PSDiver Monthly

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Dedicated to the expanding knowledge of Underwater Crime Scene Investigation

Hurricane or Flood Response – Are You Prepared?
by Mark Phillips

Training Ideas

Candid Letter to the Editor ~

NEWS
DIVING MEDICINE
EVENTS
CONTINUING EDUCATION
AND MORE!
Greetings –

Over the last few months I have had the opportunity to conduct two training seminars and three different training classes. Conducting these seminars is a long term goal I have had and what I intend to do after I retire from the fire service in a few years. I enjoy teaching and sharing information and occasionally learn something new and useful from my students.

So far this year, I have had the opportunity to observe the basic scuba skills of over 50 skilled divers. It surprises me sometimes at how “rusty” those skills are. These are the same skills our divers complain about having to do each year in an annual skills review yet they do not seem to improve.

So, this month, instead of an editorial rant I want to offer some training ideas and suggestions that may help tighten up some of your basic scuba skills. Remember, these basic skills are entry level skills that had to be mastered at one time or another during a diving career.

These drills should be conducted using basic scuba gear or your full PSD kit and a basic scuba mask – not a full face mask. This means your divers may need to relearn how to reconfigure a first and second stage regulator. A review of first stage regulators, high and low pressure ports may be in order before you start.

**Treading Water.**

This is the most basic of in-water self rescue skills. This is not survival floating or dead man float, rather the ability to keep your head above water and even converse. Instructors can even use the tread water time to conduct mini lectures. Each team member SHOULD be able to tread water for at least 30 minutes or longer without struggling.

Pay attention to body position in the water. Be attentive to hand motion and timing kick cycles. Remember your lungs are balloons – get them close to the surface and they will help support you. Be attentive to breath control. Use a small side stroke and swim in small circles to change muscle groups if you get tired. Find a comfort zone and try to stay in it.

If your team can tread water for 30 minutes without stopping or struggling, go 45 – toss a ball around but do not let anyone touch the bottom or sides OR support their body with the ball. If they can make 45 and are not struggling, they have likely found their comfort zone and have their timing, buoyancy and breathing under control.

**800 meter swim with Mask, Fins and Snorkel**

Unless there is a need, for example, Dive Master Certification qualification, I do not recommend doing this for time – just completion.

During this exercise, work at getting the maximum efficiency out of the dive fins you are using. There are so many styles and types available now it is getting hard to keep up. But it is important to know how each fin works and how to maximize the efficiency of each type of fin.

For the most part, the biggest difference in fins is between paddle fins and split fins. Split fins work more efficiently with smaller, quicker strokes while paddle fins work as efficiently as they can using a longer downward stroke. **Trade fins with someone during the swim.**

While you are doing the swim, practice keeping your toes pointed behind you, your knees slightly bent and your
body relatively parallel to the surface. If you hear or feel you feet splashing, you are bringing them too far out of the water.

If you get tired or as you get farther along, notice how your knees are bending. Are your legs still relatively straight or are you starting to bicycle more? If you are, force your legs behind you, tighten your knees and point your toes.

Use your snorkel. Keep your face in the water. Relax. It is not a race, breath normally. If you can, put your hands behind your back and use only your body and fins to move and turn you. Every time you reach the deep end break, breath hold dive to the side of the pool and surface clear your snorkel without lifting your head out of the water.

Mask Clearing
I have yet had a diver in any of my PSD classes not be able to clear a mask. Mask clearing is one of those skills that once learned, seems to stay with you.

In my Open Water classes, to show they have mastered the skill, I ask my NEW students to clear a fully flooded mask at least 5 times on a single breath of air and surface clear a snorkel without lifting their heads out of the water. Yes, I really do.

Can you do that? It takes practice. If you cannot do it now, the challenge will be to relearn how to clear a mask using as little air as possible AND maintain breath control.

You can equate this to a diver who just realized he is out of air and must deal with the issue at depth. Breath control and confidence with breath control go a long way towards panic control.

Blacked Out Cutting Drills
It is amazing to me to see just how much the agencies have been able to do to increase the need and sense of urgency for multiple cutting devices.

I once described how and where I placed my cutting devices on a particular dive and was ridiculed for carrying so many. I had 6. I will normally have no less than 3 and require no less than 2 on any of my divers. I prefer 3 but it is hard to force the issue when someone else is having to pay for them. 3 should be your minimum!

But the interesting thing is what the divers choose to carry. I usually see a knife, EMS scissors and occasionally heavier shears. As effective as these tools can be, when I do entanglement drills, the divers usually go for the wrong device. For this drill, have no less than 5 different devices. You might have to get inventive or experiment.

Black out your masks. Get some nylon twine. Tie loops in it and make a noose. Have your divers tangle in the line and watch which tool they choose. Pay attention to how they retrieve it, how they use it and how it is stored back into proper position and secured. If you see what I see, you will discover that your divers are NOT proficient at zero vis entanglement clearing and are not proficient at retrieving, using and securing their tools.

While you are doing drills, watch your other divers. You will learn by watching the efforts of others, their mistakes, their struggles and their triumphs. And before you ridicule or criticize, make sure YOU have mastered the skill!

Stay Safe,
Mark Phillips
Editor / Publisher

If you would like to discuss this topic or any other, join our discussion group at:
CLICK HERE TO JOIN
Hurricane or Flood Response – Are You Prepared?

By Mark Phillips

When we have a hurricane approaching our emergency response programs start kicking in. When this occurs, those in charge of planning, logistics, administration, etc., instigate those parts of the program that involve those of us who perform the work.

For us, the planning, staging, cost analysis and logistics of preparing for a hurricane response is beyond our control and above our pay grades. However, it is we who are expected to be able and capable of responding to water rescue or assist with a water evacuation effort. Exactly how well prepared are we?

Inadaquate funding, inadaquate training, improper or compromised equipment and a general lack of understanding force teams to make life threatening decisions that should not have to be made. Why? No or too little funding and support during the year.

Recognizing we do not know everything is a first step. Being able to “man up” and admit a job may be beyond our capabilities is another. Having the preexisting condition allowing us to make that decision is not always apparent.

When lives are at risk, we tend to forget that we have limitations; where and what they may be.

Training is always an issue. How do you train for a water evacuation when the only time conditions exist to train are when the need is present? How do we justify simulation training and preplanning when we have no budget allotment for this discipline of water response? How do we adapt our other equipment to safely work in flood conditions and how do we safeguard out team?
Let’s take what I believe is a logical look at the issue. First you need a boat. You need a boat suitable for the job with a trained boat operator and at least one spotter or extra hand that is familiar with the boat. That requires training. If you only have one boat operator and he/she is involved in another aspect of the hurricane aftermath or preliminary evacuation, the boat is useless. No boat – no flood rescue or evacuation. So, more than one water response team member should be able and capable of operating the boat. That takes time and training before the need arises. It takes a budget.

If the boat is called out to assist or perform a water rescue, those responding should have self rescue skills to keep themselves from becoming victims or statistics. They should also have the necessary skills to perform a water rescue in moving or flood waters. That takes time and training before the need arises. More budget.

Are we getting the idea? It takes time and training before the need arises. We are already in hurricane season. It is too late – and there is no budget for that anyway.

Let’s consider what we can do to prepare for next year.

First let’s identify what we could be called on to do.

We could be called to:
- Evacuate before a storm
- Evacuate after a storm
- Rescue during a storm
- Rescue before or after a storm
- Inspect for damage
- Recover bodies
- Scout areas for staging grounds
- Perform other tasks ...

We could be asked to coordinate boat rescues or even rescue folks in flooded underpasses. We might even be asked to perform an underwater recovery if the situation presented itself.

In my opinion, each of these tasks is a different discipline of water response and each requires a specialized skill set to safeguard the team. While skills will overlap, not all will. EACH requires time and training.
Second, let’s identify potential hazards so we can work to either prepare for them or know to avoid them.
- Current / Wind
- Hidden Dangers
- Obvious dangers
- Chemicals / sewage / septic tanks
- Culverts / pressure differentials
- Floating debris in current
- Animals
- Humans

Third, let’s evaluate the tools we may need for the job.
- Boat
- Proper clothing or PPE
- Rain Gear / Wide brimmed hats
- Life jackets for team members
- Life jackets for evacuees or victims
- Rope

- Rescue Bags, Floats etc
- Medical Kit with O2 and EpiPens
- Sunscreen, Bug Spray
- Maps
- GPS – both boat and hand held
- Lights, spotlights, hand held lights and strobes
- Batteries
- Mobile and portable radios. If power is down or repeaters are not within range, line of site radio communication is all you will have.
- Cells phones can be added but may not be working.
- Waterproof container(s) to hold dry gear and clothes.
- And more depending on need and location.
- **Food and water for your crew to last no less than 12 hours.**
• At least two reliable timing devices – cell phone clock does not count.
• We may need pet carriers
• Body Bags

**Fourth**, considering the multiple types of job skills that may be utilized on a single mission we need a **PLAN**. In this plan:

• We need to identify entry and exit points for both evacuees and boats.
• We need alternate entry and exit points for both evacuees and boats.
• We need contingency plans.
• We need an evacuee hand-off site and someone waiting to take them.
• We need to commit to a NO DIVE rule if we are performing top water rescue OR define an exception to that rule.

In today’s world departments are facing budget cutbacks, staffing reductions and spending freezes. Some would argue that this has always been the case. But if you look closely, you can see a progression of at least the fire service moving from proactive to reactive. When a firefighter is killed, more people get hired or newer equipment gets purchased. I realize that is a narrow and possibly unfair blanket statement but when teams have to scrounge for a few bucks to get proper equipment or do without training and are still asked and expected to risk their lives the inadequacy of the situation seems unfair to me.

Water is a recreational medium. We swim in it, we boat and ski, we fish, and we just enjoy water. But when water becomes a force and displaces people or causes catastrophic destruction and jeopardizes lives, it is looked
on as an enemy. We can’t fight water. We can’t stop raging water with a fire truck or police car.

We call the water response team. You will be asked to do things you are not trained to do. You will be asked to use equipment that may not be designed for the task at hand. You will do your best and probably make do. We call it a success if no one dies on our watch. We call it an unfortunate incident and a heroic death if you die. How noble to give one’s life attempting to save another.

Of course, after you die your noble death, your department will recognize the inadequacies of your equipment and training and your team will get an influx of time and money to fix the problems so no one else loses their life. This is the nature of a reactive department.

We cannot make up for lost time now. It is too late. We are already in hurricane season. But this issue is not limited to just hurricane season. Every year we see municipalities or regions around the country face storm floods or rivers overflowing their banks. The same problems exist for those teams.

While not intended to be a rant on inadequacies, this article is intended to make you think. You have the ability and an obligation to stop an operation that is unsafe. You must recognize and acknowledge your limitations in both training and equipment and avoid overreaching those limits.

Having done so, start working on fixing what you can. Communicate with your administration your concerns and limitations. Fight for what you need to do your job as hard as you will fight to save someone from drowning.

In the end, it is the same fight.

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Divers practice being in trouble
http://www.watertowndailytimes.com/article/20100716/NEWS03/307169980
JULY 16, 2010 By JAMIE MUNKS TIMES STAFF WRITER

HYPERBARIC CHAMBER: Rescuers from around state learn how to respond in case of injury.

BROWNVILLE — Extremely hot and cold temperatures, intense pressure and confined spaces are what rescue divers from all over the state subject themselves to every three months when they climb into a hyperbaric chamber.

"Everyone acts as a victim once so they see what it feels like," said Mark A. Knowles, captain of Jefferson County's Special Tactics and Rescue team. "We're simulating being underwater at a certain depth, and we choose settings based on different problems and symptoms a diver might be experiencing."

If someone has lung over-expansion or another decompression injury from ascending too quickly from a dive,
simulating being deep underwater in a hyperbaric chamber can help heal the injury and could save the diver's life. State and county rescue divers gathered Tuesday to train in using the chamber in the case of a diving accident.

The STAR team uses the hyperbaric chamber, which is owned by Hunt's Dive Shop, Clayton, through an agreement between Jefferson County and the dive shop.

The team trains with state police divers. The hyperbaric chamber, kept at the Brownville Fire Department, is the only one in New York to which state divers have access.

Eight senior divers representing groups from New York City to Buffalo make the trip to Brownville to use the chamber. When the state trooper divers are at full capacity, there are 65 divers based in different areas around the state. Currently, there are about 50 divers.

The divers haven’t needed to use the chamber on a call since they gained access to it nearly two years ago, but it does cut down on cost. Previously, every time the divers went on a deep dive, a helicopter had to be on standby to
take someone to the hospital in case there was a problem.

"Having this around is a big safety factor for us," said Sgt. Alvaro E. Garcia, a state police diving officer. "It's been years since we've had to put someone in a chamber after a dive, but even if we're wrong and the chamber isn't the answer for the symptoms someone is having, it can't do any harm."

All of the divers take turns working outside of the chamber to pressurize the inside and get it to the correct depth. Three people can fit in the chamber at one time.

During the scenarios, each person who is acting as a victim is assigned a diver profile with how far they were diving, what went wrong and their symptoms. They go through short interviews and physical tests before getting into the chamber.

When Thomas N. Barden, a senior diver from the state divers' Troop D, played a victim during a scenario, his role was that of a diver who was about 80 feet deep when he began to ascend too quickly. When he got to the surface, his skin was itchy and he didn't feel quite right.

The chamber is a six-atmosphere chamber, which can simulate depths as low as 165 feet. When the chamber is pressurized and the simulated descent begins, those inside must equalize their ears continually by holding their nose and exhaling so the pressure doesn't become too intense. The temperature rises and it becomes loud inside the chamber. When ascent is simulated, the temperature drops.

About 50 percent of the diving in which state troopers are involved is in retrieving someone who has drowned, Sgt. Garcia said. Most of the rest of the work is diving to find a body of someone who was murdered or criminal evidence.

"It's a sad thing, but most of these guys wouldn't give this up for anything," he said. "It's rewarding because in a lot of the cases, the families are counting on us."

Serious plunge: Rescue divers practice in river
http://www.t-g.com/story/1652305.html
Tuesday, July 27, 2010
By BRIAN MOSELY

Practice makes perfect and with that in mind, local rescue divers made sure last week that they are as good as they can be.

Last Thursday, the city's and county's joint Technical Rescue Team conducted a drill in the Duck River behind Shelbyville Power, where a mannequin of human size and weight was dropped in the water.
Members of the Bedford County Fire Department provided support operations to the team divers with a boat and safety personnel, and divers took turns practicing sweep search patterns to find the mannequin.

The team consists of personnel from the Bedford County Emergency Medical Services, the county fire department, Bedford County Emergency Management Agency and Shelbyville Fire Department. Divers from the Bedford County Sheriff's Department also work with the team.

EMS controls team operations in the field and EMA administers the team budget for purchasing training and equipment.

The team recently conducted rescue operations in Bedford County during the spring flash flooding and also deployed to Rutherford and Cheatham counties to support water evacuation operations.

The team has trained personnel and equipment to conduct water rescue and recovery operations, confined space rescue such as in caves and wells, and high angle rescue from cliffs, tall buildings, and other similar situations.

Guilty plea entered in mischief case


July 28, 2010 By Lori Coolican, Saskatchewan News Network; Postmedia News

A Saskatoon woman with a long history of mental health issues pleaded guilty to a mischief charge Tuesday in connection with a made-up tale of violent sexual assault that prompted police and rescue divers to conduct a full-scale search of the riverbank almost three years ago.

Michaela Rose Brown was 19 years old when she called 911 with a horror story on the afternoon of Sept. 10, 2007.

Brown said she had been sexually assaulted in the 800 block of Avenue H South by a group of five males who had followed up the attack by tying her hands behind her back and dumping her into the river.

When officers found her in the 1200 block of Spadina Crescent West a few minutes later, she told them she'd been with a female friend, who had also been tied up and thrown in the water. Brown told police she had not seen her friend since. The city's emergency responders swung into high gear to scour the shoreline for...
the missing woman, calling out canine units, the police plane, divers from the fire department's water rescue team, and ambulance personnel.

Meanwhile, Brown was taken to hospital -- where she refused to cooperate when staff tried to perform a standard sexual assault kit on her, Crown prosecutor Deb Black told court.

Back at the spot where Brown had told police she was tossed into the river, the searchers could find nothing. Brown had given police her friend's name, so officers went to the woman's home -- where they found her, safe and sound.

The friend said she had not been with Brown at all that day. When they confronted Brown, some confusion arose about whether she might have given the wrong last name for the missing woman, so police decided to continue the search, Black said.

During an interview with a police sergeant about four hours after she first called 911, Brown admitted she'd fabricated the whole incident.

After consulting her mother, police learned she had a long-standing history of mental health issues and was under the care of a psychiatrist, court heard. She was later sent to Saskatchewan Hospital in North Battleford for assessment, and eventually released on bail to the care of her mother.

Brown's false allegation cost Saskatoon Fire and Protective Services about $7,000 -- and that doesn't include the hours of work expended by a large number of police officers, Black told court.

"Of greater concern to the Crown is that fire and rescue was called, and those individuals were required to enter the water ... and these individuals put their lives at risk as a result of the allegation, and as it turned out, for no reason."

Read more: http://www.leaderpost.com/news/Guilty+plea+entered+mischief+case/3331585/story.html#ixzz0w9n8JJ4B

**Body is found in the ocean bound and with a gunshot to the head. Cops: It's a suicide**

August 03, 2010 kwadlow@keynoter.com

A man's body -- wrapped with a chain -- found by rescue divers Monday apparently solved the mystery of an empty boat found circling in waters off Key Largo.
The body was tentatively identified as Michael J. Smith, 54, of Georgia, missing since he failed to return a rental boat Sunday night.

A bullet wound to the head strongly suggests he committed suicide, according to the Monroe County Sheriff's Office, but the investigation will continue.

Divers with the Key Largo Volunteer Fire/Rescue Water Emergency Team recovered a handgun, which appears to belong to Smith, from the ocean floor near Mosquito Bank.

The 26-foot boat, rented Sunday from Pontunes Boat Rental at Jewfish Creek, was found circling in waters about 2.5 miles off John Pennekamp Coral Reef State Park in Key Largo.

A search involving U.S. Coast Guard boats and aircraft, Florida Fish and Wildlife Conservation Commission patrol boats and the dive rescue team was launched but nothing was found.

Late Monday, the dive team followed a track from the rental boat's navigation unit to find the body.

"Smith's identification and credit cards were found in a bag attached to his waist," said Sheriff's Office spokeswoman Becky Herrin. "The medical examiner will be doing a fingerprint comparison to confirm the body's identity."

A length of chain was wrapped around the body, but the hands and arms were left free. "According to witnesses where Smith rented the boat, he was seen getting onto the boat carrying a duffel bag, which appeared to be very heavy and which may have contained the length of chain," Herrin reported.

The gun found in the water, about 19 feet down, is a Glock Model 30 handgun. Smith's son, a police detective in the Atlanta area, told investigators is father owned the same type of weapon.

The possible suicide was the second death on Upper Keys waters from last weekend.

Divers searching East Lubbock lake for evidence in homicide
August 5, 2010
Divers are searching an East Lubbock lake for evidence this morning in hopes of recovering a key clue in Wednesday’s homicide of Stanley Rodriguez.

Rodriguez, 34, was found dead in a vehicle at about 4:10 a.m. Wednesday in the parking lot near Dunbar Historical Lake, 2600 block of East Canyon Lake Drive.

Rodriguez suffered a single gunshot wound to his head, according to the Lubbock County Medical Examiner’s Office.

No new information in the case has been released today, and no suspects have been named.

Authorities this morning wouldn’t say what evidence they were looking for in the lake or whether a gun had been recovered in the case.

Four divers are searching the shoreline near the parking lot, using under-water metal detectors.

The Lubbock Fire Department dive team arrived on scene at about 8:30 a.m. Officials didn’t know how long they planned to search the lake.

Officials say the lake is about 30 feet in its center, but about 8 feet near the shoreline where divers have concentrated searches so far.

The fire department also had a boat on site, but didn’t know if they would use it.

Police urge anyone with information in the homicide to call Crime Line at 741-1000. Callers may remain anonymous and may be eligible for a reward.

**Diver Recalls Reaction To Red River Tragedy**


8/05/2010

Disbelief" was the reaction of one of the Shreveport Fire Department divers when he was told six teens were missing in the Red River in Shreveport on Monday. Capt. Robby Thomas was the first SFD diver who went into the river in what authorities hoped might be a rescue effort but soon became a recovery effort.

Thomas found the first body after about 10 minutes. "In warm water, anytime you're down for more than 10 minutes, the likelihood of reviving or survival is slim," Thomas said.

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Rescue Diver

MORE INFO

Video: Rescue Diver
The six teens, ranging in age from 13 to 18, were wading off a sand bar in the river when they stepped into a drop-off while trying to reach a 15-year-old who got in trouble. They were found in 25 feet of water.

The victims were identified as Takeitha Warner, 13; her brother, JaMarcus Warner, 14; and another brother, JaTavious Warner, 17. The members of the other family are brothers Litrelle Stewart, 18; Latevin Stewart, 15; and his brother LaDairus Stewart, 17. All were from Shreveport.

Funerals will be Saturday afternoon. Services for the Stewarts will be at 2 p.m. at Morning Star Baptist Church, 5340 Jewella Ave. The Warner funerals will be at 3 p.m. at Praise Temple Full Gospel Baptist Cathedral, 4725 Greenwood Road.

**Constable patrolling near MSC Chitra drowns**


Aug 9, 2010

MUMBAI: A constable attached with the marine unit of the city police died this morning after he fell off a speed boat during patrolling near the cargo vessel MSC Chitra, which had collided with another vessel on Saturday.

The victim, Ramesh Tukaram More (45) and three other constables were patrolling in a speed boat in the wee hours today around 1.5 nautical miles from the Chitra.

"More fell off the boat after he lost control. The other three constables also could not rescue him as none of them including the victim knew swimming," a police official said.

More's body was recovered by life guards later and sent to state run J J hospital, officials said.

Two Panamanian cargo ships - MSC Chitra and MV Khalijia 111 - collided on Saturday off the Mumbai coast causing an oil spill from one of the vessels.

Several constables attached with the marine police unit of the city police have been patrolling on speed boats in and around the collision spot since Saturday, officials said.

Oil continued to spill for the third consecutive day today even as anti-pollution operations are being carried out by the Navy and Coast Guard to check and neutralise the oil.
Thirty three crew members, including two Pakistanis, were rescued following the incident.

Read more: Constable patrolling near MSC Chitra drowns - Mumbai - City - The Times of India

Local divers see rise in Rio Grande rescues
http://www.themonitor.com/articles/rise-41636-divers-see.html
August 09, 2010 Lindsay Machak The Monitor

MISSION — The Rio Grande is dangerous to cross at any time, but the raging floodwaters from Hurricane Alex make the river even more treacherous than before, officials say.

Since the river began to flood in the first week of July, the Mission Fire Department’s dive team has responded to more than 15 calls for rescues on the Rio Grande. Usually they’re only needed once or twice a month, Captain Joel Dominguez said. "Weslaco, Brownsville and San Benito have dive teams too," he said. "But for some reason we get called out a lot more than the others."

Once the team is dispatched to a location, a rescue can be done in minutes, he said. "It takes about five minutes —- depending on the situation, just to get from here to the river," Dominguez said. "We launch the boat if we have to and then we’ll be in the water within 15 minutes."

But the strong currents of the floodwaters have made rescue missions more difficult. Being in the river at night — as they recently had to do to — is the most dangerous because it limits the diver’s visibility, Dominguez said. "You can’t see debris floating down the river," he said. "So that makes it extremely dangerous for us."

Most of the people who need rescue are trying to cross into the United States illegally, Dominguez said. "If the river was back to normal conditions, they would have made it across," he said.

Mexican authorities have a team for saving people in the river, but many of the calls for rescues are made to American agencies by citizens on this side of the river.
Border Patrol spokeswoman Rosalinda Huey said when a call comes in, her agents have to act as quickly as they can to save people in the river, regardless of their nationality. "When we see somebody in distress, we have an obligation to assist them whatever way we can," she said. "If Mexican authorities can assist in a faster way, then I’m sure we would coordinate with them. But a human life is a human life."

When Border Patrol pulls a citizen of another country out of the river, that person is first checked for any injuries, Huey said.

After the individual receives medical attention, Border Patrol takes custody of the person. "They would be in Border Patrol custody until they were sent back to their country of origin," she said.

Death of Point Edward Firefighter Leads to Charges
8/10/2010 AM980 News

Ontario’s Labour Ministry has laid charges in the death of a Point Edward firefighter early this year.

The Village of Point Edward, Fire Chief Doug MacKenzie and a training officer face a total of 11 charges under the Occupational Health and Safety Act.

Each faces a charge of failing to take every precaution reasonable for protection of a worker, with a court date of September 10th.

51-year-old volunteer firefighter Gary Kendall died in a rescue training exercise on Lake Huron on January 30th.

Canada Chief, Training Officer Charged in FF's Water-Rescue Training Death
Firehouse.com News

The village of Point Edward, the fire chief and a training officer have been charged in the death of a firefighter who died during a training exercise earlier this year. Volunteer Firefighter Gary Kendall, 51, became trapped under a large ice flow during ice-water rescue training at the Lake Huron shoreline on Jan. 30. He was pulled from the water but died the following day in the hospital.
The village, Fire Chief Doug MacKenzie, and Terry Harrison were charged under Ontario's Occupational Health and Safety Act with "failing to take every precaution reasonable in the circumstances for protection of a worker."

MacKenzie faces an additional charge of failing to ensure an adequate safety plan was present. Harrison is also charged with failing to ensure an adequate pre-training hazard assessment was done and failing to have an adequate training plan, according to the report.

A court date has been set for Sept. 10.

New Franklin Police Station To Help Keep Community Safe

Aug 13, 2010

FRANKLIN, Tenn. – The new Franklin Police station boasts 90,000 square feet of spacious hallways, and user friendly areas for police officers. It cost $36 million dollars. Police architects designed the building to make it user friendly beginning with the evidence intake room. "There's a ventilation system that's movable. They can bring this down. If something has an odor or there are particles that need to be vented to the outside it can done through this vacuum," Sergeant Charles Warner said.

The chain of evidence in a police station is important. There can be no breaks. There's even a pass through refrigerator. "Once the evidence is placed inside and this door is shut. The key is turned and it is unopenable from this side. The evidence custodian can only get it from the other side," Warner said.

There is an area where the underwater recovery team and police divers train for evidence gathering under water.

Cars and trucks involved in crimes and deadly crashes are brought to the vehicle processing bay for close examination. "This is our lab facility and in this area we have the capability of processing different types of evidence," said Warner. "These two chambers have the capability of processing evidence using gas, air, vacuum and cold water."

In a courtyard, there's a special wall to memorialize officers killed in the line of duty. Fortunately, that hasn't happened.
Near the courtyard the covered garage includes kennels for police dogs. "Our K-9 partners have the ability to get out of the car and go into a nice climate controlled environment and there are two separate kennels in this area here," Warner added.

It's a nice facility, but the ultimate goal is to keep Franklin safe. Franklin Police believe it will make a difference.

Franklin's police station includes several hundred square feet of unfinished space for future growth.

'Think before you leap' warning to bridge jumpers

http://www.bicesteradvertiser.net/news/8329217._Think_before_you_leap__warning_to_bridge_jumpers/

13th August 2010 By Emily Allen

"THINK before you jump." That was the message from police divers and the Environment Agency who pulled four bikes, an axe, a laptop, and some scaffolding from the River Thames at Godstow Bridge in Oxford.

They organised the dredging session on Wednesday to warn river jumpers they could be seriously injured or die if they land on hidden objects lurking beneath the murky waters of the Thames.

Insp John Ramsbottom said his team of police divers recover all sorts of objects from the river every year, from bodies to shopping trolleys, firearms to broken glass.

He said: “River jumping is not a leisure activity, it’s very dangerous. I remember someone impaling themselves after jumping off Shillingford Bridge about five years ago.” Other popular jumping spots include Donnington Bridge in Oxford, Shillingford, and Wallingford Bridge.

Dangers include the speed of the water flow, which can sweep even strong swimmers downstream, shallow waters, and boats, whose owners often find it hard to spot swimmers.

Russell Robson, principal recreation officer for the Environment Agency, said Godstow Bridge was a popular jumping spot, as it was near Wolvercote village and close to a pub.
He said the agency did not want to spoil anyone’s fun, but urged them to use the river safely and responsibly.

Mr Robson said: “It’s a popular bridge for people jumping off in the summer months. “People are wanting to have a good time but they don’t really know the implications.

“We know it’s a thrill and it’s something that people have always done, but that thrill can end up in a nasty injury. “Stuff that has been thrown in miles upstream can flow down and there are tree roots under the water.”

Matt Strange, the Environment Agency’s waterways technical officer in charge of patrolling and enforcement on the river, said he received about six calls a week during the summer from members of the public worried about bridge jumpers.

He said: “In my experience it’s primarily young teenagers but we do get some older people in their 20s and 30s.”

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Rescuers' work no day at the beach
http://www.livingstondaily.com/article/20100815/NEWS01/8150325
August 15, 2010 By Lisa Roose-Church • DAILY PRESS & ARGUS

A toddler waddles into a lake and is pulled under by the current.

A fisherman’s boat capsizes, and he fails to surface.

These are the 911 calls that scramble the Livingston County Dive Team to any local lake with the single goal of finding the missing person before he or she becomes a drowning victim.

"We do not get to choose where we dive, when we dive or even what kind of conditions we will dive in," Gregg Schkade, Livingston County Dive Team leader, said. "Public safety divers can be called out at 3 a.m. ... We can be taken away from anniversaries, birthdays, kids' ballgames.

Related: Livingston County Dive Team
Click here to view interview with divers Leveque & Thompson

"We head out into the night, and the first thing on our mind is, 'I have a missing (person) in the lake.' That hits anyone," said Schkade, deputy chief of the Hartland Area Fire Department.

While recreational divers in the Caribbean see beautiful reefs thanks to clear waters, the Livingston County Dive Team typically works in conditions of minimal visibility that makes it next to impossible to read gauges or see a body on the lake floor.
Divers encounter extreme weather conditions, such as heat indexes of more than 100 degrees or 40-degree water.

At the end of a 15-minute search pattern, pulling 150 feet of search line, their bodies feel the equivalent of running three consecutive six-minute miles.

Sometimes, they are successful; other times, their rescue mission becomes a recovery effort, such as when Hamburg Township father Dennis Regal drowned on Zukey Lake in July after helping his son return safely to the family’s pontoon boat.

Diver Chad Carney, a firefighter with the Howell Area Fire Department, said situations such as the Zukey Lake call hit home for many of the divers, and being able to find a victim helps the team — as well as the family — to find closure.

"That's something to take to heart," he said. "I have kids myself, and I'm out on the lake. It hits home sometimes."

A rich history
Livingston County has had several dive teams through the various fire and police departments. During an emergency, these teams came together with the common goal of providing a service.

About one year ago, department leaders decided the benefits of joining the individual teams would offer improved service to the public with more trained divers, standardized training and equipment, as well as a cost savings by reducing duplication of specialized equipment.

Thus was born the Livingston County Dive Team, which includes 36 members from the Livingston County Sheriff’s Department as well as Howell Area, Brighton Area, Green Oak Township and Hartland Area fire departments.

Great challenges
The goal of any public safety diver is to find a person before he or she becomes a victim.

In order to prepare for the calls, the county team trains twice a month, whether it is 100 degrees outside or 10 degrees.

On one recent training exercise, three men paddled out into Spring Mill Pond at the Island Lake Recreation Area in Green Oak Township and flipped the boat as part of the training exercise. In the scenario, two of the men made it back to shore; however, one went under and did not resurface.

"We were goofing around and my friend flipped a boat," Sgt. Dennis Bakka of the Putnam Township Fire
The roles include the primary diver, the safety diver and the 90 percent diver, so named because that person is usually about 90 percent suited up. The primary diver conducts the underwater search, while the safety diver assists the primary diver if there is any trouble. The 90 percent diver becomes the safety diver if that person is called to assist the primary diver.

"Did he go immediately down?" Schkade asked.

"Yes, he did," Bakka replied. "I tried to grab him, but he just kept going down. I lost my dad’s new oars, too."

Team members, who typically would arrive on scene minutes after a 911 call, were already standing by with their gear on. The gear consists of a rubber suit, an air tank, gauge and other items, such as rope.

In all, the gear adds more than 100 pounds to the diver.

Schkade began to give instructions to the team, assigning each member a specific role while talking to people portraying witnesses on shore.

The roles include the primary diver, the safety diver and the 90 percent diver, so named because that person is usually about 90 percent suited up. The primary diver conducts the underwater search, while the safety diver assists the primary diver if there is any trouble. The 90 percent diver becomes the safety diver if that person is called to assist the primary diver.

Each three-member diving team also is assigned two safety tenders, who are tethered to a diver by a 150-foot to 200-foot rope that is about a half-inch thick and is equipped with a cable that allows the two team members to communicate via radio.

In the exercise, the primary diver, Livingston County Sheriff’s Road Patrol Deputy Greg Thompson, pulled the yellow rope through murky water, signaling back to the tender using a predetermined code.

One tug means the diver is OK; four tugs means the diver has an emergency.

Emergencies can come at any time. During training, the divers simulate an emergency by calling out for pizza, which indicates a diver was having an issue such as getting tangled, feeling dizzy or needing more air.

Schkade said that during training sessions, the divers use phrases such as "someone needs a pizza" so any nearby beach-goers do not panic and call 911.

One of the biggest challenges, the team members agree, is the lack of visibility in Livingston County lakes.
"You plan on no visibility, and go from there," Tom Parrish of the Putnam Township Fire Department said. "That's the best thing. Plan on Braille diving. If you can see something, it's a benefit."

Sheriff’s Sgt. Jeff Leveque, who has been diving since 2003, said other challenges can include the weather, such as the case with the Zukey Lake drowning in July. On that call, surface temperatures were sweltering.

The terrain of the bottom of the lake also changed rapidly.

A dive is successful when everyone goes home safe, but the team knows that will not always be the case.

"Finding the person as quickly as possible, whether rescue or recovery," is what constitutes a successful dive, Leveque said. "The faster you find them, the better it's going to be."

**What it takes**

A recreational diver gets to see beauty in the water as the diver comes across an assortment of undersea life, but a public safety diver is looking for a drowning victim or evidence tossed by a criminal trying to hide a crime.

It is far from pretty. It is stressful. It is work-intensive. It is time-consuming.

Yet, each of the team members said they are doing it for one reason — to help others.

"(The team) is not here because they are going to end up with a million dollars at the end of the day. They're here because they want to help," Schkade said. "You have to be a compassionate person to do the job. You have to be a well-disciplined person, and you have to have the desire to help others above and beyond everything else is, literally, what it comes down to."

Each diver is certified following standards by Dive Rescue International, a Colorado-based company that provides training and equipment to public safety professionals involved in aquatic incidents.

Local public safety divers train on how to use specialized technical equipment, apply rescue and recovery techniques, and identify problems or hazards and appropriate solutions.

The training includes entanglement drills, how to interview witnesses, boat operations and search patterns,
such as making a crisscross pattern as the team searches for a potential drowning victim.

The training pays off on some calls. Parrish, a former New Jersey firefighter, recalled working a rescue call when a 1-year-old toddler fell under ice. The euphoria he felt helping bring that child safely to shore made his chosen profession worth the training and time commitment.

"It was a successful recovery; it did feel good," he noted.

**Body recovered Sunday in Canyon Lake**

**S.M.A.R.T. divers locate body of 55-year-old man**


16 Aug 2010

COMAL COUNTY (KXAN) - Divers with the San Marcos Area Recovery Team (S.M.A.R.T.) located and recovered the body of a missing swimmer just before noon on Sunday from Canyon Lake at Canyon Park.

Authorities say that Frank Delano Harrison Jr., 55, a native of North Carolina, had been residing at Canyon Park for several weeks with a female companion. Three witnesses reported to officials around 8:30 p.m. on Saturday that Harrison went missing while swimming after a tube in area 3 of the park. They said that they heard him in distress.

The Canyon Lake Fire Department conducted a shoreline search for the missing man on Friday, but they were unable to locate him. The fire department does not have divers so they were unable to search the water.

The Canyon Lake Fire Department reached out to S.M.A.R.T., who continued the search Sunday morning.

Officials had the witnesses return on Sunday morning to help lead the divers to the location where Harrison was last seen.

"After we brought the witnesses back to the scene on Sunday morning, they were able to greatly narrow down the search area.

Using a rope and arc search pattern from shore, divers were able to find the body in three minutes."

Harrison’s body was found in 8 feet of water, 25 feet from the shoreline. The death has been ruled an accidental drowning by Justice of the Peace Guerrero.

The Comal County Sheriff’s Department, Texas Game Wardens and the Army Corp of Engineers had boats and jet skis in the water to control recreational boating traffic.
while S.M.A.R.T. prepared and conducted the underwater search.

S.M.A.R.T. is a non-profit volunteer dive recovery team consisting of police officers, firefighters, and paramedics and a subdivision of the South Hays Fire Department.

This is the third drowning victim S.M.A.R.T. has recovered in the past two months.

**Two men rescued from Charles River**


August 20, 2010  By Globe Staff

Boston police and fire officials rescued two men from the Charles River early this morning after the men started showing signs of hypothermia and were struggling.

Boston police used their boat “Protector” to head to the area of the river near the Massachusetts Avenue bridge for a 2:55 a.m. call of two people in the water struggling. When officers arrived, they saw the two men, a 22-year-old and a 21-year-old, being assisted by Fire Department divers. The divers were putting life vests on the men, who were then pulled on to the boat.

They were both conscious and alert, but appeared to be in a mild state of hypothermia, police said. A police spokesman could not say why the men were in the water at the time.

The rescue came less than a week after a man tried to swim from a boat that was taking on water in the Boston Harbor and drowned. Two other people who stayed on the boat were rescued by the US Coast Guard.

**Car 'like a missile'**


Aug 22, 2010 By Nathan Crombie

A car rocketed through a barrier like a "scud missile", plunging 30m into the Manawatu Gorge yesterday, killing the driver.

Police divers later found the body 20m from the submerged car.

Central serious crash unit Senior Constable Les Maddaford said witnesses saw an Upper Hutt-registered Subaru Impreza stationwagon travelling through the Manawatu Gorge about 7.35am towards Woodville.

It was going about 100km/h and crashed through the barrier before plummeting into the river.

A witness saw the vehicle leave the road at speed and within minutes the car had sunk beneath the dirty waters of the swollen river. "He went off the cliff like a rocket
and straight through the barrier," the witness said. "A truckie coming the other way got down there with me but all we could see was an oil slick. Then a pair of shoes came floating up and an All Black cap."

Maddaford said there were no visible tyre marks on the road. The car had destroyed about 20m of barrier at the top of the cliff. Maddaford said because of the speed, the car "had the capability of going off that drop like a scud missile". "There are a multitude of things that could have happened. We'll have to inspect the vehicle for faults and check the driver's background for medical or personal issues."

Police divers from Wellington found the body about 6pm. Meanwhile, a 19-year-old man received serious head injuries last night after his Honda Civic and a Suzuki Swift collided in Whenuapai, West Auckland.

Constable Aaron Case said the Suzuki was travelling north along Riverlea Rd and about to turn into a driveway when it collided with the southbound Honda.

The Suzuki driver, 79, suffered minor injuries in the accident, which happened at about 6.30pm.

And in Tauranga, a man was in a serious condition in Tauranga Hospital yesterday after the car in which he was a passenger lost control and crashed into a wooden power pole in Greerton about 9.45am.

An eyewitness said the driver "jumped out of the car and wrapped his hands around his head and started screaming". Powerlines were strewn across the ground. And a motorcyclist was in a serious condition after losing control of his Harley-Davidson on a remote road near Omakau in Central Otago.

He suffered serious chest injuries and broken bones.

**Arrest made, IMPD searching river for weapon used in homicide**


25 Aug 2010 By: Daniel Miller

INDIANAPOLIS (WISH) - Metro Police said they have their suspect in a deadly weekend homicide, but they don't have the weapon used in the crime.

Just before 3 o'clock Wednesday afternoon Indianapolis Fire Department Divers searched part of the White River in the 26-hundred block of South Harding Street. Crews
were called by IMPD detectives to recover a weapon they say was used to kill an Indianapolis man.

A detective on the scene told 24 Hour News 8 the weapon was used in a weekend homicide on Hervey Street.

Early Sunday morning, just before 4 o'clock, metro police say three people returned home from a local bar when someone started shooting at them.

27 year-old Matthew Hayes died in the shooting. Monday, investigators arrested 24 year-old John McDonough in the case.

24 Hour News 8 learned McDonough told detectives he tossed the weapon used in the crime in the White River. Dive members dredged the bottom of the White River for several hours.

They didn't find the gun they were looking for, but they did find this one.

The detective on the scene said it was an "old gun" that may or may not have been used in a crime. The detective said they will be doing testing on the gun for evidence. As for the Hervey street investigation, the search came up empty.

John McDonough was arrested on a preliminary charged of murder. Police said the shooting was the culmination of an ongoing dispute between the two men.

Robots search water for missing man, 42
http://www.thestar.co.uk/news/Robots-search-water-for-missing.6510955.jp
03 September 2010 By Claire Lewis Crime Reporter

RESERVOIRS in Chesterfield were searched by police as part of the hunt for a man missing from Dronfield for two weeks. Derbyshire Fire and Rescue Service used two of its water rescue boats and sonar equipment to scan three expanses of water at Linacre Reservoir, near Cutthorpe, Chesterfield.

They were looking for images under the water which could have suggested there was a body. Then they sent robots into the water to beam pictures back to the search team.

The boats were deployed to help look for Nicholas Walton, aged 42, who has not been seen since his car was found abandoned at the reservoir on August 19.

Supt Gary Knighton, overseeing the search, said: "Our officers were joined by Derbyshire Fire and Rescue Service who used their boats and sonar equipment to look at three areas of water near where Mr Walton's car was found. "They were scanning the water for solid masses which robots were then sent into the water to take images of. "We have searched all three areas of water now. We also had the availability of police divers from South Yorkshire Police should we have needed them. This has been an extensive search so far in which we have also been assisted by mountain rescue team volunteers who have helped check all the surrounding land and woodland - they did a fantastic job.
for us. "We are keeping Mr Walton's family updated on a daily basis."

Police officers searching for Mr Walton have also been speaking to his friends and relatives to try to find out why he has vanished. Experts are also trying to establish the location of his mobile phone by doing cell site analysis.

Mr Walton is 5ft 10ins tall, slim, with a bald head. He was last seen wearing a light coloured long-sleeved top and dark trousers. Call Derbyshire Police on 0345 123 3333

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**INFORMATION YOU CAN USE**

**Can you believe your eyes in the digital world?**

http://www.bbc.co.uk/news/technology-10558258

2 August 2010 By Zoe Kleinman Technology reporter, BBC News

**VIDEO ON SITE: Image manipulation expert Ric Bradley airbrushes Zoe Kleinman**

Whether it's Obama on the beach or the impossibly flawless skin of this month's glossy cover girl, any picture can now be digitally altered to tell an entirely different story. In the age of the airbrush, can we ever really believe our eyes?

One man who can is Professor Hany Farid, a computer scientist and digital forensics expert who is a professional spotter of faked images - although he does not like the term.

**Technology and culture**

This is the first of a five part series exploring the intersection between technology and culture. "Fakery is a loaded word - I prefer alteration or manipulation," he said. "It's not always intended to be malicious."

His website features a large gallery of published images that aren't quite what they seem.
If there is more than one source, then the image is likely composed of more than one picture.

"When you take a picture of people in two different settings the lighting is always different," he said. "Your brain isn't sensitive to noticing it unless they are dramatically different - we are developing forensic tools to identify it."

**Light and shade**
A magazine cover showing Hollywood couple Brad Pitt and Angelina Jolie on the beach together was actually a composite of two individual shots taken almost six months apart, he said. "A lot of people think it's easy to spot because they often see bad fakes. But of course if you only see the bad ones you think it's easy," said Professor Farid.

His team uses scientific equations and mathematical algorithms to analyse photos looking for statistical anomalies in their composition.

Very subtle differences in shadowing are often a giveaway. Identifying exactly where the shadows fall on an image reveals where the light source must have been to have created that shade.

If there is more than one source, then the image is likely composed of more than one picture.

"When you take a picture of people in two different settings the lighting is always different," he said. "Your brain isn't sensitive to noticing it unless they are dramatically different - we are developing forensic tools to identify it."

**Matter of fact**
It may not be the end of the world that two movie stars were not really sunning themselves at the same time.

But the composition trick takes a more sinister turn when it is used to dramatise or even alter the recording of serious or sensitive events.

In 2003, while actress Kate Winslet was busy hitting the headlines for complaining that she had been overly airbrushed after a magazine cover shoot, a bigger scandal was brewing.

That same year photographer Brian Walski was sacked from the LA Times after he admitted to compositing two photographs of conflict in Basra.

### How to spot common alterations

<table>
<thead>
<tr>
<th>How to spot common alterations</th>
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<tbody>
<tr>
<td><strong>Cloning:</strong> Part of image subtly duplicated, eg to make smoke cloud look bigger - a computer can analyse pixel colours in different areas and compare them for similarity</td>
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<tr>
<td><strong>Re-touching:</strong> To sharpen blurred or underlit detail - proportions of basic colours in sequences of pixels are often not balanced after a re-touch.</td>
</tr>
<tr>
<td><strong>Lighting:</strong> By analysing all shadows in an image, scientists can tell whether a shot had a single light source.</td>
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*Spot the difference Zoe Kleinman gets photoshopped*
The two images both showed a soldier directing civilians but the second featured a man carrying a child in the background. They were composited so that the soldier appeared to be holding his hand out to stop the man.

Afterwards Mr Walski said he had not considered the consequences of his actions at the time. "When I put the pictures together, I knew what I was doing. It looked good. It looked better than what I had, and I said 'wow'," he told photo website PDN online soon afterwards.

Fast forward to 2010 and The Economist ran a front cover picture of US President Barack Obama looking alone and thoughtful with an oil rig in the background and the headline "Obama vs BP" - in fact he was on a beach talking to two other people who had been airbrushed out.

Deputy editor Emma Duncan said the changes were made because she "wanted the reader to focus on Obama". "For news organisations it's not a good idea," said Professor Farid. "It's like changing a quote to make it more aesthetically pleasing."

However he added that it is not common practice in news (celebrity and fashion journalism aside) - and many news photo agencies have strict policies about how their images can be used. "In the mainstream news it's relatively small - they are serious about photo-journalism," said Prof Farid.

Mixed reception

It's not just news editors who frown on doctored images - a manipulated picture is not admissible in court as legal evidence.

But Professor Farid thinks that the judges may be missing a trick.

Tools of the trade

- Software such as Gimp (GNU Image Manipulation Program) are available free online, but the best known brand is Photoshop.
- Now in its 20th year, the Adobe tool has over 5m registered users worldwide.
- Adobe says Patch Match is Photoshop's most popular feature. If an editor removes part of an image Patch Match fills the gap by pulling in content from other bits of the picture and duplicating it.
- A new device in very early stages at the Adobe research labs is a camera with a matrix of lenses that can take multiple perspectives of the same scene. These could then be synced together to create an image that is almost panoramic in its detail.

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"It's like counterfeit currency - you can't stop it but you can make it more difficult"

Hany Farid

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Hany Farid

A composite image showing lots of angles of a crime scene might show up evidence that one might miss by looking at a series of separate pictures, for example. "In a court of law you cannot introduce a manipulated photo - that is altering evidence," he said. "I would like to advocate that society starts thinking about the introduction of digital evidence in a court of law. Every year the law gets further behind the technology."
However with the media already saturated with manipulated pictures, many of which can only be identified with the help of complex mathematics, the law is erring on the side of caution for now.

Even Professor Farid admits that as technology advances, the fakes are getting harder to spot, but his methods are also evolving to keep up with the manipulators. "The ability to tell real from fake is increasingly hard," he said. "It's like counterfeit currency - you can't stop it but you can make it more difficult."

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- Polyethylene Tape: a tape used to lift latent prints off multi-contoured surfaces
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- Stun Gun: how to use a stun gun as an electrostatic dust lifter

You can also find these videos (along with others) on my web site  

Dick Warrington is in research and development and a crime scene consultant and training instructor for the Lynn Peavey Company. For the past several years, Dick has been teaching classes throughout the U.S. and Canada, trying to dispel some of those “you can’t do that” myths. Dick can be reached at dwarrington@peaveycorp.com
Chronic Ear Dysfunction In Diving

Inner Ear Injuries Related to Middle Ear Barotrauma During Descent or Compression Inner Ear Barotrauma

Pathophysiology of Inner Ear Barotrauma
This is thought to be due to implosive or explosive rupture of the round or oval windows in relation to diving stresses. Straining or valsalva maneuvers in attempts to clear the ears increases the pressure differential between the middle ear and the labyrinth to the point of rupture.

Diagnosis and Management of Inner Ear Barotrauma

Surgery for Inner Ear Barotrauma
There is a debate as to the proper management of the perilymph fistula. Some feel that it should be operated upon immediately (Pullen). Some feel that watchful waiting should be done with operative closure of the perilymph fistula done only when there is no improvement after 48-72 hours of bedrest with head elevated. Most authors advise an initial trial of medical management and that surgery should be undertaken on those who don't improve after 5 to 10 days or if inner ear function worsens in the meantime.

Otologic Problems Occurring at Stable Depth
Three divers experienced this in a chamber dive after changing from helox to a gas containing neon or nitrogen at depth. Vertigo, nausea, nystagmus were experienced and permanent end-organ damage was demonstrated in two of these divers.

Permanent Otologic Injuries Occurring During Ascent or Decompression (Inner Ear Decompression Sickness)

This is related to nitrogen bubble formation in the labyrinthine vasculature.

Human Reports of Inner Ear Decompression Sickness


Management of Inner Ear Decompression Sickness

1. Manage as decompression sickness with prompt recompression when encountered early after a dive.
2. Switch back to helium-oxygen if the problem is due to switching to air in decompression from a deep exposure.
3. Recompression to 3 ATM deeper than the depth at which the symptoms occurred or to table depths suitable for the treatment of neurological
decompression sickness.
4. Fluid replacement, oxygen administration with avoidance of anticoagulants, low-molecular weight dextran, steroids, aspirin and salicylates should be accomplished.
5. Diazepam (Valium), 5 to 15 mg is effective in relieving the vertigo, nausea and vomiting.
6. Documentation of otoneurologic symptoms as soon as possible.
7. No return to diving if permanent inner ear dysfunction ensues.

Differential Diagnosis of Inner Ear Barotrauma and Inner Ear Decompression Sickness

This is important in that the treatment is entirely different. Recompression is necessary for inner ear DCS while it is contra indicated for inner ear barotrauma.

Factors helpful in the differential:

1. Time of onset--symptoms occurring during compression (Descent) indicate possible barotrauma. Those symptoms occurring shortly after decompression (ascent) are more likely related to DCS.
2. History of the dive profile--- shallow, air dives more likely barotrauma. Deeper, mixed gas diving-more likely DCS.
3. Associated symptoms of barotrauma, such as pain, fullness, blockage with barotrauma; joint, skin or neurological problems with DCS.
4. Physical findings associated with barotrauma, ear drum findings: skin and neurological findings with DCS.

Otologic Injuries Related to High Background Noise During Diving Conditions

Investigations have failed to definitely incriminate high background noise as the cause of sensorineural deafness seen in the usual diving population. Conflicting reports fail to provide enough information to allow for recommendations to be made one way or the other. (Farmer, JC in Diving Medicine, Bove, (ed.)

Tinnitus and Diving
Ringing in the ears or 'tinnitus' (pronounced with the accent on the 'tin') is one of the most prevalent and bothersome of symptoms related to diving. Tinnitus may be caused by damage or disease, anywhere along the path of the auditory system.

Tinnitus is the perception of sound when no external sound is present; and is often referred to as "ringing in the ears." It can also take the form of hissing, roaring, whistling, chirping or clicking. The noise can be intermittent or constant, with single or multiple tones; it can be subtle or at a life-shattering level. It can strike people of all ages and, for most, it is difficult to treat.

It is estimated that over 50 million Americans are affected by tinnitus to some degree. Of these, about 12 million suffer severely enough to seek medical attention. And, about one million sufferers are so seriously debilitated that they cannot function on a "normal," day-to-day basis. In diving, it is a symptom of serious changes that have occurred because of the effects of pressure, either barotrauma, excessive attempts to equalize or to a decompression accident.
In divers, it also can be related to TM joint pressure from clamping down on the mouthpiece, wax buildup in the ear canal with tympanic membrane irritation, barotrauma to the middle and inner ear, decompression illness involving the inner ear, or rupture of the round window with perilymph fistula. With the latter, it most often found in association with vertigo and there is usually some deafness.

It may also be caused by physical trauma, infections of the ears, long standing exposure to very noisy environments, scarring and rigidity of the small bones in the middle ear (otosclerosis), toxic damage by medications (e.g. Streptomycin), and tumors of the brain or the auditory (hearing) nerve.

Tinnitus is still a phenomenon about which we know little and which has few effective treatments. During the last two decades, hyperbaric oxygenation therapy (HBO) has been used in the treatment of sudden deafness and chronic distressing tinnitus, with mixed results. Other therapies include non specific prescription medicines, non-traditional medical treatments, such as acupuncture, stress reduction and relaxation therapy, hearing aids and biofeedback therapy.

It should be emphasized that the newer methods of treatment are still under evaluation and that at this time there is no universal, symptomatic or specific treatment for tinnitus.

**Things that divers can do:**

1. Get a good examination by a diving oriented ENT doctor. The tinnitus may not be from diving at all!
2. Check out your regulator mouthpiece for fit. Consciously avoid clamping down on the mouthpiece. (Try this yourself--clamp down on your teeth and hear the high-pitched whine!)
3. Avoid the use of nerve stimulants, i.e, excessive amounts of coffee (caffeine) and smoking (nicotine).
4. Learn as quickly as possible to accept the existence of the head noise as an annoying reality and them promptly and completely ignore it as much as possible.
5. Tinnitus is usually more marked at bedtime, when one's surroundings become quiet. Use any kind of masking sound-maker.

How to Treat Tinnitus: There is not a cure for tinnitus. However, a variety of treatment options exist that offer varying levels of relief to many sufferers.

Treatment options include:
- biofeedback
- hearing aids
- medication
- masking
- Tinnitus Retraining Therapy
- TMJ treatment

**More About Tinnitus Related to Diving**

This information is provided only as a background for becoming an informed diver. It should never substitute for the expertise of a diving physician or ENT specialist. Tinnitus can be described as "ringing" ears and other head noises that are perceived in the absence of any external noise source. It is estimated that 1 out of every 5 people experience some degree of tinnitus.
Tinnitus is classified into two types: objective (what can be heard by someone else) and subjective (what can be felt).

**Objective Tinnitus** (Actually audible or observable)
The rarer form, consists of head noises audible to other people in addition to the sufferer. The noises are usually caused by vascular anomalies, repetitive muscle contractions, or inner ear structural defects. The sounds are heard by the sufferer and are generally external to the auditory system. This form of tinnitus means that an examiner can hear the sound heard by the sufferer by using a stethoscope. Benign causes, such as noise from TMJ, openings of the eustachian tubes, or repetitive muscle contractions may be the cause of objective tinnitus. The sufferer might hear the pulsatile flow of the carotid artery or the continuous hum of normal venous outflow through the jugular vein when in a quiet setting. It can also be an early sign of increased intracranial pressure and is often overshadowed by other neurologic abnormalities. The sounds may arise from a turbulent flow through compressed venous structures at the base of the brain.

**Subjective Tinnitus** (Inaudible to an observer)
This form of tinnitus may occur anywhere in the auditory system and is much less understood, with the causes being many and open to debate. Anything from the ear canal to the brain may be involved. The sounds can range from a metallic ringing, buzzing, blowing, roaring, or sometimes similar to a clanging, popping, or nonrhythmic beating. It can be accompanied by audiometric evidence of deafness which occurs in association with both conductive and sensorineural hearing loss. Other conditions and syndromes which may have tinnitus in conjunction with the condition or syndrome, are otosclerosis, Meniere's syndrome, and cochlear or auditory neve lesions.

Hearing loss, hyperacusis (excessive loudness), recruitment, and balance problems may or may not be present in conjunction with tinnitus.

Many sufferers report that their tinnitus sounds like the high-pitched background squeal emitted by some computer monitors or television sets. Others report noises like hissing steam, rushing water, chirping crickets, bells, breaking glass, or even chainsaws. Some report that their tinnitus temporarily spikes in volume with sudden head motions during aerobic exercise, or with each footfall while jogging.

Objective tinnitus sufferers may hear a rhythmic rushing noise caused by their own pulse. This form is known as pulsatile tinnitus.

In a database of 1544 tinnitus patients, 79% characterized the sound as "tonal" with an average loudness of 7.5 (on a subjective scale of 1-10). The other 21% characterized the sound as "noise" with an average loudness of 5.5. When compared to an externally generated noise source, the average loudness was 7.5dB above threshold. 68% of patients were able to have their tinnitus masked by sounds 14dB or less above threshold. The internal origination of the tinnitus sounds was perceived by 56% of the patients to be in both ears, 24% from somewhere inside the head, 11% from the left ear, and 9% from the right ear.

In another database of 1687 tinnitus patients, no known cause was identified for 43% of the cases, and noise exposure was the cause for 24% of the cases.
Diving Causes of Tinnitus

Noise

TMJ syndrome (Clenching of teeth on the regulator)

Middle ear barotrauma (Due to pressure/volume changes)

Inner ear barotrauma. (Due to pressure/volume changes)

Round window rupture (Due to elevated pressure blowing this window out into the middle ear)

Inner ear decompression accident (Due to bubbles damaging the inner ear tissues)

Finally, advice from an otolaryngologist familiar with the damage that can occur from diving should be obtained. Self-diagnosis and treatment has no place in the management of tinnitus from diving injuries.

References

Inner ear Problems

References to Perilymph fistulas, inner ear barotrauma
Scand Audiol 1999;28(2):91-6

Long-term effect of hyperbaric oxygenation treatment on chronic distressing tinnitus.
Tan J, Tange RA, Dreschler WA, v d Kleij A, Tromp EC Department of Otorhinolaryngology/Head and Neck Surgery, Academic Medical Center, University Hospital of Amsterdam, The Netherlands. t.h.tan@amc.uva.nl Lamm K, et al.

Effect of hyperbaric oxygen therapy in comparison to conventional or placebo therapy or no treatment in idiopathic sudden hearing loss, acoustic trauma, noise-induced hearing loss and tinnitus. A literature survey.

Bohm F, et al.

[Round window membrane defect in divers].


Tinnitus: etiology and management.

Long-term effects of psychological treatment of tinnitus.

Effectiveness of hyperbaric oxygen therapy in patients with acute and chronic cochlear disorders.

Clinical experience with tinnitus maskers.

Treatment of severe tinnitus with biofeedback training.

Evaluation of a tinnitus masking program: a follow-up study of 598 patients.

Tinnitus.
Letters to the Editor

I am writing this letter to you in hopes that you would forward this on to PS Diver Monthly. We have known each other now for I have no idea how many years, too many to count. I would send this in myself, but as a ranking Officer in a Dive Unit it would go against all Unit’s policies to have my name associated with this letter, but I think that there are other Units that are running into the same problem and I believe it should be talked about.

The other day I was reading in Issue 74 from the editor complaining about the training that some organizations are getting and to put it how “lame” it is. How true it is. The other thing that he didn’t bring up that I wanted to discuss is how the sport diving section is pushing their Search and Recovery aka SAR programs or Rescue Diver programs. I would go into all the jokes, but I think we know all of them and I honestly want to keep this short and to the point. As we all know these programs are to assist divers in need of help or start to look for divers immediately.

Not what we are trained to do for.

When we have prospective members come in and they boast that they are SAR qualified, I chuckle to myself and say how little do you know. 99.9% of the time those that are “SAR” qualified are the ones that go running home to mommy and never show up again.

How is it that these organizations can sell these programs so that their students think they can walk into our Units and feel as though they have a leg up on the rest of the prospectives’?

OSHA should be a concern yes, but sports diving organizations should be a bigger concern. Those that get certified are learning less and told that they need to take more certifications to learn the same that you and I learned in our basic classes when dirt was just forming. Sorry didn’t want to make us seem that we were born back at the beginning of time. But if the dive shoe fits…..

My friend, thank you for submitting this for me, I do hope that this starts some discussion within the Units out there. We have to look at the overall scope of everything. OSHA needs to keep its filthy fingers out of our business, those 3 day Public Safety Diving Courses need to wake up, they are going to kill more people than they are going to train (and you and I unfortunately know someone personally who has been touched on that one), and those sports diving organizations need to train people better and reclassify their terminologies so their students realize that their SAR classes are not what we do.

Respectfully submitted
Officer of a Dive Unit

Editors Response:

I am not normally inclined to publish letters that come to me unsigned – not that I have had that many over the years… This particular letter was routed through a mutual friend so I will give the author a place to be heard.

But – I am going to comment.

If you are part of an organized team and have issues with your membership that cause you to stay under the radar, either your administration and political climate is
untenable or you have not figured out that your voice may be the only one speaking up and heard.

There is a difference between standing up for those who trust you to keep them alive or them, you and having a debate on administrative policy with your boss.

There are a LOT of folk in our PSD community who feel the same as you and we fight the fight when we can. I still feel like recreational agencies should not be involved in PSD instruction but you cannot dispute that it is the Instructor that makes the difference. If I teach a recreational PSD class – I can guarantee you it would be the same as those I teach under a PSD agency. The initials on the card are meaningless.

They will continue to be meaningless unless or until we have something higher up than I can apparently reach, that separates us from recreational, commercial and scientific diving.

**PSDiving is a personal choice – no one makes us do it.**

Keeping our new recruits safe and building up their confidence until they are ready and prepared to perform a recovery in a bad zero vis environment is our task. If we fail those who can do the job but never build them up to that point – it is us who failed them, not the agency who said they had some training.

And, by the way, with the right instructor(s), you can learn a lot in a three day class. And if you need, advice, opinion and suggestions or just help in general- call me.

Mark Phillips
Editor

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**EVENTS**

Come out to a DUI DOG Rally & Demo Tour and Actually TEST DIVE DUI Drysuits, DiveWear Insulation and Accessories

[http://www.dui-online.com/dog_main.html](http://www.dui-online.com/dog_main.html)

**All Public Safety Diver programs are held in conjunction with DUI DOG Rally & Demo Tour dates. In most cases, the event is held on Friday for public safety divers only with the DOG Rally event open to the general public on Saturday and Sunday.**

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<tr>
<th>Date</th>
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<td>Sept 24, 2010</td>
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**Special Event Announcement**

**Oconee County Dive Team**
**Surface Supplied Air Diving seminar**
**September 25th and 26th, 2010**

The Oconee County Dive Team will be holding our fourth Surface Supplied Air Diving seminar September 25th and 26th. This is a 2-day event being held at Devils Fork State Park’s, 516 Jocassee Lake Road, Salem SC. 29676, at the divers landing, located on Lake Jocassee, one of the premier dive sites in the South East. Lake Jocassee is located about 2 ½ hours from Atlanta GA. and about the same from Charlotte NC. There is no charge for attending
other than park entry fees of $2.00 per day. Activities will start at 09:00 each day, and end around 17:00. Meals are attendee's responsibility there is a small store just out side of the park, with sandwiches, hot dogs, and barbecue, we will have plenty of water on site for hydration. Both days are identical so it is only necessary to attend one of the two days, although you are welcome to attend both sessions.

This is a hands on event, aimed at Public Safety Divers, and Team leaders having no experience with Surface Supplied Air. This seminar will demonstrate how to set up common full-face masks for Surface Supplied Air Operation. Review emergency air requirements (Bail Out Bottle) as well making recommendations as to setting up a FFM for use with gas blocks/manifolds. Introduction to various Umbilical configurations, including operational comparisons and limitations of lightweight and standard umbilicals. Attendee's will participated in the following operational positions, Air panel operator, Dive Tender, Logs and Comms and of course DIVER for those attendees holding a dive certification. Based on past years most will choose to dive a KM Super light 37 helmet. Or you may chose to dive a Band Mask or one of several different full-face masks we have available for operation on Surface Supplied Air, including a EXO-26 BR, Guardian, and an AGA.

There are 24 diving slots available, 12 each day. Divers will enter the water in pairs escorted by a safety diver. Each team is allowed time to get comfortable, practice moving around and is given an opportunity to assemble a pipe puzzle. Diving day preference will be honored until the days slots are filled after which assignments are for the opposing day. All attendees are welcome on both days however you may also want to make a fun dive or two. Should you need accommodations Devils Fork State park has full camping facilities and several villas from $104.00 to $170.00 per night, along with several other nearby state and county parks, Motels are available in Seneca, about a half hour from the dive site. Lodging reservations should be made early.

To sign up or obtain additional information contact Bob Kinder at (864) 444-2524 or Email rkinder@totalpaging.com, when signing up please include which day you would prefer to attend. You will receive a confirmation Email, confirming your slot and which day you have been assigned for diving.

September 12, 2010 - September 16, 2010
ASCLD
Baltimore, MD www.ascld.org

September 15, 2010 - September 17, 2010
Minnesota Division IAI Annual Educational Conference
Brooklyn Park, MN www.mniai.org

SEPTEMBER 17TH, 18TH, AND 19TH 2010 PANAMA CITY BEACH, FL
The Atlanta Aquanauts are hosting the 3rd Annual Dive Fest in Panama City Beach, FL again this year. This is a fundraiser that benefits SUDS (Soldiers Undertaking Disabled Scuba) which is an arm of the Wounded Warrior Project. We will have 3 days of diving, a welcome reception and our main event dinner which will feature a Raffle and a Silent Auction. We have lots of great prizes to give away such as a 7 night cruise on Blackbeard’s, Dive gear, and Dive classes and much more! For more details visit www.asdivefest.com!
Side Scan Sonar Operations and Maintenance Training Seminar

L-3 Klein Associates, Inc. the leader in Side Scan Sonar equipment is proud to announce a Side Scan Sonar Operations and Maintenance Training Seminar from October 5-7, 2010. The three day seminar will be conducted at L-3 Klein’s Facility in Salem, NH. The training will include 2 days of classroom instruction and 1 day of on the water training; lunch will be provided daily.

Remember, to obtain the best performance from your L-3 Klein Side Scan Sonar you should have an operator who is fully trained and can provide you with the best results. Please inform all your customers and users that the next L-3 Klein training class is now scheduled for October 5-7, 2010 at our Salem, New Hampshire location. Classes tend to fill up quickly and are on a first come, first serve basis, so call today and reserve your spot! Please contact Carol Morrissey at 603-893-6131 or via email at Carol.Morrissey@L-3com.com to make your reservations. Email us for a 2010 Training Schedule.

Have a great day. We look forward to seeing you in October!!

Best regards,
Deborah Durgin
L-3 Klein Associates, Inc.
11 Klein Drive
Salem, New Hampshire 03079 USA
Tel: 603 893 6131 Fax: 603 893 8807
Email: Deborah.Durgin@L-3com.com
Web: www.L-3Klein.com
October 11, 2010 - October 14, 2010  
**International Symposium on Human Identification**  
San Antonio, TX  
www.promega.com/applications/hmnid/worformeetings/

October 14, 2010 - October 17, 2010  
**Association of Forensic Document Examiners Annual Symposium**  
Phoenix/Scottsdale, AZ  
afde.org

October 17, 2010 - October 21, 2010  
**Florida Division of the IAI – Annual Conference**  
St Petersburg, FL  
www.fdiai.org

Monday, October 18, 2010 - Friday, October 22, 2010  
**SOFT**  
Richmond, VA  
www.soft-tox.org

October 21, 2010 - October 23, 2010  
**1st Annual World Congress of Forensics**  
Dalian, China  
www.bitlifesciences.com/wcf2010/

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**UHMS Northeast Chapter Meeting**  
**Diving Medicine**  
**Friday, October 22, 2010**  
**12 Noon - 6:00 p.m.**

*The Northeast Chapter of the UHMS has put together an impressive list of dive medicine and dive safety speakers for Friday, Oct 22nd, as part of its full Annual Meeting weekend. Hope to see you there!*

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**Dawn Salka, ACHRN, EMT-B**  
**NE Chapter, Secretary**  
**Undersea & Hyperbaric Medical Society**  
845-806-6337  
nyvan7@aol.com

**Homeland Security / Search and Rescue**  
Chris Demaise, New Jersey State Police Dive Team

- **Diving Fatalities**
  Dan Orr, DAN, President and CEO

- **Seasickness, The Diver’s Nemesis**
  Owen J. O’Neil, MD, Medical Dir., Hyperbaric Dept, Phelps Memorial, Sleepy Hollow NY

- **Underwater Photography Submissions**

- **Decompression and Wreck Diving...Fun and Then Some**
  Captain Hank Garvin, owner/operator, R/V Garloo

- **US Navy Diving Manual Rev. 6:**
  What does it mean to clinical HBO facilities
  Rob Sheffield, Chair, NFPA Technical Committee Chair on Hyperbaric Facilities

- **What’s New with Decompression Sickness?**
  New Insights into the Pathophysiology
  Christopher Louge, MD,

- **DCS Clearance back to dive. Current standard of care**
  Evidence based medicine, Fitness for diving.
  Return to duty
  Nick Vandemoer, MD

- **Contaminated Water Diving: Procedures and Medical Considerations**
  Eric Hxedall, RN, CHRN, Duke Center for Hyperbaric Medicine

Bally’s Hotel, Park Place and Boardwalk, Atlantic City, NJ

$25 registration:  

For further information: George Perdrizet, President  
George.Perdrizet@atlantichealth.org
Norma Cooney, V.P., Program Chair  cooneyn@upstate.edu
Owen O’Neil, Treasurer  hbodoc@aol.com
Dawn Salka, Secretary  nyvan7@aol.com
Ron Brown, Membership Chair  medals6554@aol.com

October 23, 2010 - October 27, 2010
IACP Annual Conference
Orlando, FL      www.theiacp.org

November 5, 2010 - November 6, 2010
Chesapeake Bay Division IAI Fall Conference
Ocean City, MD      www.cbdiai.org

November 8, 2010 - November 12, 2010
2010 NEAFS & NEDIAI Joint Meeting
Manchester, VT      www.neafs.org ; www.nediai.org

The University of Tennessee National Forensic Academy will host a Best Practices Symposium for forensic and crime scene investigators, December 9-10 in Nashville.

The symposium, to be held at the Hilton Nashville Downtown, will allow attendees to network with other law enforcement officials while learning about the National Institute for Justice Rape Kit Backlog Initiative and the Forensic Technology Center for Excellence.

Among the speakers will be renowned forensic investigator Dr. Henry Lee. The UT National Forensic Academy is a program of the UT Law Enforcement Innovation Center headquartered in Oak Ridge, Tenn. For information: www.nfa.tennessee.edu.

January 11, 2011 - January 18, 2011
Evidence Photographer Certification
San Antonio, TX      www.evidencephotographers.com

January 16, 2011 - January 18, 2011
EPIC – Imaging USA
San Antonio, TX      www.evidencephotographers.com

February 8, 2011 - February 10, 2011
ACSR Annual Training Conference
Jacksonville, FL      www.acsr.org

February 21, 2011 - February 26, 2011
AAFS
Chicago, IL      www.aafs.org

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

Forensic Symposium to Address Best Practices
1) Hyperbaric chambers can give divers a safe introduction to:
   a. Extreme hot and cold temperatures
   b. Intense pressure
   c. Confined space
   d. All of the above

2) Hyperbaric chambers may be used to treat:
   a. Over-heating injuries
   b. Long term organ failure
   c. Lung over-expansion injury
   d. None of the above

3) When taking pictures of a crime scene:
   a. Protect the image so that it cannot be altered
   b. Create a file to save the picture so multiple images can be made
   c. “photoshop” the picture to provide a clearer image
   d. Leave the picture on a disk

4) Underwater search patterns include
   a. Free diving
   b. GPS aided searches providing underwater location
   c. Rope and Arc
   d. Dragging divers by a tether

5) During post hurricane boating rescue responses, your equipment should include enough food for 12 people.
   a. True
   b. False

6) Witnesses can be forcably detained if they witness a drowning.
   a. True
   b. False

7) A barotrauma injury is:
   a. An injury associated with a blunt force object
   b. An abrupt change of water temperature
   c. An injury suffered by the brain
   d. An expansion injury

8) DCS is caused by
   a. High oxygen levels in the blood
   b. High rates of breathing
   c. High levels of nitrogren in the blood
   d. High sugar content of the blood

9) Tinnitus is caused by:
   a. Baratrauma injury
   b. Loud noises
   c. A pressure injury
   d. All the above
10) Tinnitus is easily cured and not long lasting
   a. True
   b. False

Team Discussion:

1) Discuss your teams SOG/SOP and how you would handle a request to investigate an underwater crime scene.
2) Discuss with your team how the environment could effect the way you respond or deliver service.
3) Discuss with your team how you might recognize a potential crime scene even though the initial request did not indicate such.
4) Does your team have a SOG/SOP that addresses picture taking and retention?

Team Exercises:

Review witness interview procedures with team before implementing the following training:

Team Exercise A

1) Create detailed scenarios for a water related call-out on index cards.
2) Break the team into groups of two’s.
3) One member (witness) gets the card with all the details of what was observed.
4) The partner must interview the witness and write down all the details relevant to the pending search.

Team Exercise B

1) Plant evidence to be recovered by team divers. Use at least two people as witnesses to observe the evidence entering the water.
2) Assign team members to interview the witnesses (following training and procedures) in order to determine the PLS of the evidence.
3) Deploy divers for search and recovery of evidence following team protocol
4) Debrief

Homework

Obtain worksheets from your local LE to assist with witness interviews. Contact at least two neighboring LE agencies and get theirs as well. Assign a team to compare the worksheets and develop a Witness Interview Worksheet for your dive team.
These training agencies have recognized PSDiver Monthly as a valued addition to their programs and Continuing Education requirements.

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

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

**Lifesaving Resources**
Lifesaving Resources advocates the need for Public Safety and Rescue personnel to be trained in Water and Ice Rescue and recognizes the PSDiver Monthly CE Program for continuing education training and credits.

**Lifeguard Systems**
Lifeguard Systems recognizes PSD Monthly as a useful source of water rescue/recovery continuing education.

We welcome all training agencies and organizations to participate.

For details, email **PSDiverMonthly@aol.com**

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Q and A Answers

1 A 2 C 3 A 4 C 5 F 6 F 7 D 8 C 9 D 10 B
Scuba 2000 is special because we have an incredible resource in Alec's vintage gear collection. Not only is it considered one of the largest and finest anywhere but Alec shares his knowledge, experiences and his vintage equipment with anyone interested. Many of the items are very unique and a lot are extremely rare. In this spot each week, we'll feature a piece of scuba memorabilia whether scuba gear, personal gear, scuba diving accessories or maybe one of Alec's hundreds of scuba related items like Sea Hunt promotional pieces, movie posters, diving games and lots more. It's sure to interest you and many will amaze you.

Here's a great old mask from US Divers that was a very popular style in the 60's. Several manufacturers made similar models which, needless to say, promised the best vision possible. Some were actually compared to a television screen allowing you 'a window to the world'. Considering that television was also relatively new and not that reliable should have been a warning.

The mask was more like the front window from an late 50's automobile (like my '56 Buick Special). The masks were big but... they were impossible to clear on one breath, gave a terrible mask squeeze, had a single edge seal (leaked badly) and you couldn't easily hold your nose to equalize. One model (Nemrod) had a metal clip that protruded through the glass and grabbed your nose when you pressed the outside arms together. The irony is that they did not give you any more peripheral vision that a small mask. Ah well!

They were cool!! Collectors are just discovering the value of these masks. This one in perfect condition might bring $60 US at an auction.

See lots of neat old scuba stuff at www.vintagescuba.com