Public Safety Diving FATALITYs —
WHO IS IN THE BAG?
Why Are We Killing Our Divers?
By Mark Phillips

Low Head Dams — What Are They?
Greetings.

Since the inception of this magazine, I have worked to bring you news and information relative to underwater rescue and recovery.

This has included general articles on scuba techniques, crime scene procedure and documentation, new technologies and even medical information related to dive specific injuries you might incur.

We have worked to dispel myths within our diving specialty and provided outlets for education and forums for general discussion of related issues.

For more years that I want to remember, I have worked for and promoted the need for a national Public Safety Diving Standard. I spent months working on a definitive answer to those who claimed we ARE diving under and must follow OSHA guidelines and those who claimed we do not. That argument was finally put to rest and the horse was buried with PSDiver Magazine Issue 112.

Recently I started working on updating the www.PSDiver.com web site. I have been archiving PSD Fatality information for a while and wanted to update the relatively small list I had published.

In my research I had included top water rescue fatalities and have now separated them from the underwater files. Simply put, if the fatality was a Public Safety Officer and they died on or off duty attempting to save the life of someone else, I included them in my research files.

The Public Safety Diving Fatality files can be found at the PSDiver.com web site or click on this link: http://www.psdiver.com/publicsafetydivefatal.html.

The top water fatalities we have posted so far can be found on the web site or you can follow this link: http://www.psdiver.com/publicsafetyfatalwater.html.

The information provided in the files is a compilation of news articles and reports that are or were publically available on the Internet. The majority of all the sources are identified with original links. There are a few files that include reports that are not attributed to any source. If you find one of these and have the source, please let us know and we will make the corrections.

These files are not complete nor do they represent the total number of water related public service fatalities. I have more files archived that will be added to each category as time permits.

If you have information, photos, reports etc that you can share, please send them to psdivermonthly@aol.com.

I have been working on updating the PSD Fatality files and have become more than concerned. In fact, I am angry. My arguments for a PSD Standards seem to fall on deaf ears yet we continue to see fatalities within our field of diving. Why? What are we missing? How many divers do we need to kill before we find and fix the problem?

Dive Safe,
Mark Phillips
Editor / Publisher

If you would like to discuss this topic or any other join our discussion group CLICK HERE TO JOIN
WHY ARE WE KILLING OUR DIVERS??
Mark Phillips

I have shared a version of this with one training agency group and feel strongly enough about it I decided to present it to our subscribers.

Before I get started, I will say this first - I'm sorry. I thought I would apologize first because if I am get through to you, I intend to make you angry. I want you to get angry. I want you to get angry and prove me wrong. I want you do some of your own research and form your own opinions based on what you learn.

For those in the business of training, I am not going to do a “tell all” exposé or violate the trust of those who have discussed standards issues or the future of Public Safety Diving etc. so get mad at me if you want - but be careful if you decide to attack me. Those of you who claim to be Public Safety Divers or instructors - I am going to challenge you and you might find this article uncomfortable. If ANY of you find the information and opinions I am going to share troubling I sincerely hope you do something about it and get involved. If that is writing pointed questions to the training ABCs, a State Official or your team taking a stand against unsafe diving practices you are forced to contend with – then do it.

If you want to blast me for bringing this up – do it. But be prepared. For those in the industry - My confidentiality will end with a public attack based on limited or false narratives. I am angry and with the research I have made available to anyone interested, you should be too!

I have been attacked publically and privately for promoting the idea of a National Consensus Standard for Public Safety Diving. The arguments against the effort always led to either “Follow OSHA” or “Follow NFPA”. Neither of those offer what I believe is needed.

OSHA does not apply to every state and NFPA is a subscription fire based guideline that is not usually acceptable to law enforcement dive teams.

New training programs are now being offered for Public Safety Diving certification. Regardless of the agency name for it, the training is intended to be for us. These same agencies have instructor training programs that allow for increasing numbers of “qualified” instructors to teach these programs.

Yet – neither the training agencies nor a general group of PSDivers can get together and even agree on what a PSDiver is, what it takes to be one or what their true function is. What skills are necessary for limited visibility or zero visibility diving?

Here is an eye opener for you – until our PSD Standards group took it on, there was NO definitions for the conditions these descriptions implied. Our work on this was introduced in PSDiver Magazine Issue 113. Guess how many folks paid attention …

Why is this important? Glad you asked. When we talk with divers and they tell us they don’t need all the people some of the ABCs require at a dive scene we immediately go on alert. When they do not hard tether and only use a hand loop or do not require a backup or safety diver – we
go on alert. Sometimes in these conversation they may mention “seeing the car or body”.

We forget that some teams dive in waters and have visibility. Of course they do not need all the safety measures we might put into place for zero visibility diving if they can see their object from the surface! Their idea of zero visibility might be a few seconds of silt out. Their concept of limited visibility might be a drop to 15 feet of visibility.

How are teams supposed to communicate with each other effectively when they have no standards to work from? More importantly, how are the training agencies teaching these diverse groups?

If you are a new member of a municipal or volunteer department that has an existing dive team, all you need is the desire to learn scuba or an open water certification to be a member. What does it take to be called a Public Safety Diver? The T-shirt.

To my knowledge, there is no other aspect of law enforcement or firefighting that works without ANY type of consensus standard. But if you are a member of one of those dive teams and drown, the most we are likely to see is some news articles and later on a possible civil suit. In some instances a detailed investigation will take place. In almost all instances, the only thing you will see come out of the investigation is a list of suggestions to prevent a similar accident from happening.

Let one of us get burned in a fire, or shot making a traffic stop; a parade of agencies and media will be involved.

How did we get here?

Fire department divers even volunteer divers have been recovering drowning victims using scuba equipment since the 1950’s. Over the years, equipment has improved and lessons learned through experience, trial and error, common sense and adaption have improved these typical divers’ abilities.

Eventually the primary source of these divers has become local or state governments via fire or police departments. Business with governmental entities is typically slow, and low profit unless you can make continued sales, sale in volume, or have a product that requires repeated sales.

Being government based teams or even privately funded volunteer teams, the recreational scuba industry did not get very involved. The number of potential divers relative to the risk and potential marketing profits left the divers on their own.

This is not to imply that there was no training available there was. Eventually training became commercialized and specific classes were being taught to share skills, information and techniques.

But where we now have instant access to information via the Internet, marketing, information, communication etc was much more limited and a lot slower and more costly.

As time progressed, technology began to catch up and some agencies learned quickly how to adapt their programs to a national and even international base. But there still existed the problem of risk and potential marketing profits. The recreational scuba community had
begun to study the Public Safety Diving community and one or two stuck a toe in the “waters” but full commitment was still held in check.

Before the attacks on 9/11, what we call Public Safety Diving was performed by scuba divers with diverse specialty skills. There were some training agencies who offered specific training for the job but dealing with government dive teams, training, equipment and the time involved to participate in those classes was almost always difficult to come by.

Some recreational scuba instructors who happened to be on a fire or law enforcement dive team built specialty training for their teams and were granted the ability to teach others the same lesson plans. They were rare instances where those instructors would share their training outlines. Usually they were held tight to limit competition.

Because there were limited classes being taught, compared to recreational scuba, those involved in teaching Public Safety Diving programs captured the small market that was available.

Then New York City was attacked.

After the attacks on 9/11 Money FLOWED from Homeland Security in the form of various grants. Select and astute dive teams received LOTS of money for equipment.

Equipment and training companies noticed. In a relatively short time, most of the Scuba ABCs had some type of PSD training certification be it a national certification or an Instructors unique specialty program.

Public Safety Diving became noticed and everyone wanted to tap into the grant $$.

It has been 15 years, money flowed for a long time but it is drying up if not already arid. PSDs are no longer as important as they were to equipment companies - perhaps even some of the recreational scuba agencies who ventured into that world of diving. I can't complain about that, it is the way of business - to follow money.

Over the years, within our community of divers, we have experienced numerous fatalities. We are still seeing fatalities within our field of diving and given the inherent risk we accept, that is expected.

Public Safety Divers were dying before 9/11 and still are.

**Fatalities within our field of diving are expected but that very expectation should be unacceptable!**

Fast forward to today. For PSD teams, training, equipment and the time involved is still difficult to come by. We STILL have no consensus standards for Public Safety Diving or even a unilateral definition of what a Public Safety Diver is. If you join a VFD with a dive team and are a diver - they can give you a t-shirt and call you a Public Safety Diver.

We have made very little progress and we are still seeing members of our diving community die. Have you ever wondered WHY?

In that same time period, Recreational Scuba has seen a boom in side mount diving, rebreather diving, even solo
diving. Are we being left behind? Have we had our run of support and exhausted outside interest and now are left to fend for ourselves again?

I see articles in various publications, blogs or group postings written by numerous individuals who claim to be Public Safety Diving Instructors or Senior Dive Team Members etc - people who came out of nowhere and have questionable real experience –

Recreational instructors who have never seen a drowning victim, never been in true zero visibility water - alone and on a rope - who are teaching their perception of Public Safety Diving to other recreational divers and calling it Public Safety Diving.

Frustratingly, it too is the nature of things and something that may never change. But without a standard or at least an agreed upon base of definitions what can we expect?

Fatalities.

This is one reason I am angry. It is difficult to find information about these fatalities. Some of those who have documentation don’t share because of confidentiality issues. Some won’t share because they need to control their own material and what is usually share are summaries with vague information. There are NIOSH reports that investigate cause, effect and offer solutions to avoid future injuries but they only report on fire department fatalities.

Information IS available if you are willing to spend hundreds of thankless hours researching. I’ve been doing that for years and have files freely available for you to download and view.

Go LOOK at the PSD Fatality folder. Download the files.

Currently I have about 60 files published representing over 200 MB of information. Those 60 files represent 60 PSD Fatalities - and I have MORE that I am working on still to publish. (I also have a folder documenting water public safety water related fatalities that is continually expanding as well.)

HALF of those published PSD fatalities occurred while TRAINING! At this point in time, with the resources we do have available, WHY are we killing our divers during TRAINING??

Without a national consensus standard for Public Safety Diving, what are our own standards or requirements?

Are our medical requirements too low, inefficient or incomplete? What standard are we using to protect the medical fitness of our divers?

I had an annual dive team physical for over 30 years in a row. A little over a year after I retired, I was told I had a failing aortic valve that had to be tended to ASAP. After ALL those consecutive years of medical checkups, after the surgery - the doctors told me they did not know why I was still alive. They called my potential demise "Sudden Death Syndrome". 30+ years and all I was ever told was "you have a slight heart murmur"....
Is our PSD training too difficult? I find that idea hard to believe but without some standardization or guideline how would we know?

Are we adding too much new or unknown equipment and not providing adequate training? There are some reports in the PSD Fatality Folder that would lend validity to the statement - but not enough to call it a trend. But certainly we should consider a comparison of training agency standards for specialty training for new or specific equipment. Who will do that? The agencies cannot even agree on what prerequisite skills or training is necessary to become or be called a Public Safety Diver. But you can buy a shirt.

Are we under equipping our teams? Are we asking our divers to do too much with the equipment they have? How would we even begin to make a comparison if there is no standard to follow? What is the proper equipment for a Public Safety Dive Team anyway? Do you require a redundant air supply? If not, how long CAN you hold your breath?

Are equipment issues killing our divers? Maybe. Some reports indicate regulator failures or inadequacies. What about redundant air? We can talk about it but to what end if there is no support for making it mandatory in xyz conditions?

Are we under staffing our teams because it is “just a 10 foot deep canal” or "just training" or our administration is cutting cost corners?

When training and time is limited, what shortcuts are being taken that are not allowed on a true dive site? What prevents those same shortcuts from transitioning to the actual dive call?

Are we asking our divers to do more than they are capable of doing or to exceed their training? How can they ever NOT exceed their current level of training if they do not push their training??? But in that training, are we going too far or not providing enough PRIOR physical and academic training? What measure is to be used to decide? Who is leading the training and how did they qualify to do that?

WHY does a PSD certification, once earned, last a lifetime with NO required continuing education? Are we teaching divers to do the work and then hope they remember enough the next time they are called out on an actual dive mission? Or if a renewal is required, is there something more than sending a check required for renewal? What happens if they still have the shirt but don’t send in the check?

And you instructors, once a class is finished, unless they are wanting to book an additional class, maybe place a deposit ... how much do you care about them afterwards?

Or, once a class is finished, does that team leave believing they are dive gods and know all there is to know about Public Safety Diving? Did you teach each and every diver in the class so well that they feel they have little need to do additional basic training or continue to work to maintain basic skills?

Teams who are excited about their training and energetic while they are in formal PSD training classes tend to lose that enthusiasm when they go back to their departments...
and have to face administrative restrictions on staffing, budget, training time and equipment. Are you doing enough in the time you have them to make them safe?

**Did you teach them that it is OK to NOT dive if they are not comfortable with conditions?**

Are you preparing them FOR your class or just hoping you get divers who know how to put their basic scuba equipment together properly?

PSD fatalities have occurred during a formal training class. But fortunately those occurrences are very rare.

**Yet HALF of our published files resulted while TRAINING!**

This should be unacceptable for ANY organization with ANY type or style of special team. It should be unacceptable to all of us. If a caver or a recreational diver drowns we see shared news reports, opinions, speculation, etc. on all sorts of social media sites. But when a Public Safety Diver drowns, our community is so small in comparison - we hear a little buzz and usually nothing else unless there was a NIOSH report released.

**There are NO NIOSH reports for LEO, EMS or volunteer SAR team PSD fatalities.**

This is what I think is killing our divers - APATHY.

Doing “good enough” is not acceptable. Pencil whipping through an academic class without understanding or learning the concepts being taught opens the door for failure. “Good enough” is not acceptable when team training consists of “What do you guys want to do today”.

One of my favorite quotes is “Under stress you will perform as you trained”. If we allow ourselves to underperform or cheat the system because there are no national consensus standards or our team has not written guideline requirements that mandate skill proficiency we are setting ourselves up for failure. In our world, failure can be deadly.

By now I really hope some of you are angry if not outraged at me for saying these things. Let me adjust a bit. WE - US - those within the Public Safety Diving and PSD training communities who have had the opportunity to learn from one another, to work with and on committed dive teams, to do what WE typically do; WE are not the problem.

While on those teams we had to learn how to be better with the tools, time and administrative support we have had available.

WE, for the most part, have learned how to say NO – to refuse a dive. But have we shared that information with the younger divers? Sadly, I think it is pretty common for the older, more experienced dives to resign themselves to just diving or quit altogether because they have tired of the continued fight for what they believe are better, safer diving practices.

Those in the world who have assumed the title Public Safety Diver, or PSD Instructor who shortcut the process of team membership, team building, training and growth are our collective problem. They have not had the opportunity to learn through real experience. They have not learned the lessons that lead to knowing how to say no.
How can those who shortcut recognize PTSD within their divers or help a new diver dealing with aftermath of a body recovery? How can they teach vehicle recovery if they do not know what an upside down car feels like when you run into it in zero visibility - or know the taste of gasoline when you blindly swim through a rising gasoline column - much less how to prepare divers for what they will need to do to search and extract the vehicle if necessary.

Read a chapter in a book, take an online test and you too can become a rocket surgeon... or just buy the shirt.

There are no enforceable standards for Public Safety Diving, unless you are in an OSHA State that follows the OSHA Directives. Even then there is still confusion because of the misinterpretation of the "PSD Exclusion". Download PSDiver Magazine Issue 112 for the full explanation of how OSHA and PSDiving are related.

Can YOU define what a Public Safety Diver is? What they do? What qualifications they must have to be called a Public Safety Diver? Is it just a special training class or a "training day" with the team?

In my opinion we are not doing enough to prepare divers for Public Safety Diving. Please, let's be clear - if you have more than a body length of visibility on your dive, I do not consider those conditions the same as I do a zero visibility dive. It is the latter condition, not the former where we see the PSD fatalities.

Why would a PSD ever get "lost"? Why would it take hours to "find" a PSD? In zero visibility why would we EVER allow a PSD in the water without being hard tethered? (Attached not just holding a hand loop).

A PSD should not be found dead because of ANYTHING that can be directly related to basic scuba skills. But with no entry level standard or even an identification of the skill requirements necessary to perform a zero visibility search and recovery dive, how on earth do we stress the need for superior basic skills?

"Diver found dead, weightbelt still on, air in his cylinder - not entangled but regulator out of his mouth". Panic? Over stressed? Hyperventilation blackout? Heart attack?

Pick ANY of the PSD training fatalities I have published and make a list of basic open water skills that could have been employed that might have saved that divers life. How can we incorporate a higher level of basic skill mastery that could have kept that diver alive? What skills should we highlight?

More importantly make the decision that these fatalities within our ranks should NEVER occur while we are training!

Take responsibility for your skills proficiency and your education in Public Safety Diving and your medical fitness. Expand your knowledge base. Learn and know your own limits. NEVER settle for “good enough”.

I hope you agree with the need for a standard for Public Safety Diving. I hope you take steps to become proactive on your team and speak up when you see unsafe practices. I hope you never settle for “good enough”

I hope you never suffer the pain of losing a team member and use the information and data that is available to build
upon - to make your team safer, more efficient and proficient.

I hope you learn and gain the confidence and courage to say “NO” when you or your team is asked to do something that is beyond your training, equipment or manpower capabilities.

We would rather talk with you than about you. If you would like to discuss this or any other issue regarding Public Safety Diving, we have a moderated forum for just that purpose. CLICK HERE TO JOIN

You can follow PSDiver on Facebook. The page is still a new addition that doesn’t get the attention it needs yet. Click HERE

If you want to write to me directly, send email to: PSDiverMonthly@aol.com.

Be Safe –

About the Author:

Mark Phillips is a retired Professional Firefighter. He was a member of the fire department dive team 32 years of his 34 year career. Mark is a Master Scuba Instructor and has written numerous training programs involving Underwater Crime Scene Investigation, Zero Visibility Diving, Firefighter Water Survival, Open Water Rescue and more. PSDiver Magazine is a quarterly publication that is freely offered to those interested in the Public Safety Diving and Public Safety Water Response field. To subscribe and to access all of the free resources provided, go to www.PSDiver.com

LOW HEAD DAMS: WHAT ARE THEY?
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http://www.safedam.com/low-head-dams.html

Low head or run-of-river dams, usually spanning the entire river or stream, present a safety hazard to the public because of their capability of producing dangerous recirculating currents, large hydraulic forces, and other hazardous conditions sufficient to trap and drown victims immediately downstream from the overflowing water.
Thousands of these mostly concrete or masonry weir-type structures, normally producing vertical water surface drops of one to fifteen feet, have been constructed across rivers and streams to raise the water level for improving municipal and industrial water supplies, producing hydropower, feeding navigation canals, and diverting irrigation water.

Tens of thousands were built in the 1800s to power gristmills and small industries. While most no longer exist, many have fallen into disrepair or have been abandoned by long-forgotten owners, thus posing dangerous conditions to the public.

Increasing numbers of kayakers, canoers, rafters, boaters, anglers, and swimmers are often unaware of, or underestimate, the dangerous forces and currents that these dams or similar hydraulic structures can produce if there are no warning signs, restricted area postings, boat barriers or bypass portages.

Waterway users should be aware of all types of drop structures such as bridge or culvert apron drop-offs, grade control structures (GCS), pipe crossings, and large dam spillways that also can produce dangerous submerged hydraulic jump conditions characteristic of low-head dams. Some waterways may warn of the danger, have boat barrier buoys strung across the water, post "exclusion" zones upstream and downstream from dams, or provide portages around low head dams as shown below, but many do not.

Fluctuating river flows from upstream hydropower releases or natural runoff – even small flow changes - can significantly increase the water hazard at a low head dam from one hour or day to the next.

Experienced swimmers have difficulty overcoming the velocities around these structures. Life vests become less effective in the turbulent foam below low head dams because of greatly reduced buoyancy. Often, boaters or paddlers do not become aware of a dam on the downstream horizon until being pulled over the dam crest from the accelerating draw-down current.

The combination of reversed currents, large hydraulic forces, low buoyancy, dangerous rotating submerged objects, hard surfaces, potential hypothermia and disorientation create what has been described as a perfect "drowning machine." The best advice to water users is to avoid being near these dams altogether – both upstream and downstream.

Waterway users also should use caution around large dam intake and outlet structures, including those owned, operated or regulated by federal agencies, such as the U.S. Bureau of Reclamation, TVA, U.S. Corps of Engineers, and the Federal Energy Regulatory
Commission (FERC), where sudden spillway and power generation releases can be very hazardous.

TVA provides warning systems at several of its dams with warning signs, horns, strobe lights, and electronic spillway signs activated to alert the public of impending hazardous waters below dams resulting from rapidly rising water and turbulence from flood gate and turbine releases. The Little Rock District of the U.S. Corps of Engineers has published a brochure on hazardous waters and downstream warnings for water users around their dams and spillways.

Boaters should be very cautious upstream from all dams, especially during flooding conditions, where accelerating surface currents are capable of pulling watercraft over spillways and overflow sections.

Photo above right: TVA warning system in heavily-used fishing, swimming and recreation area downstream from Upper East Tennessee South Holston Dam and labyrinth weir (signs, strobe lights and siren)

PUBLIC SAFETY REGULATIONS. Most states do not maintain inventories of, or regulate public safety at, these structures because of their small sizes, or because their structural integrity is not considered an issue.

Pennsylvania and Illinois are the only states that have comprehensive laws that require owners of run-of-river dams to mark so-called "exclusion zones" above and below their dams, and on the banks immediately adjacent to the dams, with signs and buoys to warn the swimming, fishing, and boating public of the hazards posed by the dam.

Virginia has established code and standards for advising the owners of low head dams to mark hazardous areas with warning signs and buoys. Owners who do so are deemed to have met the duty of care for warning the public of the hydraulic hazards. Those who do not mark their dams are presumed not to have met the duty of care for warning the public.

Upstream take-out portage & boat barrier boom.
Four or five states provide dam owners with general information about the hazards of low head dams and provide recommended warning sign and buoy installation guidance and templates.

One federal agency has developed public safety procedures for hazards created by hydraulic structures and operations. The Federal Energy Regulatory Commission (FERC) requires owners of hydropower dams, including low head dams, operating under its jurisdiction to conform to specified public safety guidelines and regulations for protecting the public around these structures.

LOW HEAD DAM INVENTORY & FATALITY DATA.

Data from an early 2014 ASDSO survey of state dam safety officials by Dr. Tschantz shows that of 42 responding states, nine states that maintain some type of inventories reported a total of 916 low head dams.

However, 28 states that do not maintain specific inventories of low head dams, but provided approximations in the form of a range with varying degrees of stated confidence, estimated that there may be as many as 1814 to 3510 additional low head dams. Five additional states indicated that they had several dams but did not submit an estimate. This means that there may be 2730 to 4426 low head dams in 42 reporting states.

Hundreds of deaths have occurred at these structures across the U.S. since the 1960s, with drownings and injuries increasing annually as more people participate in water sports. According to the 2013 Outdoor Participation Report, participation in U.S. recreational and whitewater kayaking has increased by over 100%, from 2006 to 2012, to slightly over 10 million kayakers.
Dr. Tschantz has documented for the period 1960 - August 2015, 350 fatalities and/or 98 injuries in 282 incidents at low head dams, with fatalities occurring in 263 of the incidents. [Note: Updated data (June 2016) shows that at least 380 deaths have occurred in over 290 incidents - other undocumented incidents bring the total to almost 400 deaths.].

The map on the left shows the distribution of low head dam fatalities by state. As of August 2015, 39 states have had at least one death.

Forty-five percent of the documented fatalities have occurred in Iowa, Illinois, Minnesota, Ohio and Pennsylvania (magenta-shaded states). An additional 21 percent of the fatalities have occurred in the five states (red-shaded) of Indiana, Maryland, Missouri, Tennessee, and Virginia. Some low head dams have produced multiple drownings.

Additional drownings, where details remain unavailable, are estimated through newspaper and anecdotal accounts and personal interviews to number about 100, and are not included in the documented 350 deaths. Scores of other drownings have occurred below large dams where gated spillways and turbine releases can produce dangerous turbulence and public hazard conditions. Also, water pressure at grated inlets upstream from dams can force or "suck" unsuspecting swimmers against the grillwork causing them to be helplessly trapped.

Dr. Rollin Hotchkiss, Brigham Young University Professor of Civil & Environmental Engineering, and graduate students Edward Kern and John Guyman, have described and mapped 482 fatalities at 245 different dam and spillway sites in 38 states on their BYU website.

Current (August 2015) data from Tschantz's research shows that over two-thirds, or 241, of the 350 fatalities, have occurred over the 15 years, 2000 through August 2015. Forty percent of the 350 fatalities occurred over 2-day weekends during April through August. Of 129 fatalities in which life vests, or PFDs, were reported to have been worn or not used, 53 wore PFDs and 76 did not. The relatively close (41% vs 59%) split is not surprising given the low buoyancy environment and other injurious factors that submerged victims are subject to. Data shows that half of all low-head dam related fatalities have been paddle sport recreationalists such as...
canoers, kayakers, rafters, or tubers.

The same research also shows how risky it is to intentionally or unintentionally go over low-head dams. Of 175 incidents where 390 people were known to jump from or go over a low-head dam, 68 percent either drowned (202) or were seriously injured (63) enough to require medical attention, including resuscitation and hospitalization. Tschantz’s research shows that in the 3-1/2 decades since 1980, while "only" 40 people have died as a result of dam failures, over 320, or eight times as many, have died from drowning at low head dams.

UNDERSTANDING THE RISK. The lure of a smooth overflow above a low head dam and the attraction of whitewater below are dangerously deceptive traps. In one recent Illinois drowning a 12-yr old youngster wanted to "touch" the smooth overflow wall of water and immediately became trapped by the current.

Tschantz’s research shows that some boaters were unaware of the dam before it was too late and were accidentally pulled over the crest by the accelerating current; at least three accidents occurred when boat motors failed or stalled, leaving the boats to drift over the dam crest; and many kayakers, canoers, and rafters deliberately paddled over the dam crest and capsized, apparently underestimating the tremendous power of fast-moving water while overestimating their ability to overcome these forces and currents.

Many rescuers have become victims themselves after being pulled upstream toward the dam and capsizing. A classic example of this, described in a Minnesota DNR pamphlet, "The Drowning Machine," occurred on the Susquehanna River, near Binghamton, New York, in late September 1975, with a chain of events that taught rescue teams valuable lessons about the nature of low head dam hazards and rescue operations. In the end, three people were dead and four had been injured. One evening, two rafters were swept over the Rock-bottom Dam and trapped in the current below the structure.

Witnesses called for help and a rescue boat was launched with three firefighters. Their boat capsized and all three were thrown into the river. One drowned and the other two, along with the two rafters, were pulled from the water. The next day, on a body recovery operation for the lost firefighter, the fire chief and two firefighters approached the dam from downstream.

As their powerboat reached the base of the dam, the turbulence capsized their boat. Attempts to rescue the trio failed. A few minutes later, a rescue boat with two sheriff’s deputies arrived. By this time, two of the
firefighters had disappeared and the third was bobbing in the recirculating turbulence.

The horror of the two-day event continued as the third rescue boat overturned in the churning water. Luckily, the two deputies and the remaining firefighter were swept clear of the dam and eventually rescued. Rescue teams across the country have learned from tragic incidents like this and have developed special fast water rescue and recovery techniques and protocols (e.g., Elgin, Illinois and Farmington, N.M.). Unfortunately, and despite this event and lessons learned, rescuers continue to die attempting to recover or save people caught in the deadly currents below low head dams.

Waterway users - boaters, kayakers, canoers, rafters, swimmers and anglers - have a responsibility to educate and familiarize themselves about the dangers around these types of structures, observe all warnings, and to understand their own physical limitations against the overwhelming currents and forces that these dams can produce - especially during high water and hidden hazard conditions when life jackets may not offer enough buoyancy or protection.

Dam owners, together with local officials and state dam safety and boating safety programs, also have a responsibility to work toward either reducing or eliminating the public hazard around these structures - and, at the very least, warning the public of upstream and downstream dangers.

The Canadian Dam Association's (CDA) 2011 Guidelines for Public Safety Around Dams offers a comprehensive and systematic approach for both low and high dam owners to assess public safety hazards associated with their structures and to protect public safety using various risk treatment and control measures.

Other public safety guidelines and references are discussed below.

REDUCING OR ELIMINATING THE HAZARD.
Eliminating the public hazard by removing low head dams can greatly improve recreational opportunities, such as boating, fishing, swimming, or paddle sports; restore aquatic ecosystems; and increase public safety. However, dam removal also may have adverse physical, chemical, ecological, social, and/or economic impacts.
For example, contaminated sediments that have been trapped behind some dams over decades would require study and a plan for preventing them from being transported downstream. In addition, existing or potential benefits from hydropower production, water supply enhancement, or improved navigation would be eliminated. While dam removal may enhance native fish passage and migration, the opportunity for invasive and undesirable species to migrate also increases.

Furthermore, some low head dams may have significant historical and cultural value to the local community. Legal questions and disputes over dam ownership and riparian rights of riverfront property owners may have to be resolved. Local, state, and federal regulatory and permitting requirements must be met.

Three notable information sources that discuss the impacts of dam removal are (1) DAM REMOVAL – Science and Decision Making (The Heinz Center 2002), (2) A Summary of Existing Research on Low-Head Dam Removal Projects (American Assoc. of State Highway and Transportation Officials 2005) and (3) Reconnecting Rivers: Natural Channel Design in Dam Removal and Fish Passage (Aadland, Minn. DNR 2010).


The Association of State Dam Safety Officials’ (ASDSO) website provides a listing and links to several other resources on the topic of dam removal. Hundreds of dams have been removed across the country for safety and ecological reasons. For example, more than 50 dams have been removed from Ohio streams and rivers during the past 30 years. Approximately 350 dams, including small low head dams have been removed in Pennsylvania (Pittsburg Post-Gazette 2015).

Other states such as Minnesota, Wisconsin and Virginia have taken similar steps to remove dams.

Public safety at and around low head dams can be improved to reduce the hazard and risk exposure by erecting physical boat barriers, portages, and safety devices; installing warning systems; establishing "exclusion" zones; educating the public about the risk; training emergency response and rescue personnel, and modifying a structure to eliminate the dangerous submerged hydraulic jump.

These public hazard- and risk-reducing measures have been discussed in several papers, manuals, guidelines, and webinars (see Low-head Reference Sources and Web
Links below). One notable ASDSO Journal article, *Saving Lives While Improving Fish Passage at “Killer Dams”* (Schweiger 2011), discusses and gives examples of the legal responsibility and liability of dam owners and engineered modifications to improve public safety.

Presenters in the ASDSO Webinar: *Identifying Hazards and Improving Public Safety at Low Head Dams* (Schweiger & Tschantz 2013) detail and give examples of several measures for improving public safety.

These include Legislation and Regulation, Improving Public Awareness, Non-Structural Measures, and Structural Modifications.

**Recent 2016 Low-head Dam Drowning Incidents**

2/15/16 Argyle, Wisconsin: Two fishermen (ages 42, 46) in boat pulled into overflow current at a low head spillway on Pecatonica Riv.

3/22/16 Floyd County, Iowa: 54-yr old man in boat over dam on Cedar River

3/22/16 Demopolis, Alabama: 40-yr old woman in stalled boat over dam (and lock) on Tombigbee River

3/29/16 Richmond, Virginia: 36-yr old woman wading and went over low-head dam and into hydraulic on James River

4/17/16 Warren County, Kentucky: 35-yr old man fishing - fell into hydraulic on Barren River

5/4/16 Tarrant County, Texas: 19-yr old man fell walking across dam on W Fork Trinity River

5/6/16 Morgan County, Colorado: 23-yr old man in kayak over dam into hydraulic on S. Platte River

5/10/16 Eureka, Kansas: 7-yr old girl found submerged below "low-water" dam on Fall River

5/24/16 Rochester, Kentucky: 42-yr old man (companion safe) thrown out of disabled motor boat pulled over dam on Green River

5/30/16 Wilmington, Illinois: 12- & 13-yr old bro/sister waded too close to Wilmington L-H dam overflow current on Kankakee River.

6/2/16 Columbus, Ohio: 17-yr old boy caught in hydraulic of low head dam while swimming on Scioto River.

6/8/16 Bandera, Texas: 43-yr old ex-Marine drowned saving two teenagers at Bandera City Park dam on Medina River.


7/4/16 Blacksburg, SC: 47-yr old man slipped and fell down bank into water while fishing at Dravo Dam on the Broad River.

7/9/16 Yellowstone Co., MT: 12-yr old girl missing while swimming at the Huntley Diversion Dam on the Yellowstone River.

7/9/16 Wichita, KS, 24-yr old man missing after saving a fellow kayaker at 21st Bridge dam on the Arkansas River

**Other:** Capsizing fishermen boat deaths at spillways: *Wilson Dam* (AL TVA - 3/3/16); *Cheatham Dam* (TN Corps - 5/14/16)

**Public Safety and Drowning Incident Details Link**

**NOTE TO WATER USERS:** Most drowning incidents occur from April through August. If you plan to boat or paddle, please be careful and don’t take chances. Know the river and watch for warning signs and take-out
**portages**  ...stay away from low-head dams and large dam spillways - both upstream and downstream - especially during turbine or floodwater releases and highwater conditions. Be aware that the danger can vary as the flow changes from one hour or day to the next. Always wear a personal flotation device (PFD).

**Not all dams are marked!** When boating, paddling, or rafting downstream, learn to recognize and be on the lookout ahead for a horizon line across the water surface where a low head dam is likely located - when trees or houses or other objects appear to be cut off or grow straight out of the water or if the water surface ripples suddenly change, you may be looking at a "horizon line" and the smooth overflow at the dam. Be aware that the current increases as you drift closer to the dam overflow.

**DANGER ZONES** As you drift downstream toward the crest of a low-head dam the flow tends to squeeze into a smaller space, thus speeding up the water current, which may exceed one's ability to escape from being pulled over the dam by swimming, paddling, or even motorboat.

The extent of the upstream danger zone is site dependent and varies with the flow and depth of water behind the dam. Once a boat or person goes over the dam, the force of the falling water may...
exceed hundreds of pounds which tends to push a person downward and into a recirculating current. A boater, paddler, or rafter who goes over the dam will usually be forced or pulled back toward the face of the dam where the watercraft will capsize into highly turbulent, super-aerated, and recirculating water.

The aerated water below the overfall significantly reduces buoyancy, making it very difficult to stay afloat in this environment with or without life vests. This highly aerated zone also reduces one's ability to escape by swimming, paddling, or propelling against the current.

Motorboat propellers may "cavitate" and not be functional in this zone. Note that there is a reversed current zone for some distance downstream to the so-called "boil" point where aerated water is upheaving in a very turbulent manner.

No one should venture beyond the boil into this dangerous countercurrent zone, where backflow surface currents are capable of pulling the most experienced swimmers back to the dam and into an endless recirculation cycle. Only specially-trained and equipped rescue personnel should attempt to enter this zone. The strength of the currents and forces depend on the river flow, which can fluctuate hourly or daily.

Low-head dam reference sources and web links:
- Low-head Dam References & Information (2015)
- Assoc. of State Dam Safety Officials (ASDSO)
- Hidden Dangers & Public Safety at Low-Head Dam Paper (Tschantz & Wright, 2011)
- What We Know (and Don’t Know) About Low-Head Dams, Tschantz, 2014)
- ASDSO Webinars - incl. Public Safety at Low-Head Dams (Tschantz & Schweiger, 2013)
- BYU CEE Dept. Low-Head Dam Incident Reports
- 1975 Binghamton, NY, drownings (YouTube)
- Low Head Dam Warning Signs - Pennsylvania
- Dam and Water Hazard Warning signs - FERC

REFERENCES.
There are several good references and information sources on the hydraulics, hazards, public safety, dam removal, and dam modification associated with low-head dams. Links to a list of references & information sources, along with other applicable low-head dam websites, are provided below.

In November 2013, The Association of State Dam Safety Officials (ASDSO) sponsored and hosted a 2-hour webinar Identifying Hazards and Improving Public Safety at Low Head Dams (Tschantz and Schweiger).

This webinar presentation, with reference materials and quiz for PDH credit, is available on-demand in digitally archived format from ASDSO. Dam owners, state regulators, public safety officials, policy makers, paddlers and other watersports enthusiasts, design engineers, teachers, rescuers, researchers, and other stakeholders with an interest in public safety around low-head dams will find the material in these resources useful.

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A human arm has been found by police divers during a search for two missing fishermen.

Andy Hinds, 57, and Nigel Kitchen, 50, have been missing since Sunday night after failing to return from a fishing trip off Coral Bay on the northwest coast of Western Australia.

The gruesome discovery was made by Divers on a charter boat who found the arm on the sea floor near Bills Bay, which is near the Coral Bay town.

The arm will be forensically examined to see if it belongs to one of the men, say police, and it may take several days for results including whether it was lost in a shark attack.

Earlier on Tuesday, the discovery of numerous items from the missing boat floating on the water raised fears the boat had capsized.

Police believed they had also located part of the hull of the 8.2m fishing boat.

They later confirmed on Tuesday afternoon that the debris was not from the missing vessel.
Mr Kitchen from Port Kennedy and Mr Hinds from Cooloogup were members of a Rockingham fishing club and were on a holiday with friends.

Police, State Emergency Services volunteers and numerous locals have been looking for the two since they went missing on Sunday, but there was still no sign of them.

The West Australian reports that a sea search is concentrating on the Yalobia Passage with a police boat and Volunteer Marine Rescue boats.

A land search has been conducted on the shoreline using quad bikes from Coral Bay to Point Anderson and a fixed-wing plane has also joined the search for the men.

South Florida officers find 2 alligators eating human body
http://fox17online.com/2016/05/31/south-florida-officers-find-2-alligators-eating-human-body/
MAY 31, 2016, BY FOX 17 NEWS

SOUTHWEST RANCHES, Fla. (AP) — Police in South Florida were called to a gruesome scene: a pair of alligators eating a human body.

The Sun Sentinel reports that Davie Police Capt. Dale Engle says the body found Monday in Southwest Ranches, about 20 miles west of Fort Lauderdale, appears to have been at the location for a long time.

Engle says officers were able to scare the alligators away from the body but the two lingered as officers tried to recover the body.

He says the cause of death and whether the body is a man or woman are both unknown.

Engle says a dive team would attempt to recover the body Monday evening.

Woman who was found dead in a suitcase by a fisherman had tattooed eyebrows and new teeth - but police are yet to identify her
11 July 2016 By Hannah Moore and Sinead Maclaughlin and Aneeta Bhole For Daily Mail Australia

- A woman's body was discovered at 7.45am in a suitcase in Perth WA
- Fishermen made the discovery on Saturday at Swan River North Fremantle
- The woman is estimated to be between 35 and 45-years-old and Asian
- Her front left tooth is whiter than the rest and her eyebrows were tattooed
- Police are struggling to identify the woman after Australia-wide search
- She was found with blue ceramic tiles decorated with yellow flowers

A woman whose body was found floating in a river inside a suitcase had tattooed eyebrows and had undergone a root canal on her front left tooth.
Police have released new details about the case as investigators struggle to identify the Asian woman, believed to be between the age of 35 and 45.

Forensics showed the protective crown was distinctively whiter than her other teeth, reported Perth Now.

Acting Detective Senior Sargent Mat Atkinson said the woman had not been shot, though she had sustained substantial injuries.

The unidentified Asian woman, dressed in a Tokyo Disneyland t-shirt, was found along with a 'small amount' of 20cm x 6cm blue ceramic Marca Brevettata tiles with a yellow flower design, which may have been used to help the suitcase sink.

It was also confirmed the same tiles were found near the Fremantle Traffic Bridge in East Fremantle.

Detectives believe the suitcase containing the body may have been thrown into the Swan River on the eastern side of the bridge.

Detective Atkinson told reporters at a press conference on Friday that Crime Stoppers had received more than 250 phone calls regarding the woman.

The phone calls have not helped to identify the woman or her killer though, and police are now hoping for anyone who saw suspicious behaviour between late June and July 2 to come forward.

'She will be someone's daughter, someone will know her, care for her and miss her,' said Detective Atkinson.

'The circumstances surrounding the disposal of the body are terrible and for these reasons we are committed to finding answers.' The large blue 'SB Polo' travel bag was discovered in the Swan River by fisherman the day of the Federal Election a few hundred metres from the Water Police headquarters in North Fremantle.

Western Australia Police have released images of the contents of the suitcase, the woman's clothing, along with a composite image of the victim.

Detective Senior Sergeant Chris Taylor from the Major Crime Squad Taylor confirmed the fishermen found the suitcase floating on the surface of the water at 7.45am on Saturday.
The bag had been locked but a zip came open when the fisherman pulled the suitcase from the water and into their boat.

The woman, aged between 35 to 45 years old, has been described as being of Asian appearance, about 158cm tall, about 59kg and with a shade of red colouring her hair.

Along with the Tokyo Disneyland t-shirt, the woman was wearing a dark blue Katmandu vest.

A post-mortem is expected to confirm the cause of death and the nature of her alleged murder.

Sergeant Taylor said: 'Our focus at this stage is identifying the woman. We are working with local, national and international partners in an effort to identify her.'

Inquiries into her identity are being made through Interpol after authorities had no luck in an Australia-wide search through fingerprint and DNA databases.

Sergeant Taylor said that it was not known when the woman had died or how long the suitcase has been in the water or how it got there.

The discovery of the body in the suitcase has led police into a murder inquiry according to an earlier report made by Western Australia police.

Kid’s body found 19hrs after falling in Mirpur sewer line

http://www.thedailystar.net/city/kids-body-found-19hrs-after-falling-sewer-line-1257793
July 22, 2016

Divers recovered the body of a four-year-old boy today, 19 hours after he fell into a sewer line near Mirpur Commerce College in the capital, Dhaka.
The body of Junaid Sabbir, son of Amir Hossain of Mirpur area, was found around 11:00am, Jibon Mia, duty officer of Fire Service and Civil Defence, told The Daily Star.

Four divers around 5:30am resumed search operation and recovered the body from the sewer line, the duty officer said.

Sabbir went missing from 4:20pm yesterday. Locals and family members announced in the locality through loud-speakers that he was missing.

Later, they suspected that Sabbir might have fallen into the sewer line.

On information, divers last night rushed there and started search operation into the sewer around 10:00pm and suspended it late night as they could not find the body there.

**Sheriff's divers recover stolen property from river**


August 02, 2016 By John Tunison

ALLEGAN COUNTY, MI -- Allegan County sheriff's divers successfully recovered stolen property, including a small safe, after being ditched in the Rabbit River following a May home break-in.

Sheriff's officials posted pictures of the recovery on the department's Facebook page on Tuesday, Aug. 2. Police said a Heath Township home was broken into in May, with firearms and a small safe among the stolen items.

Police in July identified two persons of interest. The duo gave police information about the location of the stolen property and said some of it was in the Rabbit River. Sheriff's divers recently suited up and, despite the river's swift waters, found some of the property.

**Allegan County Sheriff's Office** added 2 new photos.

August 2 ·
In May, subjects broke into a home in Heath Township. When the homeowner discovered the break-in, he called 911 and deputies responded to the scene. It was determined that some of the stolen property consisted of firearms and a small safe.

In July, detectives and road patrol deputies from our office apprehended two persons of interest in this case. These two individuals provided information as to the location of the property and that some of the property was thrown into the Rabbit River near Hamilton.
The Sheriff's Office Dive/Rescue and Recovery Team were contacted and conducted a recovery dive in the swift waters of the Rabbit River, which resulted in the recovery of some of the homeowner's property. This recovery will be beneficial in prosecuting the case and will help in locating the remaining stolen property.

Great Teamwork by all!!!

**Hero dies a tragic death**

http://www.thedailystar.net/frontpage/hero-dies-tragic-death-1270537

August 16, 2016

After saving the lives of two youths from drowning with his heroic efforts, 26-year-old pickup driver Sarwar Hossain drowned in a canal at Beraid of Badda in the capital yesterday.

University student Sabbir Hossain, who was bathing in the canal, said Sarwar was washing his vehicle there around noon yesterday.

Sabbir began to drown and his friend Raju Pandey dove into the canal to save him but both of them struggled with the strong current.

Children who were playing football nearby saw the situation develop and threw their football into the canal so that the drowning men could use it as a buoy.

The football kept them afloat but they could not get to the bank, Sabbir said.

Good Samaritan Sarwar, a bachelor from Barguna, then dove into the canal to save them.

Sarwar rescued the duo and also got hold of the ball.

He even handed the ball over to a 10-year-old boy who had gone into the water to retrieve it. But as soon as he
handed the ball over, he was washed away by the current, said Sabbir.

Sarwar’s body was recovered around 4:50pm by the divers of Fire Service and Civil Defence.

Inspector Merron Miah of Baridhara Fire Station, who led the six-member diver team, said they found the body about 100 yards away from the spot.

He said the depth of the canal where Sarwar drowned was about seven to eight feet but the place from where the body was found was 20 feet deep.

The body was handed over to his relatives.

Abdul Jalil, officer-in-charge of Badda Police Station, said apart from driving the pickup, Sarwar also worked at a shop in Gulshan. He used to live with his relatives in Natun Bazar of Dhaka.

30 years later, DNA testing closes a long cold case of missing teen

Oct 5, 2016 By Laurence Hammack

COVINGTON — Thirty years after two fisherman stumbled across a human skull and bones on the banks of the Jackson River, the mystery of who they found has been solved.

And Michael Dean Perdue is finally going home to Michigan. Alleghany County Sheriff Kevin Hall announced Wednesday that DNA testing has linked the skeletal remains found March 2, 1986, to Perdue, who was 17 years old when he went missing the year before in Covington. Standing at the sheriff’s side was Wally Perdue, who clutched a white cardboard box given to him minutes earlier that held the cremation ashes of his younger brother.

After three decades of wondering what happened to Michael, the Perdue family plans to take his ashes back to Ann Arbor, Michigan, for a proper burial that will lay those questions to rest.

“It’s been hard these 30 years, not knowing if he was going to come walking in the door or not,” said Perdue’s sister, Sandra Miller.

“A brother’s love never dies,” Wally Perdue told reporters and law enforcement officials who gathered at a news conference at the sheriff’s office. “Thank y’all. Let’s go home, Michael.”

‘John Covington Doe’
As a young boy in Detroit, Michael Perdue “faced much hardship growing up,” according to an account of his life and death compiled by the sheriff’s office.

Perdue never knew his father, who abandoned him and his two brothers at an early age. His mother died of a brain hemorrhage when he was young. After one brother perished in a house fire, Michael and Wally Perdue were sent to live with their grandmother in Covington.

It wasn’t long before they were running away and getting in trouble with the law.

“We were wild ones,” Wally Perdue admitted. “We walked every inch of these mountains. We didn’t do no evil, but we did a little bad.”

At the time he was reported missing — on May 4, 1985 — Michael Perdue was living with his uncle.

According to the sheriff’s account, he was present when a gas station in Covington was firebombed the night before. He fled with a second teenager, who was later arrested.

“Authorities believe Michael was with his friend at the time of the firebomb, ran from the scene and tried to swim across the river to get away but didn’t make it and drowned,” a summary of the case from the sheriff’s office stated.

No body was found at the time. Hall said it’s possible that the flood of 1985, which occurred six months later, might have swept his remains onto the riverbank where two fishermen found them the following March, a few hundred feet southwest of the intersection of Jackson and Byrd avenues.

Hall, who at the time was a rookie police officer for the city of Covington, said authorities had a theory from the start about what happened.

“For 30 years, everybody thought it was Michael,” he said. “We’re a small area, and he was the only missing person. Most people at the time had a pretty good guess.”

But by then, family members had moved away, and authorities were unable to identify any next of kin to help them piece the case together.

For the next three decades, while the remains were kept in storage at the medical examiner’s office, they were identified in police files as those of “John Covington Doe.”

Y-STR testing makes the link

The investigation lay dormant for years. Files were lost after leads went nowhere. Then, several years ago, the sheriff’s office decided to reopen the case. Working with the medical examiner’s office, the U.S.
Marshals Service, the National Missing and Unidentified Person System, the FBI’s forensic anthropology services and other agencies, investigators revisited old theories with new techniques.

Using a facial reconstruction model, officials with the FBI and the medical examiner’s office came up with a three-dimensional image of what the missing person would have looked like, based on the features of his skull. But it was another crime-solving tool that broke the case.

“Back in that day, DNA was just coming to fruition,” Hall said of the investigative techniques that existed at the time the skeletal remains were found.

Since then, science has advanced to the point that genetic samples from bones can be identified by matching them to the DNA profile of a family member by what’s known as Y-STR testing, which examines the Y chromosome that is passed unchanged from fathers to sons.

With Michael Perdue’s father unaccounted for and one of his brothers dead, authorities knew they needed to find Wally Perdue. U.S. Marshals eventually found Perdue, but DNA tests were inconclusive.

But after more advanced tests were run, Hall’s office was informed in August that their missing person finally had a name.

As he announced the results on Wednesday, Hall’s voice shook slightly and tears brimmed in his eyes.

In a line of work where all too often the news is bad, the sheriff finally had a chance to present the remains to Perdue’s family, who had driven down from Ann Arbor the night before.

“This is a great day to be wearing a badge,” Hall said.

As for failing to keep his emotions in check, the sheriff said: “The reason why is: What if it was my family, and they wanted to know where their brother was?”

The investigation is now officially closed, with no foul play suspected. Perdue’s family members say they accept the theory that he drowned.

“As far as I’m concerned, the mountains took him,” Wally Perdue said.

“I feel that his spirit is still walking this earth. And now that we’re laying him to rest, he can go home with the rest of his family.”
Also making the trip to Virginia this week was Michael Perdue’s sister, Sandra Miller.

“Wally has had a lot of struggles in his life,” Miller said. “We all have as a family. But I think that this is Michael’s way of blessing him.”

The Perdues are grateful for the hard work by the sheriff’s office and others, and for a community where two local funeral homes donated their services to have the remains cremated and returned to the family.

“It’s heartwarming to know that the community feels that way,” Miller said. “So many children go missing and they’re overlooked or forgotten. But in this community, Michael was never forgotten.”

Despite the development of DNA profiling for criminal investigation, fingerprints remain the most common type of forensic evidence to be recovered from a crime scene.

From the first identifications made at Scotland Yard in the early years of the 20th century, to the computerised storage and searching that is available now, the basic concept of making a fingerprint identification has not changed. Imperfections (or minutiae) in the pattern of ridge lines on the tips of fingers and on the palms provide the key to linking a fingerprint found at a crime scene (often referred to as a finger mark) to the fingerprint of an individual.

Since its inception, many techniques have evolved to reveal finger marks, usually deposited in sweat, at the crime scene. Some, such as the use of a fine powder applied with a brush, are as old as fingerprinting itself and remain in use because they are simple and easy to use, and are effective at revealing invisible (or latent) finger marks. Today, the numerous techniques available are neatly summarised by the Home Office Centre for Applied Science and Technology in their Fingerprint Source Book, which is essential reading for any crime scene investigator.

Generally, finger mark recovery techniques are arranged by reference to the surface (or substrate) on which the latent finger mark is deposited, with some substrates being historically problematic for latent finger mark

This new fingerprint technique could revolutionise the way we solve gun crime
https://theconversation.com/this-new-fingerprint-technique-could-revolutionise-the-way-we-solve-gun-crime-64927
September 12, 2016
recovery. One such substrate is the outer surface of spent brass shell casings, usually ejected from a firearm after firing.

Often, at the scene of a crime involving the discharge of a fireman, these spent shell casings present the only physical evidence left by the offender, so their importance shouldn’t be underestimated. Latent finger mark recovery from spent shell casings is difficult as the area of contact between the finger and the casing is limited due to the curvature of the casing and also because of the environmental extremes undergone by the casing during firing and ejection, which can all but obliterate latent finger marks.

**Solving the mystery**

Following a serendipitous finding by researchers at Swansea University that rubbing a metal surface with a tissue does not necessarily remove the finger mark ridge minutiae, we started to investigate why this might be so – and, importantly, how the finger mark might be revealed. Through experimentation, we were able to show that the inorganic components present in fingerprint sweat, particularly chloride ions, were able to induce corrosion on the metal surface at the location of the finger mark deposit. Further, this corrosion was quite difficult to remove and remained even after washing the metal in warm soapy water to remove any trace of the original sweat deposit.

Copper and its alloys (such as brass) were found to be very easily corroded by fingerprint sweat, which, potentially, makes this useful for finger mark recovery from spent brass shell casings. After further experimentation, a technique was devised that enabled a fine coloured powder to adhere preferentially to areas of corrosion on a brass disk, to which had been applied a large (about 2,500 V) electric potential.

This powder adherence was developed to work with round brass shell casings, rather than a flat disk, and eventually commercialised.

**What now?**

As might be expected, the main market for such technology lies outside the UK and since its development, has been used in many criminal cases, mainly in the US, to try and recover finger mark corrosion from spent brass shell casings. One positive aspect is that, because the corrosion is difficult to remove from the brass, the
technique can be applied to casings that are many years old and relate to what are termed “cold cases”.

Fortunately, law enforcement agencies rarely destroy evidence – particularly from unsolved homicides – and these offences present ideal evidence for this technique. In 2015, the University of Leicester signed an agreement with Zhejiang Police College in China to collaborate in advancing forensic science research and teaching. An early result of this has been the joint development of an improvement in the way this technique works. Essentially, the electrically charged shell casing is now rotated in a bed of the powder, which makes the process easier than the original method of applying the powder directly to the casing.

Why is this new development important? Well, as fingerprint visualisation techniques that are quick, easy and effective are preferred, anything that makes the process easier to produce a positive result is to be welcomed. As the use of firearms in crime seems unlikely to diminish, this development offers law enforcement agencies a further opportunity to crack cases.

Meth link to fatal crash at Mohaka Viaduct
http://gisborneherald.co.nz/localnews/2469006-135/meth-link-to-fatal-crash-at
September 12, 2016 11:36AM

Vehicle crossed centreline as car tried to overtake.
THE driver of a car that flew off a cliff and plunged 125 metres into the Mohaka River had methamphetamine in his blood and was trying to stop another car from passing at the time.

A coroner has released findings into last November’s cliff plunge that killed three Wairoa gang members on their way to a Mongrel Mob reunion in Hastings.

Ronald Ribgy, 53, Nathan Isaac, 29, and Terry Stone, 31, were killed when their car crashed at speed into a barrier on the Mohaka Viaduct underpass on November 7, mounted it and flew into the river below.

Miraculously, 44-year-old Anthony Atkinson survived the gorge plunge. He was found by rescuers with minor injuries on the river bank.

Fairfax today reported findings into the triple fatality, with coroner Chris Devonport revealing the man behind the
wheel, Rigby, had methamphetamine in his blood at the time.

The court heard expert advice that showed methamphetamine adversely affected drivers by making them overconfident and prone to “taking unnecessary risks, aggressive and dangerous driving and impaired ability to react appropriately”.

**Details of investigation**
The coroner also revealed details of the crash investigation, which showed the Inspire the four gang members were in had crossed the centreline as a second car tried to overtake it on a corner.

Marks on both vehicles showed they touched before the second car, a Honda Prelude, braked heavily, then stopped as it hit the barrier at the edge of the cliff.

At that point the Inspire crossed in front of it, hitting the barrier at speed before mounting it and flying over the top.

Fairfax reported the car touched the ground briefly on the other side of the barrier before it became airborne off the near vertical drop.

There were no witnesses and the second car involved in the accident drove off, said the coroner.

In the days after the crash a hunt was launched for a second car believed to be involved in the crash. It was handed over to police nearly a week later but no one has ever revealed who was driving the car.

The accident’s sole survivor, Atkinson, was found alive on the bank of the river at the bottom of the cliff wearing just a pair of jeans. He had a graze on his face and bruising on his left arm but was capable of walking and talking. He had been in the front passenger seat and was wearing a seatbelt.

Fairfax reported that Atkinson told police Rigby had “just lost control and we went over”. He said he did not see any other cars and did not think another car was involved.

**More Body Parts Spotted?**
September 21 2016 by Charles Chambers, LAUTOKA

A Police dive unit returned to Natadola Beach, Nadi, yesterday to check out a new report regarding the murdered Russian couple Yuri Shipulin and Natalia Gerasimova.

The report was that a diver from a nearby village claimed that while diving for fish last Friday, he saw

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wrapping similar to the ones used in the earlier body part finds.

Police spokesperson, Ana Naisoro, said yesterday: “The only thing Police can confirm is that our divers are back at Natadola.”

Ms Naisoro said the dive team was reactivated following a report Police had received. She could not make any further comments.

A Fiji Sun team went to Natadola yesterday and spotted a team of Police divers ready to head out to a particular spot near the end of the reef to the right of the beach.

A reliable source from Natadola said the villager was out diving for fish on Friday night.

“As he went below one part of the reef, he spotted a similar wrapping as that which was earlier found and contained body parts of the murdered Russians,” he said.

The source said the villager was too scared to pull the wrapping out and informed Police on Saturday morning. Investigations had gone cold after the discovery of body parts earlier. It was confirmed then that the body parts belonged to the Russians.

Mr Shipulin and Ms Gerasimova went missing after leaving their farm at Kachiqari, off the road leading to Nausori Highlands in Nadi after midday on June 16 and the only other sightings of them was through a police report that they were seen at Denarau having a few drinks.

Police recovered the couple’s vehicle, registration ‘PILOT’ on the evening of June 17 but the couple were missing. On June 24, the first pair of feet were found, confirmed by DNA to be that of Mr Shipulin. Two days later, the second pair belonging to Ms Gerasimova, were found.

A decapitated head, later confirmed through DNA as that of Mr Shipulin, was found wrapped in the same type of netting as the pairs of feet were found previously at Natadola Beach on August 3 by a New Zealand couple.

The distinct feature that stood out with all three finds were that they
had similar wrappings in green netting, stones to weigh down the parts and similar blue coloured fishing line that held the wrapping together.

By late yesterday, the diving team was still searching the reefs but police have remained tight-lipped on whether they found any more body parts.

Divers Recover Fake €12 Million from Bulgarian Dam
01 Nov 16  Mariya Cheresheva  BIRN Sofia

Three men have been arrested during a special police operation which recovered one of the largest amounts of counterfeit money in Bulgaria’s history.

Scuba divers retrieved the fake 500-euro notes, which added up to around 12 million euros, from the Mechka dam in southern Bulgaria, the prosecution announced in Plovdiv on Tuesday.

Three men have been arrested in relation to the case after a special operation carried out by Bulgaria’s Specialised Prosecutor’s Office, the State Agency for National Security, DANS, and the police.

Bulgaria’s Prosecutor General Sotir Tsatsarov said on Tuesday that it was among the largest sums of counterfeit money ever found in the country, Focus Agency reported.

Plovdiv’s appeals prosecutor Ivan Daskalov explained that the notes were very professionally manufactured but were missing identifying elements such as hologram stickers and watermarks.

The money is still being counted, he added. Police said they found 14 guns which had been stolen from an armaments shop in the southern Bulgarian city of Haskovo in 2014 and 3.2 kilogrammes of marijuana at the house of one of the suspects.

More News
Heroes of swimming: George Freeth
https://www.theguardian.com/lifeandstyle/the-swimming-blog/2014/jan/31/heroes-of-swimming-george-freeth
31 January 2014  Paul Mason

Anyone ever saved by a lifeguard owes an unspoken debt to this Hawaiian surfing pioneer, who popularized modern techniques of rescue and resuscitation

Even the best swimmers can get into difficulty in the water, especially in the open ocean. There are any number of dangers (most of which boil down to hubris): currents, waves, tides, cramp, even unexpectedly swimming into a thick, swirling shoal of mackerel. Don’t laugh: it happened off Brighton to one of Heroes of swimming’s friends, an experienced sea swimmer who got

Photo: Usien/Wikimedia Commons
into such a froth that he nearly drowned.

Anyone who's ever felt the cold grip of panic in the water as they realise that they might not make it back to shore; anyone who's waved their hands above their head to attract the lifeguard's attention; anyone, certainly, who's been hauled out of the ocean gasping and spluttering ... they all owe an unspoken debt to George Freeth.

Freeth was born in Hawaii in 1883, close by the beach at Waikiki. He was part Hawaiian, part Irish, and came from a well-connected family: his grandfather had been Hawaii's foreign minister. But there was little chance of Freeth becoming a man of affairs: from a young age, he had fallen under the spell of the water. Every spare moment was spent submerged, at the beach or in a pool, surfing or swimming.

There was no radio or TV at this time: instead, live entertainment was popular, both with locals and visitors to the islands. Among the biggest attractions were water carnivals, grand displays of aquatic skill and daring. Freeth, 17 years old at the turn of the century and already a top competition swimmer, was one of the stars of these shows. One source records that his "high and fancy" dives were especially popular.

Freeth was also a surfing champion. In fact, it was said to be him who first revived stand-up surfing, which Christian missionaries had almost killed off, in the islands. It was surfing that first brought Freeth to wider attention, when Jack London visited Hawaii and published this description of him in action:

"I saw him tearing in on [the wave], standing upright with his board, carelessly poised, a young god bronzed with sunburn."

London's descriptions of surfing created tremendous interest in the USA. Freeth headed for California to spread the word – a reverse missionary, bringing the religion of surfing to the haoles.

Freeth reached California at just the right moment. The seaside resorts of Redondo and Venice Beach had recently been built, but the developers were finding that high surf on the beaches put off visitors and prospective residents. The situation got worse in March 1907, when a trainee volunteer lifeguard drowned in front of his colleagues.

Freeth's arrival in May of that year was, essentially, the solution. He performed surfing demonstrations twice a day at Redondo, bringing crowds from Los Angeles to see the "Hawaiian Wonder" for themselves. At Venice Beach he not only surfed, but also trained a team of volunteer lifeguards. Alumni of this group would go on to develop the LA County, Long Beach and San Diego lifeguard services.
Today, any beach lifeguard would recognize the skills Freeth taught: rescue swimming, the technique for getting a surfboat out through big waves, how to paddle a rescue board. He showed how rip currents could speed you out to swimmers in trouble – much against the thinking of the day, which branded such currents "undertow" on the basis that they pulled swimmers down. Freeth's students undertook sand running, ocean swimming, paddle-boarding and surfing to maintain their fitness, and were trained in the latest resuscitation techniques. Within a few years, they had been credited with saving hundreds of lives.

Freeth's most famous rescue happened in the winter of 1908. A sudden squall hit Santa Monica Bay, wreaking havoc in a fleet of small Japanese-crewed fishing boats, which began to founder. The rescue boat could not get out, but Freeth could. He spent over two hours in the chilly waters of the bay, at the end of which he'd rescued seven men from drowning. Despite being hypothermic he went in again, swimming to the aid of three more drowning men. His strength was at an end, though: all he could do was keep them afloat. It was the turn of the volunteers he'd trained. They at last managed to get a rescue boat out through the raging surf, bringing Freeth and the three men back to shore.

The heroics of 1908 had several outcomes. First, the Japanese fishing village nearby is said to have changed its name to Port Freeth in gratitude. Freeth himself became a household name, at least in the Santa Monica Bay area. But the most important result was to set a new trend in lifesaving: where before an unwieldy crew of men in a boat had rescued swimmers, now a single, skilled lifeguard quickly made his way out through the waves.

In 1913, Freeth was in a motorbike accident and broke his ankle. While recovering, he took a job as chief swimming instructor at the Los Angeles Athletic Club. Freeth's time in charge began the rise of what would become one of the most successful swim teams in the USA, the training ground for Johnny Weissmuller, Buster Crabbe, Esther Williams and others.

In May 1918, after a disaster in which 13 people drowned, Freeth was hired as chief lifeguard for Ocean Beach, California. He and his crew had a successful summer: there was not one further drowning in the area, which then and now is famous for its strong rip currents.

But on 15 January 1919, Freeth caught influenza. It was part of a pandemic that swept the world, and which is estimated to have killed between 50 and 100 million people. Freeth, sadly, was one of them. He died on 7 April, at the age of 35. His legacy, though, can be seen on every beach where a lifeguard sits on a tower, rescue board propped nearby.
DAN’s New Liability Insurance Plans For Dive Pros To Expand Outside Of USA Soon

11-04-2016 by John Liang

If you’re a dive professional or want to take your hobby to the pro level, the Divers Alert Network recently added new liability insurance plans.

Pros who live in the USA now have access to Individual Professional Liability, General Liability and Group Professional Liability insurance plans.

If you live and work outside of the USA, DAN says it’s working hard to extend that coverage to "other regions" and to "check back for updates on the addition of new territories in the coming months." Furthermore:

“DAN recognizes the vital roles that dive professionals and dive operators play in diver safety. Because their mission is to enhance safety within the entire community, DAN believes it is critically important to provide these key players with the resources they need for incident prevention, incident management and incident protection.”

With litigation on the rise, DAN’s Risk Retention Group subsidiary began offering Professional and General Liability insurance to dive professionals earlier this year.

The new coverage is available to Instructors, Divemasters, Freediving and Swimming Instructors, including those still in training. Additionally, those who have retired from the sport can get "tail coverage, “just in case.

DAN says it plans to use the data collected through these liability programs to enhance the organization’s ability to identify the root causes of incidents that lead to claims, allowing it to develop new loss-mitigation programs to prevent these events from occurring in the first place.

Bill Ziefle, DAN’s President and CEO, says:

“Backed by reinsurance provided by various Lloyd’s syndicates and others, this new program is structured to provide sustainable and reliable cost-effective solutions for the dive industry’s liability needs. As with other DAN subsidiaries, DAN Risk Retention Group is 100 percent owned by DAN, and all profits will be used to support other DAN safety programs.”

For more information, contact a DAN insurance rep at LiabilityInsurance@DAN.org.
What's SUP?
By Bob Pratt, Director Great Lakes Surf Rescue Project.

If you've been around just about any body of water lately you may have seen people enjoying the fastest growing recreational activity on water: Stand-Up Paddleboard or SUP for short. SUP combines an oversized surfboard with an extra-long canoe paddle. This unique experience offers a wide variety of benefits. It's an excellent total body workout. Because you are standing it gives a much better view into the water than kayaking or canoeing. People are now fishing and taking camping trips via SUP. A 2015 study by the Outdoor Foundation found that stand-up paddleboarding was the fastest growing outdoor activity over the last three years. The popularity of SUP has seen the number of participants nearly triple from about 1 million to more than 3 million from 2010 to 2015. Along with the number of participants the sport has also seen an increase in accidents and even deaths. These injuries and fatalities are preventable. Here are some basic safety tips to make your SUP adventure as safe as possible.

LEASHES
Leashes should be standard equipment on all paddleboards. A carry-over from the surfing industry, a leash is a slightly elastic urethane cord that connects the board to the rider. SUP boards have a great deal of buoyancy. A leash will keep your board close by in the event of a wipeout. It also helps prevents the board from striking another paddler, surfer or swimmer. In most cases the leash is attached to the rider’s ankle with a padded Velcro strap. In moving water the ankle leash may snag on a rock or other obstruction and become a hazard. In swift-water a quick release leash attached at the waist or chest is recommended. This allows for the benefit of the leash with the option to release the board should it pose a hazard.

LIFEJACKETS
The U.S. Coast Guard considers SUP a "vessel" (unless it is being used in the surf-zone) therefore a lifejacket is required. While the regulation only specifies the PFD must be "on the vessel" attaching the lifejacket to the board is a poor option. If the board is kicked or blows away from the paddler and the paddler can't get to it (see importance of a leash above). The 25 lbs of lifejacket buoyancy sitting on the 100 lbs of board buoyancy is of no benefit if the board is blowing or drifting away. WEAR IT! There are new inflatable lifejackets that are coast guard approved. These PFD’s are lightweight and very comfortable. There is no reason not to wear a lifejacket outside of the surf zone. While surfing; the ability to duck under waves maybe impacted by a lifejacket. Evaluate your ability and the wave conditions when deciding what to wear while surfing.

COLD WATER
Cold water KILLS. Even the best swimmer can be incapacitated by cold water. There are two keys to dealing with the cold water: Insulation and flotation. A lifejacket with intrinsic flotation (not an inflatable) eliminates the paddlers need to tread water. VERY few drownings take place when a person is wearing a lifejacket. PFDs also provide some degree of insulation to the body's core. Wet suits and dry suits should be considered when the water and/or air are cold. Again paddlers should take into account: paddling ability, temperatures, wind, distance to shore... and any other
factors when deciding on appropriate thermal protection. The Four "W"s: WIND-WAVES-WATER & WEATHER 
Check the four "W"s before deciding when and where you will be paddling. Wind: take note of the forecast for the direction and strength of the wind. Smaller lakes and protected water are safer than open expanses. Special consideration should be given to "off-shore" winds that make it more difficult to return to shore. Waves: paddling in waves adds another dimension to and adds to the difficulty of stand-up paddleboarding. Understand that your ability in waves will be diminished and plan accordingly. Waves may also expose paddlers to a different culture: surfers. Before venturing into a surf zone; learn the proper etiquette. Your SUP poses special dangers to those around you, wiping out may turn your board into a missile. Learn the rules and etiquette at your beach.

Water: know where you will be paddling. Is there a current? Is the water clean? Are there tides? Are there hazardous marine animals? If I get in trouble where can I seek shelter? Weather: all of the previous "W"s can change very rapidly when the weather changes. Get the forecast before you go out. Be mindful that conditions can change quickly, keep an eye on the sky and have an alternate plan.

Finally, those universal, common sense water safety rules also apply to SUP: learn to swim, paddle with a buddy, close parental supervision, don't drink and paddle. As we see this sport continue to grow let's hope we see an increased awareness of paddling safety. If you're thinking of trying the sport or you're already an expert; modeling these behaviors will help create a safer culture for everyone.

As more and more people get into diving, there will inevitably be more diving 'accidents'. Divers not only will be facing the dangers of the accident, but will be facing a medical system that in most cases will be inadequate to care for the problems they face. Most doctors know little or nothing about diving medicine and sometimes, even the doctor who is on call for a hyperbaric chamber may not know much about diving medical problems.

In this article, we will talk about the various types of diving medical training that are available to physicians. All physicians have to graduate from a recognized medical school and pass various competency examination by state boards and national specialty groups. In addition, they have to complete one to five years of postgraduate training depending on their area of specialization. Some medical schools have limited instruction on diving medicine in the curriculum but most doctors will have received little or no training in this important area (vitally important to an injured diver). Because it is so important for the diver to know, it is entirely possible that most
divers actually know more diving medicine than most doctors! The first time physicians might be exposed to diving medicine is when they themselves take a scuba course.

Although a physician’s background medical knowledge a faster learning curve than a normal basic diver, they are still limited by the knowledge of the diving instructor, and some of these doctors (who have only a basic scuba course) feel that they are diving medical specialists! The only way that a doctor can really learn a significant amount about diving medicine is to take a course in diving medicine.

There are many courses available varying in content and length, mostly directed toward doctors who work at hyperbaric chambers. These courses tend to focus on hyperbaric oxygen (HBO) treatment of non-diving problems. This is because most chambers treat hundreds of clinical HBO patients for every diver they see.

Therefore, even though the course may be a week long, the doctor may only receive a couple of hours of instruction on diving problems. These courses tend to be held at hospitals with chambers, often located in inland parts of the United States that have few divers. Some courses are aimed at the physician who is also a diver and are therefore held at prime diving destinations (in reality, a tax deductible "working" vacation) and offer CME. They are scheduled so that the doctor can get in a couple of dives a day between lectures; examples are the DAN courses, some university courses and Medical Seminars, Inc. These courses tend to contain much more diving medicine and are taught by people who are expert in the field of diving medicine.

Doctors who are really interested in diving medicine can also attend conferences. The Undersea & Hyperbaric Medical Society has an annual scientific meeting where hundreds of papers are presented on both diving medicine and HBO. The UHMS also has several regional chapters that each hold one weekend meeting per year. Most have one day of scientific sessions and one day aimed at the recreational diver. There are also a number of excellent textbooks available on diving medicine and if the physician reads them they can learn a lot, although they will still be lacking practical experience.

Another way in which doctors can learn diving medicine, and probably the most common way in the US and Canada, is to be trained in the military. These courses are designed to teach military doctors what they need to know to allow them to take care of the many divers in the various branches of the military. Although the courses are not available to civilian physicians, most of these doctors get out after a short stint in the military and therefore many practicing civilian doctors have taken them.
Civilian courses should be long enough to teach a physician everything they need to know to properly conduct a diving physical, to recognize a diving problem when it occurs, and to know where to transfer the injured diver for treatment. They should be exposed to hyperbaric chambers and diving, and should be taught how to treat an injured diver.

In Canada there is an Advanced Diving Medicine Course that is 3 1/2 weeks long. Participants should have at least one year of experience in diving medicine and preferably come certified as a diver (military or civilian) before they take the advanced course. This advanced course focuses on treatment of injured divers and the students spend a lot of time in hyperbaric chambers. In the US, NOAA offers similar courses.

The only way that a physician can advance beyond this course level is to work in the field and to take some form of post-graduate training. There are masters programs leading toward a Master of Science degree in exercise and diving physiology. Other diving medical specialists have spent 6 to 12 months training at one of the US hyperbaric medicine facilities. There are proposed competency standards for hyperbaric physicians (1) which closely follow standards that are used in the United Kingdom, the North Sea, and many other parts of the world. In this scenario, hyperbaric physicians are certified at three levels. Level I roughly equates with one to two weeks of training and are fully qualified to conduct diving medicals and recognize diving medical problems. Level II roughly equates to the Canadian military Advanced Diving Medicine course. These physicians can treat all kinds of diving injuries in hyperbaric chambers using standard treatment tables and have significant practical experience. Level III is reserved for those few physicians who have advanced training and experience. They are able to alter and custom design treatment tables as required and are usually recognized internationally as an expert in diving medicine. Most of the Level II and III diving medical experts in the US and Canada received their training in the military forces.

From an 'occupational medicine' point of view -- another factor of importance in evaluating a physicians' diving medical expertise is their "diving" experience and training. One of the basic principles of occupational medicine is that the doctor must have a good understanding of the physical and psychological stresses that the worker/patient will be exposed too. In diving, the only way that the doctor can gain the appropriate understanding is to be trained and experienced as a diver.

In the US there is little or no diving medical training for the thousands of local physicians who will be called upon to certify that a candidate is 'fit for diving'. Although there is now a board examination for hyperbaric and undersea medicine, due to the cost and time involved this will not reach the many doctors who have primary practices of other types and who will eventually be the final arbiters in the certifying process. In addition, there are thousands of doctors who don't dive and who never take the courses offered by various agencies.

There are many physicians who have attended 'fitness to dive' or Diving Medicine seminars, who have read extensively on the subject and who could provide a responsible cadre of professionals to make available examinations at a reasonable charge for new divers.
Information about who and where these individuals are located is not readily available prior to the certification process. Diving candidates don't usually make contact with DAN or the UHMS until after they are certified - and the medical exam should have been done as the first step in the process.

The relevance of all this is that as a diver, you must always check out the quality of the advice and information you are given by physicians. Some physicians will tell you that there is no problem for you to dive with a specific medical problem, or, not knowing, refuse to allow you to dive with a condition that doesn't cause diving problems. They may not know what they are talking about and are just giving you a 'CYA'* opinion! What if you are sure that you or your buddy is bent and yet the doctor in the local emergency department tells you that you have simply pulled a muscle? Every diver should have the name and number of the closest hyperbaric chamber to call if they have a problem. In addition, it would be a good idea to learn who is the most knowledgeable and experienced diving medical expert in your area (if there is one). One way that I've found is to call around to offices and ask the nurse/receptionist if the doctor ever takes diving trips. This is not the best way to choose a doctor but at least he/she will know something about diving and may be able to refer you to the proper care.

When you are diving away from the US or Canada you should be a member of the Diver's Alert Network (DAN). They provide extensive assistance for medical problems, can advise you on whether you should seek out medical treatment, and can tell you where the closest chamber is located (anywhere in the world). Their insurance program is inexpensive and is outstanding and they have a 24-hour service which allows you to contact someone knowledgeable in diving medicine anytime from anywhere in the world. Considering that evacuation and treatment of DCS can easily cost $100,000.00, to dive outside of North America without some form of insurance would be crap shooting and could lead to financial ruin. **DAN can be contacted by calling 919-684-9111.**

Finally, for their own protection all divers should learn as much about diving medicine as possible. They must understand that very few physicians know anything at all about diving medicine and that even the doctor on call at a hyperbaric chamber might be trained mainly in HBO.

If you or your buddy have a diving medical problem and the local emergency physician does not recognize it as such, don't take this as the last word -- go to our Diving Medicine Online page [http://www.scuba-doc.com/](http://www.scuba-doc.com/), call the nearest hyperbaric chamber or call DAN; one of these will usually get you help!

*CYA=cover your ass

**Links:**

**NOAA Fitness to Dive**

[NOAA Diving Program](#)

[NOAA Working Diver Minimum Fitness Requirements](#)

[NOAA Diving Program Medical Standards](#)

[NOAA Diving Programs Forms](#)
Fitness to Dive: US Navy

**Navy Diver Screening Questionnaire**

**Navy Diving Physical**

**Disclaimer:**
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Such problems should immediately be reported to divedoctor@medscape.com

**CE Opportunities**

**Free Course: Crime Scene First Responder**
The International Crime Scene Investigators Association announced today their first online course, free to all law enforcement, anywhere in the world. The course is a refresher for patrol officers as first responders at the crime scene.

The course is hosted on the Law Enforcement Learning site, which requires registration and verification as a law enforcement professional.

"Crime Scene First Responder for the Patrol Officer" will review the steps involved at the scene for the uniformed first responder, and demonstrate the importance of this task by actual case work. Students who complete this course will receive a certificate from the International Crime Scene Investigators Association.

You can learn more and register here.

**About ICSIA**
The International Crime Scene Investigators Association was created to assist law enforcement personnel who are involved in the processing of crime scenes. The discipline of crime scene processing is such a unique field in forensic science and law enforcement that this discipline
needed its own organization. Crime scene processing is a multidisciplinary function. Crime scene processors must have a working knowledge of all the disciplines in forensic science and apply that knowledge to the documentation of the crime scene, identifying the fingerprint evidence, and the physical and testimonial evidence left at the crime scene. Find out more about us at icsia.org.

POLICE TECHNICAL to Offer GeoTime Course Nationally

POLICE TECHNICAL and Uncharted Software announce strategic partnership, offer grant-funded program for law enforcement and public safety

TORONTO, ON, CANADA - Uncharted Software Inc. announced today a training partnership with POLICE TECHNICAL that will deliver a popular call record analysis course to law enforcement and public safety agencies across the United States. “Since the introduction of our first training class in 2013, our courses in call record and mobile forensic analysis have been in high demand. With the growing need for high-quality training in law enforcement and public safety, we looked for a partner that had a proven track record of experience and commitment to the community, which is why we are happy to be able to announce this partnership with POLICE TECHNICAL,” said Curtis Garton, Senior Product Manager of GeoTime.

POLICE TECHNICAL, established in 2005, has a score of instructors teaching at the highest levels of law enforcement across North America. The company currently offers 25 courses, which predominantly focus on cell phone and online investigations as well as data analysis and mapping.

Because GeoTime courses are grant-funded, registration fees will be waived for those who register through POLICE TECHNICAL.

"We are committed to providing the best technical training to law enforcement personnel and we are pleased to offer students this unique opportunity to experience Uncharted’s software. GeoTime is an increasingly prevalent and trusted tool in the industry. Our new partnership will allow us to adapt to our students’ changing needs while easing budgetary concerns among departments and agencies,” said Thomas Manson, POLICE TECHNICAL CEO.

Uncharted’s GeoTime software is the industry’s only 3D mapping and analysis tool for law enforcement. Automatically linking calls, locations, and individuals, GeoTime compiles a timeline of CDR records and plots the data points on a map. GeoTime training is a three-tier program:
Level 1 introduces new users to call record or mobile forensic analysis

Level 2 expands on call record analysis for users with 6 months of usage experience

A User Certification class and exam designed for users with at least 12 months of usage experience. Users complete a case-based exam to verify competency in articulating technical analysis methods in testimony for court.

The first Police Technical course on GeoTime analysis capabilities will be offered in early 2017.

About Uncharted Software Inc. (formerly Oculus Info Inc.)

Uncharted™ is an award-winning creator of innovative software for Fortune 500 companies and government agencies worldwide. Since 2001, Uncharted has specialized in designing, developing and deploying groundbreaking solutions for improved awareness, analysis, and decision-making. Deeply rooted in technology research, Uncharted is recognized as an industry leader in the visual analytics and visualization community.

Interviews may be scheduled by contacting Sally Woo at swoo@uncharted.software.

About GeoTime®
Award-winning GeoTime® software is proven to increase analyst accuracy and efficiency. Trusted by law enforcement personnel globally, GeoTime® helps focus on what’s important: actionable evidence to solve crimes and prosecute confidently to keep our communities safe. Commonly used by intelligence agencies as the most effective tool for cell site analysis. Visit www.geotime.com for more information.

About POLICE TECHNICAL
POLICE TECHNICAL is a national law enforcement training company located in Terre Haute, Ind. The company currently employs 21 instructors, who teach and maintain 25 courses in five certification tracks. For more information, visit https://www.policetechnical.com/. POLICE TECHNICAL is the only Indiana-based company on the GSA Schedule 84|426 6, GSA contract award # GS07F146DA.

Interviews may be scheduled by contacting Brianne Hofmann at 812-232-4200 or through bhofmann@policetechnical.com. Law enforcement agencies interested in hosting GeoTime® are encouraged to visit Police Technical at https://www.policetechnical.com/become-a-host/

Media Contact:
Brianne Hofmann
Publications Manager
812.232.4200
bhofmann@policetechnical.com
NDPA 2017 Educational Conference, Pittsburgh PA, April 11 - 14, 2017

There is a new 3 day Conference format intended to deliver a better experience to both the diverse audience of attendees seeking knowledge and engagement, and to NDPA sponsors and Conference exhibitors.

Registration is now open! Visit www.ndpaconference.org to learn more!

New events include:

- Pre-Conference - Monday April 10
- Aquatic Law and Risk Management Symposium
- NDPA Summit Series, hosted in partnership with Starfish Aquatic Institute (SAI) on Lifeguarding Training
- USA Swimming Foundation & NDPA hosted partnership meeting.
- Conference - Tuesday April 11
- The NDPA "Safe Debate Series," a collaborative forum where participants can openly discuss controversial topics in drowning prevention
- Future professionals' Workshop with USA Swimming
- Gateway Clipper Riverboat Cruise NDPA Networking Welcome Reception
- Over 50 speakers have been selected to present on over 40 informative topics. Keynote & General Session speakers include:
  - Elliot Kaye, Chairman of the Consumer Product Safety Commission
  - Nancy Baker, Mother of Virginia Graeme Baker name sake of the 2008 Pool & Spa Safety Act
  - Ruth Sova, Motivational Speaker
  - Jonathan Midgett, Consumer Product Safety Commission

IMPORTANT NUMBERS:

Chemical spill information can be obtained by calling 1-800-424-9300.

DAN Medical Information Line at 1-919-684-2948
DAN operates a 24-hour emergency hotline (1-919-684-9111) to help divers in need of medical emergency assistance for diving or non-diving incidents

Centers for Disease Control and Prevention
1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636)

National Suicide Prevention Lifeline
Call 1-800-273-8255 Available 24/365

First Responder Support Network
The mission of the First Responder Support Network is to provide educational treatment programs to promote recovery from stress and critical incidents experienced by first responders and their families.

THE CODE GREEN CAMPAIGN

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

We welcome all training agencies and organizations to participate. For details, email PSDiverMonthly@aol.com

Public Safety Diving Association (PSDA)

ERDI

Life Saving Resources

Lifeguard Systems – TEAM LGS

Dive Rescue International