

# Equipment Maintenance and You

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It's a cool day in February. An experienced commercial diver climbed down a ladder off a pier in Camden, N.J. He was dressed out in a heated dive suit and diving helmet to chip away at underwater piles of cement using a jackhammer. He was wearing 40 pounds of weight allowing him to remain at 35 feet planted firmly to the bottom on that late February day. Then, something happened. The diver found that his surface air supply was no longer functioning. He tried to scramble to the surface, his tenders not knowing the subsurface events that were unfolding. The diver's bailout bottle drained of air in the ensuing panic. What happened is still under investigation as speculation thrives. Was it a failed valve, could it have been simply an umbilical hose that bumped a control? Could it have been simply fate? Nothing is for sure except that this story is not unique.

A research study was performed by Aviat Space Environ Med. to observe the distributions of fatal diving accidents in commercial diver populations. Divers were observed in the Gulf of Mexico from 1968 to 1975 and in the British sector of the North Sea from 1971 to 1978. According to the study, "The most significant environmental factors were equipment failure and supervisor/tender errors. These factors would be minimized by improved selection, maintenance and operation of equipment, together with improved operating and emergency diving procedures."

According to Duke University, there are approximately 1 in 100,000 dive accidents in recreational diving and 1 in 10,000 accidents involving commercial divers. In a separate recent study conducted by the Centers for Disease Control and Prevention found that America's roughly 3,000 full-time commercial divers tend to suffer an on the job death rate 40 times the national average for other workers. Commercial diving is a dangerous occupation; we all know and accept that fact. That said, we all sometimes come face to face with our worst adversary, complacency. The mundane repetitive task of pre-diving and post diving equipment starts getting abbreviated. That annual service on the helmet which has experienced 150 dives in the last six months gets pushed off another month because we can't take it off line just yet.

So what's the answer? Larger diving outfits can afford to buy redundant gear. Smaller diving contractors can't afford that kind of overhead. How do we make an industry safer without involving so many restrictions, regulations, and resulting costs that it makes companies insolvent? There is no all encompassing answer. There never is when it comes to accidents. What is known is that a major factor in many accidents is lack of proper maintenance and training. Not only training as it pertains to the operation of diving gear, but also the appropriate maintenance of that equipment. The first step to resolving this issue is to create company and personal policies that require that all pre-dive and post-dive check lists are completed. This needs to be accomplished not only in spirit but in execution. The next step is to identify potential hazards. Hazards such as a cracked air line, a malfunctioning mic. Due to the liability issues that have cropped up in the last few decades, equipment manufacturers have painstakingly created warnings, check lists, manuals, and other documentation that educates the diver/tender and releases

the manufacturer from the costly lawsuits that have plagued all industries. For example, the G2000SS, Inc. or Gorski hat comes with two pieces of literature. One is the equipment manual; the other has all of the various check lists. Both are also available on Gorski's web site ([www.GorskiHat.com](http://www.GorskiHat.com)). The next part of the equation involves having your equipment serviced by reputable service centers. It should be a shop that has the training, certification, and qualifications to service the specialized gear that makes this industry what it is today. I have had the personal experience of walking in to sport diving shops with commercial equipment to hear comments like, "sure, I've heard of this, let me take it apart and see what I can do". That never gave me the comfortable feeling that my expensive, and more dear to my heart, life sustaining equipment was being serviced by a qualified source. I've also personally had the unfortunate experience of taking equipment to a service facility and having a helmet off line for 5 weeks. Service centers need to display a commitment to complete work quickly and accurately. That's not to say that there aren't already adequately trained and equipped service centers available now. Reputable service centers are out there they are happy to serve the commercial diving community. The technology evolves rapidly. No longer are the days of working without standards. Thanks to organizations such as ADC, OSHA, the US Coast Guard, and the US Navy, diving regulations have improved the quality of life. With that, equipment manufactures have improved the reliability and quality of their commercial grade products. Divers are being better trained and exposed to more advanced tools all of the time. Maintenance and safety need to work hand in hand with productivity. That can, and should happen. Working together, the service centers and diving contractors can make the industry safer, more productive and revenue generating.

In an impressive vow to safety, the Fiji government enacted new policies that focus on commercial diving. In an article dated September 4, 2006 and available to be read at [http://www.fiji.gov.fj/publish/printer\\_7364.shtml](http://www.fiji.gov.fj/publish/printer_7364.shtml), it outlines some of the new regulations that focus on equipment maintenance. The article states that "The primary objective of the Diving Regulations is to minimize as far as practicable the health and safety risks at source through the registration, inspection and certification of dive equipment; training, certification and licensing of divers and dive staff; and promotion of best dive practices and proper supervision of dive operations." Fiji is committed to safety through training, certification and equipment maintenance.

There needs to be a continuing commitment on all sides, the divers, the tenders, the diving contractors, and the service centers. Together we can make a difference. Today's commercial divers are more aquanaut than simply divers. Safety should be our word of honor; maintenance should be our tool of choice. We should all be saying to ourselves, today everyone goes home alive and well.

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Commercial diving fatalities