

# **INCIDENT REPORTING IN THE UK RECREATIONAL DIVING INDUSTRY**

## **AN ASSESSMENT OF CURRENT PRACTICES AND POTENTIAL WAYS TO IMPROVE THEM**

**Executive Summary**

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*“Data is defined as raw facts, without inherent meaning, used by humans and systems. Information is defined as data placed in context. Knowledge is Information applied to a particular situation.”*



**C O G N I T A S**  
Individual Supervisor Organisation

*Improving Diver Safety by Challenging Current Practices and Encouraging a 'Just Culture'*

## Executive Summary

In the last 20-30 years, recreational diving has evolved from a sport restricted to the dedicated, into a more mainstream sport almost universally accessible. This is especially the case when looking at technical and rebreather diving. Over the years the systems to capture incidents and provide lessons learned have improved, but there is still a wide disparity between what is reported and what occurs. For example, the statistics from the British Hyperbaric Association show that there are nearly 3.5 times the number of individual divers treated for DCI than incidents reported in the Annual BSAC report. A key aspect is that the diving demographic is now extremely fragmented, with multiple training agencies and self-directed learning becoming more prevalent.

Fundamentally, there is a need to change the attitude to reporting. This change needs to be addressed at all levels from the individual diver to those in supervisory roles (either instructor or at agency level).

Whilst the gathering of statistical information is of value, understanding the causality is of vital importance if the number and severity of future incidents is to be reduced. Therefore there are 2 requirements; good statistical data capture and a detailed narrative for lessons learned.

To ensure commonality of terms, a diving incident is defined as:

*“Any event where an individual diver, or member of a diving project team, is injured, has an equipment failure, or conducts unsafe diving practices, either before, during or after an actual diving operation, that affects the safety of any team member, associated personnel, bystander or member of the public”.*

Near-miss incidents should be reported in the same manner as actual incidents.

A Just Culture isn't just about having a reporting system, but rather a set of beliefs and duties that should be expected from all levels in the diving operation from diver through to organisation/agency. A Just Culture requires a cultural change from the present 'blame culture'. It requires divers to understand that they can report mistakes or errors and by doing so, diving safety can be improved if lessons can be identified and learned.

BSAC, the national governing body for diving in the UK, provide the current diving incident reporting capability. It has been running since for 46 years, but only in its current guise for the last 13. There are on average 400 reported incidents each year but only 25% of those come from divers, the remainder are from professional organisations. The form was last updated in March 2003.

There are a variety of diving incident reporting systems in use for diving; BSAC, DAN, PADI, DIMS and the 'Lessons Learned' sections of websites such as the 'I Learned About Diving from That' sub-forum of Yorkshire Divers.

They all have their uses but not one of them provides a complete solution covering both statistical and lessons learned to a level with the author believes should be considered best practice.

Reporting systems within Military and Civilian aviation were also examined to understand what processes or systems could be adopted within recreational diving to improve the capabilities of the current reporting system, or inform a new reporting system.

Open reporting systems require public confidence that they will improve safety, and provide both relevant and applicable information which could change the way their procedures or practices are conducted. However, the process by which this is achieved must also maintain the confidentiality of the reporter.

Understanding the numbers of incidents and dives taking place is essential if the level of risk is to be understood. Whilst the number fatalities is probably 100% accurate, the number of incidents and number of dives being undertaken falls well short of being understood. This has been proved by looking at other sources of data such as the diving internet forums, BHA data and using industrial incident:fatality ratios.

A questionnaire was published by Cognitas in June and ran for 2 months. Over this period 257 people submitted details but 20 of these have been removed from the statistical analysis for a variety of reasons. The split between agencies was 40:40:20 PADI:BSAC:Other. Within BSAC 98.8% of respondents were aware of the Incident Report and 50% had filled one in, but outside BSAC this dropped to 87% and 9.8% respectively. 19.8% of divers inside BSAC had never read the annual report and this figure rose to 23% outside of BSAC. On average more than 90% of respondents believed that divers could learn from reported & unreported incidents and near-miss incidents, but only 32.6% of divers who were involved in an incident actually reported their incidents to the BSAC. Reasons for non-reporting were varied but the major factor was 'trivial incident that did not require reporting', followed by 'didn't think it would do any good' and in third place 'Could not be bothered'. Promoting the benefits of reporting at all levels and making reporting easier should improve these figures.

Using feedback from the questionnaire and knowledge about other reporting systems, the author has proposed a series of options which could be adopted by a reporting organisation using the same level of capture to fill some of the capability gaps which the author believes currently exist. These include:

- Ascertain the numbers and types of diving taking place in the UK and by UK divers to allow risk levels to be better understood.
- Better promotion of reporting of incident reporting and incident reports by training agencies.
- Collect more evidence from agencies/organisations such as the BHA, military recreational diving, HSE reporting and internet forums.

- Investigate whether families would be happy about publicising details behind fatality reports as they are more likely to have a greater impact than generics in an annual report.
- Provide a true lessons learned capability where specific details are available to show 'why' an incident occurred and not just 'what' happened. This 'why' may have started much before the actual incident occurred.
- Improve the level of access to BSAC data to allow those outside BSAC to understand more of the 'why'. This is especially true for fatality reports.
- Update the content and format of incident reports to improve better data capture of all reports, but especially technical & CCR diving incidents, human factors, equipment and non-technical factors.
- Improve the dissemination of important diving information outside of the agency or organisation which has detected or recognised the issue.
- Enhance the role and capability of the BDSG such that they can operate as Subject Matter Experts (SMEs) to the reporting agency.
- Provide an independent advisor to the capture, analysis and reporting processes who has no link to a training agency.
- Show positive feedback to the diving population that reporting has had an effect. The one normally cited by BSAC is the Buoyancy Workshop but this example is potentially flawed for a variety of reasons.

There is a need for a single focal point for all current safety, incident reporting & management practices, dive and hyperbaric medicine best practice and related reference material along with details of diver training standards. Consequently, the author has created a website, the Diving Incident and Safety Resource Centre ([www.disrc.com](http://www.disrc.com)), which will allow much more detail keyword searches and the ability to provide updates to subscribers.

A new reporting system involving a revised database capture process is proposed which would be managed by an independent company/organisation who would take responsibility for the collation, analysis and reporting of diving incidents. They would provide true agency independence working for and with the diving community.

Having an independent organisation would allow true independence across all agencies without the issues of an 'agency banner', may improve support from other training agencies and non-BSAC divers who perceive that the current system is a BSAC system, would allow systems to be developed more easily outside of the constraints of BSAC and finally data from this system could be fed into the BSAC system to allow BSAC to continue with their statistical evidence gathering if they wished.

There are some negative aspects to such a proposal which have been identified: 2 reporting systems which may lead to reduced overall reporting or duplicate reporting; it would take time to build up the working relationships with the external agencies to the same level which BSAC currently enjoys. External agency support, including HSE, is essential; it would take time to gain credibility and

recognition within the diving population, especially within BSAC; finally, it would require confidence that the independent organisation was in this for the long term and not out to make a 'quick buck'.

## **Recommendations**

It is recommended that:

### ***General***

The members of the BDSG discuss frankly the contents of this paper at the next meeting and provide feedback to the author of this report before 7 Oct 2010.

Training agencies include incident reporting in all of their courses highlighting the benefits of improved incident reporting and lessons learned capabilities.

Divers, including instructors, report all incidents where there is likely to be a lesson learned, this especially applies to near-miss incidents which may be considered trivial at the time, but could have had severe consequences if not corrected.

Agency organisational and supervisory chains actively promote a 'Just Culture' to improve the numbers of, and quality of, reports fed back through the reporting system.

A process is put in place which allows the dissemination of important/safety of life issues to be passed between training agencies and the diving population which maintains confidentiality of the initiator. Use of the DISRC, with an email notification, should be considered.

Cognitas continues with the development of the DISRC ([www.disrc.com](http://www.disrc.com)) to act as the single online focal point for all diving safety and incident management best practice and reference material.

A survey is run over a series of months to ascertain the demographics of UK diving.

### ***Data Capture***

The reporting organisation does more to capture the 'why' an incident occurs rather than just the 'what happened'.

The reporting organisations approaches the external agencies or organisations identified in section 5 to collect more data.

The reporting organisation modifies the capture form to improve initial data capture by providing a very basic capture process in both hard-copy and online versions.

The reporting organisation modifies the 'detailed' capture form or process to allow for areas which are lacking in coverage. These include CCR, technical, human factors and physiological issues. This could be done by producing a technical or CCR data capture annex.

The reporting organisation provides good examples of incident reports to use as best practice when completing reports.

The reporting organisation puts a process in place to allow more accurate incident and causality details to be captured, maybe through dialogue with the incident reporter.

### ***Data Access and Analysis***

The reporting organisation allows a higher level of access of incident data to all interested parties including other training organisations, instructors and individual divers whilst still maintaining confidentiality.

The reporting organisation looks at ways of revising the analysis process taking into account the revised captured data and output reporting requirements.

The BDSG, through the reporting organisation, discuss coroner's reports at the meetings with a view to publicising more detailed lessons learned reports.

The reporting organisation considers contacting families of diving fatalities with a view to getting their permission to publicise the lessons learned.

### ***Output Reporting***

The reporting organisation produces free monthly summary reports containing lessons learned, annual sub-totals and rolling annual totals to allow more timely information to be passed on to the diving community.

The reporting organisation produces free annual reports.

The reporting organisation produces detailed narratives in all reports allowing better lessons learned to be elucidated.

The reporting organisation provides a capability which allows users to select specific datasets upon which to search. These datasets could include date, location, equipment configuration, dive type etc.