

Divers Alert Network Diving Fatality Workshop

Legal Issues Panel



Panelists

- David Concannon, Esq., Law Offices of David G. Concannon, LLC
- Stephen Hewitt, Esq., Hewitt & Truskowski
- Mark Hruska, Esq., Schwartz & Horwitz, PLC
- Francois Jaeck, Esq., DAN Europe
- Craig Jenni, Esq., Dive & Marine Consultants, Int'l

Investigation Session: Legal issues associated with diving fatalities

Scuba diving fatalities have a toll that exceeds the unfortunate loss of life. Fatalities also have a major financial impact in the form of lost income, lost business, higher insurance premiums and massive litigation costs.

This panel will discuss the legal aspects of diving fatalities, including:

- major factors leading to fatality litigation,
- shortcomings of accident investigations and suggestions for improvements,
- how problematic the lack of investigative information can be in preparing for and conducting legal proceedings,
- cooperation with first responders and medical examiners to facilitate effective incident investigation, the collection of data for research and, ultimately, education of the diving community,
- the impact of fatalities on liability insurance, and
- methods for enhancing international training and diver education to reduce future fatalities

Major factors leading to fatality litigation

No. 1 – Lack of information
Uncertainty leads to litigation

The consequences of poor investigation include increased litigation, millions of dollars allocated to legal fees and litigation costs, loss of cases and higher premiums/less availability of accident insurance.

Another consequence of poor investigation is more fatalities. If we don't know what the cause of the problem is, we can't solve it.

No. 2 – Fatalities equal damages

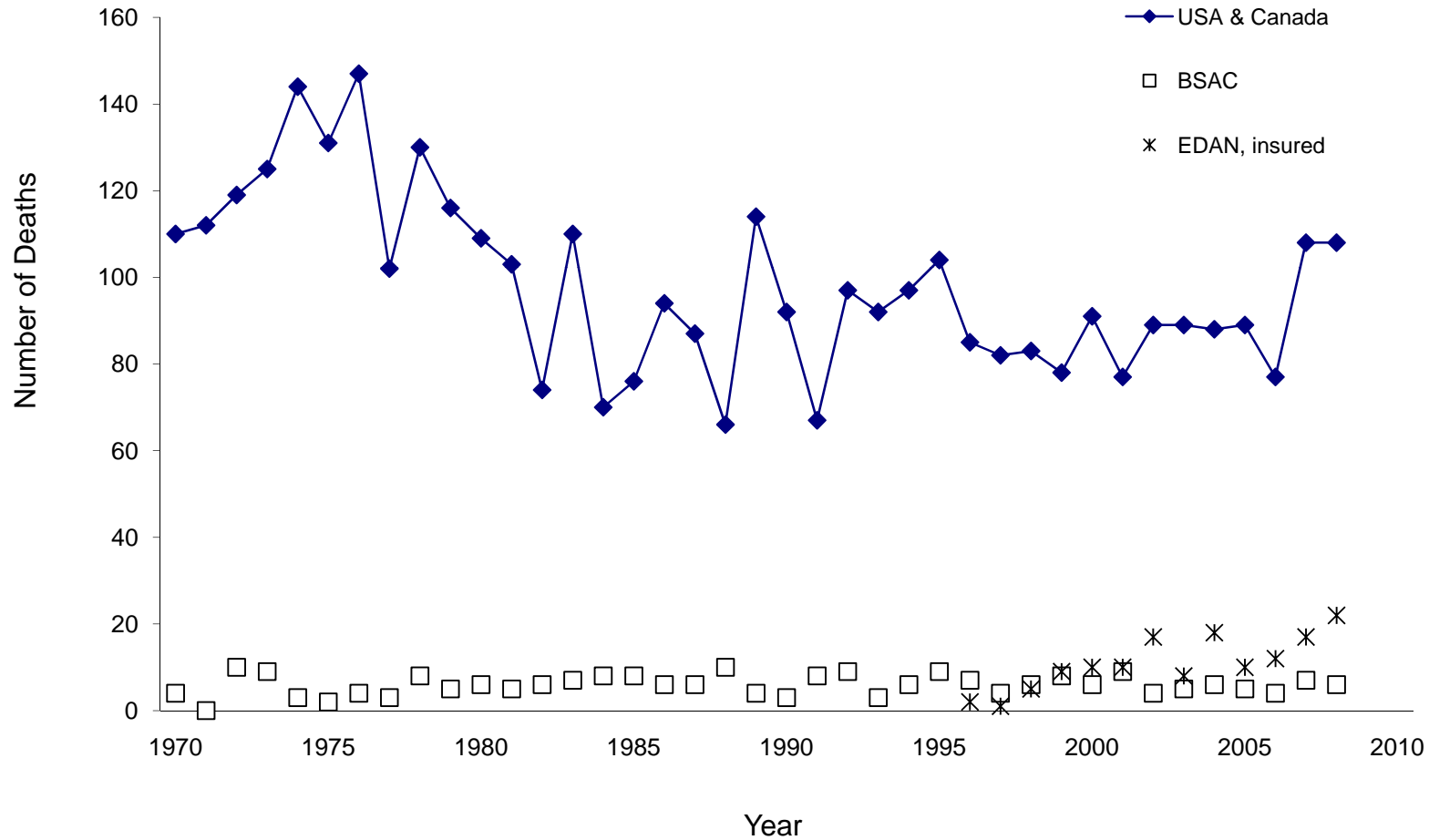
Families of injured divers sue to recover lost income, money for pain and suffering, and punitive damages.

The more we solve the first issue, the less we have to contend with the second issue!

Diving Deaths per Year

Source: Petar J. Denoble, MD., D.Sc. & Richard D. Vann, Ph.D.

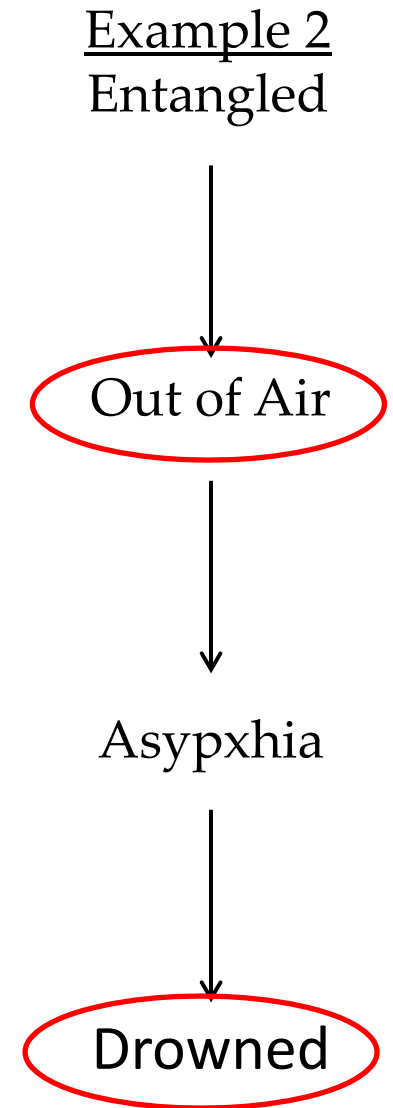
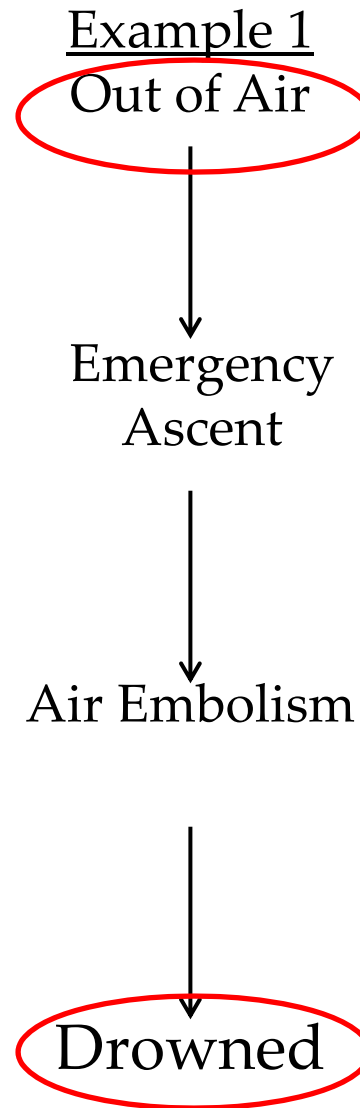
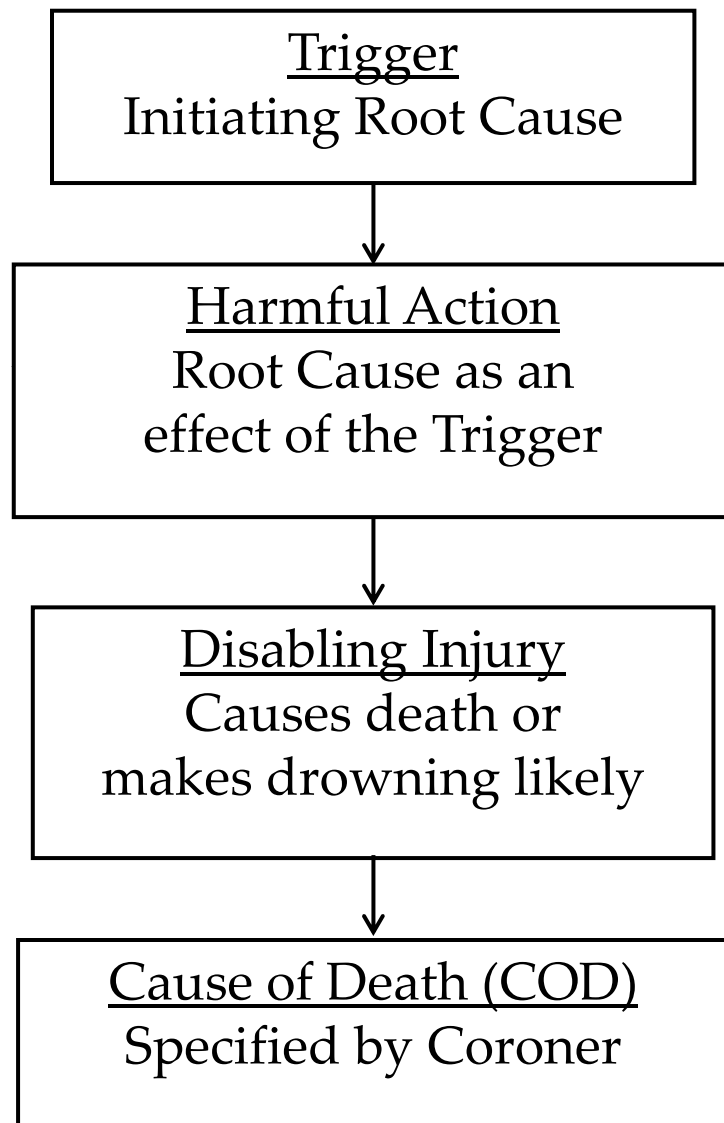
DEMA 2009



An average of 125 scuba fatalities occur
each year in the United States, Europe
and Asia

But what is causing divers to die?

Root Cause Analysis of Diving Deaths



Shortcomings of accident investigations

Denoble PJ, Caruso JL, deL. Dear G, Pieper CF, Vann RD. Common causes of open-circuit recreational diving fatalities. Undersea Hyperbaric Med 2008; 35(6):393-406.

Diving fatalities causes were investigated in 947 recreational open-circuit scuba diving deaths from 1992-2003.

Diving deaths were identified by active search of news reports, the Internet, and a cooperative network of individuals and organizations developed over many years. Following notification of a death, DAN contacted official investigative agencies, medical examiners, hyperbaric chambers, witnesses, and the decedents' families by telephone, mail, or email. These contacts could be helpful to a greater or lesser degree. Reports might include barest details or a full analysis of equipment, breathing gases, and a description of a complete medicolegal autopsy.

Information on 947 Open-Circuit Deaths from 1992-2003 was obtained from:

- 70% family interviews
- 60% autopsy findings
- 52% witness reports
- <52% investigative reports
- 28% equipment testing
- 22% breathing gas analysis

Admitted Limitations

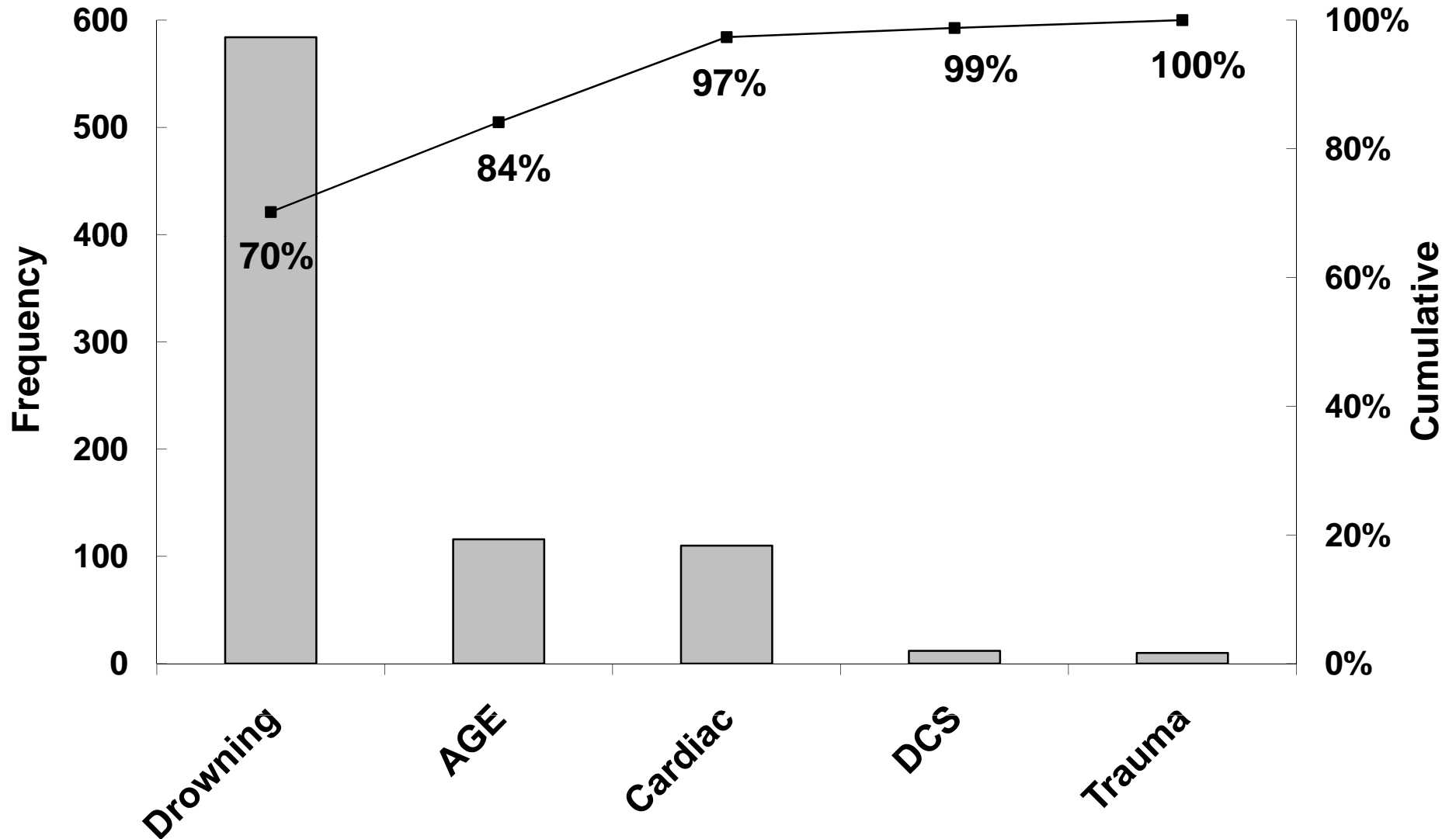
Assessing associations and making causal inferences based on surveillance system data, such as that from diving fatalities, is uncertain because of inherent defects in data quality and completeness.

Surveillance system data are more appropriate for hypothesis generation than for hypothesis testing although multiple studies based on independent data increase confidence. International data sources such as that collected by the British Sub-Aqua Club (BSAC) and Project Stickybeak in Australia might be useful in this regard.

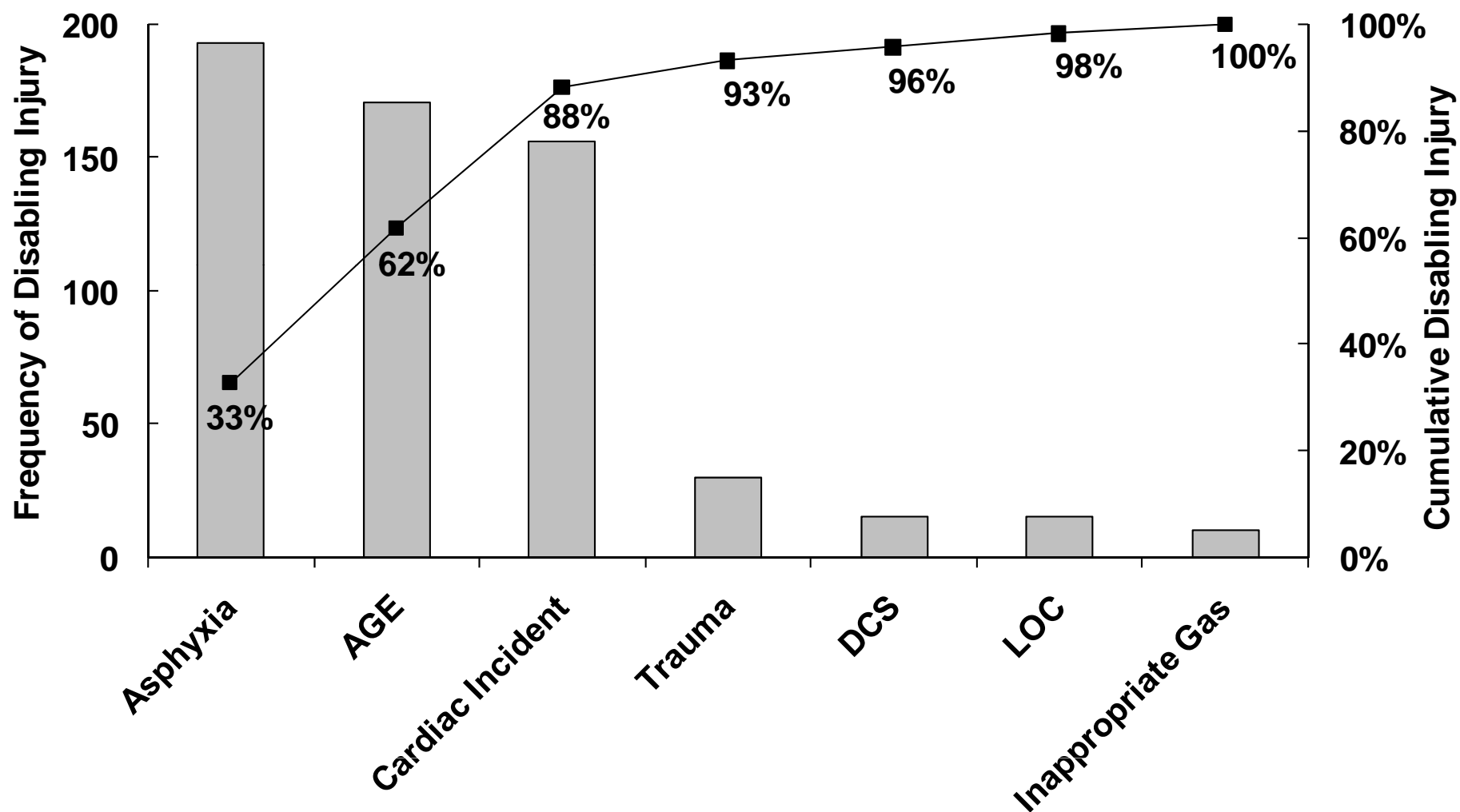
Some of the following additional limitations were identified:

- Disabling injuries were identified for only 590 of the 947 decedents. Triggers and disabling agents were even more difficult to identify.
- Post-mortem examination of divers has requirements beyond standard autopsy practice that was not always implemented by medical examiners.
- The reference group for each disabling injury was all other disabling injuries. In consequence, triggers and disabling agents associated with specific disabling injuries were not always identified completely, and their relative importance was necessarily conditional on death. Surviving divers would be a better reference population.

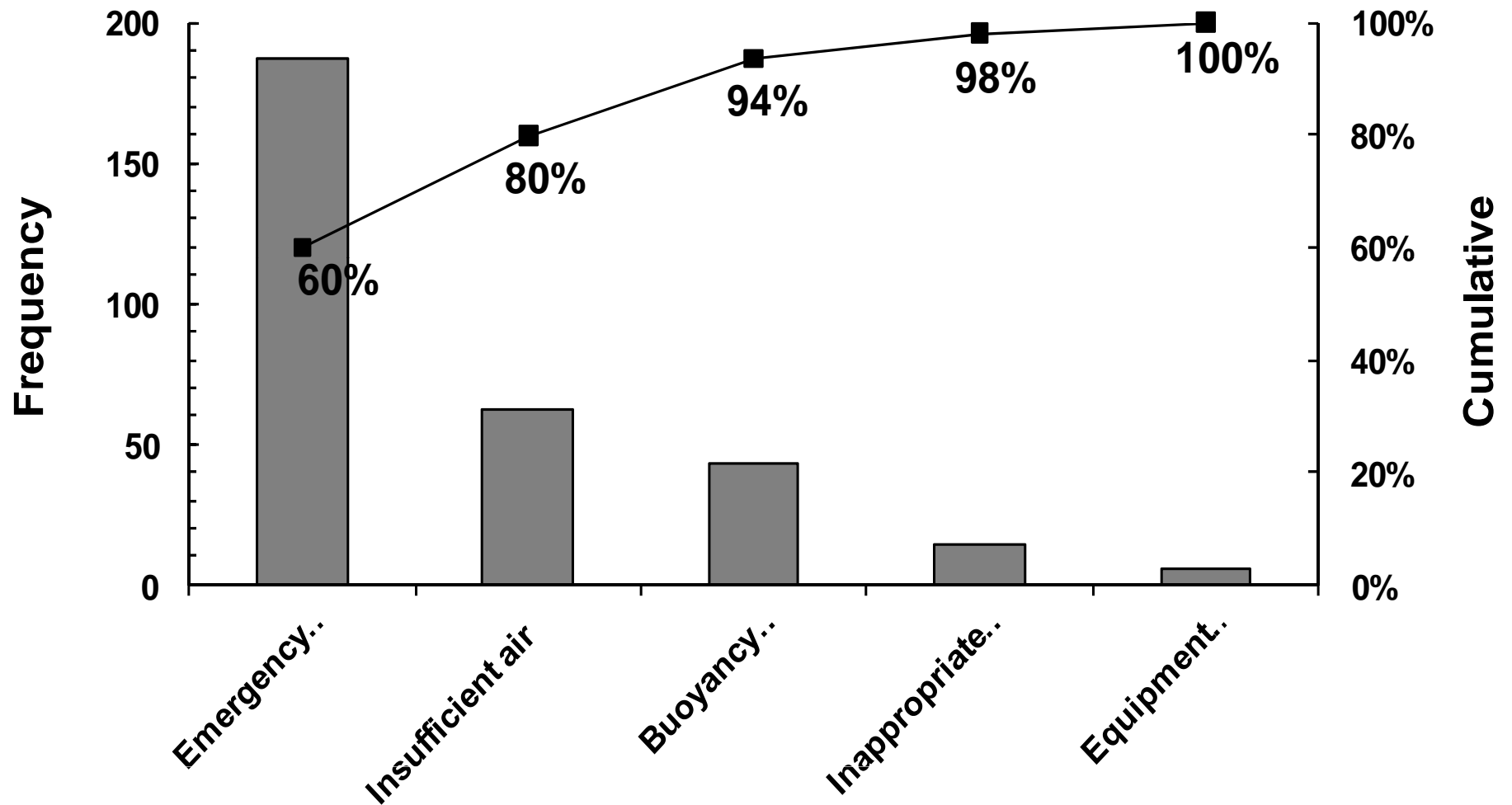
Cause of Death (COD, 814/947)



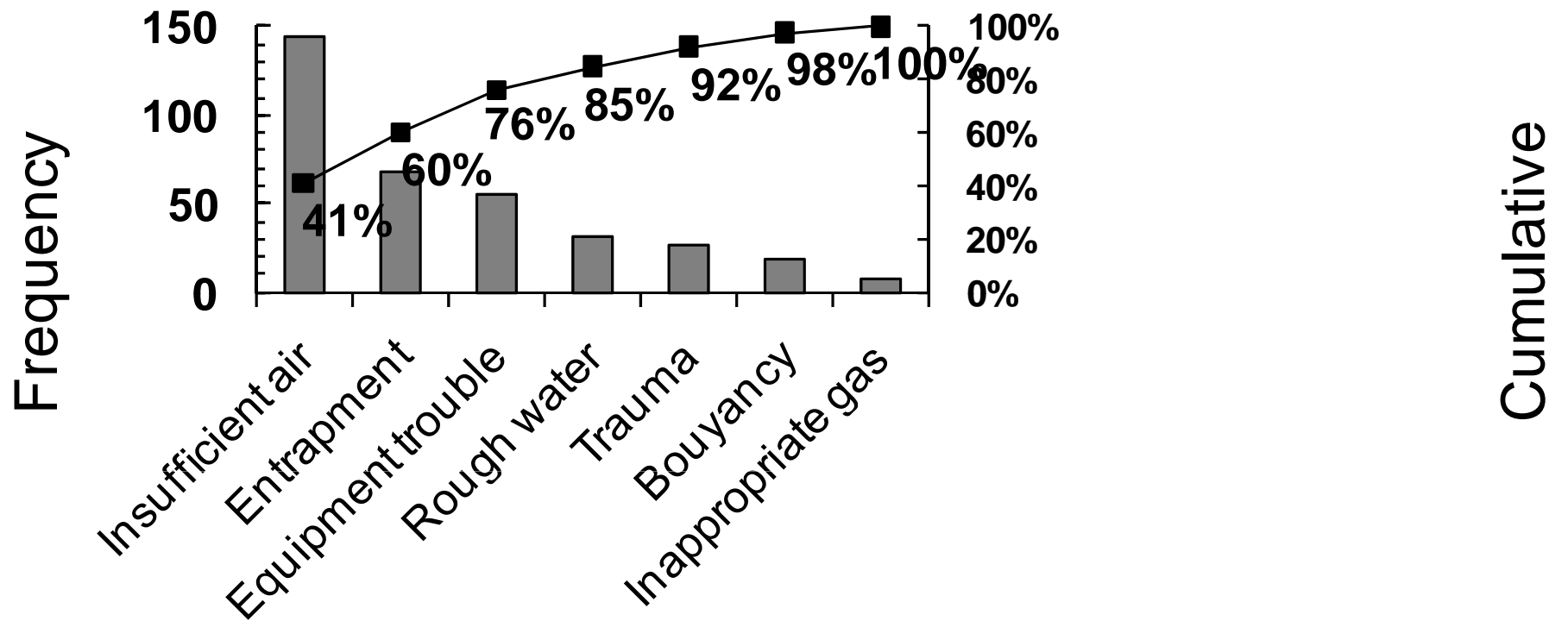
Disabling Injuries (590/947)



Disabling Agents (332/947)



Triggers (346/947)

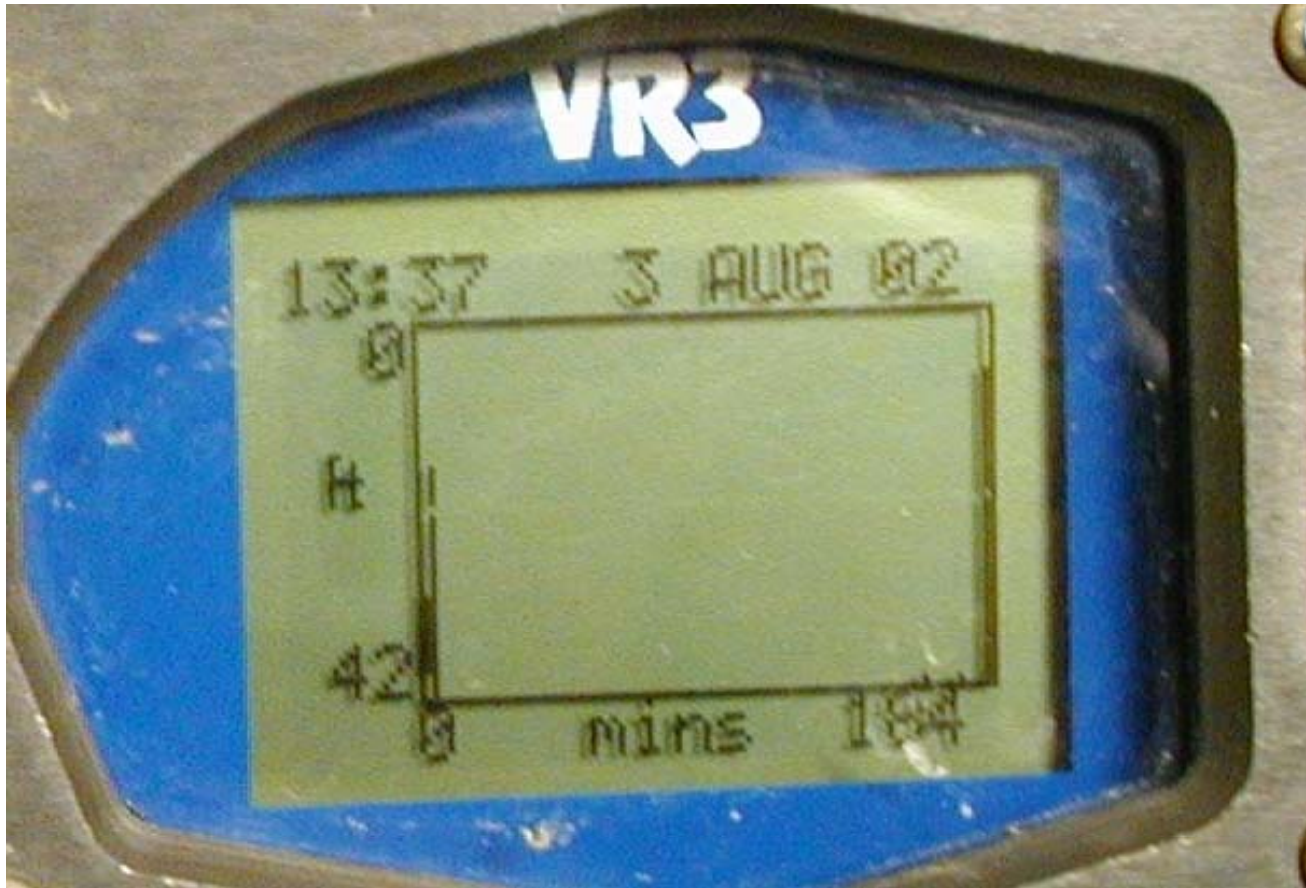


Clearly, there is a lack of appropriate investigative information. This lack of information can be extremely problematic in preparing for and conducting legal proceedings

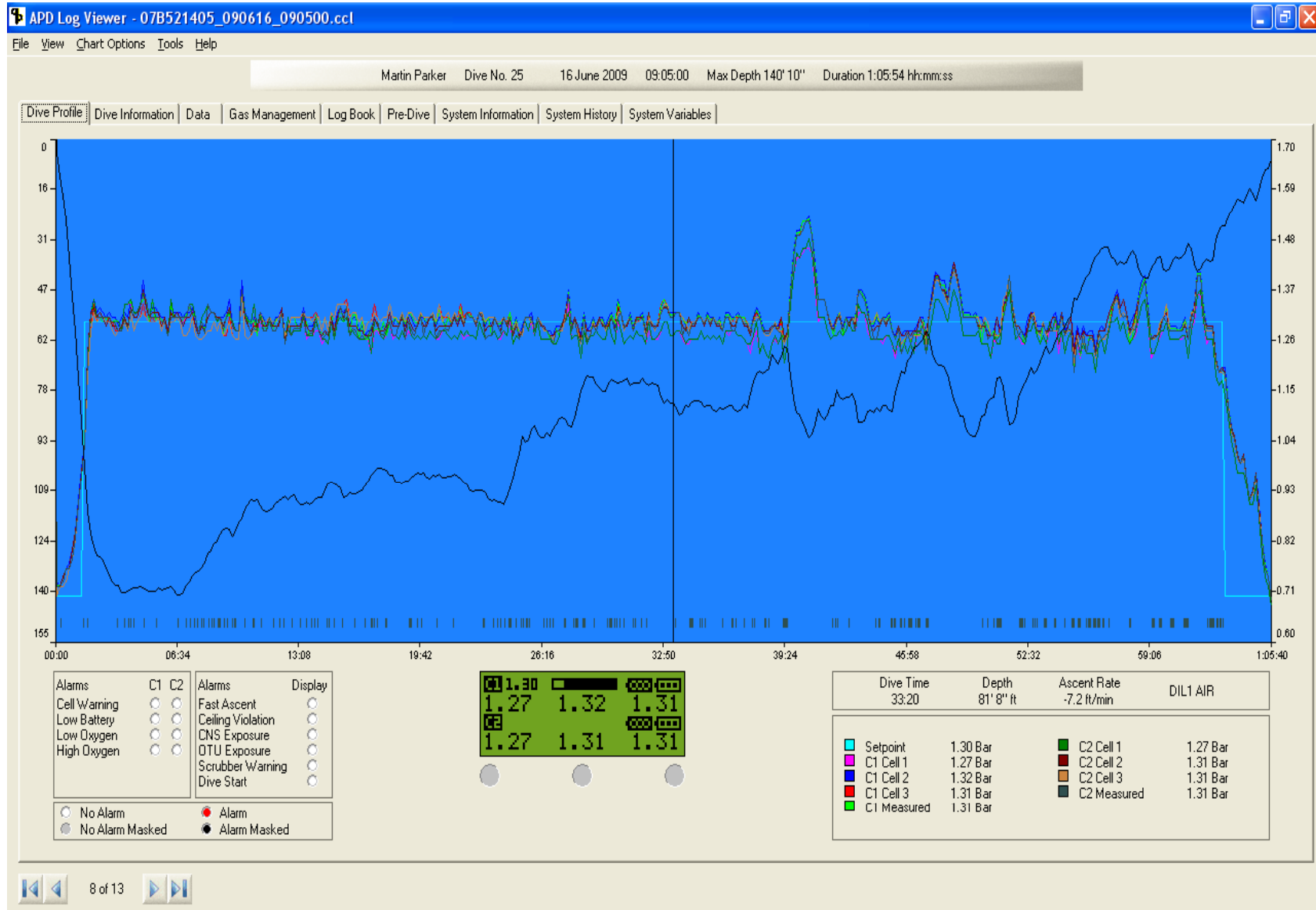
- Like bats that live in the darkness of caves, lawyers thrive in the gray areas. Uncertainty means prolonged litigation, which is expensive and distracting.
- “Drowning” is a dirty word; it tells us practically nothing about why a diver died.
- What was the first event that ultimately resulted in a diver’s death? It’s the trigger, stupid!
- Lawsuits are fought over the identification of triggers, disabling agents and disabling injuries.
- A jury or a judge will decide what caused a fatality, not divers, doctors , researchers or family members.
- In Europe, the burden of proof rests on the diving professional to prove they were not at fault in causing a fatality; automatic liability is assumed on the part of the professional when selling package travel.
- In the U.S., failure to preserve, identify and produce critical information such as dive computer data can result in sanctions for spoliation of evidence, including monetary sanctions and termination of litigation in favor of your opponent.

“A picture is worth a thousand words”

This picture was worth \$1 million ... in legal fees!



This is the type of information available from a modern dive computer



Methods for enhancing international training and diver education to reduce future fatalities

Denoble PJ, Caruso JL, Dear GdL, Pieper CF, Vann RD. Common causes of open-circuit recreational diving fatalities. *Undersea Hyperbaric Med.* 2008; 35(6):393-406.

[A]nalysis of diving fatality case data identified many triggers and disabling agents that are the focus of existing diving safety guidelines. What is new is recognition that a majority of fatalities were associated with a minority of triggers and disabling agents. This suggests that diving fatalities might be reduced by additional emphasis on the prevention of key triggers, disabling agents, and intrinsic medical factors in accordance with the Pareto principle. The design and implementation of practical solutions for avoiding triggers and disabling agents is the province of training specialists. . . Some diving fatalities are unavoidable, but the practically irreducible level appears yet to be achieved.

O'Connor, P.E. The nontechnical causes of diving accidents: Can U.S. Navy Divers learn from other industries? *Undersea and Hyperbaric Medical Society*, 2007; 34(1):51-59.

- In a review of 1,000 recreational diving mishaps, 87 percent of them were caused by human error; inexperience and insufficient training accounted for 14 percent and 8 percent respectively of the contributing factor to the mishap.
- In studies of other high-reliability industries (e.g. aviation, nuclear power generation, offshore oil production, medicine, and diving) the cause of approximately 80 percent of mishaps is generally regarded as human error.
- Also, in a review of 109 recreational diving fatalities that occurred in 2003, nearly 45 percent of victims had not dived in the 12 months prior to their mishaps.

Suggestions for improvement

- It is essential that more useful information is collected through more thorough data collection methods, and that this information is analyzed to determine the root cause of diver fatalities and near fatalities.
- Examples of fairly thorough diving fatality studies include:
 - Cumming B, Peddie, Watson J. British Sub-Aqua Club: a review of the nature of diving in the United Kingdom and of diving fatalities in the period 1st Jan 1988 to 31st Dec 2009. *DAN Diving Fatality Workshop*; April 8-11, 2010; 25 pgs; and
 - Acott, C. Human error and violations in 1,000 diving incidents: a review of data from the Diving Incident Monitoring Study (DIMS). *South Pacific Underwater Medicine Society Journal*, 2005; 35, 11-17.
- Stakeholders must increase cooperation with first responders and medical examiners to facilitate effective incident investigation, the collection and preservation of data, and accurate reporting; first responders and medical examiners must seek out and/or accept this cooperation when offered.
- Development and distribution of protocols for effective accident investigations.
- Educate those involved in accidents and accident investigations about the need to collect and preserve dive computer data and other relevant information.
- Dissemination of appropriate data to interested parties (DAN, researchers, equipment manufacturers, training agencies, families and the public) so problems can be identified and addressed more effectively.