Annual Diving Incident Report

BSAC Incident Report 2021

BSAC
Dive with us

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Introduction

The incident report for 2021 recreational diving occurring in the UK and Overseas shows some evidence of a return to previous levels of reporting following the impact of Covid-19.

The majority of information contained within this report is also shown in graphical form. Please note that all data 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 eight incident categories, plus some historical analyses. 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 format:

Month / year of incident **Incident reference**

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 significant cause or effect. For instance, an incident involving a fast ascent, causing decompression illness, will be classified under 'Decompression Incidents'.

Please read the details in this report and use the synopses to learn. The individuals who have provided this information have had the courage and generosity to record their experiences for publication so that we can use this information to avoid similar problems.

Finally, if you are unfortunate enough to have an incident, please help us maintain the most comprehensive recreational diving incident reporting system in the world by reporting it using our Incident Report form, available via the BSAC website or from BSAC HQ. As always, your anonymity is assured and great care is taken to preserve the confidentiality of any personal information recorded in the BSAC Incident Report database.

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BSAC Diving Safety & Incidents Advisor

Ben Peddie
BSAC Data Analyst

October 2021

Acknowledgements

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

- Maritime & Coastguard Agency
- Royal National Lifeboat Institute
- MOD Superintendent of Defence Diving
- PADI Europe, Middle East and Africa
- Royal Society for the Prevention of Accidents
- Scottish Sub-Aqua Club
- Sub-Aqua Association
- CFT – Coomhairle Fo-Thuinn – Irish Underwater Council
- RAID – Rebreather Association of International Divers
- IANTD – International Association of Nitrox and Technical Divers
- WAID - Water Incident Database
- Ron Evans and Alison Dando for proofreading 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

Cover photograph by Jane Morgan

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Analysis of the incident database

BSAC is the National Governing Body for the sport in the UK, and as part of our activities, we report annually on the diving incidents in the UK. We have been assembling data on recreational diving incidents for over 50 years and therefore provide the most comprehensive analysis of trends in diving incidents in the sport. Most of the incidents are reported through the online Incident Reporting form on the BSAC website, and is further supported by all the diving agencies in the UK and Eire. The data analysed in the report includes reports from divers of all diving affiliations and not just BSAC.

In addition, the data set is supplemented by reports supplied by the Maritime & Coastguard Agency, the RNLI, MOD Superintendent of Defence Diving, PADI Europe, Middle East and Africa, the Water Incident Database (WAID) and Royal Society for the Prevention of Accidents (RoSPA). The BSAC Incident Report is intended to help support diving agencies and rescue services in providing information to help inform strategic decisions and to provide information to divers on emerging trends on factors associated with incidents. In addition to receiving reports in these different ways, BSAC collates incidents that are reported in the press and online media. Figure 1 shows the sources from which the reports are derived.

A significant part of our analysis is first to remove multiple reports of the same incident in the database. This process often involves detective work using date, location, and the description of the incident to determine if a report from a dive club is duplicated by a report from the Coastguard or a bystander, for example.

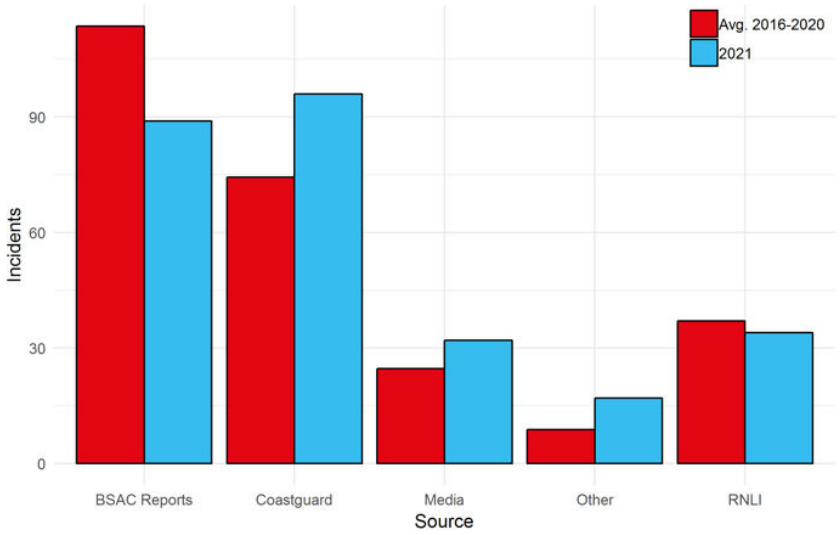

Figure 1. The source of reports contributing to the BSAC incident analysis

Incidents which are wholly commercial in nature, such as incidents involving professional scallop fishermen or operational work dives in harbours are not included in the incident report. It does however include all recreational instruction dives even when a commercial instructor is involved, as these incidents are important for our learning and to inform the development of future training programmes.

In the calendar year of 2021, we have recorded 235 incidents, including 17 classified as overseas (Figure 2). As shown in Figure 2 the number of incidents reported in 2021 has almost returned to pre-pandemic levels following the significantly reduced number of incidents reported in 2020 which was attributed to the restrictions on diving activities due to the COVID 19 pandemic.

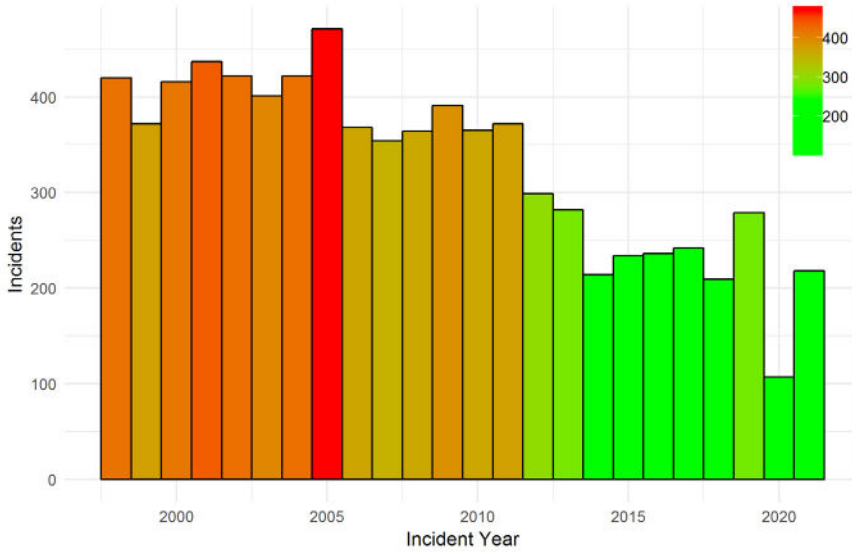

Figure 2. Total number of UK and overseas reported incidents

Incidents by Month

The number of incidents reported occurring in each month of the year is shown in Figure 3. Very few incidents were reported in January, February and March compared to equivalent months in the last five years and compared with the rest of the calendar year. From April onwards, the pattern of incidents is more in line with the expected pattern of occurrence given the last five years. We no longer see any indication of the bimodal distribution that was common prior to 2014.

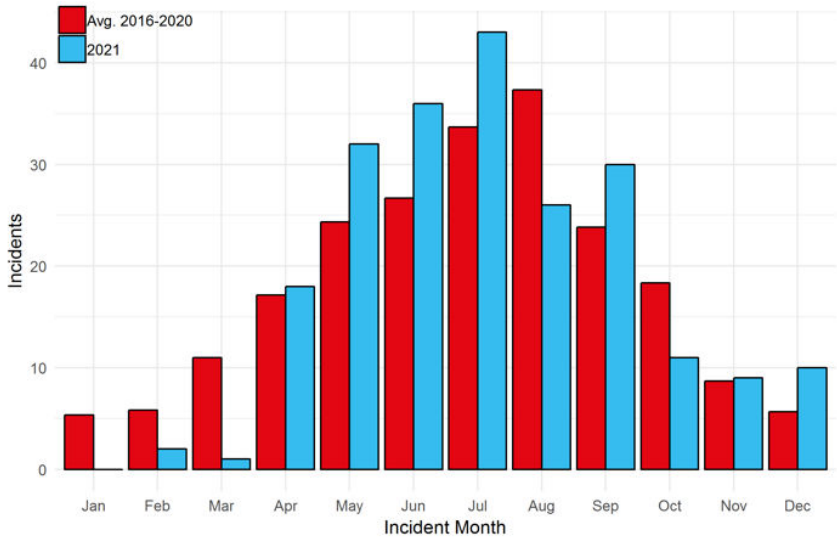

Figure 3. Number of incidents occurring in each month of the calendar year

Incidents by Category

The incident database assigns all incidents into one of eight major categories, and Figure 4 shows the allocation of the 2021 incidents into these categories. The incidents are classified by the most serious attributable factor; for example, if a fast ascent results in a DCI event, then the incident is reported as a DCI; however, if a fast

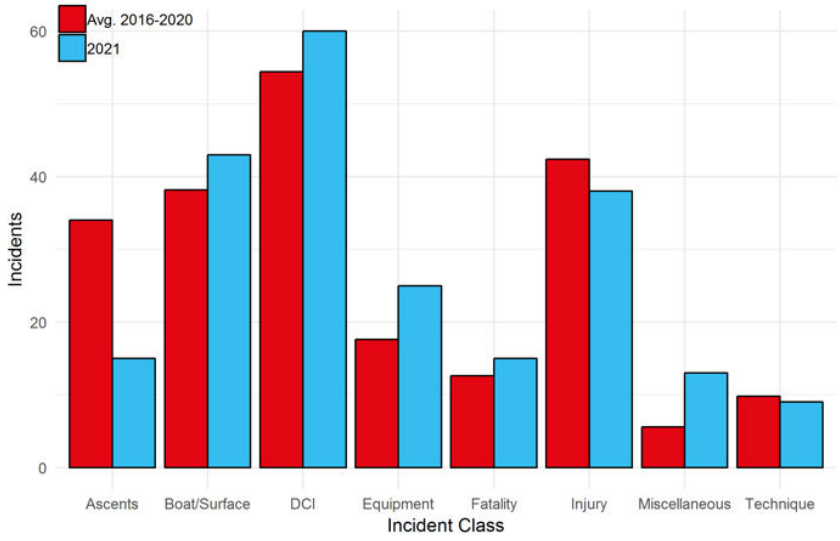

Figure 4. Reported incidents by category

ascent results in no serious ill effects, then the incident is classed as an Ascent Related Event. Incidents which cannot be attributed to an attributable factor are placed in the miscellaneous category. The ascent category involves incidents where divers have made an abnormal ascent but avoided DCI or other injury. In 2021, the pattern of distribution of incidents across the different classes appears not to have significantly changed. Figure 4 shows that there were fewer ascent-related incidents than normal and slightly more DCI reported than in previous years. This change of balance can be

caused by slightly more ascent-related incidents unluckily resulting in DCI this year. Also of note is the slight rise in equipment-related incidents and, on reading the synopses, some of these can certainly be linked to equipment malfunctioning after a lay off from diving due to the pandemic.

Regrettably there were 15 incidents resulting in 16 diver fatalities this year; more detail on these is given later in the report.

Incident Depths

The incident report provides an overview of the information provided on the depth of the dive on which the incident occurred and the depth at which the incident began. Often because of the limited nature of the report provided to BSAC from some agencies, this information is unknown. This year we see a significant rise in the number of reports from which it was impossible to glean this information.

The maximum depth of the dive during which incidents took place, categorised into depth range groupings, is shown in Figure 5. This year there has been a shift to the right of the maximum depth of the dive in which the incident occurred being somewhat deeper than in the previous year. It is common that the symptoms of DCI become apparent on the surface and other surface incidents involve boats and boating incidents and divers who are lost. Incidents do not always occur at the deepest point of the dive.

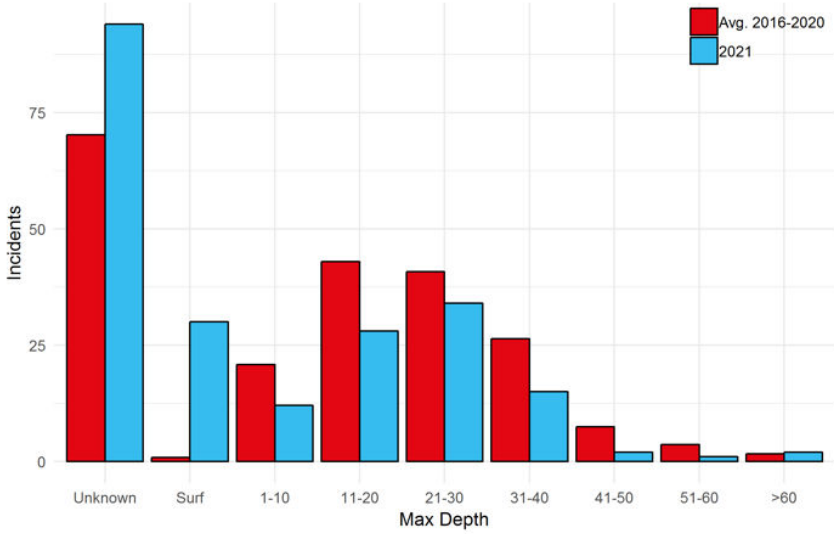

Figure 5. Maximum dive depth (m) in which incident occurred

Figure 6 shows the depths at which incidents started; these very much mirror the trends of previous years, apart from a significant decrease in the proportion of incidents starting on the surface and a reflected increase in the number of incidents at which the starting depth is unknown.

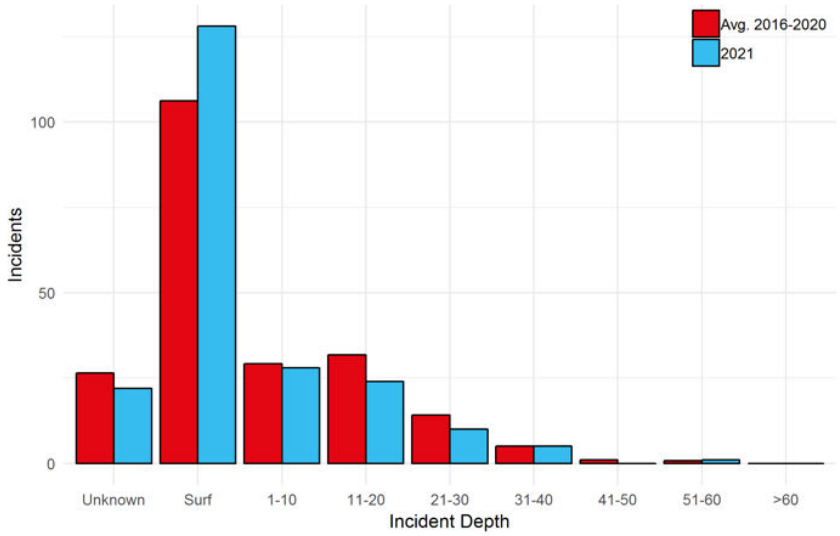

Figure 6. Depth (m) at which incident started

Diver Qualification

This year we continue to present the amended analysis of diver qualification limited to the diving qualification of the casualty only. Figure 7 shows the diving qualification of those BSAC members who were the subject of reported incidents. The proportion of each diver qualification involved in the diving incidents has changed in 2021 and is perhaps more in line with expectations in that one might surmise that more experienced divers are fewer in number and less likely to be the casualty in an incident.

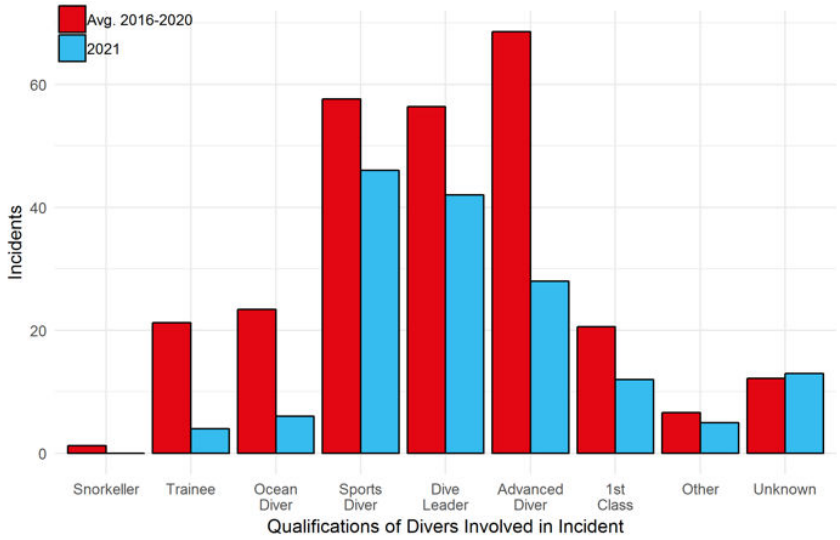

Figure 7. Qualification of the casualty in the incident

Divers' Use of Emergency Services

This section reports on the extent to which divers have needed to call upon the assistance of our emergency services; the Coastguard, the RNLI and rescue helicopters. (Figures 8, 9 & 10). In 2021, the Coastguard were called upon 109 times to assist in the rescue of divers; 78 of these were in June, July, August and September.

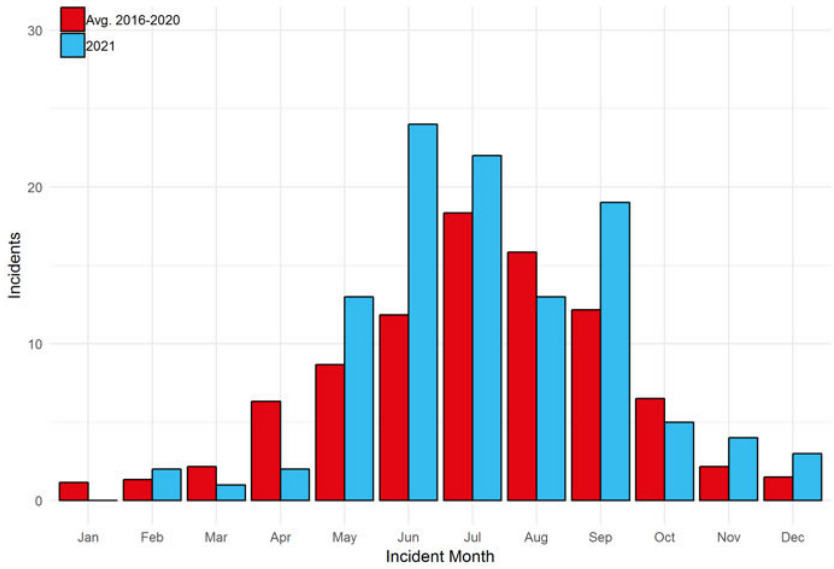

Figure 8. Incidents involving the UK Coastguard Agency in each month of the incident year

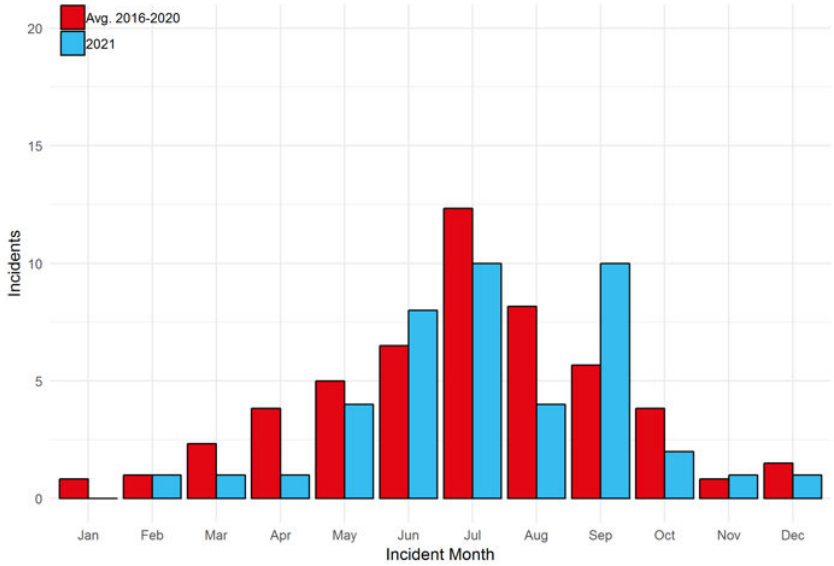

Figure 9. Divers' use of RNLI facilities in each month of the incident year

In 2021, the RNLI were called 45 times to help in the rescue of divers. 32 of these were in June, July, August and September (Figure 9).

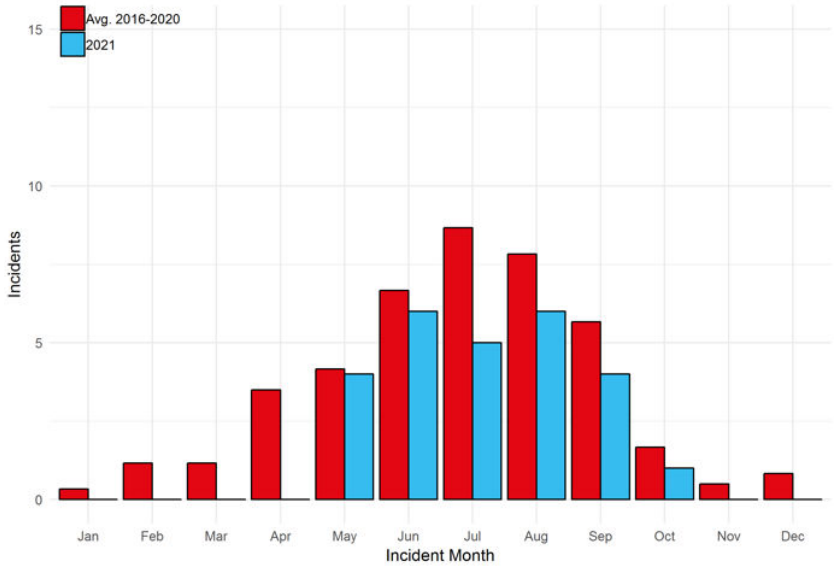

Figure 10. Divers' use of SAR helicopters in each month of the incident year

In 2021, helicopters were called 26 times to help in the rescue of divers. 21 of these were in June, July, August and September (Figure 10).

Long term trends in the classes of incident

This year we continue the analysis of the data using BSAC membership numbers as a proxy for the level of diving taking place in the UK and then present these data using a 5-year rolling average. This analysis is designed to highlight any long-term trends in the factors associated with incidents that may merit the attention of those agencies designing training programmes.

Figure 11 shows that the incidence of fatalities has remained sadly resolutely stable over the analysis period. Likewise, the number of incidents associated with equipment and technique, while relatively low, has not changed over the analysis period. It remains the case that there continues to be a downward trend, especially over the last 10 years of the incidence of decompression illness, ascent-related events and boating and surface incidents, even when accounting for an evident reduction in the amount of diving in the UK over that time.

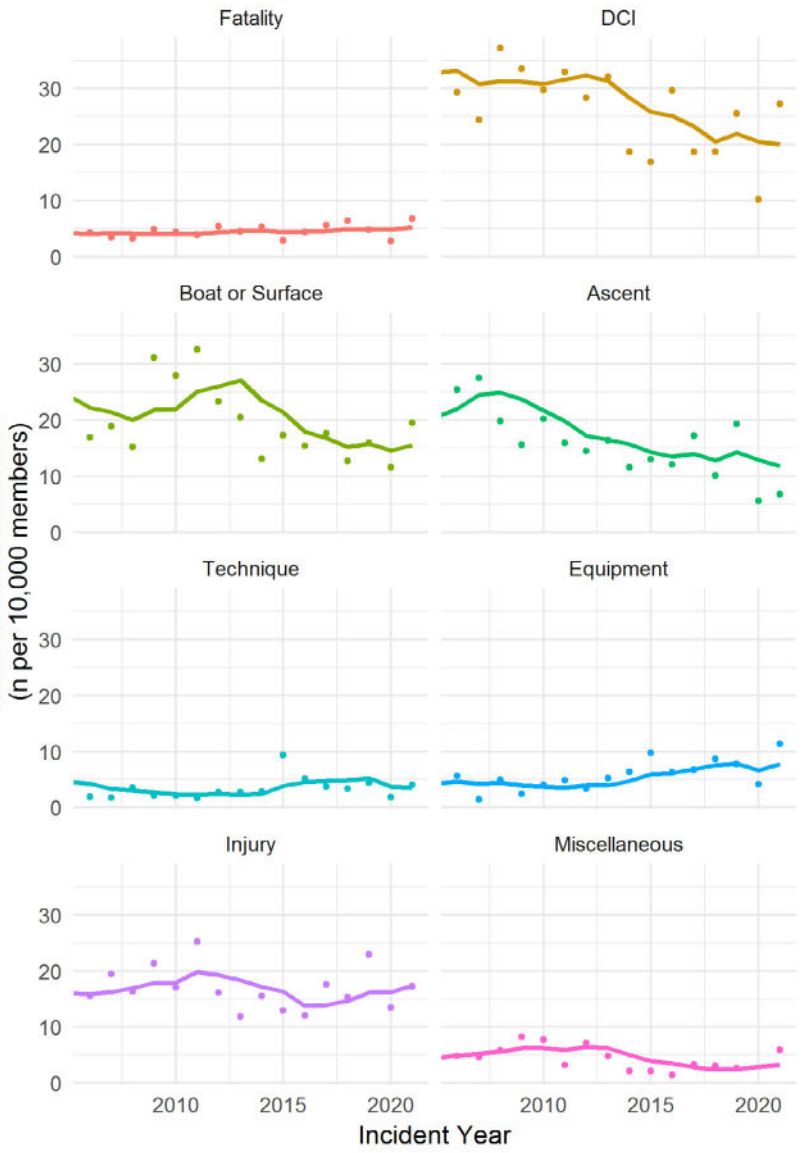

Figure 11. Incident rates by incident class using BSAC membership as a proxy for estimated participation in the sport. Trendlines are a 5-year rolling average.

Immersion Pulmonary Oedema (IPO)

Routinely, when there is an indication that Immersion Pulmonary Oedema is a possible factor in the incident, we note this in the database, and we also record the incident as a confirmed IPO when medical confirmation of the cause is evident. Figure 12 shows that there were twelve incidents this year where there were one or more of the following identifying factors present:

- Divers with breathing difficulties when not exercising particularly strenuously. Breathing difficulties may be indicated by rapid, uneven, or heavy breathing or coughing uncontrollably.
- Confusion, swimming in the wrong or random directions.

- Inability to carry out normal functions while 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 and with adequate gas supplies.
- Divers refusing or rejecting an alternate source when 'out of gas'.
- Indication of difficulty breathing when on the surface.

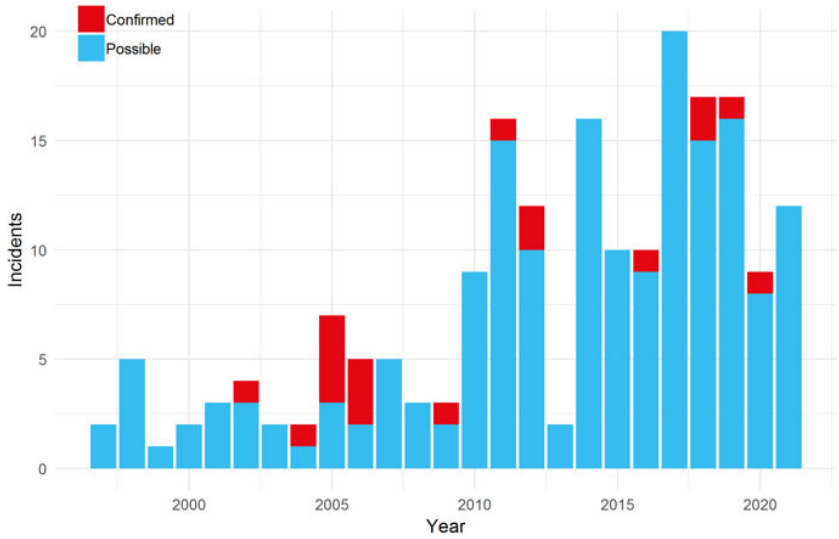

Figure 12. The frequency of confirmed and possible cases of IPO 2010 to 2021.

BSAC continues to recommend that the advice from the medical experts is followed; that if you experience breathing difficulties underwater you should terminate the dive , 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. Once out of the water, the casualty should sit, be given oxygen and medical advice sought.

Fatalities

Sadly, 15 fatal incidents occurred in the UK during the 2021 incident year involving the death of 16 divers. Eight of the 2021 fatalities were BSAC members.

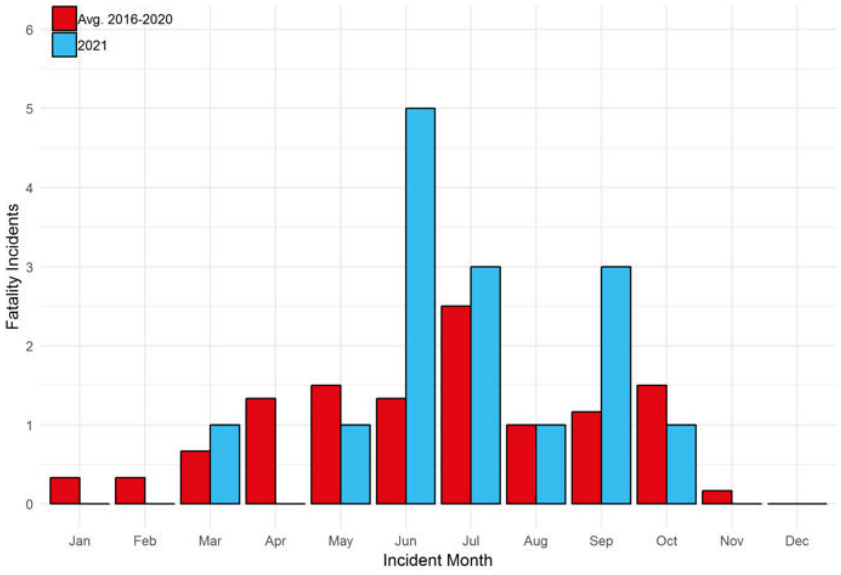

Figure 13. Fatal incidents in 2021 by calendar month compared to previous 5 years

Analysis of the fatal incidents showed that the average age of the people who sadly died was 54.9 years, and in four of the fatalities, there is enough information to conclude that natural causes were a factor. In 10 of the incidents, the casualty either became separated from their buddy or buddies or started out their dive alone.

Conclusions

Key conclusions of the 2021 BSAC Incident Report are: -

- We have always strongly suspected that the number of incidents is closely linked to the amount of diving occurring, and we can surmise from the number of incidents reported that, although there was a slow start, diving activity has largely returned to pre-pandemic levels in 2021.
- There is some evidence that some equipment failures may have been affected by the extended period of lay-off due to the pandemic.
- Very sadly, there were 16 fatalities resulting from 15 diving incidents.
- Separation and solo diving continue to feature prominently in the factors associated with incidents resulting in a fatality.
- Some incidents reported within this document could possibly have been avoided had those involved followed a few basic principles of safe diving practice. In addition, many of the unavoidable incidents are prevented from escalating into something more serious by the prompt utilisation of rescue skills and the rapid support of the rescue services. BSAC publishes online advice on ‘Safe Diving’, summarising all the key elements of safe diving practice.

Fatalities

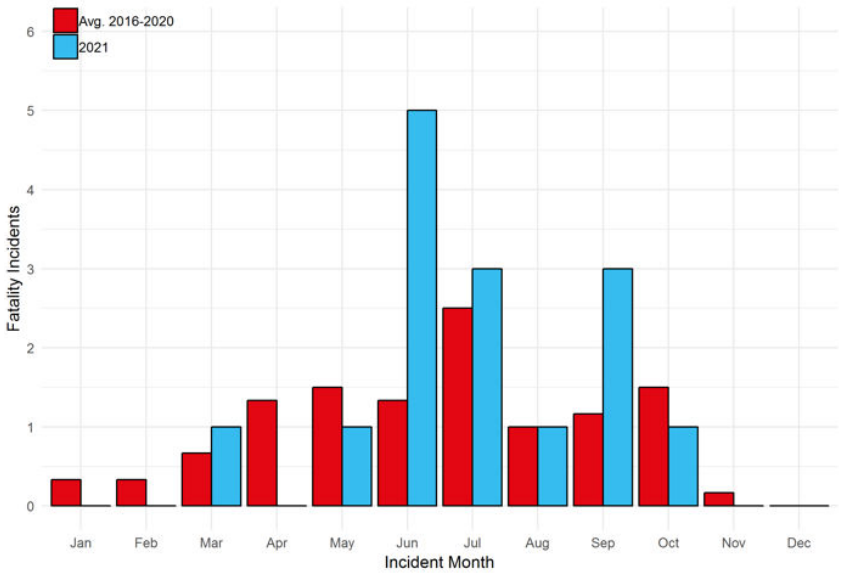

Figure 14. The month of occurrence of fatalities

March 2021 — 21/002

A diver was reported missing to the Coastguard. The Coastguard tasked assets including the police and a diver was recovered from the water and pronounced deceased at the scene. Cause of death was determined as a heart attack unrelated to diving. (Coastguard & RNLI report).

May 2021 — 21/020

A pair of divers were conducting a dive and had reached a maximum depth of 13m. After 11 min one of the divers indicated he had a problem with his head, indicating he had a headache. The pair started to ascend to the surface from a platform at a depth of 8m. During the ascent the diver began to act erratically and appeared to have breathing difficulties. He knocked his buddy's regulator out and the buddy inflated his wing and retrieved a regulator and started to provide buoyancy to his buddy who was not moving.
In continuing the ascent the casualty fell away from his buddy and sank. The buddy had taken the casualty's regulator when he replaced his displaced regulator and so was being pulled down, but he was able to call for assistance. Another diver entered the water to assist and recovered the casualty from a depth of 8m. Once recovered onto land CPR was administered with oxygen enriched rescue breaths and the emergency services were called. An AED was used, but the diver did not recover.

June 2021 — 21/038

A diver died after getting into difficulties during a dive to a maximum depth of 110m 45 miles southwest of the UK coast. The Coastguard tasked a search and rescue helicopter to meet the dive boat and the paramedic pronounced the diver dead on arrival. (Coastguard report).

June 2021 — 21/040

Two rebreather divers were diving from a charter vessel on the second day of a week long dive trip. The previous day the pair had conducted three shakedown dives during which one of them had recurring problems with his rebreather and all three dives were aborted after a short time (see report 21/240). The following day the pair conducted a dive on a wreck to a maximum depth of 37m without issue and a total dive time of 28 min. After a surface interval of around 4 hours the pair entered the water to dive another wreck

at a maximum depth of 30m. About 15 min into the dive, near the bow of the wreck, the diver who had not had the problem the previous day stopped and came upright in the water and looked like something was not right. His buddy signalled to check he was OK and initially got no response and so signalled again and got an 'OK' followed by 'something not right' and then an unclear signal, which may have been 'out of air' and then an ascend signal. The diver did not appear in distress or panic and did not attempt to reach for his bailout or switch his CCR to open circuit. The buddy signalled in the direction of the shotline, which was behind him, but the diver swam off in the wrong direction. The buddy swam after him and pointed the diver in the right direction and followed closely behind him. The diver began to swim erratically in the direction of the shotline and the pair crossed paths with another diver from their group who signalled to ask if they were 'OK', to which the buddy indicted there was a problem with the diver. At that point the diver stopped finning and sank to the seabed followed by his buddy and the other diver, who found the diver unresponsive but still retaining his BOV in his mouth. The buddy attempted to inflate the divers BCD, but this seemed to be unresponsive and so attempted to use his suit inflation, which again appeared to be unresponsive. Assuming the diver's diluent cylinder was 'out of gas' the buddy then checked the regulator on his bailout cylinder and when it didn't purge he turned the cylinder on and then attempted to attach the spare inflation hose from the bailout to the diver's suit but could not manage to attach it. The other diver then decided to grab the diver and lift him by inflating his own wing and they ascended rapidly direct to the surface. On surfacing the other diver signalled distress to the boat, which quickly came alongside and recovered the diver on the boat lift. By the time the boat came around to recover the diver who had raised the diver he got aboard to find others trying to revive the diver. The skipper called the emergency services, and the Coastguard tasked a helicopter, which was on site before all divers in the group had surfaced, winched the diver aboard and airlifted him to hospital but he did not recover. The rescue diver, having ascended rapidly from 30m, was placed on oxygen whilst the vessel headed back to harbour was then transferred to hospital where he was checked over and placed on oxygen for 6 hours before being discharged the following morning. The diver's buddy, after witnessing the rescue diver ascending with the unconscious diver, ascended the shotline with another member of the group and surfaced normally.

June 2021 **21/171**

The Coastguard was alerted to a diver overdue and missing following a dive on a wreck. The diver was subsequently recovered deceased. (Coastguard report). Subsequent media reports indicate death was due to a heart attack.

June 2021 **21/042**

A diver was reported missing to the Coastguard after failing to surface following a dive. The Coastguard tasked two lifeboats, a fixed wing aircraft, two helicopters and other vessels in the area to search for the missing diver. After calling off the search at nightfall, the following day a police dive team joined the renewed search. The diver's body was found and recovered 11 days after he was reported missing. (Coastguard & RNLI reports). An inquest confirmed that the diver died of a heart attack.

June 2021 **21/048**

A diver was reported missing following a dive from a charter vessel. The Coastguard initiated a search for the missing diver with lifeboats, helicopters and local boats joining the search. The diver was located and recovered the following day. (Coastguard & RNLI reports).

July 2021 **21/052**

A pair of divers were part of a group diving from a charter vessel and had completed six dives over the preceding three days. On the morning the pair had entered the water for a dive on an underwater arch at a depth of 25m. They were seen by another pair early in the dive swimming back from the arch and through a network of gullies and boulders. Towards the end of the dive at a depth of around 16m one of the divers approached the pair who had seen them earlier

in the dive and signalled that she had become separated from her buddy. The pair could not see the buddy, despite the 10m visibility, and indicated that the diver should stay with them. The diver joined the pair but continued to swim around in search of her buddy before she suddenly stopped, signalled her intention to ascend, and started to get out her DSMB. The diver struggled to release her DSMB and one of the pair went to assist her and they succeeded in deploying the DSMB. The diver then began to ascend and responded to a signal from one of the pair to signal she was OK and continued her ascent. The pair then continued their dive for a further few min before deploying their own DSMB and ascending, completing a safety stop at 6m for 3 min. On being recovered aboard the charter vessel the pair found the diver's buddy already aboard but no sign of the diver. Her DSMB was approximately 20m away from the boat and getting closer the skipper confirmed due to the good visibility in the water that no one was on the line. Everyone began scanning the area for any signs of the diver, whilst the skipper waited for other divers to surface. On recovering the next pair to surface one of the divers reported that he had plenty of gas left and he agreed to descend the DSMB line to check for any sign of the missing diver, but he found no sign and recovered the DSMB, which had about 10m of line deployed. The skipper alerted the Coastguard to report the missing diver. The divers aboard were organised to conduct an underwater search and were joined a short time later by divers from another vessel but despite underwater and extensive surface searches by lifeboat, helicopter and local vessels the diver could not be found. The diver was located and recovered three days later.

July 2021 **21/053**

The Coastguard received a call of a diver in difficulty near a marina. The diver had lost consciousness as he rose to the surface and his fellow divers and the boat crew were unable to revive him. A Coastguard rescue team attended and found an ambulance crew already on site dealing with the diver and he was declared deceased at the scene. (Coastguard report).

July 2021 **21/077**

A pair of divers entered the water for a dive from a charter vessel. One of the pair was using a rebreather and during the descent started to drop like a stone. His buddy followed and found him unresponsive on the bottom at a depth of 39m and tried to provide an AS and tried to find the divers inflator but was unable to locate it. She then used her own buoyancy to try and lift the diver to the surface but lost her grip during the ascent and the pair separated with the buddy ascending rapidly and the diver sinking. An extensive surface search was conducted over several days and a police diving team was called in to try and locate the diver, but nothing was found. The diver was eventually located and recovered by a police diving team a week later.

August 2021 **21/087**

A diver was reported missing following a dive where his buddy surfaced but he did not. Initially a helicopter, Coastguard rescue teams, police and RNLI lifeboats were involved in a search. The diver was located and recovered by police divers 3 days later. A preliminary post mortem report at the opening of an inquest recorded cause of death as drowning. (Media report).

September 2021 **21/100**

Three divers were exploring a wreck and had descended inside the wreck, in good conditions but did not deploy a distance line. The group continued to explore inside the wreck for around 20 min when they entered a tight corridor. Shortly after entering the lead diver signalled for the group to turn around as it seemed to be a dead end. The rear diver now took over leading but when he arrived at the point where he thought they had entered he could not locate the exit and signalled the next diver to pass him and try to locate it, which he could not. The group continued to search for an exit for a further 20 min with conditions steadily deteriorating until it became fully silted out. Due to the conditions one diver became separated from the other two and continued to look for an exit, during which he encountered the other pair a couple of times but continued searching alone to try and maximise

their search. After approximately 40 min of being lost and a total dive time of 60 min the diver realised he would be getting low on gas and continued searching and eventually encountered a round hole in the ceiling with two bars across it making it impossible for a fully kitted diver to pass through. The diver removed his side mount cylinders and passed them through between the bars, whilst breathing from a long hose and then squeezed himself through, briefly having to untangle a snagged regulator. Once through the gap he reattached the inflation hose to his wing and noted that the contents gauge read zero, so he exited the wreck as quickly as possible grabbing the cylinders by the valves. Immediately he was clear of the wreck he fully inflated his wing and ascended directly to the surface. On the surface the boat appeared some distance away and he signalled waving one arm whilst holding his cylinders in one hand. The boat came alongside, and the diver made his way onto the lift and reported that the others were trapped in the wreck. Once back aboard he was questioned about what had happened whilst another diver kitted up and the Coastguard was notified. A stream of bubbles was located and a shotline deployed close to them and the diver went to see if he could locate anything, whilst a stage cylinder was prepared and attached to the shotline. The stream of bubbles got progressively weaker and stopped after about 10 min and the search diver didn't locate anything. When the emergency services arrived, a medic boarded the boat and checked the diver over and although there were no symptoms evident, he was placed on oxygen as a precaution. On returning to shore the diver was transported to a recompression chamber and received treatment. Surface searches continued for several days after the incident and police divers investigated the wreck. The missing divers were located inside the wreck some weeks later, one after 14 days and the second after 39 days and recovered.

September 2021 **21/102**

A diver had completed a dive the previous day to a maximum depth of 13m with two other divers for a total duration of 25 min. The diver prepared to dive the following day with a different buddy on a wreck. The pair descended the shotline but dropped off approximately 3m before reaching the bottom of the line and were not on the wreck and lost sight of the line in the poor visibility. As previously agreed prior to the dive the pair continued to explore the seabed at a depth of 34m and the buddy deployed his DSMB as they were off the wreck. After approximately 15 min the buddy decided to start their ascent as they were approaching their no-deco limit. The diver indicated he had 120 bar remaining at that point they pair exchanged signals to ascend. Initially the diver ascended slightly faster than his buddy but slowed to a hover about 3m above. During the ascent the diver moved out of visibility range and the pair became separated. Around this time the surface cover noticed a second DSMB being deployed about 10m away and monitored both until the buddy surfaced and reported the separation. On checking the second DSMB there were no bubbles visible. An attempt to recover the DSMB was made but the line became taut after taking in several meters of line and so was stopped to avoid risking breaking the line. A 'Mayday' call was made to the Coastguard who tasked a helicopter and three lifeboats, and several private boats also responded. Following an extensive surface search the diver was located and recovered from underwater by divers later that evening. A coroner's inquest recorded death by drowning.

September 2021 **21/172**

A diver was reported as deceased 40nm SW of the south coast of England. (WAID report).

October 2021 **21/116**

A pair of divers were diving from a RHIB when one of them surfaced after about 10 min asking where his buddy was as they had become separated. The RHIB spent some time searching on the surface for signs of the diver's bubbles or his DSMB. A local charter boat arrived on scene to help and the RHIB crew asked them to search the area given their higher vantage point. A call to the Coastguard was made and the Coastguard initiated a multi-agency search, including tasking 2 lifeboats and a helicopter, but did not locate the missing diver.

Decompression incidents

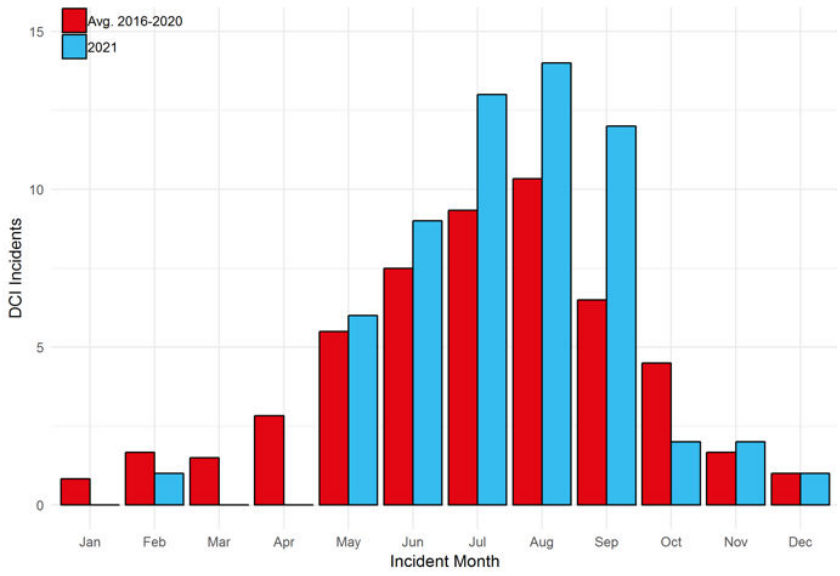

Figure 15. The month of occurrence of decompression incidents

February 2021 — 21/051

A diver was reported to suffering from DCI. A Coastguard team and ambulance crew attended the scene, and the diver was referred to a recompression chamber. (Media report).

May 2021 — 21/019

A pair of divers conducted a dive on a wreck to a maximum depth of 30m. As they prepared to ascend one of the divers deployed a DSMB during which the reel jammed due to the line being tangled. This caused the diver to ascend faster than normal but not completely uncontrolled from a depth of 20m and ascending directly to the surface, with a total dive time of 26 min. Once recovered back aboard the boat the diver was given nitrox to breathe and monitored for the rest of the day, with no symptoms observed. Approximately 24 hours later the diver experienced an unusual pain in his neck and contacted a recompression chamber for advice and was advised to attend the chamber. Following assessment, he was given recompression treatment and released the following day. The diver reported he may also have been under-weighted at the end of the dive.

May 2021 — 21/184

Coastguard received a report of diver suffering from DCI. (Coastguard report).

May 2021 — 21/187

Coastguard received a report of diver suffering from DCI. (Coastguard report).

May 2021 — 21/025

A group of 3 divers, completed a previous dive without incident to a maximum depth of 11m for a total dive time of 35 min, including a safety stop at 6m for 3 min. After a surface interval of 115 min the group entered the water and swam on the surface to a buoy marking a wreck. After a short rest on reaching the buoy the group descended to the wreck, swam along the side, and reached a maximum depth of 20m at the anchor chain. Water temperature at depth was 7 deg C and 11 C at the surface. One of the divers indicated he was having breathing difficulties and signalled to the more senior diver in the group that he wanted to ascend. The three made a controlled but faster than normal ascent and omitted any safety stop. At the surface the diver indicated that he felt faint and so a safety boat was called, and the diver

was de-kitted in the water and recovered into the boat and returned to shore, where he was given oxygen and taken for first aid and assessment at the dive centre. The other two divers swam on the surface back to shore. Following assessment and being given oxygen and fluids at the dive centre the diver felt OK and after a rest he was driven home. Later that evening the diver developed a headache and itchy skin and called a recompression chamber for advice. The diver was admitted to the chamber the next day and received a course of recompression treatment and following a further assessment was released but asked to return for further assessment later.

May 2021 **21/189**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

May 2021 **21/033**

A diver conducted an uneventful dive on a wreck with his buddy to a maximum depth of 32m and a total duration of 33 min using nitrox 32. He spent the following day walking over 14 km and then drove home for 3 hours. Later that evening he experienced weak tingling in the fingertips of both hands but put this down to tiredness. The following day he spent the day working in his backyard and again paid little attention to the symptoms until the next day when back at work he noticed the tingling sensation still present. He called a recompression chamber for advice, and he was advised to attend and received recompression treatment.

June 2021 **21/035**

The Coastguard received a call regarding a diver in difficulty aboard a dive boat and suffering from DCI. The Coastguard tasked a lifeboat, 2 Coastguard rescue teams, a helicopter and ambulance to respond. Following initial treatment by the ambulance crew the diver was taken back to sea by lifeboat for a moving transfer to helicopter, which then transferred the diver to a recompression facility. (Coastguard & RNLI report).

June 2021 **21/045**

Two rebreather divers using trimix 15/26 diluent were diving an offshore wreck to a maximum depth of 44m. At the end of the planned bottom time each diver deployed their own DSMB as had been requested by the boat skipper. As a result, the divers became separated due to different deployment methods and the effect of the tidal stream. One of the divers felt his DSMB line had tangled with the main shotline and as a result he ascended quickly to 12m before regaining control of his buoyancy and managed to descend. As the diver recommenced his ascent his drysuit dump valve became blocked by his new undersuit and he ascended directly to the surface missing 15 min of required decompression stops. The diver was recovered into the boat and the diver switched his rebreather set point to 0.9 bar to provide oxygen rich administration. The skipper requested assistance from the Coastguard whilst waiting to recover the other divers. The Coastguard tasked a rescue helicopter, and the diver was airlifted to a recompression chamber for treatments of 1 x 6 hr at 20m and 3 x 2 hr at 14m. The diver was kept in hospital for 5 days before being released.

June 2021 **21/108**

A pair of divers conducted two dives from a charter boat using air for the dive and nitrox 80 for accelerated decompression. The first was to a maximum depth of 41m with a total duration of 59 min including a stop at 6m for 7 min on nitrox 80. After a surface interval of 120 min the pair carried out a second dive to a maximum depth of 30m with a total dive time of 53 min including a stop at 6m for 8 min on nitrox 80. Both dives were without incident. Approximately two hours after the second dive, on returning to their accommodation, one of the divers experienced a slight visual disturbance, which he attributed to a contact lens issue. Shortly after it was noticed that a rash that had developed on the diver's back. He was immediately placed on oxygen and a diver helpline was called for advice. The diver was given water to drink, and a casualty assessment was carried out. The diver and his buddy were advised to go to casualty and take their logbooks and computers and to record the times of onset of any symptoms. The diver was sent with the

oxygen kit and a cylinder of nitrox 80 as a back-up. An assessment was conducted at a local A&E and the diver was transferred to a recompression chamber for treatment. The diver's buddy showed no symptoms and was cleared to return to the accommodation. Whilst transferring to the recompression chamber the diver's symptoms subsided but he continued oxygen until a Covid-19 PCR was conducted and although symptoms had subsided, he was recompressed and then kept in hospital overnight for monitoring. The diver was advised not to dive for 28 days and recommended to have a test for a PFO.

June 2021 **21/039**

A buddy pair planned an evening dive to 30m plus with up to 15 min of deco stops as preparation for a diving trip. They conducted a dive to a maximum depth of 33m and completed 12 min of stops and surfaced without incident with a total dive time of 71 min. Following the dive, the pair had drinks of coffee and discussed the dive and then departed the site. One of the divers drove a short distance home and ate an evening meal with one can of alcohol. After going to bed the diver woke around midnight with an itch on his stomach and a strange pain/sensation and noted a small rash on his abdomen then went back to sleep. The diver woke up around 0630 to prepare to go to work and noted the rash and slight discomfort were still present and so he contacted a recompression chamber for advice, and he was advised to attend for assessment. The diver contacted his buddy who reported no adverse symptoms of problems. At the recompression chamber the diver was assessed and received recompression treatment.

June 2021 **21/195**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

June 2021 **21/043**

A pair of divers had completed a previous dive to a maximum depth of 40m for a total duration of 38 min including stops of 15 min at 6m. After a surface interval of 145 min the pair entered the water and as they started their descent the mask of one of the divers was unseated and despite several attempts, he was unable to clear it. His buddy helped the diver to reseat his mask and he was able to clear it eventually but during that period the pair ascended from 17m to 7m before regaining control. Once the diver had regained his composure the pair continued the dive reaching a maximum depth of 45m and surfaced without further incident after a total dive time of 33 min including 6 min at 6m. Later that evening the diver noticed a slight pain in both his knee and ankle and sought medical advice from a recompression chamber. The diver was advised to attend and was diagnosed with CNS DCI and received three recompression treatments. His buddy suffered no adverse effects.

June 2021 **21/200**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

June 2021 **21/201**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

June 2021 **21/203**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

July 2021 **21/055**

A diver who had not dived for 2 years joined an instructor and two other students for a buoyancy and trim course to refresh his skills. A first dive was conducted, beginning with a weight check at 2m and then practising a neutral hover at 6m. Following successful skills practice the group made a slow trip around a 6m shelf then ascended to 3m and then exited with a total dive time of 23 min. After a surface interval of 42 min where minor adjustments were made to weighting, the group entered the water intending to carry out further skills practise at 18m. During the descent the diver's drysuit was leaking and he decided to abort the dive and he made a gradual ascent with his buddy and exited the water after a total

dive time of 13 min. The following day the diver felt 'fuzzy' and lethargic and so visited a local recompression chamber for a check-up and he was prescribed a course of recompression treatment.

July 2021 **21/056**

Three divers carried out a boat dive to a wreck, one breathing nitrox 32, one breathing air but carrying nitrox 32 for decompression and the third using a CCR with a diluent mix of trimix 10/50. The divers reached a maximum depth of 29m and after a bottom time of 24 min began their ascent. During the ascent at a depth of 18m the diver on nitrox 32 signalled that he had a deep stop for 2 min. The group completed the deep stop and ascended to 6m where the same diver had difficulty remaining at 6m and kept drifting up to 3m. The group spent 3 min at 6m before surfacing. The diver opted to miss subsequent dives due to the weather, but the other two divers continued to dive for the rest of the weekend. Two days later the diver contacted a recompression chamber and underwent recompression treatment.

July 2021 **21/057**

A diver had travelled to a coastal location the previous day following a very long working week and missed his evening meal due to late time arrival. The next morning the diver conducted a dive on a wreck to a maximum depth of 21m for a total duration of 44 min including a safety stop of 3 min at 6m. After a surface interval of 112 min the diver conducted a shallow reef dive to a maximum depth of 9m and a total duration of 49 min. The diver's dive profile shows depths during the dive varying between 9m and 3m. After returning to shore the diver unloaded his equipment from the boat and then travelled approximately 200 miles for a camping event. The following morning the diver awoke with a headache, which he attributed to taking some alcohol the previous night, and an aching shoulder, which he attributed to sleeping awkwardly on an airbed. The diver was also quite tired but attributed this to the long working week and significant travel distances over the preceding 2 days. A couple of hours later the joint pain was persisting and the diver noticed a tingle not previously experienced. The diver contacted a recompression chamber for advice and was advised to attend for assessment following which he was admitted for recompression treatment.

July 2021 **21/065**

A diver and her buddy completed a wreck dive to a maximum depth of 66m using CCR rebreathers with trimix 12/61 diluent. Total dive time was 95 min including decompression stops of 15m for 5 min, 12m for 6 min, 9m for 12 min and 6m for 32 min. After returning home and removing her jumper the diver noticed that her upper arm was swollen, she started breathing oxygen and contacted a recompression chamber and was advised to attend. The diver remained on oxygen until arrival at the chamber. Following assessment, a lymphatic DCI was diagnosed, and the diver received recompression treatment.

July 2021 **21/054**

A diver had conducted two dives the previous day including safety stops at 6m using nitrox 30. On the morning of the second day of diving the diver completed a dive on a wreck to a maximum depth of 34m with a total duration of 43 min including a safety stop at 6m for 4 min using nitrox 25. 10 min after returning aboard the dive boat, and 15 min after surfacing, the diver began to suffer symptoms of DCI which progressed quickly to abdominal pain and then mild numbness and disturbed sensation in his legs at which point he was administered oxygen. Once on oxygen the symptoms began to subside whilst the boat returned to harbour, and the Coastguard was contacted. On return to harbour the diver was transferred to a hyperbaric unit and assessed approximately 80 min after onset of symptoms. The diver received recompression treatment with full resolution of all symptoms. The diver was assessed 9 weeks later and found to have a PFO and is currently following restricted diving protocols and considering a PFO closure.

July 2021 **21/060**

The Coastguard tasked a rescue helicopter to assist a dive boat which had a diver aboard who had got into difficulties during a dive. The helicopter lifted the diver from the dive vessel and

landed them ashore where they were transferred by ambulance to a hospital with recompression facilities. (Media report).

July 2021 **21/061**

A diver completed a dive on a wreck from a hardboat to a maximum depth of 38m for a total duration of 45 min. After an hour on the surface the diver complained of slight earache and so he opted not to do the second dive. The diver entered the wheelhouse to get out of the elements and fell asleep. Following the end of diving the boat made way back towards harbour and as they approached the diver awoke and was unable to see and couldn't stand. The boat skipper contacted the emergency services, and a lifeboat was tasked to rendezvous with the boat. The lifeboat met the boat and two crew members trained in casualty assessment went aboard the dive boat and assessed the unwell diver and assist those crew members already helping. The lifeboat escorted the dive boat back to harbour and the diver was airlifted to a recompression facility for assessment and received two recompression treatments. A specialist doctor diagnosed the diver with benign paroxysmal vertigo and the diver is receiving continuing treatment for this condition.

July 2021 **21/066**

A diver and his two buddies had completed a series of dives over 2 days from a charter boat as part of a group trip of 18 divers. Weather was hot and sunny and sea conditions were calm throughout the weekend. The first dive was a drift dive to a maximum depth of 16m and a total duration of 42 min. Once back on the boat following this dive the diver reported feeling nauseous and looked pale, the symptoms persisted but did not get worse. The diver sat out the next dive that day and was given fluids to drink and an anti-sickness tablet, which he vomited up shortly afterwards. On returning to shore accommodation the diver slept for a period and then felt better and joined the group for food. The following day the trio completed a first dive to a maximum depth of 11m for a total duration of 59 min and then after a surface interval of 87 min a dive to a maximum depth of 19m for a total duration of 44 min. All dives included a safety stop at 6m for 3 min. Approximately 20 min after surfacing from the final dive the diver felt nauseous again and this did not improve during the 20 min journey back to harbour, but no other symptoms were apparent. Back on shore the diver sat in the shade with water to drink whilst others unloaded the boat. The diver continued to feel nauseous and then worsened and he was sick approximately 90 min after surfacing from his last dive. He was checked on by a member of the group and the diver reported feeling dizzy and was having a problem with his left ear. Checks indicated no headache, visual disturbances, tingling, numbness or rash but when asked if he could stand his balance was affected. The diver was given nitrox 36 to breathe until oxygen could be provided. A recompression chamber was called for advice and the group member went to a nearby Lifeboat Station as the crew were clearing up after a training exercise, requesting oxygen for the casualty. The casualty was assessed and after consultation with a medical diving consultant, a Rescue Helicopter was tasked to fly the casualty and his dive buddy, directly to the recompression chamber. An ambulance attended with Coastguard personnel, and the casualty was transported to the helicopter. The diver received two recompression treatments and was discharged the following day and it was suggested he have a test for a possible PFO.

July 2021 **21/075**

A diver had completed a dive the previous day to a maximum depth of 19m for a total duration of 39 min. The next day he completed a dive to 37m for a total duration of 40 min including decompression stops at 20m for 1 min and 6m for 5 min. After a surface interval of 126 min the diver and his buddy completed a dive to a maximum depth of 27m for a total duration of 36 min including safety stops at 6m for 3 min. Both divers had used nitrox 29 for the final dive and the dive was uneventful. About 30 min after surfacing, having removed his suit and packed away most of his kit, the diver felt like he had indigestion and felt he needed to burp. The symptoms progressed to an ache in his lower back on both sides. He sat

down for a while and then noticed his right leg had 'pins and needles' and a feeling of numbness, but no rash was apparent. The diver notified the dive manager who laid the diver down, placed him on oxygen and gave him water to drink and called a diver helpline for advice. The diver helpline arranged for an ambulance to take the diver to a recompression chamber where he was recompressed. During the day the diver had drunk approximately 1 litre of water and had 2 cups of tea but hadn't needed to pass urine since boarding the boat that morning and it had been a very hot, sunny day of about 30 deg C.

July 2021 **21/209**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

July 2021 **21/211**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

July 2021 **21/076**

Coastguard requested the launch of a lifeboat to respond to a call from a charter boat with a diver with suspected DCI. The lifeboat met with the charter boat and transferred two crew to assist with the diver who was airlifted by a Coastguard rescue helicopter and taken to a recompression chamber for treatment. (Coastguard report).

July 2021 **21/212**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

August 2021 **21/091**

A diver and her two buddies completed two uneventful dives. The first to a maximum depth of 32m for a total duration of 58 min including a 3 min safety stop at 6m. After a surface interval of 139 min the second dive was to a maximum depth of 21m for a total duration of 36 min including safety stop at 6m. Two hours after surfacing from the second dive the diver became aware of pain in her neck, hip and lower back, which became progressively worse, with the pain in her back radiating to her lower abdomen. She called a recompression chamber for advice and evaluation and was advised to attend. On examination at the chamber she was given two recompression treatments over the next 2 days. Cold water, 7 deg C at 21m, and dehydration were considered to be contributing factors.

August 2021 **21/084**

A diver experienced a loss of feeling in his legs following a dive from a boat where he had conducted a normal ascent. The Coastguard was notified, and they tasked a lifeboat to meet with the vessel as it arrived back at harbour. The diver was transferred to the lifeboat which took him back to the lifeboat station where the diver was checked over by paramedics and plans were made on how to get the diver to hospital. The diver was airlifted by air ambulance to hospital for further assessment and treatment. (Media report.).

August 2021 **21/213**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

August 2021 **21/214**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

August 2021 **21/089**

A diver had completed two dives the previous day, the first to a maximum depth of 22m for a total duration of 37 min including a safety stop at 5m for 3 min and after a surface interval of 180 min a second dive to a maximum depth of 12m for a total dive time of 50 min including a safety stop at 5m for 3 min. The following day the diver and his buddy dived a wreck at a maximum depth of 14m. They attempted to circumnavigate the wreck, but the current was reasonably strong and the visibility poor and so the pair followed a line to an adjacent wreck, which was open to the surface and allowed some shelter from the current. As the divers descended into the wreck the diver's fin came off and as he tried to refit it he ended up on his back. His buddy tried to lift him back up but was unable to do so, and so the diver managed to right himself with considerable

effort. The pair continued the dive but as they exited the hold and began to follow the line back to the original wreck the diver noticed a pain in his biceps. The pair continued until the diver indicated he was at 100 bar and they should start to ascend the shotline. The pair completed a safety stop at 5m for 3 min. Once back aboard their boat the divers de-kitted and the diver reported the pain in his biceps muscle. He was offered oxygen but declined as he felt well and thought he had pulled a muscle with a lot of heavy lifting during the weekend. A member of the group massaged his arm and advised that if the pain got worse or migrated elsewhere that he notifies them. On return to harbour the diver gathered his gear together and then, still feeling fine other than a slight pain in his arm he returned home. The next day the diver awoke feeling fine apart from some heaviness in his arms and went to work as normal. At approximately 1100 the diver noted some pain in his shoulder, wrist and left side of his back. The pain was very mild, like a niggle, and came and went. The diver contacted a recompression chamber for advice and spoke to a doctor who confirmed it could be DCI and advised the diver to attend urgently for assessment. At the chamber the diver was found to have mild pain and some mild balance disturbance and received recompression treatment that day followed by two follow up recompression dives the following days.

August 2021 **21/215**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

August 2021 **21/216**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

August 2021 **21/132**

A group of 8 divers using 2 RHIBs conducted 6 days diving at a coastal location. One diver completed 6 dives over past 6 days, all uneventful. The diver had a day off diving on the third day as he felt sick and had vomited a few times. He then continued diving on 18th the following day and conducted one dive to a maximum depth of 32m for a total dive time of 30 min, including stops of 3 min at 6m. The following day the diver conducted 2 dives, the first to a maximum depth of 33m for 45 min including stops of 3 min at 6m and after a surface interval of 127 min a dive to a maximum depth of 29m for 37 min including stops of 3 min at 6m. 30 min after the second dive, the diver developed a visual aura similar to a migraine in the past. Later he developed an itch on his abdomen, and back pain, which lasted for 40 min and resolved spontaneously. The diver then developed feeling of an ache and swelling in left breast which persisted but there was no noticeable rash. The following day the diver had persisting ache and feeling of swelling in left breast and was feeling non-specifically unwell. A diver helpline was contacted, and the diver was advised to attend a recompression chamber for assessment. The diver made their way to hospital by boat and had oxygen on route, with no change in symptoms. The diver's buddy experienced no symptoms and did not go to chamber. The diver received recompression treatment and was released the following day following resolution of all symptoms. In December a transoesophageal echocardiogram was conducted on the diver, the report suggesting "PFO present with large right to left shunt".

August 2021 **21/092**

Rescue teams were called to assist a diver who was reported to have got into difficulties. After a medical examination the diver was airlifted to a recompression chamber for treatment. (Coastguard report).

August 2021 **21/093**

Two divers, both using nitrox 32, conducted a wreck dive from a boat to a maximum depth of 29m. At the end of the dive one of the divers deployed her DSMB and was concentrating on her deployment. During the deployment her buddy lost control of his buoyancy and experienced a rapid ascent direct to the surface ascending from 29m in approximately 1 min missing 13 min of required decompression stops. On recovery aboard the boat the diver initially reported feeling fine but continued to breathe from his stage cylinder. After about 20 min the diver reported

feeling a tingling in his lumbar region and right shoulder. He was given oxygen and the skipper called the Coastguard, who tasked a rescue helicopter to airlift the diver to a recompression chamber for assessment. His buddy completed her required decompression and made a normal ascent, unaware of the problems encountered by her buddy.

August 2021 **21/096**

A diver was taken ill following a dive and the Coastguard was contacted for assistance. The Coastguard tasked a lifeboat, but the dive boat returned the diver to harbour escorted by the lifeboat. The diver was assessed by the ambulance service and was airlifted to hospital for further assessment and treatment. (RNLI report).

August 2021 **21/097**

Two divers were transferred to a recompression chamber for treatment. (Media report).

August 2021 **21/107**

A diver and his instructor conducted a morning dive to a maximum depth of 9m. This was the first dive of the year and his first in a drysuit for the diver under the supervision of his instructor. The dive was uneventful until they returned to a depth of 8m 33 min into the dive when the student began to struggle to maintain his depth and on ascending to 6m he lost control of his buoyancy and ascended to the surface faster than normal. His instructor ascended at a normal rate, omitting any planned safety stops, and checked the diver was OK and reassured him. After a surface interval of 150 min the diver had experienced no adverse symptoms and felt confident to complete another dive. As the pair began their second dive the diver was unable to sink and was provided an additional 2 kg of weight and he was then able to descend the shotline. The pair conducted an uneventful dive to a maximum depth of 9m including some training exercises and conducted a 5 min safety stop at 6m, surfacing with a total dive time of 38 min. The evening of the following day the diver felt overly tired and achy. The following morning he had a severe headache and his body ached more than the previous say, especially around his neck and shoulders and so he contacted a recompression chamber for advice, who suggested he should attend for assessment. The diver subsequently received two recompression treatments.

August 2021 **21/219**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

September 2021 **21/220**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

September 2021 **21/221**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

September 2021 **21/223**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

September 2021 **21/121**

Following a previous dive to a maximum depth of 22m and a surface interval of 80 min, an Instructor was with a group of students for a deep dive. One of the students made a fast ascent from a depth of 32m and was accompanied by the instructor. The instructor ensured the student was OK on the surface and left him there and descended back down to re-join the group at 27m. Two of the students had become separated from the main group and made their own way back to the surface. The instructor located some of the group and continued with the dive. The student who had made the fast ascent made his way ashore and reported to the onsite shop. He was placed on oxygen and monitored, and his oxygen saturation was measured at 93%. After 35 min his oxygen saturation read 97% and he was advised to attend a recompression chamber for assessment. The diver returned the following day to collect his car and reported he had been recompressed and had further sessions booked.

September 2021 **21/105**

A pair of divers had completed a dive in the morning to a maximum depth of 24m for a total dive time of 48 min including a safety stop at 6m for 3 min. After a surface interval of 224 min the pair entered the water again for a dive amongst a series of gullies to a maximum depth of 21m. One diver used nitrox 31 and his buddy was using air. Towards the end of the dive the pair had made their way slowly up the slope to a depth of 13m 37 min into the dive. The diver on nitrox 31 then made an uncontrolled ascent direct to the surface and his buddy was unable to reach him to help control the ascent. The buddy then deployed his DSMB and ascended normally omitting any safety stops. On surfacing the buddy re-joined the diver and asked if he was OK and he reported he was fine and explained that he had been unable to dump gas from his suit quickly enough and he had been wearing his spare undersuit, which he didn't like. The buddy reassured the diver and advised that he would be placed on oxygen once the boat had recovered them. Pickup was delayed for a few min as the diver lift had failed after recovering previous divers. Once the boat came alongside the buddy told the diver to exit first and advised the crew of the need to place him on oxygen. The diver lift was stuck in the lowered position and so the diver swam onto it and stood up to begin de-kitting, but he became incoherent and weak and so a member of the party on the boat helped to de-kit him and assisted him aboard. The diver was placed on oxygen and monitored and after 10 min, when there was no improvement, a diver helpline was contacted for advice. It was subsequently decided to arrange evacuation of the diver by helicopter. Whilst waiting transfer the diver was kept on oxygen and given water to sip. Whilst waiting for the helicopter the boat made way back to harbour but after some distance the vessel lost steering and whilst considered repairable it would take some time and so a call to the Coastguard was made who then tasked a lifeboat to rendezvous with the vessel and take her under tow to allow the diver to be airlifted. The diver was flown to a recompression chamber for treatment. The crew of the dive boat were able to jury rig their steering and made their way back to harbour under their own power, escorted by the lifeboat.

September 2021 **21/104**

The Coastguard and RNLI were called to assist with the transfer of a diver to a recompression chamber. The rescue teams were tasked to meet a helicopter at a landing site to transfer a diver with DCI and assist with transfer to a waiting ambulance for onward transport to a recompression chamber. (Media report).

September 2021 **21/227**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

September 2021 **21/230**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

September 2021 **21/112**

A diver had completed 4 days diving from a charter boat on holiday. He had completed two dives a day with depths in the range 35-40m, using a rebreather, with duration for each dive of around 60 min, with all required decompression stops completed and no omissions. On the morning of the third day of diving, the diver experienced a very brief pain in his left arm following the first dive of the day, which disappeared and a similar occurrence after the second dive. On the fourth day the pain recurred and the diver reported it to the skipper who advised contacting a doctor ashore who assessed the diver and referred him for recompression treatment.

September 2021 **21/111**

A diver had been on a diving trip where she conducted two dives a day, which occasionally included required decompression stops and all dives were completed with at least 3 min safety stops. All dives were uneventful except for one where she exceeded her qualification depth limit by 5m. On the final day's diving she completed dives of 32m for a total dive time of 40 min, including a 6m safety stop for 3 min, and after a

surface interval of 60 min 36m for a total duration of 45 min, including a 6m safety stop for 5 min. The final dive had been on a wall and included a gradual ascent from depth up the wall ensuring no decompression stops were required. The diver had been experiencing some minor shoulder pain for a couple of days and had attributed this to using a larger cylinder than normal and the pain had ceased the previous day. Shortly after surfacing from the final dive of the trip and during the boat journey back to their base the diver experienced a return of the shoulder pain at an increased intensity and subsequently reported an itchy back, pain radiating down her right arm and the front of her torso and pain in her chest and left arm. Subsequent investigation revealed skin irritation and blotchy skin, which could have been a rash and 'pins and needles' in her left arm and wrist. The symptoms subsided and returned intermittently. The diver was placed on oxygen and given fluids and the skipper called the Coastguard who tasked a lifeboat to transfer the diver to a recompression chamber. After assessment at the chamber the diver received recompression treatment and was released the next day.

September 2021 **21/110**

A diver had completed two dives the previous day. Due to poor buoyancy control on the first dive had ascended directly to the surface omitting a safety stop. The following day, after a surface interval of 20 hours the diver conducted a dive to a maximum depth of 14m for a total duration of 29 min including a safety stop at 6m. Ten hours after the dive, having returned home, the diver felt unwell and contacted a diver helpline and was advised to attend a chamber for treatment.

September 2021 **21/231**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

October 2021 **21/232**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

October 2021 **21/176**

A diver had conducted two dives during the day without incident. Later, that evening, the diver lost consciousness and then vomited. Medical advice was sought, and the diver received recompression treatment.

November 2021 **21/125**

A diver conducted 4 dives over the course of a training weekend. Dive one was a depth progression dive to a maximum depth of 25m for a total dive duration of 27 min, during which the diver conducted a controlled buoyant lift on his buddy (see incident 21/124). Dive two the same day, after a surface interval of 150 min, was to a maximum depth of 26m or a total duration of 31 min. At the end of the day the diver noted that his hands felt cold and tingly and the skin between his knuckles seemed cracked and dry but after discussing with other divers who had similar issues, he attributed this to the cold prevailing conditions. On the second day he conducted 2 further dives, the first to a maximum depth of 15m for a total duration of 28 min and after a surface interval of 120 min a second dive to a maximum depth of 21m for a total duration of 41 min. Between the two dives the diver noted that his hands tingled when he opened and closed them. On returning home at the end of the day the diver noted that his hands were redder than usual with the redness following the shape of his gloves with clear rings around his wrists. He attributed this to his compass and dive computer being tightly fastened around his gloves and aggravated by the cold. Over the next three days the diver's hands remained red, and he suffered from intermittent mild aches in his right arm and occasional numbness in one finger, together with a piecing feeling in his knuckles. On the fourth day after diving, after starting work, the diver noticed that the ache in his right arm had moved to his right shoulder. He called a diver helpline later that day and was referred to a local recompression chamber where he was diagnosed as suffering from DCI. The diver received recompression treatment followed by 5 shorter periods of hyperbaric oxygen treatment.

November 2021 **21/237**

Coastguard received a report of diver suffering from DCI. (Coastguard report).

December 2021 **21/129**

A buddy pair dived from a RHIB with a dedicated cox'n on an underwater sea stack. The pair descended to a maximum depth of 24m and swam around the stack into a slight current and then ascended to a depth of between 17 and 15m where they began to encounter some kelp. The pair again began to circle the stack again into the current. As the lead diver turned a corner, she encountered a strong surge and grabbed some kelp to steady herself, but her legs were swept upwards, and she became partially inverted. The diver tried to right herself but had to let go of the kelp and she rose quickly to the surface feet first. On the surface the diver was on her back and unable to get herself upright. The cox'n brought the RHIB over and assisted her into the boat and then moved to recover her buddy who had surfaced nearby, after witnessing her ascent and knowing the boat was nearby, so had ascended normally and completed a safety stop at 6m for 3 min. On the boat the diver was offered oxygen by the cox'n and so her buddy took the helm and returned to harbour. Back ashore the diver contacted a duty diving doctor and was advised to attend a recompression chamber for assessment, and she drove herself to the chamber. On assessment she was found to have neurological signs with nystagmus, impaired balance and brisk reflexes and received recompression treatment.

Boating and surface incidents

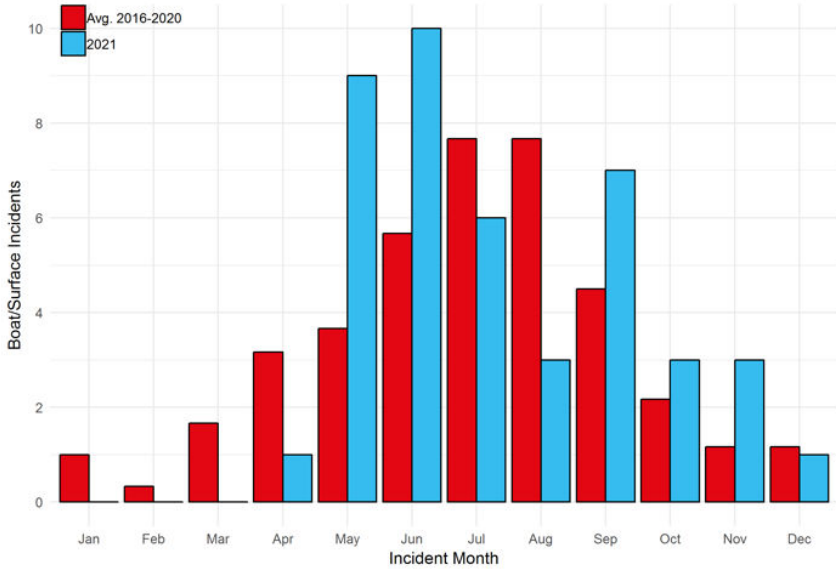

Figure 16. The month of occurrence of boating and surface incidents

April 2021 **21/142**

A lifeboat was tasked to assist a dive boat which had suffered machinery failure, with six persons aboard. The lifeboat took the vessel under tow and returned to harbour. (RNLI report).

May 2021 **21/017**

A group of divers had completed two dives from a RHIB. At the conclusion of diving the RHIB was heading back to harbour when an engine alarm sounded for low oil mix for the two-stroke engine. The engine went into engine management mode limiting maximum power to 9 knots. As weather and surface conditions were favourable the engine was stopped, isolated and the engine cover removed for inspection. The oil header tank was found to be low, but the main feeder tank was full. The engine was restarted whilst the cover was removed, and the header tank was found to not refill. The engine cover was replaced and the RHIB returned the 12 nm to harbour at a speed of 9 knots, whilst weather and sea conditions remained favourable. As the engine continued to operate under reduced power the Coastguard was not notified of the problem, but communications were monitored using VHF radio and mobile phones were also aboard should they be necessary to contact the emergency services. The RHIB returned to harbour safely and was recovered and transported for investigation by a marine engineer. The oil filter was found to be clogged with thickened oil residue which caused a reduced flow of oil from the feeder to the header tank only suitable for engine idle.

May 2021 **21/135**

A lifeboat was launched to assist divers in the water. Others coped and the lifeboat was stood down. (Coastguard & RNLI report).

May 2021 **21/185**

Coastguard received a report of diver overdue and missing. (Coastguard report).

May 2021 **21/186**

The Coastguard responded to reports of a diver cut off or stranded. (Coastguard report).

May 2021 **21/133**

Two lifeboats were tasked to a report of persons in the water, which turned out to be divers on the

surface. False alarm with good intent. (Coastguard & RNLI reports).

May 2021 **21/188**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

May 2021 **21/190**

The Coastguard responded to a PLB activated by a diver. (Coastguard report).

May 2021 **21/032**

A RNLI all weather lifeboat was diverted from another call after divers were seen calling for help off a cove. The two divers had got into difficulties and were assisted by jet skiers and kayakers who handed them over to a dive vessel which had also responded, and which returned them to shore. Two lifeboats, Coastguard rescue team, local community responders, ambulance and an air ambulance attended. The divers were checked over by a doctor and Coastguards and found to be fit and well and did not require further medical attention. (Coastguard report).

May 2021 **21/145**

Coastguard requested the launch of 2 lifeboats, an ILB and AWLB, to assist a dive boat which had broken down and had a diver unaccounted for. Due to the state of the tide both lifeboats required a low water launch. The inshore lifeboat arrived on site first and was able to confirm that all divers were now safe aboard and took the vessel under tow to calmer water. When the AWLB arrived on scene it took over the tow and towed the vessel safely back to harbour. (RNLI report).

June 2021 **21/034**

A RNLI lifeboat was requested to launch to investigate an SMB that had been seen by another vessel near a dive site with no dive boat or other activity in the area. Once on site the Lifeboat crew recovered the SMB with nothing attached and no bubbles or other signs of divers. The lifeboat conducted an expanding square search and a fisheries patrol vessel also assisted. The crews were informed there had been no reports of divers missing or in difficulty and so the search was called off and the lifeboat returned to station. (Media report).

June 2021 **21/134**

A dive boat reported suffering from mechanical issues whilst it still had divers in the water and was drifting away from the dive site. Two lifeboats were tasked to attend and were quickly on site. One lifeboat took the dive boat under tow back to harbour, whilst the second stood by on the dive site and recovered the divers once they surfaced. The divers were returned to harbour where they were reunited with the boat. (Coastguard & RNLI report).

June 2021 **21/191**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

June 2021 **21/192**

The Coastguard responded to reports of a diver in difficulties on a personal watercraft. (Coastguard report).

June 2021 **21/193**

Coastguard received a report of diver overdue and missing. (Coastguard report).

June 2021 **21/194**

Coastguard received a report of diver overdue and missing. (Coastguard report).

June 2021 **21/050**

A diver was reported missing after losing contact with his boat when the boat broke down. A safari boat crew joined the search and located the diver and recovered him aboard and returned the diver to his boat. A lifeboat had been tasked and on arrival on scene shortly after and established everyone was safe and well towed the broken-down vessel back to harbour. (RNLI report).

June 2021 **21/198**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

June 2021 **21/199**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

June 2021 **21/136**

A lifeboat was tasked to assist a diving RHIB which had suffered gearbox failure, with six persons aboard. The lifeboat took the RHIB under tow and returned to harbour. (Coastguard & RNLI report).

July 2021 **21/137**

A lifeboat was launched to assist divers in the water. Others coped and the lifeboat was stood down. (RNLI report).

July 2021 **21/204**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

July 2021 **21/206**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

July 2021 **21/208**

The Coastguard responded to reports of a diver in difficulties in the water. (Coastguard report).

July 2021 **21/138**

A lifeboat was launched to assist divers in the water. (Coastguard & RNLI report).

July 2021 **21/082**

The Coastguard requested the launch of two lifeboats in response to a charter vessel reporting 9 missing divers. The two lifeboats made best speed to the reported location, with the AWLB having to do a low water launch due to the state of the tide. A local fishing vessel also responded. The dive boat located and recovered 4 of the divers after a short search and the fishing vessel located the other divers a short while later. The lifeboats were then stood down and returned to station. (RNLI report).

August 2021 **21/086**

A RHIB had been used for a wreck dive without incident and returned to harbour to ferry a second group, who had experienced a problem with their own boat, to a dive site. On arrival on site, they found conditions suitable, and the divers began to kit up. The boat engine stalled but was able to be restarted without issue, although it was 'running lumpy' and shortly after stalled again. The engine was restarted again without problem and was running fine but only at a fast idle and so the decision was taken to abort the dive. The RHIB headed back to harbour but before they could complete their return the engine faltered again and then stopped and could not be restarted. There were tools aboard but as the weather included showers it was decided to seek a tow back to harbour rather than expose the engine to the potential for water ingress. An anchor was deployed, and a radio call was made for assistance from Seastart. Meanwhile a mobile phone was accessed, and contact made with another RHIB known to be in the area and they responded and attended to provide a tow. Another radio call was made to stand Seastart down. After towing back to shore without further incident, the engine was inspected and the spark plugs removed and checked, with one being found to no longer be working. All spark plugs were replaced, and the engine was fully functional again.

August 2021 **21/217**

Coastguard received a report of diver overdue and missing. (Coastguard report).

August 2021 **21/099**

A pair of divers were decompressing under a DSMB at a depth of 6m following a wreck dive when they heard a boat pass close overhead. After surfacing and regaining their dive boat they were informed that a large powerboat competing in an offshore race had passed within 3-5m of the divers DSMB and made no attempt to avoid the

marker. The dive boat was displaying the 'A' flag at the time.

September 2021 **21/140**

A lifeboat was launched to assist a diver. (RNLI report).

September 2021 **21/139**

A lifeboat was launched to a dive RHIB, with 4 persons aboard, that had suffered engine failure. On scene the lifeboat transferred two passengers aboard the lifeboat, whilst the other two crew stayed aboard the RHIB to steer the vessel which was taken under tow back to harbour. The tow back to harbour took 160 min. (RNLI report).

September 2021 **21/225**

The Coastguard responded to reports of a diver in difficulties in the water. (Coastguard report).

September 2021 **21/226**

Coastguard received a report of diver overdue and missing. (Coastguard report).

September 2021 **21/228**

Coastguard received a report of diver overdue and missing. (Coastguard report).

September 2021 **21/106**

The Coastguard received a call from a dive charter vessel reporting that with 11 divers in the water the boat had suddenly been engulfed in fog. The Coastguard tasked a lifeboat and vessel traffic service boat to attend to help locate the divers. All divers were recovered safely from the water and returned to their dive vessel. (Coastguard & RNLI report).

September 2021 **21/141**

A lifeboat was launched to assist a diver. (RNLI report).

October 2021 **21/113**

A dive boat contacted the Coastguard to report that two divers had not surfaced and were overdue by 20 min. The Coastguard tasked two lifeboats and as one of them made their way to the last known location they spotted the two divers more than a mile away from their original location and still drifting in the tidal current. The divers were recovered by the lifeboat, and they explained that they had been at a maximum depth of 14m and that 17 min into their planned dive the current started to increase, and they terminated the dive. On surfacing they discovered they were already too far from their dive boat to be easily seen or heard and the cox'n was not expecting them for a further 30 min. The pair of divers were on the surface for more than an hour before being recovered by the lifeboat. The Lifeboat escorted the dive vessel back to harbour where the missing divers were landed and reunited with their boat. (Coastguard & RNLI report).

October 2021 **21/233**

The Coastguard responded to reports of a diver in difficulties in the water. (Coastguard report).

October 2021 **21/234**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

November 2021 **21/235**

The Coastguard responded to reports of a diving vessel with machinery failure. (Coastguard report).

November 2021 **21/143**

A 'Mayday' call was received for a missing diver and two lifeboats were tasked. Whilst on route to the site the lifeboat received a message that a local dive charter vessel had located the diver safe and well and recovered and returned him to his scallop dive boat. On arrival the dive charter vessel discovered that the scallop vessel was aground on a submerged reef close to shore. A line was passed but the dive boat was unable to tow the vessel off the rocks and it was listing significantly on an ebbing tide. Whilst one lifeboat stood by the first lifeboat on scene established a tow and with some careful manoeuvring was able to tow the vessel clear. The scallop dive boat crew checked for water leaks and then dropped the tow

and began to head for harbour. Within a couple of min the skipper communicated that the vessel had lost engine power, so the lifeboat re-established the tow and towed the vessel to harbour.

November 2021 **21/115**

A RHIB left harbour with 8 divers and a dedicated cox'n to travel to dive a wreck and the cox'n activated SafeTrx as they departed. On arrival on site the wreck was located and a shotline deployed. As the divers prepared to dive the boat's engine died and despite restarting several times, each time the engine died, and the boat was drifting downwind from the shotline. The diving was cancelled and the divers de-kitted whilst the anchor was deployed, and the Coastguard notified. The RHIB received an offer of help from another RHIB in the area and a charter vessel to tow them after they had completed their own diving activities. The crew continued to work on the engine and after 30 min the engine was restarted, they recovered their shotline and started to motor back towards harbour at 4 knots continuing to pump the fuel bulb continuously. The cox'n kept the Coastguard and the other boats informed of their progress. The RHIB arrived back in harbour after 150 min and notified the Coastguard of their safe return and terminated their SafeTrx passage.

December 2021 **21/147**

A lifeboat was launched in response to a report of two overdue divers. Whilst on route to the location it was reported that the divers had been located and recovered by their dive boat and so the lifeboat was stood down and returned to station. (Coastguard & RNLI report).

Ascents

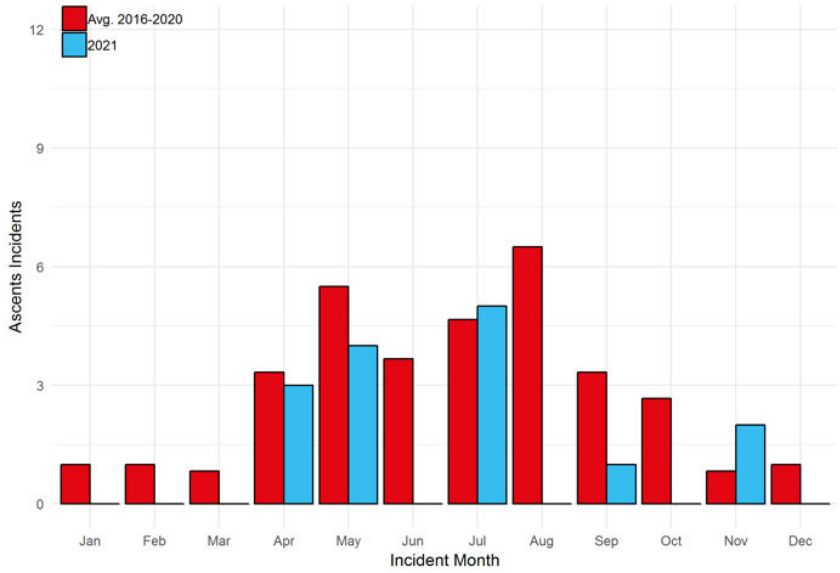

Figure 17. Ascent related incidents in each month of the year

April 2021 21/004

A diver and his buddy conducted a dive on a wreck from a charter boat to a maximum depth of 20m and as the pair approached the time to ascend the diver deployed his DSMB and then turned to note his buddy struggling with something. It became clear that his buddy's weightbelt had released and she was struggling to try and refit it. The diver dumped gas from his drysuit and BCD to weight his buddy down and try to assist with refitting the weightbelt. The buddy began to panic and knocked the diver's mask off and regulator out. The diver switched to his AS and handed his DSMB reel to his buddy to try and give her something to focus on and regain her composure. Whilst the diver was refitting his mask his buddy made for the surface whilst holding her weightbelt and the DSMB reel. The diver released his hold to avoid being dragged up with her. During her ascent the diver dropped her weightbelt and surfaced omitting a safety stop. The diver conducted his own ascent without his DSMB and completed a safety stop and on surfacing found that his buddy had been recovered via the charter boat's stern lift and had been laid down. Following an assessment, she was found not to be suffering any symptoms and had no decompression requirements and so oxygen was not administered, and the diver was monitored for the rest of the day. Total dive duration was 35 min. The weightbelt was new with a single metal buckle.

April 2021 21/005

Two buddy pairs and an instructor had completed a dive to a maximum depth of 6m to refresh and practise skills following a break from diving with a total dive time of 45 min. After a surface interval of 2 hours, the group entered the water for a second dive to a wreck at a depth of 17m, where further basic skills were again practised. One of the divers performed a regulator switch from his main regulator with nitrox 25 to his decompression cylinder with nitrox 32. He was being monitored by the instructor who was 1m away facing the diver. On switching to his deco gas, the diver immediately switched back to his main regulator, which then began to free flow. Water temperature at depth was 7 C. The diver panicked and bolted for the surface and the instructor was unable to intervene in time. The instructor ascended as quickly as possible direct

to the surface omitting any safety stops. On surfacing the diver's main cylinder was empty and he was met by the site safety boat that was already in operation. The boat crew recovered the diver's equipment aboard and following discussion with the diver instructed him to surface swim back to shore. The instructor had by this time joined the diver and he monitored him during his swim back to shore and then he led the rest of the group back to the exit point. The diver on regaining the shore self administered oxygen from the club's equipment and once the rest of the group re-joined him, he was assessed with no adverse symptoms identified. A diver helpline was contacted who advised the diver to be accompanied home and to rest. The diver subsequently had his regulators checked by a service agent, but no faults were found.

April 2021 **21/006**

Two divers planned a dive to a maximum depth of 27m as a check dive for one of them, who had not dived for 6 months or so. The buddy had completed 4 previous dives this year. The pair entered the water and descended a shotline in 5m increments stopping to conduct checks with each other at each level. The diver who had not dived recently experienced some slight problems with buoyancy control, but these were rectified. Once on the bottom they swam approximately 10m to an underwater feature of a double decker bus, where the diver lost control of her buoyancy and ascended to the top of the bus before regaining control. The diver's buddy asked if she wanted to abort the dive, but she indicated she was happy to continue. The diver then inverted and started to ascend, her buddy dumped air from his BCD, grabbed hold of the diver with one hand the top of the bus with the other preventing her ascent. After a brief period of panic the diver regained control of her buoyancy and calmed down and sat holding onto the bus for several min. During this period her buddy noticed weights on the bottom and went to recover them and helped the diver refit them. The pair then decided to abort the dive and ascended completing stops at 10m for 1 min and 6m for 3 min followed by a slow ascent to the surface. On returning to shore it was identified that the pockets for her integral weights were designed for 4 kg and the weights being used were 5 kg.

May 2021 **21/021**

Two divers were conducting their first sea dive of the year, one had completed 2 previous dives and the other had done 5. The pair conducted a dive on a wreck to a maximum depth of 24m and one of them deployed a DSMB at the end from a depth of approximately 20m. The pair conducted a slow ascent but one of them found himself slightly under-weighted and was unable to hold a safety stop at 6m and he floated slowly to the surface with a total dive duration of 48 min. His buddy remained at 6m, deployed his own DSMB and then ascended to 3m to conduct a safety stop whilst monitoring his buddy on the surface, who signalled OK. On completion of the safety stops he surfaced and both divers were picked up by their boat.

May 2021 **21/148**

A rebreather diver was at a depth of 30m when he experienced water in his mask, panicked and made a fast ascent direct to the surface. He was recovered from the water and reported no lasting effects.

May 2021 **21/015**

A diver and two buddies had completed a previous dive to a maximum depth of 25m with a total dive time of 42 min including a safety stop without problems. After a surface interval of 90 min the trio conducted a dive to a maximum depth of 23m. During the ascent the trio had planned to pause at 6m to conduct a safety stop but the diver was unable to maintain the 6m depth and ascended directly to the surface omitting the stop.

May 2021 **21/078**

A diver had completed a dive the previous day to a maximum depth of 21m for a total duration of 29 min. The diver had forgotten his BCD and had borrowed a similar model from another member of his group. On the morning of the following

day the diver completed a dive to a maximum depth of 28m for a total dive time of 33 min, this time with a different BCD of the same model but from a dive school. After a surface interval the diver, using the same borrowed BCD, the diver and a different buddy surface swam out to a point above their intended dive site and paused to regain their breath. The pair then started a controlled descent taking approximately 4 min to reach 20m as the diver had to descend slowly to allow his ears to clear. When the diver reached the bottom, his buddy was above him, and although he tried to swim up towards him, he felt he was unable to do so and felt tired and waved his torch to signal he was starting to panic a little, but his buddy did not interpret this as distress. The diver then approached his buddy and grabbed hold of his harness, which his buddy interpreted as he wanted assistance to surface. The buddy then took control, opened both their drysuit valves and started a controlled buoyant lift by putting gas into the diver's BCD. The pair ascended slowly to around 15m and then stopped ascending and slowly started to descend again despite the buddy continuing to inflate the diver's BCD. The buddy assumed there must be a fault with the BCD and so started to inflate his own BCD and this restarted the ascent, but this became increasingly fast, and the pair surfaced omitting safety stops. The total ascent time was 3 min from 20m, and the total dive time was 7 min. Neither dive computers 'locked-out' despite a faster than normal ascent from 10m. On surfacing the buddy asked the diver if he was OK and the diver said that his legs ached and so the pair rested for a few min before swimming back to shore. Once back ashore both divers were checked for signs and symptoms of DCI - none were apparent and so they were monitored for the next 24 hours, and no symptoms occurred. Following discussions, it was identified that the diver had not adjusted his weighting for fresh water and so could have been over-weighted contributing to his difficulty swimming to his buddy. During the initial controlled buoyant lift, the diver had though he was ascending too quickly and so he started to dump gas from his own BCD, without his buddy realising.

July 2021 **21/151**

A diver made a rapid ascent from 25m. On inspection his regulator first stage was found to have a missing low-pressure port and his backup regulator has no hose. The diver was observed for one hour and no symptoms appeared.

July 2021 **21/070**

On the second day of a diving trip a pair of divers conducted a dive on a wreck to a maximum depth of 26m. Prior to the dive all divers were briefed that the last diver to enter would add air to a lift bag on the shotline until it was neutrally buoyant. The previous lift bag had been damaged and the bag to be used was a 65 kg bag. The pair of divers were in the first wave and had completed their dive and were ascending the line to their first stop at 12m when they were passed by a pair from the second wave who were starting their dive and as the descending divers remained on the shotline the ascending divers were forced to move off the shot to allow them to pass. The pair returned to the shotline and ascended to their stop at 12m. The descending pair apparently added additional gas to the lifting bag sending the shot to the surface. One of the divers at 12m became entangled in the shotline, although it was around the middle of the line and so, although he was dragged up, he was not pulled to the surface. His buddy was able to untangle the diver from the rope which was wrapped around his 1st stage and right leg. The pair completed stops at 6m for 3 min.

July 2021 **21/080**

A pair of divers had completed a dive on a wreck to a maximum depth of 25m. At the end of their bottom time they ascended to 16m to deploy a DSMB. As the buoy reached the surface the handle came off the reel and the slack line became entangled around the diver's fin. As the diver tried to untangle the line from his fin, he began to ascend faster than he intended and was unable to discard the DSMB as the line was still tangled on his fin. He was also unable to dump air as the line became increasing entangled and he ascended direct to the surface omitting safety stops. The diver suffered no ill effects.

July 2021 **21/122**

A diver conducted a dive to a maximum depth of 18m. After an uneventful dive he had ascended to a depth of 13m where he lost control of his buoyancy and ascended directly to the surface with a total dive time of 49 min. The diver complained of a sore head but otherwise felt fine. He was placed on oxygen but after some time on oxygen reported that he felt fine.

July 2021 **21/157**

A guide was leading three divers on a wreck dive to a maximum depth of 28m. Approximately 15 min into the dive the group begin to ascend the hull back toward the shotline. The guide saw one of the divers ascending and pointing up, wide-eyed. Approximately 2m above him another of the divers was making a circling motion with his torch as he was stuck in a rapid, uncontrolled ascent, before quickly disappearing out of sight toward the surface. The guide signals that they are aborting the dive and within 3 fin kicks we are at the shotline. Monitoring the ascent rate, they ascend as quickly within computer limits as they can in a controlled manner, however, the diver who had indicated the ascending diver had a deep stop at 18m. The guide signalled to the other customer (an instructor) to buddy up with the diver with a deep stop, whilst he continued the ascent alone. The guide ascended directly to the surface omitting his safety stop. On surfacing he spotted the diver by the side of the dive boat. The guide quickly finned toward the dive boat whilst the skipper carefully manoeuvred closer. The guide told the casualty to keep his regulator in breathing his nitrox 29 whilst he got aboard first using the dive lift. Once the guide got aboard, he assembled the oxygen equipment and gave it to the casualty breathe. The casualty is monitored and regularly asked how he was feeling, but he consistently reports that he feels 100% normal. The charter vessel waited to collect the remaining divers and then made for the nearest port, where the casualty, still with no symptoms of DCI, was driven home. The casualty was taken to see the diving doctor as a precaution, who assessed him and confirmed there were no signs of DCI. Later the casualty reported that the cause of the rapid ascent was a lack of familiarity with his own drysuit, particularly the dump valve, which was still new to him as well as a leaking mask and GoPro setup with lights that had his attention divided throughout the dive.

September 2021 **21/101**

A diver surfaced rapidly and feet first from a dive with air trapped in his suit. He was recovered by his dive boat and the Coastguard contacted who tasked a lifeboat with paramedics aboard to attend. The diver was taken aboard the lifeboat and returned to port where he was placed in an ambulance and taken to a local recompression chamber as a precaution. (RNLI report).

November 2021 **21/124**

A pair of divers entered the water to conduct a depth progression dive to a maximum depth of 25m. One had hired a drysuit from the on-site dive centre, whilst his buddy was using his own drysuit. The pair made a progressive descent to a maximum depth of 25m and then made their way shallower in search of a rarely seen object on the site. Approximately 15 min into the dive the visibility deteriorated and diver in the hired suit was struggling to control his buoyancy and signalled that he wanted to ascend. The diver seemed distracted and held onto his buddy tightly. The buddy tried to stabilise them both by dumping buoyancy and kneeling on the bottom and tried to establish if the diver could control their own buoyancy during an ascent or would require a rescue lift. The signals from the diver were vague and so the buddy initiated a controlled buoyant lift from a depth of 22m. The ascent was variable with some rise and fall but the pair ascended to 15m 22 min into the dive. The diver indicated he was OK at this point but still wanted to ascend. The pair let go of each other and they continued their ascent to 10m at which point the diver lost control of his buoyancy and ascended directly to the surface, omitting safety stops. The diver was able to signal to his buddy from the surface that he was well and so the buddy completed a 3 min safety stop at 6m before re-joining him on the surface. On the surface the diver was apologetic, frustrated and complained of a headache. Back ashore the buddy suggested the diver should go on oxygen, but the diver was

reluctant to do so. After the buddy spoke to the dive manager the diver was placed on oxygen and did not dive for the remainder of the day and was monitored.

November 2021 **21/150**

A diver became entangled in their DSMB whilst deploying it and made an uncontrolled ascent to the surface from a depth of 9m. The diver requested oxygen and a recompression chamber was contacted for advice. The chamber advised to cease oxygen administration and to monitor.

Technique-related incidents

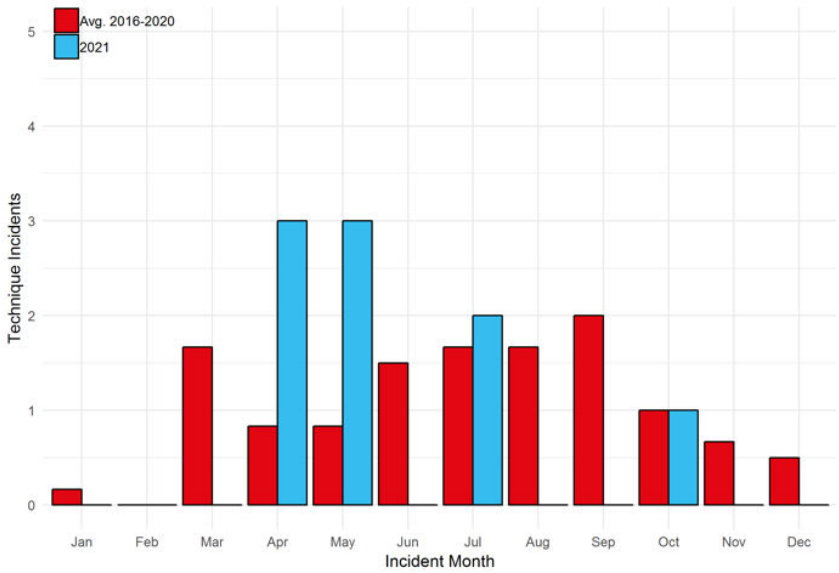

Figure 18. Technique-related incidents in each month of the year.

April 2021 **21/028**

Four divers were conducting a training dive on a preparation event. One of the students was using a main cylinder and a pony. Whilst conducting an exercise at a depth of 22m approximately 10 min into the dive the student was noted by his instructor to stop and appeared confused swapping between his primary regulator, AS and his pony regulator. The student indicated his primary regulator was not delivering gas and the instructor offered his own AS, which was declined, and the student continued to breathe from his own AS. The student indicated for the instructor to check his cylinder and pony valves, which were both found to be open. The second instructor in the group who had been observing then joined the pair and also checked the valves and offered her AS, which was again declined. The two instructors agreed that the instructor and student should return to the shotline and ascend, which they did completing a normal ascent and safety stop at 6m for 3 min and surfaced after a total dive time of 25 min to a maximum depth of 22m. On recovery into their RHIB the student found that he had incorrectly configured the regulators from his pony and his primary regulators, which were both similar and not marked to make them identifiable. The pony cylinder was found to be empty as the diver had commenced the dive breathing from it. During the dive the student had not checked his pony cylinder contents gauge as he had believed the fault to be with his primary regulator.

April 2021 **21/007**

A diver and his buddy had started a dive and had reached a maximum depth of 21m. Approximately 10 min into the dive the diver, who was using side mounted twin cylinders, switched regulators but did not purge the replacement regulator before taking a breath and experienced cold water hitting the back of his throat. The diver became breathless and despite trying to get an adequate breath he was unable to do so and so went for the surface, breathing out forcefully as he ascended, omitting any safety stop. Total dive time was 14 min. The diver suffered no ill effects, but he and his buddy carried out an extra-long surface interval, during which the diver monitored himself for signs of DCI, before diving again.

April 2021 **21/018**

Three divers had conducted a dive to a maximum depth of 35m. During the ascent one of the divers signalled that she was out of gas and one of her buddies, who was in close proximity, provided her with his AS. It was identified that the diver was using a manifolded twin-set and that the isolation manifold was closed. The valve was opened equalising the gas between the two cylinders and the diver returned to breathing from her own twin-set. The group continued their ascent and completed the required decompression stops and surfaced without further incident. Total dive time was 48 min including decompressions stops of 15 min at 6m. The diver attributed the incident to unfamiliar equipment and inadequate pre-dive checks.

May 2021 **21/023**

Two divers were diving an inland site, one of the divers was using a manifolded twin-set and during pre-dive checks he forgot to open the isolation manifold. The twin-set had a digital radio gauge on one cylinder and an analogue gauge on the other. The pair entered the water and descended to a maximum depth of 20m. The diver's digital gauge failed shortly into the dive and so the diver reverted to using the analogue gauge, not realising that it was attached to the cylinder that was isolated. The diver did notice that his gas consumption seemed to be quite low, but he attributed this to fitness training. After a dive time of 40 min and at a depth of 18m the diver could not breathe because his cylinder was empty. The diver reached for their AS, but he forgot to purge it and got a mouthful of water because he did not have the breath to clear it. He then took his buddy's AS, and this time remembered to purge it. The pair stabilised themselves and then ascended under control but quicker than normal and conducted a safety stop at 6m for 1 min. At that point the cylinder they were now sharing was down to 30 bar as the out of gas diver was breathing heavily, and so the pair surfaced together omitting the rest of their safety stops. Once back ashore the closed isolation valve was identified, and one cylinder was found to be empty with the other remaining almost full.

May 2021 **21/016**

Three divers were preparing to dive from a RHIB with a dedicated cox'n. Sea conditions were very choppy with 1m waves and a short fetch and so a shallow sheltered site was chosen in the lee of land. The three kitted up, two in open circuit and one using a CCR rebreather. The rebreather diver was seen to calibrate his unit prior to donning. The open circuit divers conducted a buddy check and then the more experienced of the two then conducted a rebreather buddy check with the CCR diver who verbally confirmed diluent on, oxygen on, drysuit direct feed connected and hand sets working. The experienced diver witnessed the handset as on but did not personally confirm the other checks and accepted the CCR diver's confirmation. The trio then entered the water and descended towards the seabed at a depth of 7m. During the descent at a depth of 4m the CCR began to act erratically and then at a depth of 6m he signalled out of gas. The experienced diver approached the CCR diver, held onto him, began to swim up and held his AS in front of the CCR diver's face. The CCR diver did not take the AS and later reported he had switched to his bailout valve (BOV) but inhaled some seawater and so thinks he had not fully rotated the mouthpiece to operate the valve properly. On surfacing the CCR diver appeared unresponsive and so the experienced diver rolled him onto his back, inflated his drysuit as he was unable to locate the direct feed for the wing and removed the diver's mouthpiece. The CCR diver began to respond and was rational but frustrated. The experienced diver checked the oxygen and diluent valves and found that the diluent was switched off, which would have caused a decrease in loop volume during descent causing the difficulty breathing and the out of gas signal. The CCR diver was assisted to de-kit by the two open circuit divers, and he was assisted back into the RHIB. After a few min discussion the two open circuit divers decided to continue with their dive but the cox'n was instructed to recall them should there be any change in the CCR diver's condition. The pair completed a dive to a maximum depth of 15m for a total duration of 52 min. On surfacing the CCR diver could not be seen on the RHIB and on asking the cox'n confirmed that he was asleep, and he had complained of

seasickness even though surface conditions close to shore had been calm. The harbour authority had been informed of the incident and a recompression chamber had been contacted for advice. The diver was advised to attend the chamber for assessment and on returning to shore the cox'n drove the CCR diver to the chamber. Following assessment, the diver was released without treatment and was driven home by the cox'n.

May 2021 **21/027**

During pre-dive checks a diver failed to check his twin-set manifold isolation valve was open. Shortly after submerging for a training dive the diver realised that he was only using gas from one cylinder due to the difference in readings between his pressure gauge and the gas integrated dive computer, which were connected to different cylinders. The cause was identified, and the isolation manifold opened, and the dive continued without further incident. The pair completed a dive to a maximum depth of 13m with a total duration of 36 min.

July 2021 **21/062**

A pair of divers, one using air and his buddy using nitrox 32, conducted a dive on a wreck from a charter vessel. The pair had discussed their gas mixes prior to the dive. During the dive they reached a maximum depth of 26m, and the nitrox diver had an extended bottom time available due to his nitrox mix. His buddy did not make him aware he had gone into required decompression stops. On ascent the pair paused at 6m to conduct a planned 3-4 min safety stop but the air diver's computer showed he had 28 min of stops to complete at 3m. There was some confusion as to why this was and it was thought his computer had been incorrectly set up and so the pair surfaced and were recovered by the boat. Once back aboard the differences between their gas mixes was identified and the air diver, who was displaying no symptoms, was placed on oxygen for 45 min as a precaution. The pair skipped the planned second dive of the day as a precaution.

July 2021 **21/071**

Two divers had completed a previous dive, each with more experienced buddies, to a maximum depth of 9m and a total duration of 40 min. In the afternoon the two divers were buddied together, both having dived the site several times in recent months, and they were reminded by the dive manager about separation procedure and turn around pressures. The pair reached a maximum depth of 12m but became separated after approximately 30 min. One diver surfaced and was on the surface for 7 min before he was able to swim close enough to the shore cover to report his buddy was missing. The shore cover immediately called the Coastguard as the diver had originally surfaced a considerable distance from shore and there was a strong current further out to sea. The missing diver surfaced 5 min later and a lifeboat which was on another call in an adjacent bay was on scene 10 min later and recovered the diver and returned him to shore. The pair reported having turned around at 140 bar as planned, but both then became disorientated and separated. Both divers were reminded of separation and other procedures and remedial training was instigated.

October 2021 **21/117**

A diver had completed a previous dive on the day to a maximum depth of 10m and a total duration of 60 min include a 3 min safety stop at 6m. After a surface interval of 105 min the diver entered the water with 2 other divers to a maximum depth of 17m and a total duration of 48 min. The diver was using a single 15 lt cylinder of air and towards the end of their planned dive the diver signalled his buddies that he had 70 bar remaining and the group commenced their ascent. On reaching 6m one of the diver's buddies gave him a signal which he thought was asking for his gas contents but was actually asking for any stops he may have had. The diver signalled '6', for 60 bar, but this resulted in the group conducted a stop for 6 min at 6m. On returning to the boat the diver was found to have 30 bar remaining in his cylinder due to the confusion and extended underwater time.

Equipment-related incidents

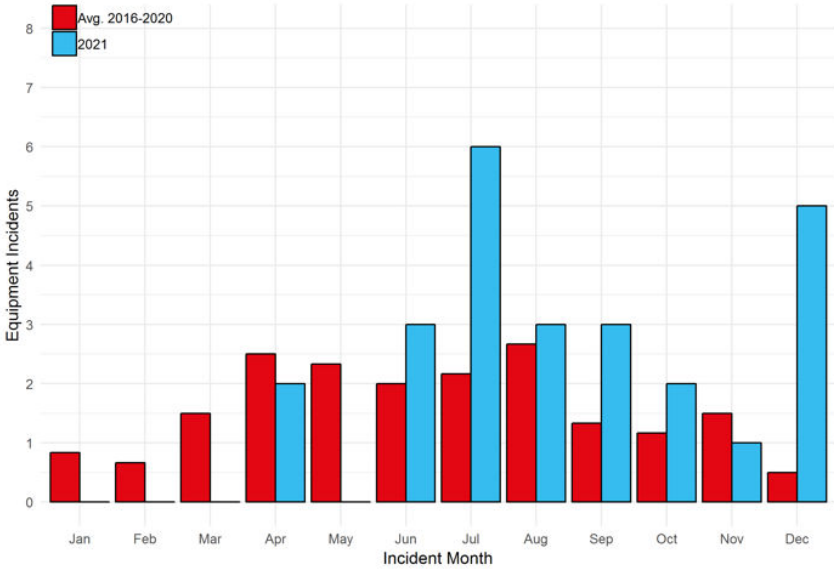

Figure 19. Equipment related incidents in each month of the year.

April 2021 21/010

A diver and his buddy had commenced a dive to a maximum depth of 21m. Around 10 min into the diver the diver experienced a regulator free flow. His buddy signalled to abort the dive and the pair ascended with the diver continuing to breathe from his free flowing regulator. After a normal ascent, omitting safety stops, the pair surfaced, and the free flow stopped once they were on the surface.

April 2021 21/044

A pair of divers had completed a dive to a maximum depth of 35m for a total dive duration of 40 min. One of the divers, who had mobility issues, was using side mounted twin-set and DPV. On conclusion of the dive the diver left his DPV in the shallows and returned to his vehicle still wearing his side mounted cylinders. As he approached his vehicle his buddy, who had already de-kitted, asked where his DPV was and offered to retrieve it for him. The buddy was still in his drysuit but was wearing sunglasses, and as he reached the DPV he grasped the handle, which activated the unit, and he was pulled over towards deeper water. The tow leash for the DPV became entangled in the propeller mechanism of the DPV and jammed it slowing it down but not stopping the propeller entirely. The owner then returned to the water and succeeded in switching the DPV off. Subsequent inspection of the unit indicated some damage to the DPV requiring it to be returned to the manufacturer for repair.

June 2021 21/036

A pair of divers were preparing to dive a wreck in a depth of 30m from a RHIB. The cox'n deployed the divers early and they were a distance from the shotline, and they needed to swim into the current to reach it. One of the divers was seen to be slow to resurface and later reported that he had difficulty regaining the surface and once back on the surface had difficulty staying there and had to put additional gas in his drysuit to regain some buoyancy. He remained low in the water and swam to his buddy for assistance. His buddy noted that his drysuit dump valve was releasing gas and as the diver tried to inflate his BCD to give additional buoyancy his buddy noted that the hose was disconnected at the top where it joined the BCD.

The buddy maintained a firm grip and inflated his own drysuit to provide additional buoyancy. The RHIB at this time was heading towards them and so the buddy did not signal for assistance. As the RHIB came alongside the diver required assistance to get back aboard. Subsequent investigation indicated that the right-angle connector between the corrugated hose and the diver's wing had broken due to degradation of the plastic.

June 2021 **21/240**

Two rebreather divers were diving from a charter vessel on the first day of a week long dive trip. The pair conducted a shakedown dive to a maximum depth of 11m during which one of the divers experienced problems with the oxygen sensors and his unit went into error, so the pair aborted the dive with a total dive time of 4 mins. A second dive had been planned but despite checking the rebreather, cells and completing all checks the same problem occurred and the dive was aborted with a total dive time of 18 mins and a maximum depth of 18m. A third dive was conducted with the same issue with a total duration of 10 mins and a maximum depth of 18m. The diver changed the oxygen cells overnight and tests indicated that the issue had been resolved.

June 2021 **21/046**

During an Instructor examination an examiner and 3 instructor candidates were at a depth of 6m practising regulator recovery when one of the candidates AS went into free flow. Despite efforts to stop the free flow it continued and so the examiner intervened and took the group to the surface. Once on the surface the free flow was stopped and found to be due to the purge button sticking. After checking gas content levels were acceptable the group continued with the lesson without further incident.

July 2021 **21/064**

An instructor was acting as a student within a group on an Instructor preparation event. Having completed two previous dives he had unzipped his suit for comfort during surface interval. Preparing to dive as part of the PIE assessment sequence he asked one of the prep students to close the zip. Towards the end of closing the student jerked the zip closed. Following kit up and buddy check he prepared to enter the water with the group. The other instructor in the group acting as an examination student entered first followed by the two preppers, one acting as an examiner. The remaining instructor entered the water last and immediately felt the inflow of a significant amount of water from the rear zip. He remained positively buoyant and had no difficulty remaining on the surface, but it quickly became clear that he could not continue with the dive. He gained the attention of the other instructor and she checked the rear area of his suit and identified that the zip had parted, so he exited the water and once clear the group reconvened and continued with their lesson. On the surface after removing his weightbelt and BCD the instructor asked another member of the event to examine his zip and they reported the zip had separated by about 4 inches and although they tried to open the zip, they were unable to do so and the only way to get out of the suit was to separate the teeth along the entire length. Efforts to repair on site were not possible and he was unable to dive for the rest of the day's events.

July 2021 **21/067**

A pair of divers had completed a dive the previous day to a maximum depth of 16m and a total duration of 18 min, including stops of 9m for 1 min and 6m for 3 min. The next day they had completed a dive to a maximum depth of 26m for a total duration of 33 min including stops at 12m for 1 min and 6m for 3 min. After a surface interval of 78 min the pair entered the water to dive a wreck and reached a maximum depth of 16m. Halfway into the dive at a depth of 11m one of the divers signalled to his buddy and pointed to his cylinders indicating they were wobbly. The buddy checked but could not identify a problem and indicated to ask the diver if he wanted to deploy a DSMB or return to the shotline, which was around 10m away. The diver indicated to use the shotline and the pair returned to the shotline and ascended completing a safety stop at 6m for 3 min. Back aboard the boat the equipment was investigated, and it was found that the plastic covers on the bolts through the backplate had

broken and no washers had been fitted and so the bolts had pulled through the backplate but had not damaged the BCD.

July 2021 **21/068**

On the third day of a diving trip a pair of divers completed a first dive to a maximum depth of 28m for a total duration of 35 min including stops at 9m for 1 min and 6m for 6 min. After a surface interval of 201 min the pair entered the water for a drift dive and reached a maximum depth of 15m. At the end of the dive one of the pair deployed a DSMB but the diver was pulled up towards the surface either because of entanglement or the line still being attached. The diver tried to fin down hard to prevent ascent causing the reel line to become entangled around the diver's cylinders. His buddy tried to disconnect the DSMB and despite the diver trying to push him away he was able to disconnect the reel and untangle the line. The pair then ascended completing a safety stop at 6m for 3 min.

July 2021 **21/074**

A diver, using a twin-set containing air, conducted a dive on a wreck to a maximum depth of 23m. Towards the end of the dive the diver lost his weightbelt and made a normal ascent to 6m but was then unable to hold their safety stop for 3 min at 6m and so omitted part of those stops. On recovery aboard the boat the diver was placed on oxygen as a precaution, and he was monitored for symptoms for the following 24 hours. No symptoms were reported.

July 2021 **21/069**

On the fourth day of a diving trip a pair of divers were diving a wreck at a maximum depth of 33m. On the bottom one of the divers signalled that he had a problem with his BCD, which was attached to a manifolded twin-set. His buddy checked and noted gas escaping from the top of the BCD valve. It was not possible to see clearly the cause, but it appeared that the BCD was leaking gas when it was not being inflated. The buddy handed the diver his AS, as he was working behind the diver. The buddy then closed the isolation manifold to try and establish which cylinder was supplying the leak. He then closed the right-hand cylinder valve but found the gas was still leaking. The buddy then signalled for the pair to abort the dive and the pair ascended completing stops at 9m for 1 min and 6m for 3 min. On surfacing the BCD was still leaking and so his buddy orally inflated it and signalled the boat for assistance. On recovery onto the boat it was discovered that the buddy had turned off the wrong cylinder and that the BCD dump valve was broken.

July 2021 **21/085**

A diver prepared to dive a wreck from a charter boat. The previous day there had been a storm and the skipper had suggested that the tides would be unpredictable and so planned to be on site early. On arrival on site however it was evident that slack was even earlier than anticipated and so the skipper advised the divers aboard to get ready as quickly as possible to avoid the tide turning during the dive. Entry was from a stern lift which was in a deck level position. The diver and others aboard then rushed their preparations and decided to enter the water four at a time instead of the more normal 2 at a time. The diver was the fourth in line and unbeknown to him the long hose on his AS had come loose and formed a loop over his left shoulder. As he stepped onto the lift the loop caught on part of the lift and the diver did not realise until he stepped off the platform to enter the water. The crewman monitoring the diver's entry noticed and attempted to stop the diver but just too late. As the diver dropped into the water the AS snagged and the AS hose sheared off at the first stage. The hose flicked away and caught the crewman, but he wasn't seriously hurt. The diver's cylinder started to empty rapidly, and he immediately inflated his BCD and drysuit and he waited for the boat to pick him and his buddy up and they aborted the dive.

August 2021 **21/090**

Two divers commenced a dive on a wreck, which was well dispersed in shallow water at the base of a cliff face. After descending to the base of the cliff at a depth of 12m the pair were settling down and preparing to move off along the wall when one of the divers noticed her buddy struggling

with his cylinder and lifting it from beneath. The buddy noticed that the cam-band clip was open, and she lifted the cylinder, tightened the band and tried to secure the clip. The clip would not stay closed and the cylinder immediately started to slip again. The buddy tried several more times to secure the clip without success and then indicated they should ascend. The buddy was holding the diver's cylinder and tried to indicate to ascend slowly but the ascent was quite quick, and the pair omitted a safety stop and they surfaced after a total dive time of 6 min. On the surface they signalled their RHIB and swam away from the rocks. Once back aboard the boat the clip was secured, and the diver was able to carry out another dive with two other divers in the group without further incident.

August 2021 **21/173**

The retaining pin on a diver's mask broke during a dive. The diver was carrying a spare mask and was able to replace the broken mask and continue with training.

August 2021 **21/158**

A dive manager (DM) was conducting a dive brief lakeside for their team of divers, when "Help, Help, Help Me" was called from the lake. The DM asked someone to raise the alarm with the dive facilities team. A female diver was on the surface of the lake, the DM, made contact and calmed her down. She could not inflate her BCD. The DM told her to drop her weights, but she was unable to do this, and she kept going underwater so the DM told her to put her regulator back in her mouth. The casualty went back under the water and a rescuer entered the water and swam to the diver's last location guided by the DM on the nearby pontoon. At this point, two divers surfaced, they were the casualty's buddies however did not go to support her. The rescuer was able to get to the diver and help her stay at the surface, by orally inflating the BCD and towed the diver to the pontoon. The DM asked the diver how she was feeling, and she said she was feeling better, she explained she was trying to get to the surface and her BCD would not inflate. At this point the facilities team arrived and tested the casualty's BCD which inflated. The casualty was towed into the confined area where she was de-kitted, removing the weightbelt, and the BCD. The DM asked what happened and she said she lost her husband and son and tried to get to the surface, she said she was too heavy and could not get up, and her BCD would not work. The rescuer confirmed she also tried the low-pressure inflator, and it did not work. After checking that the casualty was not hurt and she knew where she was, she was handed over to the team from the Dive Centre. It was noted that the diver then went back into the water.

September 2021 **21/174**

A diver entered the water for a dive and began to experience water entering their suit due to an insecure dry glove system on a brand-new suit and the dive was aborted. On leaving the water and investigating the O-ring system was found to be incorrectly fitted by the manufacturer.

September 2021 **21/109**

A pair of divers were on a wreck dive to a maximum depth of 25m. Approximately 22 min into the dive one of the divers started to find it difficult to breathe from her regulator and signalled her buddy who initially donated their AS and switched to their pony regulator. The pair commenced an AS ascent and progressed normally until they reach 15m when they were suddenly surrounded by a lot of bubbles around them and they started to ascend quicker than expected, ascending from 15m to the surface in just over 1 min. On surfacing the pair were recovered aboard the RHIB and placed on oxygen and give warm fluids. Neither diver displayed any symptoms of DCI but remained on oxygen until the supply was exhausted. Once back ashore a recompression chamber was consulted for advice, but treatment was not considered necessary. The diver's cylinder was found to contain 60 bar, when she would normally surface with 100-120 bar and her regulator was sent to check for any signs of anything blocking the airflow.

September 2021 **21/175**

A diver was on a training dive and was practicing a planned simulated 'call for gas' training drill

when the CO2 cartridge failed to fire and fill a yellow signal DSMB. The buddy deployed their own yellow DSMB to complete the drill. On investigation the cannister firing pin was found to be corroded due to the long lay-off due to Covid-19 restrictions.

October 2021 **21/131**

An Instructor, who was using an inverted twin-set with an isolation manifold, was teaching a trainee diver on a training platform at a depth of 7m. The pair had successfully completed mask clearing, regulator retrieval, out of gas drills and some buoyancy skills practice. The instructor decided to ask the trainee to practice the out of gas drill again and removed his regulator, holding it out to one side and signalled out of gas. His regulator then went into a free flow. He tried to control the free flow, but all efforts failed to stop the substantial loss of gas. The Instructor switched to his AS and attempted to carry out a shut down of his twin-set. He began loosening his straps before realising his cylinders were inverted and so he could reach down and behind him and isolate the cylinder with the free flowing regulator. At the start of the incident the instructor's contents had read 140 bar. He initially noted that his computer which was linked to a remote pressure transmitter was sounding an alarm showing zero bar remaining but on checking his manual gauge he was relieved to find he had 75 bar remaining. On stabilising himself the instructor could not see his trainee and so conducted a normal ascent omitting a safety stop and surfaced after a total dive time of 22 min. On surfacing he met the student, who had witnessed the free flow and being unsure how he could help had decided to ascend and alert the surface party.

October 2021 **21/177**

During a dive the buckle on a divers weightbelt broke. The dive was aborted, and the diver surfaced safely.

November 2021 **21/161**

Following a previous 'fun' dive the previous day, an instructor was taking a group of students for the second dive on an advanced course, with a total group size of 7. During the dive one of the students reported that she could not draw air from her regulator and signalled for an AS from another diver in her buddy team, who was a more experienced diver assigned to her group. The pair safely ascended to the surface where they discussed the problem, the regulator at this point gave air. They decided to descend using her AS and made the descent as a buddy pair, where she then reported at around 15m that she could not draw air. They then surfaced again, and the more experienced diver escorted her out of the water to a pontoon. The instructor, subsequently notified, could not immediately find a fault, just a small nick in the mouthpiece at the top. The regulator was the same one the student had used throughout the previous day, and on dive 1 of the day (to a depth of 16.8m) without a problem. The regulator functioned properly at the surface and a brief check of the diaphragm, mouthpiece and exhausts was conducted to check for obvious issues. Other than the small nick in the mouthpiece, nothing was found. The regulators were switched to the instructor's regulators (which had been used all weekend and were functioning correctly) with the instructor switching to a spare set of school equipment. When discussing the possibility of user error with the student, she seemed resistant to the idea. With the regulators swapped, and the instructor witnessing her buddy check, she was able to complete the dive to the required standard.

December 2021 **21/178**

During a dive at a depth of 25m a diver's BCD failed. The diver and their buddy aborted the dive and surfaced safely. In investigation it was discovered that a blanking plug on the BCD had come off despite pre-dive checks finding the BCD operated properly.

December 2021 **21/179**

During a dive a diver lost the weight pouches from an integrated weight system. A pair of divers following recovered the pouches and handed them to the diver who was able to refit them and continue the dive. Inspection after the dive found both pouches to be serviceable.

December 2021 **21/180**

A diver was on the way to a dive site when one of their two computers showed a low battery warning. On consulting the dive manager, the diver was advised to monitor their dive carefully, remain well inside no decompression limits and should the computer fail to abort the dive using the second computer. Following the dive it was identified that the low battery warning had initially briefly shown two days earlier and the diver had not changed the batteries at that time.

December 2021 **21/181**

During a dive the inflation valve on a BCD stuck, continually inflating the BCD. During the ascent the diver was able to dump gas from the BCD and was able to hold a safety stop at 6m for 2 min after they eventually were able to disconnect the inflator hose from the valve. During the final ascent the diver lost control of their buoyancy resulting in a faster than normal but not rapid ascent.

December 2021 **21/128**

A rebreather diver had stripped his rebreather over the Xmas period and was reassembling to test for leaks. The unit had not been dived for some time & during the last year and the cylinders, four in total, had been sent for test & oxygen cleaning. Whilst attaching the cylinders the diver noted that the handles had been swapped on 50% of them, i.e., there was a green handle on one diluent & a corresponding black on an oxygen cylinder. The cylinders had been collected from an accredited test house & put into storage without detailed inspection. Upon further inspection it was noted that the diluent stickers had been removed & replaced with “Breathing Air”. They are invariably full of trimix & were previously labelled as such in addition to the correct colour handle & “Diluent” sticker. Upon analysis it was found that all 4 cylinders, Oxygen & Diluent, were full of air. This has been brought to the attention of the test station responsible together with the likely results if had these been dived. They did not seem to understand the problem.

Illness or injury-related incidents

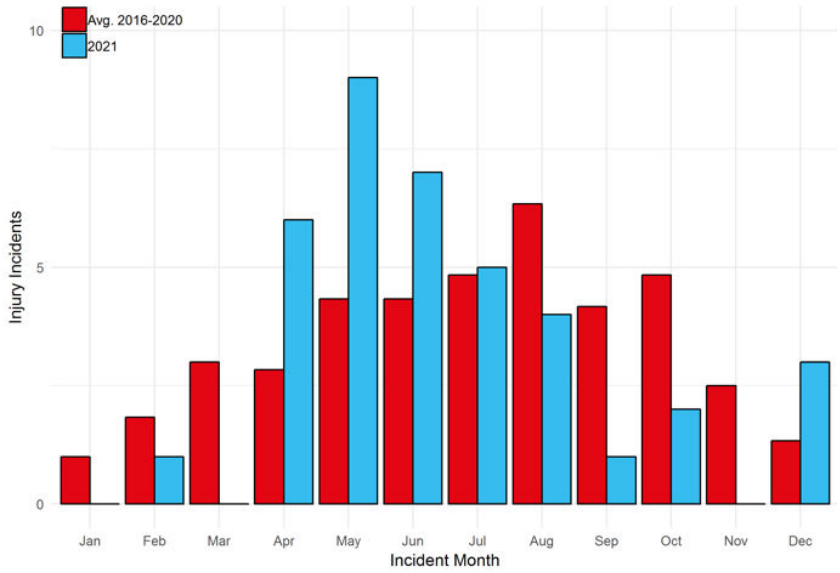

Figure 20. Illness or injury related incidents in each month of the year

February 2021 **21/001**

A diver was reported to be in difficulties close to a pier. A lifeboat was launched and attended the scene and found the diver conscious and aboard his dive boat. The diver was transferred onto the lifeboat for an initial medical assessment. On returning to shore the diver was transferred into the care of paramedics who took the diver to hospital for further assessment and treatment. (Coastguard & RNLI report).

April 2021 **21/003**

Following a dive to a maximum depth of 15m for a total duration of 10 min and a surface interval of 35 min a pair of divers conducted a dive to a maximum depth of 20m. Water temperature was 7 deg C and the pair decided to terminate the dive after 25 min underwater due to the cold, completing a normal ascent including a safety stop. After surfacing and de-kitting one of the divers felt nauseous and dizzy and appeared about to collapse. Oxygen was administered and an ambulance was called, which transferred the diver to hospital. A doctor attributed the diver's condition to cold and lack of food and unlikely to be DCI.

April 2021 **21/011**

A diver was preparing to dive and had placed his twin 12 lt cylinders on the back of a van and asked his buddy to steady them whilst he climbed into the van to move other equipment allowing his cylinders to fit onto the van floor. The buddy lost control of the twin-set which then fell onto the diver's hand resulting in an open fracture with some blood loss. The diver fainted briefly and then quickly recovered. An ambulance was called but the diver, who is a registered paramedic, stood the emergency services down and attended a local minor injuries unit for initial treatment. The diver was advised to attend a local A&E but chose to return home and attend his local A&E, which he knew had a major trauma centre with specialist services available. The diver had several pins inserted into his finger to treat the fracture.

April 2021 **21/120**

A diver and her buddy had completed a previous dive to a maximum depth of 18m with a total duration of 28 min. After a surface interval of 106 min, they commenced a second dive and descended to a maximum depth of 21m. After 7 min the diver was having difficulty and the dive

was terminated. Once back ashore the diver was struggling to breathe, and the on-site rescue team attended and cut her neck seal open and placed her on oxygen before transferring her to the first aid room. The diver began to relax, and her breathing came under control. She remained on oxygen for 20 min and then had a break off oxygen for 10 min and then checked and found to have returned to normal. She was advised to rest for a few days and drink plenty of water.

April 2021 **21/009**

A group of divers prepared to dive a wreck from the shore. One of the divers experienced difficulties with swimming against the prevailing current and started to experience cramp, he thought due to the cold. The diver aborted the dive and surfaced with his buddy who shouted for help. The diver was recovered back to shore with assistance and once ashore the cramps continued for some time. A bystander had called 999 and an ambulance took some time to arrive. The diver received medical treatment, but the outcome is unknown (bystander report only).

April 2021 **21/008**

A pair of divers had completed a previous dive to a maximum depth of 34m for a total duration of 34 min without incident. After a surface interval of 1 hr 57 min the pair began a second dive. During the descent at around 6m depth one diver was adjusting his weightbelt to make it more comfortable and descended more quickly but did not notice any pain or other signs. The pair completed a dive to a maximum depth of 20m and a total dive duration of 20 min. On surfacing the diver experienced slight discomfort and noted air issuing from his left ear.

April 2021 **21/013**

A diver and her buddy prepared to dive from RHIB. The diver had slacked off the straps for her BCD to aid donning and was also using a 15 lt cylinder, which was larger than her normal cylinder. Once kitted up and completing a buddy check the diver failed to notice that her BCD straps had not been tightened. As the pair rolled back into the water from the RHIB the diver's BCD twisted and dislocated the diver's shoulder. The diver was unable to raise her hand to signal the RHIB or her buddy, who were both indicating to swim towards the shotline. The diver was also unable to inflate her BCD further, but it was already fully inflated and supporting her on the surface. The RHIB approached to try and assist her reaching the shotline and the crew then realised there was a problem, and her buddy swam back against the current to assist in de-kitting the diver in the water. The diver was assisted back into the boat, and she was able to pop her shoulder joint back into position. No further first aid was required but the shoulder was very painful, and the diver was still unable to use her arm a week later.

May 2021 **21/026**

A freediving student, under the supervision of two freediving instructors, was conducting an open water dive. After diving to a maximum depth of 10m he became entangled in a shotline at a depth of 9m. He was untangled by one of the instructors who cut the line and he was recovered to the surface unresponsive. The two instructors recovered him from the water still unresponsive and commenced CPR with oxygen also administered. The diver became responsive and was subsequently airlifted by helicopter to hospital. The diver underwent tests at hospital including a chest X-ray, which confirmed no fluid in the lungs and the diver was discharged after 2 hours. The diver returned to the dive site for a debrief with the instructors.

May 2021 **21/152**

A diver had entered the water and was on the surface preparing to descend when he started to complain about pain in the stomach. He was towed back to shore and surface cover took over. They called the emergency services and administered oxygen. An ambulance was called but due to predicted attendance time the dive group ended up driving the casualty to the hospital. It was later reported that the diver was suffering from kidney stones.

May 2021 **21/031**

A diver, who had not dived much in cold water or drysuit diving, was buddied with an experienced instructor. The pair planned to dive a wall from

a RHIB, but the diver entered the water before the RHIB reached the entry point meaning the pair had around 7m to swim to the wall. The pair began their descent, but the diver seemed to be self-absorbed, not looking around or responding to signals, only staring at his computer, and not adding any air to his drysuit. The diver later reported that around 6m he started to have trouble breathing, felt he was getting tired and experienced some panic. At 15m he was convinced he could not get enough air and decided he needed to gain contact with something solid and so headed for the bottom, which he reached at a depth of 26m. His buddy chased after the diver and on reaching the bottom managed to get the diver's attention with an OK signal directly in front of his mask. He signalled that he wanted to ascend and then proceeded to swim up very quickly with the instructor following at a safe ascent rate. When the buddy caught up with the diver at 6m the diver was again staring at his computer and finning to maintain his depth. As the instructor approached him he rolled onto his back and began to sink rapidly followed by the instructor who caught up with him on the bottom. The diver was unconscious with his regulator out of his mouth and convulsing. His buddy attempted to put the diver's regulator back in but was unable to do so as the jaw was clamped shut. He then attempted to inflate the diver's drysuit but found the valve was open and was unable to close it. The buddy then inflated the diver's BCD and completed a controlled buoyant lift direct to the surface. On surfacing the buddy supported the diver and called for help and one of the support boats responded quickly as the cox'n had noticed lots of bubbles right from the beginning of the dive. The diver was still unconscious, blue and convulsing and three of the boat crew managed to haul him onto the sponsons. His hood was removed, and the diver began to breathe. He was then recovered into the boat and diver was able to sit up and talk, although initially incoherent he progressively became more lucid. The diver was reported to have been unconscious for about 3 min but after regaining consciousness his colour returned quite quickly. The cox'n called 999 and once he was happy the diver was stable, he returned to harbour, approximately 5 min away, leaving the second boat to recover the remaining divers. On shore the diver was given oxygen and checks were made on the diver's equipment by a local dive centre, but no problems were found. The diver was taken by ambulance for a check-up at hospital, but he was released later with no lasting effects other than having bitten his tongue.

May 2021 **21/149**

A trainee on a training dive suffered mask squeeze resulting in bruising.

May 2021 **21/022**

Following a first dive to a maximum depth of 20m for a total duration of 36 min, including stops of 10m for 1 min and 6m for three min, an instructor was leading a qualified diver on a depth progression dive to 31m. The pair descend to 31m without any problems taking approximately 10 min to reach their maximum depth of 32m. After a short period, the instructor was seen to ascend and to fiddle with the dump valve on his drysuit. His buddy ascended towards him, and the instructor sank down on top of her and then turned though 180 degrees and started to fin off quickly. His buddy grabbed his leg and tried to signal him but got no response and so she grabbed hold of him and holds him against the rock wall. The casualty did not respond to signals, but the buddy is unable to check eye responses due to the casualty having bi-focal lenses in his mask which prevented her from seeing his eyes. The buddy decided to use a controlled buoyant lift to recover him but had difficulty in inflating his BCD and having risen to 21m the pair fell back to a depth of 26m before the buddy inflates her own BCD and they start to ascend. At the start of the ascent the diver still has his regulator in his mouth, but it falls free as they get halfway to the surface. Once on the surface the buddy calls for help. She positioned the diver on his back but had difficulty in trying to get his BCD to inflate properly, she removed his mask and hood and gave one rescue breath, but the diver kept slipping below the surface. The diver was unconscious, had cyanotic lips with frothy air being expelled and so she concentrated on keeping his head above water with his neck extended. The site rescue boat came alongside,

and the diver was recovered aboard and returned ashore where he was attended by paramedic. 20 min after surfacing the diver was conscious again and talking. He was then airlifted to hospital where he was assessed, including chest X-rays and an MRI scan. No signs of DCI or lung oedema were found and after further tests and observations the diver was released 2 days later.

May 2021 **21/024**

A group consisting of an Instructor, an assistant instructor and two trainees conducted a training dive to a maximum depth of 6m. The students were being taught by the assistant instructor under the supervision of the Instructor. During the lesson one of the students was having difficulty with mask clearing after swapping her original mask with the instructor's spare, as she could not get the mask to seal properly. After some difficulty she was able to complete the mask clearing exercise and so the assistant instructor moved on to the other student. After this training the assistant instructor returned to the original student and requested the student replace her mask again without warning and before the instructor could intervene, she removed her mask completely. The instructor took a grip of the student to stabilise her as she struggled to refit her mask. She then spat out her regulator and made a bolt for the surface. The instructor went with her and was able to replace her regulator whilst purging it and the student was able to breathe from it on the way to the surface, ascent rate was just within maximum rate limits. Total dive time was 20 min. The assistant instructor and the second student surfaced shortly after, and the instructor terminated the dive at that point and debriefed thoroughly once ashore. After a surface interval, where the student showed no symptoms or cause for concern, the group entered the water for a second dive. On descent the second student had difficulty equalising and could not resolve it and so the group resurfaced. The student who had difficulties on the previous dive then said that she was out of breath and was struggling to get enough air from her regulator, which was found to be functioning correctly. The dive was abandoned, and the divers returned to shore, with the student being towed to assist with her breathlessness. Suspecting water inhalation or IPO the diver was placed on oxygen whilst equipment was stowed and then was driven to A&E. At hospital the diver was found to be breathless and had raised blood pressure, but the doctor ruled out water inhalation and IPO and after consultation with a specialist diving doctor symptoms were attributed to shock. The diver was discharged and scheduled for a follow up in two days.

June 2021 **21/037**

A diver and his buddy were conducting a wreck dive from a RHIB using a rebreather with diluent mix of trimix 10/50. At his maximum depth of 55m the diver began to experience symptoms of IPO, including breathlessness, breathing difficulties and abnormal behaviour, and he and his buddy made their way to the surface completing required decompressions stops of 1 min at 21m and 20 min at 6m during which they were supported by other members of the dive team. During the stops the surface cover were notified of the situation and the Coastguard was called, who in turn tasked a lifeboat and made a connect call with a duty diving doctor. On surfacing the diver was recovered from the water and placed on oxygen. The diver and his buddy were transferred to the lifeboat and taken back to harbour where they were met by ambulance paramedics. After assessment the diver was discharged back into the care of the dive group.

June 2021 **21/041**

During a two-day diving trip, a diver complained of feeling generally tired attributing it to the hot weather. The diver had suffered from heat stroke in similar weather 3 years previously, resulting in a two-night stay in hospital. As a result, he was repeatedly reminded to protect himself from the sun and stay properly hydrated. On the second day of the trip the diver completed a dive on a wreck to a maximum depth of 13m and a total duration of 35 min with a normal ascent and no issues during the dive. At the end of the day's diving the diver started to drive home but felt worse 20 min into the drive and stopped and checked into a hotel for a rest. At the hotel his condition continued to deteriorate, and he was taken to hospital by ambulance and kept in for 2 days before being released home.

June 2021 **21/049**

Two divers had completed two dives the previous day using rebreathers. The first to 30m for a total dive time of 45 min including stops at 6m for 6 min and after a surface interval of 105 min a second dive to 28m for a total duration 52 min including stops at 6m for 3 min. The following day the pair conducted a dive on a wreck at a maximum depth of 34m and had ascended to 5m and had completed 8 min of stops and had 6 min of required decompression stops remaining. There were several other divers on the shotline decompressing at the same time. One of the divers then experienced a sudden and large release of gas from his rebreather and found he had no gas to his bailout valve so assumed he had a loss of his diluent gas. The diver was carrying a bailout cylinder but did not use it and he swam to the surface losing his mouthpiece on the way up. On the surface he could not inflate his BCD as he had no gas available. He held onto the shotline buoy, but it would not support him, and he started swallowing water. One of the divers from another pair who was decompressing shallower realised the diver was in distress and surfaced and supported him until he could be recovered by the dive boat. The rescuing diver missed 2 min of his own decompression stops to support the diver. Once aboard the dive boat the diver was placed on oxygen and the Coastguard was notified. When the dive boat returned to shore it was met by an ambulance crew who checked the diver and found to have signs of fluid on one lung and his blood saturation level was slightly low, but no signs of DCI were apparent. The diver was transferred to hospital for observation and discharged later that evening. Examination of the diver's equipment identified a damaged 'o' ring on the BCD inflation valve, which caused the BCD to inflate using up all the gas in the diluent cylinder triggering the BCD relief valve and the diver also thinks he dumped gas during the final ascent.

June 2021 **21/153**

A trainee was under training in a swimming pool at a depth of 2m when they started to show signs of anxiety during a mask clearing exercise, breathing in a shallow rapid fashion, but managed to calm himself down. The training group got out of the water for a surface break between confined water dives. The trainee complained that he was feeling lightheaded and was advised to sit, which he did propped against the wall for support. He was advised to remove his wetsuit to waist level which he did. After around eight min he collapsed sideways but was caught by his buddy and did not bang his head. He was immediately laid flat at which point the instructor came to his side to check for breathing. On discovering none the member began CPR however the very first and only compression the casualty groaned loudly and commenced breathing although laboured and rapid. Another rescuer ran from the other end of the pool on hearing the shout for help and grabbed the first-aid kit and oxygen en route. The casualty was administered oxygen and was asked to hold it to monitor if he would lose consciousness again, his buddy held his hand and talk to him calmly. The emergency services were called, and details of the incident were relayed to the operator. The next of kin was also informed. The casualty continued to improve, and his breathing rate slowed to close to normal. He was monitored for signs and symptoms and complained of a headache at the back of his head and a tight chest. After another 10 min he was chatting more and the team kept his spirits up and at that point, they learnt that he had undergone cancer treatment, although not at the time of the incident. The paramedics arrived and monitored his blood pressure stating that they felt it was a low blood pressure event. They got him sitting up then standing and walking him to sit outside for some time to cool off after around 45 min they left and told him not to get back in the water today, but he should be okay the following day. The casualty came back in to collect his equipment and drove himself home.

June 2021 **21/154**

A first dive of the day was planned as a guided dive on the wreck by a qualified diver and dive leader, both diving in wetsuits. As it was the diver's birthday, the plan was the dive leader would supervise the diver as he laid a line across the wreck while the dive leader would covertly scatter treasure to find on the return. The diver was observed equalising frequently on the

descent to a maximum depth of 5m, however he signalled a problem with his mask and face. At that point, the mask very quickly filled with blood. The two ascended and surfaced together and the casualty immediately spat out his regulator and removed his mask. His face was covered in blood which he attempted to wipe away. They fully inflated his BCD kept the regulator in and his mask on, while swimming to the shore about 5m away. The dive leader signalled for help as there were other divers on the shore and shouted, "DIVER IN DISTRESS". Three other divers managed to reach the shoreline as the dive leader brought the diver ashore. The dive leader assumed that the diver was suffering Immersion Pulmonary Oedema and 100% oxygen was administered. The emergency services were called and given details of diver accident and suspected cause. The casualty maintained consciousness and was chatting while still on oxygen, with no chest pains or dizziness. The emergency services arrived approximately 15 min after oxygen was administered.

June 2021 **21/202**

The Coastguard responded to reports of a diver in need of medical assistance. (Coastguard report).

June 2021 **21/155**

After arriving at a car park for a dive site a diver was walking down the steps to the dive site while still in normal clothing when she lost her footing and fell on the second to last step. The concrete steps were not slippery, in good condition and used by the public to get to a cafe and around 20 meters from the water edge. She was assisted by a dive leader and after checking the casualty's ankle an ambulance was called. It was decided by the casualty that as her husband was on site that they would make their own way to the hospital. The casualty was assisted into the vehicle and later contacted the dive organiser to inform them that she had broken her ankle and torn the tissue in the other.

July 2021 **21/058**

A group of divers had completed a day's boat diving from a local charter vessel and had unloaded their equipment. Two members of the group were stood on the side of the harbour between two parked cars when another parked car, which was unoccupied, rolled from the car park and collided with the two parked cars. One of the divers held out his hands to brace against any potential impact and he then turned to speak to the second diver only to find that the diver was no longer there. The diver had still been wearing his drysuit and had fallen from the harbour wall approximately 6m onto the beach below. The emergency services were called but due to the time it could take for an ambulance to attend and the proximity of the water in the harbour the diver was moved by stretcher to the nearby lifeboat station and was attended by the lifeboat crew and several doctors and nurses including a doctor from the diver's own group. An ambulance arrived and transferred the injured diver to hospital where he was treated for a fractured ankle and abrasions to both hands. The diver was released from hospital after 2 days.

July 2021 **21/059**

A diver was taking part in an Instructor course and was to lead the dive on a shallow wreck. After entering the water from a RHIB the group gathered at the buoy marking the wreck and commenced their descent. The group paused at a depth of 2m on the shotline to conduct a teaching exercise during which the diver ascended to the surface followed by one of the supervising instructors with a total time underwater of 1 min. On the surface the diver was suffering from anxiety, was breathless and hyperventilating and so was assisted back aboard the RHIB. Once back aboard the boat the diver quickly regained control of her breathing and explained that she was uncomfortable with her buoyancy and trim due to using a larger borrowed cylinder. The remaining two divers had monitored the situation from below and surfaced but once they were sure the diver was safe aboard the RHIB they proceeded with their planned training dive. After 30 min the diver felt sufficiently relaxed and reassured and conducted a training dive by the other supervising instructor completing a dive to 14m for a total of 22 min without further incident.

July 2021 **21/156**

A diver had completed 2 guided dives in a group with four other divers. She had returned to her vehicle and taken her kit off. Whilst removing her drysuit she slipped over and landed on her shoulder. She was advised by the team to go to hospital and request they call an ambulance, but the diver refused. Later the diver saw her GP and was informed that she would not need any further treatment and to keep monitoring it.

July 2021 **21/079**

3 divers conducted a shore dive and swam 300m on the surface to a small island. The group reached a maximum depth of 15m and the least experienced member, who was fairly new to drysuit diving, seemed comfortable and had good buoyancy control and trim as well as good gas consumption. After 43 min the inexperienced diver indicated he was cold but seemed otherwise OK so the lead diver indicated they should pick up the pace to round a headland and turn for home. On the way back the lead diver spotted a nudibranch and pointed it out to the diver, who then became agitated and signalled to ascend. The group started to ascend from 13m, but the diver indicated he did not want to conduct any safety stops so he omitted them and surfaced together with the lead diver, with a total dive time of 47 min. On the surface the diver was in considerable distress and complained of a stabbing pain in his lower back which had come on suddenly whilst underwater. He was incapacitated and wanted to get back to shore and so the lead diver took hold of his pillar valve preparing to tow him ashore, whilst looking under water for the third diver who was making a slower ascent. When the third diver surfaced, he used the SOS function on his torch to signal the shore party, whilst the lead diver began to tow the diver quickly towards shore due to his level of distress. The shore party asked a local rowing club, who had been out practicing, to relaunch their boat to go and assist recovery of the diver. The divers had covered half the distance back to shore when the rowing club boat met them and began to tow the group back to shore, assisted by a member of the shore party who had gone out in her kayak and wrapped her stern line around the diver's pillar valve to tow him to shore. Once ashore the diver was de-kitted and landed onto a jetty where he was assessed. Initial assessment showed normal vital signs and good strength in all limbs, but the diver was still in distress and very cold and so was covered with blankets and coats. A short time later a Coastguard rescue team and paramedics arrived after the Coastguard had been alerted by the cox'n of the rowing club boat. A lifeboat had also been tasked by the Coastguard and arrived shortly after. The diver was found to be very wet inside his drysuit and so it was removed showing he was very wet from the waist down, the diver reporting he had been leaking from the very start of the dive. The diver was placed on oxygen and given IV fluids on advice from a recompression chamber and after removal of his drysuit the diver began to warm slightly and was able to stand and be helped into the ambulance. It was noted that the diver's weightbelt had been rigged such that there was a thick weight at the centre of his back that was being pressed on by his cylinder. It was suggested this was the cause of his back pain, compounded by getting cold. In hospital the diver was diagnosed with mild hypothermia.

July 2021 **21/094**

At the start of a dive on a wreck from a boat a diver descended rapidly and then indicated to her buddy she was OK after clearing her ears. The pair completed a dive to a maximum depth of 11m and a total dive time of 34 min with the diver indicating several times during the dive that she was OK. The boat returned to harbour during the surface interval and the diver said her back was hurting and so she decided not to dive again that day. She said that during the dive her ear had suddenly popped but she had felt OK but as the day progressed she began to experience ear pain and took some painkillers. The diver subsequently reported that the pain had been intense and that she had felt clear fluid running down her cheek and later noticed blood in her ear. She was advised not to dive the following day and to see her GP. On consultation with her GP she was found to have a perforated eardrum and was prescribed antibiotics.

August 2021 **21/081**

An instructor and two students were to undertake a dive as part of initial training for a twin-set course, with one of the students designated to lead under the supervision of the instructor. Following checks, the group entered the water and the dive leader signalled to descend and all confirmed reaching 6m and completed the planned drills. The lead diver then signalled to descend further and commenced their descent, but the other student began to ascend again. The instructor indicated this to the lead diver, and both ascended again and regrouped. The other student was distressed but had made himself positively buoyant, removed his regulator and was breathing hard. The student removed his hood and quickly regained his composure reporting that he had felt claustrophobic and panicked during the descent. After a couple of minutes, the student agreed that he was happy to continue with his hood stowed in his drysuit pocket, water temperature was 20 deg C. The group descended to 4m and checked all were OK to continue and the leading student led a dive to a maximum depth of 15m for a total duration of 35 min without further incident.

August 2021 **21/098**

Four divers were aboard a RHIB during a diving trip. One diver was replacing the CO2 cannister in his DSMB, when he caught the trigger and the cannister discharged. It is believed that the cannister had not been fully screwed in and the cylinder flew off and struck another diver in the face. The injured diver had a lot of blood around her mouth and chin, and she was given first aid. The boat made towards a local port and obtained a bag of frozen peas from a shop and used them to help reduce the swelling. They then found that the local health centre was closed and so called NHS 24 for advice. The injured diver was then driven to a hospital where she was assessed and found to have no nerve damage or broken bones. She was advised to have a dental check-up within 48 hours to check for loose or misaligned teeth. An initial visit to the dentist was abandoned due to severe swelling and bruising to her upper lip. A second examination confirmed several loose teeth. The diver was advised to have regular dental check examinations to monitor viability of her teeth.

August 2021 **21/088**

A pair of divers conducted a wreck dive from a charter boat to a maximum depth of 30m with a total dive duration of 44 min, including stops at 9m for 1 min, 6m for 8 min plus 3 min safety stops at 6m. On surfacing the sea state was found to be rougher than at the start of the dive; and it took some time before the charter skipper noticed the pair on the shotline. As the charter boat approached the pair were signalled to move away from the shotline, which they did and prepared to exit via the boat lift, which was being lowered. As the divers reached the lift they were hit by a large wave, pushing the buddy down the port side and the diver on the starboard side under the boat. The diver felt her legs being pulled towards the propeller and then felt the propeller hitting her legs. She began screaming and removed her regulator and was pulled underwater several times, although her BCD was fully inflated so she did not sink. The diver managed to get her legs free of the propeller and noticed that no longer had fins on and her drysuit boots were missing. She was thrown a rope by others on the boat and was pulled along to the lift and was able to sit on it. She was lifted to deck level and help aboard and cut out of the remains of her drysuit. The diver was given oxygen and the Coastguard was called and two lifeboats were tasked that rendezvoused with the charter boat. The injured diver was returned to shore and transferred by ambulance to hospital where she was treated for deep lacerations to both calves and her right foot.

August 2021 **21/095**

An instructor and two qualified divers had completed a training dive to a maximum depth of 10m for a total dive duration of 25 min. After a surface interval of 102 min they entered the water for a second training dive. The instructor was leading the students alongside a shelf at 6m when he noted one of the students having difficulties with his mask and then noted that his buddy was preparing his AS. The student's regulator then began to free flow and as the student became fixated with the free flow he was also descending.

The instructor caught up with him and tried to reassure him, but it became clear that he was unable to clear his mask sufficiently and was starting to panic over his free flowing regulator. The instructor switched the diver's regulator for his AS and placed free flowing primary regulator behind the student to avoid it panicking him further. The student spat out the AS and flailed around grabbing his primary and placing it in his mouth upside down. The instructor corrected the orientation of the regulator whilst signalling the buddy to remain close. By this stage the party had descended to a depth of 25m. In instructor commenced a controlled buoyant lift whilst monitoring the student's gas contents and the group ascended at a slow controlled rate. On the surface the student was ushered to a ladder exit point, and it was noted at that point his contents had just dropped below 50 bar. On return to the kitting up area the student was sat down and assisted out of his equipment and the incident was reported to the dive manager. The regulator was still free flowing at this point and was turned off and the cylinder was later found to be empty. The student was found to have traces of blood around his nostril and spat saliva and blood after removing his mask and regulator. Oxygen was requested and whilst it was being accessed the diver breathed from another diver's stage cylinder with nitrox 80. The diver was taken to the dive site medical room and was also attended by a paramedic and an ambulance crew but was found not to have had any rapid ascent or signs and symptoms of DCI and the bleeding was attributed to over-biting the regulator and a ruptured blood vessel in his nose due to mask squeeze.

September 2021 **21/114**

Whilst reversing a trailer down a slipway to launch a RHIB the vehicle began to slip on the heavily weeded slip and the vehicle ended up in the water with the rear end floating. The driver was able to recover the vehicle using four-wheel drive. However, one of the party had made his way down the slipway to help he slipped and fractured his hip. The injured person indicated that he could not move. The harbourmaster's office was notified and a member of staff, who was also a paramedic, made their way over to the injured diver. The paramedic diagnosed a fractured hip and advised that an ambulance would likely take 5 hours to arrive to transfer to hospital. It was decided to transfer the casualty in one of the group's own vehicles: the diver's drysuit was removed with some care and effort, and he was carefully loaded into the car with suitable support and padding. The casualty was driven 17 miles to hospital where he was admitted for treatment.

October 2021 **21/159**

The surface cover for a dive group heard a cry out followed by air escaping and turned to see a casualty lay on his side on the sand and ran over to him. Arriving to find the casualty conscious and trying to stop his AS from free flowing, the cover closed off the tank valve and then assessed the situation. The casualty was in no real distress but when he tried to move his right leg he let out a sharp yelp of pain. The casualty explained his leg had just buckled underneath him as he was walking but had no other pain from anywhere else. The pair were soon joined by three others who together managed to roll the casualty out of his kit and on to his back and managed to get a chair so they could sit him on it to check his leg. They then managed to remove his dry suit down to his calf and realised his kneecap had moved up his leg on top of his lower femur. The emergency services were called who explained due to it being a lower priority emergency they would not be able to supply a medical team for several hours. The dive centre arranged for more staff to come and assist and bring a vehicle as close to the beach as possible and decided the best course of action was to transport the casualty to hospital themselves.

October 2021 **21/160**

During an assessed 800m snorkel swim the casualty inhaled some water. She stopped the swim, exited the water and was coughing on the side of the pool. The casualty was given oxygen but after a few min decided she was ok and wanted to continue with the exercise and started again, successfully completing the test.

December 2021 **21/127**

A student was undertaking a final sheltered water training dive in a swimming pool. During the rescue towing part of the session the diver was lying on her back on the surface and ingested a small amount of water but thought little of it at the time. During the last 15 min of the 90 min pool session the diver had increasing difficulty breathing and felt that her throat was obstructed. As the pool session was finishing and they were preparing to leave the pool the diver informed her instructor that she was having difficulty breathing. Whilst getting changed the diver's breathing trouble continued and she coughed up some pink foam. The instructor advised the student to phone NHS 111 but there was a 45 min wait and so they attended the local hospital. On investigation at hospital, a doctor confirmed that the diver had taken water into her lungs, and that the diver, who had several allergies which likely contributed to the reaction and the severe coughing that took place. The diver was discharged and advised to watch out for signs of chest infection over the next week.

December 2021 **21/238**

The Coastguard responded to reports of a diver requiring medical transfer. (Coastguard report).

December 2021 **21/239**

The Coastguard responded to reports of a diver in need of medical assistance. (Coastguard report).

Miscellaneous

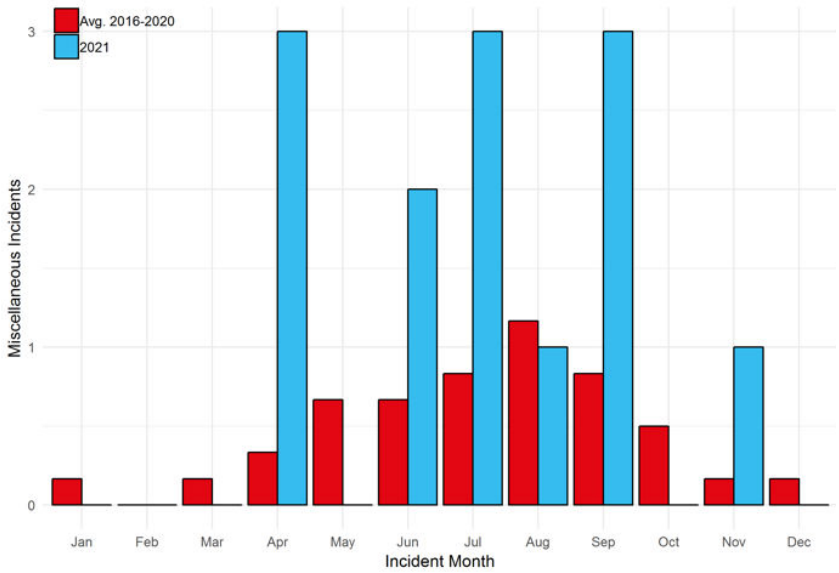

Figure 21. Miscellaneous incidents in each month of the year

April 2021 **21/182**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

April 2021 **21/183**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

April 2021 **21/012**

Two club members were carrying out a deep clean of an equipment store. During the process the pair discovered within a collection of scrap lead and several lead storage jars. One of the club members opened one of the storage vessels and then passed it to the other, who noticed that there was a very faded emblem painted on it corresponding to a radioactive warning symbol. The lid was immediately replaced, and the vessel returned to its original location. The owners of the property were informed, and the room was sealed to await investigation by a team wearing appropriate PPE to test and potentially dispose of the any hazardous waste.

June 2021 **21/196**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

June 2021 **21/197**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

July 2021 **21/205**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

July 2021 **21/207**

The Coastguard provided advice to divers to prevent an accident. (Coastguard report).

July 2021 **21/210**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

August 2021 **21/218**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

September 2021 **21/222**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

September 2021 **21/224**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

September 2021 **21/229**

The Coastguard responded to a call which turned out to be a False Alert with Good Intent - FAGI. (Coastguard Report).

November 2021 **21/236**

The Coastguard responded to reports of ordinance located by divers. (Coastguard report).

Overseas incidents

Fatality

April 2021 **21/014**

Two divers conducted a night dive from the shore and reached a maximum depth of 7m. After surfacing towards the end of the dive one of the divers began to have breathing difficulties and was seen to grip his chest. He then sank below the surface. His buddy descended after him and tried to re-insert his regulator, but she was unable to make the diver positively buoyant and the pair became separated. The buddy headed towards shore to seek assistance and a passer-by tried to throw a life ring to the unconscious diver to no avail. The buddy tried signalling other divers in their group using her dive torch in strobe mode. Another diver in the group noticed the signal and surfaced to see what was wrong. On surfacing the diver was advised of a diver in distress and was underwater drifting in an increasing current. He was directed to the approximate location of the casualty and on arriving in the general area began a search. The diver caught sight of a faint glimmer of light and on descending found it was the glow from the casualty's dive computer. The casualty was on his back in approximately 6m, with his mask on his forehead and his regulator out. The diver inflated the casualty's BCD and raised him to the surface. On surfacing the diver was unable to release the casualty's integrated weights and struggled to make the casualty positively buoyant using his BCD. The diver towed the casualty back towards a jetty against the increasing current and was joined by another diver in the group when he was 20m away. At that point a surf lifesaving RHIB arrived and recovered the casualty and returned him to shore to be met by paramedics and the police who were already waiting. The two safety divers recovered the casualty's equipment to shore. The paramedics attempts at resuscitation were unsuccessful and the casualty was declared dead at the scene. The casualty's equipment was secured for further investigation.

July 2021 **21/063**

Two qualified divers were on a check-out dive with a dive guide. The divers conducted buoyancy checks in a depth of 7m and although one was showing signs of nervousness both exchanged OK signals with the guide. The guide then briefly checked the boat's anchor was secure and turned back to the divers to see that the nervous diver was close to the surface but in the process of dumping gas from her BCD and starting to descend again. The guide swam to the diver and noticed that she was panicking and signalling to go up in a hurry. The guide tried to calm her down to allow a controlled ascent. The diver was alternating between swinging her arm and gripping the guide's arms and twice dislodged his regulator. The guide went behind the diver and gripping her cylinder handle and swam her towards the anchor line. He then changed position to face her, and they started to ascend with the guide dumping his own BCD and using the diver's BCD to control their ascent. The diver gripped the guide tightly by both his upper arms, subsequently after removing his wetsuit found to have left indentations and slight bruising. The guide moved the diver's hands onto the anchor line, and she began ascending hand over hand up the line. After ascending 2-3m the diver lost her regulator, and the guide replaced it in her mouth and purged it and noticed that her breathing had become very rapid. As they reached 1.5m the guide noticed that the diver was foaming into her mask and out through her regulator. The guide then noticed that she appeared unconscious but was still exhaling with white foam filling her mask. The pair surfaced and the guide released the diver's weightbelt and let it drop to the seabed. The guide then removed his BCD and the diver's BCD. The guide then got into the boat and pulled the diver aboard with the assistance of her buddy who pushed her from below. The guide placed the diver in the recovery position and then recovered the BCDs as they were handed up by the diver's buddy, who then entered the boat himself. The guide checked the diver who was still exhaling foam and vomit and was still unconscious.
The guide called the dive centre to alert the emergency services and pulled the anchor and returned to harbour where they were met by an

ambulance which took over care of the diver. The diver was declared deceased at hospital.

July 2021 **21/073**

An alarm was raised after a snorkel diver failed to return from a snorkelling trip near a harbour. His body was found and recovered a short time later by the emergency services and he was declared deceased. (Media report). (Eire).

November 2021 **21/119**

A diver was reported missing whilst diving from a charter vessel. No sign of the diver was found, who remains missing.

DCI

September 2021 **21/103**

A diver completed two dives, the first to a maximum depth of 34m and a total dive duration of 51 min, the second after a surface interval of 106 min to a maximum depth of 18m for a total duration of 66 min. Water temperature was 28 deg C and surface conditions were hot. 30 min after surfacing the diver felt dizzy and nausea, had difficulty breathing, had severe lethargy and was unsteady on his feet. He was able to drive back to the dive centre and then suffered two bouts of diarrhoea. The diver was placed on oxygen and an ambulance was called. At A&E a rash was noted but no neurological deficit was identified although the diver continued to complain of lethargy. The diver received recompression treatment, which improved the lethargy and the rash had largely resolved by the end of treatment. The diver has been advised to have a check for a PFO and not to dive until seen by a diving medic with ECG and PFO results.

Boat/Surface

April 2021 **21/163**

A group of divers were diving from a RHIB in a river where the water ranges from 8m in the centre of the channel up to a soft, muddy bank on both sides, river is approximately 150m wide in this area. Aboard at the time were cox'n, two divers and 4 adult snorkellers. The cox'n was retrieving divers and the RHIB had blown into reeds on the west shore, they had taken the divers aboard. Once they were all sitting the boat started to return to the clubhouse slipway when those aboard heard a pop or small bang on the right-hand side of the boat, and then air started to escape to the point where it became fully deflated on that side. Those aboard all moved over to the opposite side of the boat to shift the weight from the punctured side, and they returned slowly to shore to assess the damage. There is fencing on parts of that shore in some areas there underwater which farmers use to contain cattle during the low water levels, those on-board suspect that's what caught the underside of the boat although they didn't see it directly as it was on the underside of the tube where it meets the hull. (Eire)

December 2021 **21/146**

The Coastguard requested a lifeboat to launch in response to reports of two missing divers. The divers had been carrying out a night training dive from the shore and had been caught by fast flowing currents. On arrival on site the lifeboat quickly located the divers who were trying to make their way back to shore but were exhausted. The divers were recovered onto the lifeboat and checked out by the crew. They were both very cold but otherwise in good health and were returned safely to shore. (RNLI report). (EIRE).

Ascents

July 2021 **21/167**

A diver was on a dive on a wreck when they began to feel too light after 10 min, was attributed to having less weight than normal due to change to new membrane drysuit. The diver had reeled out from the shotline and so reeled back to the shotline to abort the dive, but became snagged in the reel line and shotline. The diver had to use his knife to cut free of the shotline and reel line.

The diver then had a rapid accent to the surface, omitting safety stops, and notified the cox'n and went on oxygen for three hours after. The diver was kept under observation for six hours after the dive, was kept hydrated and told what to do if any DCI symptoms occurred. The oxygen cylinder was labelled for change out. The diver was contacted regularly for the next couple of days and fortunately suffered no ill effects from his rapid ascent. He is taking steps to avoid any similar incident happening again. (Eire).

Equipment

May 2021 **21/162**

A dive club was visiting a site new to the club, which entailed a short walk down relatively steep pathway from the car park. Recommendation was to carry the gear down in 3 trips to avoid stress/ strain. One diver, who was using nitrox 30 and carried a pony cylinder and planned on using his secondary black AS for the dive instead of his usual yellow one. On entering the water his yellow regulator started free flowing, the venturi was throttled back to the (-) setting and he placed it Into his mouth and started the dive. The diver had difficultly equalising on the descent. The dive progressed to 17m with no issues. The buddy pair continued with dive along reefs, checking each other's gauges. After about 15 min they decided to go to their planned max depth of 25m. When they got to 25m the diver felt his heart rate rise and found it difficult to get a full breath of air. He signalled to his buddy that something was wrong, immediately his buddy noticed that the venturi was set at (-) and turned it to the default setting (+). The diver was then able to breathe freely again. The buddy pair terminated the dive at this point and proceeded to 6m for their safety stop. After about 1 min the diver lost buoyancy and ended up on the surface omitting his remaining safety stops. The diver removed mask and started clearing his throat and nose, he noticed there was blood. His buddy surfaced and signalled to the shore manager to get the oxygen kit ready, and he then towed the diver back to the pier where oxygen was administered. On the pier the diver felt drained of energy and his legs were weak. He needed help the remove his BCD and pony cylinder. The diver's heart rate was still high, but he suffered no pain, and no further blood was evident. However, due to the ascent rate, incomplete safety stop and bleeding at the surface the decision was made to contact emergency services. The diver was taken by ambulance to the hospital for an ECG and Chest X-ray, both of which came back normal. (Eire).

May 2021 **21/164**

Two divers started descending a shotline to a wreck at 25m. At approximately 7m one diver noticed bubbles all around the face and then went to take a breath and noticed no air available. The buddy was a metre or two below looking downwards on the descent, so the diver ascended back to the surface via the shotline breathing out. On surfacing there was another group of divers waiting at the top of the shotline preparing to descend. One of these divers offered assistance while the boat was called over, it only being 15m away with another group of divers kitting up. The diver was fully conscious and alert on the surface and on the ascent (diver on the surface had watched the ascent) and was not in any form of panic etc but had got a fright. The buddy had followed up when they noticed the diver had started to ascend. When the boat came alongside the diver removed their gear as normal and those aboard helped the diver aboard. The diver's computer was checked for any alarms or messages etc., with none showing, same with the buddy. On inspecting the regulator it was found that the silicone mouthpiece had separated from the main regulator body. The diver stated they had presumed a regulator malfunction when no air was available and seeing bubbles all around hence didn't use their own AS. The diver decided not to resume the dive and stayed aboard, was in a good mood and calm state and was still fine later that day and into the evening with no ill effects. The diver's regulator had been serviced a number of weeks previously and had been used on a dive earlier in the day and two weeks previously with no issues, so suspicion is a cable tie holding mouthpiece in place had broken when entering the water from the boat. (Eire).

May 2021 **21/029**

A pair of divers prepared to dive a wreck and due to a 0.5m swell decided to conduct a negative entry and meet underwater at 2m. As the pair began to swim towards the shotline underwater one diver sank and was noticed by his buddy that he had dropped to approximately 10m and was finning hard to ascend. He then sank to a depth of 25m followed by his buddy. The diver then inflated his BCD making himself positively buoyant and he started to ascend, followed by his buddy. The diver did not adjust his buoyancy during the ascent and made an increasingly faster ascent direct to the surface with a total dive time of less than 3 min. His buddy made a slower, controlled ascent surfacing after a total dive time of 3 min. Back aboard the charter boat both divers had water to drink and neither showed any signs of symptoms of illness or injury. The diver was found to be significantly over-weighted with 15 kg of weight, a heavy 15 lt cylinder, although he claimed to have completed a weight check five weeks previously, and he had used 120 bar of air from his cylinder during the dive duration of 3 min.

August 2021 **21/126**

A diver and his buddy were diving a wreck and had been to a maximum depth of 33m. Whilst inside the wreck at a depth of 32m the diver noted his trim being pulled to the right more than usual. The diver tightened his shoulder straps and thought no more of it and continued the dive. Later whilst taking photos of a bow gun mount it occurred to the diver that the variance in his trim could possibly be because he had lost one of his weight pouches and on checking this was confirmed to be the case and may have been caused by snagging as the diver swam through the wreck interior. The diver swam to the mast of the wreck and signalled the problem to the team. His buddy gave him a 1 kg weight which allowed him to maintain depth control during the swim back to shore including holding his 6m safety stop.

October 2021 **21/170**

A diver was on a dive in water at 7 deg C when their regulator free flowed. The diver was unable to switch to their buddy's AS and so ascended to 20m and then switched to their deco gas. The pair then made a normal ascent to the surface. (Eire).

Injury

June 2021 **21/165**

A diver surfaced from a dive complaining of shortness of breath and was recovered from the water as quickly as possible and assessed. The buddy pair reported that everything with the dive was normal and a safety stop had been completed. The diver was complaining of feeling very tired and unwell when in the boat. As a precaution the diver was on oxygen and monitored and returned to shore. The diver was kept on oxygen when back on shore and he started to feel better regaining the colour back in his face. The diver reported that the only thing he felt could have been out of the ordinary was he took a drink of water before the dive and it went down the wrong way. The diver was asked if he would like taking to hospital to get him checked out but he insisted he was ok. He was advised that he would need to go to his doctor to get checked out in case there was something underlying. Diving Officer called the diver later that night and he reported that he was ok, but he was going to get checked out the next day in the hospital which he did. The DO phoned the diver the following evening and said everything checked out fine but the doctor mentioned he may have taken water into his lungs before the dive. (Eire).

June 2021 **21/072**

Two students were on a try-dive in a sheltered bay with an instructor, both using air. The dive was to a maximum depth of 8m and a total duration of 22 min. Following the dive and returning to the dive shop one of the try-divers had a persistent dry cough and looked pale. She was provided with a glass of water and her condition monitored, which appeared to improve over a short period of time with her colour returning to her face. She removed her wetsuit and prepared to leave mentioned that she felt something in her chest, but the dry cough was attributed to breathing dry

compressed air. After she left the dive shop the instructor decided to double check and looked up coughing after a dive and researched IPO. When the information was reported to the centre owner she followed up with the student and found she felt short of breath and that there was something in her chest. A local hyperbaric doctor was consulted who advised the student to attend for a check-up and she was collected and transported to A&E. The student was checked and several tests were run and she was diagnosed with suffering from immersion pulmonary oedema (IPO). She was admitted to hospital overnight and was discharged the next day. The student was advised to have a follow up when she returned to the UK.

July 2021 **21/166**

A trainee was on her first open water dive with an instructor, conditions were excellent with tide on slack water. The trainee and instructor kitted up and completed buddy checks, including both checking their ears to make sure they cleared before entering the water and everything was OK. The pair entered the water and proceeded with the dive. As they descended the trainee gave a something wrong signal and pointed to her ear. The pair surfaced and the trainee seemed OK and so the pair tried again with the same outcome. The trainee returned to the boat and de-kitted. One of the other instructors thought that when she was removing hood it looked a little tight. The trainee was observed and said she was OK but a little discomforted. The trainee went to the doctors the next day and was found to have a perforated eardrum. She was given antibiotics and advised no diving until it clears up. (Eire).

October 2021 **21/169**

A diver was leading the dive when their buddy became buoyant, and a buoyant ascent resulted. The diver followed the buddy to the surface omitting a safety stop. Both divers were picked up by the boat and the dive manager was informed of the buoyant ascent. Both divers felt OK. The divers were recovered, and the boat returned to the pier. The diver reported felling unwell, and the oxygen was set up for both divers. The diver was sick, and the emergency services were called, arriving about 45 min later. A doctor from another group gave assistance. Both divers were taken to a recompression chamber for assessment and they were later discharged. (Eire).

History of previous UK diving 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

Year	Membership	BSAC	Non-BSAC
1994	50,505	6	6
1995	52,364	9	9
1996	48,920	7	9
1997	48,412	4	12
1998	46,712	5	14
1999	46,682	9	8*
2000	41,692	7	10
2001	41,272	10	14
2002	39,960	3	7
2003	38,340	6	9
2004	37,153	4	18
2005	37,185	5	11
2006	35,422	4	11
2007	34,857	8	5
2008	34,325	6	5
2009	32,790	8	9
2010	32,229	7	7
2011	30,909	5	7
2012	29,632	9	7
2013	28,728	5	9
2014	28,375	5	11
2015	27,803	3	5
2016	27,346	5	7
2017	26,774	2	13
2018	26,717	8	9
2019	27,000	10	3
2020	21,594	2	4
2021	22,047	8	8

1999 figure corrected from 9 to 8 due to a double count discovered in 2010
1998 figures onwards are calendar year figures; 1965 to 1998 are October 1st to September 31st figures.

List of abbreviations used in this and previous incident reports

AIS ..... Automatic identification system (location beacon)
AS ..... Alternative source (gas or air)
A&E ..... Accident and emergency department
AED ..... Automated external defibrillator
ARCC(K) ..... Aeronautical rescue coordination centre (Kinloss)
ARI ..... Aberdeen Royal Infirmary (Scotland, UK)
AWLB ..... All weather lifeboat
BCD ..... Buoyancy compensation device
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
HEMS ..... Helicopter emergency medical service
HLS ..... Helicopter landing site
HSE ..... Health and Safety Executive
HUD ..... Head up display
ILB ..... Inshore lifeboat
INM ..... Institute of Naval Medicine
IPO ..... Immersion pulmonary oedema
IV ..... Intravenous
kg ..... Kilogramme
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 DMC ..... UK Diving Medical Committee
UTC ..... Coordinated universal time
VLB ..... Volunteer life brigade
999 ..... UK emergency phone number

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