The British Sub-Aqua Club

National Diving Committee
Diving Incidents Report
2016

Compiled by

Brian Cumming & Jim Watson

Diving Safety and Incidents Advisors

Published by The British Sub-Aqua Club in the interests of diving safety

Introduction

This booklet contains the 2016 Diving Incidents Report, produced by British Sub-Aqua Club (BSAC) in the interest of promoting diving safety. It is important to note that it contains details of UK sports diving incidents occurring to divers of all affiliations, plus incidents occurring worldwide involving BSAC members.

The 2016 'Incident Year' ran from 1st October 2015 to 30th September 2016.

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:

MONTH/YEAR OF INCIDENT ***INCIDENT REF.***
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, Jim Watson
BSAC Diving Safety and Incidents Advisors,
October 2016

Acknowledgements

Data for this report are collected from many 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:

Maritime & Coastguard Agency

Roger Aldham, Information and Data Manager,
Katrina Mallaburn, Data and Statistical Analyst,
Royal National Lifeboat Institution

MOD Superintendant of Diving

Mark Caney, PADI Europe, Middle East and Africa

Sub-Aqua Association

Scottish Sub-Aqua Club

Lizzie Bird for data input

Dr. Yvonne Couch for proof reading this report

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.

Overview

2016 has seen 228 UK diving incidents reported. This is a similar number to the 226 reported in 2015. In the years 2006 to 2011 the number of incidents reported had been fairly consistent at around 370. From 2011 to 2014, the number of reported incidents declined by approximately 60 reports per incident reporting year and now this decline may have plateaued.

The decline of incidents seen in recent years could be explained by less diving, less incidents or less reporting, or a combination of any of these factors. For reasons explained later in this report, we believe that this decline is unlikely to be due to an overall decline in the reporting of incidents.

This year, in our report, there remain some continued trends that indicate that there have been further improvements to diver safety with respect to the number of ascent problems incidents. However, there has been an increase in the number of reported DCI incidents. This is also reflected in the reports of increased helicopter use.

In addition, we highlight a potential need for increasing awareness of the medical condition of immersion pulmonary oedema. We believe that there may be underlying evidence of this condition within the reports that could go some way to explain the recent trends seen within the fatality data.

Number of reported incidents

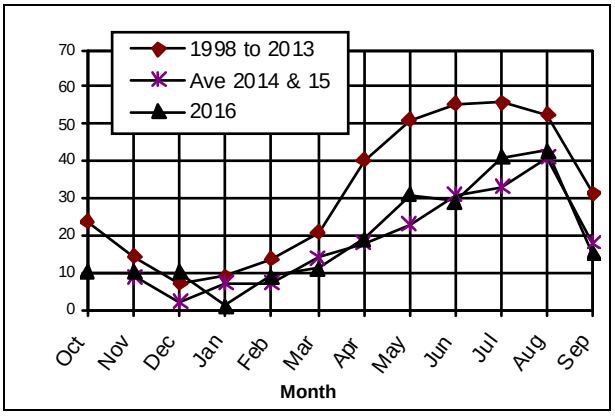
Incidents by month

Between 1998 and 2013, the distribution of incidents by month follows a sinusoidal form with the lowest number of cases in December and January, which rises initially in March or April depending on when Easter falls and then to a peak in June and July.

In 2014 and 2015, the expected rise in incidents during spring and early summer (April to July) was absent. To illustrate this, we previously charted the average number of incidents reported per month in the years from 1998 to 2013 to provide a view of the 'normal' picture. This year we have combined the previous data for 2014 and 2015 and compared this with the number of incidents reported in 2016.

Previously we proposed that it was possible that divers are being more careful at the beginning of the diving season and heeding the advice given over many years to start slowly after the winter break. The reoccurrence of similar patterns in 2015 and 2016, with significantly lower incidents in April to July inclusive provides more evidence that the pattern of occurrence of incidents is significantly changing and further analysis is required to determine what the key influencing features behind this changing trend are.

Incidents by month

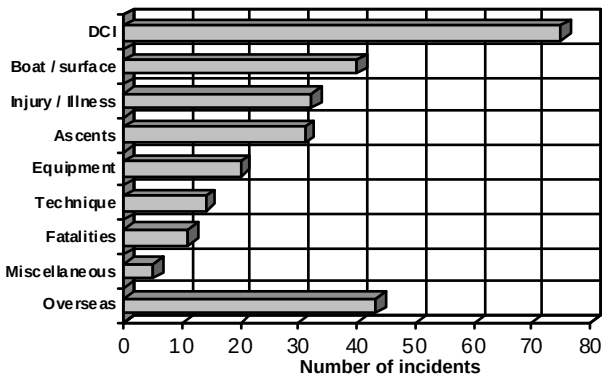


Furthermore, the fall in incident numbers appears confined largely to the months of April through July, which indicates that a decline in incident reporting is unlikely to be the root cause of the overall decrease in incidents.
It is to be expected that the total for September is lower than reality as a result of the time that it takes for reports to reach us. The cut-off period is now extremely tight because of the timing of the BSAC Diving Conference and this partially explains the drop in August and September. Reports received post cut-off are included in the database for future research purposes but they are not included in the annual report.

Incidents by category

The incident database assigns all incidents into one of nine major categories, and the chart shows the distribution of the 2016 incidents into those categories.

Categorisation of the year's incidents



The largest category of incidents in 2016 was for DCI, with 75 reported incidents, which is a substantial increase from recent years reporting. In part this may be explained by an apparent gap in Coastguard data due to Coastguard personnel changes during the latter part of the 2015 reporting year.

Incidents involving 'Boating and Surface' events had been falling progressively since the late 90s. In 2015 this had represented the largest number of incidents reported in any category but the increase in reported DCI incidents has superseded this for 2016. This year 40 boating and surface incidents were recorded which is a decrease of nine on last year. This category mainly comprises of problems with boat engines (31%) (engine failure and out of fuel) and lost diver(s) (58%).

The next largest category is 'Illness and Injury' with 32 incidents reported. The bulk of this category is thought to be cases of DCI. These cases are often reported through the RNLI and their reports do not always record DCI, they often just state 'Diver illness'. Unfortunately, therefore it is often not possible to distinguish cases of DCI from other diver ailments unless the incident is reported by another mechanism which specifies the condition.

The distribution of incidents into the categories shows some interesting changes with respect to previous years. Recently we had been reporting that cases of 'DCI' have been following a slight downward trend over the last eleven years. The number of incidents involving decompression illness (DCI) has increased substantially in 2016, more than double the level reported in 2015. However, although the number of DCI incidents reported is higher than the two preceding years it still reflects a declining trend since the recent peak around 2008. The 75 DCI cases represent an increase of 36 incidents on last year and 18 on 2014.

'Ascents' remains the fourth highest category and this involves incidents where divers have made an abnormal ascent but avoided DCI or other injury. This category peaked in 2006 and has been steadily falling since that time. In 2016, a similar decreased number of 31 'Ascent' related incidents were reported (a further 19 ascents were reported which led to an outcome of DCI, hence they are included in the DCI category). A lot of effort has been put into improving diver buoyancy control and these numbers reflect the beneficial changes that have been made and continue.

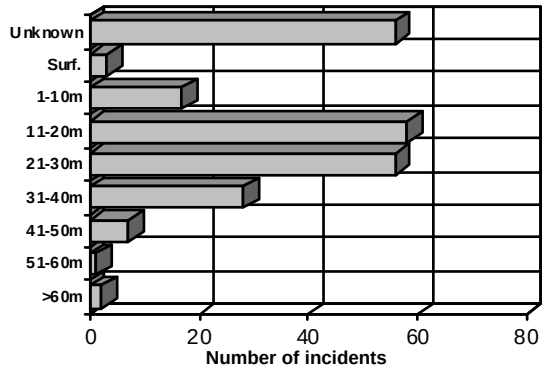
The last category to be mentioned specifically is 'Fatalities' and although the numbers are relatively small it is, of course, the most serious. This year saw 11 diver fatalities; two more than reported in 2015, which represented the lowest number for over 20 years.

More analysis on these key incident categories is given later in the report.

Incident depths

The following chart shows the maximum depth of the dives during which incidents took place, categorised into depth range groupings.
The pattern of depths in the 0m to 50m range is very similar to that normally seen and reflects the amount of diving that takes place in these depth ranges. Incidents involving dives deeper than 50m range are usually more serious and contain a disproportionate number of fatalities. This year however, there were three reported incidents involving dives to depths greater than 50m but none involved a fatality. It remains the case however that such deep dives are serious undertakings and an incident could have serious implications so we repeat the following advice.

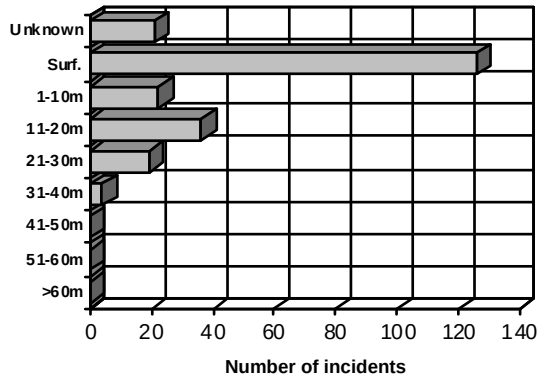
Maximum depth of dive involving an incident



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.
BSAC recommends that helium mixtures should be considered as an option for depths deeper than 40m and that mixed gas diving should be to a maximum depth of 100m. Mixed gas dives should only be conducted when the diver holds a recognised qualification to conduct such dives.
See the BSAC website for more details of these and other diving depth limit recommendations.

Incidents do not always occur at the deepest point of the dive. The next chart shows the depths at which incidents started.

Depth at which an incident started



Inevitably these data are biased towards the shallower depths, when compared with the maximum depth of the dive, since many incidents start during the ascent or at the surface. Critical among these are the DCI cases where, almost always, symptoms present when the casualty is out of the water. 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 and divers who are lost but on the surface. The depth profiles are consistent with previous years.

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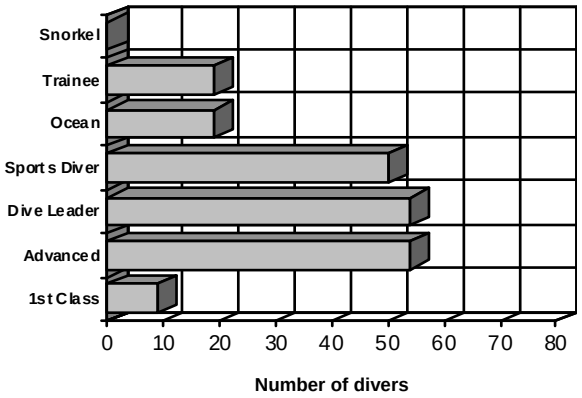
Diver qualifications

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

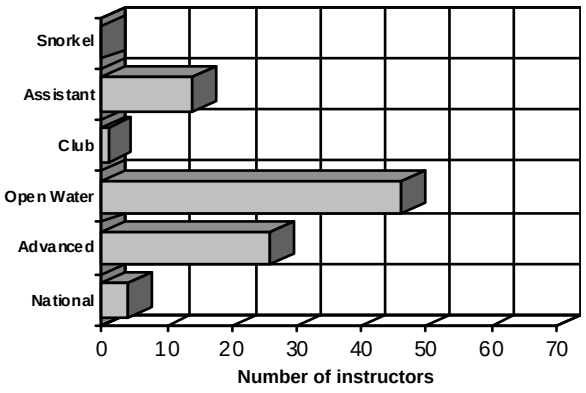
Qualification of the divers involved in incidents



These data are in line with the normal pattern of previous years and are thought to reflect the number of active divers in these qualification grades.

The next chart shows an analysis of incident by instructor qualification and again it is consistent with previous years. The only exception to this is the number of assistant instructors recorded. In analysing the 2016 data we identified an anomaly in the system that due to a change in the name of assistant instructors we had previously significantly under-reported their involvement

Qualification of instructors involved in incidents

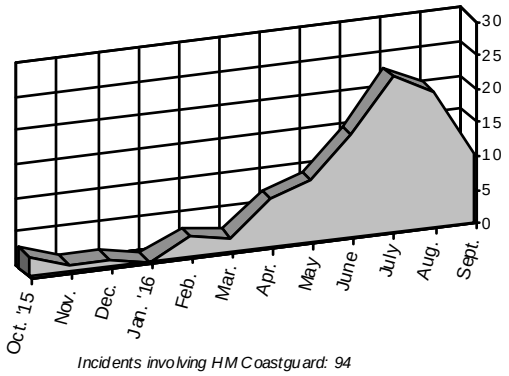


In 2014, there were no Club Instructors featured in the incident report and the plan was to drop this category from the incident report, however four instructors of this category were involved in incidents in 2015 and one this year. The involvement of each grade of instructor in incidents is probably a reflection of both the number of instructors with that qualification and the activity levels of these instructors.

Divers' use of the Emergency Services

Divers' use of the emergency 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.

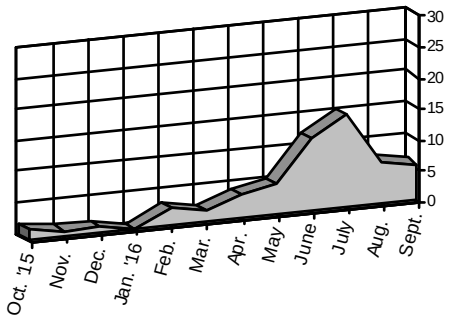
Incidents involving the UK Coastguard Agency - Monthly breakdown



Incidents involving HM Coastguard: 94

The total number of incidents involving the Coastguard was 94 (2015 total was 76) and there were 58 incidents reported that involved the RNLI (2015 total was 56). We believe that one explanation for the variation in the number of Coastguard reports was the personnel change mentioned earlier. The RNLI's main support to divers involves assistance with disabled boats, searching for missing divers and the recovery of divers with DCI. Both the RNLI and the Coastguard data reflect the change in incident reporting pattern seen in the April to July period post 2012 as discussed earlier.

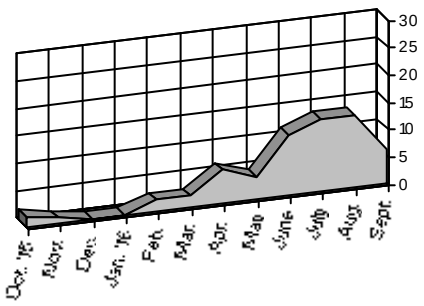
Divers' use of RNLI facilities by month



Incidents involving Lifeboats: 58

In 2016, 60 incidents involved the use of helicopters, an increase of 11 over 2015.
In diving related incidents, helicopters are mainly tasked to support searches for missing divers and to transport divers with DCI to recompression facilities. The increase in helicopter use is reflected in the increases in DCI cases reported in 2016 and may also be impacted by the previously mentioned gap in Coastguard data.

Divers' use of SAR helicopters by month



Incidents involving helicopters: 60

Fatalities

11 fatal incidents occurred in the UK during the 2016 incident year. In 2015 we reported 9, the lowest number for over 20 years.

5 of the 2016 fatalities were BSAC members. The previous ten year average for BSAC fatalities in the UK is 6.0 fatalities per year.

6 of the year's fatalities were non-BSAC members. The previous ten year average for this group is 7.7.

Key factors associated with the 2016 fatalities can be summarised as follows:-

- Ten of the fatalities in 2016 involved divers aged between 40 and 67 with an average age of 53 (in one case the divers age is unknown). This continues the previously identified trend and is discussed further in this report.
- Seven of these cases involved the casualty falling unconscious under the water. In all these incidents, where a casualty falls unconscious underwater, the rescue becomes much more problematic.
- At the time of writing there has been no confirmation that any of the reported fatalities were from medically related problems. However, there is a strong indication that medical factors could be implicated in at least 8 of these incidents and two of the remainder have insufficient information to make that assessment. Notably, in the view of the authors, there seem to be indicators that immersion pulmonary oedema (IPO) may a contributory factor in many of these fatalities.
- Three cases involved divers diving in a group of three or more. Diving in groups of three (or more) brings additional complexity to a dive and can generate problems that don't exist with pair diving. However, it is not clear whether trio diving directly contributed to these fatalities. BSAC recognises that, at times, it is necessary to dive in a group of three.
- Only one case involved a rapid ascent. This fast ascent may not have directly contributed to the fatality.
- Seven cases involved a separation of some kind but only one of these separations happened in a case where more than two divers were diving together.
- There was one case of a solo diver diving on an open circuit, who had commenced the dive as part of a group of three, where insufficient information is available to understand the cause of the incident.

Often multiple causes are involved in an incident. With a number of these fatal incidents there is currently insufficient information available to be clear about the exact chain of events and specific root causes. Often new information comes to light (from coroners' inquests for example) after the publication of this annual report. Such information is added to the incident database for future research purposes.

Decompression incidents

The BSAC database contains 75 reports of 'DCI' incidents in the 2016 incident year, some of which involved more than one casualty.
An analysis of the causal factors associated with the 75 incidents reported in 2016 indicates the following major features:-

36% were within the limits of tables or computers
22% involved repeat diving
22% involved diving to deeper than 30m
19% involved rapid ascents
2% involved missed decompression stops

Some cases involved more than one of these factors.

Given that 36% of DCI cases arose from dives reported to be within decompression limits, divers should be alert for DCI symptoms arising from any dive.

The number of reported DCI incidents is approaching double that of 2015 and reverses the downward trend previously seen when compared with the last six years. We know that we do not capture all of the DCI related incidents but the sample that is captured in this report is sufficiently large to develop a good understanding of the underlying causal factors.

As stated earlier, some of the 'Injury and Illness' incidents are also thought to be DCI related.

Boating and Surface incidents

The number of incidents involving boating and surface issues reported in 2016 was 49. The factors associated with these incidents are as follows:-

58% involved lost diver(s)
31% involved engine problems
6% involved boat problems
6% involved bad seamanship

Some cases involved more than one of these factors.

The number of lost divers (separated from their party but subsequently safely recovered) shows an increase of three from the 2015 figure which was the lowest since before 1998 and the average number of lost divers in the previous five years was 29. The 2016 number still therefore indicates a continuation of the previous downward trend.

Ascent related incidents

Ascent related incidents have been falling in recent years and this year there were 31 cases reported which is the lowest recorded since we began reporting on this category in 2008. As in previous years the majority, nineteen, of these were 'rapid ascents'.

An analysis of these 'rapid ascents' (where the detail is known) is as follows:-

63% Poor buoyancy control
25% Drysuit/BCD control malfunction/mis-use
31% Panic / anxiety / rush for surface
25% Weighting or weight related issues
13% Equipment problems
13% Delayed SMB problems
13% Out of air / gas
6% Free flows

A significant number of reported fast ascents were due to over or under-weighting issues through equipment changes without making a subsequent buoyancy check, or unfamiliar drysuit controls or lack of practice.

Many DCI cases also are associated with a fast ascent; however even though they have been recorded under the 'DCI' heading the causal factors are the same, so the actual number of fast ascents recorded will be higher than these 31 cases. This year's DCI cases included 19 incidents where rapid ascents had also taken place.

Immersion Pulmonary Oedema (IPO)

At the 2014 BSAC Diving Conference, Dr Peter Wilmshurst gave a presentation highlighting the potential for immersion pulmonary oedema to affect a diver when in the water. Originally described in the 1980's occurrences had been thought to be rare. More recent research by Dr Wilmshurst and others has started to highlight that occurrences might be more common and could explain some diving problems and fatalities.

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In particular a number of coroner's inquests into diving fatalities have found IPO to have been a major causal factor in those cases. The challenge for this report is that inquests do not always take place before the annual report is compiled. However, within this year's report there is a case of a diver who experienced breathing difficulties during a dive, surfaced and was successfully treated in hospital. This diver was confirmed to have suffered from IPO. The diver was aware of the condition of IPO and believes she was able to respond appropriately due to this knowledge.

Immersion pulmonary oedema results from a combination of being in water and the body allowing excess fluid to enter the lungs, consequently interfering with the lungs ability to allow gas exchange.

When we immerse ourselves in water the support of the more dense fluid reduces the effect of gravity on our bodies. This causes excess blood, normally pooled in the lower limbs, to begin circulating. In normal circumstances this excess is removed by the kidneys, causing the need to urinate familiar to many divers. In certain circumstances however, this excess fluid can leak into the lungs and cause difficulty breathing and if not corrected can cause death.

It has been known for some time that high blood pressure carries a risk of pulmonary oedema, which is why it forms one of the screening questions on a diving medical form. What was previously less understood is that very strenuous exercise could trigger IPO. This had previously been reported in military divers under extremes of training. That level of extreme exercise might arise in diving for example when attempting a rescue of another diver or fighting a current.

In light of this increasing body of information we believe it is possible to identify evidence in some incident reports that IPO could be a significant influencing factor and include examples of:

- Divers with breathing difficulties when not exercising particularly strenuously. Breathing difficulties may be indicated by rapid, uneven or heavy breathing, coughing uncontrollably etc.
- Confusion, swimming in the wrong or random directions.
- Inability to carry out normal functions, whilst appearing to have to concentrate on breathing.
- Belief that a regulator is not working properly.
- Indication of 'out of gas' when their regulator(s) are found to be working correctly.
- Divers refusing or rejecting an alternate source when 'out of gas'.
- Indication of difficulty of breathing when on the surface.

Examples of one or more of these can be found in the reports of diving incidents which follow. This is particularly so in the fatalities and raises the question posed in the fatalities section of possible underlying medical conditions. It is hoped that coroners' inquests might clarify some of these questions to assist with ongoing consideration of the impact of this condition.

Advice from the medical experts at this time is that if you experience breathing difficulties underwater you should terminate the dive and ascend safely and exit the water. If you recognise any of the above factors in a buddy then assist them from the water as quickly as it is safe to do so.

Conclusions

Key conclusions are:-

- The number of incidents reported this year is very slightly up on 2016.
- The monthly reporting pattern follows the unusual pattern identified over the previous two years with significantly lower numbers of incidents reported in April, May, June and July but similar numbers of incidents reported in the late summer and winter.
- The absence of the normal spring and early summer peak merits further analysis to understand the reduction in incidents at this time of year.
- The eleven fatalities in the UK are lower than the average (15.2) for the previous 10 years.
- The number of fatalities of BSAC members is slightly lower than the average of the previous 10 years.
- The six fatalities of non-BSAC members is below the average (7.7) of the previous 10 years.
- The number of medical cases in divers aged over 50 is unconfirmed so far but there are strong indications for likely medical causes including immersion pulmonary oedema; the average age of the fatalities is 53.
- Diver age and potential related health and fitness issues are still featuring and may be critical factors in this and recent years' fatalities.
- Incidents of DCI have shown a significant increase following a period of steady decline. The numbers remain lower than the number of DCI cases per year in the period 2000-2010.
- In 2016, there was a lack of serious incidents arising from dives of 50m or more depth.

As has been stated for over fifty years in this report, most of the incidents reported within this document could have been avoided had those involved followed a few basic principles of safe diving practice. BSAC publishes a booklet called 'Safe Diving' which summarises all the key elements of safe diving and is available to all, free of charge, from the BSAC website or 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 using our Incident Report form, available free via the BSAC website or from BSAC HQ.
As always, your anonymity is assured – great care is taken to preserve the confidentiality of any personal information recorded in BSAC Incident Reports.

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Fatalities

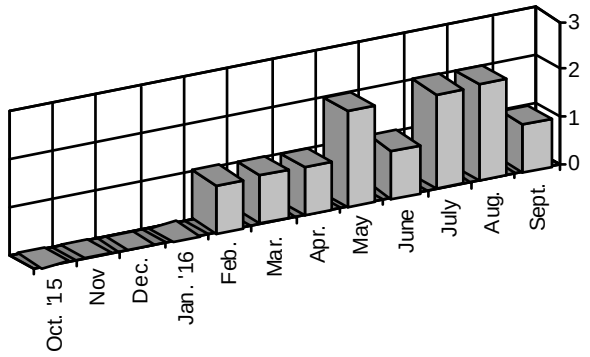
February 2016 16/033

The Coastguard received a call from the ambulance service reporting an unconscious diver in the water. Coastguard rescue transport and a lifeboat were tasked to the site. A helicopter was tasked and the lifeboat stood down. The diver was eventually located some way from the initial dive site and was declared deceased by a doctor. The reported depth of the dive was 30m. The helicopter was tasked to transport a second diver to a hyperbaric chamber. (Coastguard report).

March 2016 16/037

Following an uneventful shore dive to 20m in poor visibility, a diver indicated to his buddy that he was cold and wanted to surface. As the buddy arrived at a 4-5m shelf he noticed the diver was no longer with him and surfaced to look for him, with a dive time of 29 min. He could not see bubbles on the surface and then checked to see if the diver had already made his way to shore due to being cold but could see no sign of him. The buddy then noticed a thin stream of bubbles near a shotline. He swam out and descended to find the missing diver at 4m with his regulator out of his mouth, his BCD inflated and undone with the regulator's first stage snagged by loops of the shotline around it. The buddy attempted but was unable to release the diver and surfaced to raise the alarm. Emergency services were called and a rebreather diver descended and recovered the diver. Paramedics administered CPR but the diver was declared deceased on site.

UK Fatalities - Monthly breakdown from October 2015 to September 2016 incl.



April 2016 16/069

A group of divers had chartered a yacht for a week's holiday but were not engaged in any diving activities during that time. Whilst sailing back to port they passed a wreck site and noticed two hardboats on the site. The boats were approximately two hundred metres away when the yacht heard a 'Mayday' from one of the dive boats saying they had an unconscious diver aboard. The Coastguard scrambled a lifeboat and helicopter which arrived on the scene shortly afterwards. One of the yacht's crew was a doctor and offered assistance to the dive boat who replied there was already a doctor aboard from the other dive boat. The yacht dropped sail and approximately ten minutes later came alongside the dive boat. The yacht's doctor, accompanied by another crew member who was a nurse, went aboard the dive boat. The doctor from the second dive boat was already administering CPR and the yacht's doctor and nurse assisted while surfacing divers were picked up by the two dive boats. Approximately forty minutes after the 'Mayday' had been issued the doctors reached a joint decision that resuscitation had not been possible and the diver was pronounced deceased. Back aboard the yacht the doctor and nurse reported that they had not been offered a working oxygen kit on the dive boat and the first aid kit was inadequate. They also reported that the casualty had been found by two divers who were not his buddies. He had been seen falling through the water without his regulator in and the two divers had sent him to the surface from a reported depth of 20m by dropping his weightbelt. They had followed him up and subsequently assisted in giving CPR. The two divers, as a result of their fast ascent, were suspected of having DCI and transferred to the lifeboat. When they arrived back in port the divers were taken by ambulance to a recompression chamber for treatment and later discharged.

May 2016 16/070

A diver had completed a dive to a maximum depth of 7m. The following day he dived with a buddy, at the same site, for around 20 min without incident at which point they became separated. The buddy surfaced near the boat and asked the skipper if he had seen the diver surface. At the same time, two other divers surfaced with the missing diver and called for help. The diver who had been missing was unconscious, so they towed him 10m to the boat where they brought him on-board. The Coastguard was called and CPR and oxygen were administered. A trained lifeguard who had been water-skiing nearby came to assist with the resuscitation attempts. A helicopter arrived and transported the diver to hospital where he was pronounced dead on arrival.

May 2016 16/078

An instructor and three students carried out a shore based depth progression dive to a planned maximum depth of 35m. They were accompanied by two experienced support divers to assist the group and, if needed, split into three pre-arranged buddy pairs. The instructor and three students descended slowly all holding onto a shotline with the instructor's hand below the students' hands. The group stopped at three planned depths of 10m, 20m and 30m to ensure all were 'OK' and happy to continue, which they were. At a maximum depth of 35m the instructor let go of the shotline and took a photograph of the students' achievement. After approximately 2 min the group began to ascend the shotline with the instructor's hand placed above his students' hands to ensure they maintained a suitable ascent rate and the support divers moved to a position adjacent to their designated buddy. At 28m, one of the students panicked and rapidly ascended the shotline above the instructor. The instructor signalled for the group to break into three pairs as he ascended to reach the student above him and managed to get hold of him at approximately 21m. The student was clutching his pressure gauge, which appeared to be working, so to calm him down the instructor gave him his alternate source regulator. The instructor maintained a gradual controlled buoyant lift ascent rate to around 9m when the student became unresponsive and the instructor carried out a rapid ascent to get both of them to the surface. A group of divers were on the shore and one of them entered the water and assisted in de-kitting and removing the student from the water. The divers on the shore immediately began CPR which was then supported by oxygen and a defibrillator within three minutes. Emergency services had been called and an air ambulance arrived within ten minutes but the diver did not recover.

June 2016 16/100

A diver using nitrox 32 carried out a shore dive with two buddies. It was reported that the diver separated from the other

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two within a few minutes of the dive starting. The diver's partner on the shore raised the alarm when he had failed to return after approximately an hour. The dive site was searched by boat looking for lone bubbles and the diver was found floating face down with no regulator in place. He was recovered to the shore, CPR with oxygen was attempted and the emergency services were called. The diver was pronounced dead at the scene. The diver's equipment was retained by the police but the buddy divers could not be identified as they appeared to have left the dive site before the alarm was raised.

July 2016 16/189

The Coastguard received a call from a dive boat reporting an unconscious diver following a dive to a maximum depth of 12m for a dive duration of 4 min. The diver was transferred to hospital by rescue helicopter where he was pronounced deceased. (Coastguard & RNLI reports).

July 2016 16/174

The incident occurred on the first dive of the day conducted in an inland freshwater quarry. The group consisted of the course instructor, a student and a certified assistant. The descent took longer than anticipated as the student had trouble equalizing. When they reached 30m, all three divers had turned on their torches and visibility was approximately 10m. As agreed during the dive briefing, the student set his compass bearing and they paused to check their air. The student indicated 160 bar remaining then started swimming. The instructor stopped the skill practice due to inadequate buoyancy control. They returned to repeat the skill which was completed on the second attempt. Their ascent was planned with 80 bar remaining however, when the instructor checked the student's air, it had dropped during the skill practice to 60 bar. They signalled to ascend and the divers began a normal ascent up the line. The assistant had his torch on the student's cylinder pressure gauge, and was monitoring his air pressure closely, prepared to supply air if needed. At 20m the student's air pressure fell below 50 bar. As briefed, the assistant supplied his long hose second stage which the student swapped to without incident. They commenced an ascent at a normal rate then, at 18m, the student suddenly indicated he was out of air. With the assistant breathing off the same air supply, the instructor purged the second stage whilst it was in the student's mouth. They encouraged eye contact by signalling to do so and gave the 'breathe slowly' and 'calm down' signals. During this, the student appeared to be gasping rather than breathing normally. After a moment, he appeared to calm down, stopped signalling out of air and he responded to the signal to restart the ascent. The ascent from 18m to 12m took place at a normal rate; the student's breathing was regular but noticeably heavy. At 12m, the student indicated out of air again. The instructor supplied his own long hose second stage which was accepted and the student appeared to calm down, although he appeared uncomfortable and agitated. They continued a standard ascent from 12m to 5m. The divers attempted a 5m 3 min safety stop but, before it was completed, the student showed further signs of difficulty and reduced responsiveness. The student displayed significantly increased anxiety and tried to ascend. They attempted to control this ascent. There were initial signs of awareness and then suddenly the student became unresponsive. His regulator fell out of his mouth; they pushed it back in and pressed the purge button. With the second stage in place they ascended with the student. There were no signs of breathing and at 2m the regulator was no longer in place. They decided to complete their ascent which took less than 1 min. At the surface they raised the alarm and commenced rescue breathing. Within 2 min the dive site rescue boat had arrived and they took the student aboard and into the care of the rescue team, and subsequently the emergency services. The student was treated at the site and then taken to hospital where his condition was reported to be critical and he later died.

BSAC Fatalities against membership 1982-2016 (UK fatalities only)

August 2016 16/151

Two divers had carried out a hardboat dive to a maximum depth of 21m for a dive time of 33 min including a safety stop of 3 min at 5m. After a surface interval of 2 hours 2 min they entered the water to carry out the second dive which was a shallow drift dive on a flat seabed at around 14m. They descended to 13m on an SMB and began the dive. One of the divers approached his buddy after 5 min to show that he only had 75 bar left in a 232 bar 12 lt cylinder. The buddy could see a stream of air coming from the regulator clamp on the cylinder valve and presumed the 'O' ring had blown. The buddy immediately indicated to ascend and they proceeded to the surface with the buddy reeling in the SMB line. On the surface the buddy shouted to the diver to put his pony cylinder regulator in his mouth and inflate his BCD but the diver just stared blankly at him. The buddy continued to shout to the diver to put his pony cylinder regulator in and inflate his BCD. The buddy was holding onto the diver to keep his mouth out of the water when the diver turned toward the buddy and snatched his regulator from his mouth. The buddy switched to his own pony cylinder regulator at which point the diver snatched that from his mouth and started pushing the buddy underwater. The buddy pushed the diver away just as the hardboat reached them and the crew managed to grab the buddy at which point the diver sank below the surface. A shot was deployed at the location and a 28 min circular search conducted around the shot but to no avail. Two other pairs of divers entered the water and conducted searches for 18 min and 19 min, again to no avail. The Coastguard had been called and four lifeboats and a helicopter searched for seven hours. Two days later a team of six divers conducted a grid search of the area and located the body of the diver.

August 2016 16/160

It was reported that a diver on holiday got into difficulties whilst carrying out a shore dive. Her buddy went to the diver's rescue but disappeared below the surface. Members of the public recovered the diver and the buddy was located underwater. He too was recovered and brought ashore where a defibrillator was located, CPR administered and the Coastguard called. An air ambulance, Coastguard helicopter and land ambulance were tasked to the site. Paramedics treated the buddy but he was declared deceased at the scene. The diver was taken to hospital where her condition was thought not to be serious and she was discharged the following day. (Coastguard & media reports).

September 2016 16/184

A group of divers carried out a hardboat dive on a wreck. One of the divers was a qualified diver but, not having dived for some years, had starting his training again from the beginning and this was his seventh open water dive. He was buddied with an instructor who thought the diver appeared nervous and out of breath whilst kitting up. Once they were ready the instructor gave the diver time to calm down by letting another pair of divers enter the water first. When they entered the water and reached the shotline the diver appeared out of breath so they waited for a minute or two before descending. The dive boat had come alongside to check on the pair but both gave the 'OK' signal and descended. The descent was slow to a maximum depth of 22m and the diver stirred up the silt as he hit the bottom. The shot had been pulled off the wreck so the instructor indicated he would pick it up and place it back on the wreck. The shot was pulled from his hand and turning to look for the diver the instructor saw he was 3m above him. He gave the diver the 'OK' signal which the diver returned and descended to the instructor. The dive plan was for the diver to lead but he headed off in the wrong direction away from the wreck. The instructor tugged on his fins, the diver turned around and the instructor pointed to the wreck to show him the way. When he looked back at the diver he was not there. The instructor carried out a 360 deg search but could not see the diver. A dive knife landed in front of the instructor which he assumed was the diver's. He picked it up to return it later, deployed his DSMB and ascended to regroup at the surface as had been agreed in separation procedure given on the dive brief. The instructor surfaced and could not see the diver but then saw a group of three, one of whom appeared to be unconscious so he gave the distress signal to the boat and moved to the group to find it was the missing diver who was unconscious. No more than 5 min into the dive the boat skipper had seen a diver surface on his own in an inverted position. He shouted at him to inflate his BCD and then noticed he was unresponsive and sinking. The skipper manoeuvred the boat to try and recover the diver onto the boat lift but was unable to do so as the diver continued to sink. He made an emergency call to the Coastguard requesting helicopter and lifeboat assistance. Two other divers had descended the shotline on their dive and found the diver lying on his back, at the bottom of the shot, with his mask on and regulator in, but he was unresponsive. They carried out a controlled buoyant lift on the diver but the rate of ascent from 10m was fairly quick. The diver was given rescue breaths on the surface, recovered aboard the boat and CPR commenced. The two divers who had carried out the buoyant lift had headaches and were clearly in shock so were made to lie down and given oxygen and nitrox 32, which was alternated between the pair. CPR continued and two lifeboats arrived shortly followed by a helicopter which airlifted the diver to hospital but he did not recover. One of the lifeboats took the pair, who had recovered the diver, ashore where they were taken to a hyperbaric chamber but later discharged without the need for treatment.

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Decompression Incidents

October 2015 16/001

A diver and her two buddies, all using air, completed two dives on the first day of a hardboat diving weekend. The first dive was to a maximum depth of 16m and 21 min into the dive the group had ascended to 8m then re-descended over the next 9 min back to 16m before starting their ascent 3 min later. Their total dive time was 39 min including a 3 min stop at 5m. After a surface interval of 2 hours the group carried out a second dive on a wreck to a maximum depth of 30m. At depth there was a significant current which caused the divers considerable exertion. After a slow ascent they had incurred an 8 min mandatory decompression stop and, because of the reverse profile compared to the first dive, they decided to remain for a further 9 min at the 5m stop and surfaced with a dive time of 54 min. Two hours later the diver reported that she had a warm patch of skin on her shoulder which felt 'lumpy' underneath. She also had some joint pain in her arm, which she had felt earlier whilst unloading the dive boat. The diver was immediately put on oxygen, given water to drink and medical assistance was sought. The diver was taken to the nearest hyperbaric chamber where DCI was diagnosed and she received recompression treatment after which her symptoms disappeared. The diver's two buddies were symptom-free and continued diving that weekend.

October 2015 16/276

During a first open water training dive, after completing skills on a 6m depth platform, a group of students was taken for a tour. First they descended to 12m but then came back to 9m as students were struggling with buoyancy. When the group stopped to reorganise, the instructor noticed that one of the students was losing buoyancy control and started ascending but the instructor managed to slow him down. At a similar time another trainee started to ascend, and the instructor's assistant held on to her BCD to slow her down. Neither the instructor nor the assistant considered the ascent to be particularly rapid. The group completed the second dive but the diver who had made the buoyant ascent felt too tired and she discontinued with the training as a precaution. The divers left the site in good spirits. The following morning the instructor received a text message that the buoyant diver was suffering from a stiff neck and back ache. The doctor recommended treatment for the casualty as it was uncertain if the symptoms were a result of the diver's previous days of work or DCI.

October 2015 16/277

A trainee diver had completed two training dives the previous day. The following day he completed a third training dive to a maximum depth of 12m with no issues. After the dive he reported being cold accompanied with a headache and neck ache. He was advised to get changed in order to warm up and have some food and drink, after which he reported that he felt better. In the evening of that day it was reported to the centre owner that he was feeling unwell. Approximately two hours later the trainee diver went to the hospital. He was diagnosed with DCI.

October 2015 16/193

A dive boat requested medical assistance for a diver showing symptoms of DCI following a dive to a maximum depth of 36m with a dive duration of 60 min. The Coastguard tasked an ambulance to meet the dive boat at a nearby pier and transfer the diver to a hyperbaric chamber. (Coastguard report).

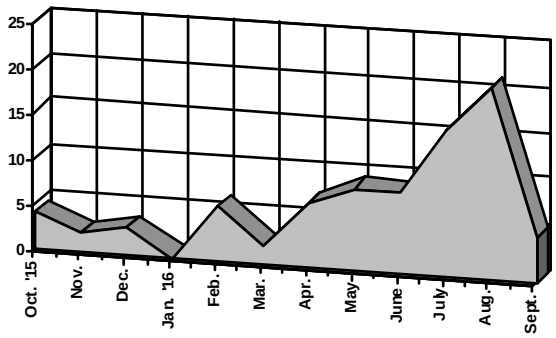
November 2015 16/195

A dive boat reported a diver suffering from possible DCI following a dive to a maximum depth of 42m with a dive duration of 15 min. Medical advice was sought and on the doctor's advice the diver was airlifted to a hyperbaric chamber. (Coastguard report).

November 2015 16/279

A diver had recently suffered from a chest infection. She undertook a dive to a maximum depth of 34m and around the maximum depth she started coughing, causing her to panic. The diver attempted a quick ascent to the surface but this was slowed down by an instructor. Safety stops were not conducted. DCI symptoms subsequently appeared and she was referred to a recompression chamber for treatment.

Decompression incidents by month



December 2015 16/022

A diver on a diving weekend had completed two shore dives on the Saturday, one to a maximum depth of 32m with a total dive time of 35 min including a 3 min safety stop at 6m but he had lost buoyancy control at 3m on the ascent and surfaced. The second dive, after a surface interval including a lunch break, was to a maximum depth of 30m with a dive time of 35 min including a safety stop. Both shore dives had involved carrying kit some distance to and from the water's edge and surface swims of around two hundred metres. On the Sunday, the diver and his buddy completed a shore dive to a maximum depth of 30m. They both ascended using a DSMB and the diver had a dive time of 32 min including a 3 min safety stop and his buddy surfaced 2 to 3 min later. On the surface the diver checked they were both 'OK' before they swam to the shore, which was again around two hundred metres away. Back on shore the pair started to de-kit when the diver felt dizzy and had to sit down but then started to feel worse and the buddy called for assistance. The diver was put on oxygen and monitored for about fifteen minutes but after vomiting twice was again placed on oxygen. After discussing emergency service response time with a local diver it was decided to take the diver directly to the nearest A&E department. The A&E consultant contacted a hyperbaric chamber for advice and they advised the diver be transported to them. He underwent recompression treatment that day followed by a further five sessions over the next five days. The diver was discharged and returned home. He received a letter from the chamber two weeks later which asked that he have an echocardiography test to check for a PFO and also requested that the diver saw a diving

referee with the results of all his tests to ascertain his fitness to dive.

December 2015 16/029

A diver had carried out a successful rebreather training dive to a maximum depth of 8m with a run time of 81 min. Four days later the diver experienced mild dizziness and loss of balance which he attributed to being tired. He went to bed, slept and the symptoms had disappeared by the following morning. He contacted a hyperbaric chamber and they believed he had suffered a minor vestibular DCI. A month and a half later, having completed several open circuit dives with no problems, the diver and his buddy carried out a shore dive using rebreathers to a maximum depth of 28m with a run time of 91 min. The divers left 28m at 20 min, spent 40 min at 20m and made a gradual ascent over the final 30 min including a 10 min stop at 6m. The entire dive was at 1.3 PO2. The diver had no symptoms for 29 hours but then felt mildly dizzy and his vision was slightly disturbed. The diver's buddy suffered no ill effects. The following morning the diver's symptoms remained, they became worse during the day and he began to feel nauseous. That evening the diver contacted the hyperbaric chamber who arranged for a local hospital to examine him which resulted in him being taken to the chamber by ambulance as an emergency admission. The diver received four sessions of recompression treatment over the next four days and was discharged. The chamber had reported that this was a totally unprovoked DCI and suggested the diver be checked for a PFO. They also strongly advised the diver never to dive again, even if he had a PFO and it was repaired. The diver took the chamber's advice and has stopped diving. He subsequently had a PFO check which was found to be negative.

December 2015 16/040

A diver had carried out two uneventful shore dives to 26m. The first was for a dive time of 45 min including a 1 min stop at 13m and a 3 min stop at 5m which was followed by a 75 min surface interval. The second dive was for a dive time of 46 min with a 1 min stop at 13m and a 3 min stop at 5m. Back on shore and 45 min after surfacing the diver started to feel dizzy followed by nausea. He sat for a few minutes whilst his buddy monitored him but they both came to the conclusion that it was highly likely the diver had DCI. Help was summoned, oxygen provided and emergency services contacted. Contact was made with a hyperbaric chamber and arrangements made to transfer the diver. Due to severe weather it was not possible to evacuate the diver by helicopter and he was taken to the chamber by ambulance. The diver was quickly diagnosed as having a vestibular DCI in his right inner ear and it was also noted that the diver had atrial fibrillations and extremely high blood pressure. The diver was given recompression treatment and re-visited the chamber over the next two days. Reviewing the profiles downloaded from the diver's computer there was no obvious reason for him contracting DCI but he was advised to have a PFO test before diving again.

February 2016 16/041

An instructor and her two trainees all wearing wetsuits, accompanied by a rescue diver, had carried out three shore based training dives with the water temperature at 7 deg C. The first dive was to a maximum depth of 5m with a dive time of 13 min followed by a surface interval of 1 hour 35 min before the second dive to a maximum depth of 9m with a dive time of 22 min. There were no issues following the dive other than the group feeling cold with the instructor having to help remove the trainees' fins. After a surface interval of just under 2 hours the group carried out their third dive. The dive manager had briefed that this was to be a maximum depth of 12m because of the slightly aggressive planned dive profile which included two alternate source ascent exercises. The group descended to 9m and carried out the two lift exercises to the surface, re-descended and went for an exploratory dive but the maximum depth reached by the group was 16m. This was due to the instructor forgetting the dive manager's brief and working from a training slate with a maximum depth of 15m indicated for the training dive. They ascended to carry out mask removal and replacement exercises at 6m where they also carried out a 3 min safety stop before surfacing with a dive duration of 25 min. Again the divers were cold and the instructor had to assist the trainees to remove their fins. The divers had a hot drink and food on site and then returned home. Later that evening the assistant dive manager contacted the instructor asking if she had any symptoms of DCI as she had taken one of the trainees, who had a pain in his hip, to a hyperbaric chamber. The doctor at the chamber confirmed it was possible DCI; the trainee had been admitted and given recompression treatment which resolved his symptoms. He was discharged but told not to dive for twenty-eight days. The instructor, the other trainee and the rescue diver suffered no ill effects.

February 2016 16/043

An instructor and two trainees carried out a training dive. One of the trainees was wearing a semi-drysuit, the instructor and other trainee were in drysuits. The group descended to 6m where they spent 15 min swimming around as it was the first dive of the year for all of them. They then carried out regulator removal and recovery exercises and controlled buoyant lifts. The trainees ascended too fast on the lifts so they repeated them and carried out five in total. The trainee in the semi-drysuit started feeling cold in the water temperature of 6 deg C so the group surfaced and he was handed over to the shore cover. The instructor and remaining trainee continued the lesson with another three controlled buoyant lifts being carried out including one to the surface. The divers re-descended to 6m and then to 17m. They began their slow ascent and reached 12m at which point the trainee had a complete loss of buoyancy control resulting in a very fast ascent to the surface. The trainee gave the instructor an 'OK' signal from the surface and the instructor ascended at a normal rate but missed a safety stop. Because of the fast ascent and multiple lift exercises the instructor decided they should not do a second dive. That evening the instructor began to feel uncomfortable with a headache and some weakness in his arms. The trainee did not have any symptoms so the instructor put his symptoms down to a mild cold and lack of sleep from the night before. The following morning the instructor felt fine but during the afternoon he experienced another onset of the symptoms but this time with some sweating and a stomach ache but thought this might be due to a cold. The next day he felt well again but the symptoms came back and worsened. The instructor self administered oxygen for thirty minutes which eased the muscle pain in his right arm. He called the trainee who told him that she was experiencing some 'weird' feeling in her fingers and toes and admitted that she had felt this during the evening after the dive but ignored it. After a consultation with a hyperbaric chamber the instructor and trainee were admitted for recompression treatment which fully resolved all their symptoms.

February 2016 16/036

A diver on a boat dive developed DCI symptoms of a headache, pain in an elbow and a rash following a rapid ascent from a wreck. The maximum depth of the dive was 28m with a dive duration of 17 min. A lifeboat, with a doctor experienced in working with divers aboard, took the diver and her buddy back to shore and the diver was taken by ambulance to a recompression chamber for treatment. (Coastguard & RNLI reports).

February 2016 16/044

An instructor and two students carried out two training shore based dives. The first dive was to a maximum depth of 18m with a total dive time of 20 min including a 3 min safety stop at 5m. After a 1 hour 45 min surface interval the group descended to

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6m. They carried out two controlled buoyant lift exercises to approximately 3m then each student completed the lift to the surface with a 6 min surface interval between the lifts during which they practised in-water rescue breaths. The lifts were reported as being controlled but a bit faster than a normal ascent. Their overall dive time was 11 min. They then carried out surface tows and landing a casualty exercises. The following day one of the students attended a hyperbaric chamber with DCI symptoms and received recompression treatment.

February 2016 16/053

A diver and his buddy had carried out three shore dives. The first was to a maximum depth of 6m followed by a surface interval of 1 hour 20 min before the second dive to a maximum depth of 11m for a dive time of 13 min. After a 1 hour 30 min surface interval the pair carried out the third dive to a maximum depth of 20m for an overall dive time of 32 min. All the dives were within computer limits with no fast ascents and both divers felt fine at the end of the day. They both returned to a friend's house and during the evening the buddy began to complain he was very tired so went to bed. In the morning the buddy was still very tired and walked back to his own home but on the way felt his left leg was a lot weaker than the right and he started to have lower back pain. He called the diver who went round to the buddy's home and decided that something wasn't right. They contacted another diver who advised they should speak to a divers' medical helpline. The helpline deduced that the buddy might have DCI and contacted a hyperbaric facility. The diver who had been contacted for advice drove to the buddy's home with an oxygen kit and took both divers to the hyperbaric facility. The buddy received recompression treatment which resolved his symptoms and he was advised to have a check up a month later.

March 2016 16/196

A diver with suspected DCI following a dive to a maximum depth of 28m was airlifted from a shore diving site to a recompression chamber. (Coastguard report).

March 2016 16/054

The Coastguard was contacted regarding a diver who was suffering symptoms of DCI, following a boat dive on a wreck. A lifeboat was called to the scene and transferred the diver to an ambulance which took her to a hyperbaric chamber. It was reported by another diver on the same dive site that the diver was part of a dive group and was concerned about a rapid ascent from a wreck dive. It was reported she had an ache in her shoulder that evening but didn't do anything about it. The following day she had a rash which was generally red and hot. The diver was put on oxygen and she appeared to improve. A hyperbaric chamber was contacted and they had requested the lifeboat to transfer the diver to them where she received recompression treatment. (RNLI & media reports).

April 2016 16/082

An instructor and her student carried out a morning shore based training dive. They swam out to a wreck marker buoy and, as the student had previously mentioned that he needed to descend slowly to equalise his ears, they made a slow descent down the shotline. The student stopped every couple of metres indicating he had ear problems but at each stage they cleared and the divers continued their descent reaching the bottom of the shotline at 18m. The planned exercise was use of a distance line and the instructor began to demonstrate its use but after approximately 5 min the student indicated he had an issue and wanted to ascend. The instructor reeled in the distance line and the divers slowly ascended the shotline carrying out a 3 min safety stop at 5m before surfacing with a dive duration of 18 min to a maximum depth of 18m. On the surface the student immediately started to vomit, said he was dizzy and feeling unwell. They remained on the buoy for a couple of minutes before returning to the shore. The student vomited several times during the swim back and, as the instructor had indicated to their shore cover that there was an issue, several divers were waiting in the water to assist in de-kitting and removing the student from the water. The student was taken to a first aid room where it was believed he had an inner ear problem. They did not think oxygen would help so none was administered. Later in the afternoon the student was still feeling sick and taken to a local hospital who contacted a hyperbaric chamber. The student was taken to the chamber and received seven hours of recompression treatment. He recovered enough to be discharged and was advised to consult a diving medical referee before diving again.

April 2016 16/096

A diver had organised and carried out ten sea dives over seven days of a week long training trip. He dived no deeper than 12m for the seven dives he carried out over the first five days. On the sixth day he dived to a maximum depth of 16m for a dive duration of 29 min and a dive to a maximum depth of 29m for a dive duration of 28 min. On the seventh and last day of the trip the diver carried out an afternoon depth progression shore dive to a maximum depth of 36m for a dive duration of 31 min. The following day, approximately twenty-four hours since the last dive, he travelled home over a hilly route and felt unwell. He arrived home and later that evening attended an A&E department where he was seen by a diving doctor and DCI was confirmed. During the early hours of the next morning the diver was airlifted and transferred by ambulance to a hyperbaric chamber where he received six hours of recompression treatment. After a follow-up appointment the next day the diver was discharged and returned home. He later had an echocardiogram which showed evidence of a PFO and was referred for a full diving medical.

April 2016 16/072

A diver on a drysuit training course had carried out two shore dives with her instructor and another student. The water temperature was around 7 deg C. The first dive, practising drysuit skills including inversion recovery, was to a maximum depth of 16m with a dive time of 37 min including a 3 min safety stop. The diver noticed both her hands were considerably swollen after the dive and her instructor confirmed that this was a result of her tight wrist seals and would subside with time. Following a 2 hour 41 min surface interval, during which the diver had lunch and rehydrated, the second dive included carrying out two buoyant lifts from 10m to the surface followed by an exploratory dive to 25m with a 3 min safety stop at 5m. The first lift had activated the diver's computer ascent alarm over the last 5m and the diver noticed the instructor had grabbed onto her from below to try and slow the ascent. The second lift was controlled to the surface and the group then swam to a marker buoy and descended to a maximum depth of 25m. The diver surfaced with a dive time of 34 min. Her hands were still swollen and again the instructor re-assured her that he had previously experienced the same thing and the swelling would subside in a few days. The diver returned home and that evening, around four hours after surfacing from the last dive, she noticed a mild ache in her left shoulder. The following day her hands had returned to normal although the diver felt tired, unwell and her left arm ached. The next day the diver awoke with a numb left hand and forearm but after getting up the feeling returned to her arm although it still ached. She contacted a hyperbaric helpline and the doctor strongly suspected DCI and requested that the diver attend a recompression chamber as soon as possible. The diver was diagnosed with DCI and received treatment. The doctor attributed the DCI to the rapid ascent during the second dive and noted that the cold water temperature and tight wrist seals may also have been predisposing risk factors.

April 2016 16/199

The Coastguard was called by a dive boat after a diver surfaced having missed his decompression stops, had been placed on oxygen and had 'tingling' in his face. His maximum depth was 33m with a dive duration of 47 min. The diver's buddy completed his safety stops. The diver was airlifted to a hyperbaric chamber. (Coastguard report).

April 2016 16/200

The Coastguard received a call from a dive boat who reported a diver had made a rapid ascent. The diver was conscious and on oxygen and showed no symptoms. Her maximum depth was 21m with a dive time of 30 min. The dive boat travelled to a marina where a Coastguard helicopter evacuated the diver to a hyperbaric chamber. (Coastguard report).

May 2016 16/071

The Coastguard received a 'Pan Pan' call from a dive boat which reported that one of its divers required urgent medical assistance following a rapid ascent from 48m and was showing symptoms of DCI and bleeding from the mouth. A Coastguard helicopter headed to the scene where they airlifted the diver to shore and he was transferred to an ambulance and taken to a recompression chamber. (Coastguard report).

May 2016 16/079

Two divers carried out a drift dive from a RHIB and surfaced after 19 min to a maximum depth of 20m. They immediately advised they had been unable to maintain buoyancy due to being under-weighted, had made uncontrolled ascents from 13m and missed their 3 min safety stop at 6m. They were recovered aboard the RHIB and neither of their computers 'locked out' but, after a few minutes, one of the computers displayed a fast ascent warning. Neither diver showed symptoms of being unwell but medical advice was sought and, after speaking to both divers, advised that they be placed immediately on oxygen and transferred to the nearest hyperbaric chamber. Both divers received precautionary recompression treatment for four and a half hours.

May 2016 16/088

A diver using nitrox 28 had completed a boat dive on a wreck to a maximum depth of 30m for a dive duration of 42 min including a 5 min decompression stop at 6m. After a surface interval of 3 hours 30 min the diver using nitrox 31 and her buddy using nitrox 32 carried out a second wreck dive to a maximum depth of 32m for a dive duration of 39 min including a 3 min safety stop at 4m. Ten minutes after surfacing the diver had acute back pain followed by numbness and 'tingling' from the waist down and she was also dizzy. She was immediately put on oxygen and a local recompression chamber contacted. The dive boat returned to port where a waiting ambulance took the diver to the chamber where she was diagnosed with spinal DCI and given recompression treatment. The diver was re-assessed the following morning and had no apparent after effects.

May 2016 16/119

A buddy pair, one using nitrox 36 and the other nitrox 32, carried out a RHIB dive on a wreck. The divers descended to the bottom of the shotline at 26m at which point the console of one of the divers became caught in the wreck. As the diver attempted to free the console one of her fins also became snagged and she began a buoyant ascent in the reduced visibility. The diver surfaced at the end of a fast buoyant ascent and felt short of breath with some chest pain. The buddy had followed the diver to the surface at a slower ascent rate. Their dive time was around 4 min to a maximum depth of 26m. A hardboat on the same wreck site indicated to the RHIB that two of their divers had surfaced. When the RHIB arrived and were told of the fast ascent the diver was de-kitted in the water as the cox'n called the Coastguard. Aboard the RHIB the diver was given oxygen and the Coastguard dispatched a helicopter which arrived thirty minutes later during which time the diver had become extremely cold despite wearing a drysuit. The buddy pair were transferred to the hardboat for the helicopter lift and flown to shore where they were taken by ambulance to a hyperbaric chamber. Following assessment at the chamber the diver was given five hours of recompression treatment but none was required for the buddy.

May 2016 16/112

For their fourth and final boat dive of a training weekend an instructor using nitrox 32 and assistant instructor using nitrox 36 were each buddied with a trainee using air. The dive prior to this had been to a maximum depth of 8m for a dive time of 29 min and included controlled buoyant lift drills from 6m involving three ascents to the surface. After a surface interval of 3 hr 30 min, the fourth dive was to a wreck at a maximum depth of 12m and the four divers planned to stay together in their two buddy pairs. The assistant instructor entered the water first and was to be followed by the two trainees and the instructor in last but, due to some confusion on the approach to the shotline, the assistant instructor jumped off the boat too soon and had to be recovered to the boat. She was assisted with a buoy being thrown on a line to give her a tow back to the boat. Once all the divers had entered the water they carried out their dive, in poor visibility at times, and had a gentle swim around the wreck. At the end of the dive the instructor deployed her DSMB for the trainees to use as a guide line and ensure the group stayed together. They completed a 2 min safety stop at 6m and a 1 min stop at 2m to carry out a low gas contents buoyancy check. The divers surfaced with an overall dive time of 28 min but needed to swim away from a harbour wall and against a current for their boat to pick them up. The boat threw out the buoy on the line and all four divers held on to it. The assistant instructor and her trainee were at the end of the line but due to the speed of the tow they lost their grip and had a hard swim back to the boat. A few hours later the assistant instructor reported that her hands were swollen and was told to keep an eye on them but a while later they were more swollen and she called a diving doctor. She was advised that it was possible DCI and to go to a hyperbaric chamber for assessment. The chamber confirmed the assistant instructor had lymphatic DCI and she received recompression treatment.

May 2016 16/085

An instructor was carrying out shore based training dives with a group of six divers on a hot and sunny Sunday. The first dive was to a maximum depth of 10m which included mask clearing at 6m, an exploratory dive to 10m, ascent to 6m and alternate source ascents from 6m to the surface with a dive duration of 35 min including a safety stop of 4 min at 5m. The surface interval was 120 min during which the instructor's 'O' ring blew out twice whilst he changed cylinders. He decided to change his regulators from an A clamp to a DIN fitting which also meant changing his drysuit inflator valve. One of the trainees in the group tore a wrist seal and just as the group were about to enter the water for the second dive another seal was torn necessitating a change in drysuit. Because of the stressful situation the instructor decided to carry out an exploratory depth progression dive with no training skills to a maximum depth of 16m. 25 min into the dive one of the trainees started to have a panic attack and her buddy ascended with her. The instructor signalled to the remaining four divers to ascend. The panicked diver did not have a fast ascent which was supported by her buddy's computer readout and they completed a 5 min safety stop at 6m before surfacing with a dive time of 30 min to a maximum depth of 16m. The divers left the site but driving home the instructor had 'pins and needles' on the inside of his right arm which he put down to

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travelling with his hand in the same position. As a precaution the instructor self administered oxygen for an hour which resolved the 'pins and needles'. The instructor went to work on the Monday feeling tired which he put down to exertion. The trainee who had the panic attack contacted the instructor on the Tuesday evening complaining of extreme tiredness and he advised her to contact a hyperbaric chamber for advice. The trainee was diagnosed with DCI and had three sessions of recompression treatment. When the instructor woke up on the Thursday morning he had 'pins and needles' in his feet and hands. He contacted the hyperbaric chamber, was diagnosed with DCI and underwent three sessions of recompression treatment.

May 2016 16/093

Three divers planned a boat dive to a wreck at approximately 30m and with a maximum decompression stop of 5 min. The plan was to descend on the shotline and return to it for their ascent upon reaching either 100 bar or when one of their computers indicated a 1 min decompression stop. When the divers reached the wreck the visibility was poor making it challenging diving for the group of three. They did not venture very far and when one of the divers reached the agreed 1 min decompression stop on her computer she indicated to her two buddies to return to the shotline. Unable to locate it the diver deployed her DSMB and had 2 min of decompression indicated. One of the buddies decided to deploy his own DSMB and this delayed the group's ascent increasing the diver's decompression time to 4 min. The diver ascended with one buddy on her DSMB and the other buddy using his own but they could see each other. At 9m the diver discovered that the two DSMB lines had become tangled so she stopped to untangle them. Whilst doing this the diver was trying to maintain buoyancy and, once the lines were freed, she had quite a lot of line out so had to reel it in before ascending to the decompression stop. She now had 10 min of decompression indicated at 3m. The diver ascended to 4m to carry out an 11 min decompression stop but after 1 min found herself floating up to 2m. She returned to 4m but was still buoyant and unable to vent air quickly enough from her drysuit; she surfaced with a dive duration of 37 min to a maximum depth of 30m. The diver gave the distress signal to the boat which picked her up. The diver's buddy sent up his DSMB to enable him to complete his decompression stop. The diver was put on oxygen and on return to shore contact was made with a hyperbaric chamber who asked the diver to attend. There the diver underwent a series of tests and it was decided she should receive recompression treatment as a precaution. Following the treatment the chamber doctor decided that the diver had not suffered DCI.

June 2016 16/104

The Coastguard had received a call from a dive boat with a diver suffering DCI. The diver was reported to have numbness in their fingers following a dive to a maximum depth of 30m for a dive duration of 40 min. A helicopter was deployed and airlifted the diver to hospital. He was then transferred by ambulance to a hyperbaric chamber for recompression treatment. (Coastguard report).

June 2016 16/206

A dive boat contacted the Coastguard reporting a diver presenting symptoms of DCI following a dive to a maximum depth of 38m with a dive duration of 45 min. The boat proceeded to harbour where the diver was transferred to an ambulance and taken to hospital. (Coastguard report).

June 2016 16/105

A group of divers had been diving from a charter boat when one of them had made a fast ascent and was vomiting blood. She was treated for DCI aboard the boat by one of the other divers who was a doctor and the Coastguard called. The diver was transferred to a lifeboat where her condition improved considerably while being treated by the crew. A helicopter arrived and the diver was airlifted to a recompression chamber. (Coastguard & RNLI reports).

June 2016 16/135

A trainee, his buddy and their instructor carried out a shore training dive. They started with a buoyancy check at 3m which resulted in needing to surface for a little more weight. The divers descended to a 6m platform and as the trainee carried out a drysuit inversion recovery skill his cylinder hit the platform causing a loss of momentum. The inversion was corrected but the trainee ascended to just below the surface. As the ascent had been further and quicker than he would have liked the trainee decided to surface to catch his breath. The instructor and buddy surfaced and they all swam back to shore and took a short break floating on the surface. Following the trainee's quick ascent it was decided not to attempt the exercise again but carry out a depth progression dive to a maximum of 10m. At around 9m the trainee drifted up slightly from his instructor and started to dump air but was unable to make himself negatively buoyant. He made an uncontrolled ascent, missed a safety stop and surfaced with a dive duration of 26 min to a maximum depth of 9m. The trainee waited on the surface for the instructor and buddy to surface and it was decided to abort the dive and for the trainee not to carry out a second dive that day. Later that evening the trainee had pain in his back and a slight pain in his right shoulder and wrist. As the right side of the trainee's body in particular was affected by cerebral palsy, his back, shoulder and wrist pains were rare but not unheard of regardless of activity level but, combined with feeling particularly tired and the dive's saw-tooth profile, he decided later than evening to call a hyperbaric chamber. It was agreed that it would be best to wait until the next morning to see what affect sleep had on his tiredness and pains. There was little change the following morning and the trainee went to the chamber. No firm diagnosis was reached due to the complex nature of the trainee's symptoms but he was given six hours of recompression treatment. Although feeling more himself he still had the pains as before although to a lesser extent. He had three further sessions of treatment over the next three days and the pains reduced each day.

June 2016 16/106

A diver with suspected DCI, his dive buddy and dive master were all taken aboard an inshore lifeboat from their dive boat. The group were then transferred to an all weather lifeboat which liaised with a helicopter and the diver with suspected DCI was airlifted to a hyperbaric chamber where he underwent recompression treatment. (Media report).

June 2016 16/114

Two divers, one diving twin independent 12 lt cylinders with air and the other diving a 15 lt cylinder with nitrox 32 and a 3 lt pony, carried out a hardboat dive to a wreck in 30m. At 26 min the divers began their controlled ascent on the shotline and completed a 5 min stop at 5m and a 3 min safety stop at 4m. They were recovered by the hardboat, de-kitted and had a hot drink. Approximately five minutes later the air diver complained of pain in his left upper arm and two minutes later indicated that he did not feel well. His buddy informed the skipper and the diver was put on oxygen but shortly after began to vomit and complained of dizziness. Another diver aboard the boat was a hyperbaric nurse and she took over monitoring and recording the diver's condition and completed a full body check for further symptoms. Because of the left arm pain and no obvious reason for DCI based on the dive profile the concern was that there could be a cardiac problem. The nurse contacted a doctor at a hyperbaric chamber and the skipper called the Coastguard to

notify them of the problem. The decision was made to send a helicopter and the diver was airlifted to the chamber where he received recompression treatment over four days. The diver was diagnosed with a vestibular DCI in his left inner ear possibly caused by a PFO so he was due to undergo further tests.

June 2016 16/125

A diver carried out a hardboat dive to a maximum depth of 21m for a dive duration of 46 min. After the dive the diver complained of a severe headache and felt nauseous. The boat skipper administered oxygen and contacted the Coastguard. The diver reported that her headache had decreased whilst on oxygen. A lifeboat attended and a helicopter evacuated the diver to a recompression chamber. The diver was given recompression treatment and discharged the following morning but with the advice to undergo tests for a possible PFO and not to dive until this had been completed.

June 2016 16/127

A diver had carried out three boat dives over a weekend. The first dive on the Saturday was to a maximum depth of 18m for a dive time of 44 min and the second to a maximum depth of 20m for a dive time of 37 min. On the Sunday the diver and his buddy carried out a dive to a wreck and reached a maximum depth of 24m. As the diver inflated his DSMB at 23m for the ascent his weightbelt fell off and he made an uncontrolled buoyant ascent from 22m to the surface. This took less than a minute and the diver surfaced with a dive time of 25 min and a missed safety stop. His buddy surfaced normally having carried out his safety stop. Back aboard the boat the diver reported tingling in the fingers of both hands and was immediately put on oxygen and the Coastguard alerted. The dive boat started to return to harbour and was met by a lifeboat. Two of the lifeboat's crew boarded the dive boat, assessed and monitored the diver. Apart from the tingling in his hands the diver seemed to be stable. Back in harbour an ambulance met the dive boat and the diver was transferred to a hyperbaric chamber. The diver was assessed and due to the rapid ascent, the missed safety stop and tingling in his fingers he received recompression treatment. The diver remained symptom-free after the treatment and during a telephone review with the diving doctor the next day but he was advised not to dive for four weeks nor to fly in the next seventy-two hours.

June 2016 16/208

The Coastguard received a 'Pan Pan' call from a dive boat with a diver suffering from suspected DCI. The diver had been diving on a wreck to a maximum of 60m for a dive duration of 180 min. As the dive boat headed back to port a helicopter evacuated the diver and he was taken to a recompression chamber. (Coastguard report).

July 2016 16/120

Three divers carried out a hardboat dive and, after a steady descent, swam along a rock face to a reef and descended to their maximum depth of 17m. Approximately 25 min into the dive one of the three indicated that his dive computer was not working but the two buddies computers had no stop time left. Towards the end of the dive one of the buddies deployed his DSMB from 16m and they ascended gradually to carry out a 3 min safety stop at 6m. The ascent from 6m was steady but the diver with a failed computer ascended slightly faster from 3m and surfaced with an overall dive time of 40 min. On the surface the diver displayed signs of confusion and disorientation so one of the buddies supported him on the DSMB until the hardboat arrived and both buddies helped him onto the hardboat's lift and back aboard the boat. The diver was still displaying signs of confusion and dizziness, he lay down and oxygen was administered. He explained that he had had a momentary dizzy spell that cleared at 16m just before the ascent. This had worried him and when the dizziness returned and remained when he was at around 3m he made his slightly fast ascent to the surface. The Coastguard was contacted and the buddies stayed with the diver who complained of a bad headache and tingling in his left jaw. With other divers recovered the hardboat headed back to shore. Back in harbour the diver's headache got worse before the ambulance arrived but he could feel all his extremities and his vision and hearing appeared normal. The diver was kept on oxygen and taken by helicopter to the chamber. The diver received recompression treatment with a suspected CAGE and vestibular DCI. He was advised to have a bubble echocardiogram to rule out a PFO and also advised to have an ENT consultation to rule out ear barotrauma or any other medical causes for his vertigo at 16m as he had been seen by an ENT doctor a month prior to the incident for tinnitus and hearing loss in his left ear.

July 2016 16/156

Two divers had completed a shore dive to a maximum depth of 22m for a dive duration of 34 min including a 3 min safety stop. They exited the water and walked to their vehicle in a car park when one of the divers felt his left arm go numb and he felt 'wobbly' in general. On being checked at a first aid station the diver's left arm and hand were not functioning and he had no feeling when his hand was squeezed. The diver was put on oxygen and his hand function returned after five minutes. The diver had no joint pains but his arm, now fully functional felt 'heavy after twelve minutes on oxygen. No other injury was seen but an ambulance had been called.

July 2016 16/212

The Coastguard received a call from a dive boat with three divers who had made a rapid ascent. It was reported that the divers had made an ascent from a maximum depth of 30m to 10m, descended back to 26m from where they made a rapid ascent to the surface. Two of the divers were using nitrox 32 and the third diver, using air, had been put on oxygen. A rescue helicopter airlifted the divers ashore where an ambulance transferred them to a hyperbaric chamber. (Coastguard report).

July 2016 16/116

A Coastguard helicopter was called out in response to a distress call involving three divers who had experienced a rapid ascent from 26m with one of them showing signs of DCI. The divers were airlifted ashore and transferred by ambulance to a recompression chamber for further checks. (Media report).

July 2016 16/117

A diver became ill with chest pain and breathing problems on a dive boat after surfacing from a dive. The dive was reported to have been to a maximum depth of 19m with a dive duration of 45 min but the diver had made an uncontrolled ascent from 12m. The dive boat contacted the Coastguard saying the diver required medical assistance and they also requested additional oxygen. The dive boat headed for shore and a lifeboat was launched. On arrival in port the lifeboat crew boarded the dive boat and gave medical assistance to the diver including oxygen and monitored her condition while a diving doctor was giving them advice by phone. A rescue helicopter had been alerted but after some time this was cancelled with the decision to send a road ambulance to the site. The road ambulance crew who attended requested an air ambulance and a doctor with a view to taking the diver to hospital. However, when the air ambulance arrived the doctor aboard decided to fly the diver directly to a recompression chamber. (Coastguard & media reports).

July 2016 16/253

A diver was diving from a liveaboard boat on a diving holiday. On the first day she had conducted a single dive. On the second day

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of her trip she conducted a dive to a maximum depth of 26m for a total duration of 41 min. On the third day she completed a first dive to a maximum depth of 35m and a total dive time of 24 min including stops at 6m for 5 min. After a surface interval of 184 min the diver completed a dive to a reef to a maximum depth of 24m and a total dive time of 42 min. The dive had been completed well within her computer's limits and she and her buddy had ascended before incurring mandatory decompression stops. After returning to the liveaboard the diver reported experiencing visual disturbances including multiple images through one eye as if through a kaleidoscope. On inspection small bubbles could be seen in her pupil. She was placed on oxygen but displayed no other symptoms at the time. The diver dives with gas permeable contact lenses. A hyperbaric medical unit was contacted for advice and they recommended the diver's condition be monitored. After a few hours the bubbles disappeared and no further symptoms were experienced.

July 2016 16/118

A diver, using nitrox 32, and his buddy carried out a boat dive on a wreck lying in 33m and standing around 6m high. The divers descended the shotline and reached 33m in around 4 min. The grapple had hooked into a small piece of wreckage around 5m from the wreck so the diver lifted and carried it to the wreck to secure it in approximately 29m. The divers clipped a distance line to the shotline and explored the wreck. There was some fluctuation in depth with the shallowest point reached around 26m and the divers returned to the shotline and unclipped the distance line. At this point the diver's computer indicated he had 7 min of stops to carry out. The pair carried out a very slow ascent and the diver's computer was clear of stops at 8m. The pair ascended to 6m and carried out a 3 min safety stop before surfacing with a dive time of 45 min to a maximum depth of 33m. Back aboard the boat the divers assisted others back into the boat, assisted with lifting the grapple and the boat returned to shore. The diver got out of the boat to steady it for recovery at which point he felt a numbness and 'pins and needles' in his legs from his buttocks down to his feet but otherwise felt fine. He made his way out of the water, lay on his back and was given oxygen and the Coastguard called. After around twenty to thirty minutes the feeling returned to the diver's legs and he was able to get out of his drysuit without assistance. He remained on oxygen until a helicopter arrived to take him to a recompression chamber. The diver now felt back to normal and had no symptoms or pain during his assessment at the chamber and his blood pressure, pulse, temperature and ECG were all normal. It was decided to give the diver recompression treatment for four hours and forty-five minutes. Following this, not having had any pain or issues whilst in the chamber and after the treatment was completed, the examining doctor was happy for the diver to return home.

July 2016 16/213

The Coastguard received a call to assist four divers who had been located by a vessel. These divers had been reported seventeen minutes overdue from a wreck dive to 29m by their dive boat. The dive boat confirmed the divers, who went down a shotline, should have deployed DSMBs but none were seen. Two other divers had seen them on the wreck as they started to ascend. Two of the divers appeared to be suffering from DCI and were airlifted by rescue helicopter to shore where they were met by an ambulance and transported to a hyperbaric chamber. (Coastguard report).

July 2016 16/215

The Coastguard received a call from a dive boat reporting a diver with suspected DCI. The diver was reported to have carried out a dive to a maximum depth of 30m with a dive duration of 25 min. The diver was landed ashore where he was taken by ambulance to a hyperbaric chamber for treatment. (Coastguard report).

July 2016 16/128

A buddy pair, using nitrox 32, carried out a boat dive to a wreck. They descended on a slack tide to a maximum depth of 33m and remained between this and 31m until one of the divers' computer indicated 1 min of no stop time left. The pair ascended to 25m, deployed a DSMB and slowly ascended to 5m where they carried out a 3 min safety stop and surfaced with a total dive time of 36 min. Back aboard the boat and after he had de-kitted the diver felt slightly seasick and vomited a little which he said was normal for him. After ten minutes he felt numbness in his feet and then a headache at the back of his head on the right side. The skipper was alerted and contacted the Coastguard. The diver was told to lie down and oxygen was administered which resolved his headache but he still had numbness, mostly on the right hand side, in his feet and then his hands. The boat returned to the nearest harbour where the local Coastguard was waiting and an ambulance arrived thirty minutes later. The ambulance was going to transfer the diver to hospital but on his insistence and the ambulance checking with their control centre, it took him to a hyperbaric chamber. The diver now felt very cold, his legs and arms were numb and he felt very weak. He received two sessions of recompression treatment which resolved all his symptoms.

July 2016 16/217

A lifeboat was tasked to meet up with a dive boat that had reported a diver aboard displaying symptoms of DCI following a dive to a maximum depth of 32m with a dive duration of 29 min. His symptoms included dizziness and abdominal pain which reduced when the diver was put on oxygen. On the advice of a diving doctor the lifeboat evacuated the diver to a lifeboat station. An ambulance transferred the diver to a hyperbaric chamber. (Coastguard & RNLI reports).

July 2016 16/130

The Coastguard was informed by a hyperbaric chamber that a diver suffering from DCI was going from the hardboat she had been diving off to a local GP's surgery and needed to be transferred to the chamber. The casualty was airlifted to the chamber. She had been diving, using nitrox, from the hardboat and completed her eleventh dive of the week to a reported maximum depth of 20m for around 60 min. Back aboard the hardboat she had acute pain in her right hand which improved with oxygen but worsened when she came off the oxygen. (Coastguard report).

July 2016 16/131

It was reported that a diver aboard a motor cruiser, some 12 miles offshore, had dived to around 61m for 38 min and became ill when he surfaced. The Coastguard was contacted and a lifeboat deployed while a rescue helicopter had also been tasked and was on its way. With radio medical advice from a hyperbaric chamber, the lifeboat crew were requested to give medical care to the diver until the helicopter arrived. The lifeboat crew were put aboard the cruiser and the diver found to be very poorly and his condition caused some concern. He was given oxygen and carefully monitored. On the arrival of the helicopter the diver was transferred to the lifeboat and airlifted to a hyperbaric chamber for treatment. There was no further update on the diver's condition. (Coastguard, RNLI & media reports).

July 2016 16/221

The Coastguard was called regarding a diver on a hardboat who required an ambulance to meet the boat to transfer him to a hyperbaric chamber. The diver was on a hardboat diving trip and was on day three of a diving trip. He had carried out two dives on the first day and two dives on the second day. The dive on the third day was to a maximum depth of 39m for 30min and he had surfaced with a 'spectacular' rash on his chest. (Coastguard report).

July 2016 16/222

A dive boat called the Coastguard at 19:09 to report a diver with DCI symptoms which had started about 11:00 that morning following a dive to a maximum depth of 64m with a dive duration of 105 min. The diver had a sore elbow and dull ache in his shoulder. A hyperbaric chamber was contacted and the Coastguard advised that getting the casualty into a helicopter would cause more damage than good. It was requested the situation be monitored through the evening in case the symptoms got worse. (Coastguard report).

August 2016 16/225

A dive boat called the Coastguard requesting medical advice for a diver showing symptoms of DCI. A dive doctor advised that the diver be evacuated by helicopter to hospital. (Coastguard report).

August 2016 16/224

The Coastguard received a call from a dive boat to report a diver on the surface suffering from chest pains. The diver had carried out an air dive to a maximum depth of 34m for 36 min. An ambulance was requested to meet the dive boat at a nearby pier and the diver was transferred to a recompression chamber. (Coastguard report).

August 2016 16/226

A dive boat issued a 'Pan Pan' with a diver displaying symptoms of DCI. The dive boat was heading back to harbour but had contacted a hyperbaric facility who recommended evacuation of the diver by ambulance. A lifeboat was tasked to meet the dive boat and the diver and buddy were taken ashore to a waiting ambulance and taken to the chamber. (Coastguard & RNLI reports).

August 2016 16/228

The Coastguard received a call requesting evacuation of a diver who was suffering from signs and symptoms of DCI. The diver had carried out a dive to a maximum depth of 37m for a dive duration of 30 min. A rescue helicopter was tasked to airlift him to a hyperbaric chamber for treatment. The diver received treatment with a follow up review by the duty dive doctor the day after. (Coastguard report).

August 2016 16/283

A diver completed a training dive to a maximum depth of 40m completing all required drills and following the planned dive profile. Due to the warm conditions at the surface, all students had been advised to drink plenty of water in-between dives, enter the water from the pontoon before kitting up in order to stay cool and on getting out of the water rest, seated before de-kitting. Following the dive the diver had returned to his car and, after stripping his kit down, the diver became lightheaded and was advised to sit down and rest. His symptoms at this time were fatigue and vertigo, which initially were suspected to be due to heat exhaustion. After around 5 min of rest, with no improvement, the diver was reclined in his car with the air conditioning on to cool down and given oxygen. After a further 5 min the diver's condition had not changed and a recompression chamber was called for advice. After another 20 min it was decided that the best action was to take the diver direct to the chamber, together with his buddy and a certified assistant with the oxygen kit. The diver arrived at the recompression chamber in approx 90 min and was given recompression treatment for 6 hours and then sent home. Still feeling unwell, after reaching home, the diver was admitted to his local hospital for further tests. He was then taken back to the chamber for further treatment and then back to hospital.

August 2016 16/284

Following a training dive to a maximum of 6m the previous day, a trainee diver complained that she had 'pins and needles' and aching in her arms. She presented herself to a recompression chamber where she received three chamber treatments after which she had no residual symptoms and was advised that she could dive again after four weeks.

August 2016 16/145

A diver and his buddy carried out two hardboat dives. The first dive was on a wreck to a maximum depth of 32m and a dive duration of 47 min including an 11 min decompression stop at 3m. During the stop the buddy ran out of air and completed the dive on the diver's alternate source. After a surface interval of 1 hour 22 min the pair carried out their second dive on a wreck to a maximum depth of 20m for a dive duration of 47 min including a 3 min safety stop. Back aboard the hardboat and approximately twenty minutes after surfacing the diver began to feel itchy on his right arm but didn't feel the need to tell anyone. Back in harbour the diver carried his kit to the end of a pier and ran to get his car as the pier was due to close. He packed his car and with a fellow diver as a passenger he began to drive back to his dive group's accommodation when he started to feel a pain in his right arm. He told his fellow diver about the pain and, suspecting DCI, the fellow diver put him on oxygen from a rebreather and called a local hyperbaric chamber. The chamber called the Coastguard who organised an ambulance to transfer the diver to the chamber. After twenty minutes the oxygen from the rebreather ran out so the diver was given nitrox 50 and after twenty minutes the diver reported that the pain in his arm had started to decrease but he still felt pain with a loss of feeling in his arm. The ambulance arrived, checked the diver and put him on oxygen. When the diver arrived at the chamber he was diagnosed with DCI and received one session of recompression treatment. After the treatment the diver's symptoms had disappeared and normal feeling in his arm was restored.

August 2016 16/229

A diver called the Coastguard for advice. She been diving the day before but was starting to suffer DCI symptoms. The Coastguard connected the call with a dive doctor who advised the diver to attend a hyperbaric chamber which she did. (Coastguard report).

August 2016 16/149

A dive group consisted of two instructors, a qualified diver and a student. The lead instructor made sure the group was ready and started the descent. At around 3m the instructor signalled to check if everyone was OK. The descent continued. The student was close to the instructor. The qualified diver and the second instructor started to drop behind. The qualified diver then swam under the second instructor as if to try and catch up to the others but then stopped. The depth was 14m. The diver started ascending, signalled 'something is wrong' and pointed to his ears. By this time the lead instructor and student were out of sight. The troubled diver was ascending and the second instructor followed. The diver gave again the signal 'something is wrong' and pointed to his ears. The second instructor gave the signal to ascend. The second instructor's computer indicated 10m. Then the student reached for his BCD inflator, pushed the button and started a buoyant ascent. He was quickly out of view. When the second instructor reached the surface the diver was 3m away and the second instructor asked if he was OK? He replied "yes - they were going down too fast and I couldn't equalise my ears". The shore was approximately 15m away. The dive supervisor on the shore was concerned and looking for the lead instructor and student diver on the surface, but they were not visible. The troubled diver had drifted around 15m from an exit point. The second instructor reached the diver and asked what was wrong? He said he didn't feel right. There was another

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diver there also ready to help. The second instructor towed the diver back to the shore and the staff at dive site directed them to an exit point. They asked the diver how he was and he again replied that he didn't feel right. The second instructor removed the diver's kit and towed him another 5m to the exit ladder. The diver climbed the ladder with difficulty and dive site staff took over his care while the second instructor swam to another exit point. The diver experienced problems with his leg, he was placed on oxygen, the emergency services were called and a helicopter and an ambulance attended the scene. It is believed that the diver was taken for recompression treatment. (This incident is linked to 16/285).

August 2016 16/147

An air ambulance was called to a lake location where a diver was suspected to be suffering from DCI. The helicopter's trauma team doctor assessed the diver and he was airlifted to a recompression facility. The flight took thirty-seven minutes and the diver was stable on his arrival at the chamber. (Media report).

August 2016 16/177

A buddy pair had carried out a shore dive to a wreck lying at approximately 30m. They had followed a large underwater pipe for a distance of around 400m and then a rope to the wreck in a steady cross current which had not caused significant exertion. During that dive a DSMB had been deployed and fixed near the wreck's bow to serve as a marker buoy for the next two planned dives. This would allow a surface swim rather than an underwater swim out to the wreck and give more time on the dive. As they were leaving the wreck one of the divers gave an OK signal and the buddy signalled that something was wrong. The buddy was monitored for any problems and, by the time they reached 15m, he was responding positively and the pair returned to shore. As a result of the dive the buddy decided not to dive again that day. It was decided that the diver with a new buddy, who had had a 2 hour surface interval since her first dive, would go in and retrieve the DSMB and return with no exploration of the wreck. The new buddy, using a rebreather, was not happy about the dive due to the long surface or underwater swim combined with a current. The pair entered the water and, due to a dive two days earlier which had aggravated her sinuses, the buddy decided to swim on the surface following the pipe then drop down to it at around 8m. The pair followed the pipe and rope to the wreck where they unclipped the DSMB and gradually returned back along the marked route with the diver reeling in the DSMB line. At about 25m the pair lost sight of each other. The buddy made a 360 deg search but was unable to locate the diver. By the time the diver reached 20m he still could not see his buddy. He considered ascending at this point but was still a long way from the shore and with a lot of loose DSMB line which could cause a hazard and being more exposed to the current if he surfaced, he took the decision to continue along the seabed winding the reel until he reached 10m and ascended. He surfaced with a dive duration of 34 min to a maximum depth of 30m having completed a required 1 min decompression stop. He signalled to the shore he was 'OK' and looked around for the buddy. Not seeing her he finned the remaining 150m to the shore and then noticed the buddy was back on shore. The divers confirmed everyone was 'OK' before they packed up and left the site. Shortly after the buddy experienced 'pins and needles' and went to hospital. After being assessed she was transferred by ambulance to a hyperbaric chamber and diagnosed with skin DCI. The buddy received recompression treatment and was discharged the following day. A few days later the diver's buddy from the first dive was diagnosed with middle ear DCI and given recompression treatment.

August 2016 16/158

Following a shore dive to a maximum depth of 24m for a dive duration of 53 min a diver was removing his drysuit when he complained of chest pains, had 'pins and needles' in his right leg together with numbness and weakness. The diver was taken to a first aid room where he vomited and was put on oxygen. No injuries were seen but when he came off the oxygen he still had 'pins and needles' and his left leg began to feel 'strange'. The diver was put back on oxygen but had pain in his chest and 'pins and needles' in his fingertips. An ambulance was called and the diver taken to a recompression chamber.

August 2016 16/231

A dive boat contacted the Coastguard to report a diver with DCI symptoms after a rapid ascent. The Coastguard made a connect call with a hyperbaric chamber who recommended evacuation. A rescue helicopter evacuated the diver to the chamber. (Coastguard report).

August 2016 16/232

A Coastguard rescue helicopter assisted a diver suffering from a suspected burst ear drum and possible DCI aboard a RHIB ten miles out to sea. The diver was airlifted to a hyperbaric chamber. (Coastguard report).

August 2016 16/233

The Coastguard tasked a rescue helicopter to recover a diver exhibiting DCI symptoms from a dive boat. The diver had aches and pains in his left arm following two dives. The first dive was to a maximum depth of 31m for a dive duration of 50 min and the second dive to 19m for 33 min. The diver had been put on oxygen but the pain had not gone and he was reported as being diabetic. The diver was airlifted ashore and met by a Coastguard rescue team, police and hyperbaric chamber personnel who took the diver to hospital. (Coastguard report).

August 2016 16/234

A Coastguard helicopter and ambulance were tasked to extract a diver with possible DCI from a hardboat berthed in a harbour. The diver had pains in his right shoulder and down his arm. He had been put on oxygen but was looking pale. The diver had the pain after his first dive but thought this was due to a previous dislocated shoulder injury. His second dive was reported to be to a maximum depth of 30m for a dive duration of 35 min. The diver was taken by helicopter to a hyperbaric chamber. (Coastguard report).

August 2016 16/287

A trainee diver completed two training dives, with a deepest depth achieved of 13m. Later that evening she experienced 'pins and needles' in her arms. During the night she awoke with shoulder pain and 'pins and needles' in her arms and legs. The next morning the trainee diver called the NHS helpline and they passed on the contact details of a recompression chamber. The trainee diver contacted the chamber and was told to attend and she received recompression treatment.

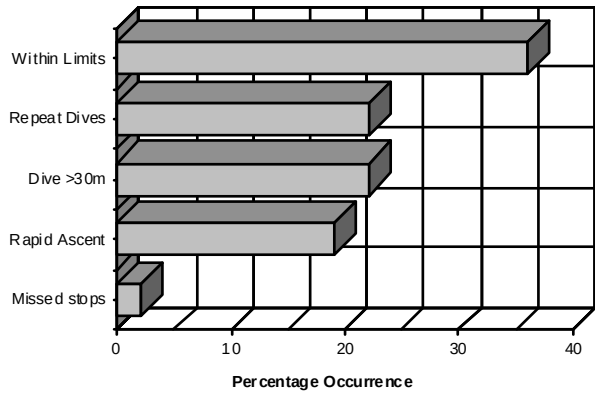
August 2016 16/173

A buddy pair carried out a shore dive to a maximum depth of 22m. A rapid ascent was made to 15m but the divers managed to complete a 3 min safety stop before surfacing with a dive duration of 37 min. One of the divers felt dizzy on de-kitting and felt the onset of 'pins and needles' in his hands and feet. He was put on oxygen but the 'pins and needles' increased to his upper arms and he had pain in his chest area. Emergency services were contacted and an ambulance took the diver to a recompression chamber.

August 2016 16/236

A dive boat reported a diver suffering from DCI following a dive to a maximum depth of 38m. The boat was proceeding to shore and the Coastguard informed a hyperbaric chamber who arranged an ambulance to meet the dive boat. On arrival the diver was transferred to the ambulance and taken to the chamber. (Coastguard report).

Percentage analysis of factors involved in cases of DCI



September 2016 16/176

Two divers carried out a shore dive. One diver was using a twin-set with 7 lt 300 bar cylinders of air and a 7 lt cylinder with nitrox 50 decompression gas and the buddy was using a rebreather. The purpose of the dive was to maintain depth experience and to practice the use of decompression gas. The divers carried out a kit check at 2m and made a gradual descent to 43m maximum depth. They carried out a swim at 40m and the open circuit diver's no decompression limit was 4 min. They stayed at depth for another 5 min and then made a gradual ascent to 30m and after 15 min made a gradual 5 min ascent to 20m and arrived at 6m approximately 45 min into the dive. The diver switched to his decompression gas and carried out 14 min of decompression and the pair surfaced with a dive duration of 65 min. As the diver, still wearing his drysuit, made his way back to his car he slipped on wet rocks and fell backwards hitting his right buttock but cushioned the blow with his right arm and suffered a small cut on his hand. The diver returned home and approximately three hours after surfacing he felt a pain in his right shoulder. Twenty minutes later the pain was 'unusual' and having contacted his buddy who was fine, the diver spoke to a hyperbaric chamber. He was admitted to a local A&E department and in consultation with the chamber and the intermittent arm pain it was decided to discharge the diver with advice to rest the arm, take aspirin and drink water at regular intervals to see if the pain would resolve. There was no improvement by the next day and the diver was re-admitted to the A&E department. In consultation with the hyperbaric chamber he was put on full flow oxygen and transported by air ambulance to the chamber. The diver underwent recompression treatment during which his symptoms resolved but it was recommended that the diver have a PFO test at a later date.

September 2016 16/239

The Coastguard received a request from a hyperbaric chamber to transfer a diver from a dive site to a local recompression chamber for treatment of DCI following a dive to a maximum depth of 35m. The diver exhibited skin DCI; the symptoms improved with oxygen but deteriorated when off oxygen. A lifeboat picked up and transferred the diver to a waiting ambulance for onward transfer to the chamber. (Coastguard, RNLI & media reports).

September 2016 16/187

A group of divers were on a hardboat diving trip. A diver and his buddy had carried out a dive to a maximum depth of 14m with an approximate dive duration of 30 min. This was followed by a 1 hour 40 min surface interval. For their second dive the buddy pair were joined by another diver, who was also an instructor, on her first dive of the day. The dive site selected was a backup as strong currents had been reported at the first location. The dive plan was to go through a shallow gully onto a wreck site and the skipper warned the divers about potential currents towards the end of the dive. The dive went to plan and the three divers remained together but, at around 15m and 25 min into the dive, they were caught by a strong current and swept across the wreck site but they found a rope attached to wreckage and were able to secure themselves to it. The instructor signalled to the buddy pair to abort the dive and deployed her DSMB at around 30 min into the dive and the group ascended. At 10m the buddy began to inhale water, choked and attempted to ascend to the surface by inflating her BCD. The instructor and the diver took hold of her to prevent a fast ascent. The buddy was gesturing frantically towards her face and the instructor and diver assumed this was due to panic. Still maintaining a hold on the buddy a controlled ascent was attempted but was ineffective and the trio ascended and descended until at around 32 min the buddy appeared to relax and go limp. The instructor and the diver made an emergency ascent with the buddy and surfaced with a dive duration of 33 min to a maximum depth of 15m. On the surface the buddy was asked what was wrong and she said she could not breathe and the instructor shouted to the boat for urgent assistance. During the wait the buddy became incoherent and was unresponsive as she was lifted aboard the boat. The instructor and the diver were recovered aboard and the skipper called the Coastguard. The boat immediately started to travel back to port and any remaining divers still in the water were picked up by other vessels. The buddy was very pale with blue lips, foam tinged with blood around her mouth and she lost consciousness but was breathing. Oxygen was administered but the cylinder ran out and there was a delay in transferring the first stage to a second cylinder obtained from another dive boat due to a seized thread which had to be freed with grips. The second cylinder ran out near to the port but by this time a lifeboat was alongside and a third cylinder provided. The buddy went in and out of consciousness during the journey but improved noticeably after she started to receive oxygen with the colour returning to her face and lips. When the boat arrived in port a passing GP came aboard and took over the buddy's treatment. Shortly after an air ambulance arrived and the buddy was transferred to hospital where she was treated for fluid on the lung and a possible heart condition but no formal diagnosis of her condition was confirmed. The diver, who had accompanied her in the air ambulance, was identified as having a potential DCI due to a loss of balance and received recompression treatment. He was discharged the following day. Shortly after the air ambulance had departed with the buddy pair, the instructor started to complain of mild pain in her chest and back. She was taken to the lifeboat station and received oxygen for 25 min which resolved the symptoms and she was allowed to go home. Later that evening with further mild symptoms of DCI and having made contact with the hospital, the instructor was advised to attend a local hyperbaric chamber where she received recompression treatment and was discharged the following day.

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September 2016 16/240

The Coastguard was contacted by a dive boat that requested assistance with a diver suffering from possible DCI following a dive to a maximum depth of 20m for a dive duration of 30 min. A lifeboat was tasked to the dive boat to provide immediate medical assistance. The dive boat was put on a connect call with the emergency dive doctor at a hyperbaric chamber who gave medical advice. Coastguard rescue teams were tasked to meet the lifeboat in the harbour and take the diver to a helicopter landing site where she was airlifted to the chamber. (Coastguard report).

Injury / Illness

October 2015 16/004

Two divers entered the water from a RHIB to carry out a dive on a reef at 15m. They both signalled 'OK' on the shotline and began their descent but both re-surfaced, then attempted to re-descend but again returned to the surface almost immediately. The RHIB moved closer to the divers and one of them said that he felt breathless and could not take a deep breath. Both divers were recovered aboard the RHIB and the diver was assessed but appeared well and not in any apparent distress. He confirmed that as he tried to descend he felt out of breath and unable to take a full breath. The diver had no chest pain, no recent coughs or colds or any other symptoms. He was given some water and told to rest. On return to shore the diver attended a medical centre where he was examined, had a chest x-ray and was assessed as fit to dive.

October 2015 16/027

A pair of divers carried out a shore dive on air to a maximum depth of 50m. During the dive one of the divers started to be concerned that his regulator was not performing adequately so his buddy donated his alternate source regulator and attempted a controlled ascent. At 25m the diver went into a fit, an uncontrolled ascent followed and the pair surfaced with a dive time of 14 min. The diver was unconscious and the alarm was raised. Assistance was given by other divers on the shore which resulted in the successful resuscitation of the diver. He was airlifted to a recompression facility. The diver made a full recovery but was recommended to stop diving for a minimum of two years pending medical approval.

November 2015 16/278

A trainee diver was kitted up and waiting to enter the water. He was sat on a wall by the slipway close to the water's edge. Other students in the group were being assisted into the water by the instructors, the students had been briefed to stay seated until helped into the water - due to the risk of slipping on the algae on the slipway. The trainee diver attempted to shuffle along the wall and, as he pushed up with his right leg, he slipped. A cracking sound was heard apparently from his knee. The trainee diver was assisted out of his equipment in order to exit the water. First aid was administered. The casualty was found to have torn a ligament in his knee.

December 2015 16/017

A trainee and his instructor had completed their first shore dive of the day with no problems. On the second dive to a maximum depth of 20m for a dive duration of 23 min the trainee had experienced slight pain in his ear but had subsequently equalized. Before his third dive he approached the dive manager to indicate that he had slight pain in his ear and was advised to stop diving and monitor the condition. Later that evening the pain grew worse and the diver went to hospital where a potential perforated ear drum was diagnosed. A week later the trainee's injury was diagnosed as an ear barotrauma and not a perforation. He was given antibiotics and was expected to make a full recovery.

December 2015 16/020

A diver had completed a 22m night shore dive with a dive time of 39 min and exited the water via a concrete slope. He removed his fins when he reached the dry part of the slope because he was aware that algae on the slope could be slippery when wet. He turned and walked back down the slope to help another diver remove his fins but slipped and fell onto his left side still wearing twin 300 bar cylinders. Others went to his assistance and the diver complained of pain to his upper arm, as though he had been punched, and felt nauseous and faint. The diver was taken off the slope and laid down. He was given nitrox 36 to breathe for ten minutes and was monitored for any worsening effects. After a short while the shock had worn off, the diver felt a lot better, declined the offer to be taken to A&E and felt well enough to go to a pub for a meal and non-alcoholic drink. The following day the diver went to A&E where it was found he had suffered slight ligament damage in his left arm but he was able to return to work.

February 2016 16/035

A diver checked himself into a hospital and the doctors deliberated on whether he should be transported to a recompression chamber. The diver was airlifted to the chamber by a Coastguard helicopter which had been on standby for some time. (Coastguard report).

March 2016 16/057

An instructor and his trainee had completed a shore dive to a maximum depth of 11m for a dive time of 20 min. After a 2 hour surface interval they commenced a second dive and descended to 3m to carry out a buoyancy check, mouthpiece clearing and static alternate source skills. They then descended to a maximum depth of 15m exchanging 'OK' signals at regular intervals and the trainee seemed comfortable with no sign of any problems. The divers ascended and followed an underwater wall at around 13m and when the trainee's air reached 150 bar they turned around and began to head back to their exit point. At 8m the trainee responded to signals and appeared happy and alert with no visible signs of stress or problems. They continued to ascend and completed a safety stop at 6m and began to move toward their exit point. Just after this and at 4m the instructor found the trainee was not with him. He carried out a 360 deg turn, swam to the exit point, completed another 360 deg turn but could not see her underwater. When he looked up he saw her on the surface so began a quick ascent to make sure she was alright. As he started to surface, with a dive duration of 37 min, the instructor found the trainee inverted with air in the feet of her drysuit which she was trying to resolve but it was apparent that her movements were slowing down. The instructor immediately righted the trainee but she seemed to be unconscious so he inflated her BCD and towed her immediately to the shore less than three metres away where with additional assistance the trainee was removed from the water and oxygen, resuscitation and medical care were administered. The emergency services had been alerted and an ambulance and helicopter quickly arrived on the scene. Paramedics assessed the diver and she was taken to hospital.

March 2016 16/058

It was reported that a rebreather diver had carried out his 5 min surface breathing test prior to a shore dive but had a problem at 9m and sank to 20m where he lost consciousness. His two buddies recovered him to the surface where the alarm was raised, medical assistance given and the diver regained consciousness. The diver's rebreather had not been assembled correctly and he had suffered a CO2 hit.

April 2016 16/059

A group of four divers carried out a shore training dive. The group comprised an instructor and his trainee on his second open water dive and an assistant instructor with a qualified diver undertaking a refresher session. The trainee and the diver had not used drysuits before and had hired suits for the dive; the trainee's was a little too big for him. The preparation for the dive took some time with a full dive brief, buddy checks and buoyancy

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checks during which both the trainee and qualified diver needed additional weights which were added to their BCD pockets. The group descended and carried out mask clearing, buoyancy and inversion recovery skills at 3m. The instructor then led the trainee and the qualified diver paired together with the assistant instructor following at the rear on their planned dive to a maximum depth of 10m. The group ascended and reached an underwater feature in about 5m at which point both the trainee and qualified diver appeared to lose buoyancy control. The trainee had attempted to perform drysuit inversion recovery and the qualified diver simply ascended and both disappeared from view. The instructor and assistant instructor ascended and surfaced with a dive duration of 30 min. On the surface the trainee was inverted and the instructor turned him the right way and inflated his BCD. The trainee's regulator was not in his mouth and his lips were blue and the instructor raised the alarm. At first it appeared the trainee wasn't breathing but as the instructor extended his airway he could hear him making a noise so started towing him towards the shore. A rescue boat arrived and recovered the trainee to the shore where oxygen was administered. The trainee recovered and later reported that he had felt the legs of his drysuit filling with air and had performed a forward roll during which he felt his foot slip out the drysuit boot and he could not control his finning. He had tried again to do a forward roll, lost his fin and hit his head with his knee, which he believed had knocked him out. The qualified diver reported that he had purged air from his BCD but had trouble purging air from his drysuit and made a buoyant ascent.

April 2016 16/063

An instructor had completed two dives on a training day. The first dive was to a maximum depth of 19m for a dive duration of 52 min including a 3 min stop at 6m and, after a surface interval of 1 hr 40 min, the second dive was to a maximum depth of 20m with a dive duration of 36 min including a 1 min stop at 10m and 3 min stop at 6m. He spent an hour packing his car and resting before leaving the dive site but noticed when getting into the car that his right wrist was stiff and mildly painful. The instructor attributed this to a sprained wrist while removing equipment, with a total weight of nearly 40 kg, after the second dive. Once home the instructor strapped the wrist and took painkillers. After five days of stiffness and pain the instructor visited a local A&E department in the evening and following an x-ray, a fracture was ruled out but a hyperbaric chamber was contacted. The chamber felt there was a risk of DCI and arrangements were made for the instructor to attend the following day. He was kept in hospital overnight, started oxygen therapy and was kept under observation until the next morning when, still on oxygen, he was transferred by ambulance to the chamber and examined by a doctor. After a physical and neurological check the doctor diagnosed a sprained wrist and the instructor was discharged.

May 2016 16/094

A diver and his two buddies had completed a shore dive to a maximum depth of 29m for a dive duration of 35 min. He exited the water via a ladder onto a pontoon and, as he walked forwards in full kit, his fins caught in the pontoon slats and he fell over. The diver chipped a tooth, banged his nose and hands quite hard and cut his head. The diver was assisted by first aiders and his buddies helped to de-kit him. One of the buddies, on advice from the first aiders, took the diver to hospital as there was some concern that he may have had concussion due to the cut on his head.

May 2016 16/247

A pair of divers entered the water at an inland site planning to swim to the east end of the lake and then return to their entry point. One diver had forgotten his compass and so the other led the dive following his own compass. The pair followed the compass for 18 min without incident and then reversed their route to return. The pair had exchanged OK signals and checked air contents at regular intervals. Towards the end of the dive the leader appeared to speed up and frequently change direction. The pair followed the slope of the bottom up to 3m depth and then surfaced after a total dive time of 41 min. On surfacing they realised they were at the wrong side of the lake and so inflated their jackets and began to swim. The lead diver was spitting quite a bit and after a short period asked his buddy to take a weight pouch from him. They continued their swim until the diver passed his buddy a second weight pouch. The buddy had some difficulty swimming with the two weights until he moved them onto his chest to support them. After repositioning the weights he noted the lead diver had moved away quite quickly, was floating quite high in the water and did not respond to shouts. The buddy then dropped the extra weights close to a marker buoy and shouted for help. The lead diver appeared to be swimming in circles at this point. Other divers on a rescue course responded and brought the diver to shore where the site medical response team took over. The diver was responsive and able to talk but kept trying to spit, though without producing very much. He removed his hood and got his head out of his suit. The diver was given oxygen, an ambulance was called and the diver was transferred to hospital where he was diagnosed with heart problems and some time later had five stents fitted. The diver was subsequently reported to have had difficulties breathing following a previous dive at the site, which had been put down to restrictions due to new equipment.

May 2016 16/087

A diver at a shore diving site required emergency medical assistance and was evacuated from the site. (Media report).

May 2016 16/154

A buddy pair carried out two shore dives. The first dive was to a maximum depth of 16m for a dive duration of 23 min. The second dive was to a maximum depth of 21m and they slowly ascended from 18m as one of the divers was experiencing ear problems. They made a 3 min safety stop at 6m and surfaced with a dive time of 35 min. Thirty-five minutes after surfacing one the divers bent over and collapsed face down injuring his nose. He was taken to a first aid room and received treatment to a cut on his nose and forehead. The diver was reported to have 'tingling' across his shoulders which reduced when he was given oxygen.

June 2016 16/207

The Coastguard received a call from a dive boat requesting assistance with a diver who had fallen on the deck and was very dizzy. A helicopter evacuated the diver to hospital. (Coastguard report).

June 2016 16/099

An instructor, with a trainee and an assistant instructor acting as the trainee's buddy, had completed two shore dives. The first to a maximum depth of 7m with a dive duration of 30 min including a safety stop of 3 min at 5m and the second dive, after a surface interval of 1 hour 23 min, to a maximum depth of 11m for a dive duration of 25 min with a safety stop of 3 min at 6m. After a surface interval of 1 hour 52 min the group carried out their third dive and descended to 6m to carry out alternate source skills. They had completed the static skills with no problems but on the second skill the trainee, receiving the regulator from his buddy, put it in upside down and breathed out to purge it but took in a lot of water as he breathed in. He took the regulator out and replaced it the right way up but forgot to purge it and, as he breathed in, he took in water again which caused him to panic and swim to the surface. The instructor and assistant instructor followed the trainee up and found him rather flustered on the surface but he quickly calmed down. The instructor checked if

the trainee was 'OK', if he had any pain and if he had held his breath. The trainee said he was fine but he had just panicked when he couldn't get air from his regulator. The group spent about 12 min on the surface and when asked if he wanted to continue or end the dive, the trainee said he wanted to try again. The group descended and completed the drill then swam around for another 12 min at an average depth of 7m practising buoyancy control. The divers surfaced with a maximum depth of 10m for a dive duration of 44 min, which included the 12 min at the surface and a safety stop of 5 min at 5m. On the surface the trainee coughed up a small amount of bloody phlegm. The divers exited and de-kitted as quickly as possible. The trainee had no pain but occasionally coughed although each cough had less blood. The trainee was taken to hospital where an x-ray and initial tests showed no problems except for an elevated heart rate and slightly reduced oxygen levels. His breathing sounded normal and nothing changed over the next five hours. The doctor's opinion was that the most likely cause of the bloody phlegm was a small barotrauma which would resolve itself over time. The trainee was kept in hospital overnight as a precaution and discharged the next day with advice to avoid strenuous exercise for a week.

June 2016 16/265

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

June 2016 16/111

A diver ascended from a wreck dive at a maximum depth of 22m and had problems at 8m. He surfaced with a dive time of 30 min and signalled to the dive boat that he required immediate assistance. As the boat approached it was obvious the diver was in a poor state. The diver was de-kitted and recovered into the boat with great difficulty. His breathing was laboured and noisy, his lips were blue and swollen and he was unable to help himself. Oxygen was administered, the top half of his drysuit removed and the diver's condition improved. The Coastguard was contacted with a request for immediate assistance. A helicopter was scrambled and airlifted the diver to hospital.

July 2016 16/139

A group of divers were carrying out dive assessments from a hardboat. An examiner diving on nitrox 32 and a candidate diving on nitrox 30 surfaced from their dive on a wreck with a dive duration of 45 min to a maximum depth of 26m and the candidate reported he had a slight headache and felt nauseous. The night before he had the start of a headache and took a painkiller but felt fine if a little tired at breakfast. On the way to the dive site the candidate felt mildly seasick and became hot and nauseous when kitting up and waiting to enter the water. The examiner and dive manager asked the candidate if he was 'OK' to dive and he replied he was feeling sick but would be fine once he was in the water. He drank some water and the pair carried out their dive. The candidate felt fine during the dive until carrying out a 4 min safety stop at 6m when he felt the mild seasickness return. Back aboard the boat the candidate's headache rapidly became worse followed by dizziness and thirty minutes later the candidate had to lie down. He was put on oxygen and a call made to a diving doctor who advised the candidate be evacuated to a hyperbaric chamber. The Coastguard was contacted and a lifeboat and helicopter were tasked to the dive site. The candidate was transferred to the lifeboat for the helicopter lift and flown to hospital to be assessed by a diving doctor. The diagnosis was that the candidate was not suffering from a diving related illness but, as the candidate had informed him that he suffered from migraines, a potential link or indicator of a PFO, the doctor suggested that this be investigated further. The candidate re-joined the dive group later that afternoon.

July 2016 16/141

An instructor and two students carried out two dives, the first to a maximum depth of 12m with a dive time of 40 min and the second to a maximum depth of 15m with a dive time of 40 min. The surface interval was 2 hours. During the ascent on the second dive the first student felt a sharp 'pop' in his left ear but had no pain. During the evening his ear became more painful and began to feel full of fluid. He attended a medical centre and the doctor diagnosed a bruised eardrum and advised no further diving for two weeks. The second student took some time to clear his ears on the first dive, he had pushed hard and experienced a bit of pain in his right ear but gave no indication of this to the instructor and continued the dive. On the second dive the student felt a bit of pain but indicated to his instructor that all was well. Later that evening the second student had oily bloody liquid coming out of his ear. He called a diving doctor who informed him that he probably had a mid-ear barotrauma, not to dive and rest the ear for at least forty-eight hours. The following day the second student was assessed by a doctor, given a hearing test and told he might have a very small perforation and was given a course of antibiotics. He was due to see the doctor in two to three week's time for re-assessment.

July 2016 16/271

Lifeboat launched to assist diver. Others coped. (RNLI report).

July 2016 16/133

A trainee carried out his third open water shore dive to a maximum depth of 7m for 27 min. 30 min after surfacing he said he had an upset stomach and tingling in his finger tips on both hands. The trainee was given a neurological test and all was fine and the test was repeated ten minutes later. As a precaution a hyperbaric chamber was contacted and the doctor advised they would like to see the trainee but in the meantime to put the trainee on oxygen as a precaution. When the trainee arrived at the chamber the diagnosis given was that the trainee had possibly swallowed air or some seawater resulting in the nausea and as the tingling in his fingers had gone, this had probably been due to having cold hands. No treatment was given and the trainee was discharged but the doctor asked him to remain local to the chamber overnight in case of worsening symptoms. The next morning the trainee had no symptoms.

July 2016 16/281

A diver was exiting the water wearing full scuba equipment when he lost his footing and fell over. He was hit by a wave surge and hit his head on a rock. He was assisted out of the water and was treated for head injuries, bleeding and bruising.

July 2016 16/219

A Coastguard rescue team reported a young diver with severe head pains following a shore dive to 3m for between 20min to 30min. The diver was untrained and this was his first dive accompanied by his father and an instructor. He had severe head pain and his heart was racing. In conjunction with advice from a hyperbaric chamber and the ambulance crew, the young diver's problem was deemed to be sinus squeeze and he was taken to hospital for further checks. (Coastguard report).

July 2016 16/132

A lifeboat was launched and met a boat where a person aboard was suffering health problems which may have been related to diving. The person was assessed and transferred to the lifeboat which returned to harbour where it was met by a waiting ambulance. There were no details of the person's condition. (RNLI & media report).

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August 2016 16/223

A 999 call was made reporting a diver with possible DCI and hypothermia at a lake dive site. The Coastguard tasked a rescue helicopter but the request was deferred until a hyperbaric chamber could be arranged. Once this was done the helicopter arrived at the site. The diver was given oxygen but did not appear to be suffering from DCI and was flown to hospital. (Coastguard report).

August 2016 16/285

A group consisting of two instructors, a trainee and a qualified diver conducted a training dive to a maximum depth of 17m. During the descent the qualified diver had a problem with his ear and went to the surface by using his BCD. He was followed to the surface by the one of the instructors and the group got split-up. The trainee diver and the instructor began to descend a little further to the bottom at 17m. The instructor then noticed the other pair were missing and searched for 1 min but could not find them. At this point the trainee diver was breathing very heavily and appeared panicked. The instructor decided to spend a small amount of time trying to relax his breathing rate. The instructor sent up an SMB and indicated to the trainee diver to hold the line. The trainee diver subsequently let go of the SMB line and inflated his BCD. The instructor stopped the ascent and the trainee signalled that he wanted to go up. The trainee diver was very agitated and kept rolling onto his back. As the trainee diver leant forward the left part of the mouthpiece came out of his mouth, he then fully inflated his BCD resulting in a rapid ascent. The instructor kept hold of the trainee diver and managed to slow down the ascent until, at about 2m, the casualty inflated his drysuit and popped to the surface. At this point the instructor no longer had hold of the trainee. Emergency teams at the dive site came out via their rescue boat within seconds and recovered the trainee diver. He complained of some chest pain and was coughing up blood streaked fluid. It is believed that the trainee was taken to hospital where he remained for a number of days. (This incident is linked to 16/149).

August 2016 16/286

During a rescue exercise to recover a diver from the water one of the trainee rescuers slipped backwards and fell over and hit her head on some wooden crates near the exit steps.

August 2016 16/235

The Coastguard received a call from a dive boat near a pier that they had two divers missing. However whilst on the call the divers appeared but had drifted a long way from their expected position. In the process of getting to the divers a member of the boat crew hit the pier and suffered a head and back injury. He was conscious and breathing. A lifeboat was tasked to assist and they administered first aid and evacuated the crew member to an ambulance on shore. (Coastguard report).

September 2016 16/245

A diver returned to an inland dive site for advice the day after she had carried out a dive and had sustained a bruise caused by drysuit squeeze. The diver complained that she had pain in her arm during the night which was still there. After speaking to a doctor at a hyperbaric chamber she was advised to attend.

September 2016 16/191

Back on shore following a dive earlier in the day a diver complained of 'pins and needles' and numbness in his right arm. He was given oxygen and after talking with the lifeboat crew from their station on the site, a call was made to a hospital and an ambulance called. The diver continued on oxygen until the ambulance arrived but after lengthy oxygen treatment he had recovered to the extent that the ambulance crew decided no further treatment was required.

September 2016 16/185

A diver carried out a shore dive to a maximum depth of 11m with another instructor and three recently qualified divers. The group swam out along a channel to 6m and then turned right into the bay, descending to a maximum depth of 11m. On the way back towards the shore just before entering the channel the diver started to feel she was having to suck very hard on her regulator to obtain any gas. She purged the regulator in case there was a blockage but it made no difference. The diver was coughing frequently and, on checking her pressure gauge, found she had 140 bar remaining. She switched to her alternate source octopus regulator but the problem remained. She was able to exhale normally through the regulator. She decided to surface immediately but was not seen by the rest of the group who were just turning the corner into the channel. On surfacing the diver continued to have difficulty breathing regardless of whether or not she used her regulator or breathed surface air and her cough was now almost continuous. The diver called for help and attempted to swim to rocks a few metres away but was unable to and was aware of starting to lose consciousness. Onlookers from a cliff path saw her and pulled her out of the water and up onto the rocks. The diver started to recover a short time later and within 10 min was able to walk off the rocks with assistance although still quite breathless and coughing but the cough had eased a little. The diver was placed on oxygen and transported to hospital and after tests was diagnosed as suffering from immersion pulmonary oedema (IPO). The diver remained in hospital for four days before being released. She has been referred to a doctor specialising in IPO and has been advised not to dive in the interim.

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Boating & Surface Incidents

October 2015 16/192

The Coastguard received a report of an overdue diver from a dive boat. Several dive vessels nearby commenced searching and two lifeboats and a Coastguard helicopter were tasked to the scene. A short time later it was confirmed the diver had been picked up earlier by another dive vessel and had not been in any difficulty. (Coastguard & RNLI reports).

October 2015 16/194

The Coastguard received a call reporting that two divers were overdue. A lifeboat and Coastguard rescue team were tasked to the area but as they were on route both divers were picked up by a RHIB and taken safely to shore. No medical assistance was required. (Coastguard report).

November 2015 16/256

Two lifeboats launched to assist dive boat. (RNLI report).

November 2015 16/021

A dive RHIB with a cox'n and two pairs of divers had spoken to the harbour authority on their working VHF channel 14 and asked for permission to dive on a wreck in a shipping channel just outside the harbour limit. They were informed that the only shipping activity expected was a warship that would be approaching a deep water mooring within the harbour and, as she would not be leaving the harbour, the divers were clear of all shipping to proceed with their dive. A shotline was deployed on the wreck site and the first pair of divers, one on a rebreather, entered the water followed a few minutes later by the second pair and the 'A' flag erected . Whilst both pairs were diving the warship proceeded to sea and only communicated her intentions to the harbour authority as she was about to leave the harbour entrance. The second pair of divers were being recovered during this time and reported that the first pair were decompressing on the shotline. The cox'n was concentrating on the divers and looking to seaward as they had received a prior communication from the harbour authority that a submarine was approaching the shipping channel. As the divers were recovered aboard the RHIB the warship, now approximately half a nautical mile from the shotline and travelling at speed, sounded a long blast on her horn. The RHIB, with the first pair still underwater, went directly to stand by the shotline. The cox'n, wearing a high visibility jacket, and the two divers waved at the approaching warship which started to take avoiding action. Due to an imminent collision the RHIB stood 200m off the shotline as the warship passed between it and approximately 20m from the shotline; the shotline marker buoy was submerged by the warship's wake. The RHIB drove round the warship's stern looking for the buoy and a pilot boat hailed the RHIB asking what they were doing in the shipping channel to which the RHIB answered that they had permission from the harbour authority and still had divers down. The buoy was out of position but the pilot boat sighted it some 100m away. The RHIB was relieved to see bubbles on the buoy and six minutes later the divers surfaced, shocked but alright. They had been at 6m carrying out a mandatory 15 min decompression stop and described hearing 'a deep throbbing sound'. They were confused as they knew, from the permission given to dive by the harbour authority, that no large vessels should be near them. The sound quickly got much louder and the divers, by now very concerned, tentatively descended to around 9m not wishing to go deeper and increase their decompression obligation. The noise and vibration became so much that their entire bodies and dive kit was vibrating and they could hear and feel the prop wash. When the noise abated they re-ascended to 6m to complete their decompression, arrived back on the surface with a dive duration of 60 min at a maximum depth of 32m, and found three shaken people in the RHIB. The harbour authority had received contact from the warship that she wished to go to an anchorage in the harbour so did not think that informing her of diving on the wreck site was necessary. The warship proceeded outbound and the harbour authority asked what her intentions were to be told she was proceeding to sea and would go to anchor in the harbour on her return. The authority tried to contact the dive boat on their working channel 14 but the dive boat had re-set its radio to channel 16 after permission to dive had been given. The warship, now travelling at speed out of the harbour, had been sighted by the RHIB. A lookout aboard the warship saw the RHIB and the warship reduced speed to a minimum for manoeuvring and commenced a hard turn to starboard, passed the buoy by approximately 20m and informed the authority and the incoming submarine. As the incident had happened so quickly, the cox'n and divers in the RHIB did not have time to call the warship on their VHF nor heard any attempted communication from the warship on channel 16. After the RHIB had recovered the divers they received a call from the harbour authority on channel 16, checking that all was well and that they had thought the warship was going to an anchorage. Once they were back ashore, the port authority supervisor spoke to the cox'n and was very apologetic appraising him of the fact that the warship had put to sea and created a situation by a lack of information and her intentions being misunderstood by the port authority. The divers co-operated fully with the harbour authority in their investigation of the incident.

February 2016 16/258

Lifeboat assisted in the search for missing diver(s). Others coped. (RNLI report).

March 2016 16/056

Two groups of divers, using two RHIBs, were diving a wreck at 20m. One was moored to a shotline tied to the wreck, which the second group of three divers had been tasked to recover and send up. The other RHIB was standing off so that it could pick up the first group of divers. The second group had just started their dive when another two dive RHIBs approached the site. They enquired how many groups were diving and were told there were two and that the shot would be recovered. The two RHIBs then stood off and maintained their distance for a while. The first group of divers had sent up a DSMB and the RHIB tasked to pick them up drifted near them waiting for them to surface. The RHIBs that had been standing off then approached the dive site but the second group of divers, tasked with releasing the shot, surfaced around 10m from the moored RHIB. The shotline had drifted a little in the water as it was not straight down to the wreck and did not have a weight on the end. The RHIBs that had now approached the site drove straight over where the second group had surfaced and their heads were about 1m from the propeller of one of the RHIBs. It was felt that the first two RHIBs on site should have notified the other two to keep their distance but had assumed they would abide by the rule regarding the flying of an A-flag and kept their distance when manoeuvring with a sharp lookout being maintained. It was also felt that the second group of divers who recovered the shotline should have ensured they kept the shotline taut or used DSMBs to mark their underwater and surfacing position.

March 2016 16/259

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

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April 2016 16/198

The Coastguard received a call reporting a diver had been missing for ten minutes. Coastguard rescue teams, police and a helicopter were tasked to the site. The diver was located safe and well and no medical assistance was required. The diver had been on a wreck dive to a maximum depth of 19m for a dive time of 35 min to 45 min and had failed to surface with his buddy. (Coastguard & RNLI reports).

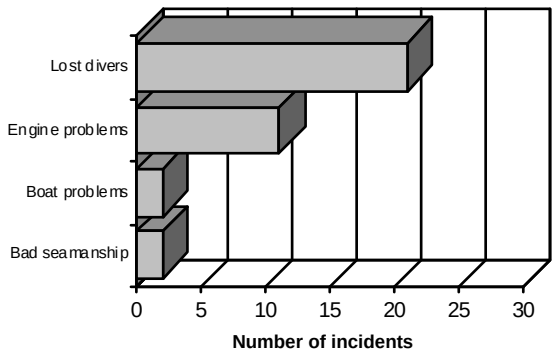
April 2016 16/062

The Coastguard received a call from divers who reported that one of their group had not surfaced as expected from a dive and was missing. Coastguard rescue teams, lifeboats and helicopters were sent to the area to search for the diver. The diver was found on the shore by local residents shortly after the Coastguard had been alerted. One of the helicopters landed and the diver was checked by the on-board paramedic and, after advice from a doctor, the diver was given the 'all clear' and allowed to make his own way home. (Media report).

April 2016 16/075

A buddy pair carried out a shore dive and swam out into a bay. After 25 min to a maximum depth of 6m, one of the divers signalled he wanted to ascend and the pair surfaced together close by a rocky headland and just outside the bay. There was little current but the tide was ebbing and there was about a metre swell. One of the divers indicated he was tired and wished to return to the shore so they both began to swim the fifteen metres back into the bay and close to the rocks. The diver who was tired gave up on the swim and his buddy assisted him to rocks nearby but they were still outside the bay and out of sight of their shore cover. The diver clung onto the rocks and made no further attempt to rescue himself so the buddy climbed onto the rocks and attempted to lift the diver from the water. He removed the diver's weights and with help from a climber who was on the headland, pulled the diver onto the rocks. A local boat tried to assist but fearing for his boat on the rocks, called the Coastguard who sent out a lifeboat. The lifeboat recovered the divers and returned them to the shore sixty minutes after they had begun their dive to the surprise and relief of the shore cover. The diver is reviewing his fitness and volunteered to undergo some revision of his rescue and self-rescue training.

Analysis of boating & surface incidents



May 2016 16/260

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

May 2016 16/261

Lifeboat launched to locate missing diver(s). False alarm. (RNLI report).

May 2016 16/109

Two divers carried out a reef dive from a RHIB. They had descended using a lobster pot line and once they had moved a safe distance away they deployed a DSMB. They completed their dive as planned and surfaced with a maximum depth of 26m and a dive duration of 33 min. On the surface they could see their RHIB but, possibly due to the sun's reflection on the water, the divers on the RHIB could not see them. One of the divers had 100 bar of air left and his buddy had 50 bar. When the buddy was down to 20 bar she used the diver's alternate source regulator. They could see the RHIB driving up and down obviously looking for them. The divers removed their weightbelts so they were positioned higher in the water. After twenty-two minutes the RHIB located and picked the divers up.

May 2016 16/202

A dive boat contacted the Coastguard to report a diver had separated from his buddy on a dive to a maximum depth of 23m and was overdue by 10 min. The diver was new to using a rebreather but had about three hours of gas remaining. (Coastguard report).

May 2016 16/262

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

May 2016 16/203

A 999 call was received from a diver who had been shore diving with a colleague who failed to surface when due and the Coastguard was contacted. However, whilst search and rescue assets were being tasked the diver surfaced and made his way to shore. He was suffering no ill effects or injury. A lifeboat had been launched but the diver was found safe and well prior to its arrival and no medical treatment was required. The report noted this was a false call with good intent. (Coastguard report).

June 2016 16/204

The Coastguard received a 'Mayday' reporting a missing diver and a lifeboat was launched to assist. (Coastguard Report).

June 2016 16/205

The Coastguard received a call from a dive RHIB reporting three of its divers were missing. They were overdue by twenty minutes from their planned dive time but had sent up a DSMB which had tangled in the tide with a shotline that had been deployed for the divers to descend and ascend. The RHIB was asked to remain by the shotline and lifeboats, rescue teams and a helicopter were tasked to assist with other vessels in the area involved in the search. One of the lifeboats found the divers safe and well, recovered them aboard and took them ashore. (Coastguard report).

June 2016 16/107

The cox'n of a RHIB called the Coastguard to report that three of its divers were twenty minutes overdue from their dive. A 'Mayday' was issued and a multi-agency search was carried out which included lifeboats, a rescue helicopter, four shipping vessels, two fishing boats, a yacht, four RHIBs from a yacht club and Coastguard shore teams. The weather conditions of calm seas with thick banks of rolling fog caused poor visibility and challenging search conditions. About two hours later and nearly three miles from their original dive location the divers, who had

remained close together, were located and recovered by an inshore lifeboat. They did not require medical assistance however they were fatigued, hungry and thirsty. The divers were transferred to an all weather lifeboat which took them back to port. (Media report).

June 2016 16/264

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

June 2016 16/140

Whilst on a diver cox'n assessment a 'man overboard' drill was carried out. One student was driving the boat and another student had been tasked to throw the buoy off the boat to simulate the 'man overboard'. The student driving the boat turned it quickly and the student who had thrown in the buoy was unable to get a firm grip and fell into the sea. His life jacket inflated immediately, the drill was stopped and the student was recovered from the water having suffered no injuries.

June 2016 16/209

A dive boat reported an overdue diver. A 'Mayday' was broadcast by the Coastguard and two vessels responded. A lifeboat was launched and a helicopter tasked for the search. The dive boat located the diver and confirmed they were safe and well and required no medical attention. (Coastguard & RNLI reports).

June 2016 16/210

The Coastguard received a 999 call from a member of the public reporting a diver in the water waving an orange floatation device and shouting. There was a dive boat in the area but it was heading away from the diver. The Coastguard made a call on CH 16 to any dive vessel in the area and the dive boat responded saying he was picking up the diver after he had drifted away with the tide and he was well. (Coastguard report).

July 2016 16/268

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

July 2016 16/269

Lifeboat launched to assist swamped / leaking dive boat. Craft towed in. (RNLI report).

July 2016 16/122

In thick fog with visibility less than 100m members of the public heard shouts coming from rocks in a bay and called the emergency services. Two divers had surfaced from a dive and because of the fog their dive boat had been unable to locate them. A lifeboat was launched and used its foghorn to identify itself to the divers shouting for help and those who had called the emergency services. The dive boat located the divers before there was a need for the lifeboat. (Media report).

July 2016 16/216

A 'Pan Pan' was received from a dive boat regarding an overdue diver. During the details collection phase, the diver was relocated and confirmed safe and well. (Coastguard report).

July 2016 16/129

Three divers were rescued after they were spotted clinging to a marker buoy. They had been trying to swim to shore when they got into difficulty as they struggled against a strong tide. Two lifeboats were launched and the inshore lifeboat arrived first on the scene and recovered the divers. They were then transferred to the all-weather lifeboat, checked over and taken back to shore. (RNLI & media reports).

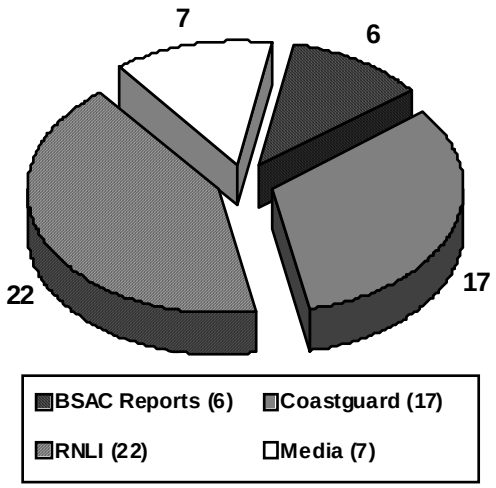
July 2016 16/220

The Coastguard was contacted by a RHIB which reported two divers overdue. Two vessels in the area started to proceed to the position as two lifeboats and two Coastguard helicopters were being tasked. Around twelve minutes later the RHIB reported both divers had surfaced with a dive duration of 75 min to a maximum depth of 10m and no further assistance was required and all units were stood down. A Coastguard rescue team was tasked to meet the RHIB on its return to harbour and offer safety advice. (Coastguard report).

July 2016 16/272

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

Boating & surface incident report source analysis



August 2016 16/138

The Coastguard was contacted by a dive boat reporting that three divers were overdue. A 'Mayday relay' was broadcast and three lifeboats, shore rescue teams and a helicopter were tasked to attend. The divers had managed to swim ashore and were spotted by one of the lifeboats. The helicopter landed to confirm the divers did not require medical attention and the divers were picked up by their dive boat. They had carried out a dive to a maximum depth of 20m for a dive duration of 40 min. (Coastguard & RNLI reports).

August 2016 16/273

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

August 2016 16/274

Two lifeboats launched to assist drifting dive boat. Outcome unknown. (RNLI report).

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August 2016 16/227

A RHIB reported a diver overdue. Whilst the Coastguard was taking details another dive boat confirmed they had recovered the diver who was safe, well and did not show signs of DCI. The diver, using nitrox 32 and carrying an EPIRB, had carried out a solo dive for about 60 min dive duration to a maximum depth of 26m. (Coastguard report).

August 2016 16/230

The Coastguard received a call from an unidentified vessel reporting two divers were overdue. The divers surfaced before units were tasked with no further assistance required. (Coastguard report).

August 2016 16/146

A beach manager raised concerns with the Coastguard about a diver who had gone missing off a beach. The Coastguard interviewed the beach manager and the diver's buddy and a search was launched. The missing diver then surfaced and was met by the Coastguard who gave him some safety advice. (Media report).

August 2016 16/275

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

September 2016 16/237

The Coastguard was informed of two overdue divers by the wife of one of them. As information was being gathered the divers were confirmed safe and well ashore and no further action was taken. (Coastguard report).

September 2016 16/162

A RHIB carried out a drift dive with two crew and four divers in two buddy pairs. Shortly after the divers had entered the water the RHIB's engine cut out. The cox'n opened up the choke but could not re-start the engine. The crew realised they were drifting and deployed an anchor at which point one buddy pair surfaced with a DSMB and a dive duration of around 30 min to a maximum depth of 13m. The RHIB called them over but they were caught in a current and unable to reach it so the crew attempted to throw a rope but the divers were too far away. The more experienced diver in the water shouted to the RHIB to issue a 'Pan Pan' call requesting help. The divers drifted for approximately fifteen minutes and were picked up by another dive boat in the area. A second dive boat on the site recovered the other two divers. Two lifeboats had been launched and one of them towed the RHIB back to harbour and all the divers were transferred from the dive boats and were taken ashore by the second lifeboat where they were met by the Coastguard. One of the divers who had drifted for fifteen minutes had got cold and back at the lifeboat station was given blankets and jackets to warm her up.

September 2016 16/238

Beach Lifeguards raised concerns over two shore divers that were seen to enter the water and not come out. After investigation no further action was required, as they were not reported missing and, as they were drift diving, they could have exited the water elsewhere. (Coastguard report).

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Ascent Incidents

October 2015 16/009

As the sea state outside a harbour wall was not suitable for diving, six divers aboard a dive RHIB dived a wreck inside the harbour wall in an area protected from the wind. A diver using nitrox 32 and his buddy using air, carried out their dive on the wreck and then moved to the wall reaching a maximum depth of 18m. At around 24 min the diver appeared to have buoyancy issues so his buddy pulled him down, the diver regained control, they exchanged 'OK' signals and continued with their dive. At around 15m the pair came across a couple of other divers with DSMBs and, to avoid drifting into their lines, the diver moved away at which point he indicated he had a problem to his buddy. He had tried to control his buoyancy by swimming down but was in a feet-up position and he then ascended too quickly for his buddy to give assistance. The diver surfaced with a dive time of 26 min. The buddy deployed his DSMB and carried out a controlled ascent, avoiding a hardboat above him, and surfaced. He was told by divers on the hardboat that they had picked up the diver as he said he had made a fast ascent. The buddy saw the diver being transferred to the RHIB and when the buddy had been picked up he discovered that the diver had been put on oxygen on the hardboat and was still on oxygen in the RHIB. The diver showed no signs of DCI but the pair aborted their planned second dive and the diver remained on oxygen as a precaution. After he returned home that evening, the diver reported he was fine.

November 2015 16/039

A buddy pair carried out a hardboat dive to a wreck at 26m. They descended to 22m and headed north hoping to find the wreck. They had no issues during the first 30 min of the dive but at 26m one of the divers realised he was low on air and going into decompression. The pair deployed their DSMB with the diver holding the reel as the buddy inflated the buoy. They forgot to detach the reel from the diver's BCD and it jammed and the diver was pulled upwards. At 3m the diver managed to dump air out of his BCD and drysuit and re-descended to 25m where he managed to un-jam the reel so the DSMB could rise to the surface. Both divers began their ascent but the diver realised he was struggling to breathe so switched to his buddy's octopus regulator. The buddy took hold of the diver and they continued their ascent with the diver still holding the DSMB reel but they rose too quickly and missed the decompression stop. The divers surfaced with a dive time of 36 min to a maximum depth of 26m. The divers were recovered aboard the hardboat where they were checked and given water but neither showed any symptoms of DCI.

November 2015 16/008

A diver carried out a winter shore dive with two buddies to practise his dive leading skills. The group descended and reached a depth of 20m in 3 min. The diver then made a rapid ascent to around 9m and his buddies followed him. After a short time at 9m he indicated he was 'OK' and the group re-descended to 22m. One of the buddies could see the diver was not happy so the dive was aborted. The group made a normal ascent to 6m where the diver's computer and one of his buddies' indicated a mandatory decompression stop of 4 min which they completed and surfaced with a dive time of 13 min. The diver reported after the dive that he had descended too quickly in the dark cold water and experienced some dizziness and panic. He also felt that his neck seal was tight and he was over-weighted. After a surface interval of two and a half hours and having reduced his weight, the diver carried out a second dive and experienced no further problems.

December 2015 16/032

A diver and her buddy, using a drysuit for the second time, carried out a shore dive and had descended near a small wreck at 16m. They moved around the wreck and were at 12m when the buddy pointed at her foot. The diver indicated for the buddy to swim to her by the wreck so she could sort out what was wrong. She turned towards the wreck, looked back at the buddy but she was nowhere to be seen. The diver saw her ascending so the diver made a controlled ascent and they met on the surface. The buddy's fin strap had slipped and she had lost buoyancy causing a fast ascent. The diver re-fitted the fin strap, re-assured the buddy and suggested they try to descend to a 6m platform. The pair descended but the buddy's drysuit boot slipped off her foot so they ascended and made their way to shallow water where the diver pulled up the buddy's drysuit. They attempted to re-descend but the boot came off again due to second-hand drysuit being too long in the leg for the buddy. The pair aborted the dive with a total dive time of 4 min to a maximum depth of 16m.

February 2016 16/038

A diver and his buddy had carried out a shore dive to a maximum depth of 18m for a dive time of 20 min. After a 1 hour 5 min surface interval he carried out a second dive but, at a depth of 15m, he suffered a regulator free flow which led to an uncontrolled ascent. The diver surfaced with a dive time of 15 min to a maximum depth of 18m. He was given first aid and oxygen was administered for twenty minutes. The diver, normally fit and well, was reported to have had a cough before the dive. He was advised not to dive or drink alcohol and to avoid exertion for at least twenty-four hours.

April 2016 16/197

The Coastguard received a telephone call from a diver stating that he had been diving on his own and had surfaced too quickly from 20m. His maximum depth was 30m and his dive duration was 40 min. A Coastguard rescue team and an ambulance were tasked to scene and the diver was taken to hospital. (Coastguard report).

April 2016 16/077

An instructor and his trainee had carried out a shore based training dive to 13m for 23 min. After a 2 hour surface interval they entered the water for their second dive. The pair descended to 6m and carried out two controlled buoyant lifts followed by a surface tow. They took a few minutes after the tow before they descended and carried out a dive on a piece of wreckage to a maximum depth of 15m. Another pair of divers were on the wreckage and the trainee bumped into one of them at 14m. Her primary regulator caught in the pillar valve of one of the divers which dislodged her regulator and she got a mouthful of cold water at 8 deg C. When she turned to the instructor he could see she was in distress. He located and replaced her regulator in her mouth but despite her purging it she was unable to get her breath. The instructor assumed the trainee had an issue with the regulator so gave her his alternate source regulator but despite her purging it she was still unable to get her breath. The instructor took hold of her, held his alternate source regulator in her mouth and took the trainee to the surface where she was shaken but able to breathe. The instructor ensured they were both buoyant and, after a few moments to allow her to calm down, re-assured the trainee and towed her to shore. Their dive duration was 10 min. The trainee removed her own equipment and exited the water. The trainee suffered no ill-effects from the incident and after a break and some lunch she decided to complete her last planned dive of the day.

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May 2016 16/201

The Coastguard received a call from a dive boat with a diver who had made a rapid ascent from 27m at the end of a 20 min dive. The diver, who had a history of asthma, displayed no symptoms but was put on oxygen. The Coastguard put the dive boat in contact with a dive doctor and, once all the other divers were back aboard, the boat returned to port. (Coastguard report).

May 2016 16/080

After a surface interval of 2 hours 54 min a diver and her buddy, who was wearing a spare drysuit he had not used before, carried out their second hardboat dive of the day to a maximum depth of 35m and ascended to 9m for a gas switch. At 9m the diver signalled for the buddy to switch gas and he noted he had a decompression obligation of 2 min at 6m. As he began the gas switch the buddy was still slightly buoyant and with a slack shotline and not monitoring his rate of ascent, he ascended to 6m where he tried to control his buoyancy but was unsuccessful. Noting his decompression obligation had reduced to 1 min at 6m, he surfaced with a dive duration of 32 min. The diver remained at the 9m decompression stop and her buddy was recovered aboard the hardboat and put on oxygen for fifteen minutes. Medical advice was sought but as the buddy was showing no symptoms of DCI he was advised no further treatment was required but to monitor for any symptoms over the next few hours. The buddy was also advised that he could dive the following day but to a more conservative profile and with no mandatory decompression stops.

May 2016 16/084

The Coastguard was contacted after a buddy pair on a boat dive made a rapid ascent from 20m. There was a doctor aboard the dive boat and when the boat had berthed at a harbour pontoon they confirmed to the Coastguard the divers had no symptoms, the boat had oxygen for at least another hour and they were happy to re-assess the divers. The Coastguard arranged for the doctor to speak with a hyperbaric chamber for further advice. A lifeboat picked up the divers who were then transferred to a second lifeboat which returned to port and an awaiting ambulance. The divers were taken to hospital for further assessment. (Coastguard report).

May 2016 16/123

Three divers carried out a boat dive on a wreck in low visibility and reached a maximum depth of 18m. Towards the end of the dive when one of the diver's air had reached 100 bar the group prepared to ascend from 16m and one of them deployed his DSMB. The ascent was controlled up to 12m at which point the diver who had begun the ascent with 100 bar showed one of her buddies her pressure gauge which read 20 bar. The buddy offered her alternate source to the diver, held onto her BCD and they continued the ascent. At 6m the buddy felt the diver become buoyant so dumped air from her own BCD and drysuit as the diver, wearing a wetsuit, also dumped air from her BCD. The ascent was fast from 6m to 3m and then rapid to the surface. At the surface, with a dive time of 40 min, the diver switched back to her own regulator. Neither the diver or buddy had any symptoms following the dive.

May 2016 16/081

A RHIB with four divers and a cox'n planned a wreck dive but when they arrived two other dive boats were already on the site, a large 8m RHIB and a smaller RHIB, with a group of nine divers. The wreck was in two halves and the divers already on the site had deployed their shot on the bow section so the RHIB that had just arrived put their shot in on the stern section and deployed their divers. The two RHIBs on the bow section were attached to each other allowing the cox'n of the smaller one to dive in the group's final buddy pair. The pair, both with twin-sets, rolled off the smaller one causing its tubes to ride over the larger RHIB's tubes and it partially capsized. It righted itself and the large RHIB recovered the buddy pair and any of the small RHIB's contents that had floated away. The large RHIB, still with the smaller one attached, approached their shot to re-deploy the divers. Another pair from their group had already surfaced and were told to let go of the shot so the last pair could be deployed but whilst this happened the divers on the surface drifted away. The cox'n of the RHIB diving on the wreck's stern section was concerned, went over to check if the divers on the surface were 'OK' and asked them to put up a DSMB so they could be seen. He then returned to his shot as his divers were due to surface as the large RHIB, still attached to the smaller one, moved slowly to recover the drifting divers. As the cox'n prepared to collect his divers he saw another pair from the larger RHIB's group surface with two DSMBs giving the distress signal. As the large RHIB was still picking up the drifting divers, the cox'n recovered the distressed divers who reported that one of them had run out of air during his 6m stop, had switched to his alternate air source but had a problem and sank to 10m. His buddy had descended, given the diver his alternate source regulator and lifted him to the surface. Their dive time was 46 min to a maximum depth of 29m and the diver had missed 8 min of decompression stops but his buddy, diving nitrox 27, had cleared his stops. The diver had no symptoms but was put on oxygen and given a small amount of fluids. The cox'n contacted the Coastguard and through them a hyperbaric chamber who advised that the diver be transferred back to the large RHIB, remain lying down and stay on oxygen whilst returning to harbour where they should update the chamber on the diver's condition. The large RHIB detached from the smaller one to return to harbour and all the other divers on site were recovered to their respective boats. Back ashore the hyperbaric chamber confirmed that as the diver had not displayed any symptoms there was no need to recompress him but requested the diver to monitor himself over the next twenty-four hours. The diver later reported that he and his buddy had deployed a DSMB for their ascent but believing his ascent rate was too fast he had slowed down and, in the low visibility, had lost sight of his buddy ascending above him. The diver decided to deploy his own DSMB at around 14m, dropped down to 17m before deploying it but steadied himself back at 14m where his buddy, who had been waiting at 10m for about 5 min, re-joined him. At 8m, with his air low, the diver went onto his buddy's alternate source regulator and they both lost buoyancy descending to around 11m. Ascending to 6m, struggling to maintain buoyancy whilst holding onto the diver, with loose DSMB line around them and his air getting low, the buddy made a buoyant ascent taking them both to the surface with the diver missing his 5 min decompression stop and 3 min safety stop.

May 2016 16/108

A diver carried out a boat dive on a wreck and reached a maximum depth of 34m. After ascending and conducting a 3 min safety stop at 6m he put air in his BCD which caused him to ascend faster than normal. He surfaced with a dive duration of 25 min. Back aboard the boat he informed the dive manager of his fast ascent. After confirming that all the diver's decompression had been carried out it was decided to put him on oxygen as a precautionary measure. The oxygen from a rebreather was used and diver remained on this for about thirty-five minutes. The diver showed no signs of DCI but before he left to go home he was advised that if he started to feel any symptoms he should call the emergency services.

May 2016 16/086

During the third boat dive of a weekend an instructor and his trainee carried out a depth progression dive. Arriving at a depth of 18m the trainee was comfortable and happy to continue with

the dive but at 17m became distracted by a curious seal. The trainee lost concentration on his buoyancy control and he began to ascend without being aware of the situation. The instructor signalled to the trainee to concentrate and moved towards him to control the ascent but the trainee was beyond reach and heading for the surface. The trainee realised he was ascending too quickly at approximately 15m and started to vent his drysuit but although slowing his ascent rate he ended up on the surface with a dive duration of 10 min to a maximum depth of 18m. The trainee signalled to the dive boat and was picked up. He was monitored for signs of DCI whilst the boat waited for the instructor, who was clearly visible and monitored from the boat, to complete his safety stop. A diver aboard the boat was prepared to enter the water if necessary. The instructor surfaced 4 min later with no problems and was recovered by the boat. The trainee showed no symptoms but it was decided he was not fit to dive for the rest of the day.

May 2016 16/097

A diver had forgotten his weightbelt during a dive and it was aborted and he had also lost his mask. The next day, using a backup mask, the diver and his buddy carried out a hardboat dive to a maximum depth of 14m with a dive duration of 20 min. The diver had commented that he felt a bit under-
weighted on this dive. After a surface interval of 2 hours 30 min the pair entered the water for a reef dive but as the diver was not descending his buddy attempted to pull him below the surface assuming he was having a weighting issue. When the divers reached the bottom of the reef, at approximately 12m, the buddy noticed that the diver's mask was half full of water and that he was in distress. The diver's backup mask did not seal as well as his primary and as he descended the mask began to flood. On the bottom, and after several attempts to clear it, the diver realised the mask was not going to seal and started to panic as he was getting water up his nose. The buddy took hold of the diver, inflated his drysuit and they made a buoyant ascent surfacing with a dive duration of 2 min to a maximum depth of 12m. They gave the distress signal to the boat and were picked up. Neither showed any symptoms of DCI and the dive manager decided to stop any further diving and, as a precaution should the divers develop any symptoms, that the boat should return to port. Both divers were advised to remain hydrated, avoid alcohol and report any symptoms immediately. Oxygen was available at the divers' accommodation if required. Both divers decided not to dive the following day.

June 2016 16/155

Two divers completed a shore dive to a maximum depth of 21m. One of them was reported as being over-weighted and had deployed a DSMB for the ascent but at 17m put more air in his drysuit and made a buoyant ascent to the surface with a dive time of 25 min. Back on shore the diver reported that he had a pain in the area of his thumb and his hands were swollen and feeling numb. The diver was still wearing his drysuit and his wrist seals may have caused the swelling on what was a warm day. Oxygen was administered for fifteen minutes and the pain and numbness began to resolve when the diver removed his drysuit.

June 2016 16/103

An instructor using a rebreather and his student using air carried out a training dive from a boat onto a reef reaching a maximum depth of 38m. They made a gradual ascent to 12m where the student made an uncontrolled ascent and surfaced with a dive duration of 19 min but no mandatory decompression was missed. The instructor deployed his DSMB at 12m and ascended normally. The diver was put on oxygen whilst medical advice was sought. The advice was to remove the diver from oxygen, monitor for any symptoms but he should not dive for the remainder of the day.

June 2016 16/252

A qualified diver was undergoing training in the use of an SMB on a drift dive with an instructor and accompanied by another qualified diver. During the descent and throughout the dive the diver used the SMB correctly and ascended to conduct a safety stop at 6m. On reaching 6m the diver was concentrating too much on maintaining his buoyancy and allowed the SMB line to become too loose and it snagged in his fins. He attempted to disentangle himself but lost control of his buoyancy before his buddy or instructor could assist him and he ascended to the surface after a total dive duration of 25 min. The dive had been well within no decompression limits and no ill effects were reported.

June 2016 16/113

An instructor and his trainee had carried out a shore dive to maximum depth of 28m for a dive time of 20 min. After a surface interval of 2 hr 30 min they descended on their second dive but at 21m the trainee's mouthpiece separated from his regulator and caused him to panic. The instructor carried out an alternate source ascent but at 3m the trainee broke away and rapidly ascended to the surface with a dive time of 4 min. His panic at the surface alerted the need for the emergency services to be called. No symptoms of DCI were present but oxygen was administered as a precaution. An ambulance arrived but after examination by the paramedics and following two hours of observation the trainee was allowed to return home.

July 2016 16/211

The Coastguard was contacted by a dive boat reporting three divers had 'come up in a hurry'. One had a pain in the right shoulder and the boat was heading back to port. The maximum depth of the dive was reported as 25m. (Coastguard report).

July 2016 16/214

The Coastguard was called by a dive boat after a diver had missed stops on his ascent and was on oxygen. The diver, using nitrox 27, was reported to have carried out a dive to a maximum depth of 41m for a dive duration of 27 min. He carried out a stop for 2 min at 6m but lost buoyancy control and surfaced. The diver was evacuated by helicopter and taken to a diving doctor for assessment. (Coastguard report).

July 2016 16/143

A diver and her buddy carried out two shore dives. The first dive was to 27m for a dive duration of 46 min including a 3 min safety stop at 6m. After a surface interval of 1 hr 55 min the divers carried out a second dive reaching a maximum depth of 21m and ascended. At 12m one of the divers experienced buoyancy problems, was unable to arrest her ascent, missed a safety stop and surfaced with a dive time of 24 min. She signalled she was 'OK' to the surface cover but due to the distance from the shore they did not see her. The buddy completed her safety stop at 6m and surfaced four minutes later. The divers swam back to shore and the diver who had made the buoyant ascent requested assistance and oxygen. Initial assessment showed no symptoms but as a precaution a hyperbaric chamber was called. They advised putting the diver on oxygen and taking her to hospital. At the hospital the diver was monitored for four hours and then discharged.

August 2016 16/161

A diver and his two buddies carried out a wreck dive from a RHIB. The diver felt immediately at the start of the dive that he was very over-weighted and needed additional buoyancy in his drysuit and BCD. The diver continued the dive and noticed his air consumption had increased due to his bad trim in a slight

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current. The diver reached a maximum depth of 26m and continued the dive until his no stop time of 32 min and began an ascent with one of the buddies who had the same no stop time. The other buddy had deployed his DSMB for his ascent. Due to inadequate buoyancy the diver sank before ascending using additional buoyancy and finning. His dive computer indicated a 4 min ascent time warning. His contents gauge read 70 bar at the start of the ascent but his air consumption increased due to finning and he noticed breathing from his regulator was getting tight at around 15m with his gauge reading 15 bar. At this point the diver thought it was unlikely he would be able to continue breathing at the safety stop and still have air to inflate his BCD when back on the surface. He gave the 'out of air' signal to the buddy who reacted immediately by giving the diver his octopus regulator. Their ascent took 5 min from around 9m but was not as controlled as intended as the buddy deployed his DSMB while the diver was maintaining buoyancy and contact. The divers surfaced with a dive duration of 41 min to a maximum depth of 26m and the diver's computer indicated an 'extend surface interval' warning and a 'fast ascent' warning. The divers were monitored for any after effects back aboard the RHIB. The diver reported that he had carried out a buoyancy check with his new drysuit in a swimming pool the night before using borrowed weights. He had used heavier weights for the dive and over-estimated the weight needed in salt water as opposed to fresh water. He also said he had not allowed for the weight of additional equipment on the dive and confirmed that he should have carried out a proper weight check in salt water before the dive and begun his ascent earlier due his increased air consumption.

August 2016 16/282

A diver had already completed two training dives. After dive two there was an extended surface interval when the instructor briefed the group on dive three. An instructor entered the water with the diver, her buddy and other students. As a group the descent was made using a reference shotline to 23m. On the bottom the instructor carried out the required skills on a flat platform. Once the skills were completed, and 8 min into the dive, the group left the platform to swim across the lake reaching a maximum depth of 26m. After a further 4 min the group were at a depth of 16m when the diver lost her buoyancy control slightly but this was resolved by her buddy. The buddy then turned to notify the instructor of this issue at which point the diver again lost control of her buoyancy. The buddy was unable to prevent the diver from ascending. The buddy followed the diver to the surface where she was located immediately. The diver was fully conscious and communicative at the surface. The buddy assisted the diver out of the water after advising shore cover to get the oxygen. After exiting and removing their kit both the diver and her buddy went onto oxygen, the dive site staff were notified of the incident and both divers were attended to by shore cover and on-site staff. After witnessing the unplanned ascent the instructor led the rest of the group up, conducting a slow ascent including completing a safety stop and exited the water. Neither the diver nor her buddy showed signs of DCI at any point but both remained on oxygen for two hours. When the instructor asked the diver about the incident it was explained that she had an inverted ascent due to excess air in her drysuit. The instructor spoke to chamber staff and, due to the inverted ascent that the diver had experienced, they advised that she attended a chamber for further examination. The diver was transferred by ambulance to the hyperbaric chamber where she was asymptomatic on arrival, but as she was there, they advised a four hour treatment in the chamber. The diver was released at 01:00am with no signs or symptoms of DCI. She was advised not to dive for four weeks.

August 2016 16/254

A diver and her buddy were diving from a RHIB on an offshore pinnacle where it was noted there was a long swell and some tide running. The diver decided not to carry her steel 3 lt pony cylinder. On entering the water the diver had to swim hard into the current in order to maintain contact with the shot and avoid pulling it off the top of the pinnacle whilst descending. As a result it had not been obvious to the diver that she was under-weighted. At around 8m the buddy pair managed to get into the lee of the pinnacle and checked everything was OK. Due to the swell and water movement it was difficult to check their buoyancy. The pair then explored the reef following the southern edge reaching a maximum depth of 31m. As the divers made their way back up the reef they found themselves on a small shelf at a depth of 20m but could not see the main wall and so deployed a DSMB. The pair had not incurred any mandatory decompression stops. During their ascent the diver got caught in an up-current caused by the tide hitting the reef wall and she began to ascend faster than normal. The diver tried to dump excess gas from her suit dump valve but was unable to control her buoyancy and surfaced having missed her planned safety stop. The diver was recovered to the RHIB but did not display any symptoms. She was placed on oxygen as a precaution. On returning to shore a hyperbaric facility was contacted and advised that the diver should not dive for the rest of the day. No ill effects were experienced by the diver.

August 2016 16/148

An instructor, a diver and a trainee diver were diving from a boat. It was the final training dive for the trainee and conditions were calm. The trainee diver became agitated aboard the boat prior to entering the water. She was re-assured and agreed to continue with the dive but following the entry was unable to descend. She then managed to descend but had no control of her buoyancy and the instructor took her back to the surface and checked what the problem was. The trainee stated she did not know but agreed to dive again. She then made a rapid descent followed by a rapid ascent. The instructor aborted the dive and re-assured the trainee as they returned to the boat. The trainee started to lose her weighbelt and the instructor called the dive boat over who responded quickly. As the instructor and diver assisted the trainee to the boat she lost her weightbelt. The trainee was recovered aboard the boat and it was agreed that more sheltered water training was required.

August 2016 16/178

A diver, who had recently bought a new drysuit and done around five or six dives with it, carried out two RHIB dives on a Saturday. The first was to a maximum depth of 11m with a dive duration of 47 min including a safety stop at 6m for 3 min and the second dive, after a 5 hour surface interval, was to a maximum depth of 26m with a dive duration of 40 min including a stop at 6m for 3 min. On the Sunday the diver and his buddy carried out a RHIB dive to a maximum depth of 27m for a dive duration of 27 min. The pair ascended from 27m with no problems but at 14m the diver could not vent his drysuit quickly enough and accelerated to the surface. His buddy continued to carry out a controlled ascent. The diver was immediately spotted by the RHIB and recovered aboard within minutes. He was showing no obvious symptoms of DCI but after explaining what had happened he was put on oxygen. The Coastguard was called and the diver's details given, The remaining divers had surfaced and were recovered aboard the RHIB. The incident had occurred within half a mile of a harbour and the RHIB pulled into it a few minutes before an ambulance arrived. Still breathing oxygen and with no signs of DCI the diver was taken to a hyperbaric chamber as a precaution. He was given recompression treatment, kept in overnight and received a further session of recompression treatment the following morning after which he was discharged. The diver had no after effects but intended to have an additional dump valve fitted to his drysuit and undergo refresher drysuit training.

August 2016 16/157

Three divers, one of whom was a trainee, had carried out a shore dive to a maximum depth of 11m with a dive duration of 44 min. They carried out a second shore dive to a maximum depth of 16m and at around 13m the trainee's mask began to flood. The trainee took in water and removed his regulator. One of the other divers gave the trainee his alternate source regulator, the dive was aborted and the divers surfaced with a dive time of 7 min. The trainee was taken to a first aid room and oxygen was administered.

August 2016 16/167

A rebreather instructor and his two students had carried out two 70 min dives, including practice skills, in a quarry to maximum depths of 10m and 15m. The next day, which was the students' first rebreather dive in the sea, the group were diving to a maximum depth of 20m for skills practice and depth progression. The ascent from 19m was on bailout and at around 12m to 10m one of the students was unable to control his buoyancy and ascended to the surface despite the instructor assisting by dumping air from the wing BCD. The student was orally dumping air from the breathing loop and using the counterlung dump but was probably not sufficiently horizontal in the water for the counterlung dump to be effective. The student surfaced with a dive duration of 70 min to a maximum depth of 20m but missed a safety stop at 6m for 3 min. The divers were recovered by their dive boat and suffered no ill effects. A second dive was completed successfully and the student completed the course and qualified as a CCR diver.

September 2016 16/190

A diver and his buddy carried out a drift dive from a RHIB. The buddy had a few problems clearing his ears so the descent was taken slowly and they reached the seabed at 15m. There was a mild current so the diver deployed his DSMB and the pair drifted with the current to around 20m. The buddy, who was the less experienced of the pair, looked comfortable and was giving 'OK' signals. Hearing a boat following them overhead the divers continued the dive until 30 min into the dive they reached 24m. As the buddy was close to 100 bar and the diver did not want to go any deeper he decided to ascend. The diver had to pay attention to winding in his DSMB reel, which was small and relatively hard to use, but monitored his buddy regularly. On the ascent it was difficult getting upward momentum, possibly due to the action of the current which had picked up once the divers had left the seabed, but their ascent accelerated at around 20m. The diver dumped some air and checked on his buddy but saw he was some way above him. To avoid doing a fast ascent to reach him and unsure whether he could control it and manage to stop the buddy, he hoped the buddy would control his buoyancy and return down to him but the buddy continued to ascend and surfaced near the DSMB. The diver could hear the boat nearby so he made a normal ascent reducing his safety stop to 1 min but kept an eye on the buddy at the surface. The diver surfaced next to the buddy and the boat, which was not the RHIB as this had broken down earlier, but another dive boat on the site. The buddy had been talking to people aboard the boat and appeared to be 'OK' but the diver shouted to the boat that the buddy had made a rapid ascent and should be put on oxygen. The buddy boarded the boat via its lift and, after checks, he appeared not to have any symptoms. His computer showed a maximum depth of 24m on a relatively square profile for 32 min. He had ascended from 24m to the surface in 2 min with a dive duration of 38 min. The computer was not showing any mandatory decompression stops, he had missed a safety stop and the computer had given a 'fast ascent' warning. The buddy was moved into the boat's wheelhouse and put on oxygen. After a couple of minutes he said he had a pain in his right upper arm as well as an ache in his left calf but confirmed he had suffered some cramp in his leg during the dive. A lifeboat had arrived and the buddy pair were transferred and taken ashore. The buddy walked up to the lifeboat station where he was assessed by one of the lifeboat's crew, who was also a paramedic, who called an ambulance. The ambulance subsequently requested a helicopter to transfer the buddy to hospital where, after further examination, they deemed it unnecessary for him to receive recompression treatment.

September 2016 16/246

A diver carried out a shore dive with his two buddies. The divers had descended to a maximum depth of 36m and at some point the diver had an unspecified problem. He released his weightbelt and made a rapid ascent to the surface with a dive time of 13 min. He was seen on the surface by a staff member at the dive site who raised the alarm. The diver was recovered by a rescue boat but was unconscious and not breathing. First aid, including CPR, was given and the diver started to breathe and eventually recovered a slight degree of consciousness. The emergency services had been called and a doctor and paramedics took over care of the diver. He was transferred by ambulance to hospital and later made a full recovery.

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Technique Incidents

October 2015 16/003

The dive plan for a buddy pair was for one of them to secure a dropped weightbelt on the seabed at 15m by attaching it to the shotline for their boat crew to recover and the other diver to then deploy a DSMB so they could continue with the rest of their dive. The pair entered the water and began their descent on the shotline. Shortly after leaving the surface the diver who had been tasked with deploying his DSMB from the seabed, unclipped it and began to deploy it but, whilst doing so, he drifted in a slight current and poor visibility away from the shotline. He returned to the shotline and continued to deploy his DSMB as the pair descended to 15m. The diver once again drifted away from the shotline and lost sight of his buddy. He completed a 360 degree visual search, ascended a couple of metres and continued to look for his buddy until he surfaced. In the meantime the buddy, shining his torch, had remained on the shotline but as the other diver did not return he ascended and surfaced shortly after him. Their dive time was about 4 min and the dive manager, having checked their computers, decided to allow them to continue with their dive ensuring they monitored their computers and completed any mandatory stops.

December 2015 16/031

An instructor was carrying out a shore training dive in a quarry in December with a trainee, who was about to qualify; they were accompanied by a qualified diver. They were all using drysuits with the qualified diver using her recently acquired suit for the second time. The trainee had complained of being cold and was determined to wear a wetsuit under his drysuit. The instructor persuaded him not to and, once kitted up, the trainee said he was cold but then said he was wearing the same as usual and was 'toasty warm' but he refused to wear a hood despite it being December. With the confusion the instructor insisted on a weight check. Both the trainee and diver were able to sink so the group started to descend but the diver was having some trouble and, despite the instructor holding her hand, the diver could not leave the surface. The group surfaced in standing depth and the instructor gave the diver an additional 2 kg weight and all agreed to descend a second time. The diver was still having trouble but the instructor managed to pull her down and they descended to around 6m. The instructor had been concentrating on the diver and then noticed that the trainee was not with them but saw him indicating on the surface no more than 6m away. The instructor and diver ascended and found the trainee in a distressed state saying he had a wet breathe from his regulator. The dive was aborted and the trainee reported a bit later to another diver that he had experienced a free flow on the surface.

December 2015 16/025

Three divers carried out a shore dive. They took 8 min to reach a maximum depth of 21m and after 22 min at depth the divers started their ascent. At 10m one of the divers started to lose control of her buoyancy and was struggling to stay down. Her drysuit's feet were buoyant and she struggled to get into a vertical rather than a horizontal position despite the efforts of her buddies to push her legs down. The buddies held onto the diver and tried to dump air from her drysuit and BCD with limited success but managed a relatively normal ascent with one of the buddies holding the diver down. The trio surfaced with a dive duration of 37 min with no apparent post dive effects and no undue indicators on their computers.

March 2016 16/144

Three students were asked by their instructor to plan a shore dive to conduct mask clearing, alternate source ascents and controlled buoyant lifts followed by a wall dive to a maximum depth of 30m. This was to be followed by a second dive to 18m maximum depth. The students worked together and their instructor nominated one of them to lead and plan the dive. The nominated dive leader, with only fifteen dives since diving again after a fifteen year break, had briefed and circulated his dive plan to the group using a more conservative computer setting as he had a medical condition and was not that physically fit, the air temperature in early spring was forecast to be around 1 deg C. The dive included multiple skill ascents at the beginning of the dive from 15m to 6m and a planned maximum depth of 30m. This was also the dive leader's first dive to 30m although he had carried out dives to 25m before. The dive leader arrived on the site at the briefed time but the instructor and one of the other students had arrived early and were already setting up their kit; the start of the dive brief was delayed. The third student was unwell and had decided not to dive. The instructor told the students that, on reaching the wall during the dive, he wanted them to swap over the dive leader role. The dive leader carried out his dive brief and the group moved to their entry point but, on being asked why the planned time to start the dive was now an hour late, he began to feel pressurised that the day's diving was not going to plan. During the buddy check the instructor's inflator hose to his wing BCD was not attached. The other student had misplaced his fins and was using a pony cylinder for the first time, it took some time for the dive leader to secure it in a comfortable position. The group descended to the planned depth of 15m to carry out the exercises but, having signalled to level off, the dive leader and the other student were beckoned down to 18m by the instructor. The students carried out the alternate source ascents from 18m to 6m and the first controlled buoyant lift exercise. On the second buoyant lift the student who was lifting the dive leader was unable to prevent an ascent to the surface. The dive leader's computer showed he had missed a safety stop and they re-descended straight away. At this point the dive leader's computer showed information that he was not familiar with but he had no restriction on his 'no decompression limit' (NDL) so the divers continued to descend. They reached a maximum depth of 29m on the wall and noticing that the dive leader had 8 min NDL the dive leader indicated to the other student to swap over the dive leading role but got no response. The dive leader then mistakenly gave a signal to switch to their pony cylinders, they did not do so but did switch the dive leading role and continued the dive. The group ascended to the top of the wall where it had been planned to deploy a DSMB. The student, who had been the dive leader, now had 7 min NDL on his computer and 70 bar in his main cylinder. He thought he gave the appropriate signals to the instructor and showed him his computer. The instructor responded with an 'OK' signal and headed off to the area where the group had carried out their earlier exercises at 18m. Following the instructor, the student switched to his pony cylinder as his main cylinder was now down to 25 bar. On reaching the exercise area he was signalled by the instructor to deploy his DSMB which he did. The group began the ascent but at 15m the student's pony cylinder ran out so he switched back to his main cylinder. Reaching the safety stop the student's computer showed 17 min of decompression stops. His weightbelt began to slip off as, wanting to save air, he had not put any in his drysuit. As the student struggled to retain his weightbelt the instructor signalled the other student to take the DSMB. The student then ran out of air and used the instructor's alternate source. The instructor and other student completed their decompression stop but the student still had 14 min of decompression left on his computer although his back-up computer was clear. The group surfaced with a dive time of 50 min to a maximum depth of 29m but the student's computers were both 'locked out'. No subsequent ill effects were reported.

March 2016 16/055

An instructor and two students were diving from a boat and had started a training dive with alternate source rescue ascents from 15m to 6m. The exercises went well but after acting as the recipient one of the students replaced his main regulator with his pony cylinder's octopus regulator. After 10 min the student felt resistance on the regulator and realised he was running out of air even though the group had just carried out an air check with his main cylinder's contents gauge showing 150 bar. The student took the instructor's alternate source regulator while the instructor sorted out the problem and put the student back on his main regulator. The student remained calm throughout. The divers surfaced with an overall dive time of 30 min to a maximum depth of 15m. The student's main and octopus regulators were very similar with the same mouthpiece and hose colours and this had caused the confusion.

April 2016 16/083

Whilst conducting a try-dive in a swimming pool an instructor noticed a lone diver in the deep end. Her 'instructor' was on the surface using a mask but no other equipment. No try-dive forms had been filled in and no briefing given.

April 2016 16/074

A buddy pair carried out a boat dive on a wreck and descended a shotline to a maximum depth of 29m. It was very dark below 15m and using torches the visibility on the wreck was around 2 to 3m. One of the divers recovered the shotweight using a lift bag, his buddy then deployed a DSMB and the pair began their ascent. The diver who had recovered the shot had accrued 3 min of decompression and his buddy 6 min. At approximately 7m the visibility dramatically reduced to less than 0.5m and the divers lost sight of each other. Both carried out separation drills and the diver deployed his own DSMB. Both divers, with a dive time of 33 min to a maximum depth of 29m, carried out their decompression stops at 6m and a 3 min safety stop and surfaced without further incident. .

May 2016 16/124

An instructor and two divers carried out a drift dive from a hardboat. The dive plan included increasing one of the diver's experience in deploying her DSMB using a small reel and assisted by the other diver filling the buoy. The divers descended to about 16m but the current was faster than had been briefed by the skipper and the diver filling the DSMB had difficulty so the instructor took over. Once the DSMB had been deployed the diver holding the reel let out more line so that the other diver could use it as a buddy line and the instructor attached her buddy line to the reel with the diver holding the reel now in the middle of the three. The strong current started to pull the group into deeper water and the instructor indicated that they should swim back towards the reef but this did not make much difference. Within 10 min the group were approaching 20m which was deeper than the dive plan so the instructor signalled for the group to ascend. The current was pulling hard on the DSMB which made the small reel difficult to wind and the divers made slow progress. The group stayed together until around 16m when the diver, who had been using the DSMB line as a buddy line, disappeared. She had been looking at her computer, was not holding onto the line and drifted off. She surfaced alone having carried out a 3 min stop at 5m. The instructor and other diver had stopped and looked around for a couple of minutes for the other diver and then continued their ascent. They made a 3 min safety stop at 5m and surfaced with a dive duration of 28 min to a maximum depth of 21m. Initially they could not see the other diver anywhere but were relieved to see she was already back aboard the boat.

May 2016 16/095

A diver using a single cylinder of air and his buddy using a cylinder with nitrox 32 carried out a boat dive on a wreck at 32m. Between 25m to 20m the diver misread his computer thinking he had 10 min of no stop dive time left and with 70 bar he signalled to his buddy to end the dive and start their ascent. The diver noticed his error and that he had in fact 10 min of decompression to complete. His breathing rate increased as his buddy was deploying his DSMB. During this time the pair separated and the buddy continued his ascent to 6m during which he could see the diver and his bubbles some way below him. The diver decided to deploy his own DSMB and saw a pair of divers on twin-sets carrying out a decompression stop at 6m and he made his way to them. He switched to the alternate source regulator of one of the twin-set divers and completed his 10 min decompression stop before surfacing with a dive duration of 45 min to a maximum depth of 32m and with 10 bar in his cylinder. The buddy had carried out his 9 min stop at 6m and surfaced with 25 bar. The buddy pair re-united at the surface and were picked up by their boat. The diver concluded that his eyesight had significantly deteriorated of late hence the reason he misread his computer and he planned to purchase a mask with prescription lenses.

June 2016 16/102

A buddy pair, both using rebreathers, carried out a wreck dive from a boat. 23 min into their dive and in low visibility at their maximum depth of 39m the pair became separated. After an unsuccessful visual search both divers deployed their DSMBs and ascended to 6m to carry out a 5 min decompression stop. They both surfaced five metres from each other with a dive duration of 34 min.

July 2016 16/142

Three divers carried out a boat dive to a maximum depth of 12m. One of the divers, using nitrox 24, was positioned behind his two buddies and holding an SMB. At 10m he became separated from them, carried out separation procedure, ascended and was recovered by the boat. The buddies stayed together and one deployed a DSMB. They carried out the separation procedure, ascended and were recovered by the boat. Dive times for all three divers was 19 min.

July 2016 16/137

An instructor agreed to take a very nervous diver for a dive. The diver had been unable to enter the water on a previous boat trip due to his anxiety and the same had happened on the trip now being undertaken. The instructor, who the diver knew well, suggested that he dive with him. The instructor paid special attention to ensure the diver was relaxed and understood exactly what he was doing which put the diver at ease. They carried out a dive to a maximum depth of 24m during which the diver was relaxed, . After 40 min they began their ascent using the instructor's DSMB and they carried out a 1 min stop at 12m and then a 3 min safety stop at 6m. When they had completed the safety stop the instructor signalled to surface but the diver indicated to his computer which the instructor was not familiar with and did not think there were any stops indicated. The divers surfaced with a dive duration of 52 min. When they were back aboard the dive boat another senior diver pointed out that the diver's computer was showing missed stops. The diver was immediately put on oxygen, the boat returned to harbour and the diver was taken to a nearby hyperbaric chamber. There he was given more oxygen and observation but after three hours he was discharged but told not to dive for twenty-four hours. The instructor, who had focused hard at putting the nervous diver at ease on the dive brief had not realised they were diving different gas mixes. The diver was using air, the instructor was using nitrox 32 and his computer was set at nitrox 32 from a dive the previous day but he had forgotten to re-set it to air for

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the dive. The diver carried out another dive with the instructor the following day without any problems.

August 2016 16/251

A diver and two buddies planned a dive to a wreck in a maximum depth of 38m. Prior to the dive, the boat's skipper asked the divers to lift the shot using the attached lifting bag. The first buddy descended quickly. The diver and her other buddy followed but, at about 4m, her drysuit inflation hose became disconnected. Her buddy re-attached it but this delayed their descent. Underwater visibility was very poor and they did not see the wreck until they settled onto the seabed beside the hull. The shot line was looped down to the seabed and over the wreck. The wreck was on its side and the diver moved up and onto the side of the wreck while her buddy descended to her. They saw the third diver's torch light and moved down towards it. Visibility at this time was almost nil and the diver held the shotline to avoid becoming lost. As she was adding gas to adjust her buoyancy she felt the shotline jerk upwards; the first diver down had inflated the bag and sent the shot to the surface. The diver let go of the line but she had been dragged up from 35m to 27m. She looked down and around but could see no sign of her buddies. With low visibility and a current running, she knew that she would not be able to join up with her buddies again so she made a slow ascent to the surface and returned safely to the boat. Her dive duration was 18 min. Her buddy surfaced about 30 min later. No subsequent ill effects were reported.

September 2016 16/242

The Coastguard received a report of an unmanned RHIB displaying a dive flag. It had been noticed over a 45 min period. During the call a group of divers returned to the boat. No further action was required. (Coastguard report).

Equipment Incidents

November 2015 16/010

During a winter shore dive training exercise a diver had inflated his DSMB mid-water at 12m using his alternate source regulator. Using controlled bursts the regulator went into free flow and all efforts to stop it failed. The diver switched to his bailout 3 lt pony cylinder while his buddy turned off the main cylinder and then slowly re-opened the valve which resolved the free flow problem but the cylinder contents had reduced from 210 to 100 bar. The diver switched back to his main cylinder and the divers continued their dive cutting the dive plan short to surface with the required reserve. Their maximum depth was 13m with a total dive time of 16 min.

November 2015 16/011

Three divers were carrying out a winter shore dive and at 12m as one of group started to deploy his DSMB, his alternate source regulator free flowed. One of his buddies gave their alternate source regulator to the diver and switched his cylinder off and then back on which resolved the free flow. The diver switched back to his cylinder and completed the DSMB drill. The trio checked air and continued the dive to a maximum depth of 13m for a total dive time of 28 min, including a 3 min safety stop at 6m, without further incident.

November 2015 16/012

Three divers were carrying out a winter shore training dive. Whilst filling a DSMB at 12m one of the diver's alternate source regulator went into free flow. Despite attempts to rectify this, including breathing from it and turning it upside down, the free flow continued. The diver switched to the alternate source of one of his buddies and indicated that he should shut down his cylinder. The buddy slowly re-opened the cylinder without the free flow resuming. The diver switched back to his main regulator and noted that the cylinder pressure had dropped to 120 bar. The divers aborted the dive and surfaced with a total dive time of 25 min to a maximum depth of 13m.

December 2015 16/018

Three students and their instructor were carrying out a winter shore training dive. At 6m as one of the students filled his DSMB his alternate source regulator went into free flow. Despite attempts to resolve it the free flow continued. The student switched to the instructor's alternate source and indicated to shut down his cylinder. Once the free flow had stopped, one of student's buddies slowly opened the cylinder without the free flow resuming and the student switched back to his primary regulator. His cylinder pressure had dropped to 120 bar. All the divers returned to the surface with a dive duration of 15 min.

March 2016 16/061

On the first shore dive of the second day of a diving course an instructor and two students carried out a dive to a maximum depth of 10m. At 6m one of the students had a free flow from his octopus alternate source regulator. The instructor placed the student on his alternate source and switched off the student's cylinder. He turned it back on and with no free flow from the regulator the student went back onto his primary regulator and the divers continued their dive and surfaced with a dive duration of 40 min.

March 2016 16/060

On their final shore dive of a diving course two divers had reached a maximum depth of 12m and ascended to a 6m training platform. One of the divers inflated his DSMB with his alternate source regulator but it free flowed. His buddy offered her alternate source regulator and turned the diver's cylinder off and back on again but his regulator continued to free flow. The buddy turned off the cylinder again and the divers carried out a controlled alternate source ascent and surfaced with a dive time of 35 min.

April 2016 16/067

A student and two instructors, acting as his 'students', carried out the final shore dive of an instructor training course. As the student demonstrated DSMB deployment at 6m his alternate source regulator went into free flow. He switched to one of the instructors' alternate source regulator who turned the student's cylinder off and back on which resolved the free flow. The student switched back to his primary regulator and the divers surfaced shortly after with a dive duration of 17 min to a maximum depth of 6m.

April 2016 16/066

A buddy pair, one using a rebreather, carried out a boat dive to a maximum depth of 12m. 22 min into the dive the rebreather diver had a CO2 alarm. He carried out a diluent flush but the alarm came back on so the diver switched to his bailout cylinder and indicated to his buddy to ascend. The buddy deployed a DSMB, the divers made a normal ascent and surfaced with a dive time of 25 min. The rebreather diver found that after dismantling the scrubber there was not enough grease on the scrubber's 'O' ring.

April 2016 16/073

Two divers carried out a RHIB dive on a wreck using single 12 lt cylinders. The pair descended a shotline and at around 30m and 15 min into the dive one of the divers indicated he had 100 bar remaining and, as planned, they began to make their way back to the shotline. 2 min later the buddy noticed air escaping from behind the diver's head at the same time as he indicated he only had 50 bar left. Realising that they were not going to make it back to the shotline, the buddy quickly deployed her DSMB and the pair began to ascend. At approximately 25m the diver calmly gave the 'out of air' signal and began breathing from the buddy's octopus regulator. The buddy took control and they ascended slowly to the surface missing their planned 3 min safety stop at 6m. They surfaced with a dive time of 22 min to a maximum depth of 32m. The divers were recovered aboard the RHIB without further incident. An initial inspection of the diver's regulator DIN fitting revealed a slight amount of looseness coupled with intermittent release of air. Back on shore it appeared that the DIN fitting to the regulator had not been fully tightened on assembly as following further inspection the 'O' ring was intact, there was no damage or debris on the valve seating and the regulator did not leak when attached to a different cylinder. The original cylinder was refilled that evening and used for a dive the following day without incident.

April 2016 16/091

A diver using nitrox 25 and carrying nitrox 80 for decompression conducted a boat dive on a wreck to a maximum depth of 48m. He ascended the shotline and completed a 1 min decompression stop at 27m and a 1 min stop at 16m. During his 15 min stop at 6m he thought his side slung cylinder knocked against his drysuit inflation valve. The valve, which was new, stuck open and his drysuit rapidly inflated. The diver had difficulty venting all the gas from his suit as he was wearing a thick winter undersuit which was a tight fit and didn't allow rapid migration of gas. He was able to hold onto the shotline but after he had floated up from 6m to 2m he rapidly re-descended

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to 6m to complete his decompression stop. The diver surfaced with a dive duration of 50 min.

May 2016 16/153

Two divers, one of whom was an instructor, carried out three shore dives. The first two dives were to a maximum depth of 15m for a dive time of 30 min and to a maximum depth of 20m for a dive time of 30 min. On the third dive, with a maximum depth of 21m, one of the divers experienced a regulator free flow and a rapid ascent was made. The divers surfaced with a dive time of 10 min and one of the divers was reported to have had a nose bleed.

May 2016 16/098

A diver was loading his assembled kit onto a RHIB from a pontoon and heard something hissing. He listened to all the hoses, regulators and the first stage and thought the hissing seemed to be coming from around the cam-band area of his BCD. The diver turned the cylinder off and purged the regulator but the hissing was still coming from the cam-band area. Another diver arrived and they dropped the whole set in the water over the side of the RHIB and saw a stream of bubbles coming from the cylinder wall. They took the cylinder out, detached the regulators and opened the valve in order to drain the cylinder. The cylinder was left in the middle of the pontoon, which had been cleared of people, and the divers retreated onto the shore to wait for it to fully drain. The cylinder had had a full five year hydrostatic test and oxygen clean in 2014 and the service company had advised that isolated rust spots had been found on the cylinder's internal base which were repaired by shot blasting. The cylinder was recorded as due for re-test in January 2017. It was sent for inspection to the dive centre who had filled it and the technician reported it was the worst cylinder he had ever seen internally and it contained a cup of salt water. The cylinder was destroyed. The technician also advised that should such a problem should occur in the future to turn a cylinder on and drop it in the water so if it exploded the water would take the shock.

June 2016 16/280

A diver was spotted alone on the surface and swimming around. Other divers, who did not know him, confirmed he was not being used for a rescue scenario. An instructor called out to the diver and asked him to swim towards the pontoon. The diver did not follow their instructions so they entered the water and helped him back to shore. He was de-kitted and supported by divers to sit down so that he could rest. The diver explained he been to a maximum depth of 8m and had experienced an equipment malfunction where his regulators stopped giving him gas even though he had 120 bar according to his gauge. The diver's buddy had ascended and was being assisted by more divers on the shore.

July 2016 16/165

A diver was using his twin-set at a depth of 4m in a swimming pool. His twin-set consisted of independent 7 lt 300 bar cylinders each set up with main regulator, alternate air source and pressure gauge. The twin-set had been serviced five months earlier. The diver found that when he switched from one cylinder's regulator to the other cylinder's, he had no air. Back on the surface and checking the equipment the diver found that the regulator that had not worked would only do so at a cylinder pressure of below 280 bar and the cylinder had been filled to 300 bar. At a pressure above 280 bar the regulator's first stage 'locked out' and would not give any gas to the low pressure ports although the pressure gauge said 295 bar. It was impossible to remove the first stage as he could not purge the air using either the octopus regulator or the BCD. He was forced to remove the pressure gauge which 'popped out' after being unscrewed with a brief bang releasing all the pressure. The regulator set was taken back to the service agent and the diver was informed that although the first stage is rated at 300 bar, and this is stamped on the first stage, they are only tested at 232 bar. The service agent rectified the problem and refilled the two 7 lt cylinder to 300 bar.

July 2016 16/134

A rebreather diver carried out a boat dive on a wreck. On reaching the seabed at 32m and approximately 5 min into the dive the diver had an audio and visual CO2 alarm so he carried out a diluent flush which cleared the alarm. Approximately fifteen minutes later at 30m there was another CO2 alarm which could not be cleared by a diluent flush so the diver switched to his bailout cylinder, aborted the dive and surfaced with a dive duration of 28 min.

July 2016 16/182

A rebreather diver carried out a boat dive to a wreck at a depth of 30m when his rebreather signalled a CO2 alarm. The diver bailed out to open circuit and carried out a diluent flush. The alarm cleared and the diver returned to the loop. Approximately 3 min later the CO2 alarm occurred again. The diver bailed out and aborted the dive. When he reached 12m the diver called for extra gas as a precaution and carried out a 5 min safety stop at 6m. He surfaced with a dive duration of 36 min to a maximum depth of 30m and had no ill effects after the dive. He stripped down the rebreather unit but could find no obvious reason for the alarm and the scrubber material was new at the start of the dive.

July 2016 16/243

A diver and his buddy, both wearing 12 lt manifolded twin-sets with 200 bar entered the water from their dive boat. They carried out a reef dive and reached a maximum depth of 20m during which the diver collected three crabs in his goody bag. At around 25 min and with 120 bar the diver signalled to his buddy to ascend. The buddy went to deploy his DSMB but was unable to unclip it. The diver handed the goody bag to the buddy, deployed his DSMB, took the goody bag and clipped it onto the reel for the ascent. The pair carried out a 3 min stop at 6m and surfaced with a dive time of 31 min. The boat was some way off picking up other divers. The diver had inflated his wing BCD and put air in his drysuit but his head went back beneath the surface. The diver immediately added more air to his BCD but this made no difference as his head was still below the surface. He added more air to his drysuit which lifted his head out of the water but the drysuit was very uncomfortable and the diver was struggling to breathe as his neck seal was pushing up under his chin against his throat. He felt his weightbelt pushing down past his hips so decided to release it as he had a security lanyard connecting it to a shoulder buckle on his BCD. Still not knowing what the problem was the diver decided to jettison the weightbelt so he could lie flat on the surface, disperse the air in his suit and make it easier to breathe. He undid the weightbelt but, as it was still attached to his BCD's shoulder buckle by the lanyard, it pulled his head underwater, the air in his drysuit rushed to his feet and the diver inverted. Still with his regulator in and with 100 bar although inverted the diver felt comfortable. After a few minutes his mask began to flood and he struggled to clear it. To get attention of people in the boat he started waving his bright yellow fins in the air. Whilst doing this he attempted to lift the weightbelt hanging from the lanyard to unclip it but it was too heavy. He was now becoming breathless so let out some of the DSMB's line and clipped it to the weightbelt. He took his knife, mounted on his left shoulder, and cut the lanyard which released the weightbelt now supported by the DSMB which sank just below the surface. The diver managed to right himself and saw the boat heading toward him. Another diver approached the diver to assist and the diver dropped the knife

for safety reasons. The diver was recovered aboard the boat but his recall of events during his recovery were sketchy until another diver brought him a cup of sweet tea. The diver inspected his dive kit and found the BCD's corrugated inflator hose had split so he had been unable to inflate his BCD on the surface. He checked his computer and it showed a dive time of 38 min indicating he had been struggling on the surface for 7 min. The next day the diver asked about what happened on the boat whilst he was in the water. The diver's buddy had signalled the boat and they saw the diver was inverted and waving his fins in the air. The boat skipper had asked 'is that normal?'. The response had been that 'no it wasn't and the diver was in trouble'.

August 2016 16/150

A diver and his two buddies had carried out a boat dive to a maximum depth of 34m with a dive duration of 43 min including a 5 min stop at 6m. The diver was using independent twin 10 lt cylinders and finished the dive with pressure readings of 130 bar and 90 bar. After a surface interval of 2 hours 15 min the trio carried out a second dive to a maximum depth of 24m. He started the dive using the cylinder with 90 bar intending to switch when this reached 50 bar to the 130 bar cylinder. Approximately 20 min into the dive his regulator began to feel tight to breathe and adjusting it made no difference. After two or three breaths the regulator stopped delivering air completely so the diver switched to his other cylinder. He looked at the pressure gauge for the cylinder he had been breathing from and it indicated 60 bar but when he tapped the gauge the needle fell to 0 bar. The diver indicated to his buddies that he now had 130 bar in a single cylinder and they commenced their ascent when he had 70 bar left. The divers surfaced with a dive time of 38 min including a 3 min safety stop at 6m. This was the first time the diver had experienced any problem with the pressure gauge.

August 2016 16/166

During the second of two training dives on a rebreather course a diver's rebreather gave a CO2 alarm at 18m. The diver immediately bailed out to open circuit and carried out a diluent flush. The alarm cleared and all else was well. The diver returned to the loop but approximately 3 min later the CO2 alarm occurred again. The diver bailed out onto open circuit, aborted the dive and surfaced with a dive duration, including a 3 min safety stop, of 41 min to a maximum depth of 20m. The diver was recovered to the dive boat and no ill effects were felt. Between the two dives the batteries had been changed in a medium rough sea which may have caused the 'O' ring to be disturbed. The diver continued the course and qualified as a CCR diver.

September 2016 16/183

Whilst carrying out a BAR equipment check on a boat dive a diver checked his pony cylinder's regulator and the air did not smell right and tasted oily and metallic. He asked the dive manager to try and they confirmed the air did not smell or taste right and instructed the diver not to use the pony cylinder on the dive. On return to shore the 3 lt pony cylinder was inspected and it was found to have flash rusting on the base and 100mg/m^3 of water vapour was detected. The compressor used to fill the cylinder was tested and passed.

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Miscellaneous Incidents

December 2015 16/257
Lifeboat launched to assist dive boat. False alarm. (RNLI report).

June 2016 16/263
Lifeboat launched to assist diver. Others coped. (RNLI report).

June 2016 16/266
Lifeboat launched to assist dive boat. Others coped. (RNLI report).

July 2016 16/270
Lifeboat to assist dive boat. False alarm. (RNLI report).

August 2016 16/159
Two divers had carried out two shore dives. The first dive was to a maximum depth of 9m for a dive duration of 40 min and the second was to a maximum depth of 22m with a dive duration of 38 min. Thirty minutes after surfacing the diver started to get 'pins and needles' in both hands and went to the first aid room on site. The diver was put on oxygen for fifteen minutes, checked after a five minute break and was 'OK'. The diver was told not to dive again that day and to remain on the dive site for at least an hour.

Overseas Incidents

Fatalities

January 2016 16/034

A diver and his buddy carried out two dives on the last day of a week's holiday on a liveaboard. The first dive was to a maximum depth of 12m for a dive time of 62 min and after a 3 hour 52 min surface interval they carried out an uneventful dive to a wreck at 30m. The divers ascended together on the boat's anchor line, which was attached to the wreck and, with no mandatory decompression stops, they carried out a 3 min safety stop at 5m. The anchor line was crowded with around ten other divers carrying out stops and the pair lost sight of each other as they floated just off the anchor line. The buddy could not find the diver and assumed he had swum with several other divers as they returned to the stern ladder of the liveaboard to exit the water. The buddy surfaced with a dive time of 33 min to a maximum depth of 30m and exited the water but did not find the diver or his equipment aboard the boat as expected. The missing diver was spotted by the crew of one of the liveaboard's support inflatables approximately 30m from the boat. He was unconscious and was recovered to the liveaboard where CPR was started and oxygen applied whilst the boat returned to port. The diver was transferred by ambulance to hospital and assessed by a neurologist and a hyperbaric doctor by which time he was conscious and able to answer questions although unable to remember anything about the incident. Following a CT scan the examining neurologist suspected a stroke. There was no evidence of DCI and recompression treatment was not given due to the risk of the diver's condition worsening. During the night the diver's condition deteriorated and he passed away later the next afternoon.

May 2016 16/248

A pair of divers had previously been diving for four days consecutively completing two dives each day, at least one daily over 40m depth and had followed all decompression requirements. Both were using rebreathers. On the final day they originally planned to conduct two dives but then decided to limit to a single dive in light of the previous sequence of deep dives and worsening weather conditions. The pair planned not to incur a lot of decompression stops and entered the water and conducted a normal descent to a wreck which was relatively flat to the bottom and ranged between 46m and 43m in depth. After 20 min bottom time without any problems the pair were close to the shotline and the lead diver signalled his buddy they would spend another 2 min looking around and then start their ascent to which the buddy signalled OK. The buddy appeared to hang around near the shotline at this point rather than follow the lead diver but gave no indication anything was wrong. After the 2 min the pair started their ascent up the shotline with the lead diver slightly ahead. At the first indicated decompression stop at 40m the lead diver noticed his buddy was lagging behind and something was not right so he descended and saw that the buddy seemed to be struggling with something. Once level with his buddy he gave him an OK signal but instead of responding the buddy took his rebreather mouthpiece out, closed the loop, and went to locate his bailout regulator which was attached to his side-mount cylinder. The lead diver noticed that his buddy grabbed his contents gauge instead of his regulator and so the lead diver took the regulator and assisted his buddy to get it into his mouth. The buddy began breathing from the regulator but his breathing was noted to be very rapid and appeared panicked. The lead diver tried to calm him down by indicating to him to slow his breathing. As the buddy's breathing slowed the lead diver signalled OK and received an OK in return but he noted that the buddy's eyes appeared stressed and he seemed to be having trouble breathing. The pair had 15 min of required decompression at this point and so they started to ascend to carry out their decompression with the lead diver monitoring the buddy's gas contents as he appeared only to be able to concentrate on breathing. At the 15m deco stop the buddy continued to breathe rapidly and so the lead diver gave him his own backup supply of gas and he switched regulators and then the lead diver transferred his cylinder and attached it to his buddy. The pair completed stops at 15m and 9m and ascended to 6m. The lead diver determined that as his buddy had come off his rebreather loop then his computer would not reflect the decompression he required and so indicated to him that they would need to do an additional 30 min at 6m to ensure a safe ascent to which the buddy signalled OK. The lead diver had remained on his loop and his decompression requirements had cleared at this point. Another rebreather diver from the group ascended the shotline and he was carrying a nitrox 40 mix and so the lead diver indicated to hand this over to help the buddy decompress quicker. The buddy indicated he understood this and the new cylinder was clipped onto him and as the regulator was passed to him he switched to breathe from it and gave the OK signal. Other divers from the group ascended to the same point and each signalled OK to the diver and he responded with an OK signal but did not appear to be at ease. After 10 min the pair were on their own at 6m as the others had completed their decompression and ascended. The lead diver maintained regular checks and signalled OK and received an OK on each occasion. Suddenly the buddy's mask started to fill with water and he struggled to clear it. The lead diver tried to see if the mask skirt was distorted or any other cause but none were evident. After several attempts the buddy managed to clear most of the water to below eye level and he signalled that he was OK but evidently was not. The lead diver, conscious of the need for additional decompression, signalled there were 20 min to go and would the diver be OK to do that to which he signalled OK and did not indicate he wanted to ascend. After some time the lead diver diverted his attention briefly to check his own equipment and on turning back his buddy was not in sight. Checking around he saw him halfway to the surface but he did not appear to be ascending quickly. The lead diver ascended after him and by the time he reached the buddy he was on the surface. Total dive time was 52 min. On surfacing the lead diver shouted at the buddy to see if he wanted to re-descend but got no response; the buddy was unconscious and had foam in and around his mouth. The lead diver shouted for help but they had surfaced on the opposite side of the boat to the other divers and he was not heard. The surface conditions were rough and the diver did not feel he could effectively provide rescue breaths and so decided to get him back to the boat. The tow back to the stern of the boat was difficult due to the sea state and the drag of all the equipment the pair carried. Eventually someone on the boat spotted the pair and others entered the water to assist in de-kitting and recovering the unconscious diver onto the boat and they commenced CPR. The exhausted lead diver took around 5 min to recover to the boat and remove his equipment and then assisted with CPR. Resuscitation attempts were continued for 40 min whilst the boat returned to port to be met by an ambulance. The ambulance took the diver to hospital but he did not recover. A post mortem examination indicated the diver had suffered from pulmonary barotrauma.

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Decompression Illness

October 2015 16/007

A diver and his buddy, using nitrox 30 and nitrox 29 respectively, carried out a boat dive on a wreck and reached a maximum depth of 34m. After 34 min the diver surfaced alone as his buddy remained at 6m to complete decompression requirements. The diver exited the water and stated that he had missed about 4 min of decompression due to a buoyant ascent. He de-kitted and sat quietly on the boat but 33 min after surfacing he notified his buddy that he had 'tingling and pins and needles' in his right leg. He was put on oxygen by the surface support by which time his left leg was similarly affected and he had numbness on his right thorax. Oxygen continued to be administered and the diver was taken to hospital where he subsequently underwent recompression treatment.

October 2015 16/019

A diver on a liveaboard holiday had completed three dives on the first day with the deepest being 13m. On the second day the diver conducted three dives using nitrox 30. The first early morning dive was to a maximum depth of 37m for a dive duration of 48 min, the second dive, after a surface interval of around 3 hours 31 min, was to a maximum depth of 37m for a dive duration of 47 min and the third dive, after a surface interval of 2 hours 44 min, was to a maximum depth of 30m for 60 min. Back aboard the boat and about ten minutes after surfacing the diver experienced a light flash across his eyes and within a minute he could not focus, everything was spinning and he could only stand with some form of support. The diver informed the dive manager and the diver was immediately put on oxygen. Shortly after this the diver began to be sick. The dive manager contacted a hyperbaric chamber and the boat returned to port taking around nine hours for the journey during which the diver was kept on oxygen. The diver was transferred by ambulance to the chamber and was still dizzy, unable to focus, had severe disturbance to his balance and had muscle pain in his chest and back. The diver was given recompression treatment in the early hours of the following morning after which he felt much better. He was discharged, asked to drink a lot of water and electrolytes and return to the chamber that evening for another session of recompression and re-evaluation of his residual symptoms. The diver returned that evening but was still dizzy while walking and underwent the second session of recompression treatment after which he reported a marked improvement. The following day the diver, although feeling more or less normal but still unbalanced when walking, underwent a third session of treatment. The diver was diagnosed with an inner ear and musculoskeletal DCI with dehydration on the dive day being a strong precipitating cause. During the early morning before the first dive on the second day the diver had diarrhoea and had taken two anti-diarrhoeal tablets but had not eaten and drank very little during the day. The diver was advised not to fly for three days, not to dive for two months and then consult a diving doctor.

May 2016 16/089

A diver had completed a boat dive on a wreck to a maximum depth of 30m with a dive duration of 42 min including a 3 min safety stop at 6m. After a surface interval of 2 hours 5 min the diver carried out a second wreck dive to a maximum depth of 27m with a dive duration of 37 min including a 3 min safety stop at 6m. The diver surfaced with a bad headache which he put down to dehydration as it was a hot and windy day. His left ear felt 'dull' as though it had not equalised despite the diver not having any problems on the descent or ascent. He returned to his accommodation but the headache, very much like a migraine, continued to worsen so he took a pain killer which eased it. The headache lasted for twenty-four hours and then subsided. During the evening two days later the diver felt 'tingling' in his left hand and shoulders and his left leg felt weak. He sought medical advice who recommended that the diver attend a hyperbaric chamber. The diver was assessed with DCI and received recompression treatment.

June 2016 16/121

A diver carried out two shore dives organised by a dive centre in sunny hot conditions with an average air temperature of 23 deg C. The first dive was on a wreck to a maximum depth of 34m for a dive duration of 41 min with a 3 min safety stop at 5m. After a surface interval of 1 hr 30 min the second dive was on another wreck to a maximum depth of 32m for a dive duration of 45 min with a 3 min safety stop at 5m. Bottles of water were consumed during the day and food between the two dives. On return to the dive centre, about two hours after the second dive, the diver experienced vertigo, dizziness and nausea. He lay down and after ten to fifteen minutes experienced the onset of skin mottling to his shoulders, top of arms, upper chest and back. The dive centre called for an ambulance and the diver was taken to hospital and a hyperbaric chamber for examination. The diver was diagnosed with an inner ear barotrauma and the other predispositions for DCI, such as dehydration, exertion on entries and exits, too much sun and general fatigue were not discounted. The diver received recompression treatment and had three more sessions over the next three days. Following sufficient recovery to fly home the diver was discharged with two letters from hyperbaric and neurology consultants.

Illness / Injury

October 2015 16/005

A trainee carried out a shore training dive to 3m but 34 min into the dive had a problem clearing his ears. The trainee was removed from the water and sent to a medical centre for assessment. He was told not to dive for two weeks.

November 2015 16/015

A student on a diving course carried out a shore dive. The student entered the water and descended but at 3m was unable to clear his ears and carried out a controlled ascent and surfaced with a dive time of 6 min. He exited the water supervised by the dive manager.

November 2015 16/014

A diver was aboard a RHIB travelling to a wreck site. The weather was a SE wind force 2 to 3 with a moderate sea state. The diver was jolted in the RHIB and suffered minor back injury caused by a muscle spasm. The diver attended a medical centre and was given mild painkillers.

November 2015 16/016

A group of divers were on an expedition and, due to wind and swell, had chosen a sheltered and shallow wreck site to carry out shore dives. They had just completed carrying out rescue scenarios when a muffled shout was heard and two divers, not from their group, were seen about fifty metres away. One of the divers was not moving and the other was unsuccessfully attempting to perform rescue breaths. Three divers from the group were dispatched to assist and when the first rescuer arrived on the scene he found the motionless diver pale with blue lips, a mask full of water and not breathing so he

administered rescue breaths. The first rescuer towed the diver to shore and the other two rescuers helped him and also assisted the diver's buddy, who appeared to be in shock, to stairs at the exit point. The unconscious diver, having ejected water after one of the rescue breaths, was now breathing, He was de-kitted and carried from the water up the steep stairs, which needed at least four people, to the hard standing at the top. He was given oxygen, placed in the recovery position, made warm and comfortable with blankets and his pulse and breathing rate recorded. The diver regained consciousness and was able to speak after about ten minutes. Members of the expedition had called an ambulance and the diver was transferred to hospital where he was kept in overnight. The only details given regarding the divers' dive was that they had reached a maximum depth of 8m and an incident had occurred at 3m. The diver who was resuscitated was a trainee, his buddy was an instructor and they had no surface cover on the dive site.

December 2015 16/026

Towards the end of a shore training dive to a maximum depth of 7m a group of divers had ascended to 4m on a reef when one of the trainees over-
inflated his BCD and went to the surface. The group's instructor signalled for the trainee to re-descend back down to the group. The trainee tried to fin down head first and the instructor indicated that he should use the kidney dump on his BCD. The trainee stopped finning down and re-surfaced. He tried to use his BCD's shoulder dump and then finned down to about 3m. The instructor was able to get hold of the trainee and dumped air from his BCD. When he looked at the trainee's face he appeared to be disorientated and confused. The instructor gave the 'OK' signal but the trainee responded with the 'something wrong' signal so the instructor took him to the surface and signalled for the rest of the group to ascend. On the surface the trainee said he felt as though his ears had 'popped'. The following evening a doctor confirmed that the trainee had damaged his ear drum.

February 2016 16/042

A diver, on a diving trip, surfaced with a headache after an uneventful dive to a maximum depth of 25m for a dive time of 33 min. As a precaution medical advice was sought and following a neurological check no problems were found. The medical advice given was that the diver should not dive for four days and it was strongly recommended she not dive for the rest of the diving trip duration. The diver's headache went later that evening.

February 2016 16/181

An instructor and his trainee carried out a shore training dive including a vertical descent and alternate source ascent skills. The site consisted of a sandy reef gradually dropping from 2.5m to 10m at a 45 deg angle. There was a current running along the shore and the instructor used a shotline to prevent unnecessary task loading on the trainee. The pair carried out the dive including the skills but the trainee made some hurried descents and ascents due to poor buoyancy control although none were considered by the instructor to be of concern. The divers surfaced with a dive time of 45 min to a maximum depth of 10m. During the debrief no mention was made by the trainee of any pain or discomfort. The next day the trainee reported to another diver that he could not hear and had pain in his ears. The diver advised the trainee to seek medical advice and later that day he attended a clinic where the doctor advised that both the trainee's ears had been damaged. The trainee sought advice from another clinic where the doctor confirmed both his ears were perforated and were also infected. On further advice from divers in his club the trainee saw a diving medical referee who confirmed both ears were perforated and they should heal in two to four weeks. It took about eight weeks for the trainee to make a full recovery.

April 2016 16/068

A diver had completed eight dives on a boat diving trip. On his ninth dive he experienced a slight pain in his right ear and tried to equalise at 4m but still feeling pain, he descended and continued the dive to a maximum depth of 30m for a dive duration of 16 min. After the dive the diver reported that his right ear was slightly painful and was advised not to dive again that day. The following morning the diver found a yellowish discharge on his pillow and could not equalise his ears. He was stopped from diving for the remainder of the trip and monitored for the rest of the week. A doctor at a health centre confirmed the diver had suffered barotrauma in both ears but he was expected to make a full recovery.

May 2016 16/090

A trainee complained of ear pain after his first open water shore dive to a maximum depth of 7m for a dive duration of 40 min. He attended a medical centre and was advised not to dive for seven days.

June 2016 16/110

A trainee carried out his first open water shore dive to a maximum depth of 3m but 10 min into the dive he indicated he had ear pain. The dive was aborted and the trainee attended a medical centre where he was advised not to dive for the next seven days.

June 2016 16/101

A group of divers had carried out two dives from a hardboat. Two of the divers volunteered to recover the shotline by jumping off the hardboat in their drysuits to join the hardboat's RHIB. The sea state was rough and the boat was moving. One of the divers heard the cry 'Go' and instinctively jumped but failed to check if the other diver had re-surfaced. She landed on him and dislocated his shoulder. The diver was recovered by the crew and safely brought back aboard the hardboat. Efforts to reset his shoulder were unsuccessful and the diver was taken ashore to hospital where his shoulder was re-set and he was told to rest his arm for at least three weeks.

June 2016 16/244

A group of divers were diving from a beach and the air temperature was 42 deg C. Whilst monitoring the diving the dive manager noticed a diver, who was not part of his group, collapse as she walked from the sea to her car. The diver struck her head against the car but did not lose consciousness. Divers in the group put the diver in some shade, gave cold water, administered oxygen and monitored her. She was then put inside a cool air-
conditioned car and monitoring continued. The diver's friends took over and drove her home.

June 2016 16/288

An experienced open-circuit diver, who had never used a rebreather previously, was on a rebreather try dive. The dive was to a maximum depth of 20m for a duration of 39 min. The diver appears to have jumped into the water without the mouthpiece in his mouth which allowed water into the loop. During the dive the diver was noticed to be uncomfortable and another diver brought him to the surface using a controlled buoyant lift. The diver was distressed, in pain and struggling to breathe at the surface. He was recovered into the boat, taken to the shore and then on to hospital. The diver was found to have serious respiratory tract tissue damage and required a tracheotomy to assist his breathing. Outcome unknown.

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July 2016 16/126

A trainee diver complained of sinus pain after his first open water dive to 1m for 20 min. The diver attended a medical centre and was advised not to dive for seven days.

July 2016 16/136

A trainee descended to 3m on a shore dive but complained of ear pain and the dive was aborted. He surfaced with a dive time of 4 min. He attended a medical centre and was advised not to dive for seven days.

August 2016 16/169

On a diving trip abroad and between dives a diver stumbled and stubbed the small toe on her left foot. She was given first aid by elevating the foot and keeping it as cool as possible. The diver did not dive again that day. Back at the diver's accommodation the diver's foot was kept elevated and cooled with ice packs. The pain did not subside so she was taken to the nearest medical facility. The doctor did not believe the toe was broken but was a possible small fracture or muscle damage. The diver did not dive the next day and kept her foot rested, elevated and cool where possible. She returned to diving the following day and was provided with help in and out of the water to prevent additional weight bearing on her foot as a precautionary measure,

August 2016 16/171

A diver and his buddy carried out a shore dive. The diver was unable to clear his ears on the descent. He managed to reach 3m but could not descend any further. The dive was aborted and the diver did not dive again that day. He sought medical advice at a local pharmacy and purchased ear drops which dissolve ear wax. The diver was able to dive the following day but four days later had ear problems again and did not dive for another two days to allow his ears to rest.

September 2016 16/255

A diver had conducted 6 dives over 5 days of an expedition. On the 4th day he had completed dives of 20m for a total of 31 min including 3 min at 6m and after a surface interval of 180 min a dive to 15m for a total of 16 min including 3 min at 6m. On day 5 after completing a dive to a maximum depth of 20m with a total duration of 39 min including 3 min at 6m the diver reported feeling pain in his left arm just above the elbow. The diver had undertaken weight training the evening before. A diving doctor was consulted and the diver was taken to the medical centre for examination. The diver was assessed to have had muscle strain and was cleared to return to diving.

Boating and Surface

October 2015 16/152

A group of four divers, in two buddy pairs, were on holiday and carried out a shore dive. They entered the water and checking everyone was 'OK' the group descended to 10m to follow the curve of a reef out to a wreck at 36m. The visibility deteriorated, the divers lost sight of the reef and descended to the seabed at 36m. No one knew in which direction the wreck lay so the most experienced diver decided to abort the dive. He signalled 'Up' and all three divers responded and made a slow controlled ascent with 1 min stops at 12m, 9m 6m and 3m and surfaced with a dive duration of 25 min to a maximum depth of 36m. On the surface the divers were all within twenty-five metres of each other and the experienced diver called the other three over to him so they could re-group and return to the shore together. The experienced diver linked up with two of the others and waited for the fourth to swim over to them assuming he had ducked under the surface to avoid struggling against the current. Whilst waiting the three divers were in a slight swell with a bit of a surface current making it difficult to swim to the shore. At this point one of the three divers started to panic because he was breathless so the experienced diver and the other diver took hold of his hands, re-assured him and started finning gently towards an exit point. The group of three were now concerned about the fourth diver's non-appearance. The divers had now been on the surface for twenty minutes and people on the shore realised there was some kind of problem and had put out a call for assistance. The experienced diver was now extremely concerned with there being two potential incidents. A water taxi came to the divers' assistance and once aboard the experienced diver explained to the operator that they had a missing diver who had last been seen a hundred metres from the shore. The water taxi did a search of the area but failed to locate the missing diver. The boat returned the three divers to the shore near their entry point and they swam across the shallows and exited the water. The group found the missing diver hiding at the rear of a car park, as far from the shore as it was possible to get. He never gave any explanation of his actions, in particular not letting the group know he was safe on shore, and refused to talk to any of the group.

September 2016 16/163

A buddy pair were on tropical holiday and had booked a series of dives through their hotel with a dive operator. They carried out a boat dive with a dive guide and two other divers but 30 min into the dive the dive guide signalled for them to surface due to choppy waters and low visibility. When the group surfaced the boat was nowhere to be seen. The dive guide told everyone to remain calm and started blowing his whistle saying the boat would hear them and come back. The boat did not return and, fearing the group would be washed onto rocks about fifty yards from the shore of an island, the dive guide ordered the group to swim away from the island. The group were caught in a rip tide and were carried further out to sea and about twelve miles from land. The group linked arms as the weather worsened and endured a tropical storm, blazing heat and high waves. Meanwhile a huge search operation involving two helicopters, twenty-two vessels and a plane had been launched. As the hours passed one of two other divers was very sick in the heavy seas and the main fear was sharks that were common in the area. After seven hours the crew of a pleasure boat involved in the search spotted the 5 ft DSMB that one of the buddy pair had put up and recovered the group who were all severely dehydrated and sunburnt. Since the incident one of the buddy pair has been diagnosed with post-traumatic stress disorder. An investigation was carried out and found the skipper and dive guide negligent and the dive operator negligent with their licence suspended indefinitely. (Media report).

September 2016 16/249

A RHIB with five divers and a cox'n returning from a dive was swamped by a large wave taking on a large amount of water. A second wave then hit the RHIB and the bow appeared to nosedive under the wave and filled the boat completely. The senior diver instructed the five divers to enter the water whilst the boat was bailed out with support from a second RHIB. Once empty of water the elephant's trunk bailer was found to be blocked by a rubber cap and with this removed the divers were recovered and the boat trimmed by moving divers towards the rear and they returned to port without further problems.

Ascents

February 2016 16/047

An instructor and his student were completing an SMB exercise during a shore dive. The student became buoyant and began to ascend feet first. The instructor grabbed the student and pulled him back down but when he released him he continued to ascend. The instructor indicated that a tuck and roll attempt might help the student but he continued to ascend, became entangled in his SMB line, missed safety stops and surfaced in an uncontrolled manner. The total dive time was 25 min to a maximum depth of 20m.

March 2016 16/052

Two divers using nitrox 23 had carried out an uneventful boat dive to 50m and ascended a rock outcrop completing a 2 min stop at 12m and a 3 min stop at 9m where they experienced a strong swell. At 6m one of the divers signalled to his buddy to move away from the rock wall but after repeating the signal the buddy remained by the wall. The diver's computer was clear and the pair remained at 6m for a further 4 min. The diver signalled he was clear to ascend to which the buddy responded but then attempted to deploy his DSMB. A surge took the diver to 3m and he tried to fin down but a second surge lifted him to the surface with an overall dive time of approximately 27 min. Meanwhile the buddy, who the diver could see from the surface, remained at 6m and continued trying to deploy the DSMB without success. The diver remained on the surface and was picked up by the dive boat. He had no ill effects from the dive and his buddy surfaced a little later. The buddy had been lifted to 4m by the surge and due to the sudden ascent had incurred a additional 3 min stop. Carrying out the additional required stop of 3 min at 6m and struggling to deploy his DSMB he surfaced after an overall dive time of 35 min.

August 2016 16/172

An instructor and his student had carried out a shore training dive to a maximum depth of 22m with a dive duration of 42 min. After a surface interval of 1 hr 35 min the divers carried out a second training dive to a maximum depth of 13m on a wreck. Towards the end of the dive and at 10m whilst hovering above the seabed the student successfully inflated a DSMB using her alternate source. As the buoy ascended the student's hair became tangled around the DSMB reel which jammed the reel and began dragging the diver towards the surface. The student let go of the reel unaware that her hair was still trapped. The instructor cut the DSMB line with trauma shears stopping the rapid ascent at around 7m. Both divers ascended at a safe rate and surfaced with a dive duration of 44 min.

September 2016 16/168

A group of three divers had carried out a RHIB dive to a maximum depth of 25m for a dive duration of 24 min. After a surface interval of 3 hr 3 min the group carried out their second dive onto a wreck and reached a maximum depth of 20m. Between 12m to 10m and 20 min into the dive one of the divers began to carry out a mid-water DSMB deployment drill. The diver filled the buoy and as it ascended the diver's left hand became entangled and the reel jammed. The diver was aware he was ascending too fast but he did not panic and breathed out all the way to the surface. His dive time was 28 min. He gave the RHIB the 'OK' signal and also to the other two divers who were ascending and surfaced a minute later. The divers were recovered aboard the RHIB and the diver who had made the fast ascent was immediately placed on oxygen while other divers in the water were recalled. The diver was taken to a recompression chamber and a neurological assessment was carried out. The diver was kept on oxygen for ninety minutes and monitored for six hours. He was discharged and told not to dive for 12 hours.

Technique

January 2016 16/030

Two divers had completed a couple of 30m dives and one to 50m whilst on a diving holiday. They planned to carry out a shore dive using air to a cave at around 44m and, having dived it before, one of the divers knew it was likely that she would suffer narcosis at that depth. The pair descended and found the cave and the diver found that, as usual at this depth, her narcosis made her feel very wary about entering the cave so let her buddy, who was also her partner, go in to take photographs whilst she hovered around the cave entrance. The diver saw her buddy look towards her so she turned away out of the cave entrance and moved to the right. Unseen by the diver, her buddy exited the cave but turned to the left and ascended the rock face above the cave. The diver assumed her buddy was still in the cave and waited with increasing panic because he had not appeared. With narcosis, panic and around 24 min of decompression, the diver dumped her SMB reel so it could be used as a marker and ascended. The diver was breathing rapidly, had insufficient air to complete the 24 min decompression stop and ascended missing 16 min of decompression. She surfaced with a dive time of 45 min to a maximum depth of 44m. She raised the alarm and was picked up by a local RHIB and returned to shore to the sound of ambulance sirens. The diver admitted to being hysterical at this point believing her buddy and partner was dead but became even more hysterical when he was found safe and well at the dive centre. The buddy, when he had exited the cave, assumed the diver had ascended as he had seen her turn away from the cave and he couldn't see her or any bubbles so he had ascended expecting to re-join her at some point. The diver was put on oxygen, taken to hospital by ambulance and monitored for a few hours but suffered no ill effects.

February 2016 16/049

An instructor and his student were carrying out a shore based training dive. The instructor had just finished dive management duties and met with his student, who had already kitted up. The instructor kitted up, the pair went through their buddy checks and made their way to the entry point. The instructor knelt down in shallow water, made his way through rocks to slightly deeper water and then beckoned the student to follow and do the same. The student knelt down, rolled onto his back and stood straight back up saying he felt water down his back. He was helped from the water and it was found that his drysuit zip was fully open. The dive was aborted.

Equipment

November 2015 16/013

Two students were diving a wreck with an instructor on a training course. At 11m one of the students suffered an 'O' ring failure in his DIN insert fitting. The student switched immediately to his instructor's alternate source and they all ascended with a total dive time of 11 min. The divers were recovered aboard their dive boat and suffered no ill effects.

February 2016 16/046

A buddy pair had entered the water from the shore to carry out a dive on a wreck. One of the divers had difficulty leaving the surface and returned to a ladder on the shore where he was

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given extra weight by the surface team. The pair descended but the diver felt trapped air in his drysuit boots and, as he attempted to resolve the problem, one fin strap slipped under the boot's heel. The buddy noticed this when they were at 8m and tried to assist the buddy but as he tightened the strap it broke. As the descent was proving difficult and now with a broken fin strap the decision was made to abort the dive and the pair ascended and surfaced with a dive time of 6 min to a maximum depth of 8m. They signalled 'OK' to the shore cover but as they swam back to the ladder the diver's fin came off and it was retrieved by his buddy. They exited the water without further incident.

February 2016 16/048

A student on a shore based training dive carried out a mid-water DSMB deployment at 20m. The reel jammed so the student let it go. She surfaced with an overall dive time of 34 min to a maximum depth of 25m but, due to the dive being carried out from the shore and an offshore wind, the DSMB could not be recovered.

February 2016 16/050

A diver carried out a shore dive on a wreck to her dive qualification's maximum depth of 35m. At depth the diver's fin fell off and in order to recover the fin she reached 36m. The diver replaced the fin and the dive continued without further problems. The diver surfaced with an overall dive time of 29 min to a maximum depth of 36m including a 1 min decompression stop at 6m.

March 2016 16/092

A rebreather diver on a holiday liveaboard had completed four days of diving. Using the liveaboard's RHIB the diver, in a group of five but with identified buddies, carried out a dive on a wreck reaching a maximum depth of 25m. As the group left the wreck to move onto a reef the diver saw an instructor, who was leading a training course, trying to breathe from the octopus regulator of one of his students, who looked quite distressed and not happy with the situation. The diver swam about ten metres to the group and readied his bailout cylinder of air by unclipping it and turned it on. He donated the regulator to the instructor and gave him the cylinder which the instructor attached to his BCD. The diver checked the instructor was 'OK' and re-joined his group to continue their dive. After surfacing with a dive duration of 58 min including a 3 min decompression stop at 5m, the diver checked what the problem had been with the instructor and was told it was due to regulator failure.

March 2016 16/064

A group of eight divers carried out a shore night dive which was the final dive of their holiday The dive was to a large rock at around 35m with a 10m overhang which they had dived on previous occasions. The group descended and when they reached the overhang the four buddy pairs started to enter together when one of a buddy pair indicated something was wrong with her primary regulator. Her buddy offered his alternate source regulator but the diver switched to her own alternate source which had no problems. At this point the diver appeared to be suffering from narcosis and tried swimming in the wrong direction so her buddy guided her to the edge of the overhang so they had a clear ascent above them. They alerted the rest of the group to the problem and the buddy carried out a controlled buoyant lift on the diver. For the first 10m of the ascent the diver concentrated on her computer but at 25m she regained her overall focus and was able to control her own buoyancy but, to ensure no further problems, the divers maintained a hold on each other. They carried out a 3 min safety stop at 3m and surfaced with a dive time of 26 min to a maximum depth of 34m. The rest of the group surfaced, checked on the buddy pair and also monitored them following the dive for any signs and symptoms. The diver's primary regulator, which had been hired, was hard to breathe from at the surface and was taken to a dive centre to be checked.

April 2016 16/065

A dive group planned a 'shake down' dive to 15m but of the twenty-seven computers they had been loaned, six failed on depth read outs at 6m. The dive was aborted with an overall dive time of 4 min. Extra computers had to be hired as replacements.

June 2016 16/175

A group of divers were on day four of a six day boat diving holiday. Three of the divers carried out a wreck dive and descended a shotline. At 20m one of the divers noticed that his air had begun to taste strange. He initially put this down to either swallowing salt water or a previous bad taste in his mouth. The group reached their maximum depth of 33m where the diver's buddies signalled 'OK' prior to moving away from the shotline. The diver signalled 'OK' but as he started to move the taste became worse. He signalled to his buddies he was not 'OK' and would ascend. The diver's signal was interpreted as him not being happy with his regulator so one of the buddies offered his alternate source which the diver declined. The buddy pointed to the diver's pony cylinder and the diver switched onto it. The taste changed immediately and the trio returned to the shotline and ascended. They completed a 1 min stop at 6m and a 3 min safety stop at 5m and surfaced with a dive time of 14 min. The divers were recovered aboard the boat where the diver who had the bad air was assessed but oxygen was not required although it took some time for the bad taste to go. The other members of the group checked their cylinders and reported a 'taste' from the air. On returning home the diver had his cylinders cleaned and they were found to be heavily contaminated and contained moisture. The rest of the dive group were informed and recommended to get their cylinders cleaned. It was found that several had various levels of contamination whilst others did not. The dive operator who had filled the cylinders, apart from the diver's pony, reported that no other customers had complained of bad air.

August 2016 16/170

A diver, on a trip abroad, had rented a computer from a local dive centre. On the first dive the diver and his instructor descended on a shore dive and at 15m the diver signalled to his instructor that the computer was not functioning properly. The computer had entered 'dive mode' but was not reading depth. The dive was aborted and the computer replaced. The diver did not dive again for twenty-four hours.

September 2016 16/250

A diver completed a dive to a maximum depth of 15m using nitrox 36 and dive computers set to air. During the dive the computer was working correctly and the dive was completed without encroaching on less than 5 min of remaining no stop time and a 3 min safety stop was completed. On surfacing the diver's computer stopped working and the diver was only able to report his maximum depth from an analogue gauge on his SPG console. The dive was checked against decompression tables and was found to be well within limits. The diver was issued a replacement computer but used tables to monitor subsequent dives until the group had a day off from diving and then resumed using the dive computer to monitor decompression requirements.

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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.

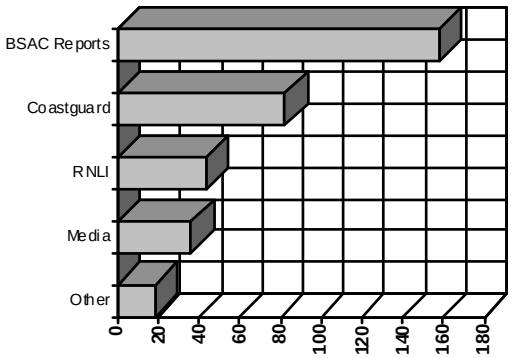
Incident Report Forms can be obtained free of charge from the BSAC Internet website
http://www.bsac.com/incidentreporting
or by phoning BSAC HQ on ***0151 350 6200***

Numerical & Statistical Analyses

Statistical Summary of Incidents

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Incidents Reported	439	465	453	409	498	499	437	401	416	453	412	405	377	335	277	274	283
Incidents Analysed	417	458	432	392	445	474	418	377	381	409	393	392	346	311	265	252	271
UK Incidents	384	433	414	366	423	441	379	349	359	381	364	375	314	263	216	226	228
Overseas Incidents	33	25	18	26	22	33	39	28	22	28	29	17	32	48	49	26	43
Unknown Locations	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UK Incident - BSAC Members	113	122	149	162	154	160	148	120	129	120	116	193	133	104	101	131	106
UK Incident - Non-BSAC Members	52	94	55	74	72	65	50	61	65	29	30	94	40	38	30	24	28
UK Incident - Membership Unknown	219	217	211	130	197	216	181	168	165	232	218	88	141	121	85	71	94

UK Incident Report Source Analysis



Total Reports: 337
Total Incidents: 228

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History of UK Diving Fatalities

		Number of Fatalities	
Year	**Membership**	**BSAC**	**Non-BSAC**
1965	6,813	3	-
1966	**7,979**	**1**	**4**
1967	8,350	1	6
1968	**9,241**	**2**	**1**
1969	11,299	2	8
1970	**13,721**	**4**	**4**
1971	14,898	0	4
1972	**17,041**	**10**	**31**
1973	19,332	9	20
1974	**22,150**	**3**	**11**
1975	23,204	2	-
1976	**25,310**	**4**	**-**
1977	25,342	3	-
1978	**27,510**	**8**	**4**
1979	30,579	5	8
1980	**24,900**	**6**	**7**
1981	27,834	5	7
1982	**29,590**	**6**	**3**
1983	32,177	7	2
1984	**32,950**	**8**	**5**
1985	34,861	8	6
1986	**34,210**	**6**	**9**
1987	34,500	6	2
1988	**32,960**	**10**	**6**
1989	34,422	4	8
1990	**36,434**	**3**	**6**
1991	43,475	8	9
1992	**45,626**	**9**	**8**
1993	50,722	3	6
1994	**50,505**	**6**	**6**
1995	52,364	9	9
1996	**48,920**	**7**	**9**
1997	48,412	4	12
1998	**46,712**	**6**	**16**
1999	46,682	8	8 *
2000	**41,692**	**6**	**11**
2001	41,272	9	13
2002	**39,960**	**4**	**10**
2003	38,340	5	6
2004	**37,153**	**6**	**19**
2005	37,185	5	12
2006	**35,422**	**4**	**12**
2007	34,857	7	5
2008	**34,325**	**6**	**4**
2009	32,790	7	7
2010	**32,229**	**8**	**9**
2011	30,909	4	7
2012	**29,632**	**10**	**7**
2013	28,728	5	10**
2014	**28,375**	**6**	**10**
2015	27,803	3	6
2016	**27,346**	**5**	**6**

* 1999 Figure corrected from 9 to 8 due to a double count discovered in 2010
** 2013 Figure corrected from 9 to 10 due to reporting of a snorkel fatality after the publication of 2013 report
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LIST OF ABBREVIATIONS USED IN THIS AND PREVIOUS INCIDENT REPORTS

AS	Alternative source (gas or air)
AAS	Alternative air (gas) source
A&E	Accident and emergency department at hospital
AED	Automated external defibrillator
ARCC(K)	Aeronautical rescue coordination centre (Kinloss)
ARI	Aberdeen Royal Infirmary (Scotland, UK)
AV	Artificial ventilation
AWLB	All weather lifeboat
BCD	Buoyancy compensation device (e.g. stab jacket)
BOV	Bailout valve
CAGE	Cerebral arterial gas embolism
CG	Coastguard
CCR	Closed circuit rebreather
CNS	Central nervous system
CPR	Cardiopulmonary resuscitation
CRT	Coastguard rescue team
DCI	Decompression illness
DDMO	Duty diving medical officer
DDRC	Diving Diseases Research Centre (Plymouth, UK)
DSC	Digital selective calling (emergency radio signal)
DSMB	Delayed surface marker buoy
DPV	Diver propulsion vehicle
ECG	Electrocardiogram
ENT	Ear, nose and throat
EPIRB	Emergency position indicating radio beacon
FAWGI	False alarm with good intent
FRS	Fire and rescue service
GP	General Practitioner (doctor)
GPS	Global positioning system
Helo	Helicopter
HLS	Helicopter landing site
HMCG	Her Majesty's Coastguard
HUD	Head up display
ILB	Inshore lifeboat
INM	Institute of Naval Medicine
IPO	Immersion pulmonary oedema
IV	Intravenous
LB	Lifeboat
MCA	Maritime & Coastguard Agency
m	Metre
min	Minute(s)
MOD	Maximum operating depth
MOP	Member of the public
MRCC	Maritime rescue coordination centre
MRSC	Maritime rescue sub centre
MV	Motor vessel
NCI	National Coastwatch Institute
PFO	Patent foramen ovale
PLB	Personal locator beacon
POB	Persons on board
QAH	Queen Alexandra Hospital (Portsmouth, UK)
QAB	Queen Anne Battery (Plymouth, UK)
RAF	Royal Air Force
RHIB	Rigid hull inflatable boat
RMB	Royal Marines base
RN	Royal Navy
RNLI	Royal National Lifeboat Institution
ROV	Remotely operated vehicle
SAR	Search and rescue
SARIS/SARSYS	Search and rescue information system
SMB	Surface marker buoy
SRR	Search and rescue region
SRU	Search and rescue unit
UK SDMC	UK Sports Diving Medical Committee
UTC	Coordinated universal time
VLB	Volunteer life brigade
999	UK emergency phone number

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