**

**32/87 December 1986.** One of a pair of divers failed to surface after they became separated after two minutes of a dive to 7m. The solo diver stayed down for 42 min. in total before surfacing. In the meantime the Coastguard had been alerted. When questioned about the dive later, the diver claimed that "His buddy had said that if they became separated not to bother surfacing as it is only 7m of water !!!!!" **B.**

**54/87 March 1987.** An observer in a swimming pool was struck in the mouth by the second stage of a regulator as one of the divers was kitting up. Damage to her mouth occurred. **I.**

**55/87 April 1987.** A trainee at a branch 'Come and Try It' session was hit by another trainee as the latter jumped into the pool. The subject was thought to have suffered mild concussion but recovered OK. **I.**

**79/87 Dec. 1987.** An inexperienced diver lost consciousness at 30m after exceeding the planned depth of 20m. He had difficulties acquiring sufficient air, although there was enough in the cylinder. There was evidence of over-exertion, narcosis, too much lead and a badly adjusted regulator, now obsolete. He was brought safely to the surface by his experienced buddy. **B.**

**109/87 June 1987.** A novice diver on her first open water dive suffered a perforation of both eardrums, having had some difficulty in descending due to too much air in her ABLJ. **B.**

**145/87 July 1987.** A trainee on a 'Come and try it' dive in a warm, clear water location panicked and lost his mouthpiece. He lost consciousness but was quickly revived on the surface. **I.**

#### EQUIPMENT

**2/87 May 1986.** A diver became entangled in an SMB line as he descended down it. The reel had been secured by a previous pair of divers and it is thought the entangled pair inadvertently released line as they descended. On the surface the entangled diver failed to inflate his ABLJ as he could not twist the cylinder on the borrowed lifejacket. His weightbelt was ditched but it snagged on the line. The cover boat came to their rescue. **B.**

9/87 July 1987. A diver narrowly escaped injury when the HP union blew on a compressor, while a cylinder was being filled. The union showed no sign of wear and ruptured without warning. **B.**

36/87 Nov. 1986. A diver suffered severe 'colic' after a faulty regulator gave him a mixture of water and air on an ascent. Excess buoyancy in dry suit accelerated the ascent and a separation resulted. The regulator had been recently purchased, second hand, without being tested. **B.**

45/87 Feb. 1987. A diver's expensive diving watch 'froze' while on a dive under ice to 8m. Having thawed it out he was later able to freeze it again in a container of icy water. Another, much cheaper digital watch gave no problems. Manufacturer of watch which froze "Did not want to know" when the incident was reported to them. **B.**

47/87 Feb. 1987. Diver suffered from particles of rubber and metal entering his arm after a cylinder pillar valve 'O' ring burst. **B.**

50/87 March 1987. Diver suffered hypothermia with body temperature down to 31 degrees after a dive to 35m in very cold water. He lost consciousness after taking undersuit off after the dive. A badly fitting 'wet' hood and no gloves were contributory causes. **B.**

51/87 March 1987. A female diver suffered hypothermia which required hospital treatment after a dive to 20m in air temperature of 3 degrees and water temperature of 6 degrees. Wind and blizzards occurred and they were the last pair to enter the water. She was wearing a WETSUIT. **I.**

57/87 April 1987. A diver in a new dry suit found that the shoulder harness of her cylinder fouled the direct feed to her suit and air was introduced to the suit involuntarily. Her buddy prevented an inverted ascent. She eventually used an ABLJ to reach the surface out of breath. **B.**

61/87 April 1987. The first stage of a regulator sheared in half during a dive to 25m. The regulator was only one year old and had recently been serviced. A manufacturing flaw was diagnosed although the manufacturers refuse to accept this. Fortunately both divers had regularly practised assisted ascents and they reached the surface successfully. **B.**

86/87 June 1987. A diver suffered lost vision and was in danger of passing out on a dive to 34m. On ascent his vision cleared and they made a successful ascent. He vomited violently for 10 mins. on the surface and was left with a bad headache. Severe oil contamination of his air, cylinder and regulator was subsequently found. **B.**

120/87 July 1987. A diver's ABLJ mouthpiece ripped off after snagging wreckage during a dive. This was not noticed until buoyancy adjustment was required. **B.**

121/87 July 1987. Diver rolled off the boat and found his air supply had failed and that he couldn't regain his posture as air was gushing around his neck. He used his ABLJ emergency cylinder to surface in the correct position. When his equipment was examined it was found the second stage hose had severed at the first stage end and the escaping air had prevented him surfacing properly,

'jet propelling' him under the water. A faulty regulator was later discovered to be the cause. **B.**

135/87 August 1987. A diver suffered moderately severe bruising of his gluteus maximus when he was struck by his buddy's exploding ABLJ emergency air cylinder. This fractured, whilst being charged from a diving cylinder, near the junction of the valve and the cylinder collar. This was a new cylinder some 3 months before the incident. **B.**

162/87 August 1987. A compressor operator in an overseas location was badly injured when a cylinder being charged exploded. **I.**

## MISCELLANEOUS

1/87 Feb. 1986. A diver under training suffered two burst eardrums in the swimming pool. **I.**

16/87 Sept. 1986. A diver suffered severe stomach pains after a 14 min. dive to 36m. He was rescued by helicopter but on arrival at the chamber it was decided that recompression was not necessary. The diver had quite a large amount of lemonade on the way to the site and it is thought he suffered a 'lemonade bend'. **B.**

53/87 April 1987. A diver had to be helped from the water with some blood on his lips after a cold water dive to 25m. He had borrowed a regulator with a badly fitting mouthpiece and had been up very late the night before. Hypothermia was evident from the incident report. **B.**

88/87 May 1987. Diver became unconscious on shotline ascending after dive to 50m. His buddy returned, untangled him from rope which was snagging equipment and raised him to the surface. Prompt, effective CPR at the surface brought the subject back to life. A full recovery was made. **B.**

130/87 Oct. 1986. A diver complained of pains in the arm after a day's diving with a decompression computer which involved two immersions to 30m, one to 20m and the final one to 18m. It was later diagnosed not to be a bend but before alerting the Coastguard the subject insisted on some in water recompression. **B.**

## ILLNESS

56/87 April 1987. A diver vomited and suffered vertigo after a dive to 25m for 25 mins. An inner ear infection was diagnosed and later he had a 'flickering effect' of the eyeballs when observed. Vertigo attacks lasted up to a week later and doctors felt he had lost inner ear fluid leaving an imbalance which accounted for the vertigo. **B.**

58/87 April 1987. A diver under training became semi-conscious in the pool while undergoing a full equipment test, including a wet suit. He was taken to hospital for examination although he had made a good recovery when helped out of the water. **B.**

117/87 July 1987. A diver suffered a non diving related brain haemorrhage during a dive to 10m. She was recovered unconscious into the boat and transferred to hospital from the shore. **B.**

## APPENDIX 1

### HISTORY OF DIVING FATALITIES

YEAR	MEMBERSHIP	DEATHS		YEAR	MEMBERSHIP	DEATHS	
		BSAC	NON-BSAC			BSAC	NON-BSAC
1959	2,615	1		1975	23,204	2	
1962	5,023	1		1976	25,310	4	
1963	5,255	1		1977	25,342	3	
1964	5,571	2		1978	27,510	8	(4)
1965	6,813	3	(0)	1979	30,579	5	(8)
1966	7,979	1	(4)	1980	24,900	6	(7)
1967	8,350	1	(6)	1981	27,834	5	(7)
1968	9,241	2	(1)	1982	29,590	6	(3)
1969	11,299	2	(8)	1983	32,177	7	(2)
1970	13,721	4	(4)	1984	32,950	8	(5)
1971	14,898	0	(4)	1985	34,861	8	(6)
1972	17,041	10	(31)	1986	34,210	6	(9)
1973	19,332	9	(20)	1987	34,500	6	(2)
1974	22,150	3	(11)				

FATALITIES/INJURIES/ILLNESS	1984	1985	1986	1987
01 Fatality	13	14	15	8
02 Embolism	7	10	10	6
03 Decompression sickness	72	57	52	69
04 Injury caused	24	4	6	9
05 Illness involved	8	6	13	5
06 Ear problems/damage	10	5	6	4
07 Hypothermia	2	6	2	4
08 Unconsciousness	7	5	5	5
09 Resuscitation	3	2	5	5
10 Breathlessness	29	5	5	6
11 Narcosis	1	6	8	4

#### TECHNIQUE

12 Aborted dive	13	8	6	7
13 Assisted ascent	8	7	9	8
14 Buoyant ascent	9	19	14	12
15 Free ascent	-	-	-	1
16 Other ascent	1	1	-	1
17 Lost diver(s)	31	18	21	34
18 Buoyancy/weight	7	16	10	8
19 Carelessness	9	13	29	35
20 Ignorance	11	19	27	24
21 Disregard of rules	34	14	22	28
22 Malice	2	1	3	-
23 Out of air	8	8	9	8
24 Pre-dive check	8	4	1	2
25 Rough water	10	17	14	9
26 Bad seamanship	10	10	5	4
27 Good seamanship	0	2	1	0
28 Good practice	5	6	6	7
29 Separation	19	14	7	6
30 Trio diving	8	2	7	3
31 Training drill	11	1	4	9
32 Training inadequate	9	12	10	5
33 Sharing involved	5	4	5	6
34 Deep dive (30m +)	50	41	43	51
35 Low U/W vis.	2	4	2	3
36 Low surface vis.	0	2	2	1
37 False alarm	3	6	4	2
38 Solo dive	9	2	4	6
39 Divers underwater	132	117	117	109
40 Divers on surface	73	48	37	44
41 Nets	-	2	1	1
42 Cold water	4	5	13	7

#### EQUIPMENT

43 Boat problems	28	13	4	3
44 Motor problems	11	12	3	4
45 Regulator performance	17	2	11	7
46 Equipment faulty	2	16	18	19
47 Equipment fitting	2	6	7	6
48 Equipment use	8	12	4	6
49 Equipment wear	5	2	4	2
50 Equipment inadequate	5	2	3	5
51 Ropes	1	2	3	5
52 SMB absent	15	7	5	7
53 SMB inadequate	1	1	4	3
54 SMB contributed	-	3	2	6
55 Propellor	-	1	2	0
56 ABLJ/BC/Stabjacket	28	3	5	3
57 Dry suit	5	13	9	4

#### CHANCE

58 Fire/explosion	2	0	0	3
59 Foul air	1	2	0	1

#### RESCUE SERVICES

60 Ambulance	-	-	-	26
61 Police	-	-	-	15
62 Helicopter	-	-	-	42
63 Coastguard	-	-	-	66
64 Lifeboat	-	-	-	29

#### DECOMPRESSION SICKNESS ANALYSIS

				1987
65 Recompression chamber	-	-	-	63
66 Recompression U/W	-	-	-	3
67 Within tables	-	-	-	29
68 Rapid ascent	-	-	-	6
69 Repeat diving	-	-	-	12
70 Deep diving (40m +)	-	-	-	20
71 BSAC tables (stated)	-	-	-	25
72 Inaccurate use	-	-	-	11
73 Computers	-	-	-	11

#### STATISTICAL SUMMARY OF ACCIDENTS AND INCIDENTS

ITEM	1983	1984	1985	1986	1987
Incidents reported	142	213	165	154	162
Incidents analysed	142	211	164	154	162
British incidents	126	200	160	146	142
Incidents abroad	9	11	5	8	16
Location unknown	7	10	0	0	4
BSAC Members	112	138	118	107	110
Non BSAC Members	6	15	17	19	5
Membership unknown	24	74	29	28	47

All the above reports are based on information received between October 16th 1986 and October 15th 1987.

Fig 1

#### BSAC FATALITIES AND MEMBERSHIP 1977-1987

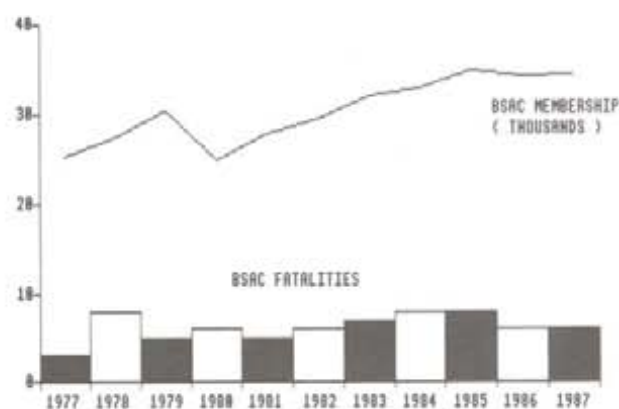


Fig 2

#### FATALITIES - MONTHLY BREAKDOWN - 1987

