

# The British Sub-Aqua Club



## NDC Diving Incidents Report 2003

*Compiled by*

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## Introduction

This booklet contains the 2003 Diving Incidents Report, produced by The British Sub-Aqua Club (BSAC) in the interest of promoting diving safety. It is important to note that it contains details of UK diving incidents occurring to divers of all affiliations, plus incidents occurring worldwide involving BSAC members.

### Report Format

The majority of statistical information contained within this report is also shown in graphical form. Please note that all statistical information is produced from UK data only and does not include Overseas Incidents unless noted as 'All Incidents'.

The contents of this report are split into an overview of the year, and then the details of nine incident categories plus some historical analyses. The various sections can be found as shown below:-

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Within each category the incidents are listed in the order of their occurrence, not necessarily that of Incident Reference. They are laid out in the following form:

<i>MONTH/YR OF INCIDENT</i>	<i>INCIDENT REF.</i>
Brief Narrative of Incident.....	
.....	

The nature of many diving incidents is such that there is usually more than one cause or effect. Where this is the case the incident has been classified under the more appropriate cause or effect. For instance an incident involving a fast ascent, causing decompression illness, will be classified under 'Decompression Incidents'.

*Brian Cumming,  
BSAC Diving Incidents Advisor,  
November 2003*

## Acknowledgements

Data for this report are collected from several different sources. I would like to extend my thanks and appreciation to the following for their assistance in its production and in ensuring its completeness:

**Ken Bazely, National Diving Liaison Officer, HM Coastguard**

**Peter Bradley, Sea Safety Liaison Officer, and  
Sarah Baumer, Service Information Data Quality Supervisor,  
Royal National Lifeboat Institution**

**and, in particular, all of those divers and other sources who have taken the trouble to complete Incident Reports and share their learning experience with others.**

**Finally, to Dr. Yvonne Couch for proof reading this report**

## Overview

**2003** has seen a reduction in the total number of incidents that have been reported. In the 2003 incident year (October 02 to September 03 inclusive) 392 incidents have been analysed, compared with 432 in 2002, 458 in 2001, and 418 in 2000.

There could be a number of reasons for this reduction:-

- Firstly, that a lower percentage of incidents have been reported to the BSAC.
- Secondly that less dives have taken place.
- Thirdly that dive safety has genuinely improved.

It seems unlikely that the first explanation is true since we have increasing links with other diving agencies, very good links with the emergency and rescue authorities, and an effective press cuttings service.

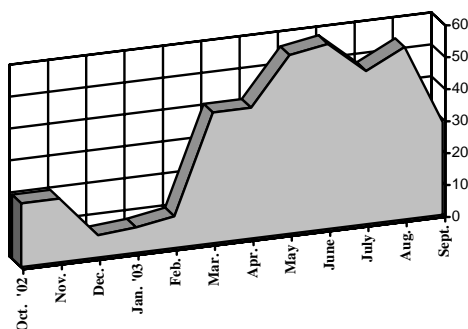
A reduction in the amount of diving is a plausible explanation; our own membership numbers continue to reduce and we hear that other agencies have noted a reduction in diving activity.

But I would also like to believe that we are succeeding in making diving safer and there is some evidence for this. We have very high confidence that we record all UK incidents involving a fatality since these are high profile events and we get information on each one from several sources. A comparison of the BSAC membership fatality rate shows a steady but clear improvement and I think it reasonable to assume that other categories of incidents share a similar trend. With the excellent weather that we have enjoyed this summer we might have expected more diving and more incidents not less.

I strongly suspect that the reduction in reported incidents is a combination of the second and third factors.

The distribution of reported incidents is shown in the following chart. As can be seen, 67% of these incidents have occurred in the summer period. This is totally consistent with previous years, reflecting the increased number of dives that take place during the warmer weather.

Monthly breakdown of all incidents - 2003



### Incidents by category

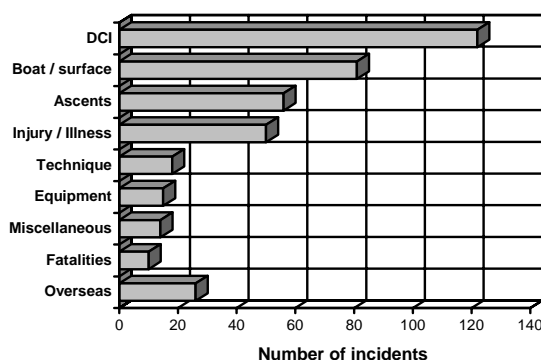
The incident database categorises all incidents into one of nine major categories, and the following chart shows the distribution of the 2003 incidents into those categories.

The highest number of incidents relates to 'Decompression Illness (DCI)' and this follows the trend of 2002 where DCI incidents took over from 'Boating and Surface' incidents as the largest group. Nevertheless both of these have seen a

reduction over previous years and it is the reduction in these two categories that accounts for the bulk of the overall reduction in reported incidents.

'Boating and Surface' incidents have shown the greatest improvement. These incidents mainly relate to engine failures and/or lost divers. This year sees 81 such incidents reported and this is a 30% reduction over the typical levels of the last 5 years. The BSAC has repeatedly highlighted the importance of correct engine servicing and of carrying and using surface marker and detection aids to prevent divers from becoming separated from their boats; I think that it is fair to claim that people have responded to this advice and we are now seeing the benefits.

Categorisation of the year's incidents



### Fatalities

The 2003 incident year has seen 11 fatal incidents in the UK, a significant reduction compared with the average of 16.3 per year over the last 10 years.

The factors associated with these fatalities can be summarised as follows:-

- Five cases involved depths greater than 50m. One involved solo diving and an out of breathing gas situation. One involved a rapid ascent and severe DCI. With the other three cases there was insufficient information to comment.
- Four cases involved separation. In one of these cases the divers chose to separate. Two cases involve divers in difficulty who then became separated. One case involved divers who became separated during their ascent.
- One case involved an accident with a trailer during the recovery of a diveboat.
- One case where there is simply insufficient information to be able to draw conclusions.

The penultimate case is arguably not a diving incident but it has been included since the casualty, whilst not actually diving at the time of the incident, was engaged in an activity directly associated with a dive trip.

Finally there was one reported fatality overseas that indirectly involved a BSAC member.

### Incident depths



The chart below shows the maximum depth of the dives during which incidents took place, summarised into depth range groupings.

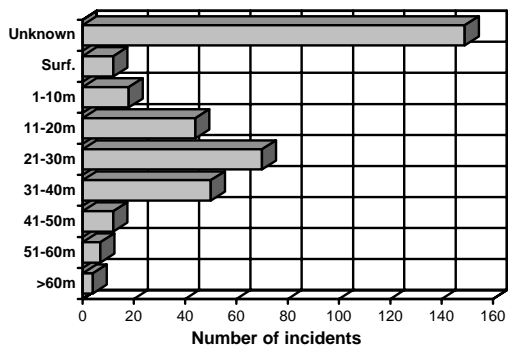
The pattern of depths in the 0 to 50m range is very similar to that normally seen and reflects the amount of diving that takes place in these depth ranges. The number of incidents reported in the greater than 50m range is 11 and this is lower than previous years. However 5 of these 11 were fatal incidents, clearly indicating the risks associated with deep diving.

The BSAC advises that no air dive should be deeper than 50m, and that dives to 50m should only be conducted by divers who are appropriately trained and qualified.

The recommended limit for divers trained to Sports Diver standard is 35m and then only when they have received appropriate training for diving at this depth.

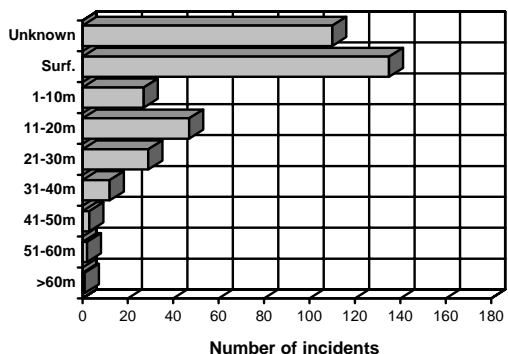
The BSAC recommends that mixed gas diving should be to a maximum depth of 70m and then only when the diver holds a recognized qualification to conduct such dives.

**Maximum depth of dive involving an incident**



The next chart shows the depth at which the incident started. Inevitably the data is biased towards the shallower depths since many incidents happen during the ascent or at the surface. Critical among these are the DCI cases where almost always the casualty is out of the water before any problems are noted. This partially explains the large occurrence of 'Surface' cases as this includes divers with DCI who have left the water. Other surface incidents involve boats and boating incidents.

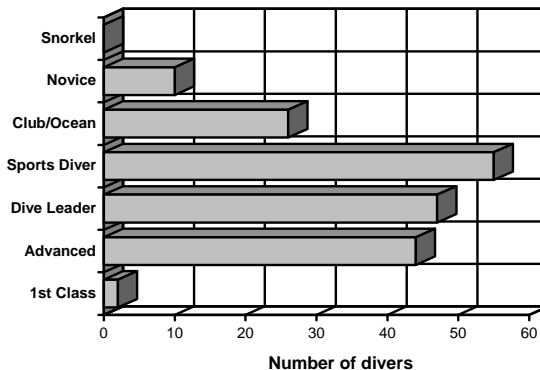
**Depth at which an incident started**



**Diver Qualifications**

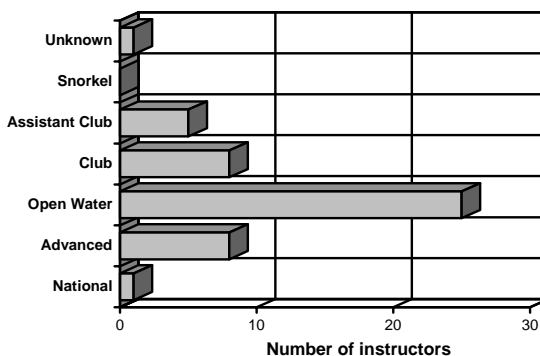
The next two charts show the qualification of those BSAC members who were involved in reported incidents.

**Qualification of the divers involved in incidents**



Although the data suggest that divers at the level of Sports Diver are the most prone to problems one must be careful in the interpretation of these data. The picture is clearly distorted by the numbers of members that we have at each of these grades. It is very probable that the largest single group of members are Sports Divers, hence the high incidence of problems.

**Qualification of instructors involved in incidents**



An analysis of incident by diver qualification shows that no grade of diver, from novice to instructor, is immune to problems. It is all too easy to make the assumption that only inexperienced divers get into problems, but the chart shows that this is not so.

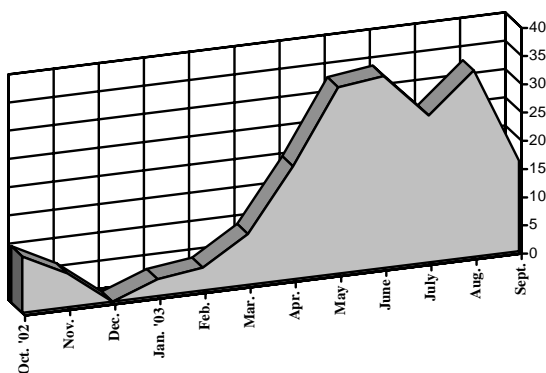
The distribution of these qualification data conforms to the pattern seen in previous years.

**Divers' use of the Emergency Services**

Divers' use of the rescue services shows a monthly distribution aligned to the distribution of all incidents, and is clearly correlated with the number of dives that are taking place.

Our demands upon the Coastguard service were in line with those of recent years.

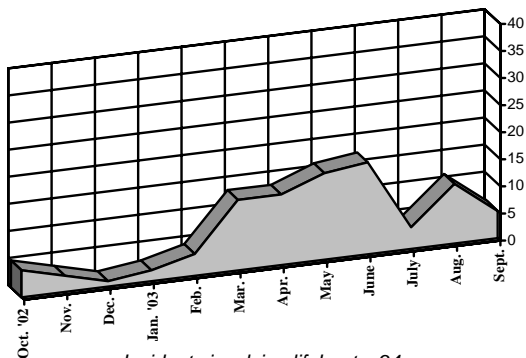
**UK Incidents involving the Coastguard agency  
- Monthly breakdown**



Incidents involving HM Coastguard: 194

Our call upon the RNLI in the 2003 incident year is very similar to that of 2002, which was down on previous years. Over the four years previous to 2002 the RNLI was involved in an average of 120 incidents per year, in 2002 it was 95 and in 2003 it was 94.

**Divers' use of RNLI facilities by month**



Incidents involving lifeboats: 94

Divers' requirements for SAR helicopters continues to rise. Last year recorded an increase, and the 2003 incident year has seen another significant rise. The average over the preceding five years was 92 recorded incidents involving a helicopter, this year it was 130

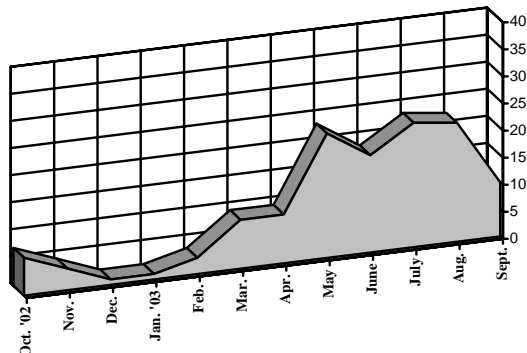
Helicopters are tasked to support searches for missing divers and to transport divers with DCI to recompression facilities. Given the reduction in DCI and lost diver incidents that I reported earlier one would have expected to see a reduction in the need for helicopter assistance.

Typically, over the last five years helicopters have been involved in 20 – 25% of reported incidents, this year it was 35% of reported incidents.

It seems probable that we are seeing a general increase in the availability and use of helicopters for these tasks.

Perhaps this aligns with and helps to explain the reduction in calls upon the RNLI.

**Divers' use of SAR helicopters by month**



Incidents involving helicopters: 130

**Decompression Incidents**

The BSAC database contains 122 reports of DCI incidents in the 2003 incident year, some of which involved more than one casualty. When these multiple cases are counted the result is 132 cases of DCI.

In 2002 168 cases of DCI were recorded, 116 in 2001, 134 in 2000 and 86 in 1999.

An analysis of the causal factors associated with these cases indicates the following major features:-

- 33 involved repeat diving
- 32 involved diving to deeper than 30m
- 31 involved rapid ascents
- 18 involved missed decompression stops

Some cases involved more than one of these causes.

The report includes several cases of 'Diver illness' reported by the RNLI and whilst the nature of this illness is not recorded by the RNLI it is very likely that these are further cases of DCI.

As reported many times before, poor buoyancy control is at the heart of the majority of these cases. Divers are failing to correctly control their ascent, especially in the critical last 10m zone and ending up with rapid ascents and/or missed decompression stops. Very often the diver is using a drysuit and is unable to prevent a buoyant ascent.

Divers continue to have problems with the deployment of delayed surface marker buoys – reels jam, equipment gets caught and divers are dragged to the surface. The very piece of equipment that is supposed to increase the safety of an ascent is having just the reverse effect.

This is an area where more training and practice is clearly needed.

Two other factors that have contributed to DCI this year are:-

- Dehydration – the hot weather has led to dehydration, compounded by divers in drysuits avoiding drinking because of the inconvenient consequences of doing so! However a trip to the loo, even in a drysuit, is quicker than a trip to the recompression chamber.
- Multi-day dive trips – divers are neglecting to take the recommended mid-week break from diving and developing DCI as a result.



## **Conclusions**

Key conclusions are:-

- The number of fatalities has reduced significantly. Fatalities in the 2002 calendar year were 50% lower than in recent years.
- Reported incidents are down over previous years indicating, in part, an improvement in diving safety.
- There has been a continued reduction in the number of boating and surface incidents.
- There has been a moderation in the number of incidents related to very deep diving, but there is still a clear and very strong correlation between increasing depth and increasing risk. 4 incidents involved depths of greater than 60m and 3 of these were fatalities.

Most of the incidents reported within this document could have been avoided had those involved followed a few basic principles of safe diving practice. The BSAC publishes a booklet called 'Safe Diving' (latest edition May 2002). This booklet summarises all the key elements of safe diving and is available to all, free of charge, through BSAC HQ.

Remember you can never have too much practice and the further you stay away from the limits of your own personal capabilities the more likely you are to continue to enjoy your diving.

Please browse through the details in this report and use them to learn from others' mistakes. They have had the courage and generosity to record their experiences for publication, the least that we can do is to use this information to avoid similar problems.

Finally, if you must have an incident please report it on our Incident Report form, available free from BSAC HQ or via the BSAC website.

As always, your anonymity is assured – great care is taken to preserve the confidentiality of any personal information recorded in BSAC Incident Reports.

## Fatalities

November 2002

03/009

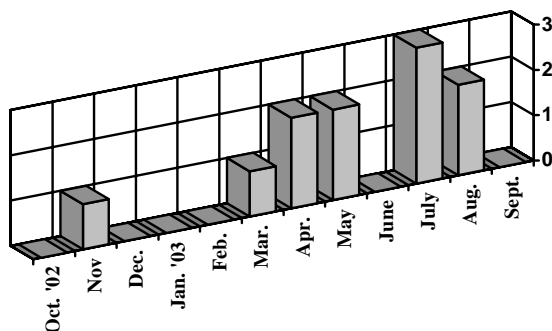
Two divers made a dive to 90m. One of the divers was using trimix 10/52 and the other a rebreather. At the end of the dive they ascended a line, with the rebreather diver above the other. At around 45m the trimix diver passed the rebreather diver and gave the 'OK' signal. The rebreather diver then noticed a 'fuss on the line' above him. He terminated his stops and ascended to 20m to check. He saw no sign of the other diver and completed his stops. At the surface he discovered that the other diver had not appeared. After the planned dive time he raised the alert. Police and Coastguard teams conducted a search using a thermal imaging camera but the missing diver was not found. Plans were being made for a follow up search using an ROV.

March 2003

03/062

A pair of divers completed a dive to 55m and were conducting a decompression stop at a depth of 6m. One of the divers was seen to convulse and sink rapidly. His buddy was unable to get to him. The Coastguard was alerted and an extensive search was conducted by a helicopter, a lifeboat and several other vessels. The missing diver was not found. The missing diver had been using trimix. The buddy was taken to hospital suffering from shock.

**UK Fatalities - Monthly breakdown  
from October 2002 to September 2003 incl.**



April 2003

03/064

Three divers conducted a dive to a wreck in a maximum depth of 30m. During the ascent, at a depth of 20m, one of the three indicated that he was very low on air. He commenced sharing air with the dive leader. The third diver ascended to 20m and indicated, on two occasions, that she had a problem. The sharing pair continued to the surface. Their total dive time was 12 min. The third diver failed to surface. The Coastguard was alerted and a search was organized involving two lifeboats, a helicopter, navy divers, other divers and other surface craft. The search was completed at dusk. Further searches were planned by police divers. The missing diver's body was recovered approximately five weeks later. It was reported that the weightbelts being used by the divers were prone to coming undone and that the divers had been told to tie them up.

April 2003

03/065

Two divers completed a wreck dive to a maximum depth of 37m. One of the pair completed his decompression stops and surfaced. The other diver remained at the stop as he had a further 3 to 4 min of decompression to complete. This second diver failed to surface. A search was conducted involving two helicopters, two lifeboats and other craft but the diver was not found. Underwater searches were also carried out with divers and an ROV in the following days but to no avail.

May 2003

03/121

A diver got into difficulties during a dive. His buddy offered her alternative air source but it was refused. The divers became separated and the buddy surfaced and raised the alarm. Another diver entered the water and found the casualty lying, unconscious, at a depth of 22m. He brought the casualty to the surface and he was recovered into the boat. Resuscitation techniques were applied and the diver was taken to hospital, where he was declared to be dead on arrival.  
(Newspaper report only).

May 2003

03/122

Two divers were diving solo on a wreck in a depth of 66m, both were using trimix. One of the divers noticed the other deploy a delayed SMB and then give the 'out of air' signal. He approached the diver and gave him his backup trimix regulator. They exchanged OK signals and started to ascend. The diver giving air deployed a delayed SMB and switched on his nitrox 32 supply as he was concerned about his trimix supply with two people using it. Between 50 and 45m his trimix ran out and he switched to nitrox 32 and made a fast ascent to 40m where he did a 2 min stop. He noticed that the other diver was no longer with him but had no choice but to continue with his ascent. He completed a series of decompression stops, including a switch to nitrox 70 at 12m. He left the water with some decompression stops uncompleted and placed himself on oxygen. He alerted the skipper that the other diver was possibly missing. After the second diver's planned dive time had expired the emergency services were alerted and a helicopter and a lifeboat were tasked to assist. The missing diver was not found.

July 2003

03/148

Two divers completed a wreck dive. One of them deployed a delayed SMB and started to ascend. Shortly into the ascent he checked for his partner but could not see him. He stopped and looked around for the missing diver but he was not to be seen. He made a normal ascent. At the surface it was determined that the second diver had not surfaced and the Coastguard was alerted. A helicopter, two lifeboats and a ferry undertook an extensive surface search and divers searched underwater the following day, but the missing diver was not found.

July 2003

03/149

A group of seven divers were diving on a wreck at a depth of 63m. One diver surfaced missing all his decompression stops, a second diver surfaced missing half of his required stops, and a third diver failed to surface. The two divers who had missed stops were airlifted to a recompression chamber. The diver who had missed all his stops was declared to be dead on arrival. An extensive search involving a helicopter and lifeboats was conducted for the missing diver. The following day divers found his body, on the seabed, entangled in netting.

**BSAC Fatalities against membership 1982-2003**



(UK fatalities only)



### August 2003

03/166

A diver experienced difficulties whilst at 20m and returned to the surface. At the surface she was unconscious. She was recovered from the water and resuscitation techniques were applied. The Coastguard was alerted and a lifeboat and helicopter were dispatched to assist. She was airlifted to hospital but declared dead on arrival.

### August 2003

03/165

A group of divers were engaged in recovering an RHIB from the water. The boat was on its trailer and was being towed up a narrow track by a tractor. Some divers were in the boat and two others rode on the back of the tractor standing on a footplate. During a gear change the tractor lurched and one of the divers fell from the back of the tractor. She fell under the wheels of the tractor. She received severe injuries and died at the scene.



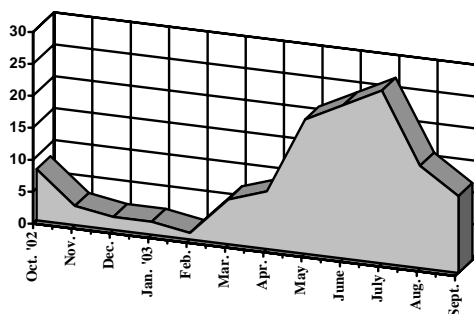
## Decompression Incidents

**October 2002** **03/256**  
Dive boat calls to report that it has diver aboard suffering from suspected DCI, airlifted to recompression facility for treatment. (Coastguard report).

**October 2002** **03/048**  
A diver dived to 17m for 28 min with a 1 min safety stop at 6m. 2 hours later he undertook a second dive to conduct controlled buoyant lift training. The dive plan was to dive to 6m. He dived with an instructor and a buddy to act as the casualty. They made their descent and the trainee continued down to 12m where the instructor caught him up and stopped him. They returned to the surface where the instructor re-briefed them. They dived to 6m and the trainee conducted the lift. The trainee over-inflated the casualty's BCD and they made a rapid ascent. The instructor managed to slow the ascent a little but they continued to the surface. No further diving was conducted that day. The trainee noted discomfort in his shoulder but put this down to carrying heavy equipment. The following day the symptoms had worsened and he now had some numbness. He sought medical advice and reported to a recompression facility where he received treatment for DCI.

**October 2002** **03/258**  
Diver complaining of pain in arm and 'pins and needles' in legs airlifted to recompression facility for treatment. (Coastguard report).

**Decompression incidents by month**



**October 2002** **03/037**  
Two divers made a dive to a maximum depth of 35m. When one of the divers was down to 50 bar they prepared to deploy a delayed SMB. One of the divers started to fill the buoy with her alternative air source which then began to free flow. The other diver ditched the SMB and attempted to stop the free flow. Whilst doing so, the diver with the free flow attempted to take his regulator. He tried to reach his own alternative air source but was prevented by the other diver's struggles. He could see that she still had her own regulator in place and so he pushed her away, assuming that she could still breathe. The diver with

the free flow then began to panic and rushed for the surface, the other diver attempted to slow the ascent, but they were joined by a buddy line and they both made a rapid ascent to the surface. The dive duration was 28 min. They were recovered into their boat and placed on oxygen. The Coastguard was alerted and the divers were airlifted to a recompression facility for treatment. Subsequent investigation revealed a blown 'O' ring in the swivel connector of the diver's alternative regulator. Narcosis was felt to have been a contributing factor.

**October 2002** **03/260**  
Report from DDRC Derriford, diver complained of feeling unwell, suspected DCI, ambulance and fire tender administered oxygen. Diver later transferred by ambulance to DDRC for treatment. (Coastguard report).

**October 2002** **03/255**  
Dive boat reports two divers surfaced missing 35min of stops, third diver with chemical burns from object picked up on the seabed. Medi link established, all divers airlifted to hyperbaric chamber and burns unit. (Coastguard report).

**November 2002** **03/023**  
A diver made a dive to 7m for 28 min. 2 hours later she dived again; this time to 20m for 24 min. The second dive profile included a very slow ascent to 6m after 12 min. The following day she experienced 'pins and needles' in her back. That afternoon she attended hospital. She was given oxygen, placed on a drip and taken to a recompression facility. She received two sessions of recompression therapy.

**November 2002** **03/032**  
A pair of divers descended to a wreck which was lying on a slope. They reached the deepest part of the wreck at 42m and then tied a distance line to the wreck and continued down the slope towards 50m. They disturbed silt and this reduced visibility. The dive leader indicated that they should return. At this point the reel jammed and he released his torch so that he could use both hands to recover the line. His buddy tried to help but this hindered the dive leader. The buddy then began to feel anxious and began to breathe rapidly. He took hold of the dive leader and tried to pull him towards the surface. Their struggle reduced visibility further. The dive leader pushed the buddy away and recovered his torch. When the dive leader found his buddy he was lying motionless, on the bottom, tangled in the line, but with his regulator in his mouth. The dive leader put air into the buddy's BCD and cut the lines to release the tangle. They made an uncontrolled, rapid ascent during which the dive leader lost his grip on the buddy. When the dive leader reached the surface he saw his buddy at the surface, motionless and face down. Another dive boat went to assist. Divers from this boat entered the water to help. The unconscious diver was recovered into his group's boat. He recovered consciousness and was placed on oxygen. The dive leader was assisted from the water and he too was placed on oxygen. The Coastguard was alerted. The buddy had pain in his arms and vomited. Both divers were airlifted to recompression facilities for treatment. Both were discharged, symptom free, the following day.

**November 2002** **03/035**  
A pair of divers descended to 23m. They then re-ascended to 18m at which point one of the pair heard a loud sound of air being released. Her regulator began to free flow and would not supply the full amount of air. Her buddy offered his alternative

air source which she took. Because of her lack of air she was not able to clear this mouthpiece and could not breathe. She put her original regulator back in her mouth. She was struggling to breathe and beginning to panic. Her buddy brought her to the surface. At the surface she blacked out briefly. She was helped from the water and placed on oxygen. She then felt aches in her joints and reported to a recompression chamber. Both divers received treatment and made a full recovery.

**December 2002** **03/036**

A diver completed two 20 min dives to a depth of 35m. The following day he repeated these dives with a 3 hour surface interval. On the last dive he made a 1 min stop at 6m. Later that evening he noticed a pain in his elbow and shoulder. He sought medical advice and was recompressed. This did not resolve the symptoms. The diver was advised not to dive for six weeks.

**December 2002** **03/091**

Two pairs of divers entered the water to conduct a dive to 48m. One of the divers' drysuit split on entry and he aborted his dive. The buddy of this diver descended with the other pair. At the bottom he did not stay with the other divers. He returned to the shot to begin his ascent. He was using a twin-set with separate regulators to each cylinder. He changed to the other regulator at the start of his ascent. This regulator began to free flow. He managed to stem the free flow but had only 35 bar left in that cylinder. He ascended the shotline and started his planned decompression stops. However with 21 min of stop time remaining at 3m he ran out of air. He surfaced, gave the distress signal, and was recovered into the boat. He was placed on oxygen and given fluids. He was on oxygen for 67 min and showed no signs of DCI. The next morning he woke with a pain in his shoulder and neck; this area was the site of a previous injury. He sought medical advice and reported to a recompression chamber. He received a series of five recompression treatments and the pain was resolved.

**January 2003** **03/265**

Following a call from ambulance control, it transpired a dive vessel was proceeding to harbour with a diver aboard suffering from suspected DCI. Transferred by air ambulance to hospital. (Coastguard report).

**January 2003** **03/049**

The Coastguard was alerted when three divers surfaced missing decompression stops. The divers were transferred to an inshore lifeboat and taken to a recompression facility. One diver received recompression treatment and the other two were kept in hospital for observation. (Coastguard & RNLI reports).

**February 2003** **03/051**

A diver conducted a dive to 41m for a duration of 38 min with a 5 min stop at 18m and a 4 min stop at 6m. 2 hours 14 min later he dived again. His second dive was to 26m for 35 min with a 3 min stop at 6m. During his drive home he felt pain developing in both his arms. He sought medical advice and was referred to a recompression facility where he received treatment. His buddy conducted the first dive with trimix and used nitrox 50 for decompression and he experienced no problems.

**March 2003** **03/061**

A trainee diver was on his fifth dive. Less than 5 min into the dive, at a depth of 20m, his regulator began to free flow. His instructor brought him to the surface using his alternative air source. After 30 min the trainee began to feel very unwell and was placed on oxygen. He was taken by helicopter to a

recompression facility where he received treatment. The water temperature was 5 deg C.

**March 2003** **03/069**

A diver completed a 24 min dive to a depth of 12m. Back on the boat she felt that she was becoming sea sick. Once back on the shore she felt dizzy and had trouble walking. Sea sickness was still considered to be the cause. She was placed on oxygen. She felt very dizzy when she moved her head. Medical advice was sought. 1 hour after surfacing she was still unwell and the oxygen supply was exhausted. She was taken to hospital where she was again placed on oxygen. 7 hours later there were no signs of improvement and diving medical advice was sought. An inner ear problem was diagnosed and she was airlifted to a recompression facility for treatment. The following day she received a further recompression treatment and made a full recovery. A DCI of the inner ear was suspected.

**March 2003** **03/205**

A diver conducted a 20 min dive to 10m. Later he dived to 25m for 20 min. 30 min later he noticed a pain in his arm. He was placed on oxygen and he went to a hospital. He was airlifted to a recompression facility where he received recompression treatment and made a full recovery.

**March 2003** **03/073**

Three divers were 12 min into a dive at their maximum depth of 21m. At this point the cylinder of one of the divers slipped out of its clamp and his regulator was pulled from his mouth. He froze. His buddies realized the problem and one of them gave his alternative air source. The diver without the regulator did not breathe. His buddies brought him to the surface and raised the alarm. The diver was recovered from the water, he was not breathing and resuscitation techniques were applied. He was placed on oxygen and airlifted to hospital. An embolism was suspected and two sessions of recompression treatment were planned. It was noted that the casualty had new equipment with 12 kg of weight in his BCD weight system plus a 7 kg weightbelt and ankle weights. It was also noted that he used two, different, medical inhalers.

**March 2003** **03/110**

Whilst on a training dive, at a depth of 22m, a diver's regulator began to free flow. His buddy offered her alternative air source but he was shocked and unable to respond. The buddy ensured that he had air and attempted to lift him with a controlled buoyant lift. However the free flow prevented her from putting air into his BCD so she lifted him using her own BCD to initiate the ascent. Their dive time was 15 min. Once out of the water the condition of the diver with the free flow deteriorated and he was placed on oxygen. He was airlifted to a recompression facility where he was treated for mild symptoms of DCI. He made a full recovery.

**March 2003** **03/080**

Two divers were at a maximum depth of 20m when the regulator of one of the pair began to free flow. They made a normal ascent. The diver with the free flow seemed unharmed but complained that the air flow had 'burned' the back of his throat. Later that day the diver became unwell and sought medical advice. He subsequently received recompression treatment. The water temperature was 5 deg C.

**March 2003** **03/086**

Two divers completed a dive to 44m. Their dive time was 28 min including a 5 min stop at 6m. Shortly after getting back into the boat, one of the divers became unresponsive. She was laid

down and the Coastguard was alerted. The oxygen kit had been left ashore. The diver's condition deteriorated, she became short of breath and had blurred vision. The helicopter was estimated to be 45 min away and so the boat headed back to harbour. In the harbour they were met by a lifeboat and oxygen was administered. The diver started to vomit. She was transferred by ambulance and helicopter to a recompression facility. The diver was recompressed. Following this treatment she was still nauseous and unsteady. She was kept in hospital. By the following morning she had lost feeling and movement in her legs. She was placed on a course of recompression and oxygen therapy over a three week period, after which she could walk with crutches but had no feeling in her legs. Treatment continued.

**April 2003 03/100**

A diver completed a 27 min dive to a maximum depth of 11m. Most of the dive was between 4 and 6m. Her previous dive was 22 hours earlier. After the dive she noted that her hands were tingling. Her drysuit was removed and she was placed on oxygen and given fluids. Medical advice was sought and the casualty was taken to a recompression chamber where she received treatment. Her symptoms responded to the treatment. She was transferred to hospital and stayed there overnight. She then began a train journey home. During this journey her symptoms returned. She attended a hospital and was given an anti-inflammatory injection which caused her arm to go completely numb. She was taken to a recompression facility where she received two further treatments over two days. It was stated that the casualty's mild asthma was a causal factor and a PFO was suspected. Further tests were planned.

**April 2003 03/063**

Two divers undertook a shore dive to a maximum depth of 15m. After 27 min, at a depth of 9m, one of the divers experienced air migration into the legs of his drysuit. He managed to regain an upright posture but was unable to prevent a rapid ascent to the surface. His buddy followed at a normal rate. The buddy assisted the diver to the shore. He was placed on oxygen and medical advice was sought. The Coastguard was contacted and the casualty was taken by helicopter to a recompression facility where he received a series of recompression treatments. His buddy went with him but he was not recompressed. The diver was using a drysuit which he had borrowed for the dive.

**April 2003 03/277**

Following a 999 call, diver recovered by rescue helicopter suffering from suspected DCI, transferred to recompression chamber for treatment. (Coastguard report).

**April 2003 03/285**

Dive support vessel contacted Coastguard on VHF channel 16 reporting having two divers aboard suffering from suspected DCI, following medical advice were transferred by helicopter to hospital for treatment. The divers had made two dives, the first to 30m plus and the second to 35m plus. (Coastguard report).

**April 2003 03/287**

Dive support vessel reported having two divers aboard with suspected DCI following a rapid ascent from 18m duration 7 min. Airlifted by Coastguard helicopter to recompression facility for treatment. (Coastguard report).

**April 2003 03/289**

Dive support vessel called Coastguard for assistance after a diver surfaced complaining of chest pains and numbness in lower back. Subsequently airlifted to recompression facility for

treatment. NB 28m 28 min. (Coastguard report).

**April 2003 03/290**

Dive support vessel called 'Mayday', reported having a diver aboard with suspected DCI following a rapid ascent, met at harbour by ambulance and transferred to hyperbaric chamber for treatment. (Coastguard report).

**May 2003 03/292**

Dive support vessel called Coastguard reporting they had a diver aboard with suspected DCI, following a 13m dive for 11min, no previous dive that day. Diver airlifted to recompression chamber by Coastguard rescue helicopter. (Coastguard report).

**May 2003 03/297**

Dive support vessel contacted Coastguard by telephone whilst alongside in harbour, reporting having a diver aboard with suspected DCI. Patient airlifted by Coastguard helicopter to recompression chamber for treatment. (Coastguard report).

**May 2003 03/298**

Dive support vessel called for assistance following a diver having made a rapid ascent with missed stops. Casualty and buddy airlifted to recompression chamber for treatment. (Coastguard report).

**May 2003 03/299**

Dive support vessel (RHIB) called for assistance following a diver ascending with suspected DCI. Casualty airlifted to recompression chamber for treatment. (Coastguard report).

**May 2003 03/104**

Dive support vessel alerted Coastguard of having a diver aboard suffering from suspected DCI, recovered to shore, taken by ambulance and transferred to rescue helicopter and flown to recompression chamber for treatment. (Coastguard & RNLI reports).

**May 2003 03/123**

A diver completed a 40 min dive to a depth of 38m. This included 9 min decompression at 5m plus a further 4 min safety stop at 3m. 1 hour after the dive he noted that his left shoulder was red and itchy. The diver was placed on oxygen and the emergency services were alerted. The diver was taken by lifeboat to a recompression facility where he was treated for DCI.

**May 2003 03/113**

Two divers descended to a depth of 35m. At this point one of the pair panicked and went for his buddy's alternative air source. His buddy managed to get them both to the surface although their ascent was fast. Their total dive time was 3 min. At the surface the buddy shouted for help. The casualty was recovered from the water. He could remember nothing of the incident and was uncommunicative. He was placed on oxygen and the emergency services were contacted. The diver was taken by helicopter to a recompression facility. He received one recompression treatment and was discharged the following day.

**May 2003 03/096**

Two divers conducted a 30 min dive to a maximum depth of 22m. During the ascent one of the divers complained of a problem with her ears and needed to be assisted to the surface



by her buddy. The diver was taken to hospital for investigation of the ear problem. Some time after her release from hospital she complained of numbness in her hands and she received recompression treatment.

**May 2003** **03/300**

Following a call to Coastguard, diver transferred by ambulance to recompression chamber for treatment suffering from suspected DCI. (Coastguard report).

**May 2003** **03/109**

Two divers were 10 min into a dive to 18m when one of the pair panicked and went to her buddy for his alternative air source. The buddy got them to the surface and towed the panicked diver to the side of the quarry, giving AV as he did so. Other assistance arrived. The casualty was taken by helicopter to a recompression facility where she received two treatment sessions. It was reported that the panicked diver was nervous and inexperienced, had a very tight semi-drysuit, and had been coerced into the dive by her buddy. She suffers from asthma and is a smoker.

**May 2003** **03/146**

Two divers conducted a training dive to a depth of 17m. At the bottom, one of the divers lifted the other to 6m using a controlled buoyant lift. They then re-descended and practiced some navigational skills. They then stopped in a depth of 15m and practiced mask clearing and regulator sharing. They ended the dive with the other diver conducting a controlled buoyant lift to the surface. At the surface she completed the rescue practice. 1 hour 32 min later they dived again. This time they dived to 18m and again practiced navigational skills. After 37 min they again practiced air sharing and then mask removal. During this exercise one of the divers inhaled water up her nose which caused her to experience breathing difficulties. She tried to cough. She found that she could breath out but not in. Her buddy held her nose for her but this did not help. The troubled diver pushed off the bottom to swim to the surface. Her buddy inflated her BCD and they made a rapid ascent to the surface. At the surface she quickly recovered. Later that night she noticed that she had blurred vision but thought that it was due to her contact lenses and tiredness. Early the following morning she noticed a rash on the left side of her waist, over her right bust and at the bottom of her spine. Later she developed a pain in her left shoulder. The pain got worse and she sought medical advice. She reported to a recompression facility and was treated for DCI.

**May 2003** **03/116**

A diver who was suffering from DCI was transported by helicopter and ambulance to a recompression chamber for treatment. (Newspaper report only).

**May 2003** **03/302**

Dive support craft reported having a diver aboard suffering from suspected DCI, airlifted to recompression facility by Coastguard helicopter. (Coastguard report).

**May 2003** **03/124**

A diver completed a dive to a maximum depth of 22m for a duration of 51 min. 1 hour later he dived to 18m for a duration of approximately 40 min including a 3 min stop at 3m. After this dive he complained of a migraine and when asked he stated that he had a small pain in his side. His right hand grip was found to be significantly less strong than his left. He was given water and placed on oxygen and the emergency services were alerted. The boat returned to the harbour and the diver was taken by ambulance and helicopter to a recompression facility

where he received a long series of recompression treatments. It is reported that this diver had been diving without a hood and that he was dehydrated as he had drunk little because he was diving in a drysuit which was difficult to get into. The diver was subsequently tested for a PFO and a small hole was found.

**May 2003** **03/307**

Diver recovered to DDRC suffering from itching and red blotches, no further details at present. (Coastguard report).

**May 2003** **03/310**

Dive leader called Coastguard reporting having a diver on oxygen suffering from suspected DCI, airlifted by Coastguard rescue helicopter to recompression chamber for treatment. (Coastguard report).

**May 2003** **03/309**

Following a dive to 48m diver complained of feeling unwell aboard diving vessel, patient given oxygen and airlifted to hyperbaric chamber for treatment. (Coastguard report).

**May 2003** **03/167**

A diver completed a series of six dives over a three day period. On the last day her only dive was to 35m for 32 min. About 90 min after surfacing she noticed a rash and some itching across her back. She was placed on oxygen for 21 min and her symptoms resolved. After a 5 min break she was placed on oxygen again for another 18 min. The Coastguard was alerted and the casualty was brought ashore and then taken by ambulance to a recompression facility where she received a precautionary recompression treatment.

**May 2003** **03/313**

Retrospective report of diver suffering cerebral DCI, made to Coastguard by relative of patient. (Coastguard report).

**May 2003** **03/207**

A pair of divers conducted a dive to 24m. After 15 min one of the pair deployed an SMB and they started their ascent. At 11m the diver with the SMB lost control of his buoyancy and was carried to the surface in 20 seconds. His buddy surfaced normally. At the surface both were recovered into the boat. The diver who had made the rapid ascent developed a headache. When this worsened he was placed on oxygen and the Coastguard was alerted. The diver was airlifted to a recompression facility where he received a precautionary recompression treatment. He suffered no subsequent ill effects. It was subsequently determined that the buoyant ascent occurred because the diver had closed the auto dump on his drysuit.

**June 2003** **03/319**

Diver having completed a dive to 39m missing total of 20 min of stops, was placed on oxygen as a precaution, and airlifted to Portsmouth recompression chamber, where he later developed symptoms of DCI. (Coastguard report).

**June 2003** **03/318**

Dive support vessel reported having two divers aboard with suspected DCI, met by ambulance and transferred to Royal Navy helicopter, who transported casualties to recompression chamber for treatment. (Coastguard report).

**June 2003** **03/314**

Dive support vessel reported having a diver aboard who had



missed stops and was showing signs of DCI, subsequently airlifted to recompression facility by RAF helicopter. (Coastguard report).

**June 2003 03/132**

A diver completed two dives in a day. Between the two dives she laid in the sun. After the second dive she noted a skin rash but assumed that this was the effects of the sun. The following day she dived to 27m for 30 min with a 3 min stop at 6m. 1 hour 47 min later she dived to 25m for 31 min. After the first of these dives she noted a sharp pain in her shoulder. After the second dive she had a severe pain in her shoulder, felt unwell and 'was itchy'. She also found a red, white and blue rash on her upper body and her upper right arm was severely swollen. She sought medical advice, was placed on oxygen and then taken by helicopter to a recompression facility. She received a series of recompression treatments over a six day period. She was left with a sore back, neck and shoulders. A spinal DCI was diagnosed.

**June 2003 03/152**

A diver completed a dive to 22m for 38 min with a 4 min stop at 6m. 5 hours later she dived again, this time to 19m for 41 min with a 5 min stop at 6m breathing nitrox 50 during the stop. The following day, 18 hours later, she dived to 23m for 40 min with a 5 min stop at 6m. Later, back on shore her right shoulder began to prickle and then hurt. After a delay of 45 min she breathed oxygen for 1 hour. The pain eased significantly. She drank 1.5 l of water and made a 4 hour drive home. The following day she sought medical advice and was told that she should have been recompressed when the initial symptoms appeared. As it was 24 hours later she declined recompression treatment and the symptoms remained for a further two days. It was suggested that this diver might have a PFO. In hindsight she reports two previous instances of itching and painful mottled skin that may also have been minor cases of DCI.

**June 2003 03/140**

A diver conducted a dive to 8m for 34 min. Later that day he dived to 14m for 28 min. The following day he dived to 47m for 24 min with a 2 min stop at 9m and a 5 min stop between 6m and 3m. After this dive he felt slightly sick and was unsteady on his legs. His symptoms remained but, after a surface interval of 4 hours 22 min, he dived again; this time to 25m for 30 min. At the end of the day he walked up a 150m hill and noticed that the unusual feeling in his legs remained. During the night he suffered cramp in his legs and the following day he noticed a soreness around his ribs. He felt unwell and breathed oxygen for 15 min. Later that morning he dived to 10m for 20 min. He still felt unwell and so he contacted a recompression chamber and was advised to attend for examination. He was diagnosed with a spinal DCI and received a series of eight recompression treatments over a 7 day period. He planned to be tested for a PFO.

**June 2003 03/316**

Dive support vessel put out a 'Mayday' call requesting assistance for a diver suffering from suspected DCI following a rapid ascent from 36m. The diver was airlifted to a recompression chamber by Coastguard rescue helicopter R-I. (Coastguard report).

**June 2003 03/142**

A dive support vessel called the Coastguard to report that they had two divers aboard who had made a rapid ascent from 30m. Although no symptoms were present, following medical advice the divers were airlifted by an RAF helicopter to a recompression facility. (Coastguard report).

**June 2003 03/317**

Dive support vessel reported having a diver aboard suffering symptoms of DCI, after consultation with hyperbaric chamber doctor, vessel was met by Coastguard and ambulance at Queen Alexandra Battery, transferred to chamber for treatment. (Coastguard report).

**June 2003 03/153**

A diver completed a 25 min dive to 36m with a 2 min stop at 6m. 4 hours 22 min later he dived again to 32 m for 28 min with a 2 min stop at 6m. The following day, 19 hours 30 min later, he dived to 35m for 31 min with a 2 min stop at 6m. 2 hours 30 min after surfacing from this dive he complained of a damp feeling to the skin on the inside of his left forearm. 90 min later he experienced numbness. He was placed on oxygen and medical advice was sought. The diver received recompression treatment and his symptoms resolved.

**June 2003 03/154**

A diver completed a 27 min dive to 35m with a 2 min stop at 6m. 4 hours 18 min later he dived again to 24 m for 37 min with a 2 min stop at 6m. The following day, 18 hours 30 min later he dived to 34m for 35 min with a 1 min stop at 9m and a 2 min stop at 6m. 2 hours after surfacing from this dive he reported feeling tired and a skin rash was found on his left shoulder. He was placed on oxygen and medical advice was sought. The casualty received recompression treatment and his symptoms resolved.

**June 2003 03/326**

Following a 999 call received, diver reported suffering from suspected DCI, was subsequently airlifted to recompression chamber for treatment. The diver had conducted a 20 min dive to 36m. (Coastguard report).

**June 2003 03/169**

A diver conducted a dive to 27m. During the dive he lost contact with his buddy. He looked around for him and then started his ascent. He moved to the top of the wreck and deployed a delayed SMB. Whilst doing this he heard air being released from somewhere, he could see no bubbles. He began his ascent. He was unable to control his buoyancy and made a rapid ascent to the surface. His dive time was 33 min. It is thought that the inflator valve on his BCD had been allowing air into the BCD in an uncontrolled manner. He was recovered into the boat and placed on oxygen. He began to experience pain in his right shoulder, calves and knees. He was airlifted to a recompression chamber for treatment.

**June 2003 03/168**

A diver conducted a dive to 29m. She began her ascent when her computer indicated 11 min of decompression at 3m. She ascended to 6m and stopped for 2 min, she then spent a further 11 min at 3.5m, switching to nitrox 32 for the final 5 min. She left the water and the boat returned to shore. She assisted with unloading kit and then noticed a rash appearing on her stomach and a visual disturbance in her left eye. She was placed on oxygen and contact was made with a recompression facility. She was taken to the recompression facility and received a 7 hour treatment for a neurological DCI.

**June 2003 03/170**

A diver completed a 30 min dive to a depth of 30m with a 3 min stop at 6m. 6 hours later he dived to 33m for 28 min with a 6 min stop at 6m. Once ashore he removed his drysuit, which had been leaking, and went to help recover the boats. He then noticed a tingling and numbness in his left foot and upper leg.



He was placed on oxygen. The local recompression facility was contacted and the diver was taken there for examination. He was found to be in good health although he was told that he had had a DCI.

June 2003 03/212

Two divers completed a 22 min dive to 29m. 6 hours 22 min later they dived again to 29m for 36 min. The following day they dived to 28m. Towards the end of the dive they deployed a delayed SMB to begin their ascent. The bag burst and they reeled it in and deployed a second SMB. This took more time than planned and they started their ascent with 13 min of decompression stops indicated. During the ascent one of the pair lost control of his buoyancy and ascended directly to the surface. Another diver entered the water to join the buddy whilst he completed his decompression stops. Both divers were airlifted to a recompression facility where recompression treatment was given.

June 2003 03/330

Following a series of dives, a diver, suffering from DCI, reported to local doctor. The diver was subsequently airlifted to recompression facility by Coastguard helicopter. (Coastguard report).

June 2003 03/331

Dive support vessel reported having a diver aboard suffering from suspected DCI following a dive to 58m for 23 min and having missed 30 min of stops due to equipment malfunction. (Coastguard report).

June 2003 03/185

A diver completed an 81 min dive to 49m with a 2 min stop at 22m, a 4 min stop at 9m, a 23 min stop at 6m and a 3 min stop at 3m. He used nitrox 80 from 9m to the surface. 5 hour 2 min later he dived again. His second dive was to 32m for 71 min with a 2 min stop at 12m, a 1 min stop at 9m, a 7 min stop at 6m and a 3 min stop at 3m. Again, he used nitrox 80 from 9m to the surface. After the second dive he experienced a pain in his right bicep whilst passing a gas cylinder into the boat. Once in the boat the condition worsened and he was placed on oxygen and given water to drink. The emergency services were alerted and he was airlifted to a hospital and then taken by ambulance to a recompression facility. Recompression resolved his symptoms. He had had a previous skiing injury to this arm and this may have contributed.

June 2003 03/332

Dive support vessel met by Coastguard and ambulance, as the vessel came alongside, following a report of a diver aboard feeling unwell, taken to recompression facility for treatment. (Coastguard report).

June 2003 03/418

A diver completed a 29 min dive to 32m including a 3 min safety stop at 6m. 20 min after surfacing he developed symptoms of DCI on the skin and in the joint of his shoulder. He was placed on oxygen and taken by lifeboat to a recompression facility where he received treatment. He made full recovery. Dehydration is thought to have been a contributory factor.

June 2003 03/159

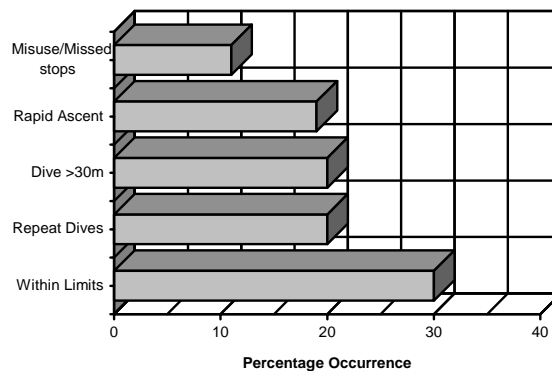
A diver completed a 38 min dive to 28m with a 2 min stop at 6m. 4 hours 19 min later she dived again to 28m for 30 min with a 2 min stop at 6m. The following day she dived to 17m for 37 min with a 2 min stop at 6m. On the journey home she noticed some tingling in her fingers but discounted DCI. She

awoke the following morning with 'pins and needles' in her left hand; the sensation lessened and she returned to bed. Later that day she sought medical advice and attended a recompression chamber. She received three sessions of recompression therapy and the symptoms resolved.

June 2003 03/133

A diver completed a series of eleven dives over a period of six days. These dives ranged between 12m and 38m with durations from 23 min to 37 min. Only one of these dives involved decompression. One the sixth day he dived to 25m for 26 min and then to 17m for 34 min with a 3 hour 34 min surface interval. The following day he made a 10 hour journey home. Towards the end of this journey he felt pain in his left elbow and some numbness in his left forearm. The symptoms became apparent when he had not moved his arm for some time. The following morning the symptoms remained and he sought medical advice. He attended a recompression facility where a suspected minor DCI was diagnosed. He was recompressed and released the following day symptom free.

**Percentage analysis of factors involved in cases of DCI**



July 2003 03/195

A diver conducted a series of four dives over a two day period. The first dive was to 36m for 36 min including a 9 min stop at 6m. After an interval of 2 hours 7 min he dived to 14m for 38 min including a 3 min stop at 6m. During this second dive he came to the surface briefly part way through the dive to take a compass bearing. The following day after 21 hours 22 min he dived to 33m for 38 min including an 8 min stop at 6m. After this dive he had to swim hard to get to the boat. Finally, after an interval of 1 hour 58 min, he dived to 25m for 26 min. He did not make any stops on this last ascent. During this ascent his computer gave two ascent rate warnings. During his drive home he noticed a 'swimming' sensation in his head and a slight discomfort in his right elbow and left shoulder. The following day he woke up with a tingling sensation in his hands and shooting pains in his elbows and at the front of his left shoulder. The following day he awoke with worse symptoms. He sought advice and was referred to a recompression chamber where he received two sessions of recompression treatment.

July 2003 03/186

Three divers undertook a dive to a maximum depth of 24m.

After 25 min they deployed a delayed SMB to make their ascent. No stops were indicated on their computers. One diver had only 40 bar remaining. They ascended to 12m at which point the diver who was low on air started to have a problem venting his drysuit and they rose to 7m before he regained control. They re-descended to 14m to restart the ascent. When they reached 10m again the diver who was low on air took the alternative air source of one of the others. These two divers then rose to the surface missing an indicated 2 min decompression stop. The third diver surfaced normally. The Coastguard was alerted and the divers were airlifted to a recompression chamber. One of the divers who had missed stops lost the strength in one arm and had 'pins and needles' in his fingers. Both were recompressed and the symptoms resolved.

**July 2003** **03/162**

A diver conducted a 24 min dive to a depth of 30m with a 4 min stop at 9m and a 3 min stop at 6m. 1 hour 39 min later she dived to 20m for 37 min with a 1 min stop at 9m and a 3 min stop at 6m. After this second dive she complained of a pain in her shoulder. She thought that this was the result of a muscle strain sustained whilst getting back into the boat. Once back on shore she examined her arm and found it to be red and blistered. The diver was laid down and placed on oxygen. Advice was sought from the local recompression chamber and the diver was taken in for examination. The diver had seven sessions of recompression therapy. It was thought that the diver might have a PFO.

**July 2003** **03/419**

A diver suffering from DCI was taken by helicopter to a recompression facility for treatment. (Newspaper report only).

**July 2003** **03/338**

Dive support vessel called to report that they had a diver, suffering acute pain following a rapid ascent from 21m. She had previously dived to 63m same day, the diver was airlifted to recompression chamber for treatment. (Coastguard report).

**July 2003** **03/164**

Two divers conducted a 48 min dive to a maximum depth of 43m including a 6 min stop at 6m and a 16 min stop at 4m. The divers carried a total of three computers and they did not surface until the last had cleared. Once out of the water one of the pair reported an increasing pain in his back and a tingling in his legs. He was placed on oxygen and the Coastguard was alerted. The diver was airlifted to a recompression facility where he was treated for a neurological and vestibular DCI.

**July 2003** **03/172**

A diver completed a series of seven dives over a period of a few days. On the day before the incident he dived to 38m for 56 min which included a 20 min stop at 4m. 5 hours 37 min later he dived to 42m for 63 min including a 12 min stop at 4m. The following day he dived to 49m for 82 min which included a 40 min stop at 4m. Later that day, once back on shore, he experienced soreness in his arm and noticed a rash. He was placed on oxygen and taken to a recompression facility where he received recompression treatment.

**July 2003** **03/239**

A diver received recompression treatment after developing DCI.

**July 2003** **03/175**

A diver on a training course commenced a dive. During the descent his buddy had a problem and they made a fast ascent

from 12m. The diver then re-descended and completed a dive to 34m. The following day he dived to a depth of 20m. After this dive he developed symptoms of DCI. He was taken to a recompression facility where he received treatment.

**July 2003** **03/343**

Dive support vessel reported having a diver aboard suffering from suspected DCI, whilst being administered oxygen, Coastguard helicopter R-IJ airlifted casualty to recompression chamber for treatment. The diver had conducted a dive to 35m for 25 min and then to 33m for 28 min. (Coastguard report).

**July 2003** **03/341**

Dive support vessel having a diver aboard suffering from suspected DCI, sought medical advice. Was met by ambulance and transferred to DDRC. (Coastguard report).

**July 2003** **03/342**

Dive support vessel reported having a diver aboard suffering from suspected DCI, airlifted to DDRC by Royal Navy helicopter. (Coastguard report).

**July 2003** **03/248**

Two divers conducted a dive to a maximum depth of 26m. They then followed a reef which sloped gently upwards. After 16 min one of the divers thought that he had been stung around the mouth by a jellyfish and he took the regulator from his mouth, wiped his mouth with his hand and then replaced the regulator. He did this a number of times. They swam back to their starting point where the troubled diver experienced a headache. His buddy signaled the ascent and they made a slow ascent to the surface. Their total dive time was 27 min. Once back in the boat he was placed on oxygen and taken to the shore. The Coastguard was alerted and the diver was taken by helicopter to a recompression facility. The diver received recompression treatment and this resolved his symptoms.

**July 2003** **03/344**

Following a call from a dive centre, a diver was reported to be suffering from DCI, was given a medi link call to doctor and subsequently transferred to recompression chamber for treatment. (Coastguard report).

**July 2003** **03/173**

Two divers were at 54m when one of the pair experienced a regulator free flow. He took the alternative air source of his buddy and they began their ascent. At 40m the buddy's regulator began to free flow. The diver whose regulator first free flowed had an unmanifolded twin-set and he returned to his own air supply at 25m. His buddy had only 25 bar remaining and she surfaced slowly, missing 5 min of decompression stops. The other diver conducted 2 min of decompression stops and surfaced. They swam to a platform to get out of the water. Whilst his buddy was helping him from the water the diver who had experienced the first free flow became unconscious and went underwater. His buddy got him to the side and summoned help. He was recovered from the water and placed on oxygen. After 10 min he recovered consciousness and he was found to have symptoms of DCI. He was taken to a recompression chamber for treatment. The other diver suffered no ill effects.

**July 2003** **03/345**

Two divers were at a depth of 28m when one of the pair ran out of air. Her buddy offered his alternative air source but it was not accepted. The diver then made a rapid ascent to the

surface, where she was narrowly missed by a hardboat which was operating on the site. She was recovered into a boat and placed on oxygen. She and her buddy were taken to the shore and another boat collected other divers from the group. The diver and her buddy were airlifted to a recompression facility for treatment.

July 2003 03/250

A diver had conducted a series of dives over a period of seven consecutive days. On the last day he dived to 34m for 40 min. 4 hours later he dived to 26m for 40 min with an 11 min decompression stop at 6m. Very early the following day he awoke with an ache in his arm and in the morning he complained of dull and shooting pains in his arm. He was placed on oxygen and the Coastguard was alerted. The diver and his buddy were airlifted to a recompression facility where the diver with symptoms was treated for a suspected DCI. He was discharged, fit, the following day.

July 2003 03/347

Following a dive at 12:00, diver sought medical advice at 20:00 having completed a 53m dive 21 min, taken by private means to hospital suffering from suspected skin bend. (Coastguard report).

July 2003 03/183

A diver completed a series of dives over a five day period. On the last day he dived to 42m for 35 min with a 2 min stop at 6m and an 8 min stop at 3m. 2 hours 25 min later he dived again. This second dive was to 33m for 41 min with a 6 min stop at 3m. During the return boat trip he complained of feeling unwell and of diarrhea. He felt seasick and lay down at the back of the boat. Others monitored his condition. He experienced continual stomach cramps. Once ashore he attempted to walk but felt dizzy, sick and very weak. He was placed on oxygen and medical advice was sought. He was taken to a recompression facility and fluids were given. He received recompression treatment. A stomach infection and severe dehydration were identified as contributing factors.

July 2003 03/240

A diver conducted a dive to a maximum depth of 26m for a duration of 40 min. After this dive she noticed a slight ache in her left hip joint. After a surface interval of 2 hours she conducted a second dive very similar to the first. After the second dive she again noticed the ache in her hip. 1 hour 30 min later the ache worsened and then became a stabbing pain. She sought medical advice and attended a hospital. She was placed on oxygen and, after a 1 hour wait for an ambulance, she was transported to a recompression facility. On the way the ambulance broke down and a further 45 min wait ensued before a replacement arrived. She received four sessions of recompression treatment over a three day period and made a full recovery. She was advised to arrange a

July 2003 03/197

Two divers conducted a dive to 15m for 40 min including a 2 min safety stop at 6m. Three hours later they dived again. During their descent, at a depth of 9m, the dive leader accidentally let go of the SMB. The divers ascended to the surface, collected the SMB and swam back to the shotline. They re-descended but at 3m one of the pair had problems clearing his ears so they aborted the dive. Their total dive time was 7 min. Once back in the boat the diver's ear cleared but he was then seasick. The following day the diver noticed a pain in his elbow joint and a numbness in his fingers. He sought medical advice and reported to a recompression facility. He was recompressed and this resolved his symptoms.

July 2003 03/421

Two divers conducted a dive to 45m. They surfaced, low on air, having missed decompression stops. Both divers exhibited signs of DCI and were airlifted to a recompression facility for treatment.

July 2003 03/184

Two divers completed a dive to 32m for 27 min and they conducted a safety stop at 6m. 2 hours later they dived again. Their second dive was to 22m. Towards the end of the dive, one of the pair spotted a weight that someone else had lost. He picked it up. He put extra air into his suit to support the weight. At about 19m he dropped the weight and his buoyancy began to carry him to the surface. Struggling to retain control he ran out of air and managed to switch to his alternative source. His buddy hung on to him trying to control the ascent but at 14m he had to let go and the buoyant diver made an inverted ascent to the surface where his suit was fully inflated. Both divers left the water. 25 min later the diver who had made the buoyant ascent rapidly went into a decline. The emergency services were alerted and an ambulance attended the scene. The casualty was then airlifted to a recompression facility where he was successfully treated for a neurological DCI.

July 2003 03/187

Two trainees and an instructor conducted a training dive. They completed two ascents from 6m using an alternative air source. They dived to 14m and one trainee lifted the other using a controlled buoyant lift. At the surface he towed the other trainee for 25m. They then conducted compass drills at the surface. One of the trainees then left the water and the other trainee descended with the instructor to practice a controlled buoyant lift from 6m. This was aborted as the trainee could not clear her ears. Their total dive time was 1 hour 6 min. 2 hours 15 min later the trainee who first left the water and the instructor dived again. They descended to a maximum depth of 16m then spent half the dive at a depth of 6m. Their dive time was 20 min. Later that evening the trainee who had made the second dive noticed a tingle in his hand and contacted a recompression facility. He attended the facility and was recompressed. It is thought that dehydration may have been a contributing factor.

August 2003 03/188

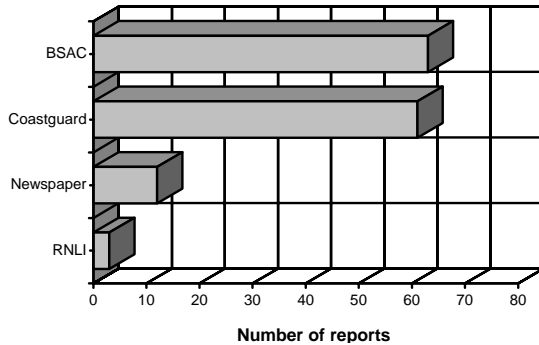
Two divers completed a 44 min dive to 30m with a 12 min stop at 3m. 2 hours 7 min later they dived to 24m for 28 min with a 2 min stop at 3m. The following day, 15 hours 28 min later, they dived a third time. This dive was to 35m. After a dive time of 17 min they deployed a delayed SMB and started their ascent. Their computers indicated that a 4 min stop was required. At 28m the weightbelt of one of the divers fell off. He tried to get back down to it but was unable to do so as his legs filled with air. He made a buoyant ascent to the surface and his buddy went with him. They were recovered into the boat and placed on oxygen. At the surface one of the divers' computer indicated 18 min of missed stops. The Coastguard was alerted and both divers were airlifted to a recompression facility. One diver was showing signs of DCI and both were recompressed. The symptoms resolved.

August 2003 03/218

A diver completed a 65 min dive to a maximum depth of 21m, including a 6 min stop at 5m. 1 hour 52 min later he dived again. His second dive was to 23m for 58 min including a slow 18 min ascent from 20m at the end. After this dive he became ill and was taken to hospital. From hospital he was transferred to a recompression facility and received a series of four treatments for DCI. It was a hot day and the diver may have been dehydrated.



**Decompression data source analysis**



**August 2003 03/200**

Two divers completed a dive to 30m. After 27 min they started their ascent. One of the divers attempted to deploy a delayed SMB but the reel jammed. He tried to get another reel out of the pocket of his buddy's BCD but in doing so he knocked the regulator from her mouth. This diver replaced her regulator but was now breathing hard and starting to panic. During this period the divers were ascending and distressed diver was unable to control her buoyancy. She rose to the surface in less than 2 min, missing decompression stops. Her buddy remained to complete his stops although, once back in the boat, he was found to have missed 1 min of decompression stop. The Coastguard was alerted. The divers were placed on oxygen and medical advice was sought. The divers were airlifted to a recompression facility where they both received recompression treatment.

**August 2003 03/354**

Dive support vessel reported having two divers aboard suffering from suspected DCI, both airlifted by rescue helicopter to recompression chamber for treatment. (Coastguard report).

**August 2003 03/242**

A diver completed a 34 min dive to 34m including a 4 min safety stop at 6m. 3 hours 30 min later she dived again to 25m for 55 min including a 6 min safety stop at 6m. 15 min after this dive she noticed that her upper arms were sore; she thought that this was due to pulled muscles. 1 hour later she developed a migraine which lasted for 30 min. 3 hours later she noticed that her upper arms were covered in a blotchy red and white, marbled rash. The following day she sought medical advice. The rash had gone but her arms were still sore. She attended a recompression facility and received treatment for a skin DCI. She was tested for a PFO but none was found.

**August 2003 03/360**

Dive support vessel reported having a diver aboard with suspected DCI, patient was airlifted to hyperbaric chamber for treatment. Note: had there been a delay of half an hour the patient may well have been paralyzed. (Coastguard report).

**August 2003 03/223**

A diver completed a 39 min dive to a depth of 36m, including a 1 min stop at 15m, 11 min at 6m and 1 min at 3m. Her

computer only indicated a total of 8 min stops but extra safety stops were conducted. 1 hour later, back on shore, she removed her diving suit and noticed an itchy, bruised feeling on her left arm. These symptoms began to spread and she was placed on oxygen and medical advice was sought. She was taken to a recompression facility. The symptoms had spread across her shoulders and down her right arm, and similar symptoms appeared at the top of both her legs. Her arms were also swollen. A skin and lymphatic DCI were diagnosed and she received three sessions of recompression therapy.

**August 2003 03/361**

Dive support vessel contacted Coastguard reporting having a diver aboard suffering from suspected DCI, patient and buddy were airlifted to hyperbaric chamber for treatment. Hull Coastguard team supported. (Coastguard report).

**August 2003 03/202**

Two divers conducted a dive to 31m for a total of 59 min including 5 min at 9m and 8 min at 6m. One diver was using nitrox 25, the other was using air and their decompression schedule was for air. After a surface interval of 3 hours 55 min they made a second dive. They both dived using air to 29m for 43 min including 4 min at 9m and 6 min at 6m. Once back in the boat the diver who had made the first dive on nitrox helped to recover the anchor. 24 min after surfacing this diver complained of a pain in his left upper arm but put this down to lifting the anchor. Later that day he noticed a rash and a marbled blueness on his upper arm. He was placed on oxygen and the rash began to reduce. Medical advice was sought and the diver was taken to a hospital. He was placed on a drip and transported on oxygen, by ambulance, to a recompression facility where he received recompression treatment. His symptoms resolved.

**August 2003 03/203**

Two divers conducted a 25 min dive to a maximum depth of 33m with a 3 min stop at 6m. 2 hours later they made a drift dive to 16m for 54 min. 3 hours later one of the pair noticed minor pains and 'twinges' in his elbows, knees, shoulders and particularly his left wrist. These symptoms persisted for two days and on the third day the diver sought medical advice. He was examined at a recompression facility and received recompression treatment which resolved his symptoms. This diver had previously suffered from a similar DCI. This diver has Addison's disease.

**August 2003 03/362**

999 call received by Coastguard reporting a diver feeling unwell following a 28m dive for 25 min having missed stops, patient airlifted to hyperbaric chamber for treatment, suffering from suspected DCI. (Coastguard report).

**August 2003 03/369**

Dive support vessel contacted Coastguard reporting having a diver aboard suffering from suspected DCI. (Coastguard report).

**August 2003 03/365**

Dive support vessel reported having a diver aboard with suspected DCI, transferred to hyperbaric chamber for treatment. (Coastguard report).

**August 2003 03/364**

A call was received from the skipper of a dive vessel reporting a diver from the party had begun developing signs of DCI, medical advice was sought and, following that advice, a rescue

helicopter and ambulance were tasked, however the diver refused medical assistance, all units returned to normal duties. (Coastguard report).

**August 2003** **03/228**

A diver conducted a dive to a depth of 27m. She was using a newly purchased BCD which was thought to be the same as the one on which she had trained. However the direct feed hose was shorter and, as a result, the fill and dump valve was higher than she was used to. During the ascent she was unable to find the dump valve and she made an uncontrolled, rapid, ascent to the surface. Her total dive time was 20 min. She was placed on oxygen and taken ashore. Medical advice was sought and she was taken to hospital. She was then taken to a recompression facility and treated for a suspected DCI.

**September 2003** **03/237**

Two divers conducted a dive to 40m. After 28 min they both deployed delayed SMBs to make their ascent. One of the pair was diving with an extra T shirt and fleece under his undersuit. Prior to deploying the SMB this diver dumped air to make sure that he was negatively buoyant. He started to ascend and found that he was too heavy and he let air into his BCD. He then realized that he was ascending too quickly and attempted to reach the hose of his BCD. He took three attempts to find the hose and dump the air. His ascent continued and he tried to dump air from his suit but none was released. He pulled at his neck seal, but was unable to prevent a buoyant ascent to the surface. He ascended from 32m in just over 1 min. He was recovered into the boat and placed on nitrox 50. His dive computer indicated 30 min of missed decompression. His buddy completed 20 min of decompression stops. The following day the diver who had made the buoyant ascent experienced a numbness of his shoulder, elbow and leg. He attended a recompression facility and received two recompression treatments over a two day period.

**September 2003** **03/374**

Dive support vessel reported having a diver aboard with suspected DCI, diver and buddy airlifted to recompression facility for treatment. (Coastguard report).

**September 2003** **03/425**

A trainee diver was carrying out a mask clearing exercise. The mask did not seal correctly and she made several attempts to clear it. Then she started to panic and swam for the surface. Her instructor attempted to slow the ascent but they still surfaced faster than normal. At the surface the diver was hyperventilating, she complained of a headache and did not seem fully alert. She was recovered from the water and placed on oxygen. The emergency services were alerted and she was airlifted to a recompression facility where she was treated for a suspected embolism. (Newspaper report only).

**September 2003** **03/249**

A diver completed a 30 min dive to 32m including a 10 min stop at 6m. 8 min later the diver began to feel unwell. He was placed on oxygen and taken by ambulance to hospital. After 2 hours in hospital he was discharged. He still felt unwell and sought specialist medical advice by phone. He was advised to attend a recompression facility where he received recompression treatment. He subsequently received a series of three treatments at another recompression facility.

**September 2003** **03/376**

Doctor called Coastguard requesting assistance to evacuate diver with suspected DCI to recompression chamber for treatment, transferred by ambulance to air ambulance for the

journey. (Coastguard report).

**September 2003** **03/234**

A diver completed a 42 min dive to 28m including a 3 min stop at 6m. She was breathing nitrox 30. 45 min after surfacing she experienced blurred vision, dizziness, a loss of balance, nausea and vomiting. She was taken to hospital and from there she was taken by ambulance to a recompression facility. She was on oxygen and a saline drip during the journey. She received a series of recompression treatments over the next four days for a vestibular DCI.

**September 2003** **03/253**

A diver completed a 22 min dive to a depth of 26m. 20 min after surfacing he experienced 'pins and needles' in his legs. He was placed on oxygen and returned to shore. He was taken by ambulance to a recompression facility where he received recompression treatment. It was reported that this diver had not eaten or drunk properly for at least 14 hours prior to the dive and dehydration is thought to have been a factor in the DCI.

**September 2003** **03/254**

A diver completed a series of thirteen dives over a consecutive seven day period. Depths ranged from 13m to 39m and durations from 28 min to 61 min. On the seventh day he dived to 28m for 35 min with a 3 min stop at 6m. 3 hours 16 min later he dived to 27m for 44 min with a 3 min stop at 6m. 29 hours after this last dive he became aware of an itching across his back. He went to a recompression facility where he was recompressed for a skin DCI. He reported that he had noticed itching earlier but had been preoccupied by an unrelated issue.

**September 2003** **03/378**

Dive support vessel reported having a diver aboard suffering from suspected DCI, with a doctor recommendation diver evacuated by air with Coastguard helicopter, and taken to recompression chamber for treatment. (Coastguard report).

**September 2003** **03/426**

A diver completed a dive to 36m for 38 min including a 13 min stop at 3m. 2 hours 40 min later he dived to 27m for 24 min including a 7 min stop at 3m. During the ascent from this second dive, this diver became separated from his buddy and he surfaced 12 min before him. Once back in the boat he complained of a stiff right shoulder and 10 min later accepted oxygen. The casualty thought that his problem was a strained muscle. 20 min later he stopped taking oxygen. He became very seasick. 2 hours later he arrived back on shore, but he continued to be sick. The casualty was found to be disorientated and unable to walk properly. The Coastguard was alerted and the casualty was airlifted to a recompression facility. He received a series of recompression treatments over the following eight days. A vestibular DCI was diagnosed and the casualty had a residual hearing loss in one ear, four weeks after the event.

**September 2003** **03/379**

Dive support vessel reported having a diver aboard who had made a rapid ascent from 6m. As symptoms developed the casualty was airlifted by Coastguard helicopter and transferred to hospital by land ambulance. (Coastguard report).

**September 2003** **03/383**

Dive support vessel made urgency call to Coastguard requesting assistance for diver suffering from suspected DCI. Returned to port to be met by ambulance, taken to recompression chamber for treatment. (Coastguard report).



## Injury / Illness

October 2002 03/385  
Lifeboat launched to help diver with illness. (RNLI report).

October 2002 03/261  
Following a dive to 24m for 20min, diver with suspected DCI. Diver and buddy were airlifted by Coastguard helo to Poole recompression chamber, where his symptoms were diagnosed as not diving related. Treated in an A&E hospital. (Coastguard report).

October 2002 03/011  
A diver was using his left hand and arm to steady himself as he left the water from a dive in a quarry. In doing so he suffered a dislocated arm. This arm had been previously dislocated eight years ago.

October 2002 03/020  
An instructor and a trainee made a dive to 6m for 23 min. 2 hours 30 min later they dived again, this time to a maximum depth of 5m to conduct controlled buoyant lift training. During the descent the student experienced problems clearing her ears. Once clear they descended to 5m and the student lifted the instructor to the surface. At the surface she complained of pain in her left ear and she was distressed. After 1 min the pain ceased and they left the water. The student reported that the pain started in the last half metre of the ascent. She complained that her ear felt 'full' and that her hearing was impaired. Later blood was seen coming from her ear. The following day she attended hospital and a perforated eardrum was diagnosed.

November 2002 03/025  
A pair of divers conducted a dive to 20m for a duration of 25 min. After the dive one complained of shoulder pain and a slight rash. Medical advice was sought. The diver was placed on oxygen. The diver then explained that he had suffered an injury from a fall 14 days earlier. The diver was taken to a recompression facility but extensive testing indicated that he did not have a DCI.

November 2002 03/003  
Two divers completed a dive to 20m for 40 min. 90 min later they dived again. One of the pair had twin cylinders charged with nitrox 32. He had 100 bar remaining from the first dive and used this for his second dive. They agreed that he would lead the dive and ascend when he got to 50 bar. They dived to 20m. After a while, the dive leader indicated that they should head back. Shortly afterwards the dive leader took the alternative air source of his buddy. The dive leader then took the jacket inflator of the buddy and they started a controlled buoyant ascent. There was no warning given but both divers were relaxed. Suddenly, during the ascent, the dive leader's head snapped back and the regulator came out of his mouth, he let go of his buddy and started an uncontrolled descent. He grabbed for his pony regulator which contained 100% oxygen. The buddy followed the dive leader to the bottom. The dive leader was lying on the bottom, moving and breathing erratically. The buddy offered his alternative air source but the dive leader did not seem to notice. The buddy tried to inflate the dive leader's BCD but nothing happened. Because of the dive leader's movements the buddy could not release his weightbelt. He took hold of the back of his BCD, inflated his own BCD and attempted to lift him. He was too heavy to lift. The buddy ascended and called for help. He then tried to re-

descend but his own breathing became very erratic and he had to resurface. Other divers recovered the dive leader. Resuscitation was applied and the diver was taken to hospital where he was placed on a life-support machine. The dive leader had been using a new BCD. The casualty regained consciousness approximately four weeks later and is reported to be recovering.

November 2002 03/014  
Three divers conducted a shore dive. One of the group experienced breathing difficulties. All three made a rapid ascent to the surface. The diver with breathing difficulties was placed on oxygen and the Coastguard was alerted. All three were taken to by helicopter to a recompression facility. (Coastguard report).

November 2002 03/026  
Three divers conducted a 24 min dive to a depth of 20m. 3 hours later one of the three suddenly developed a headache. He was placed on oxygen. The pain slowly subsided but he felt slightly nauseous, cold and 'jittery'. The Coastguard was alerted and medical advice sought. He was advised to attend a hospital, from where he was referred to a recompression facility. Tests at this facility concluded that the diver did not have a DCI. The effects were thought to be due to a build up of carbon dioxide. The diver was kept in hospital for observation and released the following day.

November 2002 03/027  
Two divers completed a 31 min dive to a depth of 21m. They planned to leave the water using a steel ladder on a pontoon. The first diver removed her fins, placed them on the pontoon and climbed out. She then bent to pick up her fins and slipped on the wet surface. She fell back into the water hitting her thighs and arm on the side of the pontoon. Her buddy, who was still in the water, helped her out. Two days later she was suffering from some stiffness and bruising but the condition was improving.

November 2002 03/028  
A trainee diver was conducting a dive to 6m. 6 min into the dive she began to panic. Her buddy brought her to the surface where she convulsed and had difficulty breathing. She was removed from the water and placed on oxygen. The emergency services were alerted and the diver was taken to a recompression facility. She was recompressed as a precaution, but it was considered that she had had a convulsion as a result of a panic attack. It was subsequently discovered that this diver had a history of such attacks, but had not declared this.

November 2002 03/029  
A diver made a stride entry into the water at the beginning of a night dive. She had a torch on a lanyard attached to her right arm and it is believed that this torch struck her arm. This diver suffered from rheumatoid arthritis and had had recent reconstructive surgery on her arm. She thought that her right elbow had been damaged by the impact. She was taken by ambulance to hospital and a fracture of the lower right arm was diagnosed.

December 2002 03/038  
A diver was removing equipment from a swimming pool storage cupboard when a cylinder fell forward. He was unable to move

out of the way and the pillar valve struck his foot. A ambulance attended the scene.

**December 2002** 03/386  
Lifeboat launched to help diver with illness. (RNLI report).

**February 2003** 03/046  
Two divers were preparing for a dive. They entered shallow water but one had difficulty fitting his fins so he walked back to the shore where he managed to fit them. Whilst re-entering the water he tripped and fell. He landed on one knee. This knee was badly injured, and the diver required surgery and twelve weeks convalescence.

**March 2003** 03/058  
A diver conducted her first ever dive using a semi drysuit in water at 5 deg C. She dived with an instructor to a maximum depth of 6m for a duration of 20 min. After the dive she was found to be on the verge of hyperthermia for which she was treated. She made a good recovery.

**March 2003** 03/070  
Two divers descended slowly to a depth of 19m. After 5 min, one of the pair experienced a sharp pain across his eyes. He ascended quickly. He suffered no further ill effects but reported that he had been under stress for a number of weeks and had had two sleepless nights.

**March 2003** 03/098  
A trainee and an instructor conducted a 20 min dive to a maximum depth of 6m. At the start of the dive, the trainee had failed to turn on the cylinder valve sufficiently and this had not been noted during buddy checks. The partially open valve provided increased breathing resistance and the trainee strained her intercostal muscles in her efforts to breathe. The dive was terminated when the trainee's gauge showed 50 bar. Back in the boat the cylinder was turned on correctly and the gauge then read 140 bar. The following day the issue was discussed and medical advice was sought. The trainee was taken to hospital by ambulance and advised not to dive for at least 10 days.

**March 2003** 03/275  
Ambulance control reported receiving a call from member of the public of a diver in difficulties, rescue helicopter R-WB scrambled, casualty airlifted to hospital. Symptoms were of drowning and not DCI therefore taken to A&E. (Coastguard report).

**April 2003** 03/099  
A trainee was ascending from a dive to 8m. At 6m she lost control of her buoyancy and rose rapidly to the surface before the instructor could assist. At the surface the trainee dumped air and rapidly descended to rejoin the instructor. The trainee was somewhat unresponsive to signals and held her hand over her ear. The instructor brought her to the surface with a controlled buoyant lift and they abandoned the dive. Some hours later the trainee complained of blood coming from her ear. She was examined by a local doctor and a perforated eardrum was diagnosed. The trainee had been recovering from a cold and was taking Sudafed. She had dived successfully for several days before this event.

**April 2003** 03/083  
Two divers completed a 26 min dive to a maximum depth of 21m. They spent the last 3 min at 6m. The dive began with a long surface swim. Upon surfacing one of the divers was sick.

Once out of the water the diver was sick once more. It was finally concluded that the diver had suffered from food poisoning.

**April 2003** 03/089

A trainee and an instructor dived to a depth of 25m. At this point the trainee looked uncomfortable and, in trying to clear his mask, ended up with it above his nose. His instructor brought him to the surface using a controlled buoyant lift. The dive duration was 15 min. Once out of the water, the trainee was placed on oxygen. He was taken by ambulance to hospital and a series of tests were conducted on him. He was found to be suffering from a fast heart rate and low blood oxygen levels. An underlying health problem was suspected.

**April 2003** 03/135

An RHIB was maneuvered stern first into a beach and stopped in a depth of about 1.5m. As divers prepared to board the boat a 3m high wave approached. Warnings were shouted to the cox. The wave grew to a height of 5m and lifted the boat vertically. The cox was thrown out of the boat which was then hit by a second large wave. The boat landed upside down on top of the cox with the A frame buried into the sandy beach. The cox surfaced in an air pocket under the boat and then managed to escape to join the other members of the party. The cox sustained an injury to his lower back. The Coastguard was alerted and the casualty was taken by helicopter to hospital where a cracked or broken rib was diagnosed. The boat was recovered but some equipment was lost.

**April 2003** 03/107

A diver was 20 min into a dive, at a depth of 20m. He experienced an shooting pain in his left knee. He made a controlled ascent. The knee was found to be swollen and 'locked'. He was advised to see his doctor.

**April 2003** 03/101

An instructor completed two training dives; the first to 6m for 30 min and the second, 1 hour later, to 6m for 25 min. She left the water after the first dive by climbing a ladder and she noted that her left leg felt weak and her left hip felt as if it was going to give way. Her leg became progressively weaker and she had great difficulty leaving the water after the second dive. She had significant weakness in her leg and she had numbness and tingling in her left leg and foot. The following day she sought medical advice and a damaged disc in the lumbar vertebrae was diagnosed. This diver had suffered a previous back injury.

**May 2003** 03/295

Ambulance control called Coastguard for assistance, following diver reporting buddy having become unconscious underwater after losing mouthpiece. Casualty taken by ambulance to hospital for treatment (near drowning). (Coastguard report).

**May 2003** 03/191

A diver undertook her first dive in UK waters. She started her descent and immediately her mask began to flood. She cleared the mask but it flooded again. Her buddy attempted to help her. The mask continued to flood and she let go of the buoyancy control system of her BCD which she had been holding. She then took hold of her alternative air source by mistake and tried to use this to dump air from her BCD. Realizing the mistake she struggled to find the buoyancy control which had moved out of place. She eventually found the control and experienced further problems in releasing air. Finally she managed to dump air and descended quickly to the seabed at a depth of 12m. She experienced pain in her ears. She began to panic and her buddy tried to calm her down. Another diver realized that there was a

problem and used a controlled buoyant lift to get her back to the surface. She was recovered into the boat and blood was seen coming from one of her ears. The Coastguard was alerted and the boat returned to the shore. The diver was taken to hospital and a badly inflamed eardrum was diagnosed.

### May 2003 03/114

Two divers completed an 18 min dive to a depth of 35m. One of the pair made a fast ascent from 6m to the surface. He complained that he felt sick and dizzy. His buddy helped him from the water. He was given oxygen for 20 min and recovered. This diver was building up his depth experience. His previous deepest dive had been to 21m. 1 hour later this diver was sick, he was placed back on oxygen and taken to hospital, from where he was discharged a few hours later.

### May 2003 03/129

An instructor led two trainees on an assessment dive. They entered the water from a pontoon and swam to a buoy. At the buoy one of the trainees stated that she felt nervous about the dive. They waited whilst she regained her breath and then descended the buoy line to a depth of 20m. At the bottom they exchanged OK signals and prepared to swim off on a compass bearing. The instructor then noticed that the trainees were ascending the line together at a faster than normal rate. He followed them up and when he got to the surface one of the trainees was towing the other to the shore. The instructor caught them up at the pontoon and he and others helped to lift the diver who had been towed from the water. Resuscitation techniques were applied to this diver and she recovered at the scene. She was placed on oxygen and taken by helicopter to hospital where she was reported to be recovering well.

### May 2003 03/130

Two divers were exploring the shoreline at low water springs to seek a new entry point. They walked down some weed covered steps and onto a flat area of weed covered concrete. One of the pair slipped on the penultimate step and struck the base of her spine on the edge of a step. She conducted shore dives later that day and the following day. Later the second day she sought medical advice. Her only injury was found to be bruising and she was given painkillers and anti-inflammatory drugs.

### May 2003 03/304

Diver reported as suffering from chest pains and croaky voice. Airlifted to recompression facility for treatment; air reported as suspect. (Coastguard report).

### May 2003 03/125

Two divers began a dive down an underwater cliff face. At 12m one of the pair experienced problems with her buoyancy and began to sink. Her buddy got her to the cliff face and removed one of her weights. However she still sank and, in the process, lost a fin. Her buddy came to the surface and raised the alarm. A search was initiated for the missing diver. In the mean time the missing diver was discovered, swimming in circles, at 20m, by two other divers. The missing diver had suffered from severe mask squeeze and was blind. The two divers brought her slowly to the surface; she had 61 bar remaining in her cylinder. The blinded diver was taken by helicopter to a recompression facility for treatment. 45 min later her buddy began to show signs of DCI and he too was airlifted for recompression treatment. The diver who had had buoyancy problems was diving in a hired drysuit and had problems with her suit earlier in the day. Both divers were reported to have subsequently made good recoveries.

### May 2003 03/131

A diver was helping to load a boat from a pier. He stepped up from the pier over the side of a high sided pilot boat to move equipment to the RHIB which was moored to the outside of the pilot boat. Whilst stepping off the pier he slipped and fell back onto the pier. The cylinder that he was carrying fell onto his right wrist and he fell on top of the cylinder. After the fall his wrist seemed to be unbroken and he continued with the planned dive. Later that day the wrist began to swell and became more painful. He sought medical advice and an X ray suggested a possible fracture of the scaphoid. His wrist was placed in plaster for three weeks and the final diagnosis was that he had suffered bruising of cartilage and bone.

### June 2003 03/329

Report came to Coastguard that a diver had been hit by another vessel, diver suffered bruising, owner not reprimanded, but vessel known to other craft. (Coastguard report).

### June 2003 03/158

Two divers conducted a dive to a maximum depth of 42m. At the end of the dive they returned to the shotline and untied it from the wreck. They began their ascent. At about 15m one of the pair noticed that the other diver was below him and he descended to join him. When he got to the other diver, at a depth of about 24m he found him to be unresponsive and sinking. He tried to attract the diver's attention but got no response. The diver's eyes appeared half rolled back and he had a blank, vague expression on his face. He took hold of the unresponsive diver and began to lift him to the surface using a controlled buoyant lift. At around 9m the unresponsive diver gave the OK signal and began to make his own ascent. The pair stopped for 1 min at 3m and then surfaced. The rescuing diver called for assistance from the boat which approached to assist. Two other divers entered the water, helped to release them from the shotline, in which they had become tangled and assisted them back onto the boat. The diver who had been unresponsive was placed on oxygen and the emergency services were alerted. They were met by a lifeboat and provided with further oxygen. Once ashore the diver was taken to hospital from where he was released after a check up. This diver was not aware of any problem during his ascent which he believed to have been normal except for sinking back to 24m due to buoyancy problems. He does not recall the other diver trying to attract his attention. This diver was taking a daily dose of amitriptyline for pain control of a previous head and neck injury. Further medical advice was being sought. The diver's air was checked and no problems were found.

### June 2003 03/413

Lifeboat launched to help diver with illness. (RNLI report).

### June 2003 03/160

A diver completed a 28 min dive to a depth of 33m. 1 hour after surfacing he began to feel nauseous and dizzy; he then began to vomit. He developed a tingling feeling in his hands, he was weak and unable to stand or walk. He was given oxygen. It was thought that the diver was suffering from food poisoning since two others in the party, who had not dived, were experiencing similar problems and all had eaten in the same place the night before. The ambulance service was contacted and a doctor attended. The doctor consulted diving medics who insisted that the diver be airlifted to a recompression facility. The diver was examined at the recompression facility and was recompressed as a precaution. His symptoms remained and the final diagnosis was gastric flu/viral infection. He was kept in hospital for three nights.

July 2003

03/337

Dive support vessel reported having a crew member aboard suffering from crushed fingers, airlifted by Coastguard rescue helicopter, and transferred to ambulance for conveyance to hospital. (Coastguard report).

hospital.

August 2003

03/367

Dive support vessel reported to Coastguard upon returning to harbour of having a diver aboard with pains in left arm. Rescue helicopter Coastguard team and ambulance tasked. (Coastguard report).

July 2003

03/163

A diver completed a 33 min dive to a maximum depth of 29m. He conducted a safety stop for 3 min at 6m. Once back in the boat he noticed that his left bicep and elbow hurt. He spent the next hour helping other divers on and off of the boat. He then discussed the pain with others and was placed on oxygen. Once ashore he was taken to a recompression facility. After an examination he was transferred to a hospital where the final diagnosis of a muscle strain was made.

August 2003

03/227

An RHIB suffered engine failure at a dive site and it was anchored. Another RHIB assisted by recovering the divers from the disabled boat and then towing the boat back to the shore. The disabled boat was released before it was secured to a jetty and it began to be blown by the wind into shallow water. The rescuing boat went to assist and the painter from the disabled boat was thrown to a crew member in the rescuing boat. The rescuing boat was put into reverse and the painter was pulled from the hand of the crew member. The painter had a karabiner on the end and this caught the middle finger of the crew member, breaking it and removing the skin from the end of this finger. He was taken to hospital for treatment.

July 2003

03/176

A diver suffered mask squeeze during a training dive. He had a problem with his eyes but declined medical assistance.

August 2003

03/348

999 call made by diver traveling home after previously making a dive 4 hours earlier, had breathed oxygen immediately after the dive having felt unwell. (Coastguard report).

September 2003

03/244

Two divers conducted an 11 min dive to a depth of 6m. Both experienced sinus pain over their left eyes. Both were placed on oxygen for 30 min and given water. No subsequent ill effects were experienced.

August 2003

03/215

A diver conducted a dive to a maximum depth of 26m. 20 min into the dive, at a depth of 20m, her left ear felt a little uncomfortable and took two or three attempts to clear. Upon surfacing the diver had a mild headache, she felt unwell and had earache later that evening. She took pain killers and felt well the following day although she had intermittent deafness and a feeling of 'fullness' in her ear. Two days later she commenced another dive. At 3m she experienced vertigo. This feeling persisted and at 13m she aborted the dive. Upon surfacing she experienced tinnitus and deafness in her left ear. Once on shore a considerable amount of wax was removed from her ear but the problem remained. Ten days after the causal dive she saw a medical specialist and a rupture of the round window of her left ear was diagnosed. This injury appeared to be healing.

September 2003

03/230

A diver completed a 24 min dive to 33m with safety stops of 1 min at 9m and 3 min at 6m. 2 hours 30 min later he dived to 19m for 44 min with a 3 min safety stop at 6m. After the first dive he felt seasick and spent the interim period ashore. The diver was involved in pull-starting engines and charging cylinders. At 11 o'clock that night he was woken by pain in his left shoulder and elbow and he sought medical advice. He was taken by helicopter to a recompression facility where he received two recompression treatment sessions. The treatment did not change his symptoms. He was given pain killers. It was concluded that the diver had suffered from a pulled or strained muscle.

August 2003

03/241

An instructor experienced difficulty descending for a second dive, but he continued with a 65 min dive to 9m. After the dive it was suspected that the diver had suffered a perforated eardrum and he sought medical advice at a hospital.

September 2003

03/246

A 65 year old diver had just completed buoyancy control training in a swimming pool. As he left the pool he experienced a short term memory loss, unable to remember anything that had happened towards the end of his training session. He was taken to hospital and he was found to have elevated blood pressure and it was suspected that he had suffered a transient ischemic attack.

August 2003

03/353

Request received from dive support vessel for assistance, reporting having diver aboard complaining of chest pains following rapid ascent, patient airlifted to recompression chamber for treatment. Treated for cardiac condition. (Coastguard report).

September 2003

03/375

Dive support vessel whilst involved in the evacuation of a diver suffering from suspected DCI, reported having an injured diver aboard. Apparently having dislocated shoulder whilst assisting. Injured diver met by waiting ambulance and conveyed to hospital. (Coastguard report).

August 2003

03/424

A diver who suffered chest injuries was taken by ambulance to

## Boating & Surface Incidents

October 2002 03/384  
 Lifeboat launched to assist dive boat with engine problems.  
 Craft towed in. (RNLI report).

October 2002 03/259  
 RHIB reports that it is broken down, unable to recover divers.  
 ILB recovered all four divers and towed RHIB to shore.  
 (Coastguard report).

October 2002 03/262  
 Dive boat drifting unattended, later divers returned, safety  
 advice given. (Coastguard report).

October 2002 03/263  
 Following a report from ambulance control with reference to  
 missing diver and one in difficulty off Porthkerris point, MRCC  
 Falmouth alerted CG Cliff team, R-193 Navy helo, Falmouth  
 LB, subsequent report confirmed divers safely ashore.  
 (Coastguard report).

February 2003 03/267  
 Broken down dive support vessel. Contacted RNLI direct, who  
 self launched to recover craft. (Coastguard and RNLI reports).

February 2003 03/050  
 The Coastguard was alerted when a diver failed to return to his  
 boat. Another diver attempted an underwater search but a  
 strong current prevented him. A lifeboat, a helicopter, shore  
 teams and other craft began a search. The diver was later  
 found safe and well and he was returned to the shore where he  
 was met by an ambulance. (Coastguard & RNLI reports).

February 2003 03/268  
 Dive RHIB reported engine failure, with four divers in the water,  
 two recovered by another vessel remaining two made own way  
 to dive RHIB. (Coastguard report).

March 2003 03/388  
 Lifeboat launched to assist dive boat with engine problems.  
 Craft towed in. (RNLI report).

March 2003 03/389  
 Lifeboat launched to assist dive boat with engine problems.  
 Craft towed in. (RNLI report).

March 2003 03/270  
 999 call received for two divers reported waving for assistance  
 off Brixham breakwater. Recovered by inshore lifeboat to  
 shore, subsequently details emerged that one diver ran out of  
 air, became fatigued, called by waving for assistance.  
 (Coastguard & RNLI reports).

March 2003 03/390  
 Lifeboat launched to assist dive boat with engine problems.  
 Craft towed in. (RNLI report).

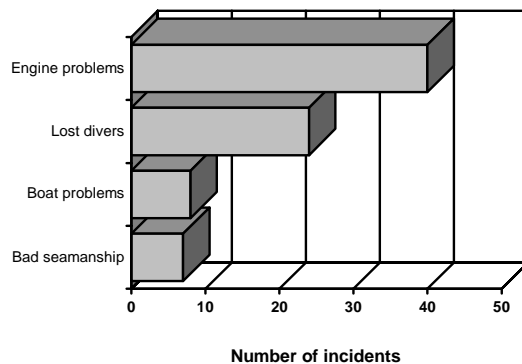
March 2003 03/082  
 During a boat handling course a boat ran aground on a  
 sand/shingle spit. The instructor took over control. The engine  
 was partially lifted and the engine and wave action was used to  
 refloat the boat. It was subsequently found that the propeller  
 had been damaged, the skeg had been bent and the bottom of  
 the boat had major scratches.

March 2003 03/392  
 Lifeboat launched to assist dive boat with engine problems.  
 Craft towed in. (RNLI report).

March 2003 03/271  
 Divers suffering from exhaustion recovered by lifeboat, returned  
 to shore, met by Coastguard and ambulance. (Coastguard  
 report).

March 2003 03/273  
 Broken down dive RHIB, suffering engine failure. Called a 'Pan  
 Pan', subsequently towed to shore. Divers recovered by other  
 vessels. (Coastguard report).

### Analysis of boating & surface incidents



November 2002 03/012  
 Three divers were reported overdue after a wreck dive. An  
 extensive search was conducted involving two helicopters, four  
 lifeboats and four Coastguard rescue teams. The three were  
 found, safe, at the shore, nearly 5 hours after starting their dive.  
 (Coastguard & RNLI reports).

November 2002 03/264  
 Unnamed dive boat suffered mechanical breakdown, towed to  
 port. (Coastguard & RNLI reports).

January 2003 03/266  
 Dive RHIB reports engine failure, 8 pob. RNLI ILB launched to  
 vessel, restarted engine by self, escorted to port by ILB.  
 (Coastguard & RNLI reports).



**March 2003** 03/272  
Broken down dive support vessel, due to broken throttle. Towed to shore by another vessel, another vessel recovering 4 divers who surfaced later. (Coastguard report).

**March 2003** 03/393  
Lifeboat launched to assist dive boat with engine problems. Craft towed in. (RNLI report).

**March 2003** 03/274  
Shore diver reported to be in difficulties 0.5 nautical mile offshore. Diver returned to shore before rescue units arrived on scene. (Coastguard & RNLI reports).

**March 2003** 03/394  
Lifeboat launched to assist stranded diver. Two persons brought in. (RNLI report).

**April 2003** 03/279  
Diving RHIB reported having broken down, towed to shore by lifeboat. Later, lifeboat assisted in recovering divers in the water. (Coastguard & RNLI reports).

**April 2003** 03/280  
Dive support vessel suffered engine problems believed to be fuel related. Having divers down at the time. Divers recovered by lifeboat who towed the vessel to shore. NB all comms on mobile phone. (Coastguard & RNLI reports).

**April 2003** 03/281  
Broken down dive support craft. Gearbox failure. Lifeboat brought craft in. (Coastguard & RNLI reports).

**April 2003** 03/397  
Lifeboat launched to assist dive boat with engine problems. Craft towed in. (RNLI report).

**April 2003** 03/284  
RHIB tasked to recover two divers. (Coastguard report).

**April 2003** 03/286  
Various resources tasked to assist divers in apparent difficulty off Shoalstone pool. Later discovered that a SMB had been lost two days earlier from a dive boat. (Coastguard & RNLI reports).

**April 2003** 03/399  
Lifeboat launched to assist dive boat with problems. (RNLI report).

**April 2003** 03/097  
A group of divers prepared to enter the water in a sheltered harbour area. They were briefed to stay in a confined area of the harbour. During the dive, one pair left the main group and strayed outside of the agreed area and out of sight, outside the harbour wall. When the main group surfaced the missing pair were noted and the Coastguard was alerted. The missing divers were recovered by another dive boat and safely returned.

**May 2003** 03/102

Two divers undertook a dive to a maximum depth of 15m for a duration of 23 min. Their boat dropped them in the lee of a large rock as there was a large swell. During the dive they encountered a current and were unable to swim back against it. They deployed a delayed SMB and made their ascent. At the surface they discovered that they had moved around the rock and were out of sight of their boat. They blew a whistle but were too far away to be heard. They deployed a large flag, fully inflated their SMB and switched on a strobe light. The dive had been in the evening and dusk was approaching. The Coastguard was alerted and a search involving three lifeboats and a helicopter was instigated. The divers were recovered by their own boat after being at the surface for 75 min. The dive boat initially searched in the wrong area and was directed to the correct search area by the Coastguard based upon tide and current predictions. The flag that the divers carried made them easy to find once the boat was in the correct area. No subsequent ill effects were experienced.

**May 2003** 03/291  
Coastguard received call from RNLI of two divers in difficulty in surf, assisted ashore by lifeboat crew, no further medical attention required. (Coastguard report).

**May 2003** 03/293  
Dive support vessel informed Coastguard that she had broken down, towed to shore by another vessel. (Coastguard report).

**May 2003** 03/294  
Dive support vessel (RHIB) made a 999 call to Coastguard informing of suffering engine failure. No divers were in the water, towed to shore by lifeboat. (Coastguard & RNLI reports).

**May 2003** 03/296  
Dive support vessel (RHIB) called Coastguard by mobile phone, reporting they had lost power and were drifting with two divers still in the water. They could not anchor as they had lost that in the morning, furthermore the divers had no detection aids as they had lost them also in the morning. Lifeboat recovered divers clinging to the Mew stone, dive RHIB towed to safety by lifeboat. (Coastguard & RNLI reports).

**May 2003** 03/301  
Dive support vessel called Coastguard reporting engine failure, towed to shore by another dive vessel (RHIB). (Coastguard report).

**May 2003** 03/404  
Lifeboat launched to assist dive boat with engine problems. Craft escorted in. (RNLI report).

**May 2003** 03/119  
The engine of a dive boat failed and the crew were unable to recover two divers who had surfaced from their dive. The Coastguard was alerted and a helicopter, a lifeboat and other craft were tasked to assist. The helicopter recovered the divers and returned them to their boat via the lifeboat. The lifeboat stood by to assist the disabled dive boat. (Coastguard report).

**May 2003** 03/305  
Dive support vessel called 'Pan Pan' reporting missing diver. Diver subsequently recovered 2 nautical miles from dive site by searching rescue craft. (Coastguard & RNLI reports).

**May 2003** 03/306



Retrospective report. Whilst diving on a wreck, another vessel passed directly overhead placing the divers into danger, details passed to small vessel inspector. (Coastguard report).

**May 2003** **03/303**

Dive support vessel put out a 'Pan Pan' broadcast as the vessel had suffered engine failure, towed to harbour by lifeboat. (Coastguard & RNLI report).

**May 2003** **03/406**

Coastguard, police, ambulance and a lifeboat responded to a diver who was reported to be in difficulty. He was rescued from the water and taken to hospital.

**May 2003** **03/137**

Three pairs of divers entered the water from a dive boat at 10 min intervals. Shortly after the last pair had started their dive the cox and crew noticed a sea mist approaching. They managed to recover the first pair of divers before the mist surrounded them, but lost sight of the SMBs of the other two pairs. The cox alerted the Coastguard. One pair was picked up by a passing boat, but the last pair were not found for over 1 hour. These divers blew whistles and one of them switched on an EPIRB that he was carrying. Eventually they were spotted by a fishing boat which had been assisting in the search. The fishing boat radioed the lifeboat and they were recovered. One of the divers' drysuit had a leak in the dump valve mounting and he was very cold. The lifeboat had not been listening for the EPIRB because they had not been told that the divers were carrying one. The divers were subsequently informed that the Coastguard helicopter (which had been preparing to join the search) monitors for EPIRB signals as a matter of course. There was some doubt that the EPIRB may not have been working due to a sealing fault. The marine forecast had not included a mist warning.

**June 2003** **03/147**

Two divers commenced a dive by swimming down the anchor line of their boat. The boat was positioned close to a rocky outcrop and they had been briefed that the current was running away from the rocks. They swam over kelp until they found exposed rocks. At this point, about 16 min into the dive, the current was running in the opposite direction to that anticipated. They prepared a delayed SMB. During this process the reel of the SMB jammed and the reel was released to allow the SMB to ascend without pulling the diver to the surface. They did not have a second SMB. They continued their dive to a total duration of 31 min including 3 min of decompression stops. Their maximum depth was 18m. Upon surfacing they realized that they were a long way from their boat, around the other side of the rocks. The surface party had discovered the free-floating SMB and had begun a search for the divers. When the divers were overdue the Coastguard was alerted and a search began involving two lifeboats, a helicopter and four other craft. The divers were found by one of the other craft, safe and well, 1 hour after surfacing.

**June 2003** **03/320**

Dive support vessel reported having engine problems, thought to be fuel related, was able to limp home under own power supervised by Harbour Master. Problem was faulty kill switch. (Coastguard report).

**June 2003** **03/134**

A dive boat was returning from a dive when the fuel for the outboard engine ran out. A second tank was connected to the engine but it could not be restarted. The divers paddled the boat to a safe position and the Coastguard was alerted. A

police launch attended and towed the boat to the harbour. It was later thought that the engine had run out of oil. The engine was a 2 stroke engine and the oil was supplied from a separate tank. When this tank ran out the engine was designed to shut down.

**June 2003** **03/127**

An RHIB was on passage to a dive site when a red flare was seen fired from a nearby speedboat. The divers went to investigate. The boat had stalled in choppy seas. As the dive boat approached the brand new speedboat, the speedboat pitched upright and sank stern first. The speedboat crew, a man and two boys, were recovered into the RHIB. They were wearing T shirts and shorts and had no lifejackets. They were wrapped in exposure blankets and taken safely to the shore. The Coastguard was alerted.

**June 2003** **03/315**

Dive support vessel, reported having broken down with divers still in the water, lifeboat tasked and as lifeboat arrived vessel managed to restart engine. (Coastguard & RNLI reports).

**June 2003** **03/141**

Two divers descended a shotline to a wreck in a depth of 29m. The shotline was rigged with a small counterweight at the top to be self adjusting. When the divers entered the sea state was 2 to 3 as forecast. During the dive the sea state rose to 6, the counterweight became tangled and the shotline was carried away from the wreck in the current. The crew of the covering boat were unaware and followed the shot, believing they were over the wreck. Towards the end of the dive the two divers were unable to find the shotline and deployed a delayed SMB and made their ascent. At the surface they were out of sight of the boat. When it was realized that they were overdue the Coastguard was alerted and a search was initiated. 45 min after surfacing the divers were spotted by a searching helicopter and then they were picked up by a lifeboat. No subsequent ill effects were experienced.

**June 2003** **03/407**

Lifeboat launched to assist dive boat with engine problems. (RNLI report).

**June 2003** **03/408**

Lifeboat launched to assist dive boat with engine problems. Craft towed in. (RNLI report).

**June 2003** **03/210**

Two divers conducted a dive to a maximum depth of 28m. They encountered a slight current so they deployed their delayed SMB after 12 min. After completing the dive they surfaced with a total dive time of 32 min. Their boat was about 400m away from them and they were not seen. The boat crew was occupied because another member of the party had surfaced rapidly without his buddy. After 20 min their boat began to search for them but they were unable to attract the attention of those on board. They drifted into a race. Other boats failed to notice them. The boat crew alerted the Coastguard and a helicopter, a lifeboat and other craft commenced a search. They were eventually found after 2 hours by another dive boat which spotted their yellow and orange SMB. Both were safely recovered.

**June 2003** **03/324**

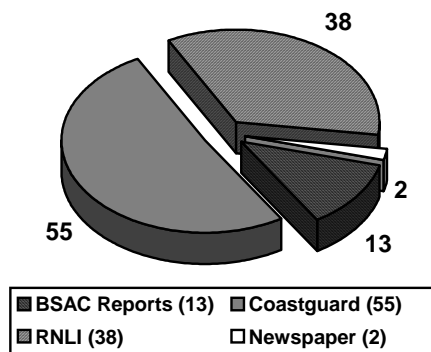
Dive vessel reported breaking down with ten persons on board.

Towed to safety by the Cullercoats RNLI. (Coastguard & RNLI reports).

Craft brought in. (RNLI report).

**June 2003** **03/325**  
 Member of the public reported diving RHIB stuck on rocks, with possibility of two divers also stuck. Recovered by fishing vessel and returned to shore. Dive vessel recovered and also returned to shore. (Coastguard report).

**Boating & surface incident report source analysis**



**June 2003** **03/145**  
 Two people were waiting in their dive boat whilst four divers conducted a dive to a depth of 26m. These two people noticed a boat of an estimated 6,000 tons coming straight for them. They were flying an A flag but the boat continued towards them. The unhooked themselves from the shotline buoy and attempted to alert the vessel. It appears that there was no one on the bridge and the boat passed directly over the divers' bubbles. The divers remained on the bottom and they were affected by the wash of the ship, the vibration of the propellers and sand being stirred up around them, but were otherwise unharmed. A crew member from the boat gave a 'friendly wave'.

**June 2003** **03/410**  
 Lifeboat launched to assist dive boat with fouled propeller. Craft towed in. (RNLI report).

**July 2003** **03/333**  
 Dive support vessel reported having a missing diver, rescue helicopter was scrambled, the diver was spotted by parent vessel, SAR units stood down, subsequent investigation revealed the delayed SMB had become entangled. (Coastguard report).

**June 2003** **03/411**  
 Lifeboat launched to assist dive boat with engine problems. (RNLI report).

**July 2003** **03/335**  
 Dive support vessel, reported as overdue. Communication search commenced vessel found safe and well. (Coastguard report).

**June 2003** **03/328**  
 Dive vessel reported bad seamanship following an incident where a vessel steamed through a dive site being used by many divers, all displaying the alpha flag. Offending vessel interviewed by Coastguard, a report of a Hazrep was filed. (Coastguard report).

**July 2003** **03/171**  
 Two RHIBs were returning separately to the shore after a day's diving. The engine of one of the boats spluttered and then stopped. The cox found that the bulb in the fuel line was flat and she was unable to pump fuel. The fuel tank showed less than a quarter but not zero. She anchored the boat and alerted the Coastguard. The Coastguard attempted to contact the second boat to assist. After 10 min she found that she could pump fuel again and she was able to start the engine. She informed the Coastguard and continued her journey. She was met by the second boat which accompanied her back to the shore.

**June 2003** **03/327**  
 Harbour Master reported that a pleasure vessel had picked up two divers, who had become separated from their dive boat. Dive boat had lost communications. (Coastguard report).

**July 2003** **03/247**  
 An instructor and a trainee were involved in a shore dive in a lake. Boats were not usually allowed on the lake. However on this day there was a problem with walkers on the shore of the lake and a rescue boat was launched to help. The rescue boat drove straight over the two divers who were 50m offshore in a depth of 4m. They suffered no ill effects.

**June 2003** **03/211**  
 Three divers entered the water from an RHIB and began their dive. The cox noticed that the fuel was running low and switched over to the second tank. The engine stopped and would not restart. The cox found that a fuel line had become disconnected and he reconnected it. The engine was prone to oiling up and could not be restarted. The cox was unable to find a plug spanner onboard. The divers resurfaced and were drifting away from the boat. One of the boat crew monitored their position. The cox called the Coastguard but was unable to hear a response. He then radioed nearby boats for assistance and a yacht relayed his message. A helicopter was dispatched to assist and was directed towards the divers, whose SMB could still be seen. Another diver boat recovered the divers and the RHIB crew managed to restart the engine. They returned to shore where they were met by Coastguards. They were informed that a lifeboat was searching for them. The RHIB crew had not heard the radio message from the Coastguard telling them this as they had been experiencing problems with VHF radio reception.

**July 2003** **03/174**  
 A group of divers deployed a shotline on a wreck. The first pair entered the water and on arrival at 33m discovered that the shot had been dragged off the wreck. They sent the shot to the surface with a lifting bag and swam on an agreed bearing to try to find the wreck. They encountered a 0.5 knot current and decided to drift with the current. They then deployed their SMBs but became separated whilst doing so. Divers in the boat

**June 2003** **03/412**  
 Two lifeboats launched to assist dive boat that was out of fuel.



recovered the shot and re-laid it on the wreck and a second pair entered the water. When the second pair surfaced they reported that the first pair had not been seen and a search was initiated. The first pair had surfaced and met up at the surface. Divers in the boat alerted the Coastguard of the missing pair and a surface search involving a lifeboat, a helicopter and an aircraft was initiated. The divers activated an emergency beacon, deployed sea dye and used a torch to attract attention. The divers were spotted by the aircraft and recovered by their dive boat 4 miles from their entry point after 2 hours 45 min in the water. They suffered no ill effects.

August 2003 03/350

Whilst on exercise RNLI lifeboat assisted divers from rocks where they had been trapped by tide and current. Taken to own dive support vessel. (Coastguard report).

August 2003 03/349

Dive support vessel reported having two divers missing in fog, Coastguard rescue helicopter scrambled to assist in locating missing divers. The divers were subsequently found by the diving vessel as the helicopter arrived on scene. Neither diver required medical assistance. (Coastguard report).

August 2003 03/423

A dive boat reported two diving pairs missing to the Coastguard. The dive boat later recovered all divers safely.

August 2003 03/422

A sudden, freak, storm caused a dive RHIB with six people onboard to run aground. They issued a 'Mayday' call but managed to free themselves before the lifeboat arrived to assist.

August 2003 03/355

Two divers waved for assistance following a shore dive having become fatigued, were assisted by a dive vessel and met by Coastguard Team once ashore, no medical treatment required. (Coastguard report).

August 2003 03/359

Dive support vessel raised the alarm having two missing divers, rescue helicopter scrambled and RNLI all weather boat requested to launch, divers recovered by own vessel, heavy swell prevented the boat from seeing them despite having surface detection aids. (Coastguard report).

August 2003 03/358

Dive support vessel reported having two missing divers, Coastguard rescue helicopter scrambled, as another vessel reported having located the missing divers and recovered them aboard, helicopter stood down. (Coastguard report).

August 2003 03/201

Two pairs of divers undertook a drift dive in a depth of 14m,

leaving two others in the boat. When the first pair surfaced they took control of the boat and the third pair got ready to dive. The boat was driven up current and against the wind to a suitable entry point for this third pair. The divers entered the water and the boat moved down current to collect the second pair who were expected back at the surface. The boat crew spent 20 min trying to locate the second pair but failed to do so. The divers were at the surface and could see the boat. The search was extended back towards where the third pair had entered in hope of recovering them to help with the search. The sun was low in the sky and the sea surface was choppy. The Coastguard was alerted and a lifeboat and a helicopter were tasked to search. The lifeboat arrived first and coordinated a search involving the dive boat and a large speedboat that came to assist. The speedboat was high out of the water and the divers were soon spotted. One pair was recovered by the lifeboat and the other by the dive boat. All safely returned to shore. Each pair was using an SMB but other surface detection aids were not carried.

August 2003 03/366

HM Coastguard requested the launch of RNLI lifeboat to assist two divers in difficulty, Coastguard rescue team attending, both divers returned to shore by lifeboat. (Coastguard report).

August 2003 03/370

Dive support vessel reported having two missing divers. Two lifeboats and police launch tasked to search, together with Coastguard rescue helicopter R-WB and shoreline search conducted by Coastguard rescue Team, divers located safe and well. (Coastguard report).

September 2003 03/372

Dive support vessel suffered engine failure, RNLI lifeboat launched and towed stricken vessel to shore. (Coastguard report).

September 2003 03/373

Dive support vessel reported being disabled and requiring a tow, Coastguard requested RNLI lifeboat to launch to assist vessel, which was towed back to shore. (Coastguard report).

September 2003 03/377

RHIB called for assistance having suffered engine failure, towed to safety by RNLI lifeboat. (Coastguard report).

September 2003 03/381

Dive support vessel reported having a missing diver, who had dived to 60m with a rebreather. Numerous resources searched. Recovered by own vessel 1 mile from datum. (Coastguard report).

September 2003 03/382

Dive vessel reported on a 999 call breaking down, whilst rescue units were making their way to the casualty they made their way to shore. (Coastguard report).

## Ascents

October 2002

03/031

A pair of divers made a dive to a maximum depth of 22m. Towards the end of the dive they made a gradual ascent to 12m; they spent 5 min at this depth. They then became separated and both made rapid ascents to the surface. Their total dive duration was 41 min. They were recovered into the boat. Both their computers indicated alarms and they were placed on oxygen. During the return journey to the shore one of the divers reported a numbness in the little finger of both his hands. Once ashore he was taken to hospital. No further treatment was found necessary.

October 2002

03/021

A pair of divers conducted a dive to a maximum depth of 36m. At 13m one of the pair lost control of his buoyancy and made a rapid ascent to the surface. He was placed on oxygen. Their total dive duration was 10 min. No subsequent ill effects were experienced.

October 2002

03/022

A pair of divers conducted a dive to a maximum depth of 36m. At 25m one of the pair was unable to make his drysuit dump valve function and he made a rapid ascent to the surface. Their total dive duration was 16 min. No subsequent ill effects were experienced.

January 2003

03/053

A pair of divers were ascending from a 28 min dive to a maximum depth of 31m. During the ascent, one of the divers got air in her drysuit boots and became inverted. Her buddy tried to hold on to her but she made a rapid ascent to the surface. She experienced a slight headache. She was placed on oxygen for 20 min and kept under observation for a further 1 hour. She did not experience further symptoms.

January 2003

03/054

Two divers conducted a dive to 21m for 24 min. Later that day they dived again, to 28m. During this dive one of the pair experienced a regulator free flow and he made a rapid ascent to the surface. At the surface he called for assistance and he was recovered from the water. He was distressed and he was placed on oxygen. He soon recovered and showed no signs of injury. He was kept under observation for 1 hour but no symptoms developed.

February 2003

03/056

Two divers were ascending from a dive to a maximum depth of 34m. 10 min into the dive, at a depth of 20m, the regulator of one of the divers began to free flow. He made a rapid ascent to the surface. He was placed on oxygen as a precaution. No subsequent symptoms were reported. The water temperature was 6 deg C.

February 2003

03/055

Two divers were 11 min into a dive to a maximum depth of 22m. One of the divers' regulators began to free flow and he made an uncontrolled ascent to the surface. He was given oxygen as a precaution. No apparent injury was suffered. The water temperature was 6 deg C.

February 2003

03/057

Two divers had made a 30 min dive to a maximum depth of 20m. They were conducting a 3 min safety stop at 6m when the regulator of one of the divers began to free flow. They made a faster than normal ascent to the surface. No subsequent problems were encountered.

March 2003

03/068

Two divers undertook a dive to a planned depth of 7m. One of the pair was using a new drysuit. During the dive they agreed to descend to 21m. After a period at 21m the diver with the new drysuit experienced buoyancy problems. Air migrated into his legs and he became inverted. His buddy attempted to right him. They struggled for a while and the inverted diver lost his mouthpiece. He grabbed the alternative air source of the other diver. They began to ascend. The buddy was unable to dump air from her drysuit as her arms were pinned down by the other diver. They made a very rapid ascent to the surface in about 30 sec. At the surface they called for assistance and were recovered into a boat. The diver who had been inverted had swallowed a lot of water and he was placed on oxygen for 30 min. He then developed a headache and was placed back on oxygen. Both divers were taken to hospital from where they were released 24 hours later. No DCI was indicated.

March 2003

03/060

During a training dive a diver experienced a problem with his weight at a depth of 17m. The weightbelt came off and the diver made a rapid ascent to the surface. The dive duration was 3 min. He was kept under observation but no symptoms developed.

March 2003

03/074

Two divers were 8 min into a dive at a depth of 20m. The regulator of one of the divers began to free flow. He made a rapid ascent to the surface and was able to breathe from the regulator for part of this ascent. Although shaken by the experience he showed no signs of DCI. He was placed on oxygen as a precaution. The water temperature was 5 deg C.

March 2003

03/077

A pair of divers were 23 min into a dive at a maximum depth of 20m. At this point the weightbelt of one of the divers slipped off and he made a fast ascent to the surface. He suffered no ill effects.

March 2003

03/078

A diver made a 22 min dive to a depth of 5m. 1 hour 50 min later he dived again, this time to 21m. After 21 min his regulator began to free flow and he made a faster than normal ascent to the surface. He suffered no subsequent ill effects. The water temperature was 5 deg C.

March 2003

03/079

Two divers were 25 min into a dive to a maximum depth of 11m. At 10m one of the pair, a trainee, breathed in water through his regulator. He panicked, took his buddy's regulator and then made a rapid ascent to the surface. No subsequent ill effect was reported.

March 2003

03/206

Two divers made a fresh water dive to a depth of 22m. During the descent, at a depth of 18m, one of the divers noticed that her regulator was not supplying air normally and that she was surrounded by bubbles. She met up with her buddy at 22m and gave the 'out of air' signal. She took the alternative air source of the other diver and they took hold of each other before making their ascent. They were surrounded by bubbles and unable to observe their computers. They surfaced without conducting a planned safety stop and their computers indicated an ascent rate warning. Their dive time was 3 min. They left the water and were placed on oxygen for 30 min. One of the pair noticed a tingling in the fingers of one hand several hours later, but this subsequently resolved. It was determined that the regulator had frozen causing a free flow. The surface water temperature was 9 deg C.

March 2003

03/095

Two divers conducted a dive in a quarry to a depth of 20m. 14 min into the dive they found the visibility to be very low and the cuff dump of one of the divers' drysuits was leaking. They decided to terminate the dive and they started an ascent. The diver with the leaking drysuit dumped too much air and began to re-descend. He put more air into his suit. Back at 17m the ascent began to speed up and the diver found that he was unable to dump enough air to prevent a rapid ascent to the surface. Once out of the water, both divers were placed on oxygen and neither suffered subsequent ill effects.

March 2003

03/081

Two divers made a 25 min dive to a depth of 20m. Some time later that day they dived again this time to a maximum depth of 21m. At 20m one of the pair became disorientated and made a fast ascent. No subsequent ill effects were experienced. The dive duration was 16 min.

April 2003

03/087

Two divers conducted a dive to 36m. At 35m one of the pair became inverted and started to rise to the surface. During the ascent he managed to right himself but he made an uncontrolled ascent to the surface, missing 10 min decompression at 6m. His dive duration was 30 min. At the surface his 12l cylinder was empty and he reported that he was just about to switch to his pony cylinder. He was placed on oxygen for 15 min then, after a break, for a further 30 min. No subsequent ill effects were experienced.

April 2003

03/278

Following a 'Pan Pan' alert it transpired that two divers made a rapid ascent from 16m, due to stuck inflator valve on drysuit freezing open? Alternate air source ascent, given oxygen. Ambulance taking the two divers to hospital for treatment. No symptoms developed. (Coastguard report).

April 2003

03/251

Two divers completed a dive to a depth of 32m. With 3 min of decompression indicated on their computers they looked for the shotline to ascend. They could not find the shotline and started their ascent with 7 min of decompression indicated. They planned to deploy a delayed SMB at 9m. However they were not able to inflate the SMB. One of the divers then ran out of air in his main cylinder and switched to his pony supply. With 3 min of decompression remaining they again attempted to inflate the SMB. Whilst doing so they experienced problems with depth control, sinking below 9m and rising to the surface. At the surface one of the divers dumped air to return to 3m but his loss of buoyancy caused him to drop down to 17m. He was unable to inflate his suit or BCD as his main cylinder was empty

so he dropped his weightbelt. He surfaced having missed 3 min of decompression stops. He reported that wearing mittens and holding a camera contributed to his problems inflating the delayed SMB. No subsequent ill effects were reported.

April 2003

03/282

Diver made a rapid ascent from 8m following a dive to 25m. Taken to hospital via ambulance suffering from shock, no other symptoms. (Coastguard report).

April 2003

03/106

A trainee and an instructor conducted a dive to a maximum depth of 19m. At 18m the trainee pressed both inflate and deflate buttons on his BCD control and lost buoyancy control. He made a rapid ascent to the surface. His total dive time was 31 min. He was recovered from the water and placed on oxygen. No subsequent ill effects were experienced.

April 2003

03/283

Following a normal ascent on a line, diver swept off the line. Ran out of air and made a rapid ascent to the surface, unable to maintain surface buoyancy, ditched own twin-set. Report came to HM Coastguard as diver had jettisoned set on the wreck site. (Coastguard report).

April 2003

03/111

A diver dived to 33m for 37 min including a 2 min stop at 6m. 6 hours 31 min later he dived again to 24m for 42 min. 17 hours 13 min later he made a third dive to 33m. After 24 min his computer indicated the need for a stop at 6m and he began his ascent. He found that the cuff dump of his drysuit would not release air. He then lost control of his ascent and began to rise quickly. He was eventually able to release air from his neck seal but could not prevent himself being carried directly to the surface. He ascended from 28m in under 2 min. His total dive duration was 28 min. Once out of the water he was placed on oxygen and the Coastguard was alerted of a potential problem. No symptoms were experienced and no further actions were taken. The diver believes that the cuff dump had been blocked by a long sleeved thermal vest that he was wearing, the valve worked correctly when checked later.

April 2003

03/112

A diver completed a 30 min dive to a maximum depth of 32m. During the dive she spent 2 min at 20m and then made a faster than normal ascent to the surface. This was her first use of a drysuit for some time and she felt that the suit was tight. 2 hours 10 min after the dive she complained of 'pins and needles' in her left hand and her left arm felt 'dead'. She was placed on oxygen and given water to drink. 40 min later she was taken off oxygen with no ill effect. It was concluded that the problem was muscular. She took more fluids and did not dive again that day.

May 2003

03/105

Two divers conducted a dive in a quarry at a depth of 35m. Underwater visibility was poor and they used reels to lay distance lines. When they returned to the starting point one of the pair became tangled in the lines. They stirred up sediment, the visibility became zero and both divers became tangled in the lines. The delay caused the divers to exceed the no stop time and they began to ascend an underwater rock face, still tangled. At 32m one of the pair emptied one of his twin cylinders and switched back to the second cylinder which contained 50 bar. At 26m the other diver started to drop back down. The diver who was low on air then used the last of her air to inflate her BCD and, at 23m, switched to her decompression cylinder which contained nitrox 80. At this point

she dropped the reel and got free of the tangle. She ascended rapidly to 6m and completed 3 min of an indicated 15 min decompression. She then surfaced and was placed on oxygen. The diver who had sunk back down used his BCD to regain buoyancy and also became free of the tangle. He made a rapid ascent directly to the surface, missing an indicated 28 min of decompression stops. He swam to a jetty, left the water, and was placed on oxygen. The dive duration was 41 min. Both divers were taken to hospital and kept on oxygen for 4 hours. No subsequent ill effects were reported.

May 2003 03/192

A diver completed a 31 min dive to 31m with a 1 min stop at 9m and a 3 min stop at 6m. 2 hours 13 min later she undertook a 47 min dive to 25m including a 2 min stop at 9m and a 5 min stop at 6m. At the end of this second dive she lost control of her buoyancy and surfaced missing 1 min of decompression. No subsequent ill effects were experienced. Sea swell exacerbated the buoyancy problems.

May 2003 03/136

Two divers completed a dive to a maximum depth of 20m for a duration of 43 min of which the last 23 min was spent at 6m. After a surface interval of 1 hour 53 min the pair dived again. 5 min into the second dive, at a depth of 18m, one of the pair pressed the inflation valve of his drysuit to adjust his buoyancy. The valve stuck and the diver became positively buoyant. He disconnected the direct feed hose but rose from 16m to 3m in 20 sec. This diver had become separated from his buddy and surfaced. The second diver surfaced 3 min later. The hose was reconnected and found to work correctly. The divers then conducted a 20 min dive to a maximum depth of 20m. After the dive the computer of the diver who had made the rapid ascent indicated a warning, analysis of the computer dive log showed a 'high blood bubble level' from the point of the rapid ascent to the end of the last dive. No subsequent ill effects were reported.

May 2003 03/311

Dive support vessel reported having a diver onboard feeling unwell following a dive where she omitted decompression stops. Vessel met by ambulance and doctor consulted, no treatment given. (Coastguard report).

June 2003 03/321

Dive support vessel contacted Coastguard reporting having a diver aboard who had missed stops, additional oxygen was requested, another dive vessel assisted with oxygen. Diver and buddy examined by paramedic and released with safety advice and emergency phone number. (Coastguard report).

June 2003 03/138

Two divers conducted a dive to a depth of 17m. One of the divers had not dived recently and was unfamiliar with her drysuit. Her buddy noticed that her weightbelt was slipping and attempted to assist. The weightbelt fell free and the buoyant diver began to ascend. The buddy took hold of her and used his own weight to slow the ascent. At 6m he let go of the buoyant diver who rose to the surface. The buddy completed a normal ascent. Their dive time was approximately 40 min. No subsequent ill effects were experienced.

June 2003 03/322

Dive support vessel reported two divers having made a rapid ascent from 31m, were administered oxygen, medical advice was obtained. Conveyed to hospital by ambulance.

June 2003 03/323

Dive support vessel reported having a diver aboard who had made a rapid ascent from 30m. The dive vessel put the patient back into the water to finish any outstanding decompression!!! (Coastguard report).

July 2003 03/334

Dive support vessel reported having a diver aboard who had missed 22 min of stops, showing no ill effects, being administered oxygen. After seeking medical advice, the patient was airlifted to recompression facility for treatment. (Coastguard report).

July 2003 03/336

Dive charter vessel contacted Coastguard to inform they had a diver aboard who had made a rapid ascent from 30m. The diver was airlifted to recompression chamber for treatment. (Coastguard report).

July 2003 03/339

Dive support vessel reported having a diver aboard having made a rapid ascent, was administered oxygen and developed no signs of DCI or lung expansion injury. (False alarm with good intent). (Coastguard report).

July 2003 03/340

Two divers airlifted to recompression chamber, following a rapid ascent from 32m. Medi link used, one diver also received a blow to the mouth causing bleeding. (Coastguard report).

July 2003 03/180

A diver was diving in a borrowed drysuit and had added extra weights to his weightbelt as a consequence. At the end of the dive to 25m he was ascending when, at 8m, he felt his weightbelt slip. He was unable to stop it falling away completely and, as a result, he made a buoyant ascent to the surface. His computer had been showing no stops prior to the event but on surfacing indicated that a 1 min stop at 3m had been missed. The diver suffered no ill effects.

July 2003 03/346

Dive support vessel reported having two divers aboard who had missed stops following a 33m dive being their second of the day, following medical advice, both divers evacuated by rescue helicopter and transferred to recompression chamber for treatment. (Coastguard report).

August 2003 03/236

Two divers conducted a dive to 25m. One of the pair deployed a delayed SMB but the line became tangled on the reel and it was abandoned. The other diver deployed her delayed SMB and they ascended. One of the divers was too buoyant and was unable to stop at 3m to conduct the 5 min stop indicated by her computer. She rose directly to the surface and her buddy went with her. They were recovered into separate boats and placed on oxygen. The Coastguard was notified and the divers were taken to the shore. Once ashore they sought medical advice and went to hospital. They were placed on oxygen for 6 hours. Neither diver suffered ill effects.

August 2003 03/216

Two divers conducted a dive to a maximum depth of 41m. They began their ascent up the shotline. A current had begun to flow and at 20m they found two other divers holding the shot buoy which had been pulled down by the effect of the current and the divers' drag on the shotline. One pair of divers let go of the shotline and began to deploy a delayed SMB. Whilst doing

so they lost control of their buoyancy and made an uncontrolled ascent to the surface missing 8 min of decompression stops. Their dive time was 22 min. They were recovered into their boat and placed on oxygen. The Coastguard was alerted and the boat returned to the shore. The divers were taken by ambulance to a recompression facility. They were kept on oxygen for a further 3 hours but were not recompressed. They suffered no subsequent ill effects.

### August 2003 03/199

Two divers completed a wreck dive to a depth of 33m. At the end of the dive they were unable to find the shotline and so they deployed a delayed SMB and made their ascent. At 8m the SMB line became snagged and the diver holding it felt that she was being pulled through the water. She was unable to free the line by pulling on it so she abandoned the reel. During this period the other diver was caught by another SMB line and pulled to the surface. This diver re-descended to join his buddy. His computer was showing an error state and indicated a requirement for 18 min of decompression. By this time the first diver had 7 min of decompression remaining and they completed this together before surfacing. Their total dive time was 48 min. The diver who had missed stops was given lots of water to drink and no subsequent ill effects were experienced. It was later discovered that other divers had seen the first SMB and tried to pull it in, not realizing that there was a diver below.

### August 2003 03/217

Two divers dived to 21m. They became lost and ascended up a rock face to 5m. They stopped at 5m for 1 min but one of the pair began to breathe in water and they made a fast ascent to the surface. No subsequent ill effects were experienced.

### August 2003 03/351

Dive support vessel reported having two divers aboard having made a rapid ascent. Treated at DDRC Plymouth. (Coastguard report).

### August 2003 03/352

Recompression chamber reported giving medical advice to dive support vessel with two divers aboard having made a rapid ascent. Air assets were on another tasking, the vessel made its way to port, when the air asset became available the helicopter transferred both patients to recompression chamber for treatment. (Coastguard report).

### August 2003 03/356

A call was intercepted by Coastguard, between dive support vessel and port control, stating requiring immediate access to the port to evacuate two divers who had missed stops one having also run out of air. The vessel had accessed medical advice direct. (Coastguard report).

### August 2003 03/243

A diver conducted a dive to 35m. During the ascent, at a depth of 13m, he lost control of his buoyancy and rose faster than normal to the surface. His dive time was 36 min. He was placed on oxygen as a precaution but no symptoms developed.

### August 2003 03/221

Two divers dived to 33m for 16 min. At the end of the dive they made a fast ascent, missing a planned safety stop. Both were placed on oxygen. No subsequent ill effects were experienced.

### August 2003 03/357

Dive support vessel reported having a diver aboard having

missed all stops following a 35m dive, duration unknown, missed 18 min of stops. Airlifted by rescue helicopter R-WB taken to hyperbaric chamber for treatment. The patient had been diving in a three and the vessel had divers aboard from various clubs etc. (Coastguard report).

### August 2003 03/222

A diver was diving at a depth of 43m. He became entangled in a net and removed his stab jacket to cut himself free. There was a strong current and he was unable to release his equipment so he made a free ascent to the surface. His computer indicated an emergency. The Coastguard was alerted and the diver was airlifted to a recompression facility. No DCI was diagnosed but the diver was given a precautionary recompression treatment because of his fast ascent.

### August 2003 03/368

Dive support vessel reported to recompression chamber having a diver aboard having made a rapid ascent from 30m. The recompression chamber contacted Coastguard who scrambled the Coastguard helicopter and Pool Coastguard team to assist. Transferred to hyperbaric chamber for treatment. It transpired that the delayed SMB had become tangled upon deployment, causing them to ascend rapidly. (Coastguard report).

### September 2003 03/229

Two divers conducted a night wreck dive to a depth of 29m. Towards the end of their dive they noticed a current start to pick up. They deployed a delayed SMB and when they released it the line paid out horizontally to the limit of the 50m line. They began their ascent and found themselves apparently being pulled quickly through the water by the line. It was later deduced that the line had caught around the shotline preventing the divers from drifting in the strong current. They held onto each other and ascended with the line horizontal until they reached 10m where they made a 3 min stop. The line started to jerk them upwards so one of the pair decided to cut the line. Whilst doing so the two divers were carried to the surface. Their dive time was 49 min. They signaled to the boat and were recovered. One of the divers' computer indicated that they had missed an 11 min stop at 3m. They were placed on oxygen and the Coastguard was alerted. The boat returned to the shore and the divers were taken to a recompression facility where they were given a precautionary recompression treatment.

### September 2003 03/232

Two divers undertook a drift dive to a planned maximum depth of 25m. The current carried them to 27m. The weightbelt of one of the divers came loose and whilst trying to tighten it it fell away. His buddy took hold of him and both dumped air but they were not able to prevent a buoyant ascent to the surface. Their dive time was 12 min. One of the pair gave the emergency signal to the boat which was about 20m away. The boat crew then found that the engine would not start. An auxiliary engine was started but this had been secured in such a way that it could not be lowered into the water. Another crew member donned fins and entered the water to assist the divers. He reached them and began to tow them to the boat. The engine was then started and the divers were recovered. They were placed on oxygen and a mobile phone was used to alert the emergency services. The boat headed to a nearby harbour and they were met by ambulances. One diver complained of a pain in his arm. Both were taken to hospital but no DCI was found and they were released after 2 hours.

### September 2003 03/231

Two divers completed a dive to 23m for 47 min. After an interval of 1 hour 42 min they dived to 26m for 51 min. They





planned to conduct a no stop dive but as they started the ascent from their second dive one of their computers indicated that a 3 min stop was required. During the ascent one of the divers suffered a reversed ear and descended to clear it. In doing so, whilst also having to control the SMB reel, he knocked his mask and had to clear it. During this period he sank back from 5 to 15m. His buddy stayed with him. They then made a rapid ascent to the surface. Once back in the boat both divers' computers were indicating missed decompression stops. They were placed on oxygen, the Coastguard was alerted and the boat returned to shore. They were airlifted to a recompression facility where they received precautionary recompression treatment.

September 2003

03/233

Three divers undertook a wreck dive to a depth of 22m. At the

end of the dive they deployed a delayed SMB to make their ascent. At 15m one of the group lost control of his buoyancy and made an uncontrolled ascent to the surface. His dive time was 41 min. The other two surfaced normally. Once in the boat it was found that the buoyant diver's computer indicated that 3 min of decompression stops had been missed. He was placed on oxygen and transported to the shore. Medical advice was sought and the diver was monitored for 48 hours. He developed no ill effects. The diver normally used a pony cylinder but on this dive he had not and he was underweighted at the end of the dive.

September 2003

03/380

'Mayday' call from dive support vessel requesting assistance for two divers who had missed 20 min of stops, airlifted to hospital by rescue helicopter R-128. (Coastguard report).

## Technique

October 2002

03/008

A diver using trimix 17/32 dived with a group of others to a depth of 60m. On the way down the shotline he realized that he had forgotten his weightbelt. On the bottom he searched for objects to put in his BCD pockets. Affected by narcosis he became separated from the rest of the group. After the planned time he deployed a delayed SMB and began his ascent. During the ascent he switched to nitrox 36. He was swept onto the shotline and took hold of this. The sea state (wind around force 6) and the current made it difficult for him to hold on to the line to complete his stops. He decided to make a slow ascent up the line and to get on to oxygen in the boat. At the surface he used nitrox 50. He was recovered into the boat and placed on oxygen. He had missed 30 min of decompression stops. The Coastguard was alerted and the diver and his buddy were airlifted to a recompression facility. The diver received precautionary treatment. He suffered no lasting effects.

November 2002

03/024

Three rebreather divers were conducting a dive to 36m in a quarry, one became separated and the other two surfaced. 10 min later the third diver was still missing and a search was initiated. Two pairs of divers descended and began to search. 15 min after this the alarm was raised and an ambulance was called. 5 min later a delayed SMB came to the surface; this buoy carried the name of the missing diver. The ambulance was cancelled. 5 min later the searching divers arrived back at the surface. 32 min after the alarm was first raised the missing diver arrived back at the surface, safe and well.

December 2002

03/052

A pair of divers conducted a dive to 22m for 17 min. One of the pair used more air than usual and ran out at 10m. She used her buddy's alternative air source and they made a rapid ascent to the surface. No ill effects were reported.

March 2003

03/071

Two divers completed a 37 min dive to 34m. 2 hours later they dived again. They planned to go to 20m. After about 15 min they became separated. One of the divers was seen by his buddy to be dropping down. The other diver came to the surface and raised the alarm. A single set of bubbles was seen. 10 min after the alarm was raised the second diver surfaced. He had sunk down to 34m and found that he needed to conduct decompression stops on his ascent. He was exhausted but otherwise unharmed.

March 2003

03/072

A diver was diving with a new drysuit. She dived with a buddy to 6m for 25 min to familiarize herself with the suit. 2 hours 30 min later they dived again, this time to 22m. 9 min into this dive, at a depth of 17m, she became uncomfortable and her buddy thought that she was going to bolt for the surface. The buddy took control and brought her to 12m. She then started to descend again and her buddy used the diver's BCD to start them ascending again. At 6m the troubled diver made a rapid ascent to the surface. At the surface she was extremely distressed and briefly unconscious. She was recovered to the shore and placed on oxygen. She was taken to hospital from where she was discharged shortly afterwards. The diver was reported to have made an aircraft journey sometime the day before.

March 2003

03/075

A trainee diver made a dive to 15m for 35 min. 2 hours 30 min later he dived again, this time to 18m. 20 min into the dive he signaled that he had a problem with his regulator. The instructor realized that a free flow was happening. The diver went for his own alternative air source but the instructor gave his alternative air source and started to bring them to the surface. The trainee spat out the regulator and they came to the surface at a normal rate. At the surface the trainee was shocked but otherwise unharmed. He was recovered from the water and placed on oxygen. The diver was taken by ambulance to hospital. The water temperature was 5 deg C.

March 2003

03/094

Two divers and two instructors entered the water to conduct controlled buoyant lift training drills from a depth of 22m. One of the instructors was wearing a full face mask. This was the first time that he had used it in open water. He carried a conventional spare regulator and face mask as backup. The two divers started their first lift. At this point the assisting instructor noted that the instructor with the full face mask was 'in a state of confusion', and then he pulled his mask off. He placed his alternative regulator in his mouth but then took it out again. The assisting instructor offered his own alternative air source, placing it in his mouth, then offered a spare mask that he was carrying but the confused diver made no attempt to fit it. The assisting instructor then fitted the mask for him. After a while control was regained and the assisting instructor lifted the first instructor to the surface with a controlled buoyant lift; making a safety stop at 3m. The divers conducting the training drill surfaced safely a few minutes later. All divers got safely from the water. The diver with the face mask stated that he had had difficulty breathing from it hence its rapid removal. No subsequent ill effects were experienced.

April 2003

03/276

Report received of unattended dive boat. Subsequent investigations revealed diver was below; surfaced, no further assistance required. (Coastguard report).

April 2003

03/085

Two newly qualified divers were diving together; one adult and one 12 years old. The 12 year-old was using a new drysuit. Early in the dive the drysuit direct feed hose of diver with the new drysuit became disconnected. They reconnected this hose. Then, at 20m, this diver's mask flooded. They started to ascend but the direct feed hose became disconnected again and was reconnected. They experienced buoyancy control problems and at the 10m the troubled diver lost his mask completely. The divers managed to reach the surface where they were assisted from the water. No subsequent ill effects were experienced.

May 2003

03/308

Dive support vessel, reported having two divers surfacing having run out of air, although very cold no other symptoms were observed, recovered to ambulance, examined but not hospitalized. (Coastguard report).

May 2003

03/213

Two divers completed a dive to 25m. One of the pair deployed a delayed SMB prior to ascending. Before inflating the SMB she had 60 bar remaining. The ascent was delayed because the SMB reel jammed and needed to be freed. On completion of her stops, at a depth of 6m, she ran out of air. She was passed her buddy's alternative air source and they made a safe ascent to



the surface.

June 2003

03/193

Two divers descended a shotline to a wreck. The line was slack and during the descent one of the divers became tangled. His buddy had continued to the wreck. The tangled diver managed to free himself and continued his descent. At the wreck he met up with his buddy but again became tangled in the line. His buddy helped to untangle him but to do so it was necessary to remove his regulator on three occasions. The regulator began to free flow but they were able to stop it. They aborted the dive, making a short stop at 6m before surfacing. No subsequent ill effects were reported.

June 2003

03/194

Two divers were nearing the end of a dive to 31m but were unable to relocate the shotline to ascend. One of the divers had only 70 bar so they deployed a delayed SMB. This took them a further 2 min. As they started their ascent the diver who was low on air had 30 bar remaining, the other had 110 bar. They had planned to conduct a 3 min safety stop. As they started this stop the air supply of the diver who was low on air ran out. He shared air with his buddy and they completed the stop before surfacing. They were safely recovered into their boat.

July 2003

03/161

A dive leader entered the water with two trainees to dive on a wreck. During their descent, at a depth of 6m, one of the trainees experienced water entering his mask and he panicked. He was attached to the dive leader by a buddy line and this prevented the panicked diver from making a rapid ascent. All three surfaced and were recovered into the boat. No subsequent ill effects were experienced.

July 2003

03/252

During the ascent from a dive to 36m one of a pair of divers indicated that he was low on air.

His buddy gave him his alternative air supply and they surfaced

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safely having completed a 5 min stop at 6m. Their dive duration was 29 min.

August 2003

03/224

Two divers completed a 33 min dive to 21m with a 2 min stop at 5m. Once back on the surface one of the pair inhaled water and started to choke. A rescue boat responded and brought the diver to the shore where he quickly recovered.

August 2003

03/225

A diver was participating in a deep diving training session with an instructor as his buddy. 6 min into the dive, at 35m, the diver indicated that he had a problem with his regulator. The instructor gave him his alternative air source and they started to ascend. At 18m the diver spat out the alternative air source and took the instructor's main regulator. The instructor allowed this to happen and used the alternative air source himself. The diver was very agitated, almost fighting. The instructor managed to swap the regulators back again so as the diver would be on the longer hose. The instructor held the regulator in the trainee's mouth and activated the purge to ensure that the diver had air during the rest of the ascent. They made a rapid ascent from 21m to the surface, where the alarm was raised and the divers were recovered from the water. Their total dive time was 13 min. The troubled diver was not breathing but quickly responded to resuscitation techniques. He was taken to hospital from where he was discharged, fit, the following day.

September 2003

03/245

A diver jumped into the water and this caused his pony regulator to free flow. The cylinder was switched off and then on again to stop the free flow. He then dived with his buddy to 32m. At 32m he ran out of air and he took the alternative air source of his buddy. They made a safe ascent to the surface. It was then discovered that he had dived, in error, using his pony cylinder; his main cylinder was turned on and charged to 200 bar. No ill effects were reported.

## Equipment

### December 2002 03/414

A rebreather diver dived to 89m. 10 min into the dive the zip of his drysuit failed, opening the full width of the zip. He made his ascent to the surface including a total of 35 min decompression. The cold water forced him to surface missing the final 6 min of his decompression. His buddy completed the full decompression. The water temperature was 5 deg C. He was placed on oxygen and drank water. He was airlifted to a recompression facility where he received recompression treatment.

### January 2003 03/067

Three divers descended a shotline to a depth of 24m. One of the three realized that he was losing air. He found that it was coming from his alternative air source and he signaled to one of the others. His main regulator then developed a free flow. The other diver offered his alternative air source which the first diver took. During the ascent both regulators of the second diver started to free flow. They continued to the surface. At the surface the first diver left the water. The second diver re-descended with the third diver and the free flow stopped. They continued their dive. The second diver then ran out of air even though his contents gauge did not read zero. He used the alternative air source of the third diver and they ascended safely to the surface. The water temperature was 3 deg C.

### April 2003 03/118

Three divers descended to a depth of 15m. At this depth one of the divers removed her mouthpiece and stuck her tongue out at one of the others. This other diver returned the gesture. His regulator then began to free flow. He attempted to stop it but could not do so. He placed it back in his mouth and continued to breathe from it. The diver who had made the first gesture then offered her alternative air source to the diver with the free flow; he took it and started to breathe from it. They started their ascent. The third diver turned off the cylinder with the free flow but it continued to free flow when he turned it back on. He turned it off again until they were at 2m. The free flow stopped. At the surface the divers made themselves positively buoyant and returned to the shore. No subsequent ill effects were reported.

### April 2003 03/190

An instructor using a rebreather dived with a trainee on open circuit air. They conducted a first dive without problem but 10 min into the second dive, at a depth of 22m, the instructor experienced a build up of carbon dioxide. He tried semi-closed operation but this did not help, he then switched to his 7 litre bail out cylinder which was filled with air. He ascended to the surface and then swam to the shore where he safely left the water. The trainee followed. The diver reported that the scrubber was 40 min over its life of 120 min, but this had not been a problem previously. The water temperature was 5 deg C and this may have impaired the scrubber's efficiency. He reported that he had difficulty switching to his bail out because of his respiratory distress and high breathing rate, and that even after he had switched the symptoms persisted; he took several hours to fully recover.

### May 2003 03/209

Two divers conducted a dive to 35m using nitrox 28. After 29 min one of the pair deployed a delayed SMB in preparation for their ascent. He used his primary regulator to inflate the SMB

and breathed from his secondary regulator. The SMB deployed correctly but the regulator began to free flow. The divers were unable to stop the free flow. The diver was using a twin cylinder system and his buddy was able to switch off the free flowing regulator. They made a safe ascent, conducting a 5 min stop at 6m. Neither diver suffered subsequent ill effects.

### May 2003 03/128

Two divers made a dive to 9m. One of the pair was diving in a drysuit, in open water, for the first time. The suit was an 8 mm neoprene suit with a thick thermal undersuit. He was weighted with 13 kg on a weightbelt and 7 kg in the weight system of his BCD. During the dive this diver lost a weight from his BCD and became positively buoyant. He was able to hold on to a submerged railing to prevent an uncontrolled ascent. His buddy was unable to find the lost weight so he looped the line from a reel under the railing and back to the reel. The buoyant diver then held on to the buddy and the buddy used the line to control their ascent. Both reached the surface safely. Their total dive time was 13 min. The weight was recovered later.

### June 2003 03/126

Two divers dived to a wreck in a maximum depth of 33m. Towards the end of the dive they ascended to the top of the wreck and one of the pair discovered that the manual wrist dump of his drysuit would not work. They deployed a delayed SMB and began their ascent. The diver released air from his suit by placing a finger down the wrist seal. He managed to control his ascent to 6m but was unable to stop to conduct decompression and he continued to the surface. He exchanged signals with his buddy who stopped to complete his decompression. The diver who had missed decompression stops started his ascent with his computer indicating 3 min at 3m. This diver was recovered from the water and placed on oxygen for 15 min. He experienced no symptoms of DCI and no further action was taken. It is thought that the valve was prevented from working because it was blocked by the diver's undersuit.

### June 2003 03/428

Three pairs of divers conducted a dive in a river to a maximum depth of 10m. One of the divers was using a rebreather. Each pair was connected by a buddy line. About 28 min into the dive, at a depth of 8m, the buddy of the rebreather diver noticed that the buddy line had gone tight and was starting to pull him to the surface. He saw that his buddy was floating above him, face upwards and that his arms were thrashing. He pulled the buddy back down to him and saw that his lips and the skin around his face was blue. At this point the rebreather diver's mouthpiece fell from his mouth and he stopped moving. The buddy tried to replace the mouthpiece but the casualty's teeth were clenched shut. The buddy attempted to bring them to the surface using the casualty's BCD but it would not inflate so he used his own buoyancy to bring them to the surface. The water clarity was very low and water movement made it difficult for him to retain grip on the casualty and to bring them to the surface. Once at the surface he shouted for help and two walkers on the river bank responded; they used a mobile phone to call the emergency services. At this point another buddy pair surfaced 20m away and they swam to assist. The buddy provided AV to the casualty and the three divers brought the casualty to the river bank where, with the help of the walkers, they removed him from the water. Once ashore they continued applying resuscitation techniques. The casualty, who was not breathing when landed, started to breath spontaneously and showed



signs of regaining consciousness. The casualty and buddy were airlifted to hospital and the casualty was reported to be making a good recovery. It is thought that the rebreather handsets had bumped along the riverbed during the dive and that this action had caused them to switch off, thus starving the diver of oxygen and causing him to fall unconscious.

**June 2003** **03/139**

Two divers descended a shotline to a depth of 9m. For one of the divers this was her third open water dive. At the bottom of the shot this diver did not return the OK signal from the dive leader. She then gave the out of air signal and spat out her regulator. The dive leader offered his alternative air source. The troubled diver took this, then rejected it and repeated the out of air signal. The dive leader purged the alternative air source and presented it again. He then brought her to the surface using a controlled buoyant lift. During the ascent the troubled diver breathed from the alternative air source with difficulty. At the surface she quickly recovered. She reported that her regulator seemed to be delivering water. She went to hospital for a check up and was discharged after being given antibiotics and treated with a nebuliser. No further ill effects were reported.

**June 2003** **03/156**

A diver was operating an air compressor to recharge diving cylinders. The filter tower drain valve was closed and no cylinder was attached. The manifold was subjected to an over-pressurization and the relief valve failed to operate. As a result a safety disc at the bottom of the tower burst. No one was injured.

**July 2003** **03/177**

Two divers began a descent to 25m. At about 13m one of the pair began to get water in his regulator. He flashed his torch at his buddy and tried to control his breathing with increasing flooding of his mouthpiece. He gave his buddy the 'out of air' signal and his buddy provided his alternative air source. Once control had been regained they made their ascent to the surface. At the surface the diver with the problem regulator vomited as he had ingested water. His only symptom was a stomach ache.

**July 2003** **03/178**

Two divers conducted a dive to 55m. One diver had a single cylinder filled with air and a 3l pony cylinder with nitrox 40. His buddy was diving with trimix in twin 12l cylinders and he also carried side mounted cylinders. The regulator of the diver with the single cylinder began to free flow and he signaled 'out of air' to his buddy. The buddy provided him with an alternative air

source and they ascended to a depth where the diver could use his nitrox 40, then they made a normal ascent to the surface. No subsequent ill effects were experienced. The water temperature at depth was 2 deg C.

**July 2003** **03/179**

A trainee found herself trying to breathe an air/water mixture at 17m. She made a rapid ascent to the surface followed by her instructor. Once the trainee was safely out of the water the instructor re-descended. Examination of the trainee's mouthpiece showed that there was a hole in it and that it was in a generally poor state. Her alternative air source mouthpiece was in a similar condition.

**July 2003** **03/182**

Two divers conducted a wreck dive to a depth of 42m. At the end of the dive they were unable to relocate the shotline and, after a short search, they ascended to 35m. One of the divers experienced problems with her drysuit dump valve and she made a rapid ascent to 25m before releasing the air through her neck seal. She descended slightly then they re-ascended to 25m. At this depth one of the divers attempted to deploy a delayed SMB but the string tangled after the buoy was released and the SMB was abandoned. The other diver deployed her delayed SMB and they made a normal ascent with a 27 min stop at 6m. Their total dive time was 75 min. During their stop another diver from their party descended to check that they were well and supplied air to one of them for the last 5 min. Both divers breathed oxygen for 1 hour after surfacing. No subsequent ill effects were experienced.

**July 2003** **03/181**

During the ascent from a 30 min dive to 20m a diver experienced problems with his mask flooding. He was at 10m when the flooding started. The dive leader managed to control the ascent to 3m but then had to let the troubled diver go to make his own ascent. The ascent was a little fast. At the surface the troubled diver was breathless and in a state of panic. The dive leader surfaced soon afterwards and took control. He secured the casualty and signaled the boat. The diver was quickly recovered into the boat and soon regained his composure. No subsequent ill effects were experienced. The mask had been brought the day before.



## Miscellaneous

- February 2003** 03/387  
Lifeboat launched to assist dive boat. False alarm. (RNLI report).
- February 2003** 03/269  
999 call received for two overdue shore divers, Coastguard rescue helicopter R-WB scrambled and Portland Bill Coastguard team. To RV with first informant, subsequent inquiries proved they had returned to shore earlier, no medical attention required. (Coastguard report).
- March 2003** 03/391  
Lifeboat launched to assist diver. One person brought in. (RNLI report).
- March 2003** 03/395  
Lifeboat launched to assist diver. False alarm. (RNLI report).
- April 2003** 03/189  
An instructor and a trainee dived to 7m. They became separated and surfaced. They regrouped and re-descended. A little later they became separated again, and resurfaced. The trainee complained that his weightbelt was loose. The instructor helped to tighten the belt and they re-descended. The trainee then made for the surface again because the belt had become loose again. At the surface the trainee was drifting away from the shore. The instructor decided to land them both on a nearby rock. The trainee was tired and out of air. They waited on the rock for others in their party to locate them. They were later picked up by a lifeboat. Surface visibility was restricted due to fog.
- April 2003** 03/396  
Lifeboat launched to assist diver. Others coped. (RNLI report).
- April 2003** 03/398  
Lifeboat launched to assist stranded diver(s). Four persons brought in. (RNLI report).
- May 2003** 03/403  
Lifeboat launched to assist stranded dive boat. Craft escorted in. (RNLI report).
- May 2003** 03/405  
Lifeboat launched to assist diver. (RNLI report).
- May 2003** 03/312  
Dive support vessel reported two overdue divers, after requesting lifeboat launch, the divers were recovered by own boat, all resources stood down. (Coastguard report).
- June 2003** 03/417  
A dive party found a metal object 3m long by 0.6m diameter floating 2.5 miles offshore. They contacted the Coastguard and reported it as a potential hazard, gave its position and marked it with an orange buoy. Later that day they relocated it and informed the Coastguard. Two spar buoys had gone missing in the area and it was thought to be one of these. With the agreement of the Coastguard the object was towed into a marina and tied up to the jetty. It was later discovered to be part of a WWII torpedo and bomb disposal experts were called to deal with it. It did not contain any explosives.
- June 2003** 03/144  
Three divers entered the water intending to descend a shotline to a wreck in a depth of 31m. There was a slight current and the divers were carried away from the shot buoy. They decided to descend away from the shotline and during the descent they became separated. One of the group deployed a delayed SMB and surfaced after 5 min. The remaining two divers re-established contact with each other at the bottom of the shotline. Noticing the missing diver, the dive leader waited and looked around and then gave the signal to ascend. The third diver ignored this signal and swam away to dive alone. The dive leader ascended and surfaced with a dive time of 10 min. After a while, when there was no sighting of the third diver, the Coastguard was alerted and a search commenced. The bubbles of the third diver were located and a thunderflash was used as a recall signal. The third diver did not surface. Two other divers were preparing to enter the water when the solo diver surfaced after a dive of 50 min. A maximum dive time of 40 min had been agreed to allow a second wave of divers but this second wave was cancelled.
- August 2003** 03/363  
Dive support vessel reported having a missing diver, the diver's bubbles were sighted and the diver later surfaced. The diver reported having become entangled in underwater shotlines, no medical treatment was required. (Coastguard report).
- August 2003** 03/371  
999 call received by Coastguard of a missing diver, Coastguard rescue helicopter and Coastguard teams tasked together with RNLI lifeboats to conduct search, rescue helicopter recovered missing diver safe and well. (Coastguard report).

## Overseas Incidents

### Fatalities

September 2003 03/235

A group of ten divers conducted a dive on a wreck. One of the divers entered a part of the wreck which had previously been inaccessible. Once inside the wreck the visibility quickly reduced and the diver was unable to find his way out. His body was recovered the following day.

### Decompression Illness

December 2002 03/044

A diver conducted a series of dives whilst on vacation. Typically she dived twice per day, the first dive to around 30m and the second to around 16m with a 45 min to 60 min surface interval. She dived for five days and then had a break of two days. She then dived for two days then had a one day break and dived for a further two days. Finally after a further one day break she dived for a further three days. During the third from last day she experienced shoulder pain, but she attributed this to a muscle strain sustained whilst standing up awkwardly. The pain did not worsen and she had no other symptoms so she continued to dive. 20 hours after the last dive she undertook a 12 hour flight home followed by shorter domestic flight. At the start of the flight the pain had almost gone. During the descent from the first flight she felt pain again. Between flights the pain subsided but became apparent during the second descent. The following day she was able to obtain medical advice and she was referred to a hyperbaric facility where she was treated for DCI.

January 2003 03/415

A diver completed three dives per day over a six day period. All dives were less than 30m and only one involved decompression stops. 27 hours after his last dive he began a flight home. During the flight he noticed a slight 'pins and needles' in his left foot which disappeared when he stood up. The next day he had a headache. 48 hours after his last dive he developed a slight 'pounding' in his left shoulder, a tingling in his left arm, an ache in his left wrist and elbow, and intermittent aches in his back and neck. He sought medical advice and received recompression treatment. He suffered aching muscles for the following week but made a full recovery.

April 2003 03/416

A diver received recompression treatment for a suspected type 2 DCI.

May 2003 03/103

Three divers conducted a dive to a depth of 27m. When one of the divers reached 100 bar he signaled the ascent. They deployed a delayed SMB and made their ascent. They had planned to stop at 6m but one of the divers did not do this. Their total dive time was 22 min. The divers were recovered into their boat. Shortly afterwards, the diver who had missed the stop complained of a headache and began to vomit. He was placed on oxygen. He was allowed to float at the surface to remove him from the movement of the boat. He was then transferred to another boat, placed on oxygen and taken to the shore. His condition did not improve so he was taken to hospital and from there to a recompression facility where he

was treated for a mild case of DCI.

### Illness / Injury

October 2002 03/010

A diver completed a 40 min dive to a maximum depth of 15m. At the surface he had to wait about 10 min to be picked up as the boat was recovering other divers. In the swell he was violently sick. By the time he was back on shore he had recovered apart from a sore throat caused by his having been sick. That evening he did not eat because of his throat but he did drink water and fruit juice. Early the following morning he noticed a rash under both arms. He was placed on oxygen for 10 min and felt well. The next morning medical advice was sought. The diver was cleared to dive again the following day.

November 2002 03/042

10 min into a dive, at a depth of 14m, a diver looked into an underwater cave. He steadied himself with his left arm against the rocks and used a torch to look deeper into the cave. At this point he was bitten behind his left elbow by a large Moray eel that he had not seen. A small amount of blood came from two small holes in his wetsuit. After a short period he aborted the dive. Once out of the water he discovered that he had two deep cuts in his arm 25mm and 50mm in length. He was taken to hospital where the wounds were closed with nine stitches. (Related to 03/040)

March 2003 03/076

A diver completed a 41 min dive to a maximum depth of 39m with a 7 min stop at 3m. 2 hours 25 min later he dived again, this time to 31m for 44 min with a 12 min stop at 3m. 10 min after surfacing he noticed a pain in his upper left arm. This was assumed to have been a muscle strain caused by moving twinsets around. Early the following morning the pain was still present and medical advice was sought. As a precaution the diver was recompressed. After this treatment the pain was unresolved. The diver was given an intravenous drip and pain killers. 2 hours later the pain had subsided. The diver was given further pain killers and kept in hospital overnight for observation. A muscular strain was finally diagnosed and further pain relief was prescribed.

April 2003 03/084

A boat with four divers onboard approached a jetty to unload equipment. Two of the divers were unable to lift some of the diving equipment since it was too heavy. The cox asked one of these divers to take the helm whilst he unloaded the equipment. This diver was not experienced at boat handling and she was given brief instructions on what to do by the cox. Whilst unloading was taking place a swell developed and the cox moved back down the boat to take control again. Whilst he was moving the boat was hit by a large swell and the cox was thrown overboard. His legs were hit by the moving propeller. He was recovered from the water and taken to hospital where he needed treatment under local anesthetic. Others helped to recover the boat, equipment and remaining divers.

August 2003 03/226

A diver and an instructor completed a 32 min dive to a maximum depth of 38m. During their ascent they completed a



1 min stop at 9m, a 3 min stop at 6m and a 3 min stop at 3m. These stops were not required by their computers but were completed as a training exercise. During the 3m stop the instructor began to feel dizzy and he developed a pain in his chest. Once out of the water he was placed on oxygen. He complained of having been cold during the dive and seemed to be in mild shock. The emergency services were alerted and the boat returned to shore. The casualty was taken by ambulance to hospital. He was examined and the diagnosis was of possible cold shock. He was discharged from hospital the following day. The surface water temperature was 28 deg C and the seabed temperature was 18 deg C. The casualty had been wearing a 3mm full body wetsuit, and he was described as having little body fat.

### September 2003 03/238

A trainee had difficulty clearing her ear during a pool training session. She visited her doctor and her ear was found to be red with a red line on the eardrum. A week later the trainee reported that the ear had been rested and cleared much more easily. She undertook a dive to a depth of 9m. After the dive she found that she was able to blow air out of her right ear. A medical examination revealed a perforation to her eardrum. She had not experienced any pain, dizziness or discomfort during the dive.

## Boating / Surface Incidents

### October 2002 03/204

A pair of divers dived from the back of a moored live-aboard dive boat whilst two RHIBs ferried divers to another site. The divers planned to descend to a plateau below the boat. They dived to 36m and then, after 13 min ascended back towards the mooring line. As they approached the mooring line in a depth of 18m they were caught by a current which carried them back down to 28m. They re-ascended and deployed a delayed SMB at 6m. They conducted a 3 min safety stop and then surfaced. Their dive time was 25 min. At the surface they were about 400m from the boat and being carried away from it. They attempted to attract the attention of those in the boat with a whistle and by waving the SMB but they were not seen; the wind was against them and the sun was behind them. They drifted for over 90 min in 1m high waves until they were eventually found and recovered by one of the RHIBs. They were safely recovered back to the boat.

### June 2003 03/157

A solo diver launched a delayed SMB during a 45 min dive to a maximum depth of 17m. Upon surfacing he found that he had lost contact with his boat. The current was against the wind and there was a breaking swell about 2m high. The diver could see the boat when he was at the top of a wave but they could not see him. He started to swim towards the shore. The boat crew alerted the Coastguard and a search involving two lifeboats, a helicopter and other craft was initiated. The search took place away from the area in which the diver was carried. He was eventually spotted by a yacht that had been involved in the search but was leaving the area. The yacht relayed the diver's position and he was recovered by lifeboat after being at the surface for 3 hours. He was airlifted to hospital but released after a brief check.

### August 2003 03/219

Five divers were traveling in a dory to a dive site. 20 min into the journey the low oil warning for the port engine sounded. The boat was stopped and the oil was checked, but nothing untoward was found. The alarm was weak and intermittent and was thought to be due to faulty wiring; the boat had previously

had a wiring problem. The engines were restarted and the journey continued. 10 min later this engine suddenly lost all power. A small leak was found in the oil reservoir. Attempts were made to repair the hole during which an oil pipe was lost overboard. The engine casing became flooded with seawater and oil. An electrical short then developed and the main engine wiring loom started smoking profusely and a cable connector started to melt. There was concern that disconnecting the cable from the battery, which was in the bilge, would ignite any fumes that might have been in the bilge. Eventually the electrical connection to the engine was disconnected. The boat then returned safely to harbour. Both engines had been dealer serviced within the previous six months.

## Ascents

### November 2002 03/033

An instructor and two trainees began a dive to a depth of 9m. They then ascended to 6m at which point the weightbelt of one of the trainees became loose and fell off. The instructor caught the belt but was not able to hold on to the trainee. The other trainee took hold of the buoyant diver and they made a rapid ascent to the surface. The instructor then surfaced and they got back into the boat. Both were monitored for symptoms of DCI but none were apparent.

### March 2003 03/117

Two divers completed a dive to a maximum depth of 43m. Their dive time was 51 min which included a 3 min stop at 6m and a 16 min stop at 3m. Upon surfacing it was noted that both their computers indicated missed stops. One of the computers indicated that 3 min had been missed at 3m the other just indicated missing stops at 3m. Both divers were placed on oxygen and returned to shore. Medical advice was sought and the divers received one session of recompression treatment. No symptoms of DCI were experienced at any time.

### April 2003 03/088

Two divers dived to a wreck at a depth of 34m. Towards the end of the dive they made their way to the mast of the wreck and one of the divers deployed a delayed SMB. During the deployment he lost control of his buoyancy and began to ascend. His buddy took hold of him and brought him back to the mast. They then ascended to 15m and began a swim back to the shore. During this swim, the diver lost control of his buoyancy for a second time and ascended to the surface. His buddy followed, making a 1 min stop at 6m. At the surface the buddy checked that all was well and towed him back to the shore. The dive duration was 20 min. It was subsequently established that the delayed SMB had been attached to the diver during its deployment. No subsequent ill effects

### July 2003 03/196

Two divers conducted a dive on a wreck to a maximum depth of 38m. One of the divers had a problem with his mask leaking. After a dive time of 20 min the computer of one of the divers indicated a 17 min ascent time. They located what they thought was the shotline and began their ascent. This line turned out to be an old shotline which had been cut at 24m. Both divers deployed delayed SMBs, but in doing so they sank back down to the seabed at 37m. Their ascent time had increased to 30 min. They ascended to 6m where one of the divers' computers indicated that a 33 min stop was required. The diver with a flooding mask continued to experience problems and he did not reel in the SMB line during his ascent. The line became tangled around the other diver. In rough and moving water they struggled to maintain their decompression depth. Finally they were pulled to the surface by the SMB which was affected by a



strong current. They missed an indicated 28 min decompression. Both divers were recovered into the boat and placed on oxygen. The Coastguard was alerted and the divers were airlifted to a recompression facility. Both divers were recompressed although the only symptom experienced was a slight shoulder pain by one of the pair.

**August 2003** **03/198**

A diver and a trainee undertook a dive to a depth of 16m. After about 16 min, the fin of the diver caught on the weightbelt of the trainee causing it to become undone. The weightbelt fell to the seabed and the trainee was unable to hold on to it. The buddy tried to slow the ascent but both were carried to the surface. They were recovered into their boat and placed on oxygen. Medical advice was sought. Once ashore both divers were kept on oxygen for a further 1 hour. No symptoms of DCI were experienced.

**Technique**

**November 2002** **03/034**

A diver undertook a led dive with a dive school whilst on vacation. She dived with two other divers and the dive leader. Prior to the dive she noticed that air was leaking from the high pressure hose of her regulator. The instructor attempted to fix the problem and slowed the leak. They dived to a maximum depth of 10m. The diver with the leaking regulator indicated to the dive leader when she reached 100 bar, and again at 50 bar. At this point one of the other divers was out of air and was using the dive leader's alternative air source to continue the dive. The diver with the leak was then at 5m with 10 bar indicated on her gauge. They then swam under a rock ledge at which point the regulator became hard to breathe from. She surfaced to find herself in waves breaking strongly against the rocks. She was churned around in the water; pushed under the overhang and then thrown back to the surface. The other diver came to her aid, gave her his alternative air source and helped her away from the rocks. She orally inflated her BCD. The dive leader then surfaced and assisted her back to the shore. Once out of the water the diver was shocked and distressed. The diver states that the cylinder pressure gauge read 10 bar when it was empty.

**November 2002** **03/043**

A trainee and another diver were conducting assisted ascents from a depth of 10m. The first ascent took place with the trainee using his alternative air source. During the ascent the other diver's regulator began to free flow. He was not able to stop it and they continued to the surface. At the surface they drifted out of the shelter of the shore into choppy water and a boat was launched to recover them. The diver with the free flow stated that he may have knocked the venturi control of his regulator into the 'minus' position as he took it from his mouth. No subsequent ill effects were reported.

**January 2003** **03/045**

Two divers entered the water and planned a no stop dive to a maximum depth of 30m with a 3 min safety stop at 6m. During the descent they lost buoyancy control and reached the bottom at 39m. They re-ascended and stabilized at 25m. They were low on air and therefore made an ascent directly to the surface. Once out of the water their computers were checked and it was determined that they had exceeded the maximum ascent rate. The divers did not dive again for 48 hours. No adverse effects were experienced.

**May 2003** **03/208**

Two divers commenced a shore dive by swimming through a tunnel to the open sea. The tunnel was open to the air at the surface. They turned and swam along a cliff wall to a maximum depth of 23m. When their air reached 120 bar they turned to retrace their route but higher up the wall at a depth of 13m. They reached what they thought was the tunnel entrance and swam in. However this turned out to be a cave and the swell made it difficult for them to swim out again. Outside the tunnel one of the pair ran out of air and used the alternative air source of the other. They surfaced and swam back on the surface. Neither diver suffered any ill effects.

**Equipment**

**November 2002** **03/041**

Three divers undertook a dive to a maximum depth of 27m. They then returned to 8m to investigate a cave. A strong swell was present and the divers used this to move forward. Whilst being carried forward the BCD emergency cylinder control valve of one of the divers brushed against the rocks and this turned it on. The diver was carried upwards but managed to regain buoyancy control and returned to his buddies. He estimates that he rose 3m during this problem. No subsequent ill effects were experienced.

**August 2003** **03/220**

Three divers undertook a dive to a planned maximum depth of 40m. During the dive one of the group noticed that his dive computer read 53m and he started to ascend whilst preparing to deploy a delayed SMB. The other divers followed him but lost sight of him at 28m. The lone diver surfaced with his computer reading 53m, 30 min dive time and 12 min of missed decompression stops. The other two divers carried out 3 min of decompression as indicated by their computers and then surfaced. Checks were made of the divers' instruments and it was found that the computer which read 53m had malfunctioned. The diver had not been deeper than 40m. As he ascended his computer was stuck on 53m and he thought that he was being carried down by a current, this caused him to swim harder for the surface. This diver was placed on oxygen and the Coastguard was informed. The diver was taken by ambulance to hospital, he had a 'fuzzy head' and was confused about the incident. The diver suffered no subsequent ill effects.

**Miscellaneous**

**November 2002** **03/040**

A pair of divers conducted a 52 min dive to a depth of 16m. During the dive, at a depth of 14m, the divers were exploring a small underwater cliff. This cliff contained a small cave with crayfish in it. One of the divers moved into it. He then noticed a large moray eel in the cave and backed out. 3m to his right was another similar cave again containing crayfish. He moved towards this cave. The eel then came from its cave and seized the diver's day-glo hood which it shook violently. The hood was pulled from the diver's head and his mask was displaced. With his buddy's help he recovered and refitted his mask. The eel then released the hood and swam towards the diver. The diver tried to scare it away with bubbles and when this did not work he hit it with his torch. The eel swam away. (Linked to 03/042)



## INCIDENT REPORTS

If you would like to add to, correct or place a different interpretation upon any of the incidents in this report please put your comments in writing and send them to the following address:

***The Incidents Advisor,  
The British Sub-Aqua Club,  
Telford's Quay,  
South Pier Road,  
Ellesmere Port,  
Cheshire,  
CH65 4FL.***

For new incidents please complete a BSAC incident report form and send it to BSAC HQ at the address shown above.

**All personal details are treated as confidential.**

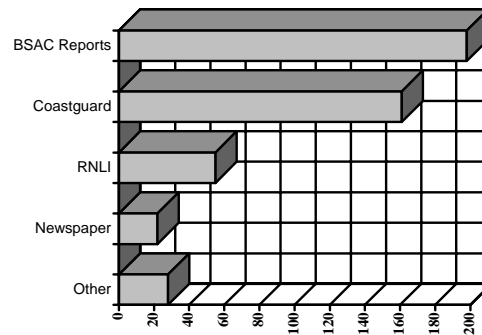
Incident Report Forms can be obtained free of charge by phoning BSAC HQ on **0151 350 6200**  
or from the BSAC Internet website.

## Numerical & Statistical Analyses

### Statistical Summary of Incidents

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Incidents Reported	385	351	315	397	452	397	439	465	453	409
Incidents Analysed	385	351	315	370	431	382	417	458	432	392
UK Incidents	322	318	295	349	404	357	384	433	414	366
Overseas Incidents	9	33	20	21	27	25	33	25	18	26
Unknown Locations	54	0	0	0	0	0	1	0	0	0
UK Incident - BSAC Members	164	157	136	101	135	128	113	122	149	162
UK Incident - Non-BSAC Members	8	20	4	29	52	47	52	94	55	74
UK Incident - Membership Unknown	213	178	175	219	217	182	219	217	211	130

### UK Incident Report Source Analysis



Total Reports: 464  
Total Incidents: 366

### History of UK Diving Fatalities

Year	Membership	Number of Fatalities	
		BSAC	Non-BSAC
1965	6,813	3	-
<b>1966</b>	<b>7,979</b>	<b>1</b>	<b>4</b>
1967	8,350	1	6
<b>1968</b>	<b>9,241</b>	<b>2</b>	<b>1</b>
1969	11,299	2	8
<b>1970</b>	<b>13,721</b>	<b>4</b>	<b>4</b>
1971	14,898	0	4
<b>1972</b>	<b>17,041</b>	<b>10</b>	<b>31</b>
1973	19,332	9	20
<b>1974</b>	<b>22,150</b>	<b>3</b>	<b>11</b>
1975	23,204	2	-
<b>1976</b>	<b>25,310</b>	<b>4</b>	<b>-</b>
1977	25,342	3	-
<b>1978</b>	<b>27,510</b>	<b>8</b>	<b>4</b>
1979	30,579	5	8
<b>1980</b>	<b>24,900</b>	<b>6</b>	<b>7</b>
1981	27,834	5	7
<b>1982</b>	<b>29,590</b>	<b>6</b>	<b>3</b>
1983	32,177	7	2
<b>1984</b>	<b>32,950</b>	<b>8</b>	<b>5</b>
1985	34,861	8	6
<b>1986</b>	<b>34,210</b>	<b>6</b>	<b>9</b>
1987	34,500	6	2
<b>1988</b>	<b>32,960</b>	<b>10</b>	<b>6</b>
1989	34,422	4	8
<b>1990</b>	<b>36,434</b>	<b>3</b>	<b>6</b>
1991	43,475	8	9
<b>1992</b>	<b>45,626</b>	<b>9</b>	<b>8</b>
1993	50,722	3	6
<b>1994</b>	<b>50,505</b>	<b>6</b>	<b>6</b>
1995	52,364	9	9
<b>1996</b>	<b>48,920</b>	<b>7</b>	<b>9</b>
1997	48,412	4	12
<b>1998</b>	<b>46,712</b>	<b>6</b>	<b>16</b>
1999	46,682	8	9
<b>2000</b>	<b>41,692</b>	<b>6</b>	<b>11</b>
2001	41,272	9	13
<b>2002</b>	<b>39,960</b>	<b>4</b>	<b>10</b>
2003	38,340	5	6

LIST OF ABBREVIATIONS USED IN INCIDENT REPORTS

AV	Artificial ventilation
BCD	Buoyancy compensation device (e.g. stab jacket)
CAGE	Cerebral arterial gas embolism
CG	Coastguard
CPR	Cardiopulmonary resuscitation
DCI	Decompression illness
DDRC	Diving Diseases Research Centre (Plymouth, UK)
ECG	Electrocardiogram
EPIRB	Emergency position indicating radiobeacon
GPS	Global Positioning System
Helo	Helicopter
HMCG	Her Majesty's Coastguard
ILB	Inshore lifeboat
IV	Intravenous
LB	Lifeboat
m	Metre
min	Minute(s)
MRSC	Marine Rescue Sub Centre
PFO	Patent foramen ovale
POB	Persons on board
RAF	Royal Air Force
RHIB	Rigid hull inflatable boat
ROV	Remotely operated vehicle
RNLI	Royal National Lifeboat Institution
SAR	Search and rescue
SMB	Surface marker buoy
999	UK Emergency phone number