



# PS DIVER MONTHLY 81

January 2011

*Public Safety Diver*

*EPA Polluted Water Diving*

*(Part 2 of 3)*

**NEWS**

**EVENTS**

**DIVE MEDICINE**

**CONTINUING ED.**

**AND MORE!**

**“Decompression Injuries”**

**Dive Alert Network**

## Greetings,

Over the last few months I have been tasked with redrafting our dive team operational guidelines. In doing so, it occurred to me that we were really no longer a dive team. *Have you considered what you and your team actually do and are responsible for?*

In years past, about all we did was recovery work; never rescue or swift water anything. The hurricanes we got hit with changed more than we realized for our team. We were faced with a series of tasks that we had never trained for and were a little unprepared to do. We managed but it was not pretty.

We came to the conclusion that we are more than an underwater recovery team and now consider ourselves a **Water Response Team**. Within that team we have other defined groups or teams. Consider that we do all dive related calls. We have a boat that is used to do everything from run sonar, drag surface booms to contain spills, perform boating assistance and it serves as a potential evacuation vehicle during floods.

We have been asked to perform damage surveys in areas that are still underwater, check and service the dry hydrants around our local port. We also recover vehicles for the regional auto task force.

Our dive truck is equipped with an air conditioning unit, upholstered benches, a work station, a command desk and a 4 bottle air cascade system. It can certainly support our divers but could also be used as a rehab vehicle, a mobile SCBA fill station or even an alternative mobile command post.

So consider the variety of water related disciplines we could be called on to perform as a Water Response Team:

**Dive Operations**  
Rescue

Body Recovery / Evidence Recovery  
Hazardous chemical mediation  
Line Tender  
Decontamination / Haz-Mat

### Boat Operations

Sonar Operations  
Rescue  
Boater Assistance  
Flood Evacuation  
Post hurricane rescue

### Top Water Rescue Operations

Rescue Swimmer  
Life Guard  
Standby Rescue  
Flood Assistance / High Water Rescue

**This represents a short list of responsibilities my team is facing. If your team has more responsibilities than are listed here, let's expand the list! Click the link below and post it to the group forum!**

I realize that this may be an unusual list but this is what I am considering as part of what we do and who we are. And because our job and responsibilities have expanded, we are better able to justify our existence.

I have some expectation that our budget requests for new or replacement equipment will increase proportionately with our responsibilities. (Yes I had to suppress a laugh)

If all stays the same, we will gain responsibility and actually be given less time for training and have to do it with a diminished budget too. That is the way of the world right now.

But in the long run, this change of attitude, of recognition for our team should help boost capabilities and potential budget. Along with and until that change, we will have to educate, train and adapt to our administrative changes and figure out how to do what will be required of us.

Stay Safe,  
Mark Phillips  
Editor / Publisher  
[PSDiver Monthly](#)

**If you would like to discuss this topic or any other, join our discussion group at:**  
[CLICK HERE TO JOIN](#)





# SPECIAL to PSDiver Monthly

## Public Safety Diver – EPA Polluted Water Diving Module 3 (Part 2 of 3)

By: Sean Sheldrake, Unit Diving Officer, EPA Region 10  
Rob Pedersen, Deputy Unit Diving Officer, EPA Region 10  
Alan Humphrey, Unit Diving Officer, ERT

### Module 3. Personal Protective Equipment and Decontamination

There are a number of ways to protect the diver from various levels of dive site contamination. These methods include: keeping the diver completely dry through use of a dry suit, utilization of dry gloves, ensuring materials including the dry suit are constructed of an easily decontaminated material such as vulcanized rubber ([USEPA, 1985](#)), use of a positive pressure full face mask that seats on a dry hood or preferably a hardhat that mates directly to the dry suit ([USEPA 1985](#); Barsky 1999, USN 2008), appropriate training, and thorough decontamination such as a potable water post-dive rinse ([USEPA 2001, 2009c](#)). For example, inappropriate dry suit material (neoprene) and wet gloves are being used by a commercial diver at a polluted water dive site (See Figure below). A neoprene dry suit cannot be decontaminated and can spread contaminants onto the boat and potentially to the next dive operation ([USEPA, 1991](#)). A slick rubber suit is generally considered more amenable

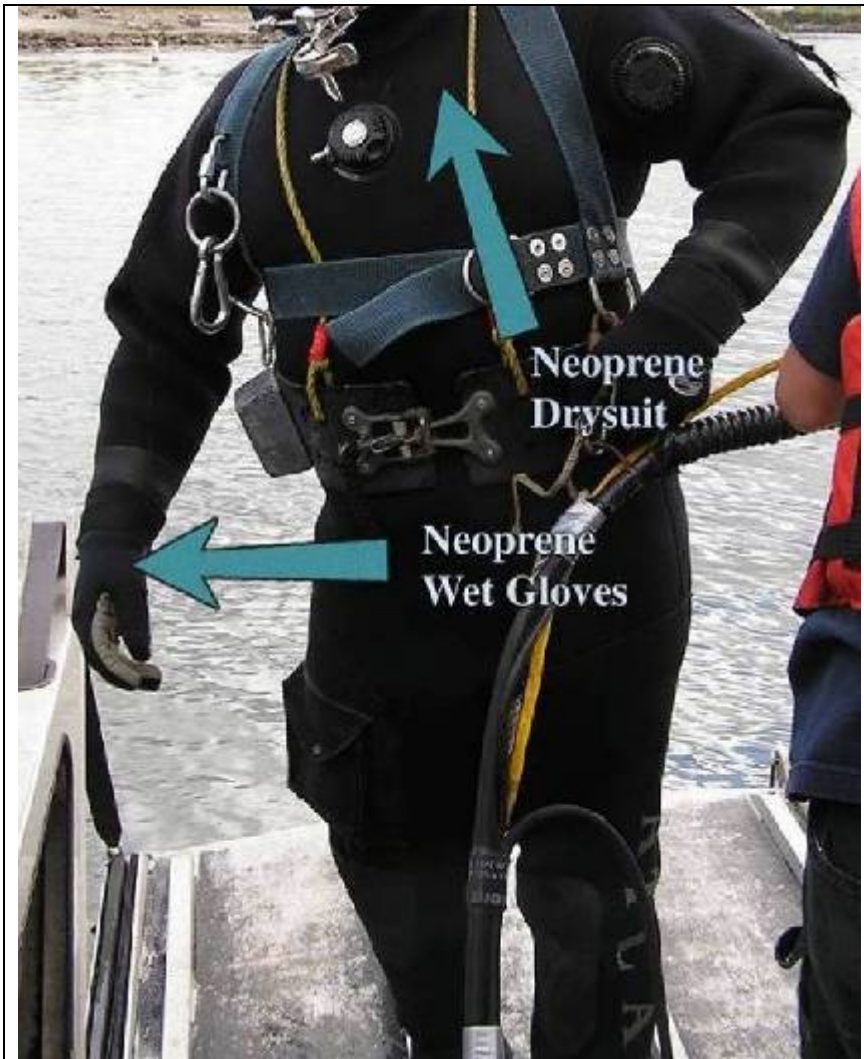
to decontamination ([USEPA, 1985](#)), though breakthrough for certain chemicals remains a concern ([Trelleborg Viking, 2001](#)).

As far as accepted PPE approach, there is some disagreement between EPA and the USN regarding use of a positive pressure full face mask seated on a dry hood, which the USN in their Guidance for Diving in Contaminated Waters generally considers to be inappropriate for polluted water as "...full-face masks offer no protection for the Diver's head, neck, or ears, all of which are potential sites for

exposure to waterborne hazards" which is only true if the full face mask is not used in conjunction with a properly fitting dry hood. The USN correctly points out that there is a droplet inhalation concern, even when using a positive pressure mask such as the positive pressure Interspiro AGA. USN notes that when using the AGA or any other full face mask, positive pressure is preferred to minimize exposure, for which there is general agreement amongst all agencies based on previous study ([USEPA, 1985](#)). USN



**Figure 5; Photo of EPA Dive Training at the Office of Research and Development Gulf Ecology Division Lab (ORD-GED) in Gulf Breeze, Florida. Photo by Sean Sheldrake, EPA Region 10 Dive Team**



**Figure 6. A diver exiting the water at a Portland Harbor Superfund Cleanup site. Neoprene materials cannot be decontaminated.**

also points out that most commercial divers use helmets, not full face masks. However, the USN guidance fails to

cite that many commercial divers fail to properly mate the diving helmet to the dry suit to gain the stated advantages of helmet usage. Rather, most commercial contractors use neoprene neck dams for this purpose (contrary to EPA and USN publications on proper helmet mating to the suit), which can leak profusely into the diver's helmet if the helmet is in any position other than absolutely level, with the amount of leakage varying by tightness of the neoprene ([USEPA 2009b](#)). In other words, incorrect helmet mating can render the helmet no more protective, and potentially less protective than a positive pressure, full face mask.

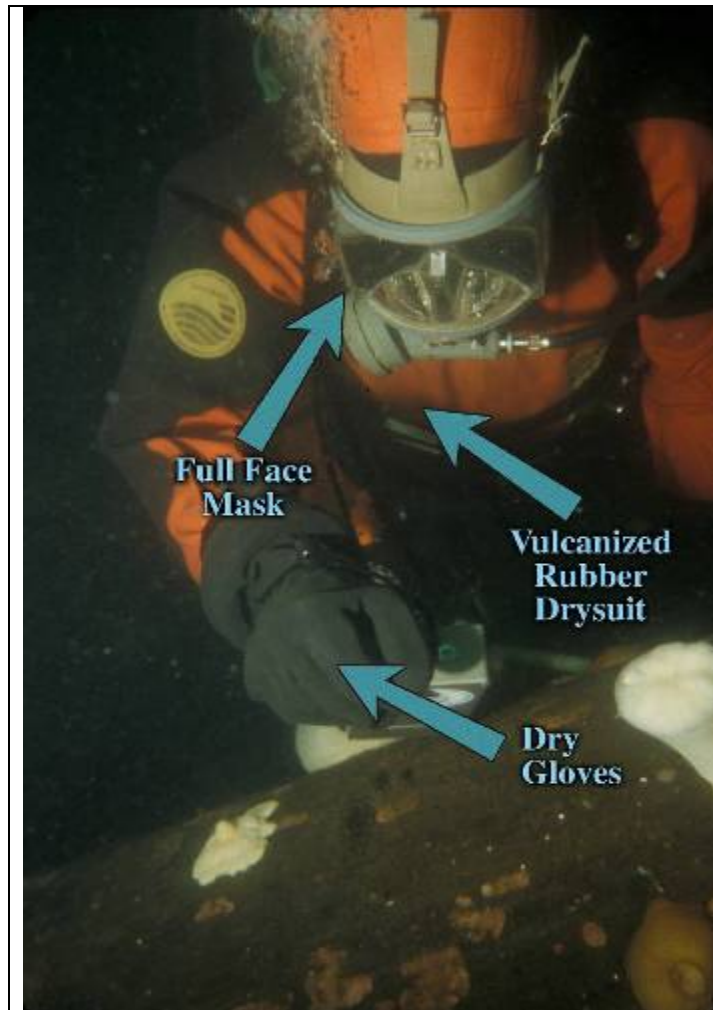
The Navy's "category 3" level of full face mask protection due to lack of a dry suit and dry hood allows for diver dermal (over the head and neck) and ear exposure to contamination. The USN's characterization of insufficient protectiveness of the full face mask/not using the full face mask in conjunction with a dry suit/dry hood leads the USN to primarily dive in wetsuit (category 4) or Viking and helmet diving modes (category 2) as the USN category 3 is not or is not believed to be sufficiently protective. This is a significant difference in PPE; essentially jumping from virtually no protection to some of the highest level of protection available, potentially causing more exposure to their divers in light to moderately contaminated environments, especially in areas where the quantity of gear involved with category 2 can be prohibitive. Likewise, the types of water for which the Navy recommends this type of gear jumps from not polluted at all for category 4 to "heavily contaminated" in the case of category 2. Category 3 dives are exposing the Navy diver through dermal and ear canal exposure to

“moderately contaminated” water due to the lack of dry hood/dry suit usage in category 3.

For example, in a water body such as a harbor with many nearby outfalls that are not currently discharging, lacking available data, EPA Region 10 and ERT would use a full face mask seated on a dry hood, dry gloves, and a potable water rinse for both a) unknown pollutants that may likely exist due to historical practices in the water body, and b) the possibility that conditions could change due to a sudden outfall discharge.

Admittedly, keeping the diver fully dry is easier in cold water and air conditions prevalent to Region 10 inland and coastal waters in Alaska, Oregon, Idaho, and Washington much of the year.

However, the Region 10 dive unit effectively demonstrated management of heat stress in triple digit temperatures with varying levels of humidity for both inland (Yakima River) and Puget Sound operations (Duwamish River), primarily through the use of potable water washdown of



**Figure 7: EPA Region 10 Diver Rob Pedersen mapping the zone of discharge along the outfall pipe at an Alaskan Seafood Processor. Note the diver is kept fully dry in decon. compatible gear. Photo by Sean Sheldrake, EPA Region 10 Dive Team.**

primary and standby divers on a regular basis when on the dive platform. This has also included management of heat stress in warm water conditions (~70-75degrees F) present in the Willamette River in conjunction with high air temperature. Therefore, even absent historical conditions, the presence of outfalls would be enough to trigger use of the above gear, since heat stress can be managed more easily than exposure to some exotic disease vectors. It is possible that a hardhat type diver dress may be most appropriate for some number of sites. However, it could also be the case that defining PPE as only including a commercial hardhat mated to a dry suit may discourage dive programs from taking some measures in PPE improvements due to the time and logistical challenges of surface supplied helmet diving, resulting in additional diver exposure. For some dive operations, surface supplied/hardhat measures are simply impractical due to space, cost, or time constraints in response to the dive site, such as in the rescue phases of public safety diving.



Wet gloves are often inappropriately used for polluted water diving (Figure 6), which the divers may have deemed necessary due to impingement hazards that may compromise dry gloves.



**Figure 8: Photo of pooled creosote contamination on the bottom of Puget Sound. Photo by Sean Sheldrake, EPA Region 10 Dive Team.**

Wet gloves used in polluted water cannot be decontaminated and should be disposed of after dive operations and/or specially managed to not expose tenders and divers on this or the next dive operation. Wet gloves also potentially introduce dermal exposure to the diver during the dive, which can be significant for certain readily absorbed chemicals. Also, chemicals like polyaromatic hydrocarbons and creosote can quickly burn exposed skin when using a wetsuit or wet gloves (Figure 8). A better course might be to put nitrile or rubber gardening-type gloves over dry gloves to offer some chafing protection, and then dispose of all the gloves after the dives.

Dry suit leakage is also a substantial concern for dermal exposure, essentially rendering the dry suit to be no more

protective than a wetsuit, ([USEPA, 2009b](#)). In addition to testing suits before certain polluted water dives, diving should be discontinued in the event of a dry suit leak, the thermal undergarments separately washed, the diver showered, and the suit immediately repaired ([USEPA, 1985](#)). Due to the frequency of polluted water diving operations, Region 10 maintains leak testing equipment in its dive locker such that leaks found during polluted and non polluted water dives are immediately repaired. This equipment consists of neck and wrist clamps to allow the suit to hold air, reversing the exhaust valve such that the dry suit (e.g. Viking) can hold sufficient pressure to detect leaks, and localizing leaks via a soap and water spray.

Some dive programs may fully understand what appropriate PPE is, but may have a different view of what constitutes polluted water. Unfortunately, what constitute



**Figure 10: ERT diver undergoing potable water decontamination at the McCormick and Baxter portion of the Portland Harbor Superfund Site. The Region 10 and ERT divers were collecting contaminated bottom sediment cores for lab analysis. Photo by Bruce Duncan, EPA Region 10 Dive Team.**

s polluted water is a complex issue, and seems to mean different things to many, even amongst federal entities. More and more of the dive sites we are asked to dive are [at times] polluted, or more extensively polluted each day. One test showing the site is clean can be negated later in the day by rainfall or a turned valve. To that end, there is a wide variety of what EPA considers to be polluted water, where a positive pressure full face mask seated on a dry hood (e.g. Viking with a turbo or magnum hood) offers the diver a modicum of protection. For its own operations, EPA Region 10 finds that use of gear appropriate for mild to moderate polluted water is appropriate given the episodic or otherwise unknown nature of some releases into the environment.

Decontamination solutions are well understood from decades of testing. Some dive units may choose not to decontaminate their divers due to the increased logistical needs for collection of various wash down rinses, such as those noted in Table 5-1 of the USN guidance on Contaminated Water Diving, like the 5 percent bleach solution. Because of the ease of use of the potable water rinse (i.e. no general need to collect rinse water) and general lack of wear and tear on equipment in using this solution, EPA Region 10 conducted a study of decontamination solutions on bacteria. EPA Region 10 has found that a [potable water rinse](#) is quite effective in removing bacteria when used with decontamination compatible gear, such as the Viking dry suit ([USEPA, 2009c](#)).

With certain exceptions, appropriate PPE and decontamination protocols for polluted water is well documented. What seems to vary amongst dive units is

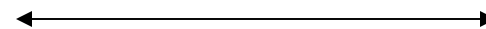
a) what constitutes polluted water, and b) what types of dive sites trigger additional measures, such that rigorous protocols, e.g. category two from the USN guidance, is put into place. Too often, the absence of information and/or elevated dive site temperatures are viewed as being compatible with lower levels of protection for the diver and tenders.

**Disclaimer:** *This paper is an illustration of steps to be taken to minimize exposure to the diver in hazardous environments and does not necessarily represent the official view of the USEPA. Mention of any specific brand or model instrument or material does not constitute endorsement by the USEPA.*



**Figure 9. A diver exiting the water at a Portland Harbor Superfund Cleanup site. Neoprene materials cannot be decontaminated.**

**Next Month Part 3**



# SPECIAL to PSDiver Monthly

## “Decompression Injuries” Dive Alert Network

Public safety divers are some of the most conscientious divers in the water, but even with all the buffers, incidents of decompression injuries may still occur. It is important that dive teams take steps to mitigate their risk.

Just as you would practice a fire rescue or an emergency evacuation, dive emergency protocols should be an integral part of drills. In order to ensure the safety of your dive team, each member should be trained and prepared to handle any diving emergency that may occur. Familiarizing your team with local sites ahead of time, using sonar depth finders and calculating air consumption rates can help your team safely prepare for each dive. It is important that each member dives within his limits and recognizes when conditions are unsafe enough that continuing to dive puts himself and the team at too much risk.

The Trans World Airlines Flight 800 (TWA 800) recovery operation is a prime example of teams recognizing their limits and pulling in additional resources to help accomplish safely the enormous task at hand. In July 1996, the Boeing 747 exploded just 12 minutes after takeoff crashing off the coast of Long Island, N.Y. This recovery effort required collaboration between the U.S. Navy, the Federal Bureau of Investigation, local law

enforcement and fire departments in order to recover all of the 230 victims of the crash and the majority of the airplane.

The search was complicated by icy conditions, entanglement hazards and deep diving in cold, swift waters that encompassed a massive offshore search area. By pulling in additional resources, the team reduced the stress put on them, which helped to mitigate their risk of DCI or other injury.

### **DCI: a quick review**

Decompression illness (DCI) incorporates two separate conditions: decompression sickness (DCS) and arterial gas embolism (AGE). From the pre-hospital caregiver's perspective, it is important to be able to recognize the symptoms of both conditions, but it is not essential to differentiate between the two since both conditions are treated on-scene with oxygen and, ultimately, with hyperbaric oxygen therapy.

**DCS** is generally characterized by muscle or joint pain that does not subside, rash, dizziness, numbness or tingling, paralysis, or extreme fatigue out of proportion

### **TWA Flight 800 \* Links**

[http://en.wikipedia.org/wiki/TWA\\_Flight\\_800](http://en.wikipedia.org/wiki/TWA_Flight_800)

**Associated Retired Aviation Professionals  
The Flight 800 Investigation**

<http://twa800.com/>



<http://www.nts.gov/Events/twa800/>



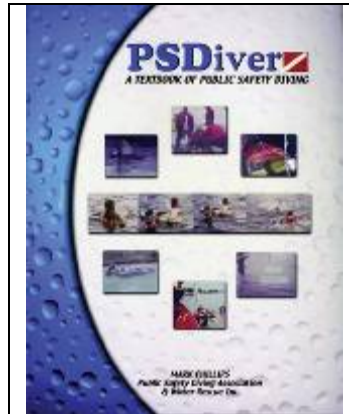
with the exertion of the dive. Divers exhibiting symptoms of DCS may also have trouble walking.

**AGE** symptoms typically occur during or immediately after surfacing and generally present as sudden unconsciousness or neurological symptoms. If initially survived, symptoms can include unsteady gait, disorientation, personality changes, weakness and paralysis. AGE may also be associated with pulmonary barotrauma which may appear as a bloody froth in the mouth or nose.

Symptom onset of a decompression illness is typically from 15 minutes to 12 hours after surfacing. If new symptoms occur after 24 hours, DCS is not likely to be the cause; however, if the diver flies after diving, delayed symptoms of DCS may occur during flight.

### **Injury Response**

Should one of the divers on your team exhibit these symptoms, monitor their circulation, airway and breathing (C-A-B). In a diving emergency, the primary first aid treatment is for trained oxygen providers to administer 100 percent oxygen using either a demand inhalator valve or a well-fitting non-rebreather mask at 15 liters



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per minute (lpm). The goal is to facilitate a wide pressure gradient between nitrogen and oxygen which will allow for easier diffusion of nitrogen out of the body. All team members should be trained in the use of emergency oxygen.

Oxygen first aid allows more efficient elimination of excess nitrogen. During a dive, the body tissues absorb nitrogen from the diver's breathing gas. When the diver ascends, if the pressure is reduced too quickly or the nitrogen load is excessive, the nitrogen in the body may come out of solution and form bubbles. The presence of these nitrogen bubbles can lead to a variety of issues including disruption of the blood and blood vessel function, nerve tissue damage and generalized tissue inflammation, among others. When a diver breathes 100 percent oxygen, the absence of nitrogen in the breathing gas increases the rate at which nitrogen leaves the tissues, and as a result, reduces bubble size. Oxygen first aid oxygenates hypoxic (oxygen deprived) tissues, helps to relieve symptoms of DCS and reduces the risk of residual symptoms after hyperbaric treatment.

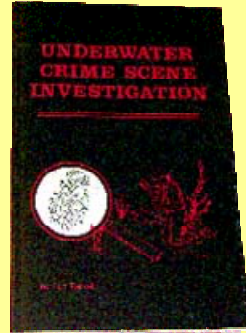
After you have assessed and stabilized the diver (monitored C-A-B and a trained provider has administered oxygen first aid), ensure pre-hospital personnel trained in dive medicine are present and follow the established protocols. Then call the **DAN Emergency Hotline at +1-919-684-9111**. If you are not familiar with first aid protocols and



assessment, call DAN first or take the diver to the nearest emergency department; DAN can walk you through the protocols, help obtain emergency medical care and act as the liaison for emergency medical personnel.

When determining a diver's risk of DCI, DAN medics consider several factors: the provocative nature of the dive, specific symptoms and timing of symptom onset following a dive. DAN cannot make a diagnosis over the phone, but can help recognize signs and symptoms of DCI, advise caregivers on proper management and coordinate transportation of the injured diver to a higher level of emergency care. DAN selects the hyperbaric chamber that will best meet the diver's specific treatment needs based on a continually updated database of chambers that DAN maintains. It is not advisable to transport an injured diver to a chamber without contacting DAN first; the closest chamber may not be the most appropriate chamber, because the facilities may not be open, operating, staffed or properly equipped to treat the diver's injury. DAN will facilitate the diver's transfer and work with the chamber's

**“Underwater Crime Scene Investigation”  
By Eric Tackett**



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**Preemptive Measures & Team Resources**

A dive team should be equipped with the skills and tools necessary to help ensure each member's safety. A [Dive Medical Technician \(DMT\)](#) is a valuable asset for any public safety diving team. DMTs are trained to respond to diving emergencies and certified to provide emergency care and basic life support to injured divers in the field. As both a diver and medical professional with advanced diving medicine training, a DMT is trained to identify and manage an emergency situation while effectively relaying information to DAN and physicians in remote locations. DMTs receive training in chamber operations and may function as operators or patient tenders. DMT-certified divers should keep their certifications up-to-date by taking continuing education hours for recertification every two years.



If you have any questions about the [DAN DMT course](#) or [DMT continuing education course](#), contact DAN Education at +1-919-684-2948 or email [oxygen@diversalertnetwork.org](mailto:oxygen@diversalertnetwork.org).

**GRANTS**

Having the right safety tools to respond to an emergency situation is essential: Automated External Defibrillators (AEDs) allow first aid providers to apply an electric shock across the heart to restart it when it has gone into cardiac arrest caused by ventricular fibrillation. DAN offers a

[training program](#) to teach divers how to use Automated External Defibrillators (AEDs) in a dive setting; DAN also offers the [AED Matching Grant Program](#), which makes them more affordable for dive teams who need to purchase one by reducing the cost by half. Grant recipients are responsible for paying half of the cost of the machine.

Oxygen first aid is a vital step in response to many dive injuries. If your team does not have access to an emergency oxygen unit, consider applying for one through the [Oxygen Grant Program](#). If your public safety diving team meets the [qualifications](#), DAN can provide [DAN Oxygen Units](#). These grant requests are determined on a case-by-case basis. In order to be considered, your team must be trained to use the equipment through the [DAN Oxygen First Aid for Scuba Diving Injuries](#) course.

And remember, DAN is here for you to provide education, preparation and emergency response. If you have any questions call the DAN Medical Information Line at +1-919-684-2948 or contact DAN via [email](#). Dive safely.



*Divers Alert Network (DAN) is a non-profit organization dedicated to the safety and health of recreational scuba divers. DAN operates a 24-hour emergency hotline (+1-919-684-9111) to help divers in need of medical emergency assistance in a diving or non-diving situation.*

## NEWS

### Fire, ice and water force evacuations by boat in Scituate

[http://www.bostonherald.com/news/regional/view/20101227/fire\\_ice\\_and\\_water\\_force\\_evacuations\\_by\\_boat\\_in\\_scituate/](http://www.bostonherald.com/news/regional/view/20101227/fire_ice_and_water_force_evacuations_by_boat_in_scituate/)  
December 27, 2010 By Richard Weir

Monday, flames leapt from a house to a neighboring bungalow on a flooded Scituate oceanfront street, forcing firefighters to evacuate residents by boat this morning.

Firefighters in scuba dry suits waded through chest-deep water among the tightly-packed beachside homes, fire officials said.

Fire department divers in inflatable rafts went door-to-door to evacuate residents on



*Photo by Stuart Cahill*

**Rescue workers evacuate a family from a flooded home in Scituate this morning where a fire broke out after flooding on 7th Avenue.**



7th Avenue, ferrying a couple and their young kids and several other adults from adjacent houses where the storm surge tides crested over a seawall and turned the flood-prone streets into a frigid lagoon.

The fire, apparently sparked by an arcing electrical panel in a vacant home, quickly spread by howling winds to another home about 10 feet away, destroying both houses before crews could stretch hoses through the deep water that prevented fire trucks from getting close to the burning buildings, officials said.

### Fire crews train for ice water rescue

[http://www.wishtv.com/dpp/news/local/south\\_central/fire-crews-train-for-ice-water-rescue](http://www.wishtv.com/dpp/news/local/south_central/fire-crews-train-for-ice-water-rescue)

31 Dec 2010 By: Jacqueline Policastro

**GREENWOOD, Ind.** (WISH) - Training for ice rescues is a dangerous job, but this week firefighters from White River Township spent time on the ice. They simulated saves on top of the water, but did not dive under water.

This training comes after [16-year-old Derek Lodestein was pulled out of an icy pond](#) in Bartholomew County on Dec. 22. It took Indiana State Police and Department of Natural Resources divers two hours to find the teen in the



White River Township firefighters train for ice rescues.

water.

Firefighters say that most ice dive missions are mostly recovery, not rescue.

If you're stuck under the ice, firefighters say you have just a few minutes to live.

"It's very cumbersome to get out there, and time is very, very important," said Greg Hurrle with the White River Fire Department.

Firefighters in Indiana aren't required to be trained in ice diving.

Firefighters estimate it would cost at least \$60,000 to start a five-person dive team. You need at least three divers in the water, two more as backup, and support on the ground.

That cost doesn't include personnel costs and yearly maintenance.

"Having a dive team on our fire department would just add an extra element of safety concerns, and a lot more cost," said Chief Kevin Skipper with the White River Fire Department.

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## Gresham firefighter earns praise for service

[http://www.theoutlookonline.com/news/print\\_story.php?story\\_id=129375347867380300](http://www.theoutlookonline.com/news/print_story.php?story_id=129375347867380300)

Jan 1, 2011 By Mara Stine The Gresham Outlook,

If it hadn't been for a car accident and a chance meeting with a childhood friend, Gresham's Firefighter of the Year would be an FBI agent.

And a young man who nearly drowned in the Sandy River this July would — most likely — be dead.

Instead, that young man walked to shore with help from rescuers, including Lt. Travis Soles and the rest of the Portland Fire & Rescue dive team.

Soles, 38, refuses to accept accolades for his role in the man's rescue. The way he sees it, any of the other divers there that night would have done the same thing.

"What's really embarrassing is we've got a whole department of Firefighters of the Year," he



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said, adding that his peers have made an art of providing more service with increasingly less funding. "We should have 80 to 90 Firefighters of the Year."

Maybe he's right.

But one thing is indisputable.

Soles is a true professional who is dedicated to his crew, station and community. And for that, three fellow firefighters and three officials with the Portland Fire & Rescue dive team nominated him for the Firefighter of the Year honor.

"We believe that he deserves this award not because of any one project or act but because of his constant professionalism and attitude," wrote Capt. Steve Best and firefighter Kurt Pothast.

Gresham Fire & Emergency Services Chief Scott Lewis presented Soles with the award on Dec. 9 during a privately funded ceremony at Persimmon Country Club.

Raised in Canby, Soles and his twin brother loved rafting, water skiing and surfing on the Oregon Coast. After studying for a few years at Clackamas Community College



*Jim Clark / The Outlook*

**Travis Soles' constant professionalism and attitude have earned him the title of Gresham's Firefighter of the Year.**

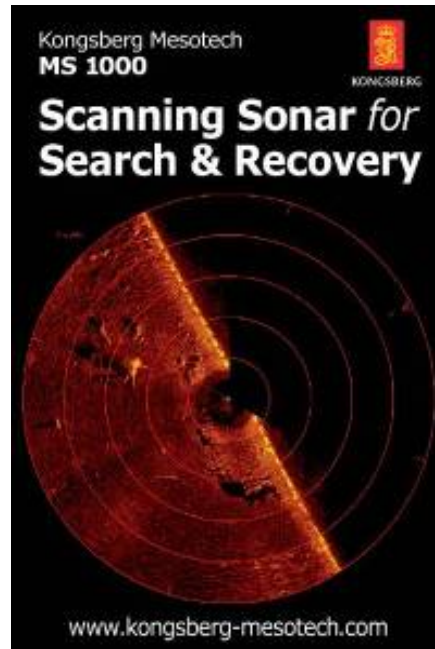
and Western Oregon State University, Soles transferred to the University of Oregon where his brother was a student.

A friend talked him into taking scuba classes. Before long, Soles became a dive instructor and taught at both the University of Oregon and Oregon State University.

With a bachelor's degree in English, Soles tested to become an FBI agent. He did well and was planning to complete the required psychological exam and a polygraph test when a car crashed in front of him. Soles stopped to help and recognized one of the firefighters on the scene as a childhood friend.

The friend was a volunteer firefighter for the Canby Fire Department. "We used to play firefighter as kids," Soles said during a break at Gresham's Station 71. "His dad was a Portland firefighter."

Soles and his friend stood on the side of the road catching up when the volunteer firefighter asked a life-changing question: "Have you ever thought of doing this?"



And that's how Soles became a volunteer firefighter at the Canby Fire Department and "walked away from the FBI," he said. "I was hooked. ... It's a combination of being able to help people and then from a selfish side of it, the variety. No two calls are ever the same. It's always something different."

In Canby, Soles joined the department's water rescue program. He completed his paramedic training and, 10 years ago, Gresham Fire & Emergency Services hired him as a firefighter/paramedic.

Soles has helped rebuild the department's water rescue program and worked with the Multnomah County Sheriff's Office dive team, which in 2008 merged with Portland Fire & Rescue's dive team. The team boasts 25 divers, including three from Gresham's fire department.

The team also responded to that near drowning in the Sandy River on July 10. A man and three friends were floating downstream on inner tubes when the man's tube flipped. His hand was tethered to a cooler on another inner tube, which got caught on a downed tree in the river.

Soles and fellow





diver/firefighter Rob Womack tried to cut him free with a knife. Ferguson managed to cut part of the tether but was pushed away by the rapids. While the victim struggled to keep his head above water, Soles realized he would have to go over the victim — drowning him further — to cut the rest of the tether.

Instead, he gave the knife to the victim.

Despite extreme cold from fighting rapids for an hour and a half, the young man cut the tether. Soles then held the man as they were washed downstream to other rescuers and a boat.

“It was probably one of the worst ones that I’ve ever been on,” Soles said of the rescue. At one point, he thought two rescuers would surely die when their raft flipped over while they tried to float downstream to reach the victim.

Miraculously, instead of being trapped in the same downed tree the victim was snagged on, the river washed them free.



When Soles is not rescuing people from rivers or fighting fires, he enjoys spending time at home in Oregon City with his family — wife Tiffany and sons Matthew, 6, and Andrew, 4.

## Divers search canal for shotgun after tip-off over double murder

<http://www.thisislondon.co.uk/standard/article-23911472-police-search-canal-for-gun-in-execution-murder-probe.do>

6 Jan 2011 Justin Davenport, Crime Editor

Police divers are searching a canal in east London for a gun used in a gangland double murder.

It follows a tip-off in the hunt for the killers of Jordan Jackson, 20, and girl-friend Layla Djemal-Northcott, 21.

The “executions” are among the most notorious of [Scotland Yard](#)'s unsolved murders.



**Victims: Jordan Jackson, 20, and girlfriend Layla Djemal-Northcott, 21**

The couple were killed in their Upper Norwood flat in 2006 by two men in ski masks armed with a pump-action shotgun.

Removals worker Mr Jackson was shot once in the neck as he answered the door to the flat in Menlo Gardens. His girlfriend, a post office worker, was shot once in the head at point-blank range as she lay in bed.

Mr Jackson's twin Kieron was seriously wounded but his girlfriend was not hurt after she hid from the gunmen, who fired a total of six shots after bursting into the flat at 6.40am on March 7, 2006.

A police diving team began searching Regent's Canal in [Tower Hamlets](#) today after receiving new intelligence to suggest the shotgun was thrown into it.

Detective Chief Inspector Neil Hutchison of Operation Trident said:

"This weapon could be the key to solving these murders. I believe these murders were pre-meditated



executions. The victims had no chance to run or defend themselves.

"I am hopeful someone may come forward. If anyone is reluctant because they are frightened I want to assure them they will be protected. They can be provided with anonymity."

Officers say Miss Djemal-Northcott was killed purely because she was in the flat at the time.

Her mother Christine Djemal said today: "Layla has not had the opportunity to finish college, get married, have children. She is deeply missed by her family."

Claudia Webbe, chairwoman of the Trident Independent Advisory Group, said: "I appeal to mothers, girlfriends, sisters. Do you have information that could help a mother finally find closure?"

There is a £20,000 reward for information leading to a conviction. Ring police on 0208 247 4553 or anonymously on 0800 555111.

More: [Divers hunt for gun in new murder link](#)



**Hook use refused to extricate woman feared dead in well**

<http://arabnews.com/saudi Arabia/article2323339.ece>

Jan 10, 2011 By **SULEIMAN AL-DIYABI | ARAB NEWS**

**TAIF: Relatives of a young woman who died after getting stuck in a bore well more than a week ago have rejected suggestions that a hook could be used to recover the body.**

“Such an attempt may result in mutilation of the body, which we fear is already decomposing,” one relative said.

The Civil Defense Department in Taif has also rejected the idea put forward by experts from Saudi Aramco. The woman’s family urged Civil Defense authorities to speed



**The company digging close to the Taif bore well in which a woman has been trapped is preparing to dig an artesian well to reach the woman's body. (AN photo)**

up efforts to recover the body in a safe and sound way, Al-Madinah Arabic daily reported.

Meanwhile, rescue efforts are under way on Monday after nine days of trying to recover the body of the 29-year-old woman, who got trapped in the 50-meter-deep well near the mountainous town of Shenaif, northeast of Taif.

Workers from an international company have continued to dig a deep well close by since Friday.

“On Sunday, the workers dug 25 meters down. They managed to break a hard rock that was in the way,” said Maj. Khaled Al-Qahtani, spokesman of Civil Defense in Taif, adding that digging works are expected to be completed today or tomorrow.



He said that divers would descend inside and recover the body once work is complete.

"They will then dig a trench from the bottom of the well to reach the bottom of the bore well, where the body of the woman is believed to be located," he said.

All rescue efforts to recover the woman over the past week have ended in failure. This is mainly because the well, which is full of water, is too narrow. When initial attempts to manually lift the body out failed, the Civil Defense brought in advanced detection and rescue equipment. Attempts to determine the exact location of the woman with the help of a thermal camera also failed.

Taif resident's hopes of rescuing the woman alive have almost faded and the tragedy has been a traumatic experience for them.

They have kept up to date with developments in their conversations and phone talks with friends and relatives.

Taif residents have also expressed anxiety over the presence of several abandoned bore wells in the region. They have started filling up some of them to avoid such tragedies in future.

The woman fell into the abandoned bore well near her house while she was strolling with relatives in the evening of January 2.

## Dive team's sacrifices commendable

<http://www.suffolknewsherald.com/2011/01/10/dive-team%E2%80%99s-sacrifices-commendable/>

January 10, 2011

Last month, I interviewed Suffolk Police Sgt. Chuck Terrell about his retirement. Terrell retired on New Year's Eve, a few days before my story about him ran in the newspaper.

Sgt. Terrell was one of the first Suffolk police officers I met when I started working at the Suffolk News-Herald more than four years ago. During those years, I interviewed him on several occasions, including about the importance of bulletproof vests (I remember Chuck knocking on his own chest to demonstrate that he wore his every day), the sacrifices of the dive team (Chuck was always ready to tell about what the dive team does, and why) and the community policing unit (yet another of the extra duties Chuck volunteered for).

He spent the most time on the honor guard, which benefited from his service for 24 of the 25 years he was on the police department.

However, in most of my interviews with him, his passion for the dive team was evident.

He spent plenty of time explaining to me and others why being a police diver is no vacation excursion.



Unlike leisure divers, those on law enforcement dive teams don't get to choose the time, place or temperature of their dives. They often are called out to dives in the nighttime hours and on days off, possibly a half-hour's drive from their home in the middle of a January rain.

And, also unlike leisure divers, law enforcement divers aren't looking for pretty fish and undersea formations. They could be seeking evidence in a crime, helping to recover a dead body or looking for the victim of a homicide, suicide or accidental death.

One of the last times I saw Sgt. Terrell was on Oct. 29 at Constant's Wharf Marina, where he had been called to help recover a body from the water. At this particular dive, the weather was nice and the water, he informed me, wasn't too cold.

However, it's clear that the dive team — for which participants volunteer — makes extraordinary sacrifices above and beyond the call of duty for police officers. With all the waterways, lakes and retention ponds within Suffolk, they also provide a necessary ancillary



service to the ordinary course of law enforcement in Suffolk.

So the next time you say a prayer for the public safety officers in Suffolk, remember to give special thanks for Terrell and others like him who volunteer for assignments that bring them added inconvenience, danger and sacrifice.

An advertisement for Ocean Eye, Inc. The top part says "Dive Equipment Sales &amp; Service For Commercial, Public Safety, &amp; Academic Diving". Below that is a logo featuring a diver's helmet with wrenches and the text "ocean eye, inc.". To the right, it says "Announcing KMDSI Sales and Service!". The middle section lists services: "Equipment Inspection • Annual Helmet Maintenance", "Commercial Helmet Rebuilds • Regulator Repair", "Custom Helmet Brackets &amp; Umbilical Services", and "Drysuit Repair/Modification". Below that, it says "Equipment Maintenance" and "Equipment Sales". At the bottom, it provides the phone number "610.621.5750", the email "OESales@Ocean-Eye.net", and the website "www.OceanEyeInc.com".

### Sandown firefighter dies during training

<http://www.unionleader.com/article.aspx?headline=Sandown+firefighter+dies+during+training&articleId=3a5af81b-df31-45c4-a877-83001c9622ed>

Jan. 16, 2011 By JASON SCHREIBER Union Leader Correspondent

SANDOWN – A local volunteer firefighter suffered a fatal heart attack Sunday after climbing out of the Exeter River following a cold-water rescue training session, a fire official said.

Harold Frey, 46, of Sandown, had joined the department only recently.



The former Epping firefighter/paramedic was a full-time paramedic with CAREPLUS Ambulance Service in Nashua.

State Fire Marshal William Degnan said the heart attack happened around 11 a.m. As Frey was coming up over



**A despondent Tshwane firefighter after all attempts to resuscitate his colleague, Henry Knox, failed. (Deaan Vivier, Beeld)**

the bank of the Exeter River off Phillips Road, he began experiencing difficulty breathing, Degnan said.

Emergency personnel quickly administered aid and continued to treat him as he was transported to Parkland Medical Center in Derry, where he was pronounced dead.

Degnan acknowledged the dangers that come with firefighting and rescue work. "Any firefighter function has a significant amount of stress," he said.

In a statement, Sandown Fire Chief Wilfred Tapley said that while Frey was relatively new to the department, he will be missed.

"It's been very difficult for the department," Degnan said. "It's a true brotherhood."

Other Sandown firefighters were too shaken to talk as they comforted one of Frey's daughters before she left the station Sunday night.

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Frey was just settling in at the fire department after recently moving from Epping to Sandown, friends said.

"He was one of the better paramedics I've known," said Epping Deputy Fire Chief Bruce Chapman, who worked closely with Frey when he was a full-time firefighter/paramedic in Epping.

"It can be a dangerous job and you know it when you sign on the dotted line," Chapman said.

Chapman said he liked to tease Frey about his bald head and nicknamed him the "Hairless Wonder."

"We'd pull practical jokes on each other all the time," said Fremont Deputy Fire Chief Kevin Zukas, a retired Epping fire captain who worked with Frey in Epping.

Chapman still remembers the day when Epping firefighters responded to a structure fire and he asked Frey why he hadn't entered the building yet.

"It's dark and smoky in there," Frey joked before going inside and performing the job he loved.



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Friends said Frey moved to New Hampshire from Tennessee. He was a member of the New Hampshire Chapter 5 Red Knights Firefighters' Motorcycle Club, which meets regularly in Epping. Chapman said the last time he saw Frey was last Sunday when he attended a club meeting.

"Harold was a great guy, was a great teacher and a great paramedic," said Steve Arneil, a

firefighter/EMT from Epping who worked with Frey in Epping and at CAREPLUS Ambulance Service.

Firefighters recalled how much Frey loved his coffee and his General Robert E. Lee coffee mug.

"It was a big coffee mug," Zukas said with a laugh.

Members of the Granite State Fire Service Support Team were at the fire station to offer assistance.



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## Come on Knoxie, not today! - frantic rescuers

<http://www.news24.com/SouthAfrica/News/Come-on-Knoxie-not-today-frantic-friends-20110117>

2011-01-17 Fanie van Rooyen, Beeld

Pretoria – Experienced, exhausted rescue workers from the Tshwane fire brigade cried openly and hugged each other on the banks of the Hennops River in Irene, Centurion, on Monday morning after a colleague died trying to save flood victims.

Henry Knox, 42, was pinned underwater by his kayak after it capsized.

Rescue workers tried for 45 minutes non-stop to revive Knox with mouth-to-mouth resuscitation.

Knox, who was based at the Wonderboom fire station, was declared dead on arrival at the Unitas hospital after being flown there in a police helicopter.

The pent-up emotion started to show after the rescuers



had loaded him onto a stretcher and into a police helicopter.

“It is a very sad day for us,” Johan Pieterse, spokesperson for the Tshwane fire brigade, said on Monday.

“Henry has been a fireman for nearly 24 years. Everyone knew him. He’s the first fireman from Pretoria to die while on duty. Many a grown man is in tears today (Monday).”

According to him, Knox was a highly experienced fireman.

### Search called off

Knox and his colleagues, as well as several police divers were searching on Monday for seven people who, according to a witness, were swept away by floodwaters after heavy morning rain.

Pieterse said the fire brigade saved another seven people from the floodwaters in Centurion and Irene and at least three vehicles were swept off a bridge.

“A young man in a VW Golf was swept away by the Kaal River, a tributary of the Hennops River and came to a



stop near the Glen Road (M18) bridge over the river, south of Irene," said Pieterse.



The man's car had turned over onto its roof in the water and as a result he had to spend three hours standing on the chassis and holding onto a tree before he could be brought to safety.

"He told us that, while he was stuck, he saw seven people being swept past him by the deluge, which is why we started the search."

Late on Monday Pieterse said the search for these seven people was called off because no family members had come forward to report missing persons.

### **Taken away by helicopter**

Beeld's reporters moved down along the riverbank, thick with brush, and saw rescue workers trying to resuscitate Knox, who had been pulled from the water onto an island.

After several minutes the firefighters threw a rope from the kayak to the reporters so they could bring their friend

to the shore.

Once on the river bank they started mouth-to-mouth resuscitation again as rescue workers repeatedly told their friend: "Komaan, Knoxie! Nie vandag nie ou pël!" (Come on, Knoxie! Not today old pal!)

Paramedics from Netcare 911 emergency services arrived on the scene and put Knox on a ventilator before he was taken away by police helicopter.

Earlier on Monday two people had to be rescued from an island and a further two from high walls in the Centurion golf estate.

At the bridge over the Hennops River in Nellmapius Road in Irene a woman was saved from the roof of her Mercedes-Benz, which had been swept along by the deluge.

### **Family dispute Vaal suicide claim**

<http://www.sowetanlive.co.za/news/2011/01/18/family-dispute-vaal-suicide-claim>

Jan 18, 2011 | Smanga Kumalo

### **MYSTERY surrounds the disappearance of a 21-year-old woman on January 2 after her boyfriend claimed she committed suicide by jumping into the Vaal River**

The devastated family of Vuyiswa Buyane believe she was murdered and then thrown into the river and now want answers from the businessman.



On the last day Buyane was seen alive the man allegedly asked her to accompany him to Emerald Casino in Vanderbijlpark.

The family said the man told them that after stopping next to the river to watch the floods and to answer the call of nature, he suddenly saw Buyane take off her shoes, jump into the water and disappear.

Buyane's aunt Georgina Moloke said, "We only want the truth from this guy - if he murdered her he must tell us the truth.

"There is no way that Vuyiswa could have committed suicide."

Moloke said it was strange that the couple would have gone through Barrage on their way to the casino.



**"We only want the truth from this guy - if he murdered her he must tell us the truth"**

"If they were headed for the casino they were supposed to go via Sasolburg, and that they stopped to do some sightseeing at the river at about 11.30pm is suspicious because one can't see (well) in the dark," she said.

Barrage police spokesperson Captain Rashaad Makhene said police were investigating Buyane's disappearance.

"We have searched for the body but to no avail.

"Yesterday (Sunday) we did not go there because the Vaal River is full and overflowing," Makhene said.

After the alleged suicide the man called the Barrage police to report the incident and when the police arrived they found him with his friend waiting on top of the bridge.

"They told us that the woman had fallen into the river.

"The police divers tried searching for her but they could not find her," Makhene said.

An advertisement for EdgeTech's search and recovery equipment. It features a yellow header with the text "Search &amp; Recovery Checklist:". Below this, there is a checklist with three items, each preceded by a checkmark: "Boat", "EdgeTech's Ultra High Resolution 4125-P Search &amp; Recovery Side Scan Sonar System", and "Peace of mind knowing you have the best system for the job". The background of the advertisement is an underwater scene. In the bottom left corner, there is a photograph of the EdgeTech 4125-P sonar system on a boat deck. In the bottom right corner, there is a photograph of a person using the system. To the right of the photograph, there is text that reads: "For more information on how the easy to use 4125-P can simplify your search &amp; recovery operations visit EdgeTech.com or call us at 1-508-291-0057." At the bottom of the advertisement, the EdgeTech logo is displayed with the tagline "Cutting Edge Technology Simplified."

## Kettering police diver to be inducted into hall of fame

<http://newstalkradiowho.com/localnews/2011/01/kettering-police-diver-to-be-i.html>

January 19, 2011 By Charlie Van Sant

Ohio -- Police Detective Gina Bier, a 16-year veteran of the department, will be inducted into the Women Divers Hall of Fame in March. The hall is comprised of pioneers, leaders, innovators and world-record holders from the world of international diving.

Bier is the first police officer to receive such an honor.

KPD leaders say that Bier has unique training which has been used in search and rescue. She was involved in the attempted search and rescue of Erica Baker in 1999.

Bier has contributed her diving expertise to the Tactical Crime Suppression Unit, of which KPD is a participant. She has also trained firefighters in search and rescue diving techniques.

## Police divers recover guns

Reason for search of pond is unknown

<http://staugustine.com/news/local-news/2011-01-18/police-divers-recover-guns>

January 19, 2011 By [Dan Scanlan](#)

An extensive underwater search Tuesday of a retention pond just north of St.

Augustine turned up at least two handguns as divers from the St. Johns County Sheriff's Office joined with the FBI and Jacksonville Sheriff's Office to look for evidence in a case.

None of the agencies will discuss the case, however.

The rectangular pond -- used for Nocatee's reclaimed water -- is off Valley Ridge Boulevard. It's in the 11000 block of Old Dixie Highway, a dirt road across from a Gate station east of U.S. 1.

FBI Special Agent Jeff Westcott could only say it's a joint-investigation search for evidence. It started Tuesday morning with diver after diver plunging into the murky 50-degree water, tethered to a shore-bound deputy.



**A member of the St. Johns Sheriff's Office dive team carries a revolver recovered by a diver from a retention pond early Tuesday afternoon. St. Johns County Sheriff's Office dive team members spent the morning searching a retention pond off County Road 210 near US 1 in St. Johns county Tuesday. They were part of a three agency team, St. Johns County Sheriff's Office, Jacksonville Sheriff's Office and the FBI that were working together searching the bottom of the pond with metal detectors. The FBI agent at the scene would give no information about the nature of the search.**

**By BOB SELF, Morris News Service**

One black revolver was pulled from the weed-choked waters just before noon after a deputy onshore yelled for someone to bring over a pair of latex gloves. An FBI agent took photographs, then washed it off and secured it in an evidence box.

"It was right on top of the dirt," the diver was heard to say.

As it was being taken away, authorities

were also heard saying that this was the third weapon found at that point. Another revolver, encrusted in mud, was found about 12:30 p.m. by another diver and secured just as quickly.



**A member of the St. Johns County Sheriff's Office dive team emerges from a retention pond with a revolver early Tuesday afternoon. St. Johns County Sheriff's Office dive team members were searching a retention pond off County Road 210 near U.S. 1 in St. Johns County on Tuesday morning. They were part of a three agency team, St. Johns County Sheriff's Office, Jacksonville Sheriff's Office and the FBI that were working together searching the bottom of the pond with metal detectors. The FBI agent at the scene would give no information about the nature of the search.**

**By BOB SELF, Morris News Service**

Divers said the pond was at least 40 feet deep and were seen repeatedly clearing long green weeds off the tether rope as well as a metal detector being used to search for more weapons. The search was continuing Tuesday afternoon in the same section of the pond.

The Jacksonville and St. Johns County Sheriff's Offices would only confirm they were helping in a joint investigation.



**By BOB SELF, Morris News Service**

**Members of the St. Johns County Sheriff's Office dive team spent Tuesday in a retention pond off County Road 210 near US 1 in St. Johns county Tuesday morning. They were part of a three agency team, St. Johns County Sheriff's Office, Jacksonville Sheriff's Office and the FBI that were working together searching the bottom of the pond with metal detectors. The FBI agent at the scene would give no information about the nature of the search but two pistols were recovered from the pond by divers by early Tuesday afternoon.**

## **NSW Police divers find more bones**

<http://www.abc.net.au/local/stories/2011/01/23/3119325.htm>

23 January, 2011 By Noah Schultz-Byard (Cross Media Reporter) **VIDEO ON SITE**



A police dive squad has found dozens more human bones at a Menindee Lake regulator in the far west of NSW.

Police say, while nothing has been confirmed, these bones appear to be from the same body as two others discovered over recent weeks.

Coordinator of the NSW Police Diving Unit, Mal Jeffs, said the team had collected many objects that would help local police in their enquiry.

"We've found a number of items that we've handed over to detectives to help them in their investigation."

Matt McCarthy from the Broken Hill Detectives Office says they are not ruling out any possibilities when it comes to identifying the body.

"We've got a strike force at the moment... obviously we're in liaison with missing persons units, interstate as well as New South Wales, and the New South Wales Homicide Squad."

Reports from within the media that the remains were confirmed as the body of missing Victorian man Daniel Rosewall have been dismissed by the police.

"Mr Rosewall was reported missing some distance

from here, but obviously he's one of our lines of inquiry.

"There's nothing to suggest it is (him), but obviously we're not ruling it out." Mr McCarthy said.

The bones were found scattered throughout a weir pool just beside the Little Menindee Creek regulator.

The possibility of the original remains being brought downstream by flood waters now seems less likely because of these recent finds.

"We're obviously not discounting anything at the moment, although with the hydrology of this area of the river... (it seems) unlikely."



Authorities are asking for anyone with information to contact Crime Stoppers or their local police station.

Noah Schultz-Byard and Natalie Whiting spoke with Sergeant Matt McCarthy regarding the dive squad's findings...

## Sonar search finds what Kenner police suspect is NFL safety's brother

[http://www.nola.com/crime/index.ssf/2011/01/body\\_found\\_in\\_mississippi\\_beli.html](http://www.nola.com/crime/index.ssf/2011/01/body_found_in_mississippi_beli.html)

January 23, 2011

Volunteer searchers in the [Mississippi River](#) today found what was thought to be the body of the [missing brother of Baltimore Ravens safety Ed Reed](#), Kenner police said.

But when a diver checked the site, no body was found. The recovery effort was then suspended for the night.

Authorities responded to the discovery at about 3:45 p.m. at the south end of [Alliance Street](#), near the St. Charles Parish line. Soon after, scores of relatives and family friends gathered near the base of the Mississippi River levee, waiting to find out if the body was recovered.

The spot is less than a mile downriver from where a man who is thought to be Brian Reed, 29, jumped into the water Jan. 6 as he fled from police on River Road.

A St. Charles Parish deputy sheriff had been flagged down by a witness who reported a car driving erratically. The deputy found the man

stopped on the side of the road. When the deputy received a call about a stolen vehicle that matched the description of the man's car, the man drove off with the deputy in pursuit.

The deputy saw the man enter the water in Kenner.

Authorities fruitlessly searched the area for days.

On Wednesday, however, Reed's family brought in a volunteer outfit, [Texas Equusearch](#), to use sonar and divers, police Lt. Wayne McInnis said. Sonar detected a presumed body in about 15 feet of water, 25 to 30 feet offshore. But when a diver checked the location, no body was found, McInnis said.



Matthew Hinton / The Times Picayune

The body was thought to be tangled around a beam and some debris in the brackish river water, McInnis said. The search operation, which lasted more than an hour, was temporarily held up when the diver became snarled in debris.

The missing man's family, including Ed Reed, was at the scene. Ed Reed declined comment.

"We just want some closure at this point," Brian Reed's sister-in-law, Javona Sanchez,

said. "We wanted him back regardless."

The Reed family, including Ed Reed, are from St. Rose.

Friends said Brian Reed had attended school in Destrehan and played baseball and softball. They described him as an accomplished dancer.

Texas Equusearch said it was assisted by the [J.D. Silveti Group](#), a Lafayette marine services consortium.



McInnis said authorities would perform a check of the surface of the water for the body, then suspend the search Sunday evening

## Dive Teams Find Evidence In Lake Overholser In Bethany Murder Case

<http://www.news9.com/Global/story.asp?S=13904872>  
*Jan 25, 2011*

BETHANY, Oklahoma -- A dive team in search of items the city's former water supervisor may have ditched after allegedly murdering his wife has recovered what could be evidence.

Police sent divers into Lake Overholser Tuesday afternoon where they found what appears to be a gym bag and a computer.

[Reginald Bartlett](#) remains in the Oklahoma County jail booked on second-degree murder complaints.

Bethany Police said they found his wife, Cathy Bartlett, laying face up with stab wounds all over her body earlier this month.

Officers said he snapped when his wife confronted him about his porn addiction.

Charges have not yet been filed in the case.

[News9.com](#) will have more information as it becomes available throughout the day.

### More:

- [Bethany Man Accused Of Fatally Stabbing Wife Denied Bond](#)
- [Bethany Police: Man Snapped Before Attacking, Killing Wife](#)
- [Bethany Man Arrested In Wife's Fatal Stabbing](#)



### [Enlarge this picture](#)

OHP dive teams are searching in Lake Overholser for evidence linked to the case of a Bethany man accused of fatally stabbing his wife.



### [Enlarge this picture](#)

Reginald Bartlett is accused of fatally stabbing his wife earlier this month.



## Police discover scores more human bones

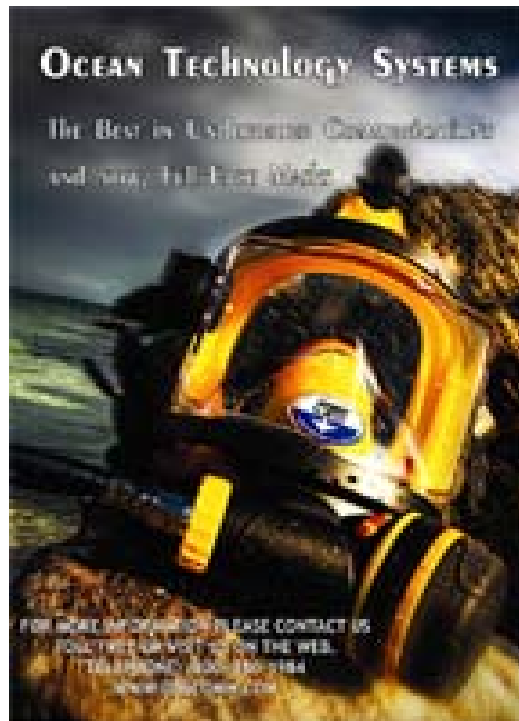
<http://www.bdtruth.com.au/index.php?news&article=1509>  
25th January, 2011

Police have narrowed down the age of the man whose bones were found in a weir pool next to the Little Menindee Creek regulator.

They said yesterday that it appeared he was in his early 20s. But the discovery of another 46 human bones by police divers on the weekend meant they were not ruling out the possibility that they were dealing with more than one body.

The bones were found in the same weir pool by members of the NSW Police Diving Unit, who returned to Sydney yesterday.

Barrier Local Area Command Crime Manager, Detective Inspector Mick Stoltenberg, said the four-member dive crew found 34 bones on Saturday and another 12 on Sunday.



Det. Inspt. Stoltenberg said finger, arm, leg, pelvis and rib bones were recovered by the divers, but no skull.

Asked if police believe all the bones belong to the same person, he said: "We can't say that.

"These bones are with our forensic staff and will be fast-tracked to Newcastle for further analysis this week."

He said the analysis would include a DNA profile. Police have narrowed down the age of the leg bone that was found by a fisherman on December 28, following an initial anthropologist's report.

"We're looking (at someone) around the early 20s," Det Inspt Stoltenberg said. He said the remains were not those of an Aboriginal.

DI Stoltenberg said police expected to receive more information when further testing was carried out on the bones.



"We're hoping it will actually identify who the person actually is."

Police will compare the bones against a DNA database of missing people, including Bendigo man Daniel Rosewall who vanished in the district in January last year.

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Mr Rosewall's car was found abandoned near Eldee Station north of Silverton. DI Stoltenberg yesterday said that police were not ruling out who the bones might belong to, or how they came to be in the weir.

"Close liaisons between Barrier LAC Detectives, NSW Homicide Squad, NSW Missing Person Unit and interstate law enforcement continues."

But he said no-one had been reported missing from the Menindee area in recent years.

He also said it appeared unlikely the bones were washed down the river, given the "circumstances surrounding" their discovery.

DI Stoltenberg said the divers had worked under very difficult circumstances.

"We put in a request (for the diver unit) and we were allocated two days and obviously a lot depended on what they found (on the first day). We're happy with what they've achieved over the weekend."

Anyone with information about the bones are asked to contact local police or Crimestoppers on 1800 333000.

## Down in the Seine

[www.nytimes.com/2011/01/27/opinion/27iht-edspence27.html?\\_r=1&pagewanted=print](http://www.nytimes.com/2011/01/27/opinion/27iht-edspence27.html?_r=1&pagewanted=print)  
26th January, 2011 By CHRIS SPENCE

Despite my fancy lined ski jacket I instantly turned blue in the freezing headwind as the Zodiac with its powerful outboard motor picked up speed. The three members of the Paris River Police with me seemed oblivious in their specially designed black cold suits. No wonder people stopped and



stared from the bridges and quays; we looked like commandos on a mission.

As the only one out of uniform, onlookers probably assumed I was the commander — or someone the others had just arrested. I concentrated on the novelty of seeing Paris from so low down, the city towering above and the swirling waters up close.



Fifteen minutes into the ride I witnessed a real-time intervention. Snowmelt upstream had brought down an entire tree that lay jammed up against the end of the Ile de la Cité. If this snagged a propeller it could immobilize a vessel, leaving it helpless to drift into another boat or a bridge piling.

One of the river policemen got astride the trunk, legs dangling in the icy water as he attached chains. It was then dragged away by a powerful tug.

Diving in the Seine is not diving in the Maldives. Commandant Michel Constant gave me the lowdown as we sat in his office on a floating pontoon at the Quai d'Austerlitz (the only office I know in which the furniture undulates queasily every time a boat passes).

He explained that candidates for the river police train in swimming pools with black tape over their masks to simulate zero visibility in the muddy river waters. If you can handle the disorientation and the potential panic that goes with it, then you are probably ready to confront the frigid Seine in winter.

Unlike open-water diving, you don't have a buddy for safety in the Seine — how can you help each other if you can't see each other? Instead, you're attached by line to a colleague in the boat, who will drag you out if necessary.

Divers are heavily weighted to avoid "flagging" — being swirled around by strong currents like a flag in the wind.

The toughest job is recovering bodies. An average of 100 each year end up in the river, either victims of accidents or suicides. Then there are the vehicles that end up on the riverbed — giant catfish, the length of an adult human, inhabit the Seine and sunken

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cars make for an ideal burrow. It is not unknown for a diver to come nose-to-nose with one of these beasts. Michel told me that it's not always clear who panics more, the diver or the fish.

The night of June 21, the "Fête de la Musique," is a sleepless one for the river police and the only time they patrol in hard hats. In the carnival atmosphere of the summer solstice music festival, some folk choose to cool off in the Seine. The police drag many revelers to safety, often with cans and bottles raining down on their heads from the quay above.

In hot weather, nude sunbathers stretch out below the Austerlitz bridge in full view of the metro running above. A megaphoned warning from a police boat, and a reminder about the steep fine for such exhibitionism, is usually all it takes for the sun worshipers to rediscover modesty.

While most public services are feeling the pinch in 2011, the well-equipped river police have recently increased their strength to 100. Michel explained that



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they cannot cut corners as they are considered a showcase for the forces of law and order.

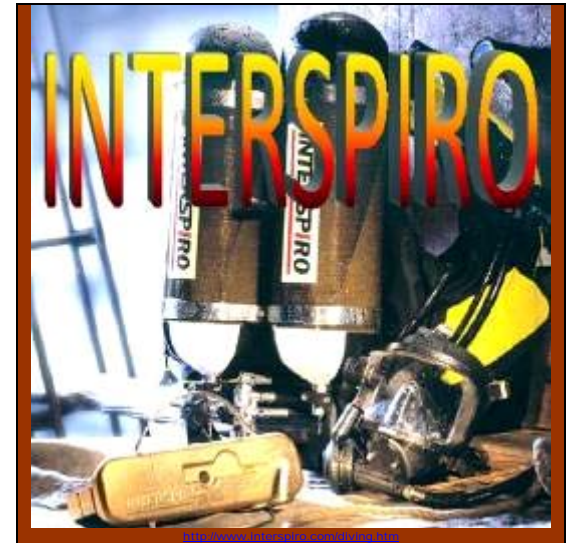
They also police the busiest inland waterway in Europe, and their remit is very wide — from towing paralyzed barges to fining boat owners for illegal parking.

In Michel's office I noticed a sword hanging on the wall, dredged from the river depths. Unusual finds from the Seine span the capital's turbulent history, ranging from Gallo-Roman artifacts to a World War II antiaircraft gun with ammunition belt still attached.

A photo on Michel's computer showed three divers grinning at the camera, one of them cradling a beautiful statue of a crouching nude.

A private collector reported its theft by one of his dinner guests who, in a panic, dumped the evidence in the Arsenal basin before later confessing. A police diver who was new to the force, found it on her first dive of active service. No wonder she looks so pleased — the work she is clutching is by Camille Claudel.

*Chris Spence is a tour guide in Paris.*



## Body floats past wedding party

<http://www.news24.com/SouthAfrica/News/Body-floats-past-wedding-party-20110201>

2011-02-01 Jacques Steenkamp, Beeld

Pretoria - As a couple happily posed for wedding photographs next to the Vaal River on Saturday, shocked wedding guests spotted a body drifting in the river behind them.

The 105 guests of the bridal couple, Annelize Rostron, 26, and her husband Sheldon, 26, were waiting at the reception area at the Vaal de Sioleh resort at 17:00 while the couple were posing for photographs on the river bank.

"We were still smiling sweetly (at the photographer) when we suddenly heard the bridesmaids screaming," said Annelize.

The guests all ran to the river bank and saw the badly decomposed body.

"The body floated very quickly past us and there was an emergency worker in a canoe behind it. The body looked like a doll to me," she said.

### Missing body

The body was that of Marie Goosen, 67, who drowned last Monday. She was pruning a tree on the river bank in front of her house at Villa Jumanji in Parys when she presumably slipped and fell in the water. Her green pruning shears were found on the river bank, near sliding marks on the ground.

Vaal de Sioleh is about 16km outside the town.

Goosen's husband, Gert, left home at about 16:00 and when he got back at about 18:00, she was gone.

Several rescue workers and police divers from the area were looking for Goosen in the river.

Police spokesperson Maselela Langa said people next to the river had let Parys police know on Saturday afternoon that the body was seen about 8km down the river from Goosen's house.

When they arrived, the body had floated about 8km further down, and they went into the water with a canoe and rubber duck, reported Tom de Wet.

### Body drifted 20km

Her body was finally retrieved from the river at about



Sheldon Rostron and his new wife Annelize pose for photographs on the banks of the Vaal River, in which the body of a drowned woman was spotted. (Mario van de Wall, Beeld)

18:00, about 20km from her home, close to the hills in the Vredefort region.

Her son Johan Claassen, 48, a pharmacist in Parys, said his mother was discharged from hospital about two weeks ago after surgery to repair damage from a previous operation.

"Four years ago, a dentist broke off a drill bit in her jaw during an operation and it caused nerve damage. After the recent operation she was able to eat properly for the first time in years."

Goosen is also survived by a daughter, Zita de Lange, 40, and four grandchildren. A memorial service will be held on Wednesday.



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## Arterial Gas Embolism

<http://www.scuba-doc.com/ageprbs.html>

---

### Pathophysiology

Arterial gas embolism is a major cause of death in diving and the initiating cause (pulmonary barotrauma) usually goes undetected. Caused most often by the expansion of respiratory gases during ascent, it also occurs when the breath is held during ascent from a dive, when there is local pulmonary pathology, when there is dynamic airway collapse in the non-cartilaginous airways and if there is low pulmonary compliance, particularly if this is not distributed evenly throughout the lungs. Boyle's law is the physical law controlling the event. Experimental evidence indicates that intratracheal pressures of about 10 kPa (4 fsw or 1.22 m. or ascending from 170 feet or 51.82 m. to 120 feet or 36.58 m.) are all that's needed for it to

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happen. Distention of the alveoli leads to rupture, alveolar leakage of gas, and extravasation of the gas into the arterial circuit.

### **Origin of Bubbles**

Bubbles in the arterial circulation can arise from basically three sources: venous gas embolism with breach of the pulmonary vascular filter (paradoxical gas embolism), patent foramen ovale (paradoxical gas embolism) and tear of the pulmonary parenchyma with entry of gas into pulmonary venous outflow. Studies show that systemic venous bubbles are trapped in the pulmonary arterial tree and are usually completely eliminated from that site. The lung traps the air and excretes it into alveoli from the arterioles. (RG Presson, J Appl Physiol; 1989;67(5),1898-1902)

The syndrome of paradoxical air embolism (from septal defects) was first described by J. Cohnheim in 1877. (J Cohnheim, ZV Berline, Hirschwald, 1877;1:134). Hagan at the Mayo Clinic reported on 965 normal hearts and showed that more than 25% of patients with a history of cardiac disease have a 'probe patent' foramen ovale at autopsy. (PT Hagan, Mayo Clinic Proc, 1984; 59:17-20.).

The other main mechanism for arterial gas embolism is by way of the pulmonary overpressure syndrome or 'burst lung'. This occurs from baropressure increases as the diver on compressed air ascends with a closed glottis or a free diver takes a breath of compressed air at depth and ascends. Because of Boyle's law, maximal changes in volume occur in the 4 feet (1.22 m.) closest to the surface and the diver sustains a tear in the pulmonary parenchyma with the escape of air into the pulmonary

venous outflow. This can result in several outcomes: pneumothorax (collapsed lung), pneumomediastinum (air in the space around the heart), subcutaneous emphysema (bubbles of air in the fatty tissues under the skin) and air into the pulmonary capillaries.

As the diver takes his first breath after surfacing, the extra-alveolar gas enters the torn blood vessels, migrates to the left side of the heart and is distributed systemically as emboli sent to areas determined by buoyancy.

Arterial gas emboli arise from gas bubbles in the pulmonary capillaries => pulmonary veins to the left side of the heart => possible coronary artery emboli (rare) or internal carotid and vertebro-basilar arteries to the brain => cerebral artery embolism (blockage) with the clinical picture of a stroke.

The foam or bubbles block arteries of the 30-60 micron caliber and cause distal ischemia, with astrocyte and neuronal swelling. As the bubble passes over the endothelium, there are direct cellular effects (within 1-2 minutes) causing PMN stimulation. The bubble itself has surface effects causing local swelling, downstream coagulopathy with focal hemorrhages. There is immediate increased permeability of the blood-brain barrier, loss of cerebral auto-regulation, rise in CSF and a rise in the systemic blood pressure. A phenomenon called 'no-reflow' occurs with a post-ischemic impairment of microvascular perfusion. This is thought to be the result of Factor VIII interacting with the prostaglandin system and possibly other blood/tissue factors.

### **Clinical Manifestations**

The clinical manifestations of cerebral gas embolism include a sudden onset of unconsciousness associated with a generalized or focal seizure. There is often confusion, vertigo (extreme dizziness) and cardiopulmonary arrest. In a series of 24 USN cases in which the time was known, 9 occurred during ascent in the water, 11 within one minute at the surface and 4 occurred within 3-10 minutes at the surface.

Other clinical manifestations include the sudden onset of hemiplegia (paralysis on one side), focal weakness, focal hypesthesia (loss of feeling), visual field defect (blank areas in vision), blindness, headache and cranial nerve defects (vision, hearing, eye movements, facial muscles and feeling). The operative word here is "sudden"--nearly all of these symptoms can also be caused by neurological decompression sickness. Less common manifestations are chest pain and bloody, frothy sputum.

---

## Management Outline

Recognition \*This usually occurs during or immediately after surfacing\*

- Symptoms
- Bloody froth from mouth or nose
- Disorientation
- Chest pain
- Paralysis or weakness
- Dizziness
- Blurred vision
- Personality change

- Focal or generalized convulsions
- Other neurological abnormalities
- Hemoptysis (bloody sputum)
- Signs
- Bloody froth from nose or mouth
- Paralysis or weakness
- Unconsciousness
- Convulsions
- Stopped breathing
- Marbling of the skin
- Air bubbles in the retinal vessels of the eye
- Liebermeister's sign (a sharply defined area of pallor in the tongue).
- Death

## Early management

- CPR, if required
- Open airway, prevent aspiration, intubate if trained person available
- Give O2, remove only to open airway or if convulsions ensue.
- If conscious, give nonalcoholic liquids
- Place in horizontal, neutral position
- Restrain convulsing person loosely and resume O2 as soon as airway is open.
- Protect from excessive cold, heat, water or fumes.
- Transport to nearest ER for evaluation and stabilization in preparation for removal to the nearest recompression chamber.
- Call DAN (919-684-9111) or your own preferred emergency number
- Air evacuation should be at sea level pressure or as low as possible in unpressurized aircraft

- Contact hyperbaric chamber, send diver's profile with the diver, and send all diving equipment for examination or have it examined locally.

## Treatment

- Recompression as soon as possible
- Oxygen
- Cautious hydration

## Pulmonary Barotrauma

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### Scenario

A 25 year old divemaster made one dive to 40 feet for 38 minutes and then spent 3 hours and 45 minutes on the surface. His second dive was to 55 feet for 27 minutes, at the end of which he struggled with a heavy anchor, swimming with it to the surface. At the surface he raised out of the water, yelled, became comatose and was pulled from the water. apparently convulsing. He was placed in the head low position, given O2 by mask and on arrival at a recompression chamber 50 minutes later, he was alert, oriented and really felt well. He complained of a slight numbness of both right extremities but otherwise had a normal exam. Is this DCS, epilepsy or pulmonary overpressure? What is the one clue you need to make the diagnosis?

This diver obviously had a pulmonary overpressure accident with arterial gas embolism and was treated by placing him on Table 6A ( 165 feet for 30 minutes) and then on Table 6. The fact that it occurred immediately on

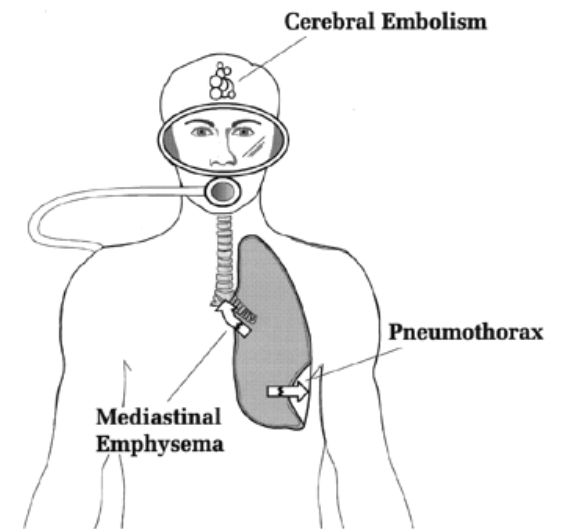
surfacing indicates that it's not DCS and surely a person with epilepsy should never have been certified as a divemaster.

## Prevention

This episode underlines the potential risk of pulmonary overpressure accidents on every compressed gas dive regardless of depth and time. Prevention of pulmonary overpressure accidents starts with a good diving physical exam to ensure no history of pulmonary pathology which would prevent free pressure equilibration of all parts of the lungs as well as psychological evaluation of propensity to panic. The scuba instructor has in his hands the final prevention by teaching the dangers of breath-holding.

## Mechanisms of Action

The mechanisms that occur when a pulmonary overpressure accident occurs are directly related to Boyle's Law, and the greatest danger is at shallow depths-with the greatest gas volume expansion near the surface. Boyle's Law states that with the temperature constant, the volume of a gas is inversely proportional to the pressure. When pressure differential between gas in alveoli and water (or chamber gas pressure in a





compression chamber) exceeds 50-100 mmHg (3 to 5 FSW), free gas can be forced across the fine alveolar membrane into pulmonary interstitial tissues, pulmonary capillaries or rarely through the path of greatest resistance, the visceral pleura.

---

### **End Result**

The results of this air movement across these natural barriers are:

- 1). Arterial gas embolism,
  - 2). Mediastinal and subcutaneous emphysema, and
  - 3). Pneumothorax.
- 

### **Arterial gas emboli**

Arterial gas emboli arise in the gas bubbles in the pulmonary capillaries -> pulmonary veins to the left side of the heart->possible coronary artery emboli or internal carotid and vertebro-basilar arteries to the brain-> cerebral artery embolism with the clinical picture of a stroke.

The clinical manifestations of cerebral gas embolism include a sudden onset of unconsciousness associated with a generalized or focal seizure. There is often confusion, vertigo and cardiopulmonary arrest. In a series of 24 USN cases in which the time was known, 9 occurred during ascent in the water, 11 within one minute at the surface and 4 occurred within 3-10 minutes at the surface.

Other clinical manifestations include the sudden onset of hemiplegia, focal weakness, focal hypesthesia, visual field defect, blindness, headache and cranial nerve defects. The operative word here is "sudden"-nearly all of these symptoms can also be caused by neurological decompression sickness. Less common manifestations are chest pain and bloody, frothy sputum.

### **An Unusual Case of Cerebral Gas Embolism**

A snorkeler takes a breath from a compressed air regulator at depth.

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### **Emphysema**

Mediastinal and subcutaneous emphysema, due to bubbling in the tissues, cause substernal pain, subcutaneous crepitus (a crunching feeling), a definite x-ray appearance and occasionally circulatory embarrassment (rare).

---

### **Pneumothorax**

Pneumothorax occurs when the visceral pleura is ruptured by the air pressure and the lung collapses. When this occurs there is pain, decreased respiration on the affected side, changes to auscultation and percussion on physical exam with typical x-ray findings. If the opening is large-a tension pneumothorax can occur, requiring tube decompression of the chest before treatment with the compression chamber.

[Spontaneous pneumothorax](#)

---

### **Precipitating Factors**

All of these things can happen when two precipitating factors occur:

- 1). Breath-holding ascent
- 2). Local air trapping

A breath-holding ascent occurs in association with panic, buddy-breathing and acute laryngospasm (a breath of sea water). Local air trapping is the result of bronchospasm (asthma), mucous plugs (post-bronchitis), blebs (blisters on the surface of the lung), air-containing pulmonary cavities (as in scarring from TB), and very often no reason whatsoever.

- [Sarcoidosis](#)
- [Marfan's Syndrome](#)
- [Cystic Fibrosis](#)
- [Asthma](#)

---

### Treatment

Treatment of these three entities varies from the simple (bedrest, O<sub>2</sub>, and observation for the emphysema) to immediate compression to 6 ATA and resuscitation while in transport for the arterial gas embolism. A chest tube is standard care for pneumothorax with a good neurological exam to rule out cerebral embolism.

Compression takes precedence over treatment of the pneumothorax and mediastinal emphysema and frequently attendants must also treat coexistent near-drowning, using endotracheal tube, 100% oxygen and IV fluids and dexamethasone.

Our young divemaster had a close encounter with the ghost of Sir Robert Boyle when he apparently held his breath while straining to swim to the surface with the

anchor. The lessons of this episode should be readily apparent and can be acted upon by all of us, no matter how experienced we think we are.

---

### \*Recent Reference

Coxson HO, Rogers RM, Whittal KP, et al: A Quantification of the Lung Surface Area in Emphysema Using Computed Tomography. *Am J Respir Crit Care Med* 159(3):851-856, 1999.

---

### References to Pulmonary Barotrauma

*J Emerg Med* 1998 May-Jun; 16(3):413-7  
Fatal pulmonary barotrauma due to obstruction of the central circulation with air.  
Neuman TS, Jacoby I, Bove AA

Hyperbaric Medicine Center and Department of Emergency Medicine, University of California Medical Center, San Diego, USA.

Cardiac arrest in cases of barotraumatic arterial gas embolism (AGE) is usually ascribed to reflex dysrhythmias secondary to brainstem embolization or secondary to coronary artery embolization. Several case reports suggest that obstruction of the central circulation (i.e., the heart, pulmonary arteries, aorta, and arteries to the head and neck) may play a role in the pathogenesis of sudden death in victims of pulmonary barotrauma. We report three consecutive cases of fatal AGE in patients in whom chest roentgenograms demonstrated confluent air lucencies filling the central vascular bed, the heart, and great vessels. In none of the victims was there evidence

by history or at autopsy that the intravascular gas was iatrogenically introduced. Total occlusion of the central vascular bed with air is a mechanism of death in some victims of AGE, and resuscitation efforts for such patients should take this possibility into consideration.

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Undersea Hyperb Med 1997 Winter;24(4):301-8  
Recompression treatments during the recovery of TWA Flight 800. Leffler CT, White JC, Medical Department, Naval Amphibious Base Little Creek, Virginia, USA.

After the crash of TWA flight 800, U.S. Navy (USN) and civilian divers recovered the aircraft and the victims' remains from 117 feet of sea water (fsw). Safety information was gathered from observations, interviews, and medical and diving records. Of 752 dives employing surface decompression using oxygen (SDO2), 10 divers required recompression treatments, mainly for type 2 decompression sickness (DCS). When using hot water heating, the DCS risk was high until the dive profiles were modified. Divers made nearly 4,000 no-decompression scuba dives. In eight scuba divers and one tender treated with recompression, the diagnoses included DCS (3), arterial gas embolism (AGE) (1), and vascular headache (2). All USN divers recovered fully. The experience is consistent with previous work suggesting an increase in DCS risk in warmer SDO2 divers. The USN SDO2 tables can be made safer by limiting bottom time and extending decompression. Even under stressful conditions, rapid ascents resulting in AGE are uncommon. Vascular headaches can mimic DCS by responding to oxygen.

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Aviat Space Environ Med 1997 Nov;68(11):1025-8  
Neurological manifestation of arterial gas embolism following standard altitude chamber flight: a case report. Rios-Tejada F, Azofra-Garcia J, Valle-Garrido J, Pujante Escudero A Centro de Instruccion de Medicina Aeroespacial (C.I.M.A.), Madrid, Spain.

In the course of a decompression at flight level 280 (28,000 ft) in an altitude chamber flight, a 45-yr-old cabin air traffic controller developed sudden numbness in his left upper and lower extremities and, soon after, complete paralysis in the left side, dysarthria and left facial palsy. A presumptive diagnosis of arterial gas embolism (AGE) was made and hyperbaric oxygen therapy (HBO) was given after airvac of the patient to the closest compression facility. Complete resolution of the symptoms was obtained after treatment Table VI-A (extended), plus 3 consecutive HBO treatments (90 min of Oxygen at 2.0 ATA). AGE is a rare event in the course of regular altitude chamber flight and diagnosis should be done in the context of the barometric pressure changes and an acute cerebral vascular injury. Risk factors and follow-up diagnostic procedures are discussed.

---

Chest 1997 Sep;112(3):654-9  
Risk factors for pulmonary barotrauma in divers. Tetzlaff K, Reuter M, Leplow B, Heller M, Bettinghausen E Department of Diving and Hyperbaric Medicine, Naval Medical Institute, Kiel, Germany.



**STUDY OBJECTIVES:** Pulmonary barotrauma (PBT) of ascent is a feared complication in compressed air diving. Although certain respiratory conditions are thought to increase the risk of suffering PBT and thus should preclude diving, in most cases of PBT, risk factors are described as not being present. The purpose of our study was to evaluate factors that possibly cause PBT.

**DESIGN:** We analyzed 15 consecutive cases of PBT with respect to dive factors, clinical and radiologic features, and lung function. They were compared with 15 cases of decompression sickness without PBT, which appeared in the same period.

**RESULTS:** Clinical features of PBT were arterial gas embolism (n=13), mediastinal emphysema (n=1), and pneumothorax (n=1). CT of the chest (performed in 12 cases) revealed subpleural emphysematous blebs in 5 cases that were not detected in preinjury and postinjury chest radiographs. A comparison of pre-dive lung function between groups showed significantly lower mid-expiratory flow rates at 50% and 25% of vital capacity in PBT patients ( $p < 0.05$  and  $p < 0.02$ , respectively).

**CONCLUSIONS:** These results indicate that divers with preexisting small lung cysts and/or end-expiratory flow limitation may be at risk of PBT.

---

[Tetzlaff K, et al.](#) [\[See Related Articles\]](#)

Risk factors for pulmonary barotrauma in divers.  
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Pulmonary barotrauma and related events in divers.

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[Bove AA.](#) [\[See Related Articles\]](#)

Pulmonary barotrauma in divers: can prospective pulmonary function testing identify those at risk?  
Chest. 1997 Sep; 112(3):576-8.

[Tetzlaff K, et al.](#) [\[See Related Articles\]](#)

Pulmonary barotrauma of a diver using an oxygen rebreathing diving apparatus.

Aviat Space Environ Med. 1996 Dec; 67(12):1198-200.

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Chest. 1998 Dec; 114(6):1791-3.

## \* EVENTS \*



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## Vintage Scuba



Australian inventor Ted Eldred is shown here with his grandson at the City Baths (the site of the first diving school in Australia) in April of 2005. Ted is recognized as the inventor of the single hose regulator. He introduced his Porpoise regulators many years before Rose Pro, U.S. Divers, or Sportsways sold their first models in 1956-57. Ted invented the Porpoise single hose regulator in 1949 and sold his first one in 1952. Air Liquide bought him out in the 1960's and suppressed his regulator, but some were made to fulfill the existing Royal Australian Navy contract. The Porpoise regulator owned by Stephen Taylor of Australia is a Royal Australian Navy model. Ted confirmed it to be the last ever sold to an individual. Unfortunately, Ted passed away on August 27, 2005. --Photos courtesy of Stephen Taylor.

<http://www.vintagescubasupply.com/regsingle.html>



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## Arterial Gas Embolism

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- 1) During a dive the body absorbs:
  - a. Oxygen
  - b. Acids
  - c. Nitrogen
  - d. All of the above
- 2) The best mask for contaminated diving is the:
  - a. Recreational mask with out the snorkel and using a latex hood.
  - b. Mated Helmet (hardhat)
  - c. Full Face Mask.
  - d. All of the above
- 3) In a diving emergency, the administration of \_\_\_\_\_% oxygen is the recognized amount.
  - a. 100
  - b. 70
  - c. 50
  - d. Any of the above
- 4) Rinse water for decontamination should be:
  - a. Collected and disposed of appropriately
  - b. Run off into a storm drain
  - c. Make a small dam and let air evaporate
  - d. All of the above
- 5) Vulcanized rubber is the only suit that protects against all contaminants.
  - a. True
  - b. False
- 6) Neoprene suits can be decontaminated using a salt/vinegar solution followed by a Mineral soap application before rinsing.
  - a. True
  - b. False
- 7) Polluted water only has the pollution on the bottom. Keeping the divers 2 feet off the bottom will protect them...
  - a. True
  - b. False
- 8) During a mission dive, when a team moves beyond the capabilities of their service they should:
  - a. Stop and start over
  - b. Go home
  - c. Call for assistance
  - d. Just keep on going as the mission is the important piece.
- 9) A dive team should be equipped with the skills and tools necessary to help ensure each member's safety.
  - a. True

- b. False
- 10) The Dan Emergency Hotline is 919-684-9111.
- a. True
  - b. False
- 11) Decompression Illness (DCI) incorporates two separate conditions:
- a. ADC, SRV
  - b. DCS, AGE
  - c. DCS, PPS
  - d. AGE, ADC
  - e. AGE, RRI
- 12) In an emergency a diver experiencing a DCI injury should be placed at 15 feet of water on 100% oxygen while waiting for transport to a chamber facility.
- a. True
  - b. False
- 13) The US Navy notes a concern with full face masks, even positive pressure in contaminated water from
- a. bright colors bringing too much attention to the divers
  - b. no side view panels limit diver's range of vision
  - c. the prohibitive cost of fitting mask with corrective lenses
  - d. droplet inhalation
- 14) Wet Gloves
- a. Cannot be decontaminated after a dive in polluted water
  - b. Can expose the diver to risk in polluted water
  - c. Should not be used after exposed to polluted water
  - d. All of the above
- 15) Problems that can occur with dry suits include
- a. Thermal stress
  - b. Leakage of outside contaminants affecting diver
  - c. Diver leakage inside dry suit
  - d. All of the above
- 16) Before diving in certain polluted conditions, a dry suit should be
- a. Duct taped
  - b. Tested
  - c. Brightly colored
  - d. All of the above
- 17) Neck and wrist clamps allow
- a. A dry suit to be pressurized and tested for leaks
  - b. A diver to be restrained after exposure to contamination
  - c. Blood pressure to be monitored by topside tether managers during a dive
  - d. A diver to remain still for body core temperature readings
- 18) The Navy categorizes pollution levels
- a. In order to identify appropriate PPE for each level
  - b. In order to set fines for polluters
  - c. To keep people out of classified areas
  - d. As pollution category increases, the rank of the diver chosen to deploy decreases

- 19) Incorrect helmet mating to dry suit
  - a. Is sometimes done by commercial contractors
  - b. Can cause leakage into helmet
  - c. Lessens the effectiveness of protection
  - d. All of the above
  
- 20) Heavily polluted refers to category
  - a. 1
  - b. 2
  - c. 3
  - d. 4

## Team Discussion:

- 1) Discuss the term *Appropriate PPE* as it applies to your team, geographic area and meaning.
- 2) Discuss the procedures necessary to perform diver decontamination.
- 3) Discuss the procedures necessary to perform equipment decontamination.
- 4) Discuss the procedures for regular equipment inspection and test to assure full functionality.
- 5) Discuss your teams policies and guides for injuries occurring during a dive.



**These training agencies have recognized PSDiver Monthly as a valued addition to their programs and Continuing Education requirements.**

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**We welcome all training agencies and organizations to participate. For details, email [PSDiverMonthly@aol.com](mailto:PSDiverMonthly@aol.com)**



## The Rancher and the Deer –

A Newly Educated Rancher

I had this idea that I could rope a deer, put it in a stall, feed it up on corn for a couple of weeks, then I'd have venison.

The first step in this adventure was getting a deer. I figured that, since they congregate at my cattle feeder and do not seem to have much fear of me when we are there (a bold one will sometimes come right up and sniff at the bags of feed while I am in the back of the truck not 4 feet away), it should not be difficult to rope one, get up to it and toss a bag over its head (to calm it down) then hog tie it and transport it home.

I filled the cattle feeder then hid down at the end with my rope. The cattle, having seen the roping thing before, stayed well back. They were not having any of it. After about 20 minutes, my deer showed up -- 3 of them. I picked out a likely looking one, stepped out from the end of the feeder, and threw my rope. The deer just stood there and stared at me. I wrapped the rope around my waist and twisted the end so I would have a good hold. The deer still just stood and stared at me, but you could tell it was mildly concerned about the whole rope situation. I took a step towards it, it took a step away. I put a little tension on the rope... and then received an education. The first thing that I learned is that, while a deer may just stand there looking at you funny while you rope it, they are spurred to action when you start pulling on that rope.

That deer EXPLODED. The second thing I learned is that pound for pound, a deer is a LOT stronger than a cow or a colt. A cow or a colt in that weight range I could fight down with a rope and with some dignity. A deer-- no chance, that thing ran and bucked and twisted and pulled. There was no controlling it and certainly no getting close to it.

As it jerked me off my feet and started dragging me across the ground, it occurred to me that having a deer on a rope was not nearly as good an idea as I had originally imagined. The only upside is that they do not have as much stamina as many other animals.

A brief 10 minutes later, it was tired and not nearly as quick to jerk me off my feet and drag me when I managed to get up. It took me a few minutes to realize this, since I was mostly blinded by the blood flowing out of the big gash in my head. At that point, I had lost my taste for corn-fed venison. I just wanted to get that devil creature off the end of that rope.

I figured if I just let it go with the rope hanging around its neck, it would likely die slow and painfully somewhere. At the time, there was no love at all between me and that deer. At that moment, I hated the thing, and I would venture a guess that the feeling was mutual.

Despite the gash in my head and the several large knots where I had cleverly arrested the deer's momentum by bracing my head against various large rocks as it dragged me across the ground, I could still think clearly enough to recognize that there was a small chance that I shared some tiny amount of responsibility for the situation we

were in. I didn't want the deer to have to suffer a slow death, so I managed to get it lined back up in between my truck and the feeder - a little trap I had set before hand . . . kind of like a squeeze chute. I got it to back in there and I started moving up so I could get my rope back.

Did you know that deer bite?

They do! I never in a million years would have thought that a deer would bite somebody, so I was very surprised when I reached up there to grab that rope and the deer grabbed hold of my wrist. Now, when a deer bites you, it is not like being bit by a horse where they just bite you and then let go. A deer bites you and shakes its head -- almost like a pit bull. They bite HARD and it hurts.

The proper thing to do when a deer bites you is probably to freeze and draw back slowly. I tried screaming and shaking instead. My method was ineffective.

It seems like the deer was biting and shaking for several minutes, but it was likely only several seconds. I, being smarter than a deer (though you may be questioning that claim by now), tricked it. While I kept it busy tearing the tendons out of my right arm, I reached up with my left hand and pulled that rope loose. That was when I got my final lesson in deer behavior for the day.

Deer will strike at you with their front feet. They rear right up on their back feet and strike right about head and shoulder level, and their hooves are surprisingly sharp. I learned a long time ago that, when an animal -- like a horse -- strikes at you with their hooves and you

can't get away easily, the best thing to do is try to make a loud noise and make an aggressive move towards the animal. This will usually cause them to back down a bit so you can escape.

This was not a horse. This was a deer, so obviously, such trickery would not work. In the course of a millisecond, I devised a different strategy.

I screamed like a woman and tried to turn and run. The reason I had always been told NOT to try to turn and run from a horse that paws at you is that there is a good chance that it will hit you in the back of the head. Deer may not be so different from horses after all, besides being twice as strong and 3 times as evil, because the second I turned to run, it hit me right in the back of the head and knocked me down.

Now, when a deer paws at you and knocks you down, it does not immediately leave. I suspect it does not recognize that the danger has passed. What they do instead is paw your back and jump up and down on you while you are laying there crying like a little girl and covering your head.

I finally managed to crawl under the truck and the deer went away. So now I know why when people go deer hunting they bring a rifle with a scope to sort of even the odds.

*Issue 81 CE Answers*

1	2	3	4	5	6	7	8	9	10	11	12
C	B	A	A	B	B	B	C	A	A	B	B
13	14	15	16	17	18	19	20				



