



# PSDiver Monthly

Volume 6 \* Issue 68

ISSUE 68

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Dedicated to the expanding knowledge of Underwater Crime Scene Investigation

**NEWS**

**DIVING MEDICINE**

**EVENTS**

**CONTINUING EDUCATION**

**AND MORE!**

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**Divers, how clean**

**is your air?**

**By: Sean Sheldrake,**

**Unit Diving Officer, EPA Region 10 Dive Unit**

## Greetings, Greetings,

Recently I found it necessary to take a little time off from PSDiver. As a consequence, I received a lot of email from subscribers asking about the next (this) issue.

Here is what happened:

I went on vacation, a very nice vacation that included exploring the original site of the ancient Olympics, driving 4x4s on a Greek Island, climbing on a pyramid on the Giza Plateau in Egypt and discovering the Grand Bazaar in Istanbul, Turkey. It was awesome.



But prior to leaving, I bought a 2003 Yamaha V-Star 1100 Classic motorcycle. I know, you are thinking I had a mid-life crisis (not yet) but stick with me a little longer, I will eventually get to the purpose of the editorial...

It was not as if I suddenly had a need or desire to own a motorcycle, I have always had a desire. I just never had the funds or permission from my wife. Say what you want but peace in the Phillips' house is dependent on her being happy and the one and only time I pushed the idea of owning a motorcycle – she was beyond not happy. She had always had a fear of me on a motorcycle that had something to do with me being immature and reckless. Go figure... Now we move a full 30 years forward in time.

A close friend of mine bought a motorcycle and rode it over to the house a lot. He told us about a trip he was

thinking about going on that sounded like it would be a lot of fun and each day he came over, he had more to share. One day, shortly after he had left, my wife said "You should go with them, it sounds like it would be fun".

As I got my mouth closed and picked up the broken bits of my coffee cup, I asked her why she would say such a thing now. Apparently, now that I am over 50, I am still immature but not nearly as reckless. I had permission.

Before she could change her mind, I called everyone I knew and put them on the hunt for a motorcycle for me and I owned one by the end of the week. But by that time, we were preparing for our vacation and time was getting limited.

I had not ridden a motorcycle in almost 30 years and even back then all I rode was dirt bikes. I had never ridden a large bike, much less a bike like the V-Star. So I practiced. We would ride down and back a country road in the evenings or afternoons when traffic was light. The round trip was about 26 miles but I enjoyed it a lot.

I had a mental picture of what I wanted the motorcycle to look like and what I wanted it to do so I did a lot of shopping on Ebay and other web sites and bought chrome covered stuff that I proudly mounted on the bike. I was still learning about the mechanics of the motorcycle and was at my friend's house one evening when it started to rain. I bailed for home as soon as I suspected rain and made it within a couple of blocks from home before it started. The first stop sign I came to, I learned what makes a motorcycle skid and even though it was a



minor incident, it spooked me a little.

Since I recognized my inexperience and had plans of going on a longer motorcycling trip, I found and registered for a Motorcycle Riding and Safety Class. It was a two day class and I managed to do it on the only weekend I had left before we were leaving on our vacation trip. Not only did I complete the class, I also got properly licensed. The bike was ready. It looked great and all the stuff I had added to it had it trip ready. We even started talking about a destination for our trip but know it had to be put off until I returned.

Then I took off on an awesome vacation. We cruised around the Greek Islands, visited Egypt and ended up in Turkey. Internet connections were few and far between and I absolutely refused to pay the extortion fees the cruise line charged for Internet service. So - I actually chilled out and did no work while I was on the trip. I de-stressed, unwound and enjoyed the free time.



All thoughts of riding were forgotten until I met the leather guy at the Grand Bazaar in Istanbul. Before we left, my wife had purchased two leather coats and talked me into buying a nice leather coat. I also bought a leather motorcycle jacket and had a pair of leather over pants custom made for me. I got them the night before we left for home.

Once home and organized, I did have to prioritize my time and got the most important work done. But in doing so, I knew I had two holidays coming, a wedding and a weeks worth of babysitting our three grand kids and I started to stress again. So - in the spirit of being de-stressed during my vacation, I was selfish and the last issue was a "two month" issue. I bought myself stress free time.

My buddy and I both had a shift of vacation left. We both have the same day off. We had the time and decided on Mena, Arkansas as a destination. Broken Bow, Oklahoma was included in the plan since it was just on the other side of the mountain. The only problem was now the time of year; December. And it is getting cold.

In South East Texas, cold to us means we can see our breath. In and around Southern Arkansas, cold to them means snow and ice and temperatures that have only one digit. So timing and weather conditions were going to be critical. But it was cold and getting colder.

Every evening when we had the chance we would go ride in the cold. We adapted clothing we already owned and added pieces where we could, to help keep us warm. Eventually I felt like I was prepared to ride in cold weather.

I packed my saddle bags carefully. I packed my sissy bar pack with clothes and kept additional warm clothes on top so I could add as, or if, needed. I packed extra tools, a rain suit, and batteries for the MP3 player and camera. The bike was mechanically ready and I was too.

The day before our scheduled departure there was a medical emergency in his family and we had to change our route plans. I left for Glenrose, Texas to visit my

sister and was to meet him in three days. I made it to Glenrose without incident and parked my bike in a shed. The temperature dropped again. I had forgotten, because I live in South East Texas, that batteries do not like cold weather. The one thing I had not changed out was the battery.

After changing out my battery, I packed up to leave the next morning to start our ride together. Our meeting place was about 5 hours away and if we timed it right we would be in Mena right at dark.

The next morning I found out I was not getting company. Too many problems had developed; my riding partner was not coming. I had a choice. I could go anyway or go home. It was 38 degrees when I left that morning, and I was in Mena, Arkansas just as the sun set.

The next morning, I called ahead and made sure the mountain pass was clear and that there was no fog. Ice, and fog were my concerns and neither condition existed. By that evening I was in Broken Bow, Oklahoma having



explored the Talimena Byway and Beaver Bend National Park. It was cold and overcast all day but I saw and experienced things that were totally new and unique to me. That night a cold front came through and it really got cold.

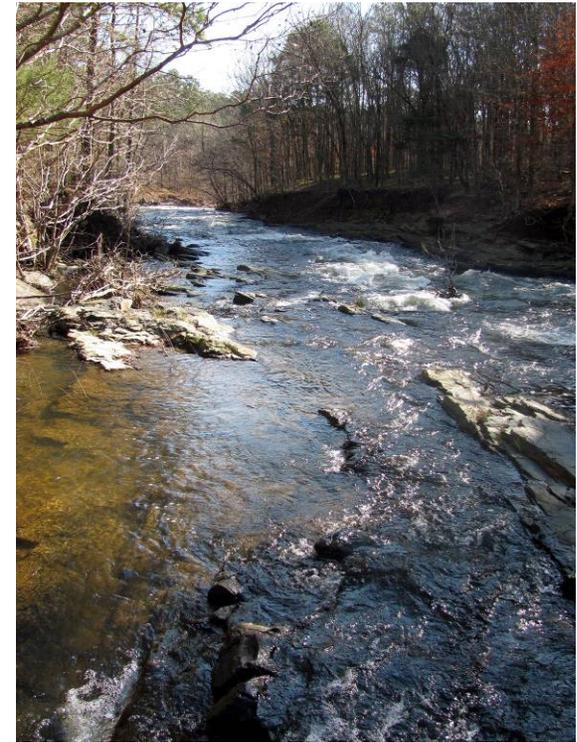
When I got up, the sun was out and the sky was perfectly clear. It was beautiful –cold but beautiful. I waited until

10 am to leave letting it warm up to 41 degrees. It was not the coldest start I had but it was the coldest day. It was so nice; I decided to retrace my route and ended up back in Mena.

I had crossed the mountain twice and had only seen a single car. I had shared Beaver Bend Park with a few die hard rainbow trout fishermen and no

one else. The areas I traveled offered some incredible scenery and were some of the most extraordinary places I have visited. But I had no one to share it with.

I decided to go home and headed south. I made it home that night around 8pm. It was dark and the accumulated exposure had finally started making me cold. No one was there. I had no key. I called my wife and found out she and my daughter were eating out. Having skipped breakfast and lunch in order to get home as early as I could I told her to order for me and I would meet them at the restaurant. So after 450 miles, I had another 12 to go.



I met them and told them about my trip while we ate. I was still cold and wanted go home. I got my wife's house keys, redressed for cold, started the motorcycle and headed the last 12 miles back home.



I made it to the highway and felt something hit my right boot. When I looked down, I discovered that the highway foot peg (one of the new things I had added) was missing. Since I knew about where I was when it happened, I decided to go back and look for it.

I turned around at the next overpass and went back into town and got back on the highway. About a quarter of a mile down the road a car came up from behind and swerved across two lanes of traffic and tagged me on the left side. I happened to be on a bridge at the time and my first thought was that my own dive team was going to have to come find my body....

Only I did not go down. I wobbled a bit but recovered. Call it luck, call it fate, maybe it was that and some modest amount of skill. The damage was minimal and I was OK. The driver was eventually found and went to jail for DWI.

I had completed my first solo motorcycle ride and had traveled 1275 miles without incident. I did this at a time when I was the only motorcycle rider on the road. Early on I questioned if I was being stupid or adventurous.

Having overcome all the obstacles and managed cold in the mid 30s to low 40s and done it comfortably; having seen and experienced what I did – I have concluded that it was a great adventure. More importantly, when my butt quits aching, I would like to do it again.

I knew I was not a good rider. I took a class to learn how to ride better and then I practiced. I practiced every time I rode and made it a point to use the techniques I had been taught.

I spent time learning how my bike worked and how to do minor repairs on the fly. I practiced.

Knowing that I was riding a motorcycle into a mountain range in December, I knew it would be cold so I prepared. I learned how to layer clothing. I learned what clothing provided better insulation and used gear designed to protect against the wind and elements. I practiced riding in the cold. I practiced riding in the cold with different clothing, different gloves and even different undergarments.

I prepared my bike for a long trip. I calculated my mileage each time I filled up so I could accurately estimate my travel range at any given time. I made sure I had a working navigational system. I researched out the route and formulated a plan that kept me off the roads after dark. I had contingency plans and even emergency



contact numbers if needed. I practiced.

When I left on my adventure, I left confident and prepared. I had no problem with traffic. I had no problem with the route. I had no problem with the weather or the cold. I had a grand time and feel a great sense of accomplishment.

I had prepared. I had practiced.

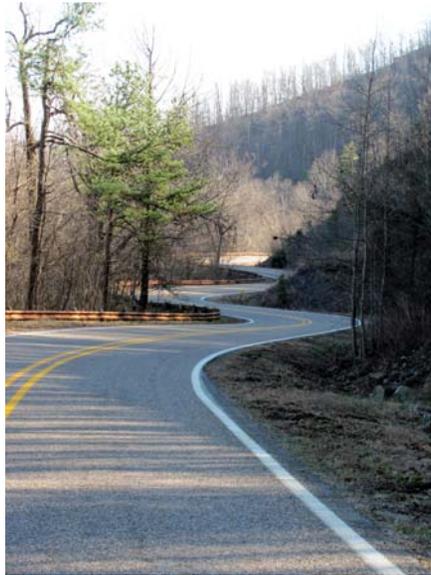
If your team was called to dive right now, are you ready? Have you inspected your equipment lately or tried it out to make sure it is working correctly? It's cold. Are you prepared to dive in cold water? Do you have proper protective gear to keep you from being exposed to the cold? Do you have proper undergarments to wear under your dry suit? Are those clothing items with you and available or in a drawer somewhere at home?

Have you practiced in your cold water gear?

If you are not prepared or trained to dive in cold water, will you put yourself and team at risk and do it anyway or will you have the stones to admit you might be out of your element? Will you take it on yourself to find proper training?

Will you practice?

My story started with a phenomenal vacation trip and ended in near tragedy. I could have had a serious accident because a drunk ran into me. But I didn't. That is in part because the impact was not that hard and in



part because I was very comfortable with my machine. It was a 1275 mile practice ride and I was still practicing.

Everything we do as a water response team is practice for the next time. Every training day, every incident and every event is a practice opportunity toward the next one. Doctors practice medicine because there is no way to ever stop learning or improving, nor should we.

But like my almost accident, the unexpected will happen. Sooner or later you will be caught off guard and surprised with a set of circumstances that have the ability to become fatal. What will you do then?

Will you live or die?

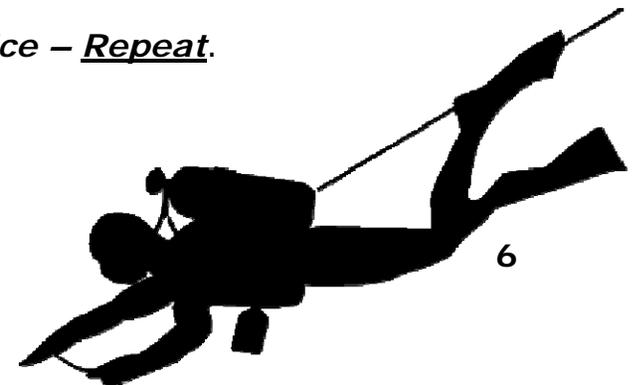
Will the outcome be decided by luck, fate, or your own preparation? Will your gear be right? Will your personal protection be intact and fit for the environment? Will your reactions be automatic? Will you have contingency plans? Will you be able to handle the unexpected when it comes crashing into you?

When bad things happen and luck fails, skill might be the only thing that can save you. Will you be ready?

The formula is simple to write but sometimes very difficult to do.

***Prepare – Practice – Repeat.***

Be Safe,  
Mark Phillips  
Editor / Publisher





**Dive Squad Chicago**  
**A Ticking Clock**  
**A Deceptive Lake**  
**And The Relentless Need To Breathe**

**Chicago's Air and Sea Rescue Unit to be featured in a National Television Reality Series**

(Chicago) The work of the Chicago Fire Department's Air and Sea Rescue unit will be featured in an upcoming reality series called, "Chicago Dive Squad." The reality TV series "plunges the viewer headlong into the full-throttle world of the Chicago Dive Squad, a world consisting of choppers, rescue boats, and a team of elite divers," says series developer Peter Karl, of Karl Productions, Inc.



Peter Karl and his production team have spent considerable time with the Chicago Dive Squad, collecting footage and interviews and recreating the dramatic rescue of a young Chicago boy who was rescued after being under water for 15-minutes. Karl Productions has

**Dive Squad Chicago...the TV show is in production and can be viewed at:**

<http://www.karlproductions.com/ds/>

**DIVE SQUAD CHICAGO**

Three million people - Fifty five miles of treacherous shoreline - One elite rescue team - Every second counts.

**DIVE SQUAD CHICAGO** is a reality TV series that plunges the viewer headlong into the full-throttle world of the Chicago Fire Department's Air Sea Rescue Unit, consisting of choppers, rescue boats, and a team of elite divers.

**THE SETTING:**

Rip tides, inshore holes, rogue waves, thin ice -- Lake Michigan is as unpredictable as it is massive, as deadly as it is beautiful. Along Chicago's lakefront, seconds matter. That's all the time it takes for a swimmer to fall prey to an undertow, a boat to capsize, or a pedestrian to be swept into the water.

Chicago's **Dive Squad** lives that reality every day. Chicago has the largest harbor system in America – greater than New York, Miami, and even San Diego. When the alarm sounds, this specialized unit moves out by land, sea and air, day or night, in every type of weather -- never knowing what they might find, but understanding that the difference between saving a person and recovering a corpse can be mere moments.

As a municipal focal point, Chicago has a rich history: big, tough, multi-ethnic, and real – the literal heart of America. Especially now, following the election of President Obama, and with its possible selection to host the 2016 Olympics, Chicago is an intriguing and gritty setting for this dramatic TV series.

produced a trailer for "Dive Squad" which can be viewed at [www.karlproductions.com/ds](http://www.karlproductions.com/ds).

The producers believe the series will draw significant ratings because of the locale and the innovative approach and preparation developed in Chicago. "Lake Michigan is as unpredictable as it is massive, as deadly as it is beautiful. Rip tides, inshore holes, rogue waves, thin ice are all part of the equation," says Karl Productions Executive Producer David Beedy.



"Along Chicago's lakefront, seconds matter. That's all the time it takes for a swimmer to fall prey to an undertow, a boat to capsize, or a pedestrian to be swept into the water," says Beedy.

Chicago's Dive Squad lives that reality every day. Chicago has the largest harbor system in America – greater than New York, Miami, and even San Diego. When the alarm sounds, this



#### LEAD CHARACTER:

There are 140 Public Safety Divers on the Chicago Fire Department, led by Cmdr. Ron Dorneker, 40, a larger than life figure who is the "heart and soul" of the **Dive Squad**. Part mentor, part taskmaster, Dorneker is a world-class Ironman athlete, a former lifeguard, and a leading authority on public safety diving. (Five times last year he dove into the Chicago River or Lake Michigan to single handedly rescue a citizen.) He is also a cancer survivor -- an ordeal that further steeled his character.

Dorneker's unique system combines intense physical training with constant refinement of rescue techniques, and a rapid response deployment strategy involving choppers, rescue boats, divers and EMTs. When a call comes in, all these resources are deployed in a multi-pronged, full-tilt race against time, with Dorneker at the helm. And with the vagaries of weather, incomplete information, and even submerged victims to contend with, responding to a call can quickly evolve into a frenetic real-time drama, unfolding and changing at break-neck speed.

#### THE PERSONALITIES:

Cmdr. Dorneker is a producer's dream: highly skilled, driven, out-spoken, and very human. He's got a heart as big as himself, and he'd do anything for his team, and everything possible to help them shave seconds and save lives.

We will also focus on the other compelling characters that emerge from the **Dive Squad**. Because of the intensity of the training and the stakes in the operations, we'll capture a wealth of human interactions and insights. Dorneker often pits the squads against each other in training drills, stoking a competitive spirit and engaging emotions. There is added pressure on the few but regular new recruits (six at the present time.) Sometimes they make it and sometimes they wash out.

Every diver has a story to tell. And we will be allowed access to their private lives as well. We'll profile **April Fishback**, currently the only female diver on the squad, and perhaps the

specialized unit moves out by land, sea and air, day or night, in every type of weather, never knowing what they might find, but understanding that the difference between saving a person and recovering a corpse can be mere moments.

There are 140 Public Safety Divers on the Chicago Fire Department, led by Cmdr. Ron Dorneker. "Ron is a larger than life figure who is the "heart and soul" of the Dive Squad," says Karl. "Ron is part mentor, part taskmaster. He's a world-class Ironman athlete, a former lifeguard, and a leading authority on public safety diving. Five times last year he dove into the Chicago River or Lake Michigan to single handedly rescue a citizen," says Karl.

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sole female diver of a major city dive unit. A former lifeguard and firefighter, April receives no special treatment.

Viewers will get to know **Cedric Collins** – the handsome African-American diver and physical fitness buff. Cedric came to the job without even knowing how to swim, and is today personally credited with saving several lives.

We will also feature **Brian Otto**, the diver who brought young Lazar to the surface in our **Dive Squad** trailer. On that day, Brian could only think of his own son, 5 year-old Devin, as he scoured the rocky bottom of Lake Michigan's Belmont Harbor, and ultimately wrapped his arms around that stroller holding the little boy. A former paramedic, Brian was awarded the Medal of Valor for saving a drowning victim prior to joining the **Dive Squad**.

Our Diver Profiles of these family-oriented heroes will help explain why members of the dedicated group risk their own lives to save others.

#### **LOGISTICS:**

We will live with the two busiest dive squads for 90 to 180 days, capturing everything from mealtime to emergency calls. We will have a third crew on call 24/7 to respond to rescue calls. A fourth camera will be assigned to Dorneker, and a fifth crew will shoot all non-rescue footage; to include training, diver profiles, and other human interest aspects such as survivor follow-up stories. We will also have lipstick/bullet cameras mounted in the rescue vehicles from all five squads to capture the divers "suiting up" into over 100 lbs. of gear.

Additionally, we will have lipstick/bullet cameras mounted in Cmdr. Dorneker's vehicle, to capture the drama of his drive to a rescue scene, including his rapid communication with the other players. And our choppers will have interior lipstick cameras as well as an exterior flare camera with thermal imaging, allowing us to track the divers underwater.

Finally, we will have a marine biologist/cameraman on staff to provide compelling underwater images.

Karl Productions plans to embed with the two busiest dive squads for 90 to 180 days, capturing everything from mealtime to emergency calls. Karl also plans bullet cameras mounted in the rescue vehicles from five squads to capture the divers "suitsing up" into over 100 lbs. of gear. Additionally, they will have bullet cameras mounted in Cmdr. Dorneker's vehicle, to capture the drama of his drive to a rescue scene, including his rapid communication with the other players.

And CFD choppers will be outfitted with interior cameras as well as an exterior flare camera with thermal imaging, allowing producers to track the divers underwater. Finally, they will have a marine biologist/cameraman on staff to provide compelling underwater images.

"The time and preparation, the commitment to shaving time and saving lives is not only great drama, it is truly inspiring. The public needs to know about these modern-day heroes. It is an honor to tell their story, says Karl.

**RESCUE/RECOVERY STATS:**

161 total operations, Jan. -- Oct. 2008

92 runs: person in the water, 43 "boat in distress" calls, 9 jumper/suicides, 7 fires, 9 animal rescues, and 2 auto rescues

Most victims are well-intended people who've been caught up in sudden and violent changes in water conditions. They are mothers, fathers, uncles, children, etc., -- often hypothermic and near drowning when the **Dive Squad** comes to their rescue.

It is important to note that even the recovery operations are compelling, because each one has a story: Who was this person? How did they perish? Did they leave a family behind?

**Karl Productions, Inc. 1743 N. Harlem Ave., Chicago IL 60607 (312) 588-1957 [www.karlproductions.com](http://www.karlproductions.com)**

## Special to PSDiver Monthly

### "Divers, how clean is your air?"

By: Sean Sheldrake,  
Unit Diving Officer, [EPA Region 10 Dive Unit](#)

All of us as divers by definition must purchase or otherwise obtain compressed air for our operational needs. For ease of use, some dive organizations may decide to create their own compressed air where it is needed (e.g., aquarium dive support or ocean survey vessel work). For those of us that cannot afford such equipment, we must buy air, enriched air, or some such breathing media from a local dive shop. In each case, most divers will agree that clean air is important to their safety.

**What is clean air?**

NOAA defines acceptable air to be that which meets the compressed gas association (CGA) grade E standard or better. The following table is taken from the NOAA Scientific Diving Standards and Safety Manual, section 3.6, August, 2008.

<b>CGA Grade E</b>	
Component	Maximum
Oxygen	20-22%/v
Carbon Monoxide	10 ppm/v
Carbon Dioxide	1000 ppm/v
Condensed Hydrocarbons	5 mg/m <sup>3</sup>
Total Hydrocarbons as Methane	25 ppm/v
Water Vapor (ppm)	2
Objectionable Odors	None

OSHA defines clean air for commercial diving as containing less than 20 ppm (parts per million) by volume of carbon monoxide (vs. the CGA standard of 10 ppm), less than 1,000 ppm by volume of carbon dioxide, 5 milligrams per cubic meter of oil mist (except that non-oil-lubricated compressors need not be tested for oil mist), or a pronounced or noxious odor (29 CFR 1910.430(b)).

EPA requires compressed air to meet CGA grade E standards. It probably goes without saying that the risk of impure air, in the worst case, is a diver unconsciousness under water.

#### **How often must compressor air be tested?**

OSHA defines minimum compressor testing frequency for commercial operations as once every 6 months (29 CFR 1910.430(b)). NOAA and EPA also require testing at least every six months for their compressors. PADI "five star" training centers used to require tests for their air on a quarterly basis, but no longer. PADI, while requiring CGA grade E air from their shops, is leaving the testing frequency up to the shop and local governing authorities—ironically in most cases there are no such regulations outside of OSHA requirements for commercial dive operations (Personal communication with Jeff Nadler, PADI 2009)

#### **Are all the dive shops you may come across testing their air?**

The short answer is an emphatic "NO." The EPA Region 10 unit sometimes dives the same locations multiple times, but just as often we travel to a new site; typically this means using a new dive shop that we are unfamiliar with. Dive shops throughout Region 10 — Oregon, Idaho, Washington, and Alaska -- like the rest of the U.S., have

fallen on hard times due to the economic downturn. Shops are closing right and left, and those that are surviving are making hard choices with their bottom line which can impact your safety.

Here are some quotes in cold-calling separate dive shops that might have been used just during the EPA Region 10 2009 operational window for SCUBA tank air/nitrox fills:

"Yes, we meet CGA grade E air except for the CO<sub>2</sub> reading, which I admit is a little high."

"I don't remember when we did our last air test. It was at least a year ago."

"Our last air test was seven years ago. We would be happy to do another one if you are willing to pay for the cost of testing."

"We did our air test regularly up to last year when we stopped. We decided that since the results were always the same, there was no reason to continue with the regular testing."

(Personal communications, EPA Region 10 divers and various dive shops, 2009).

In the case of the shop with the high carbon dioxide reading and all the shops above without a current test, they were still filling SCUBA bottles. Would the high CO<sub>2</sub>



have caused DCI-like symptoms - e.g., headache and confused diagnosis following a deep scientific dive? – maybe. In the case of the last quote in the list above, EPA divers noted that the compressor station area had been recently remodeled, the intake moved, and a charcoal grill located near the compressor building, if not the intake itself. This was a dive shop that had emphatically told me that the air used to fill their cylinders was tested regularly. In the end, they were grateful I had asked so that they could ensure that testing occurred in the future. What all of these responses highlight is that you can't count on an unfamiliar shop testing their air in all instances. This also goes to show that a shop you have used for years might stop air purity testing without informing their customers.

**Where do we go from here?**

Until more divers and dive organizations start asking for air tests and demanding clean air, I would expect that the next several years will again present a mixed bag of shops “doing the right thing” and those that try more bottom-dollar approaches. There are a lot of shops doing air tests regularly and posting them — and they deserve credit for their hard work and monetary expenditure on behalf of dive safety by virtue of your business. Protect your divers, take nothing for granted, ask for that air test.

*Disclaimer: This article is an illustration of potential hazards from compressed air impurities used during diving and does not represent the official view of the USEPA. Mention of any specific brand or model, instrument, material, or protocol does not constitute endorsement by the USEPA.*

**Public Safety Diver  
EPA Diving Overview**

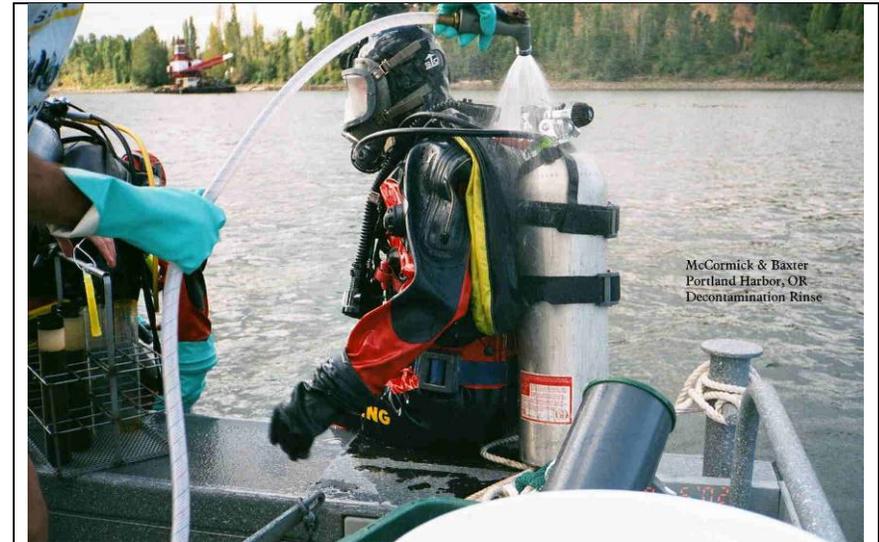
**By: Sean Sheldrake, Unit Diving Officer, EPA Region 10  
Alan Humphrey, Unit Diving Officer, ERT Jed Campbell,  
Unit Diving Officer, ORD-GED**

The US Environmental Protection Agency (EPA) has a number of dive teams throughout the country that perform scientific diving services in support of the Agency's mission. The [Region 10 Dive Unit](#) has been around since EPA's inception more than 39 years ago. The team covers a wide area, from cold, marine Alaskan waters, to warmer inland lakes and rivers in Washington, Idaho and Oregon. Scientific diving operations in support of Clean Water Act and Superfund programs typically include conducting instrument recovery, outfall inspections, and a variety of environmental media sampling. EPA's Office of Research and Development (ORD) has several Laboratory diving units conducting in-



depth studies of particular environmental issues such as coral reef and eelgrass health. The [Region 3 dive unit](#) has spent many years studying artificial reef impacts to marine ecosystems. Two dive units in Region 4 spend a significant amount of time studying impacts of the EPA and US Army Corps of Engineers (USACE) ocean dredge material disposal programs. The [Environmental Response Team](#) dives throughout the United States conducting Superfund site assessments, search operations for hazardous materials or enforcement actions, and environmental sampling. Both the ERT and R10 Dive Units focus their work, wherever it may take them, on polluted water diving.

EPA divers participate in a one week scientific diver training program at the ORD Gulf Ecology Division (GED) training facility which is also open to federal, state, and local government divers who have a need for this training. In any given year, divers from assorted backgrounds such as sheriffs, Army, and EPA divers train



**Photo of ERT Diver undergoing potable water decontamination during Portland Harbor polluted water sampling work in a joint operation with Region 10**

side by side in learning low visibility, polluted water diving techniques in the context of the scientific method. The training is conducted in May of each year in Gulf Breeze, Florida. Interested government divers with a need for this training may contact [Jed Campbell](#) for further information.

EPA diving is primarily conducted within [1910.120 Subpart T Appendix B, scientific diving exemption of OSHA](#). The EPA has a diving safety manual which governs all diving operations, as well as a diving control board which reviews the need for updates to this policy at least annually. The board coordinates audits of all dive units on a regular basis as part of their ongoing commitment to safety. In addition, the board reviews accident reports from those doing similar diving, such as



**Region 10 Diver conducting surface sediment sampling at Wyckoff Superfund Site.**

the US Coast Guard (USCG) and National Oceanic and Atmospheric Administration (NOAA), to determine if manual updates are necessary for EPA work diving.

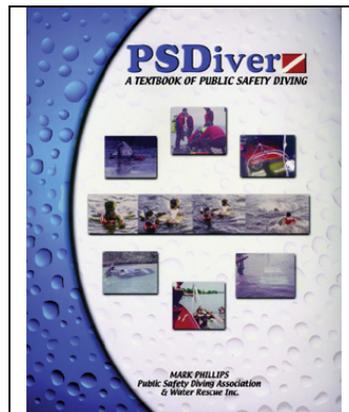
Diving modes at EPA include free swimming SCUBA, tethered solo SCUBA, and surface supplied diving. The diver may be completely "wet" for coral reef surveys, all the way to a hardhat or full face, [positive pressure mask](#) mated to a Viking drysuit with drygloves, for hazmat operations. EPA's next safety manual revision is considering adoption of tethered diving standards similar to NOAA's recently developed protocols as many scientific diving missions for EPA involve public safety-like search patterns. While diving is still controlled by tables for EPA diving, this may be changed to allow the option of computer controlled dives in the next manual revision.

EPA diving encompasses many of the same diving modes as public safety diving, including the polluted water challenges public safety divers face.

### [EPA diving equipment](#)

includes ROVs, sector scan, sidescan, drop cameras, diver held high definition cameras, towed GPS rigs for mapping surveys, and a host of other equipment.

In the future, look for more publications from EPA on standard polluted water techniques used by their hazmat diving units.



**PSDiver – A  
Textbook for Public  
Safety Diving  
By Mark Phillips**

~ An introduction to  
Public Safety Diving  
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## NEWS

### Murder On His Mobile

<http://www.thesun.co.uk/sol/homepage/news/article1500309.ece>

01 Aug 2008 /Nov 7, 2009 By VIRGINIA WHEELER  
and ANTONELLA LAZZERI

*THE suspected killer of 17-year-old Brit Cara Marie Burke filmed himself on his mobile cutting up her body, police said yesterday. They said her ex-boyfriend's phone was full of photos and video clips of him "grinning while chopping off her limbs".*



**Weapon ... knife cops say was used to cut off heads and limbs**

Brazilian Mohammed Dali Carvalho Dos Santos, 20, was arrested in the city of Goiania after Cara was stabbed to death and her body hacked to pieces. *But last* night in an amazing phone chat with The Sun he denied the murder and insisted: "I didn't kill her. I lied when I was arrested." Earlier a police source told Brazilian TV news: "He admitted the crime in his police statement and seemed proud of the film and pictures on his phone. It is shocking. "The photos of the body include the traditional Taliban-style ones where a decapitated head is placed above the body."

## Bridge

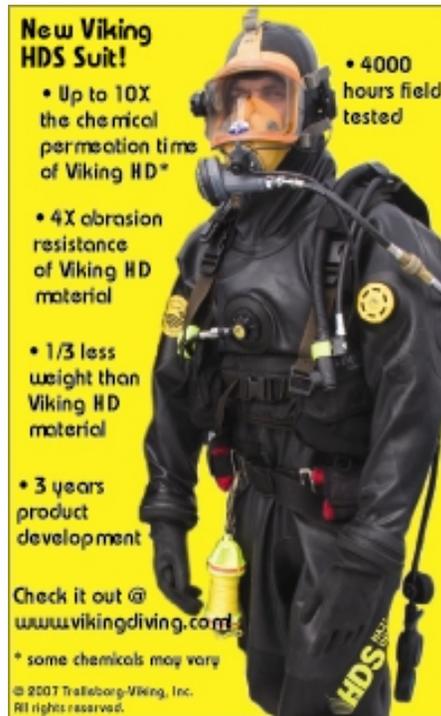
Police say Santos told them he stabbed Cara to death at his home, then sliced up her body with a large butcher's knife. Santos is said to have revealed that he killed Cara on Saturday night - then left her body in his bath and gone out to a party. He returned and cut up her body the next day.

The knife was later discovered in a drain in his street.

Cara's mutilated abdomen was found on Monday inside a blood-soaked suitcase dumped on the outskirts of the city. It was under a bridge next to a motorway.

She was identified two days later - by a pal in London who watched a report on the horror on a Brazilian TV channel that can be seen in the UK. The friend recognised Cara from two distinctive tattoos that were on her abdomen.

Police had two theories on the motive to the killing. They believe Santos probably murdered Cara because she refused to marry him and he wanted a British passport. But it is also thought he feared she was about to tell his parents of his drug habit.



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## Passport

Santos allegedly told police he put Cara's torso in a bag and dumped it in the nearby Meia Ponte river. Then he returned to his apartment, collected her arms, legs and head and drove 60km to throw them in another river.

Police divers were yesterday trying to locate the remains.

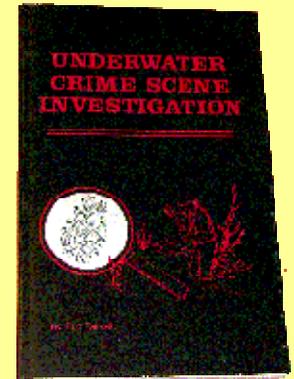
But speaking by phone from his cell last night, Santos claimed he was innocent - saying: "I was in my apartment when something happened. She got killed there but I can't say what happened. It wasn't me."

Santos said he met Cara when he was living in East London and claimed she was dating another Brazilian then. He continued: "I lived in Hackney for two years and met Cara because she used to hang around with a lot of Brazilians that I knew. "But my visa ran out and the others also got deported back.

"Cara was going out with one of them - I don't know his name - and when she got her passport he paid lots of money for her plane ticket. Her mum knew she was going and didn't want her to go, but she did. "Cara moved in with the boyfriend but she dumped him soon afterwards.

## "Underwater Crime Scene Investigation"

By **Eric Tackett**



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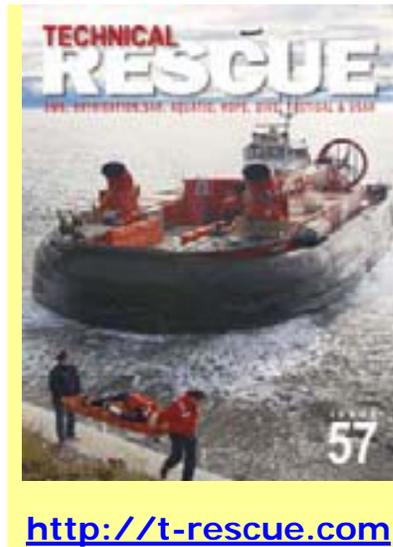
He said he was going to kill her because she spent so much on the ticket. "She moved in with me but she was never my girlfriend. We lived together for about two months and then she moved out because she had another boyfriend."

But police were convinced that Santos was the killer.

Spokesman Lenita Alves said he was arrested "in a hiding place" near the murder scene. She added: "He has already confessed to murdering Cara and decapitating her body. "He has not yet shown any remorse for what he has done. He has not cried or expressed regret of any kind. He has told us he and Cara argued on Friday after she threatened to go to the police to accuse him of being a drugs trafficker. "The murder was premeditated. He turned the music up on his stereo moments before the crime so neighbours wouldn't hear her screaming. "The murder took place at a flat they used to share until they stopped dating some time before the killing. He killed her with a single stab wound to the ribs."

She added: "We are currently searching the flat where the murder took place. We have found drugs but I am not in a position to say how many or what type."

Santos's pals said he had a love affair with Chelsea fan and animal-lover Cara, of Wandsworth, South London,



and wanted to marry her. Her mum Anne Marie was last night preparing to fly to Brazil.

Cara's distraught brother Michael Burke, 32, spoke of his family's heartache at not being able to pay for flights to the South American country. He said: "I need to look after my mum." Michael added Carla was due to come to London two weeks ago but was injured in a motorcycle crash on the way to the airport.

Members of Miss Burke's family were comforting each other today at a flat in a five-storey block in a pleasant area of Southfields, south west London. Neighbours were also calling at the address to offer their support.

At the home, the blinds were drawn and a man, believed to be Michael, said the family did not want to make any comment. Friends today described Cara fondly as full of energy and always causing mischief.

On a specially-created Facebook site, Claire Wiles, 31, from West Kensington, wrote: "R.I.P sweetheart, you will never be forgotten your loud self and crazy ways love to ya Claire & ben xxxx"

Charly Brunton wrote: "rip babes, im never going to forget you and your loud mouth lol you made me



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laugh all the time. im going to miss you loadssss. love you dahlin x" And Tiffany Matthews wrote: "r.i.p cara will never forget u and the fun times we had bunking skool :( xx u will be missed hunny x" A number of tributes referred to the 17-year-old sucking her thumb and popping around to the neighbours' houses still dressed in her nightie.

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A Brazilian tribute video posted on YouTube showed Miss Burke posing happily for the camera. In one photograph she is pictured wearing a Brazilian football shirt, while in another she is seen wrapped in a Union flag in front of a England flag.

### A long drive, a walk along the river, then a scream of terror

<http://www.vancouver.sun.com/news/long+drive+walk+along+river+then+scream+terror/2209657/story.html>

November 11, 2009 By Neal Hall, Vancouver Sun

A jury in a murder case heard a chilling recording Tuesday of a muffled scream that allegedly came from the murder victim. The Crown alleges it was the last time Rita Yeung was heard from. The prosecution contends the 20-year-old University of B.C. student was killed by her stepfather, Charles Kembo, who is on trial for the murder

of Yeung and three others -- his ex-wife, his mistress and a former business partner.

The B.C. Supreme Court jury heard a series of haunting recordings earlier in the day of Kembo laughing and talking with Yeung while driving around Vancouver in Kembo's 2004 Land Rover. At the time, Kembo was under suspicion for the alleged murder of his mistress, Sui Yin Ma, 55, whose body was found wrapped in plastic, stuffed in a hockey bag and placed in a Richmond slough on Nov. 5, 2004. It is believed Ma disappeared Oct. 22, 2004.

After Ma's body was found, police planted a secret listening device in Kembo's vehicle, put a GPS tracking device on the car and had his phones wiretapped. The Crown has alleged the device picked up the muffled scream of Kembo's stepdaughter at 1:43 a.m. on July 24, 2005. The Crown says Kembo had been driving his stepdaughter around for nine hours when he convinced her to go for a walk along the Fraser River, just north of a runway at Vancouver International Airport.

The jury and Justice Sunni Stromberg-Stein listened to the audio recording in the Land Rover that began at 1:40 a.m., including minutes of silence, broken by a scream of terror. Then the silence returned.

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More recordings will be played when the trial resumes Thursday. Earlier in the day, Kembo was heard talking on the phone to his common-law wife, Genevieve Camara, and his mistress, April Tang. "I really messed up. I must apologize," Kembo told Tang. "Rita had some issues going on." Kembo told Tang he was still with Rita but wanted to see Tang later, "even for five minutes, okay?"



A Mountie testified earlier that police used a GPS tracking device installed on Kembo's car to locate Yeung's body along the rocky shore of the river at low tide. There was no testimony about why police didn't use the device to go to the scene when they heard the scream. It is not known whether anyone was listening in real time.

Larry Litke, a now-retired Richmond RCMP officer, testified he was on routine patrol when he came across Kembo and a young Asian woman sitting in Kembo's vehicle at the end of an airport runway just after 11:10 p.m. on July 23, 2005. The officer recalled Kembo was very friendly and spoke with an African accent, but added the Asian woman didn't say much.

The listening device inside the car picked up their conversation. Litke asked the couple if everything was okay. "We're just sitting here watching planes," Kembo

told the officer, then quickly turned the conversation to the latest in aviation.

The Crown alleges Kembo went shopping earlier that evening at a Blight's Home Hardware store at 3322 Dunbar in Vancouver. The store's security surveillance video, played Tuesday, shows a black man buying a shovel and other items. The Crown says he used the items hours later to dispose of the body of his stepdaughter. The shovel was found by police divers near Yeung's body in the river.

## Body of 17yo found after river jump

<http://www.abc.net.au/news/stories/2009/11/17/2744898.htm>  
Nov 17, 2009

Police have recovered the body of a 17-year-old boy who drowned in the Williams River near Seaham, north of Newcastle. The teenager was swimming with three friends yesterday evening at about 7pm, when he went missing.

Police divers found his body this morning.

It is believed the boys had been swinging on a rope over the river when two of them banged their heads together. One of the boys did not resurface.

Port Stephens Crime Manager, Peter Fox says



it is a devastating accident. "His body was located this morning by police divers and brought to the surface and you know the whole thing of course is just very sad," he said. "He wasn't caught up he was just basically on the river bottom and in a very close area to where he was last seen yesterday."

## Kody Rae dies in freak accident at Seaham riverside

<http://www.theherald.com.au/news/local/news/general/kody-rae-dies-in-freak-accident-at-seaham-riverside/1680126.aspx>

18 Nov, 2009 BY BEN SMEE

KODY Rae and his mates were "just doing what boys do" when a freak accident claimed the life of the popular Raymond Terrace teenager. Police divers found the 17-year-old's body early yesterday morning, to the horror of watching friends and family who had frantically searched the Williams River at Seaham the night before. As darkness fell and hope faded that Kody would



**Kody Rae**

be found alive, his mates had to be dragged from the water and told to abandon their search. His death is the 16th in Hunter and Central Coast waters in the past year.

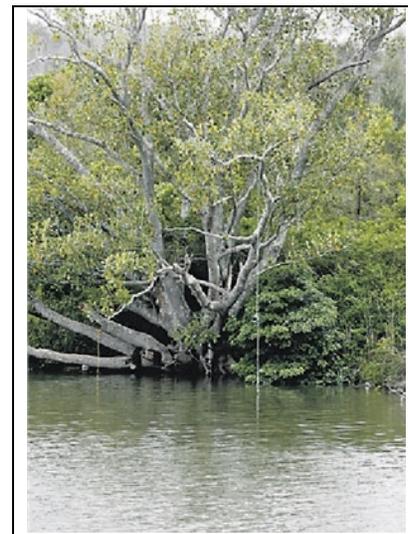
About 6.30pm on Monday, Kody and three mates had been cooling off from the extreme

heat by swimming in the river and jumping from a rope attached to a tree near the Jimmy Scott Bridge. Kody was sitting on a branch of the tree when he slipped, clashed heads with a mate and fell into the water. He did not resurface.

His parents, Tony and Kerry, spent Monday night praying for their son as they waited on the banks of the river for news. Fighting back tears at the family's Raymond Terrace home yesterday morning, Mrs Rae said Kody was a gorgeous, handsome young man. "He was the big brother to five siblings and they followed him around like the Pied Piper," Mrs Rae said. "He was just loved by all." Kody had recently begun working for his father as an arborist and was about to begin his level three training certificate.

His parents said he lived life to the fullest. He played rugby league for Raymond Terrace and had recently saved enough money to buy a Toyota Supra. "He had the car picked out," Mr Rae said. "He was a great kid and he just loved being with his mates."

Mrs Rae said the drowning



**TRAGEDY: The tree, with rope swing, from which Kody slipped.**



**SHOCK: Friends of Kody Rae talk to police yesterday near the scene of the accident. - Picture by Darren Pateman**



**HUGE LOSS: Kody's mum, Kerry Rae, is comforted at the scene.**

was "an absolute freak accident". "He just went out with the boys and was just doing what boys do," she said. "The boys that were with him had to be dragged from the water [on Monday night] because it was too dark and cold. They had to be forced to stop searching."



Police and State Emergency Service volunteers had scoured the river on Monday for a sign of Kody. The Herald understands the group of friends recently began swimming regularly in the Williams River at Seaham. Wayne Carr, a Seaham resident who was at the scene yesterday, said the river was a popular swimming spot for young people.

"You can't stop kids doing what kids do," he said.

### Man drowned after heavy drink session

<http://www.thisisexeter.co.uk/news/Man-drowned-heavy-drink-session/article-1540896-detail/article.html>

November 25, 2009, 09:59

FOLLOWING a heavy drinking session a 53-year-old man fell into a stream and drowned. An inquest into the death of Lance Tadd was told he had drunk himself into a "stupor" throughout Monday, February 9 this year, and

did not make it back to his home. e was found just after 8.30am the following day in a stream off Exeter Road, close to the Texaco garage in Cullompton.

No details of how the discovery was made were heard at the inquest. It was previously reported a group of schoolchildren saw his body, which was recovered by police divers, in the water. A post mortem examination found the cause of death to be from drowning, with acute alcohol intoxication listed as a contributory factor. Pathologist Charles Keen said the level of alcohol in Mr Tadd's blood was 287mg per 100ml, a figure normally associated with stupor.

In a written statement, Steven Devey, landlord of the Bell Inn, said Mr Tadd, of Crowbridge Park, Cullompton, had been in at around 3pm for two pints of Stella. He returned later to drink the same amount. e said: "He was a friendly, happy person who you could have a good laugh with — but on that evening he was not his normal self. He was a bit down but never discussed his personal life." Mr Devey said that Mr Tadd, also known as 'Ashley', had said shortly before he left at 9pm: "If I die tonight I am not bothered." Mr Devey added: "When he left I told him not to go up the lane because of the stream and river. "It was a standing,

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private joke as he was always falling into the stream, but he was not staggering or unsteady on his feet."



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Jacqueline Campbell-Turner, a neighbour of Mr Tadd, said: "I did not see or hear him come home that night. I thought it was unusual, but not enough to be concerned." She described the water level on the stream being very high that night following heavy rain and melting snow, but she did not realise what had happened until the morning. he said: "I heard his cats running around and in the morning I saw the police by the stream and tape around it. I thought they had shut it off for safety reasons."

Police diver PC Paul Baker, who was called to recover the body, said when he did so the water was no more than 50cm deep. Coroner Elizabeth Earland said: "Sometime after 9pm on the Monday and before 8.34am the following day and under the influence of alcohol, he fell into a fast-flowing stream on Exeter Road. He would not have fallen if he had not been acutely intoxicated and my verdict is therefore alcohol abuse."

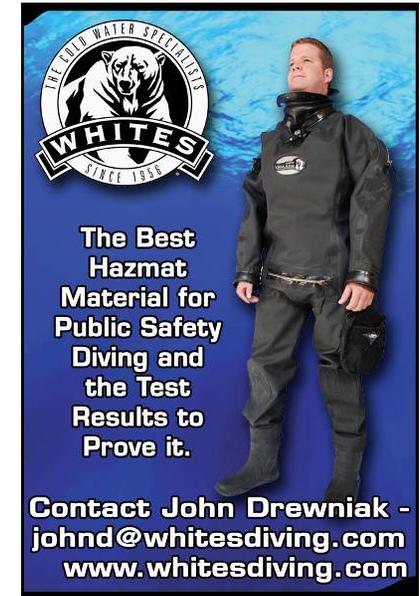
No family was present at the inquest to hear the evidence.

## Better Off Without Him

[http://www.nzherald.co.nz/sideswipe/news/article.cfm?c\\_id=702&objectid=10611630](http://www.nzherald.co.nz/sideswipe/news/article.cfm?c_id=702&objectid=10611630)

Nov 26, 2009

A two-day police hunt for a drowned man was called off when the 24-year old turned up at the crime scene looking for his clothes. The Polish man had disappeared after being dumped by his girlfriend and was last seen drinking heavily into the early hours. When his clothes were found the next morning by a lake, friends feared he had killed himself. But just as police divers were about to call in a submarine, he appeared. His girlfriend said she wouldn't be getting back with him. "It's stupid things like this that caused me to dump him. How can I allow someone like him to be the father of my children?" she said.



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## River plunge dad's horror decision to choose between wife and son

<http://www.dailyrecord.co.uk/news/uk-world-news/2009/12/01/river-plunge-dad-s-horror-decision-to-choose-between-wife-and-son-86908-21864634/>

Dec 1 2009 By Jack Mathieson

A DISTRAUGHT father had to abandon a bid to rescue his teenage son - in order to save his wife from drowning in a

river. Stacy Horton saved wife Vanessa, 35, as their son Silva, 13, drowned after her car plunged into the water. Stacy said he arrived at the scene less than two minutes after the accident to hear his wife screaming in the darkness and to see his son's friend and the family dog scrambling up the bank.

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Silva was in the front passenger seat when the car came off the road and careered down a 32ft bank into the water. When Stacy arrived from their nearby home, the family Mazda was already submerged in the river. It later emerged that the tragedy had been sparked by a childish prank.

Silva was trapped inside the submerged estate car in the Whanganui River on New Zealand's North Island. Stacy tried to dive to the vehicle, which was nose down with the tail lights burning more than three feet below the surface. He said: "I tried to get down to him but couldn't. It was too deep. And Vanessa was going under. "I made a call to pull my wife to safety. I looked back and I could see the tail lights but it was too far and I couldn't get him. "I just had to accept the fact that he had gone. "Instead of going down and risking my life as well as my wife's and son's, I chose to take Vanessa back and sat on the shore praying. "It was all I could do."

Emergency crews arrived within minutes of the crash but police divers and firefighters using breathing apparatus also failed to reach the dying boy. Mid-Central police spokeswoman Kim Perks said of Stacy's life-or-death decision: "I would certainly not have wanted to be in his shoes."

The family had been at home when they heard a group of children vandalising their letterbox. The group ran off but Vanessa, Silva and his friend Robert Palmer, 14, pursued them in the car. Vanessa pulled over to talk to the children at the river bank but the car slipped on the grass. Stacy added: "I do know my son was unconscious when he drowned after hitting his head on the dash. "It's a freak accident. We can't blame anyone. "My wife is distraught and drained, like I am."

Senior fire officer Gary Wilson said firefighters struggled in vain to reach the car as Saturday night's tragedy unfolded. He added: "We tried everything but to no avail." Divers recovered Silva's body on Sunday. Robert managed to scramble up the bank to safety as the car sank.

Police said alcohol and speed were not factors in the accident. They believe the car slid on wet grass as it slowed down.



## Tinana Creek tragedy in tenth of second, court told

<http://www.news.com.au/couriermail/story/0,23739,26436499-3102,00.html>

December 03, 2009 Glenis Green

**EWAN Gunn said he barely had time to shout "whoa" to his ski boat driver before the craft ran over a boy on a surfboard in a shocking river tragedy, a Maryborough court was told yesterday.**

Mr Gunn said he had been taking photographs as he stood overlooking the windscreen of a boat being driven by Jeffrey Ussher when the accident happened in "a tenth of a second" just before noon on Tinana Creek on November 30 last year.

His boat had been following about 60m behind another vessel towing a wake boarder in a popular ski course section of the creek when he saw Jyah Lamb, 8, right in front of the boat on a surfboard which was shiny with wax. "I'd seen Jyah and the board earlier . . . but it was very glary," he said. "He just didn't stand out. You couldn't see anything until the last second. "I can't tell if he rolled off the board just before impact or if he was lying on top. It's not something I like going through in my head. "I yelled at Jeff to stop and he cut the engine instantly and I dove down to search (for the boy). We swam and dove (sic) and searched. We couldn't do anything except pray."



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Police divers found Jyah's body some distance downstream two days later. Mr Gunn was giving evidence at continued committal proceedings in the Maryborough Magistrates Court yesterday where Ussher, 25, from Brisbane, is charged with dangerous operation of a vessel causing death. He has not been required to enter a plea.



**KILLED: Surfboard rider Jyah Lamb, 8.**

Yesterday the court was told by several witnesses that Jyah, of Noosaville, was playing on the board in a widened 100m section of the creek separate from other children when the tragedy occurred. Several families had camped on the creek shore off Nerada Rd for a weekend of skiing and wakeboarding, some of which was being filmed.

Magistrate John Smith heard that two ski boats were heading one after the other upstream – the first driven by Jyah's father Craig Lamb and towing a wake boarder with the second being driven by Ussher. While the first boat managed to miss the boy, the second allegedly hit him. The court heard that all drivers on the day were experienced with ski runs and the section of river and that safety was always paramount.

Police said there was no suggestion Ussher was hooning, speeding, drink-driving or tired.

## 'Seeing your friend die is the worst thing imaginable'

<http://www.thisischeshire.co.uk/news/4774457>. [Seeing your friend die is the worst thing imaginable /http://www.thisischeshire.co.uk/news/4774457](http://www.thisischeshire.co.uk/news/4774457).  
[Seeing your friend die is the worst thing imaginable /](http://www.thisischeshire.co.uk/news/4774457)

3rd December 2009 By Vicki Stockman

THE friend of a bright and popular 16-year-old boy who drowned in Appleton Reservoir has warned others not to swim in dangerous waters. He spoke out at the inquest of Temi Abimbola, who died on June 2, hours after the Sir Thomas Boteler High pupil sat one of his last GCSEs. "We knew we shouldn't have gone in there, other people have done it before. After seeing your friend die it's the worst thing you can possibly imagine," said the teenager, who cannot be named for legal reasons.

The inquest last Friday heard how the passionate Chelsea fan, originally from Nigeria, had joined other friends at the United Utilities-owned reservoir, a regular haunt for youngsters who would swim in the



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water despite warning signs telling them not to.

His friends said they had been there before with Temi, but he had never gone in

the water. But on this occasion he decided to join them on climbing over two locked gates and jumping off an electric box into the water. One friend, who also jumped in the water, said: "He did say he wasn't a very good swimmer. About five minutes before I said 'you don't have to jump in if you don't want to' – he said he'd be alright."

Two others jumped off the box first into the 22ft deep water then Temi followed and the friends recall him shouting 'tell my mum I love her' as a joke. But it soon became apparent that the teenager was struggling after taking around 20 seconds to come to the surface so the pair started swimming over to help. Another friend said: "I had hold of him, we were both getting pulled under the water. It was hard to keep him up. He slipped under the water. "We all tried to dive under but it was too deep and cold."



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They scoured the water trying to find Temi, wondering whether he had made it to the side. "There were other people, older people, we asked them to help but they said 'he's not our friend,'" one of the boys told the inquest.



The fire brigade was called and tried to search for Temi, but his body was later recovered by police divers. Michael Wallbjank, assistant deputy coroner for Cheshire, said: "United Utilities has taken considerable steps to ensure the public are aware of the inherent dangers of misuse of reservoirs. "What Temi and his friends involved themselves in was extremely dangerous and foolish conduct – conduct that took away a son, brother and friend."

He gave a verdict of accidental death by drowning.

### Two drown after boat capsizes

<http://www.canberratimes.com.au/news/local/news/general/two-drown-after-boat-capsizes/1697193.aspx>

06 Dec, 2009 BY LAURELLE PACEY AT THE SOUTH COAST

The bodies of two people were found in waters off Tuross Heads after a boating accident yesterday morning. The 6m boat with four people on board is understood to have

put in at Moruya before heading out to sea about three nautical miles east of Tuross Heads.

The boat capsized about 8am yesterday.

Police said Coastal Patrol was alerted at 8.30am and

emergency services contacted shortly after 9am and a search began. A nearby charter boat was first on the scene and pulled a man and a woman from the water but could not find another man and a woman, believed to be in their 70s.

Emergency services then mounted a large air and sea search involving PoAir, Marine Area Command, AUSSAR and vessels from the Royal Volunteer Coastal Patrol and other volunteers.

Police divers found the bodies of a man and woman inside the forward cabin of the capsized boat about 1.30pm.



***Police raise a 6m boat that overturned east of Tuross Heads on the South Coast***



## Three members of one family held over death of Danny Ralph

<http://www.dailytelegraph.com.au/news/sunday-telegraph/murder-family-held-on-bridge-slaying/story-e6frewt0-111118244759>

December 07, 2008 [The Sunday Telegraph](#)

Three members of the same family have been refused bail after being charged over the murder of a man whose body was discovered in a southern NSW river nine months ago.

The body of Danny Ralph, 46, was found at the bottom of Queanbeyan River by police divers on March 29. Police say Mr Ralph, a father of four and chef, was beaten and pushed off a suspension bridge.

On Friday, detectives swarmed on two

Queanbeyan homes and arrested a

man, 25, and two women, aged 20 and 50, from the same family. The 25-year-old was charged with murder, while the 20-year-old and 50-year-old were charged with being accessories after the fact.

The case was mentioned in Queanbeyan Local Court yesterday and will be heard again in court tomorrow. None of the trio applied for bail.



## Leon Campbell called girlfriend before drowning at weir

<http://www.dailytelegraph.com.au/news/nsw-act/lovers-desperate-last-call/story-e6freuzi-111118861975>

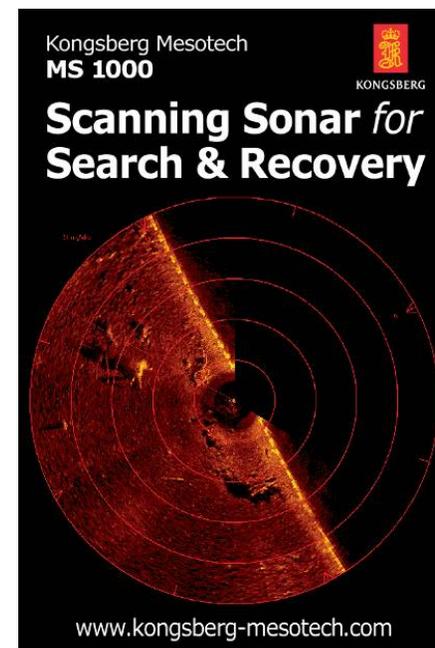
December, 2009 By Steve Gee [The Daily Telegraph](#)

The girlfriend of a man who disappeared in the Parramatta River yesterday told of how he telephoned her for help moments before he was swept away to his death.

Maddelene Mayton told *The Daily Telegraph* her boyfriend Leon Campbell was clinging to a safety railing over the weir as he pleaded on the phone for her to come to his aid.

The 21-year-old had scaled the weir fence after removing his jacket and was desperately trying to hold on to the railing under the surging water when he was swept away. By the time the 20-year-old reached the weir, just five minutes later, Mr Campbell was gone.

A panicked Ms Mayton said she immediately realised Mr Campbell was in trouble, with no sign of him on the weir bridge, which was covered under

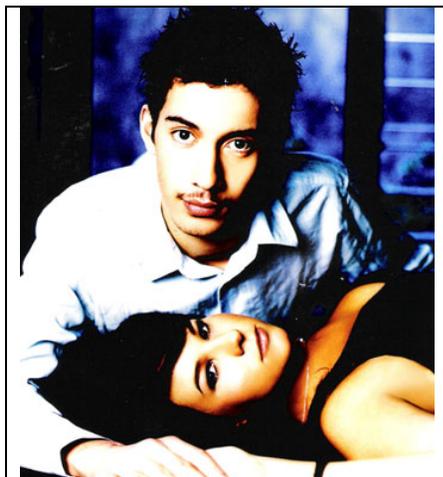


about 30cm of water. She spent the next 10 minutes scouring the water's edge, desperately calling out his name, before police and relatives arrived.

CCTV footage from Parramatta wharf captured the incident. Mr Campbell's body could be seen floating face down seconds after he lost his grip.

The Parramatta bar manager had been out drinking with friends on Friday night and was trying to cross the overflowing weir to reach a mate's house when he got into difficulty about 5.30am Saturday.

A shattered Ms Mayton told how Mr Campbell begged her for help during a series of desperate phone calls before he vanished. "He was screaming for help. He was saying 'Come and get me'. (He said) he was hanging on to the railing, then the phone cut out," Ms Mayton said yesterday, choking back tears. "He was asking me to hurry up because he needed my help." "I came straight here. I knew where to come because we come here all the time." The young Maori's shocked family spent yesterday maintaining a vigil at the wharf as police divers scoured the water for the young man's body.



*Tragic telephone call ...  
Leon Campbell made a plea  
for help to his girlfriend  
before being swept away in  
the Parramatta River.*

*Source: The Daily  
Telegraph*

As police yesterday reviewed CCTV footage from the site, a numbed Ms Mayton said the family was struggling to understand what had happened. "The camera's recorded him hanging on (to the fence) and then he's let go. That's all we know," Ms Mayton said.

Ms Mayton said the weir and river had become a special place for them since they met six years ago. The pair had only recently discussed plans for a wedding and to one day have a family.

"Whenever we wanted to be alone we would come down here and go for a walk," she said. "It was only last week we were down here on the wharf and he was teaching me how to play a song on a PCYC piano that was here."

Inspector Daniel Wiggins said the accident highlighted the dangers of taking risks near water. "It's unclear if he let go or was swept away by the water but there was a lot of water coming over the weir," he said. "It really does show the risk of skylarking."

#### **Related Coverage**

[Weir safety campaign follows drowning](#) *Daily Telegraph, 21 Oct 2009*

[Drought, credit woe sink boat builder](#) *Adelaide Now, 23 Sep 2009*

[Wellington looks to the bright side](#) *Adelaide Now, 20 Jul 2009*

[Weir 'poison not panacea'](#) *Adelaide Now, 30 Jun 2009*

## Divers Save Pajama-Clad Brooklyn Bridge Jumper

[http://gothamist.com/2009/12/20/divers\\_save\\_pajama-clad\\_brooklyn\\_br.php](http://gothamist.com/2009/12/20/divers_save_pajama-clad_brooklyn_br.php)  
December 20, 2009 By [Ben Muessig](#)

Police divers rescued a woman who jumped off the Brooklyn Bridge wearing just pajamas yesterday morning. The 22-year-old Manhattan resident, whose name has not been released, [leapt from the span](#) near its midpoint into the East River just after 7 am.

After receiving a call, an NYPD helicopter took off from Brooklyn's Floyd Bennett Field. Detective Michael Cocchi, 42, and Officer Jeffrey Dowling, 37, hurried to put on their scuba gear and jumped out of the helicopter when it was about 10 feet above the chilly river. They used the northward current to swim towards the woman in water that was about 45 degrees, according to a detailed [Times story](#) on the rescue. "It was extremely cold," Cocchi told [the Post](#). "I think she was in shock. She was floating, she didn't move, she didn't talk....She went under the water and popped back up. We knew we didn't have much time."

The divers attached a safety device and a line to the woman and [helped her board an FDNY vessel](#). The woman — who had been treading water for between five and ten



minute before the rescue — is being treated for severe hypothermia at Bellevue Hospital and is expected to recover. "It feels good. We saved somebody's life," said Cocchi.

## Man rescued from St. Joe River and 911 caller talk about the scare

<http://www.wndu.com/hometop/headlines/79955597.html>  
Erin Logan Dec 22, 2009

It's truly a miracle this [holiday season](#) for a South Bend father and his four month-old daughter.

Newscenter 16 was live on the scene Monday night when Wilson Karago and his daughter were rescued from his [SUV](#) after he drove into the St. Joe River.



[Man rescued from St. Joe River and 911 caller talk about the scare](#)

Erin Logan talked exclusively with Karago and Elisha Matakesa, the 911 caller. Karago thanks God he and his daughter are alive and that Matakesa was on the road in a relatively quiet neighborhood at ten o'clock on a Monday night. e says it's amazing he's home having a quiet evening with his precious baby Alana, when the night before they were trapped in his SUV Karago says, "She's a God send and we appreciate her work." He's talking about Matakesa. She says, "I'm like, "Oh, my God. It's not stopping. So it kind of slowed down and it kept going." I'm like, "Just stop, stop, stop. I'm like my eyes are not playing tricks on me. I know that just went over the cliff. I just called 911." She says within two

minutes, police and firefighters were on the scene and got to the SUV, already about four feet deep in the river. A few minutes after that, the father and daughter were pulled from the SUV.



Alana never got wet and slept through the whole thing. Karago doesn't remember much. He says, "I got dizzy and lightheaded and just felt hot flashes." The next thing Karago knew he was being saved by divers.

He says, "I was awake the whole way from river to the hospital. I was just so chilly and had a terrible headache. I've been having headaches lately. Even at work I wasn't [feeling good](#). So, I don't know what to make of it now."

He says he'll worry about that later. Right now, he just wants to enjoy Christmas 2009. It's one he we'll forever be thankful for.

It's also special for Matekesa and her family knowing she was there to help. She says, "God just put me at the right place at the right time."

Karago says, "Merry Christmas to her and her family."

Karago says this is the second time he's been involved in a scare like this. A few years ago, he blacked out and

drove his car into a ditch. Now, he'll be following up with doctors to see what's wrong.

Firefighters on scene said several times, given the temperature of the water, it could've been a very sad outcome. Karago was in the hospital just for a few hours and was treated for the early stages of hypothermia.

## Hunters set out to get ducks, find car instead

<http://www.postandcourier.com/news/2009/dec/24/hunters-set-out-to-get-ducks-find-car-instead/>

December 24, 2009 BY **BO PETERSEN** *The Post and Courier*

A spare tire popped to the surface with a splash. Then a flip-flop and an aerosol can. Then the trunk lid emerged and a blue Lexus sedan was towed from the Ashley River.

At the County Farm boat landing off Leeds Avenue, Hanahan resident Mark Shipman stood on the dock watching, his hands in the pockets of his camouflage outfit. He had come out at first light to hunt duck, his launch interrupted when Ashton, his wife, spotted the raised rim of the trunk. He reported the vehicle, then



waited to make a statement to North Charleston police before boating away.

Had he seen this happen before?

"Absolutely," Shipman said. "Wando Woods, Shem Creek."

No one was inside the vehicle, and Shipman's experience isn't anything unusual. Pulling empty vehicles from the boat landings is routine for law enforcement and rescue workers in the Lowcountry. The sloping ramps make a convenient slide to shove off cars someone wants to hide.

The Lexus had been reported stolen at 6 a.m. in North Charleston, less than two miles from where it was found. The owner said she last saw the car the night before. Charleston County Volunteer Rescue Squad divers jumped in after 35 cars so far this year, said Peter Rogers, public information officer.

"Just in the past two weeks we've had three." Only about 2 percent turn up with a body inside, but "they're all treated the same because those 2 percent make a difference." The partially open passenger window spilled water. An empty anti-freeze jug floated on the flooded floor. A plastic cup still sat on the dashboard.



*North Charleston police and Charleston County rescue divers retrieve a car Wednesday from the County Farm boat ramp near Leeds Avenue*

Down the dock, Ashton Shipman retrieved another flip-flop from the water. Rescue squad diver William Kitchener peeled off gear and blew a deep breath out red cheeks.

The call to dive had been his wake-up this morning. Was it cold?

"Very," he said.

What did Shipman, who duck hunts every day during the holidays, get for his trouble Wednesday?

"One goose," he said.

### **Fishing bomb could have been a 'national disaster'**

<http://www.timesofmalta.com/articles/view/20091224/local/fishing-bomb-could-have-been-a-national-disaster>

24th December 2009 Jake Schembri

Had the fishing bomb found on the Um El Faroud diving site on Sunday exploded it would have been a "national disaster", according to a diving instructor with more than 30 years experience. "If that explosive had gone off, the implications are that it would have been a national disaster. There could have been both Maltese and tourists dead or very seriously injured," had the bomb gone off on



**M&J Engineering**  
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San Diego CA 92064  
United States  
Phone 1.858.748.9442  
Fax 1.858.679.1632

a Sunday when many divers frequent the popular site off the coast of Wied iż-Zurrieq, Antonio Anastasi said.

The illegal explosive device, used by fishermen to kill fish, was spotted by divers at the site on Sunday morning. They kept their distance and immediately called the Armed Forces of Malta once they had surfaced. The AFM's Bomb Disposal Unit diffused the device shortly after.

One of the divers who spotted the bomb, 41-year-old Veronica Busuttil, who has 15-years experience, said she and her diving buddy realised immediately what they were dealing with. They remained calm and resurfaced to call in the authorities.

The device appears to have had an ominous message attached to it, saying in incorrect Maltese: Nifs qawwi itilqu freely translated meaning deep breath drop it. However, sources said that one could practically exclude the possibility that this was intended specifically for the divers. The paper on which the message was written formed part of a longer script,



which has no relevance to the explosive or to diving, the sources said.

The news sent shockwaves throughout the diving community, which has long been complaining that popular dive sites are not adequately protected from fishing practices that could pose a danger to divers.

In 2008, a law that made illegal the casting of nets or fishing lines on wrecks was passed to address these concerns. However, Mr Anastasi insisted that, while the laws went a long way to help the situation, the effort would be in vain unless there was regular patrolling.

Besides the health and safety aspect, there is also an economic argument to be made for the protection of dive sites from these sort of dangers. As Simone Brinch-Iversen, of the Professional Diving Schools Association pointed out, there are now 45 dive centres in Malta and as many as 60,000 divers each year come to experience the sites the island has to offer.



*The bomb found on the Um El Faroud by divers. Photo: Veronica Busuttil*

"We are pressing the government to ensure that non-fishing areas such as the Um El Faroud site are patrolled to prevent things like this from happening. Malta has a reputation for offering really safe diving, so an incident like this obviously puts that reputation in jeopardy," she said.

Questions sent to the Malta Maritime Authority remained unanswered, and a spokesman for the Parliamentary Secretariat for

Tourism echoed the call from the industry. "The Secretariat supports all the enforcement efforts by the competent authorities to eradicate such actions, not only because of their inherent illegality, which could lead to loss of human life, but also because these could have reverberating negative effects on our diving tourism market," he said.

The police would not comment officially but an officer who spoke on condition of anonymity insisted that regular patrols did take place even though he admitted that it was difficult to stop all illegalities at sea.

Meanwhile, a prominent former member of the Fisherman's Co-operative, who also lectures on fishing at the University, deplored the incident. Ivan Portanier, said: "I have never agreed with using explosives to catch fish, especially in a protected area. People who do things like this aren't real fishermen. They're just people trying to make a quick buck."

Dive sites, including the Um El Faroud, were earmarked as conservation areas by the MMA in 2008, meaning that it is illegal to anchor or fish there. Diving vessels are allowed to anchor, however. The Um el Faroud, a former Libyan tanker that was brought to Malta for repairs, was removed from the Shipyards and scuttled off the Żurrieq coast in 1998 after it exploded, killing nine yard workers three years earlier.

The wreck, which now sits at a depth of about 30 metres, is considered to be one of the most attractive dive sites in the Mediterranean by the worldwide diving community.

# Accomplishments

## Veteran rescuer writes book to help others prepare for tough part of job

<http://www.statesman.com/news/texas/veteran-rescuer-writes-book-to-help-others-prepare-151595.html>

Dec. 27, 2009 By [Isadora Vail](#) AMERICAN-STATESMAN STAFF

### Dan Misiaszek wants 'Hardened Hearts.'

Dan Misiaszek has spent most of his life trying to save people from crises.

As a former firefighter, police sergeant, soldier and paramedic, the 48-year-old Misiaszek has seen a lot of disturbing things, such as the infant in the Dumpster in San Marcos. Also, the New York woman whose body was found in the trunk of a car several days after a wreck — after her injured boyfriend woke up from a coma and said he had been trying to sneak her into a drive-in.



**Author Dan Misiaszek, a former firefighter, soldier, San Marcos police sergeant and paramedic, lives on 45 acres of land outside San Marcos with wife Kathy, a San Marcos police detective. He recently returned from a security job in Iraq. Ralph Barrera/AMERICAN-STATESMAN**

He's done some interesting things, too, such as staying underwater for more than 60 hours to break a world record, forming a rescue diving team in San Marcos and supervising live training courses in Iraq.

Some of his stories are so outrageous that his friends didn't believe him, he said. So he wrote "Hardened Hearts," a 200-page biography of his 30-year career in public service. "I would like someone to read it who is thinking about going into one of those careers," Misiaszek said. "They need to know that they can wear all the protective clothing, helmets, boots and gloves, but nothing can protect your mind and heart from what you will go through emotionally. I think this book can help prepare them."

Misiaszek got back this month from Iraq, where he had worked since March in diplomatic security for a private company. In the three previous years he was also a certified firearms instructor for private security company Blackwater Worldwide, which now operates under the name Xe Services, in Baghdad.

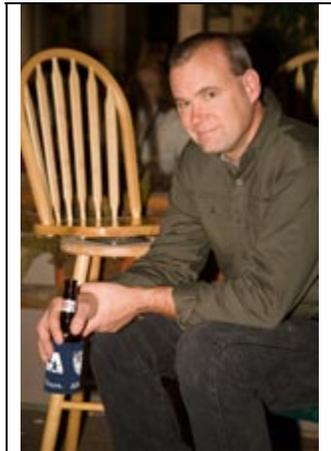
The title of the book comes from Misiaszek's favorite Bible verse, Hebrews 3:15, which reads, "Today if you hear his voice, harden not your hearts." "I think the verse stuck with me because over the years, it's easy to lose sight of what's important. Over 30 years, seeing so many people die can harden your heart, but you just have to remind yourself that any call you go on is the most important thing in the caller's life at that time, and you have to act accordingly."

Kathy Misiaszek, Dan's wife and a detective with the San Marcos police, said that when she would talk to him while he was in Iraq, he would tell her how he could see himself

in many of the young soldiers. He wanted to share his experiences to help mentally prepare them, she said. He didn't want to change their minds, he just wanted to help.

Dan Misiaszek, who lives on a small ranch outside San Marcos, became a firefighter in New York in the 1980s. He soon joined the Army and was stationed at Fort Hood. He was discharged in 1984 after breaking both legs in a parachute jump. He decided to stay in Texas and once his legs healed, he joined the San Marcos Police Department, where he and his wife formed the San Marcos Area Recovery Team, a rescue diving group for Hays County. He stayed until 2006, the same year he became an instructor for Blackwater.

Misiaszek said he hopes that his experiences in rescue operations will help others. For him, one thing was key. "You just have to disassociate yourself with the victims to be able to continue doing work like this," Misiaszek said. "Once you identify a victim, then they become someone you identify with. After the rescues, I let someone else identify the body and notify



***Author Daniel Misiaszek has 30 years of public safety training and experience, beginning with his roots as a paramedic firefighter in New York, his military service in the US Army airborne infantry, his distinguished career with the San Marcos, Texas PD, and his overseas work in high threat protection as a contractor providing personal protection services.***

the next of kin. It's the only way I was able to keep rescuing.

## Biography of Author Dan Misiaszek

<http://www.onechoicecanchangealife.com/authors/authormisiaszek.html>

Daniel Misiaszek started his career as a paramedic in upstate New York. Misiaszek worked for 4 years in the field including the trauma unit of the Faxton-St. Luke Hospital, Utica. When he left the trauma unit, Misiaszek joined the United States Army and served as an orthopedic technician at the Darnel Army Community Hospital. Misiaszek next attended the Officer Candidate helicopter flight school. In 1987 Misiaszek was injured in a parachuting accident, received a medical discharge and joined the San Marcos Police Department.

Misiaszek progressed rapidly, achieving the rank of police corporal in just 3 years. Misiaszek's talent and ability gained him recognition. In 1995 Misiaszek was selected to serve in the department's criminal investigation division and supervised the collision investigation team for ten years. This team of 10 police officers was skilled at and responsible for the reconstruction of major accidents involving serious bodily injury or death. By October 1999 Misiaszek had become a police sergeant and worked as a shift supervisor, firearms instructor and range master until his retirement in 2006.

Misiaszek has always had a love of scuba diving so it was not a far stretch for him to create the San Marcos Area Recovery Team (SMART) diver program. Misiaszek commanded the SMART for 16 years while

performing dive recovery operations throughout the state of Texas. SMART performed underwater searches and located evidence to help law enforcement agencies in accidents, missing persons and crimes involving underwater investigations. Misiaszek once stayed underwater for more than 60 hours as part of a fundraising event for SMART. This underwater accomplishment was a new world record for the longest open water scuba.

During his distinguished police career (1987 to 2006), Misiaszek served as a field training officer, hostage negotiator, detective, shift supervisor, criminal intelligence officer, firearms and tactics instructor, range master, and on the fatality collision investigation.

Upon his retirement from law enforcement as a sergeant in 2006, Daniel Misiaszek deployed overseas as a contractor to provide high threat protection and diplomatic security and serve as the range master and firearms instructor supporting high threat protection missions in Baghdad, Iraq. Misiaszek currently serves as a certified firearms instructor and range master. Misiaszek

supervises the day-to-day, live fire qualification and training courses for the high threat protection personal overseas. Misiaszek is responsible for the logistical services for the firing range which host multiple military and contracted units, as well as the many multinational embassies and coalition partners. Misiaszek works closely with logistical personnel to keep the range operations supplied, maintained, and operating safely 365 days a year. Misiaszek is a highly-trained personal protection contractor and served on several security



teams in Baghdad prior to his appointment as range master in April 2008.

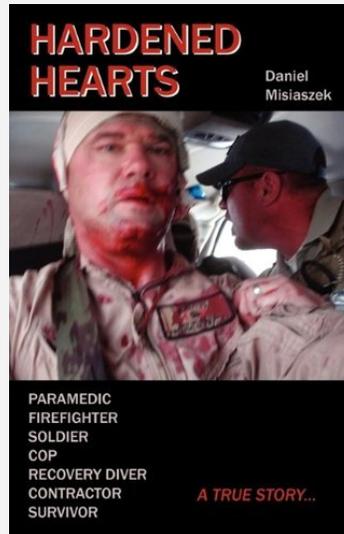
Author Dan Misiaszek lives with his wife Kathy on a small ranch in central Texas. Kathy Misiaszek is a 15-year veteran police officer who is currently a detective in CID working crimes against children. The Misiaszeks have raised 4 children.

Misiaszek has several awards, certifications and training to his credit:

#### **National & International Awards:**

- 2003 World Record Holder, Longest SCUBA Dive (Guinness Book of World Records)
- National Law Enforcement Officers Memorial Foundation, Washington DC, Officer of the Month, April 2004
- Law Enforcement Awards: Police Medal of Honor, Police Commendation Medal, Life Saving Medal, 3 Distinguished Service awards, Distinguished

## **Hardened Hearts**



When it comes to public service, Daniel Misiaszek has done it all as a police officer, firefighter, paramedic, Army soldier, search and rescue diver, and diplomatic security contractor. Follow this gripping true life and death story as it takes you deep into underwater spiral caves searching for bodies, staring down the barrel of a criminal's gun as an

officer on the night shift, and racing through the streets of Baghdad while taking enemy fire and dodging explosives. Be ready to strap on your scuba gear to set a world record, and secure your body armor and weapons to come face to face with lethal insurgents. Feel the full spectrum of raw emotions when saving a life and taking one to save your own. Complete this 30-year journey of trials and tribulations as a public servant that will have you questioning your decisions, your need to serve, your very core beliefs, your faith and dreams, and your heart...if you survive.

*"TODAY IF YOU HEAR HIS VOICE, HARDEN NOT YOUR HEARTS..." (Hebrews 3:15)*

[Order Dan Misiaszek's Book](#)

[Click Here \\$12.95](#)

#### **Career Service**

#### **Law Enforcement Certifications, Licenses, Training:**

- BFFOC-Basic Field Firearms Officer Course (Firearms Instructor) 2006
- WPPS- Worldwide Personal Protection Specialist, High Threat 2006
- Advanced Law Enforcement Rapid Response Team (ALERTT)
- Graduate - National Intelligence Academy, Coral Springs, FL
- Master Peace Officer 2003
- Law Enforcement Firearms Instructor Proficiency 1999
- Advanced Collision Investigator & Reconstruction 1996
- Police Instructor Proficiency 1995
- Advanced Peace Officer 1994
- Intermediate Peace Officer 1994
- Hostage Negotiator 1994

- Field Training Officer 1990
- Basic Peace Officer 1988
- Peace Officer License 1988
- NY State EMT/Paramedic 1982
- Associates Degree - Photography/Journalism 1981
- Firefighter certification NY State 1980

**Military Duty Stations:** HHC 1st Army Infantry Training Brigade, Martin Hospital, Ft. Benning, GA, 2/41 Mech Infantry, Ft. Hood TX, MEDDAC Darnel Army Community Hospital, Ft. Hood, TX

**MILITARY AWARDS:** Army Achievement Medal, Expert Rifle/Grenade, Army Drill Team Recognition, Highest Academics-MCT & EOCT, Airborne Wings, 175 score FAST testing. Honorable discharge.



**Dan Misiaszek** formed SMART in 1988 by bringing together public safety divers to assist with recoveries in the local area. Dan has over 27+ years of diving experience and has all major diving certifications plus Emergency Service, Scientific, Search & Recovery, TDI, Nitrox, Underwater Archeology, and full Cave. In 2002, Dan set a World Record for the [Longest Open Water Scuba Dive](#) by staying underwater for 3 days during a fund raiser. Dan has retired from full-time dive operations and consults for the team on an as needed basis.

San Marcos Area Recovery Team  
A DIVISION OF SOUTH HAYS FIRE DEPARTMENT

<http://www.smartdivers.com/>

## SAN MARCOS RECOVERY TEAM



In 1988 SMART Divers was organized to assist public service agencies and organizations with underwater search, recovery, and crime scene investigations. SMART became a non-profit 501 (c)(3) organization in 1997 and was incorporated into the South Hays Fire Department in June

2004. SMART combines the unique skills of police officers, fire-rescue, and EMS trained personnel with the field of search and recovery diving to form a specialty team of investigators above and below the water. SMART specializes in evidence recovery and documentation of the underwater scene with advanced video technology. This is a highly trained dive team that includes dive instructors, dive masters, underwater archeologist, specialty-advanced divers, haz-mat specialist, swift water rescue, deep technical, topside technicians, K9 handlers, and cave divers.



# INFORMATION YOU CAN USE

## \* PRODUCT RECALLS \*

FOR IMMEDIATE RELEASE  
December 23, 2009  
Release # 10-092

Firm's Recall Hotline: (800) 338-9143

CPSC Recall Hotline: (800) 638-2772

CPSC Media Contact: (301) 504-7908

HC Media Contact: (613) 957-2983

## Scuba Regulators Recalled by Cressi Due to Risk of Drowning

WASHINGTON, D.C. - The U.S. Consumer Product Safety Commission and Health Canada, in cooperation with the firm named below, today announced a voluntary recall of the following products. Consumers should stop using recalled products immediately unless otherwise instructed.

**Name of Product:** Cressi Ellipse Black MC5 Regulator

**Units:** About 200

**Distributor:** Cressi-sub USA, of Westwood, N.J.

**Hazard:** Partial obstruction of the High Pressure (HP)

port can produce an inaccurate reading on the pressure gauge, resulting in a slow descent of the needle in the pressure gauge. The inaccurate reading on the gauge poses a drowning hazard to divers.

**Incidents/Injuries:** The firm has received three reports of inaccurate pressure readings while the scuba regulators were in use. No injuries have been reported.

**Description:** This recall involves regulators used to control the flow of air while scuba diving, making it possible for divers to breathe under water. The recalled regulators have model name Ellipse Black MC5. "Cressi MC5" and "Cressi Black" are printed on the regulator.

**Sold at:** Authorized dive shops nationwide and on the Internet from March 2009 through August 2009 for between \$280 and \$309.

**Manufactured in:** Italy

**Remedy:** Consumers should immediately stop using the regulators and return them to a Cressi authorized dive shop for a free repair. Consumers can also return the product to Cressi at One Charles Street, Westwood, N.J. 07675.

**Consumer Contact:** For additional information, contact Cressi at (800) 338-9143 between 9 a.m. and 5 p.m. ET Monday through Friday, or visit the firm's Web site at [www.cressi.com](http://www.cressi.com)

**Note:** Health Canada's press release can be found at [http://cpsr-rspc.hc-sc.gc.ca/PR-RP/recall-retrait-eng.jsp?re\\_id=924](http://cpsr-rspc.hc-sc.gc.ca/PR-RP/recall-retrait-eng.jsp?re_id=924)



## Diving Medicine Online

Comprehensive information about diving and undersea medicine for the non-medical diver, the non-diving physician and the specialist.

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



### **Pulmonary Oxygen Toxicity** Compiled by Ernest S Campbell, MD

#### **Why does oxygen cause damage to the lung?**

Animal studies have shown that when the lungs are exposed to high levels of oxygen that deterioration occurs progressively by steps that overlap. The first step is an acute outpouring of fluid into the tissues of the lung, filling the spaces usually full of air. Following this there is bleeding between the air sacs that changes into a gummy layer and then into tough membranes and destruction of capillary and type I alveolar epithelial cells. The fluid phase merges into a subacute phase that is characterized by production of tissues usually seen in attempts at healing, result in thickening and scarring. There are type II alveolar epithelial cells produced and partial clearing of earlier acute changes. These changes are influenced by the concentration of inspired O<sub>2</sub>, duration of exposure and other factors such as species differences.

The lungs of human patients who die after prolonged oxygen therapy have the same damage as is seen in pulmonary oxygen toxicity in experimental animals. The clinical course of these patients, in conjunction with the known susceptibility of humans to oxygen toxicity, leaves

no doubt that the observed pathologic changes are caused by pulmonary oxygen toxicity. In monkeys and presumably also in humans, recovery from pulmonary oxygen intoxication is accompanied by complete resolution of changes typical of the early fluid phase. However, when exposure to hyperoxia is sufficiently prolonged for the development of prominent scarring, recovery from these pathologic effects is greatly delayed, and chronic changes may be left in the lungs.

Symptoms of pulmonary oxygen poisoning begin slowly as a substernal irritation that becomes progressively more intense and widespread along with increased coughing. Uncontrollable coughing occurs in severe cases, symptoms originating in the trachea and major bronchi associated with a constant burning sensation, which is worsened by inspiration. The most severe symptoms are associated with shortness of breath on exertion or even at rest. The onset of symptoms is variable among individuals but usually occurs after about 12 to 16 hours of exposure at 1.0 ata, 8 to 14 hours at 1.5 ata, and 3 to 6 hours at 2.0 ata. (ata = 33 ft sea water)

Pulmonary function changes to hyperoxic O<sub>2</sub> exposures include:

1. decreases in inspiratory and expiratory lung volumes
2. decreases in flow rates
3. decreases in carbon monoxide diffusing capacity
4. decrease in lung compliance.

Arterial oxygenation was maintained at rest during early reversible stages of pulmonary intoxication but was detectably impaired during exercise after hyperoxic exposure. The ability to move air in and out is impaired

earlier and more severely than is gas exchange function in normal humans exposed continuously to elevated oxygen pressures.

### **Should I be worried about oxygen treatments in a chamber?**

Humans can live normally for seven days with elevated oxygen levels at about half ata, although the level of hyperoxia that can be tolerated indefinitely with no pulmonary effects cannot be identified with certainty. However, exposure for 24 hours at 0.75 ata causes pulmonary symptoms in association with a significant decrease in vital capacity, and the rate of pulmonary intoxication increases progressively at higher oxygen pressures.

Nevertheless, the majority of current applications of hyperoxia in hyperbaric oxygen therapy and diving do not cause pulmonary symptoms or functional deficits.

Hyperbaric oxygenation causes pulmonary symptoms in patients only when used very aggressively for serious conditions, such as severe decompression sickness or arterial gas embolism. Some degree of midchest discomfort is also frequently experienced by commercial divers who use intermittent hyperoxia to hasten inert gas elimination after unusually long or deep dives. When hyperbaric oxygenation is combined with saturation exposure in the treatment of refractory decompression sickness, it is not uncommon for diving chamber attendants and the patient to experience pulmonary symptoms. In all of these situations, irreversible pulmonary intoxication can be avoided by careful

monitoring of symptoms and appropriate alternation of hyperoxic and normoxic exposure periods.

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### **Biochemistry of Oxygen Toxicity**

Gerschman and Gilbert were the first to propose that oxygen toxicity is caused by the production of *free radical intermediates* in excessive concentrations during exposure to increased oxygen pressures. The initial involvement of these agents is now well established, and several excellent reviews have summarized the literature on the biochemistry of *oxygen free radicals*. Although exact mechanisms are not yet known, free radical intermediates including superoxide anions, hydrogen peroxide, hydroperoxy and hydroxyl radicals, and singlet oxygen are potentially *toxic to cell membranes, enzymes, nucleic acids, and other cellular constituents*. Along with better understanding of oxygen free radicals has come a greater awareness of the dependence of vital biologic processes on cellular antioxidant defenses such as *superoxide dismutase, catalase, and the glutathione system*. It is now thought that in the absence of these defenses, the same oxygen pressures required to sustain life would cause lethal oxygen poisoning.

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### **References:**

Bove, Diving Medicine, 1997  
Edmonds, Diving and Subaquatic Medicine, 3rd Edition  
NOAA Diving Manual, Fourth Edition  
US Navy Diving Manual, Fourth Edition

# EVENTS



If you have an event or know of an event that might be of interest to PSDiver Monthly subscribers, send the information to: [PSDiverMonthly@aol.com](mailto:PSDiverMonthly@aol.com)



Come out to a DUI DOG Rally & Demo Tour and Actually TEST DIVE DUI Drysuits, DiveWear Insulation and Accessories  
2009 Calendar / Locations  
[http://www.dui-online.com/dog\\_main.html](http://www.dui-online.com/dog_main.html)

## Basic Evidence Photography

[http://www.imprimus.net/workshop\\_forensic\\_basic\\_evidence\\_photography.html](http://www.imprimus.net/workshop_forensic_basic_evidence_photography.html)

February 1 - 3, 2010

Seymour Police Department: Seymour, Indiana

## Our World-Underwater

<http://www.ourworldunderwater.com/>

February 19-21, 2010

Donald E. Stephens Convention Center, Rosemont, IL

## Underwater Intervention 2010

<http://www.underwaterIntervention.com>

Feb 9 thru Feb 11, 2010

New Orleans, LA, USA

## Side Scan Sonar Training

[http://www.blacklaserlearning.com/index.php?option=com\\_content&task=view&id=79](http://www.blacklaserlearning.com/index.php?option=com_content&task=view&id=79)

February 23, 24 and 25

Annapolis, MD

## Technical Large-Animal Emergency Rescue Training

<http://www.thehorse.com/ViewArticle.aspx?ID=15165>

March 22-24, 2010

Eastern Kentucky University, KY

## Beneath The Sea 2010

<http://www.beneaththesea.org>

March 26- 28, 2010

Meadowlands Exposition Center, Seacaucus, NJ

## Arkansas' Fourth Annual Search and Rescue K9 Working Dog Seminar

<http://www.sdaoar.com/2010Seminar.htm>

March 31-April 3, 2010

Camp Robinson Wildlife Demonstration Area,  
Conway, Arkansas.

## Search and Rescue 2010

<http://www.shephard.co.uk/events/44/search-and-rescue-2010/>

April 21, 2010 - April 22, 2010

Aberdeen Exhibition & Conference Centre,  
Aberdeen, Scotland, UK

## 9th Annual National Drowning Prevention Symposium

<http://www.ndpa.org/events/symposium.htm>

April 26-27, 2010. Pre-conference workshops on  
Sunday, April 25

Sheraton at Station Square, Pittsburgh, PA.

## SCUBA Show 2010

<http://www.scubashow.com/>

May 15th and 16<sup>th</sup>, 2010

Long Beach, California

**Biological & Trace Evidence Workshop**  
[http://www.imprimus.net/workshop\\_forensic\\_bio\\_and\\_trace.html](http://www.imprimus.net/workshop_forensic_bio_and_trace.html)  
May 24 - 26, 2010  
Springfield Police Training Academy, Springfield,  
Illinois

**National Search and Rescue Conference**  
<http://www.nasar.org/nasar/conferences.php?id=159>  
May 13 – May 15, 2010  
Tunica, Mississippi

**TOPICS IN CRIME SCENE INVESTIGATION:  
BODY FLUIDS AND TRACE EVIDENCE**  
<http://www.le-seminars.com/011.htm>  
June 3-4, 2010  
Clay County Sheriff Training Academy, Orange Park,  
Florida

**Firehouse Expo 2009**  
<http://www.publicsafetyevents.com/emsfh/index.po>  
July 20-25, 2010  
Baltimore Convention Center  
Baltimore, MD

**EMS Expo**  
<http://www.publicsafetyevents.com/ems/index.po;jsessionid=dWZDOXpNtSo-T-pwDoQYP1GS>  
Sept. 27 - Oct. 1, 2010  
Dallas Convention Center, Dallas, TX

**2010 IEEE International Conference on  
Technologies for Homeland Security**  
<http://ieee-hst.org/>  
8-10 November  
Waltham, MA USA

## PSDiver Monthly Continuing Education PSDM-CE-68

# Maintenance

- 1) The most important maintenance procedure you can perform on your regulator is:
  - a. Fresh water rinse immediately after your last dive.
  - b. Yearly factory maintenance
  - c. Air dry in the sun
  - d. Rebuild after each dive
- 2) Most free flow problems are related to:
  - a. High pressure seat leakage
  - b. Dirty 2<sup>nd</sup> stage
  - c. Diver inhaling too hard
  - d. Only on regulators that need to be removed from service
  - e. A & B
- 3) Intermediate pressure generally falls between 125 psi to 135 psi:
  - a. True
  - b. False
- 4) Two types of second stage regulators are balanced and unbalanced
  - a. True
  - b. False

- 5) VIP refers to:
- The highest ranking person on scene
  - Annual tank inspection
  - Variable Intermediate Pressure
  - Verified Inspection Procedure
- 6) Vulcanized suits cannot be repaired once a hole develops due to:
- The type of heating process required to "patch" is higher than field procedures
  - The expense of fixing is more than the suit is worth
  - This is a factory repair
  - The statement is false
- 7) Heat and cold have no influence on regulator operation.
- True
  - False
- 8) FFM's should be inspected after each dive. In addition:
- A yearly inspection/test and field repair kit installed
  - Sent to the factory each year
  - As long as they are working they don't need maintenance
  - Factory maintained every five years
- 9) Each team should have a yearly maintenance program for all diving gear.
- True
  - False
- 10) The name of the filter on the first stage is
- Carbon activated filter
  - Moister reducing filter
  - Sintered filter
  - It does not have a formal name
- 11) A tank "hydro" inspection is due every \_\_\_\_\_ years:
- 1
  - 2
  - 5
  - 8
- 12) When performing visual inspection of tanks it is important to check for cracks.
- On the inside bottom
  - On the outside bottom
  - The neck thread
  - Tanks do not crack

#### **TEAM DISCUSSION TOPICS / ACTIONS:**

- Discuss among your team the procedures concerning equipment owned by the team and that which is member owned. How do you handle the equipment maintenance of member owned equipment. Who pays for the repair, etc. How is annual and preventative maintenance handled on member owned as well as team owned.
- As a team, review your SOPs / SOGs concerning maintenance and discuss changes or adaptations that should be considered.

- 3) As a team, conduct an item by item inspection and inventory of all related equipment. Clean and repair any and all items that can be repaired on site. Those items that cannot be repaired, should be tagged and taken out of service for later repair or replacement.
- 4) If winter is down time for your team, inspect and winterize all of your motorized equipment and include winterizing gasoline additives.

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

### **Public Safety Diving**

**Association**(PSDA) recognizes and approves the PSDiver CE program. Each month's Q&A program credits 1 CEU for renewal up to a maximum of 3 CEUs from this source for each year's renewal.



**ERDI** Recognizes and supports the PSDiver Monthly CE Program. Contact your ERDI Instructor for details.

**We welcome all training agencies and organizations to participate.**

For details, email [PSDiverMonthly@aol.com](mailto:PSDiverMonthly@aol.com)

## **Additional Continuing Education**

### **Man shot in head with nail gun 30 times**

<http://www.telegraph.co.uk/news/worldnews/australiaandthepacific/australia/5210676/Man-shot-in-head-with-nail-gun-30-times.html>

24 Apr 2009



*X-ray showing multiple nails embedded of the skull of 27-year-old Chen Liu. Photo: Reuters*

**Police in Australia have released a shocking x-ray that shows a man's skull riddled with up to 30 large nails.**

Police hope the graphic image of Chen Liu's skull will help them track down his killer. Detectives said the nails,

which measure up to 85mm long, were fired into his head by a high-powered nail gun.

His decomposed body was found floating in the Georges River in southern Sydney in November. It had been bound with electrical wire and wrapped in a domestic rug.

Since then, the trail has gone cold and detectives released the x-ray as part of a fresh appeal for information. Officers believe Mr. Liu, 27, was shot and killed before being driven to the river in his own 4WD and dumped.

Detective Inspector Mark Newham told local media that post-mortem examination results had showed Mr. Liu was shot repeatedly in the head up to 30 times with a high-powered nail gun. "Similar types of nail guns can fire nails up to 85mm long," Mr. Newham said.

Detectives said the nail gun used in the murder was a standard cordless, framing, gas-charged gun, widely available for sale and hire.

Mr. Liu was believed to be homosexual and lived with his partner in Rockdale. He was reported missing by a male friend two weeks before two children, aged 9 and 14, found his body while on a canoeing trip. He immigrated to Australia from China in 2000.

## TEAM DISCUSSION

1) Using the news article as your "incident", discuss the points that would relate to a dive team response and recovery.

2) Since the body was found floating in the river and the initial crime scene was somewhere else, discuss a "What if" scenerio if the same body, in the same condition, was discovered at the waters edge and it was possible that the location was the initial crime scene. What would your team do then?

3) Discuss the potential variety of evidence that could be collected from the incident and the methods your team might employ.

4) Discuss your preservation methods for all items including nails, body parts, electrical wire and the rug.



Marine-related scholarships are being offered by Seaspac, Inc. SEASPACE is a 501(3)(c) organization. The SEASPACE Permanent Education Fund earnings and private donations endow scholarships specifically in support of marine-related courses of study. Financial assistance has been provided to more than 332 students enrolled in accredited colleges and universities throughout the United States. Approximately 75% of past awards have been to graduate students, with the rest going to undergraduates. Majors have included marine sciences, marine biology, wildlife and fisheries, environmental toxicology, biological oceanography, genetics, ocean

engineering, aquaculture and zoology with marine mammal applications.

The scholarships are open to undergraduate students entering their junior or senior years and graduate students with an overall GPA of at least 3.3/4.0 and demonstrating financial need. Students must be enrolled or accepted **full-time** in an accredited US college or university beginning with the 2009 fall term. United States citizenship is not a requirement.

The application document must be received no later than **11:59 PM, February 1, 2010** to be eligible for consideration, regardless of mailing date. Electronic/e-mail entries will be accepted (single pdf files preferred). Late arrivals will not be returned to the sender nor will they be scored. The application is available on the SEASPACE website below. In order to keep administrative costs down, there will be no mailout unless the request is accompanied by a self-addressed, stamped envelope.

Winners will be notified by email in mid April, 2010 regarding the results of the competition.

**PLEASE USE CURRENT FORMS ONLY!!!**

Current applications are marked "Revised 03 Sept 2009"

**Questions may be addressed to:**

Jesse Cancelmo, our Scholarship Committee Chair.

Or write to:

**SEASPACE Scholarships**  
**P.O. Box 3753**  
**Houston, TX 77253-3753**

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