Many Are Cold But Few Are Frozen: Another Look at Hypothermia

Scanning Sonar And Under-Ice Search
By Mark Atherton

COLD WATER and NEAR DROWNING

Continuing Education NEWS EVENTS
FOUND ON THE WEB
Greetings!

A few months ago my son and I were trying to organize some fishing poles that were on hangers in the garage. We had the idea of expanding the space by nailing a flat board onto the 2x4s of the garage wall. The butts of the poles would sit on the flat board and we could use the other fitted part and hang more rods up. It seemed like a great idea at the time. But we were in the garage at the beach house that my Aunt and Uncle built recently.

We had a board that needed to be cut; some nails and seven screws we found in a zip lock bag and a small hammer. We also had the contents of three tackle boxes, some nylon string and cold beer. I mentioned that the board needed to be cut...

In one of the tackle boxes we had a good paring knife. None of us knew where it came from but we knew it had been there for a while and no one ever mentioned they were missing a paring knife.

So, hold the board up against the 2x4s and scratch a line with the knife where it needs to be cut. Lay the marked board on the floor. Place the cutting edge of the paring knife on the line and strike the dull side repeatedly until you drive the blade through the piece of wood. It is not pretty but it worked.

Nail the board in place, move rods around, watch rods fall to the floor. The angle of the upper holder to the board is not allowing the rods to stand straight and they are falling off the board.

String. We will make a horizontal holder to keep the rod butts from falling off. A screw on either side, hammered in place and a piece of nylon string sawn to length with a now dull paring knife and each end tied to a screw. Now the rods fall behind the board instead of in front.

Beer.

Ok, balance the rods very carefully and they will stay on the board until someone takes one down and the other around it fall.

Flash forward a few months. We need storage area in that same garage. We have house stuff, kid toys and stuff, boat and fishing stuff and “why do we need that stuff” to store. Someone is building a new house next door and they have a large dumpster they are tossing all the trash and cut wood they are not using.

My son and I decide we will salvage some lumber from their dumpster and see if we can build some shelves in the garage. We manage to get a number of cut offs in a variety of lumber sizes as well as some really odd angle pieces of plywood. Perfect. Go get the knife and hammer... NOT.

The next weekend we go back down and this time I bring tools. Real tools. I have a skill saw, a carpenter’s hammer, an electric drill with screw driver bits. An assortment of boxes of nails and screws a tape measure and other assorted hand tools I thought might come in handy, including an old hand saw I have had in my garage for at least 20 years. I do not remember where it came from but I know I have no memory of ever using it.

And beer. (FYI -beer seems to be a common
We dismantled the old rod holder and took it down. We set out to build something that would work, be functional and look good too. The more we did, the more we wanted to do. After the second weekend, we had built custom shelves for most everything, redesigned a workbench and had an awesome storage spot for our fishing poles. We even built a storage area for the extra lumber we had left over; just in case we wanted to tackle another project.

I wish I could say it all went smoothly. Near the end of the last day, when I was the most tired and ready to be done, I was cutting a 2x4 and the power cord of the skill saw curled up and was caught by the saw blade. When the cord is cut, the saw will not work. I needed to cut three more pieces of wood. *Just three.*

I had that old hand saw. I was saved! At least I thought so until I tried to cut with it. I learned how to use a hand saw when I was in Junior High School Wood Shop. There was a difference though. In wood shop, the saws were clean, sharp and well cared for. Mine had been stored behind a cabinet, was bent and was covered in rust.

Each time I tried to use it, the blade hung or jumped out of the cut where the blade was bent. When it did work, it was very difficult to use because of all the rust. I had a tool I used to use a very long time ago that had not been cared for properly. I had a tool that should have done the job but because of my neglect, could not function. Done...

I cut the wires on the skill saw back, stripped the insulation off and twisted the bare wires back together. An hour and a half later, I still had not found ANY kind of tape that I could wrap on the stupid wires. In desperation, (now, there are two hardware stores within a five minute drive where I could have bought tape.... But I am a man), I separated the wires so that they stayed apart and plugged the cord back in. The saw worked!

I managed to get two of the 2x4s cut. I marked out the piece of plywood and discovered I was going to need at least two more pieces of 2x4. I measured and marked them out to be cut. When I started the next cut there was a bright flash, a mini explosion and the only light in the garage was coming from the flame where the electrical short caught the 2x4 on fire.   *Sigh...*

Beer.

I hear a voice from upstairs, “The TV receiver is not working, is the red light on at the box downstairs?”.

Now I don’t want to have to admit to killing the power much less how it happened or why. So I do ask my wife if she will go to the store and get me some electrical tape while I investigate what is going on with the TV receiver.

She is back in twelve minutes, the saw is fixed and working in another ten. I finish the project in twenty minutes.

I know some of you are wondering what this has to do with anything related to PSDiver.

We often use the phrase “Another tool for the toolbox” when we teach. When we discover something new that we can use, we add that tool to the toolbox.

But how often do we actually LOOK inside that same toolbox? How many of your tools are rusty and bent? How many of your tools did you learn to use years ago and when put away were neglected or just forgotten?

I have had the opportunity over the last year to participate in a number of scuba classes where I participated as student more so than as a visiting instructor. I was challenged to be...
quiet and be a student. Each class was an enlightening experience.

Because I was a student, I was there to learn that particular instructor’s skills and techniques. I was not there to share what I already knew or the methods I employ. As a consequence, in each class, I was reminded of skills and techniques that I had not used in years. In some instances, I had to perform those skills and it was not pretty.

You would think that I would be really good at some things, especially if I wrote a training program that used some of those very things. It was embarrassing to suck at some of the things I had to do. But it was a reminder that we all get comfortable with what we think we know.

For months now, I have challenged you to work on improving basic scuba skills. I have heard from some teams who took up the challenge and were surprised at how much they only thought they could do and the work necessary to improve those same skills.

When was the last time you actually needed to use a rope throw bag? When you first got them, you practiced until you could hit your target, a drowning victim, every time. Right? Try it now. You are going to miss. It is going to look bad. If you are on an actual call, someone might die. A simple rope throw bag can make a life or death difference to someone in trouble. You know that. It is why you have rope throw bags. You practiced with them so that you could use them to make a difference. Then they and their associated skills got put in the toolbox and left.

Let me know how you do when you take me up on this challenge.

Dig deep into your “toolbox” of skills, techniques and actual tools. Can you use every one of them efficiently? Better yet, can you teach the new guys what those tools are AND how to use them correctly?

It is not always fun to practice the harder techniques or difficult skills. It can be embarrassing to some to appear rusty in front of their peers. But these are TEAM skills and tools. If you have the knowledge and have lost the muscle memory, get out and knock the rust off. Use the opportunity to teach and share with your younger team members.

If you would like to discuss this topic or any other CLICK HERE TO JOIN OUR MODERATED DISCUSSION GROUP

You may have noticed that we are missing an issue in the sequence. Issue 108 was planned to be our 2014 Annual Buyers Guide and come out right before this issue. As usual, whenever I make a plan, I have to modify the plan, then revise the plan and eventually throw out any plan and come up with a new plan.

The 2014 Buyers Guide is coming, I am having to do a LOT of administrative work that I do not normally do and it is eating up my time. When Lynn passed away last year, we struggled to get her records in order so that we could keep up with billing and accounting etc. What we did not know until recently was that the person we had doing the work was not actually doing the work and we have not had billing sent out in the last 5 months! So Della and I have had to take over everything now and we are still figuring it out. We are also still waiting on some of our Sponsors to get new material to us for their ads. We will be sending out notices to you guys soon.

Dive Safe!
Mark Phillips
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PSDiver Monthly Issue 109
TOOLS in the TOOLBOX

Are they YOUR tools?
Do you know how to use ALL OF THEM? WHY NOT!?

You use the ones on top ALWAYS
- because they are easier
- they are most familiar
- ... they are not rusty!

IT’s TIME TO CLEAN UP YOUR TOOLS!
Scanning Sonar and Under-ice Search
By Mark Atherton

It is an unfortunate fact that with freezing temperatures there becomes the need for first responders to conduct under ice search and recoveries.

When ice forms on the lakes and rivers, teams with access to scanning sonar have a distinct technical edge over those using side-scan. However, operating scanning sonar from an ice platform has its challenges and issues.

Equipment—operating temperatures, ice integrity/safety, deploying the sonar head, power supply grounding, cabling and positioning are dealt with differently in sub-zero temperatures.

POWER SUPPLY:
Let’s start with the power. Even though the sonar may be operated from a DC voltage supply, the laptop battery needs charging as the search time extends. Accept the fact that you require an AC generator. Without endorsing any particular make or model, find one that is quiet and has enough output wattage to power both the sonar/laptop, and an electric heater or kettle! A 2000w-2500w unit will run a 1500w heater or kettle with lots of “juice” left over for scanning sonar. Don’t forget the spare gas can, funnel, and extra oil.

Remember. The generator isn’t grounded! It sits on rubber pads that help keep it quiet. Get a length of wire and make a seawater ground (described at the end of this article). Move the generator away from the operating station to reduce noise and the smell of exhaust, auger a hole through the ice next to the generator and deploy the seawater ground into the water below the ice, before starting the generator. Why? There may be a voltage potential between the generator frame and the water below the ice. So, unless you have a great dental plan or don’t mind being called “Sparky,” it is recommended to deploy the ground lead before switching on the power. When using a generator - even if the sonar computer is setup on shore, a seawater ground deployed into the water is recommended. And, while on the subject of generators, tie or tape the extension cord lead to the generator so it doesn’t get inadvertently pulled out if someone snags the cord. Albeit not an issue in cold weather, get into the habit of over-under coiling any leftover extension cord. This stops it from becoming a mini transformer.

SONAR HEAD PROTECTION:
Since most SAR teams deploy scanning sonar with a tripod, utilize the sonar cage in the tripod to protect the head, in particular the sonar transducer, from making physical contact with the ice or hitting bottom during deployment.

Remove the cage from the tripod top plate and secure the sonar umbilical to it with a shackle. Make it standard practice to always seize the cable attachment shackle to the cage.
Check the cable strain relief. On cold or new cable, it can slip; wrap the upstream portion of the strain relief with a thin band of tape or secure with a small hose clamp. The only issue with a small hose clamp is they tend to have sharp edges and when handled can slice into a cold finger without one even knowing. So, wrap the hose clamp with tape after using it to secure the strain relief.

When working from an ice platform another helpful hint is use an ice screw to secure the sonar cable at the optimum height above bottom.

An ice screw looks like a long lag bolt with a tie point. Used by mountaineers and ice climbers, they are available through stores catering to these sports. Alternatively, go to a local big box hardware store and buy a few lag bolts approximately 8” in length. At the top end, tie on a length of rope. Screw the device into the ice a few feet/metres from the hole and use to secure the umbilical after deploying the sonar head.

OPERATING LOCATION:

Carry extra lead weights to attach to the cage to stabilize the head in current. The image shown is from a search on the Red River in Winnipeg, Manitoba. Depending on the amount of water released from the upstream dam, current ranged from 2-5 knots during the program. To stop the sonar from twisting when deployed to bottom required up to 40 lbs/18kg of weight.
Position the sonar computer and power supply in as warm a location as possible. Obviously, a great number of factors influence the setup. Think mobility! If the ice is safe to work from, consider an ice fishing tent – or preferably, an ice-fishing shack! When using a tent, set it up on a plywood sheet with towing skids.

The tent needs heat and one of the concerns is condensation dripping down from the tent ceiling onto the laptop keyboard. If needed, cover the laptop.

When the ice is thick enough to safely take the weight, consider using a van. Working from a heated vehicle beats a tent – every time!

Working from shore is another option; however, the sonar cable length may restrict covering the search area. If this is the case, ask your sonar supplier if an additional surface cable can be added to the existing umbilical to extend its operational range.

Laptop computers and cold don’t mix – in particular the LCD displays have issues in freezing temperatures. Warm up the laptop and LCD display before turning on the power. The same is true about the sonar head. Water is at maximum a few degrees below freezing. Yes, salt water can get down to 29°F (-3C) in some conditions. Once the sonar head is running, keep it submerged and do not turn off the power. Have someone auger holes through the ice ahead of the sonar team. When ready to make the move, pull the sonar and quickly transfer the head to the next access hole.

**SCANNING SONAR SEARCH PATTERN**

The great advantage of working from a stable ice platform is quickly being able to lay out a sonar search pattern.

The issue, however, is water depth. Sound bends (refracts) to the colder temperatures and shallow water may limit the sonar’s range. There are two ways to get around this; tilt the transducer if the sonar has this option or raise/lower the sonar to maximize its range performance. As the water depth changes, adjust both to optimize range performance.

Because of the refraction issue, start with a 30’/10m hole spacing. After the first few deployments, it is evident by reviewing the sonar data if the spacing can be extended to 45/15m. As the water shallows, however, be prepared to reduce the spacing distance.
Use a compass or transit to determine the initial search pattern alignment. On the first line, pace out 10 steps and Auger a hole at that location. Continue on the alignment and repeat the process. As stated above, start with two holes at the 30’ spacing and deploy the sonar. If the record shows good bottom ensonification to 30'/10m, extend the sonar range to 45'/15m and check the image again for good bottom returns.

Ultimately, it is the sonar image clarity, which determines whether to select a 30’ or 45’ hole spacing.

When possible, center the sonar computer where the length of umbilical reaches the maximum number of augured deployment holes. Remember, that as the water deepens, the radius of coverage gets smaller.

If a sonar grid, like that shown, is used, assign a line number and identifier to each drop location. Create a drawing that replicates the pattern with line numbers and drop locations annotated. After completing the scans at each augured hole, mark off the corresponding location on the drawing. At the end of the day, this provides a record of what is covered, and what search areas remain.

Make up an acoustic marker tied to a rope that fits through the augured hole. Metal air duct works well as it is easily bent into whatever shape you wish. Attach a
lead weight to the ducting to make it sink. Even if the scanning sonar head is equipped with an internal compass, an acoustic marker comes in handy as a backsight to confirm the target’s position. Deploy the target marker in a hole adjacent to the sonar head to confirm what it looks like on the sonar display. Measure an angle and distance from the sonar head to the target and from the marker to the target. Pace the distance and angles of each on the ice and then auger another hole. Redeploy the marker in the new hole and confirm it is directly over the target. If not, repeat the process.

Finally, cut a diver access hole in the ice and make the recovery.

**About the Author:**

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**SPECIAL TO PSDIVER MONTHLY**

**The US Water Rescue Dive Team**  
By Shane Weinreis  
via [At The Ready Magazine](http://www.atthereadymagazine.com/)

Many times responders are considered only those who go in and mitigate the emergency incident. Rarely is thought given to those who are called after the initial response to bring closure to the families of victims. The US Water Rescue Dive Team is an all-volunteer organization of highly specialized divers who are called to respond to water rescue incidents in support of agencies who do not have an organic team. Equally often, however, they receive a lot of calls when they are the families (or agency’s) last resort, when the search has been called off. Many locations across the US do not have established water rescue/recovery teams or the conditions are outside of the local team’s expertise. Typically due to the depth, cold, search area, or bottom composition.

A common misconception with the general public, non-divers, divers, and even dive Instructors, is that a “Certified Recreational Diver” who has his (RESCUE DIVER Certification) is qualified to perform Public Safety Diving Services. Sadly this is an extremely dangerous misconception, and far from the truth. Far too often that belief leads to serious injury or death of divers who have taken on work they are not certified nor equipped to complete. A Police Dept. would not hire a college graduate, show him how to shoot a pistol and make him a Police Officer. Would a Fire Dept. hire a recent graduate, show him how to use a fire extinguisher and make him a Fireman? Of course not, that’s silly. So why does it happen in Public Safety Diving? Lack of public education!

Recreational training teaches a new diver the very BASICS of diving (enough to get by). Most of the time it is taught in ideal conditions (warm water, clear water, free from any dangers). It
is taught with the idea that the diver will be diving in similar ideal conditions with no stress and no dangers. Same with a Rescue Diver Certification, it teaches a recreational diver self-rescue and buddy rescue in crystal clear warm water. The Rescue Diver Course that most people are familiar with has nothing to do with Public Safety Diving. But, when people think of a "Rescue Diver" they typically think of someone who does Public Safety type of diving: Underwater rescue, underwater body recovery, evidence recovery, etc.

Public Safety Divers find themselves diving in cold, dark, polluted, moving, black, and dangerous waters. Dangers such as barbed wire, trees, glass, sharp jagged pieces of metal, entanglement hazards (just to name a few) all pose dangers to Public Safety Divers. What would a diver do if he/she could not see, all of a sudden became entangled, was bleeding from a cut, and was running low on air? Typically, that diver will PANIC which adds to the distress and forces the diver to lose control which in the underwater environment usually ends in tragedy. Public Safety Divers are trained to dive in the worst conditions, trained and equipped to respond to entrapment or entanglement dangers, and trained in proper evidence recovery.

There are typically 2 types of teams. Paid teams are usually part of a Fire Department, Police Department, Sheriff’s Office, Military, or Federal Agency. Typically to be on a paid dive team you have to spend a few years on the department or agency before being allowed to apply for a position on the dive team (not always the case, but typical). Once on the dive team it is usually a collateral duty in addition to your normal duties. Then there are volunteer teams. Volunteer teams across the country can be very different in many aspects. Some volunteer teams require the member to supply some (or all) of his/her basic equipment, which can be very costly. So a person needs to consider if they are willing to make an investment/commitment not only in time but financially. There is soon to be an Accreditation Program launching for Public Safety Dive Teams, and we are hoping to meet those requirements.

We have several different positions on our team, but the minimum qualifications to be a diver on the team are:

1. Current CPR / First Aid
2. Basic Open Water Diver
3. Rescue Diver
4. Advanced Diver
5. Public Safety Dive Tender
6. Public Safety Diver

Training Requirements for divers:

a. minimum of 2 training days per month, one of which must be a dive
b. Annual Swim Test
c. Annual Scuba Skills Assessment
Training requirements for Tenders or Medics:

a. minimum 1 training day per month
b. Annual Swim Test

Law Enforcement Training for the Underwater Crime Scene

Public Safety Divers have to be trained in underwater crime scene investigation and evidence collection. If an Officer responded to a homicide scene where someone had been shot inside a house, one of the first things that the Officer would do is to secure the scene. If investigators found the murder weapon (pistol for example) sitting on the back porch, it would be documented, photographed, mapped, etc. After everything was completed, typically only one person would physically handle the pistol, and that person would be wearing gloves. Now, if that same pistol was thrown out the back door and bounced into the pond in the back yard, that pond is now part of the crime scene. Far too often is agencies throw out all the rules (for investigating a crime scene) when something ends up in the water.

They call up anybody that has a scuba tank or pair of hip waders and have them cross the secure perimeter, and go retrieve the object with no crime scene preservation. Public Safety Divers know how to preserve the evidence, whether it is a weapon, other evidence, or a body. This is critical to prevent losing key evidence that was underwater, getting cases thrown out of court for mishandling of evidence, and worse of all….diver fatalities.

Just as with any Public Safety job, this job is not for everyone. About one-third of the calls that are made to the USWDRT are made by families. The very difficult and heartbreaking mission of victim recovery brings closure to the family and the community affected and is a critical mission for the USWRDT. Three summers ago the team responded to the Wyoming Mountains to recover an 18 year old who had fallen into a river during a family trip. The mother vowed to stay on that mountain until her son was recovered and she could bring him back home. A person considering this type of work (especially on a volunteer level) has to love people, love water, and be spiritually, mentally, and physically tough. If a person does not generally love being in the water, they will not train nearly enough.

The USDRT will deploy anywhere requested, if funding is available. So we take all calls, but make a deployment decision on a case by case basis. Unfortunately, this year alone they have had to turn down about 10 requests, due to lack of funds. So far, in 2013, we have been limited to about 500 miles (one way) in travel. If it gets further than that, we have to ask for expenses, and some of our team members have to take time away from family and try to get off work. We hope to find funding someday that will allow us to never have to tell someone, “Sorry, we want to help, but we are unable.” We are frantically seeking sponsors to help continue our efforts. We are
also in the process of developing Satellite Teams across the US that will help improve our response availability.

If someone wants to join USWRDT, we start by having them fill out an application that can be found on our website: www.waterrescue.org. To contact USWRDT, call 406-591-4649. Calls are taken 24 hours a day.

Shane Weinreis is the Dive Officer and president of the USWRDT. He has over 25 years of dive experience, and brings 16 Years Law Enforcement, 18 Years as a SCUBA Instructor, 16 Years as a Dive Team Leader for numerous dive operations and swiftwater rescue operations experience to lead the team. Shane is the owner and operator of USWaterRescue.com and works with Public Safety Divers and Dive Teams.

NEWS

Police underwater dive team makes another foray to find missing hunter
http://www.patriotledger.com/article/20140109/News/301099765
Jan 9, 2014

A law enforcement research and rescue team resumed the search Wednesday for missing Brown University student Dana Dourdevile of Marion, who disappeared on New Years Eve after leaving to go duck hunting on West Island in Fairhaven. However, the search yielded no new information as to the whereabouts of Dourdeville.

The Southeastern Massachusetts Law Enforcement Council (SEMLEC) Underwater Recovery Unit and Dive Team launched two boat searches from Hoppy’s Landing on West Island. The searches were conducted on the morning of Jan. 8, nine days after the 21-year-old ORR High graduate’s mother found his truck abandoned in parking lot in Fairhaven after he failed to return home when he said he would.

The first rescue and recovery boat left the dock just after 10 a.m. and steamed out to the scallop farm off the northeast coast of West Island.

“The boat crew used a drop video, which is an underwater camera that is towed with a tether behind the vessel which provides a live video feed to a monitor onboard the boat,” Fairhaven Police Sgt. Kevin Kobza said. “The crew kept a constant watch of the monitor, looking for any signs of Mr. Dourdeville.”

After reaching the scallop farm, the search team turned back to the northeast shore of West Island, proceeding south back towards the area of the town beach, Kobza said.
“The shallow waters were checked along the way. The video monitor experienced technical difficulties and had to be swapped out with a different one,” he said. “Once the monitor was replaced, a second crew boarded the vessel and conducted another search of the area.”

Nothing was located during either search, he said.

“Had anything of significance been located within the water, the area would have been marked and a dive operation would have been conducted,” Kobza said. “The purpose of the dive would have been to gather anything of interest that was located.”

Extensive searching has been conducted from the air, on the water and on land in the attempt to locate Dourdeville. Searchers have utilized aircraft, boats, all-terrain vehicles, K-9 units, and thermal and night vision technology to help with their efforts. So far, the only item found has been a kayak that was located adrift approximately 2 ½ miles offshore. With the exception of a glove inside the kayak, no other items have been found.

The Underwater Search and Recovery Unit conducts underwater searches from shorelines and boats. Its primary mission is the recovery of people, property and evidence from beneath the surface of the water.

Workers get training in cold-water rescues - Seminar puts focus on water techniques
http://www.poughkeepsiejournal.com/article/20140130/NEWS01/301300018/Workers-get-training-cold-water-rescues VIDEO ON SITE
Jan. 29, 2014

Panic. Suffocation. Shock - Plenty can go wrong during cold-water rescues — for victims and first responders. But in Dutchess County, where the Hudson River runs along the western boundary like a spine, and lakes and ponds are found throughout, the ability to conduct a fast, effective and safe rescue at a moment’s notice is especially important, said Sgt. Shawn Castano of the Dutchess County Sheriff’s Office, prior to a two-hour, cold-water rescue training seminar at the sheriff’s office headquarters Wednesday.

About 50 members of local and regional fire, police and emergency medical service agencies with marine patrols gathered there to learn advanced water-rescue techniques.

“Essentially, our goal is to make sure that each of the three disciplines has an understanding of each other’s’ responsibilities at the scene,” Castano said.

Pulling victims from a hole in the ice horizontally, helping them get buoyant and safely navigating the ice were all topics discussed by seminar speaker Andrea Zaferes, vice president of Team Lifeguard Systems Inc. in Ulster County.
Zaferes discussed what she called the effects of “thermal hammer,” which she described as what a person who falls through the ice endures during the first five minutes in cold water.

Zaferes teaches swift-water rescue, ice rescue and public safety diving to emergency personnel and military across the U.S. and in Canada. She also serves as a medicolegal investigator for the Dutchess County Medical Examiner’s Office.

“Everything is based on one thing,” Zaferes said. “You go home (alive).”

In addition to ice rescue, Zaferes was expected to go over aquatic death investigations and recovery during the training. “Anytime you can gain knowledge, that’s the best,” said Frank Ludwig, 34, who serves as a rescue captain at the Pleasant Valley Fire Department.

Local agencies in attendance included Dutchess County Emergency Response, TransCare and the Arlington, East Fishkill, Fairview, LaGrange, Pleasant Valley, Rhinecliff, Staatsburg and Union Vale fire departments, the sheriff’s office said.

The seminar was subsequent to the reorganization meeting for the Hudson River Law Enforcement Task Force — a network of marine law enforcement from Albany to New York City, president and Dutchess County Sheriff’s Office Capt. Gerard Lennon said.

Police divers searching for 'body part' at Salford Quays find dead parrot.

Emergency teams were sent to a stretch of the Manchester Ship Canal near The Lowry theatre shortly after 11.30am [http://www.manchestereveningnews.co.uk/news/greater-manchester-news/police-divers-searching-body-part-6643508](http://www.manchestereveningnews.co.uk/news/greater-manchester-news/police-divers-searching-body-part-6643508)

29 Jan 2014 Amanda Jane Etchells

Police divers in Salford Quays searching for a "body part" have instead found a dead parrot.

The deceased bird was pulled from the water at around lunchtime.

GMP rescue teams, paramedics and firefighters were first scrambled to the Manchester Ship Canal near The Lowry theatre shortly after 11.30am today.

They were responding to reports that "a body part" had been seen floating in the water. After searching several parts of the canal, specialist divers recovered a parrot.

A GMP spokesman said that police divers were still searching the water this afternoon, but no body parts have yet been found.
5th ANNUAL UW-CSI SERIES*
BODY AND WEAPON RECOVERY SPECIALTY
May 9-11, 2014
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PREPAID Advanced Registration  -  $300.00 per person.
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For Non-Divers*
Intro to Public Safety Diving,
UW Crime Scene Body and Weapon Recovery
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May 9, 2014 ONLY

PREPAID Advanced Registration  -  $75.00 per person.
After April 21, 2014  -  Registration $100.00

TO BE ENROLLED ALL PREPAID OR LATE REGISTRATIONS MUST BE IN BY 8AM May 9, 2014 or PAID IN FULL IN PERSON.

Participants will gain classroom knowledge on basic concepts of zero visibility search and recovery, evidence handling, terminology, safety issues, standards information and the Public Safety Diving Discipline. Invaluable for new teams and an excellent refresher for established teams. New material is added every year making this one of the most current and relevant programs offered.

Attention is placed on zero visibility diving, diver and team safety, documentation and paperwork, and successful dive missions.

Participants will be challenged with various skills in in a clear water pool using blacked out masks and will gain real experience in methods of underwater search and recovery while simulating zero visibility environments.

Teams will learn new training techniques and tips that they will be able to bring back with them.

During our open water scenario training, using information and skills learned, participants in the Body and Weapons Recovery Specialty will be challenged with successfully performing a search and evidence recovery of at least one weapon and will perform at least one successful body recovery.

CLICK HERE TO DOWNLOAD THE FULL INFORMATION FLIER
'Heroic': Manchester city centre chief's praise for fire service as divers stage dummy rescue at Piccadilly Basin
http://www.mancunianmatters.co.uk/content/310114349-heroic-manchester-city-centre-chiefs-praise-fire-service-divers-stage-dummy-rescue
31 Jan 2014  By Matthew Naylor

After five water-related incidents in the past month, Greater Manchester Fire and Rescue Service today gave a timely demonstration on how a drowning casualty is saved.

The GMFRS worked with police divers to rescue a dummy from the foot of the canal at Piccadilly Basin, a hotspot for such water-related incidents in recent times.

Upset at the fact that our canals have seen 14 fatalities in the past 18 months, GMFRS’ Manchester Borough Manager, Andy Heywood, made it clear how hazardous the city centre water can be.

“In these temperatures, water is incredibly dangerous, even if you’re a strong swimmer,” said Mr Heywood.

“Your muscles seize up in the cold and you can drown.”

The majority of the incidents that the Water Incident Unit attend are between 10pm and 4am, where people have staggered along the canal after pubs and clubs close.

It is not just accidental falls that are causing these rescues however, as many are thrown into the canal after being victims of crime in the city centre.

People are now being urged to only use canal-side paths at night when absolutely necessary as the number of water-related incidents increases.
the headlines for the wrong reasons and we cannot stand by and let another tragedy take place.

“As we have a responsibility to keep the public safe we need members of the public to help us by taking some personal responsibility and looking after themselves and their friends, especially on a night out.” As media and local residents watched on, police divers and a rescue boat went out onto the canal to recover the dummy, with impressive efficiency.

Councillor Pat Karney, spokesman for Manchester City Centre,
was also in attendance at the demonstration and spoke of his admiration for the work our Water Incident Unit do.

"I would use one word to describe what I have seen today: heroic," said Councillor Karney.

"It’s amazing what they have to do to rescue people. They endanger their own lives to make sure that people are pulled out of the canals."

Councillor Karney also said that the City Council are working with fire services, the river authority and the police to ensure that the number of water-related incidents is minimised.

Some of the ideas being thought through at the moment are to introduce gating and fences around the canals, as well as implementing more CCTV cameras.

"It is a matter of urgency because our top priority is to prevent any further accidents in this area," he said.

Dave Hughes, Station Manager for Manchester Central Fire Station, concurred with the councillor, saying: “With the number of fatalities going on, it’s just not acceptable and we need to do something about that.”

Anybody who witnesses a person falling into the canal is being urged to call the emergency services straight away and be as specific as possible when describing where the casualty is located.

Divers recover driver's body, crane hoists Jeep from New River
February 2, 2014 By Daily News staff

Divers retrieved the body of a 31-year-old man who was driving a Jeep that fell in New River from Louis Sewell Jr. Bridge on U.S. 17 Bypass Saturday morning, according to reports to The Daily News and information from Jacksonville Police Department.

A crane — positioned on the bridge — hoisted the submerged Jeep from the river, according to a press release by Jacksonville Police Department.
Rafael Rentas Rivera of Richlands was at the wheel of the Jeep, which fell from the east lane of the bypass, according to a press release by Jacksonville Police Department. No information released has explained the wreck’s possible cause.

First responders were notified of the wreck about 10:30 a.m. Saturday, Camp Lejeune Public Affairs Officer Nat Fahy told The Daily News. Rivera’s body was retrieved about 4 1/2 hours later.

Shortly before noon Saturday, Jacksonville Police Department received a report of a vehicle in the water under the bridge.

Police reached the scene and observed a black Jeep on its side in the river. Jacksonville police and fire departments; Camp Lejeune Fire Department’s Water Rescue Team; USMC Provost Marshal’s Office; Onslow County Sheriff’s Department; and U.S. Coast Guard responded.

Eastbound traffic was condensed to one lane for many hours and later completely closed during the recovery effort for a half hour.

Marine Corps fire and emergency services and Jacksonville fire officials were seen gearing up around 1:40 p.m. at the Jacksonville USO with scuba tanks. Jacksonville Fire and Emergency boats 1 and 2 transported the divers to the site.

Also at 1:40 p.m. Saturday, a Jacksonville fire truck was parked between traffic and a stretch of guardrail cordoned with crime-scene tape. The guardrail — which was buffered by a snow bank sloped almost to its top — had no damage.

Rivera's body was removed from the submerged Jeep by divers about 3 p.m. and the vehicle was lifted back on to the bridge by a “civilian” towing company’s 30-ton capacity crane, according to the Jacksonville Police Department press release.

In the release, Jacksonville Police Chief Mike Yaniero extended condolences to the Rivera Family.

DROWNING CASES ON THE RISE
http://thejetnewspaper.com/2014/02/02/17586/
February 02, 2014

A toddler of Vunato Settlement is believed to be the latest drowning victim.

The victim who is almost 2 years of age was discovered floating in the Vunato Creek by her mother yesterday afternoon at around 4.30pm.

The victim’s mother had been attending to her younger daughter when she discovered her missing. Following a search the victim’s body was discovered floating in the creek located directly behind their back yard.
She was rushed to the Lautoka Hospital but was pronounced dead on arrival. Investigations continue.

The current drowning toll stands at 8 compared to the same figure last year.

To date the same worrying trend is being noticed whereby children under 10 years of age are becoming drowning victims. Of the 8 cases, 3 are under 10 years of age while the next highest recorded figure is that of those between 17 and 25 years of age.

Further analysis shows majority of the cases have been where victims drowned while swimming in rivers.

As investigations into negligence continue on the 3 cases recorded so far, the Fiji Police would once again like to reiterate the importance of supervision.

Of particular concern is also our ability to acknowledge and know the dangers and hazards of one’s environment. Cases involving children are often where the victims homes are situated near a river or sea whereby children have wandered off on their own resulting in tragic circumstances.

This is where parents and guardians must be more vigilant! We will continue to issue advice however the onus is on individuals to take ownership of their safety and especially of the young in their care.

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**Police Divers caution communities about overflowing dams and rivers**

**Media Statement from Limpopo Media Centre**

**Corporate Communication**

**South African Police Service**


**04 February 2014 POLOKWANE** – Members of the Search and Rescue Unit of the South African Police Service in Limpopo have appealed to members of the community, especially in the Northern regions of the province, to be extra careful and vigilant when crossing swollen streams and rivers following the prolonged and persistent rainfall in the province.

Several of the dams in the Makhado and Thohoyandou areas are overflowing with small streams and rivers, including the Limpopo River, also very full and fast flowing. Two teenage boys aged 14 years drowned at Mphephu over the weekend after they tried to cross a fast flowing river.

They were swept away and their bodies were later recovered by the divers. At Vuwani, two men who were fishing were also swept away when the river came down suddenly. One man was successfully rescued by the divers, but the other one was swept away and the search for him is continuing today.

The divers, who have been working tirelessly for the past few days, are urging members of the community to be...
extremely careful when crossing swollen streams or rivers as the current of the water can look deceptively slow, but can sweep a person’s feet from underneath him/her very quickly.

Parents are urged to look after their children and always know where they are in order for them not to wander off and drown in holes filled with water, or streams and rivers. People going fishing are urged not to use dilapidated boats or water crafts and to heed to warnings of heavy rain and flooding rivers before they go out.

Another request is made for people to refrain from using alcohol when they venture in an area where there are dams, streams or rivers.

Smart aerial robot prototype successfully performs search and rescue with life preservers.
http://www.psfk.com/2014/02/lifeguard-drone.html#lNtCx
February 3, 2014

The average human takes 90 seconds to reach and save a drowning victim who is 75 meters from the beach. It takes Pars 22 seconds. Unmanned robotic aerial systems, designed to do human tasks more efficiently and with faster speeds, are increasingly being deployed for emergencies ranging from delivering defibrillators to heart attack victims to helping police search for missing persons. This lifeguard drone prototype from the RTS Labs in Iran is remote controlled by a human and is able to fly for 10 minutes on a single charge to provide immediate help to those drowning near coastlines. Pars is also smart enough to track its own path by GPS positioning and at the end of its mission it can come back home without the need of user guidance. Choppy waters do not affect Pars, and if a heat camera is added, it could recognize people at night. In theory, it could also carry up to three regular life preservers at once to assist multiple people who are drowning with one flight. With added landing gears, Pars could also potentially pull someone out of the water.

RTS Lab director and engineer Amin Rigi was inspired to design the "savior aerial robot" after hearing report after report of people drowning in the Caspian Sea, with over 1,100 people drowning to their death over the past eight years. The lab first tested a sea-based robot, but soon realized that having it be airborne was more effective. Pars can fly ten minutes at a maximum speed is 7.5 m/s in its current design iteration and can be used in missions with a 4.5 kilometer radius range to rush to drowning victims and drop life preservers down from the air. This solves another key problem that faces search and rescue teams: many
humans who rush to save other humans end up drowning themselves. On average 6 people have drowned together at the same time in the Caspian Sea, like the tragic story of 6 students who died in July 2013.

Pars was tested in the Caspian Sea in August 11th to the 15th in 2013 in thirteen trials that analyzed the following core capabilities: life vest releasing system performance, flight stability, search and rescue performance at day and night, and simplicity of robot’s control. These factors were compared with performance of traditional rescue methods and were analyzed for deficiencies of robots design. With further development, Pars could also be used in ships and off shore reliefs; monitoring of marine and off shore structures; and recording films and pictures from dangerous pathways for rescue missions with its precise positioning.

The creators of Pars, Iranian incubator RTS Labs, is looking for investment and financial support to continue to refine the design of Pars and bring it to international markets in the hopes of assisting lifeguards to save more lives.
minutes apart just after 2pm.

When Richard was brought to shore in the police divers’ rescue canoe, he was shaking violently, and had to be treated for shock, trauma and hypothermia.

“He is in a stable condition, but he is very cold,” ER24 general manager Peter van der Spuy said.

He explained that the intravenous fluids Richard was being given were to raise his body temperature. He had also been wrapped in a blanket and warm jacket.

Van der Spuy also said that Richard, who had been standing in knee-deep water, was suffering from extreme exhaustion. His efforts to keep himself erect and withstand the strong current had left him with low muscle tone.

“His body used up a lot of oxygen and depleted the system,” he said.

Richard was taken to the Kalafong Hospital after being treated on the scene. Nxungwana, who had managed to keep largely dry, was treated and allowed to go.

Petros Mahlangu and his family, who were also caught in the flash floods, had to abandon their car and run for the safety of dry land.

He, his wife and their seven-month-old son had been sitting in the car near a bridge on Lenchen North, waiting for the rain to subside, when Mahlangu realised water was flowing under the car.

“I tried not to panic for the sake of my wife and son.”

Mahlangu collected their cellphones and his wallet, and guided his wife out of the car and through the waist-high water.

“As a boy I spent hours herding cattle, and I was often caught in flooded rivers, so I knew I should walk across the river upstream, so that it did not carry us away.”

The effect of the flooding of the river had a ripple effect across Centurion, affecting numerous roads, including Lenchen North and South, Blackwood, Witstinkhout and West.

Traffic congestion was reported from John Vorster Drive, across Lyttelton and the Old Johannesburg Road.

Guests were trapped in the Centurion Lake Hotel for a period when the river flooded the road.
The floodwaters also sent car owners and drivers scrambling to move their vehicles to safety.

In Joburg, two men and a woman were rescued from a stream in Naledi, Soweto, on Monday. The trio were swept away by a strong current as they were trying to cross the river, emergency services spokesman Robert Mulaudzi said.

They were rescued by residents who had been passing by the river.

Underwater recovery team offers closure to families of drowning victims


Feb. 8, 201

Burdened with grief and shock, Stacy Hudicek returned to the Delaware River every day for almost two weeks to scan the icy water for the body of her 31-year-old brother whose truck had plunged into the river on Jan. 7, 2012.

While the truck was recovered, she said the Philadelphia police told her they were unwilling to risk the life of a diver to continue the search because of the amount of debris in that part of the river in northeastern Philadelphia.

What she and her family then faced was the unsettling reality that the body of her brother, Joseph McGeehan, would remain in the river.

“It was heartbreaking. We knew we couldn’t live with ourselves until he was recovered,” Hudicek said.

“We just wanted to bring him home and lay him to rest.”

While she and her family reached out to a number of recovery resources in the area, no one was able to help until a diver who read about the story in the news introduced her to the Garden State Underwater Recovery Unit, based in Milford, Hunterdon County. The team responds to calls for help around the state.

Team captain Sunny Longordo, a resident of Clinton Township, sprang into action. She researched the area of the river where the body of Hudicek’s brother was thought to be, and pulled together nine divers, who went into the water on Jan. 22.
“Within one hour they brought my brother back to us,” Hudicek said.

Hudicek and her family now coordinate fundraisers for the recovery unit and keep in close touch with Longordo and the divers who, through their bravery and dedication, returned the body of their loved one.

**Compassion at work**

While the team lends its expertise during sporting events such as the New Jersey State Triathlon, and in flooding situations, as in the case of Hurricane Irene, its primary purpose is recovery.

“We are called in if someone has drowned. If someone falls into the water and begins to drown, unless help arrives within three minutes, they will not likely survive. That’s when emergency personnel or others on the scene engage in rescue efforts” Longordo said.

While it is emotionally difficult work, Longordo said it is enormously gratifying to help a family find their loved one, especially when everyone else has given up.

“Often, by the time we get called in, we are their only hope. At that point, we work very closely with the families,” she said.

Established in 1959, the Garden State Underwater Recovery Unit is comprised of 25 members and is the second oldest volunteer dive team in the nation.

The unit performs approximately 10 recoveries each year.

“We are not part of a first aid squad, fire department or police agency like many other dive teams in the U.S. Underwater recovery, and water-related missions are strictly what we do,” said Greg MacTye, a resident of Holland Township who first joined the team in 1983 as an associate member.

Having worked as an instructor with the U.S. Coast Guard Auxiliary, Flotilla 48 Somerville, MacTye later served as an EMT and team leader for the Clinton First Aid and Rescue Squad’s Water Rescue Team from 1981 until 2005 when he became a full member of the Garden State team.
Taking the plunge

“There are a lot of different kinds of people on the unit,” Longordo said. “I came in as a diver but we need volunteers to help out in other ways such as driving the boat or helping out with administrative work.”

Once the divers join the team, they attend 30 hours of training to earn their initial certification. Drills last anywhere from two to eight hours.

While it is challenging to take the plunge into often bitter cold and murky waters, what drives the divers is their compassion.

“No one wants to lose a loved one under circumstances where they cannot be found and properly laid to rest. When we’re successful, we help families grieve. When we aren’t, the family at least knows that everything possible was done to find their loved one,” MacTye said.

Trial of 13-year-old’s accused killer told how police searching creek found waistband of underpants, a pair of shorts and a belt

A strand of black thread led police to the remnants of a pair of underpants believed to belong to murdered Queensland schoolboy Daniel Morcombe, a court has heard.

The trial of the 13-year-old’s accused killer has heard police divers searching a section of Coochin Creek in the Sunshine Coast hinterland found the elastic waistband of some underpants, a pair of shorts and a belt in August and September 2011.

Police were searching the area after accused man Brett Peter Cowan, 44, allegedly led undercover officers to the spot where he said he dumped Daniel’s clothes.

Senior Constable Chae Rowland said that 15 minutes after he began searching the creek on 18 August he noticed something in the thigh-deep water, about 15m from a bridge.

“Initially it was a small black thread like a strand. I followed that down to a ... bundle of twigs,” he told the supreme court in Brisbane.

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Hunt for Daniel Morcombe: court told how single black thread helped divers

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Former water police officer Sergeant Gordon Thiry said he had found a pair of shorts buried about 20cm under the creek bed, about 15m to 20m from the bridge. He then found a belt half-buried in the mud.

“I didn’t know what it was when I first saw it. I could see there was something there that wasn’t a natural item,” he told the court.

The search also found bones thought to belong to Daniel over a large area but there was evidence the body was intact when it was dumped, the court heard.

A police scientific officer, Sergeant Donna MacGregor, told the court the 17 bones or bone fragments found in bushland in the Sunshine Coast hinterland were spread over a 24m by 14m area and none of the bones were entirely intact. She said most were found within the top 10cm to 15cm of soil.

“Because of their proximity to the soil, the surface, we could ascertain that they were surface placed or that the body had been placed on the surface,” MacGregor told court.

MacGregor agreed it also suggested the body was intact when it was initially left at the scene. She said although the bones were found over a wide area, some were found in a cluster which could give an approximate idea of the area where the body might have been placed.

The sergeant said the soil was acidic and moist in places which would have accelerated the degradation of the bones. “I formed the opinion they’d been there for at least five years but … they could be [there] anything in excess of that period,” she said.

MacGregor told the court they appeared to belong to someone aged between nine-and-a-half and 14 but she was not able to determine the gender because at that age male and female bones were very similar.

Earlier in the day, the court was told that detectives swooped on Cowan when he visited the crime scene with undercover police.

Detective Sergeant Graeme Farlow said he had been working full time on the investigation into Daniel’s death for almost six months when he and a number of other officers travelled to a isolated clearing in the Glasshouse mountains on 13 August 2011.

Farlow said there was some old machinery and a couple of sheds in the clearing, which used to be a sandblasting area, and detectives had hidden themselves from view.

“I secreted myself behind a pile of timber with Detective Senior Sergeant
Edwards,” he said. “I observed a Toyota Hilux to drive into this location; it contained the accused and two other gentlemen.”

The detectives emerged from their hiding places and spoke to the men in the car. Cowan was arrested and taken to police headquarters in Brisbane.

Farlow said he had also travelled to police headquarters where he was told by senior police management there would be a substantial search under way and he was nominated to be the crime scene manager.

Daniel disappeared in December 2003 while waiting for a bus at Woombye in the Sunshine Coast hinterland.

Cowan has pleaded not guilty to murder, indecent treatment of a child and interfering with a corpse.

A forensic scientist, Catherine McGovern told the court, via video link from New Zealand, that a partial DNA profile taken from an upper arm bone found at the search site closely matched DNA from Daniel’s toothbrush.

“The DNA evidence provided strong scientific support for the proposition that the DNA recovered from the section of the humerus originated from the source of the DNA on the toothbrush,” she said.

The trial continues.

Clothes 15m from where accused said he dumped them


14th Feb 2014 Rae Wilson

ABOUT 15m downstream from a low wooden bridge over Coochin Creek where Daniel Morcombe's accused murderer claimed he dumped the boy’s clothes, police divers found underpants, shorts and a belt.

Senior Constable Chae Philip Rowland described following a small black thread down to underpants believed to belong to Daniel.

The officer said the thread led to a bundle of twigs caught up in the narrow, shallow creek bed about 10.15am on August 18.
"It wasn't a spider's web it was actually a fabric," he said.

"That led me to an elastic waist band that belonged to underpants.

"I could see a label on it and I believed it was an item of clothing."

Snr Const Rowland told Brisbane Supreme Court on Thursday that under a certain light he could faintly see the word Bonds.

Bruce Morcombe had previously told the court Daniel wore Bonds brand underwear, noting his twin Bradley wore Rio brand.

Fellow police diver Gordon Paul Thiry testified he found the Ripcurl shorts and a belt on September 26 while doing a "wading search" after logs and other debris had been removed from the creek bed.

"About 20cm under the creek bed in the soft and hard sand ... I've located a piece of material I could feel under the water," he said.

"We dug around that and eventually we recovered a pair of shorts (at 9.55am)."

They recovered a belt which was semi-submerged in the water, which was less than 50cm deep, about 10.35am.

Mr Morcombe and wife Denise had previously described to the court how Daniel commonly wore dark shorts that hung below the knee. They could not confirm whether there was a belt missing from Daniel's clothing when he disappeared.

Water science expert Jonathon Olley told the court there had been two significant flood events through the Glasshouse Mountains search site since 2003.

Mr Olley, who has studied sediment movement by water for 29 years, said nearby Coochin Creek also would have flooded on May 21, 2009, and January 21, 2011.

He said described the creek as windy with lots of fallen trees and many roots encroaching on the channel.
"All those flows we believe were small flushing flows ... so the flows would be confined to the channel," he said.

So if you threw fabrics, materials into the stream in December, 2003, it wouldn't have transported.

"The small flows would have pushed it downstream just a little bit and the probability is that it would have been hooked up in that vegetation relatively quickly."

Police scientific officer Donna Marie MacGregor, who specialises in human anatomy and forensic anthropology, told the court she concluded that Daniel's body was most likely left on the ground at Glasshouse Mountains, rather than being buried, because all 17 bones were found in the top 10cm of leaf and soil on the forest floor.

Defence says Morcombe murder confession a fake

She said she was able to determine the bones belonged to someone aged 9.5 to 14 years with a height between 127.3cm to 135.6cm but she could not determine gender.

Brett Peter Cowan, who has pleaded not guilty to murder, indecent dealing and interfering with a corpse, has told undercover officers he dumped the body at the site the bones were found and simply covered him with leaves and branches from the forest floor in December, 2003.

The bones were found between August 20 and September 9, 2011.

Ms MacGregor said the soil had a 5.5 pH level which meant it was acidic and would have had a "dramatic effect on bone preservation".

She said it would have caused the bone remains to break down "reasonably quickly" over time.

New Zealand forensic scientist Catherine McGovern said she believed an upper arm bone she examined was 540 times more likely to come from Daniel Morcombe than from the rest of the Queensland population.

Ms McGovern, appearing via video-link in Brisbane Supreme Court, said she found no DNA profile from a thigh bone but obtained six out of 26 possible results from the upper arm bone.

She said she tested this against a full DNA profile she obtained from Daniel's toothbrush.

Detectives describe waiting to arrest Brett Peter Cowan

HIDING behind a log pile at the Glasshouse Mountains search, a Sunshine Coast detective has described waiting with another detective moments before police arrested Brett Peter Cowan over Daniel Morcombe's disappearance.
Detective Sergeant Graeme Farlow said he and Detective Senior Sergeant Daren Edwards had received information from other police to be at Lot 1 at 510 Kings Road at Glasshouse Mountains about 9.30am on August 13.

While he was "secreted" by the log pile, he said he saw a Toyota Hilux drive onto the property with Mr Cowan and two other men he believed were undercover police men from Western Australia about 11am.

Sgt Farlow said he saw detectives Stephen Blanchfield, who was videoing, and Ross Hutton approach the vehicle shortly before Mr Cowan was placed under arrest.

He said following numerous briefings, he became the crime scene manager responsible for co-ordinating the searches at the Kings Road sites - Lot 1, Lot 2 and Coochin Creek.

Sgt Farlow said he also was responsible for maintaining an accurate register of what was found and for securely transporting items found for further analysis or for secure keeping.

He said he went to Brisbane, Adelaide and New Zealand with bone samples, as well as transporting DNA samples from Daniel's family.

Police officer not surprised he found no trace of Daniel while searching car of accused

A POLICE scientific officer was not surprised when he found no trace of Daniel Morcombe while searching a white four-wheel-drive Mitsubishi Pajero eight years after it allegedly transported the teen.

Ashley Martin Huth said he took swabs from a large number of places inside the vehicle from the front passenger and driver seats right through the back of the car to where Brett Peter Cowan claimed he put a mulcher the day Daniel went missing.

Brisbane Supreme Court heard during opening addresses that Mr Cowan told undercover police he was driving a Pajero in 2003 when he allegedly abducted Daniel.

Senior Constable Huth said he also used A4 pieces of sticky tape to capture hair, fibres and botanical material, and did presumptive testing for blood.

He said there was no DNA profile, no blood and no other items of interest located.

"Eight years' time, you have to consider the condition of the vehicle and when I examined it, it was very weathered and in poor condition," he said.

"I'm not surprised that I got not DNA profiles."
The court heard he examined the car in August, 2011, and again that September. But it had already been examined before in December, 2003.

Snr Const Huth said he was also present with another specialist to examine shoes found at the Glasshouse Mountains search site and two pairs of Daniel's shoes his parents had given for analysis.

Grim search for heads, hands and legs of torso
18th Feb 2014

POLICE divers have donned protective suits to search for the head, hands and legs missing from a burnt torso found on Cedar Pocket Rd last year.

The move is the latest effort by homicide detectives to try to identify the murder victim and solve the headless-corps mystery.

INTO THE DEEP: Gympie police with the help of Brisbane based homicide officers, police divers and SES search the Cedar Pocket Dam trying to find clues to help solve the mystery of the headless torso.

Over the weekend detectives made the most of dry conditions and receding water levels to start a search of Cedar Pocket Dam.

On Saturday they enlisted the help of SES volunteers to pick through long grass and rocky outcrops on the edge of the
impoundment while the Brisbane-based police dive squad scoured the dam floor and spillway.

The divers, who had just returned from recovering the body of an 18-year-old male from a water hole under Crystal Cascades falls near Cairns, had to wear special dive suits to protect them from the blue-green algae in the dam.

The "dry" suits are sealed and don't allow water to come into contact with the skin of the diver.

The divers' first search zone was the water beneath the spillway.

Three officers waded in a grid patterned search. They found lengths of pipe, a hat and a tape measure, but no body parts.

The next search was underwater behind the dam wall. Due to zero visibility under water the divers used their hands to search the floor of the impoundment in an arc-like pattern.

On Sunday they searched underneath bridges up and downstream of the dam.

No body parts were found.

Volunteer divers find cell phones, car parts and more at Catalina Island event
February 23, 2014

In an annual demonstration of the need to protect Catalina Island's waters and marine life, 479 volunteer divers collected debris yesterday from the bottom of Avalon Harbor as part of the 33rd annual underwater cleanup, supported by the Catalina Island Conservancy Divers support group.

The trash they collected from the ocean floor ranged from tires to cell phones, creating four large piles of debris that dotted the beaches in the midday sun. Among the oddest items the divers recovered were an algae covered chair, thermostat for an engine, plastic green army man and a rusted barbecue. Some of the more valuable discoveries were an assortment of cell phones and glass bottles from the early 1900s.
"As a marine biologist who dives the waters off Catalina, I appreciate the wonderful service that the Catalina Island Conservancy Divers support group and other divers from near and far perform for the good of Avalon Bay," said Ann Muscat, president and CEO of the Catalina Island Conservancy. "The vast amount of debris collected each year vividly demonstrates the need to protect our oceans and marine life by carefully disposing of trash when we are on the ocean and on land."

Trash dumped into the ocean intentionally or accidentally can harm the marine ecosystem. Marine mammals and other sea life may ingest harmful items or become entangled in debris. The disruption to the food chain can have a lasting impact.

The annual event also helps to remind the many boaters and visitors to the Island about the ramifications of tossing items overboard or carelessly discarding of trash on land. Catalina is California's only destination island, attracting nearly one million people a year. Most arrive by boat. The Island also is a popular dive spot, drawing thousands of divers and snorkelers annually to enjoy the wide assortment of wildlife thriving in its rich kelp forests.

The Catalina Island Conservancy has a long history of protecting and restoring the invaluable natural, cultural and recreational assets of Catalina to keep the Island beautiful and healthy. And through its divers support group, it participates in the annual underwater cleanup to improve the health of Avalon Bay and protect the Island's marine life.

The Catalina Island dive community started the Avalon Underwater Cleanup in the 1970s, and this event is the only time diving is permitted in Avalon Harbor. This combination of a rare diving opportunity for a good cause has made the Avalon Harbor Underwater Cleanup one of the most popular dive events in Southern California.

Divers pick one of four sites to work during the morning—the Green Pier, Step Beach, Casino Landing and Lover's Cove. Registrations to the Annual Avalon Underwater Cleanup benefit the University of Southern California Catalina Hyperbaric Chamber and the Catalina Island Conservancy's Robert E. Given Fund for Ocean Conservation and Educational Outreach. The USC Catalina Hyperbaric Chamber is a 24/7 emergency recompression facility on Catalina that serves thousands of divers who frequent the waters of Southern California.

Police seal off park pond after claim of body part being found
http://www.manchestereveningnews.co.uk/news/greater-manchester-news/police-seal-pond-painswick-park-6736172
23 Feb 2014

The underwater investigation team searched the pond in Woodhouse Park, in Wythenshawe on Saturday but found nothing suspicious.
Police were called to a park in Wythenshawe after reports of a body part surfacing in the pond.

The underwater investigation team searched the pond in Woodhouse Park, in Wythenshawe on Saturday but found nothing suspicious.

A GMP spokesperson said: “It was a false alarm. The call was made with good intentions but a thorough search of the pool has not revealed anything suspicious.”

The pond, in Painswick Park, was cordoned off for several hours while the pond was searched.

The park has since been fully reopened.

**Family friend tried to save Cape drowning victim**


Feb 24, 2014

CAPE CORAL, FL – The woman who tried saving a 12-year-old boy who drowned in a Cape Coral canal over the weekend speaks out about the tragedy.

"I tried to save him, I tried" said family friend Carol Miller. For Miller it's a loss - that hits close to home.

"He was like a son, they were here a lot" said Miller.

On Saturday, outside Miller's house on 48th Terrace in Cape Coral, playtime turned tragic.

"I would yell Adam, Adam wake up, wake up, take a breath and the next thing I knew more water would be coming up," recalled Miller.

Miller says Adam, his step-brothers, and her grandson -- all between the ages of 9 and 13 -- were playing in the pool. The boys then moved to the front yard.

Miller says she warned the boys to stay out of the backyard.

"I don't want them out back at the canals playing or in the pool area" said Miller.

But they made their way down to the canal anyway--soon after her grandson rushed to tell her Adam had stopped moving.

"Something was wrong with him that he was not swimming, cause he could swim," Miller said.

Miller says Adam normally played tricks in the water--sometimes even played dead.
But this time it was no game.

Cape Coral Fire officials say the tragedy serves as reminder about canal safety.
"Whether or not the water is deep enough for diving, whether or not you know how to swim being near the water could be a hazard, so we're encouraging people to avoid swimming in canals at any circumstance," said Cape Coral Fire PIO, Michael Heeder.

Miller, strangers, and first responders did all they could, but Adam was pronounced dead at the hospital.

**Police were "not good enough swimmers" to help Bawsey Pits drowning victim**
25 Feb 2014

A policeman has admitted none of the officers at the scene of two drownings in Norfolk last summer had been competent enough swimmers to have helped the victims.

Ryan Pettengell, 41, from King's Lynn, died at Bawsey Pits after trying to help a teenage boy who also drowned. This afternoon an inquest into Mr Pettengell's death heard from PC Ryan Williams, of Norfolk Police.

He said he heard Mr Pettengell say he would dive into the water to search for the missing teenager.

He appeared to be swimming confidently but it was later obvious he was in difficulties.

PC Williams admitted none of the police officers at the scene were competent enough swimmers to go in after him.

The inquest has also heard from Mr Pettengell's best friend, Wesley Moule. He told the jury he had seen him disappear under the water but assumed it was him being funny because he had often played practical jokes.

Victoria Hopps from West Norfolk Borough Council told the inquest the Bawsey Pits site was now officially closed - although people could still get access to it.
Mr. Pettengell's mother suggested the signs warning people not to swim there should have additional information explaining the dangers facing people.

**Near Drowning Victim Stable**
26/Feb/2014

The teenage tourist who was pulled from the surf at Mount Maunganui Main Beach yesterday is in a stable condition in Tauranga Hospital.

The 19-year-old was swimming about 50metres from shore at the oceanbeach opposite Commons Avenue, when he got into trouble at about 2.30pm.

He was rescued and brought back to shore by friends where he was treated by off-duty lifeguards and St John Ambulance.

Mount Maunganui Lifeguard Service general manager Glenn Bradley told SunLive yesterday the teen seemed to have become exhausted while out swimming.

"The young guy had been out in the surf for about half an hour when he suddenly lost all of his energy and, as it was reported to us, got into difficulty pretty quickly."

"The people that were with him assisted him to shore and our off duty-lifeguards got a call at the surf club and we went down there."

The boy was taken to Tauranga Hospital in serious condition by St John Ambulance. Read more here.

A Bay of Plenty District Health Board spokesperson says the teenager is today in a stable condition in a ward.

**Divers find plane debris off Oceano**
http://calcoastnews.com/2014/02/divers-find-plane-debris-oceano/
February 26, 2014

San Luis Obispo County Sheriff’s divers found debris Sunday from a plane that crashed off the coast of Oceano in January.

On Jan. 14, a plane flown by David Casey, 63, of Friday Harbor Wash. crashed off the coast of Oceano. Both Casey and his passenger, Alan George Gaynor, 52, of Los Angeles, are believed to have died in the crash. Search teams have yet to find any human remains.
On Sunday, the sheriff’s dive team found a wing, fuselage, a carburetor and part of the manifold.

The Sheriff’s Office is now working with the National Transportation Safety Board to attempt to recover more remains. Divers have already spent hundreds of hours searching for the plane and its passengers.

**Jeannette principal demonstrates ice and water rescue techniques**

![Image](http://triblive.com/neighborhoods/yourjeannette/5656122-74/rescue-ice-jones#axzz2udSi1y5t)

Feb. 26, 2014 Joe Napsha | The Times-Sun

Jeannette Middle School principal Matthew Jones was instructing a group of students recently, but neither the setting nor the pupils were anything like the classrooms where he has taught in the past.

Standing on an ice-covered pond in West Newton during one sub-freezing night earlier this month, Jones was instructing a group of Collinsburg and Sutersville firefighters on how to safely rescue people stranded on ice or who have fallen into icy water — using ropes, poles and as a last resort, jumping into the water.

“The (rescue) incidents are very technical and very dangerous,” for the rescuers, said Jones, 42, a Collinsburg firefighter who taught the course with Collinsburg Fire Chief Joel Koricich at Goehring Pond in West Newton.

Both Jones and Koricich are certified by the Fish and Boat Commission as water rescue instructors, as well as being certified to train candidates who want to become instructors.

While a fire department might conduct just a few cold water rescues compared to fighting many fires, the training is very important for a fire department between the Youghiogheny and Monongahela rivers, Jones said.

About 15 firefighters completed the ice portion of the Pennsylvania Fish and Boat Commission’s 16-hour Ice Rescue and Emergency Response course at the pond.

The ice portion of the course was a test of the trainees’ will and skill.

Dressed in a wet suit, neoprene gloves and boots and a special
flotation device strapped to their chest, they threw ropes out to a “victim” stranded 50 feet offshore on the ice to pull them to safety.

They then walked out to the victim and reached them with a pole; grabbed hold of the victim to pull them to safety; and jumped into the water and behind the victim, so both rescuer and rescued could be pulled to safety by firefighters on shore.

The firefighters learned to use ice awls — two pointed-end tools to be held in each hand — to dig into the ice so they can pull themselves out of the water.

And they learned to use a special rescue raft with an opening in the front so a rescuer lying prone can pull the victim out of the water.

“We're trying to train the emergency responders (rescue) procedures without going out on the ice. The best place to do an ice rescue is to do it from the shore,” said Brad Tracey of York, chairman of the Pennsylvania Water Rescue Instructors Association.

Jones is secretary of the statewide organization, which has about 50 members.

“We teach the emergency responders how to take care of themselves,” Tracey said.

In case the firefighters have to go into the water to rescue someone who can't reach or grasp a rope, they were shown how to go into the water behind the victim who can't get out of water.

The rescuer is secured by a rope to emergency responders on the shore, who pull both the victim and firefighter to safety. If emergency responders run out onto the ice without proper safety procedures in place, “they could fall in and be in no better condition,” than the person they are trying to rescue, Tracey said.

Despite what appears to be thick ice to the untrained eye, ice varies in its thickness due to heat, vegetation and even fish, Tracey said.

“There is no such thing as safe ice. The worst time is when it is starting to form and starting to decay,” Tracey said.

On a moving river, pack ice can shift unexpectedly, opening a hole to the water, then closing just as quickly, Tracy said.

“They could be swept underneath the ice and we would never find them,” Tracey said.

In the warmth of a heating tent set up to give the firefighters a break from the cold, Korich offered some sage advice to the firefighters practicing ice rescues.

“Think urgency. Think backup,” Korich said.

Despite all of the layers of clothing, Frank Rocco, one of about a dozen Sutersville firefighters participating in the training class, said it was cold, especially after going under the surface of the pond in a hole cut out of the ice.
“We’re a fire department along the (Youghiogheny) river and we have all these ponds,” Rocco said.

Members of the department have undergone training in water rescue and advanced line systems rescue, Rocco said.

“There is a lot more to it (training) than you realize,” said Rocco.

Upon completion of the 16-hour course, which included training in a Scottsdale pool, three more team members were added to the Collinsburg fire company’s response team and an ice rescue component has been added to the Sutersville fire department’s water rescue team.

They are among more than 25,000 students who have been trained since 1983 in what the Fish and Boat Commission says is the largest non-profit, public water and ice rescue training program in the United States.

The Collinsburg fire department became involved in water rescue training for its members after being called to respond with its boat to flooding in the Greensburg-Jeannette areas several years ago, said Jones who has been a certified instructor for six years.

“We realized if we are going to be called to these incidents, we have to be trained. We took that approach that we are going to use it (training) on the Mon and Yough,” Jones said.

From Koricich’s perspective, “we weren’t qualified to do water rescues,” even though the department had a boat. “We found we weren’t really prepared as we should have been,” Koricich said.

About a dozen members underwent training in various rescue classes, Jones said. He and Koricich went on to become certified to be as water rescue instructors.

“We wanted to take our game to the next level,” Jones said.

The Pennsylvania Emergency Management Agency has designated Collinsburg’s swiftwater and flood evacuation team qualified for moderately complex rescues, the second highest level of rescue categories, Koricich said.

With so many members of the department being trained in water rescue, the Collinsburg fire department’s water rescue team has been deployed by the state to water emergencies along the Youghiogheny River at Ohiopyle, in central and eastern Pennsylvania, as well as in Ohio, Jones said.

“We’ve become a regional asset,” Jones said.

That has meant some deployments for two or three days to an emergency outside the area, which results in missing school, Jones said.

“My school district has been great about it,” Jones said of his deployment.

Atlantic Beach rescuers improve on victim recovery

http://www.carolinacoastonline.com/news_times/article_7af5c9f0-a08b-11e3-9feb-001a4bcbf887a.html
February 28, 2014

ATLANTIC BEACH — Fire and rescue department divers here are training to improve how they recover a drowning victim.

It’s one of the hardest searches rescue workers must make, both for the family and the recovery team.

Lifeguards and rescue personnel try to avoid a mishap. But, if the worst happens, and it’s a recovery effort, training to use subsurface diving will expand the search effort.
Three people drowned along the Crystal Coast during the summer of 2013. These included a young firefighter who drowned while swimming in the ocean near the circle. In one of these drownings, it took several days for the victim’s body to wash up on shore.

So to better expedite the recovery process, divers were on the beach early Tuesday to learn shoreline parallel search training techniques.

“With this new training, divers who are certified in surf search techniques will be added to other search protocol,” said Adam Snyder, town fire chief. “We are already dive certified, but have not used this type of recovery before. Now, we will be certified to implement this timely recovery system.”

He said the purpose of the training is facilitating an immediate dive search. Rescuers have always launched intense searches by boat or with other watercraft. However, the surf dive will offer a more timely recovery of a drowning victim, with divers actively in the water right after the incident, rather than waiting and watching the beach days afterward.

“The then someone walking on the beach is usually the one to find the victim,” the fire chief said.

Authorities say normally a drowning victim can usually remain under water within nearly 25 yards of where he or she went under, the chief said, depending on current and surf conditions.

With the training, Deputy Chief Mike Simpson said divers enter the moving water almost immediately, and with enough weight to keep them completely submerged, and they can begin a search.

“We will be dealing with undertow and rip currents,” he said. “We try to use our hands to pull along the bottom and we need enough weight to keep us on the bottom. Otherwise, with every three feet gained, when we remove our hands from the sand to dig in and move forward, a strong current may push us 10 feet backward.”

To ensure diver safety and assist in recovery, a long line is used to tether a diver to a handler who is on the beach. The diver and handler can signal each other. One tug of the rope indicates everything is fine. Two tugs from the diver indicate he has located something or may have a problem.

Fire Chief Snyder said the training isn’t just about divers receiving more experience or just another certification. He said
more importantly, the training would offer families a much quicker recovery time.

"With this training, we can offer the families of drowning victims much more respectful, compassionate and timely results," Fire Chief Snyder said.

Pregnant Mother Of 3 Tries To Kill Kids By Driving Minivan Into Ocean

http://hollywoodlife.com/2014/03/05/pregnant-mother-of-3-tries-to-kill-kids-by-driving-minivan-into-ocean/
March 5, 2014

A pregnant woman had a ‘blank’ look on her face after driving her 3 children into the ocean in an attempt to kill them and herself.

This mom of three took extreme measures to try and take the lives of herself and her children by driving directly into an ocean in Daytona, Florida.

Mom Of 3 Drives Minivan Into Ocean
What a terrifying sight. A pregnant woman drove here minivan off the road, onto the beach, and directly into the ocean with her three small children in the back. The incident happened on Tuesday, March 4 in Daytona, Florida.

Rescuers claim that when they rushed to help the children out of the van, the kids were screaming for help and saying their mommy was trying to kill them.

One witness stated that when he tried to help the mother out of the front seat of the van, she wouldn’t move. She just sat there and stared blankly ahead without any concern. When two of the small children were pulled from the car they told the rescuers that there was also a baby in the car, which sent them back into the ocean to find the third child.

"She (the mother) wouldn’t say a word. She didn’t tell us nothing about a baby," one witness told a local news reporter.

Mother Sent To Psych Ward After Ocean Incident
After the incident, emergency responders brought the pregnant woman to the nearby hospital for a mental evaluation.

Despite being safe and sound after being pulled out of the vehicle, her three children — aged 3, 9, and 10 — were also brought to the hospital to be examined.

Local news reports that the children will be put into foster care once they are released from the hospital.
Police: Mom who drove into ocean spoke of demons

http://www.usatoday.com/story/news/nation/2014/03/05/woman-drives-into-ocean/6095197/
March 6, 2014  VIDEO ON SITE

Police say when they spoke with Ebony Wilkerson, she was lucid.

STORY HIGHLIGHTS
- Motorist did not fit criteria for involuntary mental custody, police say
- Fla. law lets authorities take those into custody who seem a threat to themselves
- Two hours after police stop, motorist drove minivan with children into ocean

DAYTONA BEACH, Fla. (AP) — A pregnant South Carolina woman who drove a minivan carrying her three young children into the ocean surf off Florida had talked about demons before leaving the house, according to her sister who worriedly called police, officials said during a news conference Wednesday.

After the call to dispatch Tuesday, Daytona Beach police officers stopped 31-year-old Ebony Wilkerson's black Honda Odyssey and she expressed fear that her husband would be coming to Florida to harm her and her children, said Police Chief Mike Chitwood.

"When we spoke with her she was lucid," Chitwood said. "The children were in the back seat, they were buckled in and were not in distress. Although the sergeant said she looked like she had some mental illness, she did not fit the criteria for going into custody under the Baker Act."

The Florida Mental Health Act, commonly known as the Baker Act, allows authorities to involuntarily take people into custody if they seem to be a threat to themselves.

Two hours after the police stop, Wilkerson drove into the ocean. Bystanders and officers helped pull her and her children — ages 3, 9 and 10 — from their minivan as it was almost submerged. Ebony Wilkerson’s sister told police she was concerned about her sister’s mental state, Chitwood said.

"Her sister had called dispatch and told them that she (Wilkerson) had been talking about demons that day before she left the house," Chitwood said.

Chitwood said Wilkerson went to Halifax Health Medical Center on Monday to voluntarily check herself but then decided against it and walked out.

The children were turned over to welfare authorities. The Volusia County Sheriff's Office said Wilkerson was undergoing a mental evaluation. Sheriff Ben Johnson said it's too early to say whether Wilkerson will face criminal charges.
Drowning Survival in Icy Water: A Review
Stathis Avramidis and Ronald Butterly

This is available for download after jumping through a few hoops at: https://www.academia.edu/151354/Drowning_Survival_in_Icy_Water_A_Review

Excerpts:

- The most serious consequences of an immersion accident are hypoxia and its effects on the cardiovascular system and the central nervous system. The mammalian diving reflex and hypothermia might offer some protection to the central nervous system despite prolonged hypoxia (Sarnaik & Vohra, 1986), probably explaining some of the incredible survival anecdotes surrounding survival of drowning incidents.

- Significant resistance of brain tissue to hypoxia occurs only after its temperature has fallen from 37 to 30°C or less (Gooden, 1992).

- One major study of childhood immersions in icy water has shown that of all survivors, some 70% suffer no long lasting effects (Pearn, 1992). Hypothermia and a variety of other factors have been suggested as important in explaining potentially successful recoveries even after some period of submersion.

- Several case studies confirmed that children under the age of 8 years with documented rectal temperature equal or less than 25°C after being immersed and without a pulse in a hypothermic environment subsequently had left the hospital without neurological consequences (Estebe et al., 1991; Fritz, Kasperekzyk, & Galaske, 1988; Leitz, Tsilimingas, Guse, Meier, & Bachmann, 1989).

Bierens, van der Velde, van Berkel, and van Zanten (1990) found that a young age actually seemed to be a good predictor for survival from drowning. This was supported by other studies that examined young subjects. For example, one major study of survivors of childhood immersions found that 66% were completely normal, 30% suffered some selective deficits, and only 3% ended up living in a permanent vegetative state (Pearn, 1992). In another study that examined the cases of 330 children (age 14 years or less) involved in drowning incidents, 142 died before admission to hospital, and 188 children were admitted after nearly drowning (now called nonfatal drownings). The authors suggested that many surviving children can live normally after drowning (Kemp & Sibert, 1991). When hypothermia was involved in a drowning, it was found that children had an improved survival outcome (Antretter et al., 1994; Estebe et al., 1991; Krandick & Mantel, 1990; Leitz et al., 1989).

**Cold Water Survival**
http://www.ussartf.org/cold_water_survival.htm

**Cold Water**
What is it? It is difficult even for an expert to define. It is estimated to be around and under the temperature of 70 degrees. However, this will vary in each case due to the specific circumstances and physical condition of the person involved.

**What Happens In Cold Water?**
Many of the fatal boating accidents occur in the "out-of-season" months when the water is cold. What happens to the body when suddenly plunged into cold water?
The first hazards to contend with are panic and shock. The initial shock can place severe strain on the body, producing instant cardiac arrest, as happened to a 15 year old scout in the month of March in Pennsylvania several years ago. Survivors of cold water accidents have reported the breath driven from them on first impact with the water. Should your face be in the water during that first involuntary gasp for breath, it may well be water rather than air. Total disorientation may occur after cold water immersion. Persons have reported “thrashing helplessly in the water” for thirty seconds or more until they were able to get their bearings.

Immersion in cold water can quickly numb the extremities to the point of uselessness. Cold hands cannot fasten the straps of a lifejacket, grasp a thrown rescue line, or hold onto an overturned boat. Within minutes, severe pain clouds rational thought. And, finally, hypothermia (exposure) sets in, and without rescue and proper first aid treatment, unconsciousness and death. We all recall the incident in which the airliner went down in the dead of winter in the water in Washington, D.C. several years ago. The vivid video of the rescue attempts and those that died due to hypothermia is not easily forgotten.

Normal body temperature of course, is 98.6. Shivering and the sensation of cold can begin when the body temperature lowers to approximately 96.5. Amnesia can begin to set in at approximately 94, unconsciousness at 86 and death at approximately 79 degrees.

What To Do In The Water
Cold water robs the body's heat 32 times faster than cold air. If you should fall into the water, all efforts should be given to getting out of the water by the fastest means possible.

Persons boating in the cold water months should be thoroughly skilled in rescue and self-rescue techniques. Most accidents involve small boats which with practice, can be righted and re-entered. Most boats, even filled with water, will support the weight of its occupants. If the boat has capsized and cannot be made right, climb on top of it.

Physical exercise such as swimming causes the body to lose heat at a much faster rate than remaining still in the water. Blood is pumped to the extremities and quickly cooled. Few people can swim a mile in fifty degree water. Should you find yourself in cold water and are not able to get out, you will be faced with a critical choice - to adopt a defensive posture in the water to conserve heat and wait for rescue, or attempt to swim to safety.

Should you find yourself in the water, avoid panic. Air trapped in clothing can provide buoyancy as long as you remain still in

When she was 2 ½ years old, Michelle Funk fell into a creek and was submerged for 66 minutes. When rescuers arrived she didn't have pulse and was not breathing. 3+ hours after that, her blood was warmed. When it reached 77 degrees F. she came back to life and is still living to this day.

Read about it here:
The Doctor's World; Ingenuity and a 'Miraculous' Revival
July 26, 1988 By LAWRENCE K. ALTMAN, M.D.
Swimming or treading water will greatly increase heat loss and can shorten survival time by more than 50%.

The major body heat loss areas are the head, neck, armpits, chest and groin. If you are not alone, huddle together or in a group facing each other to maintain body heat.

**Preparation**

Proper preparation is essential when boating on cold water. Make sure your boat and equipment are in first class condition. Check the weather forecast before leaving for your event. Always tell someone where you are going and when you expect to return. Dress in several layers of light clothing. Next to a diver’s wet suit, wool clothing offers the best protection. Always wear a personal flotation device (PFD) when boating.

**First Aid Considerations For Cold Water Victims**

Treatment for hypothermia depends on the condition of the person. Mild hypothermia victims who show only symptoms of shivering and are capable of rational conversation may only require removal of wet clothes and replacement with dry clothes or blankets.

In more severe cases where the victim is semi-conscious, immediate steps must be taken to begin the rewarming process.

Get the person out of the water and into a warm environment. Remove the clothing only if it can be done with a minimum of movement of the victim's body. Do not massage the extremities.

Lay the semi-conscious person face up, with the head slightly lowered, unless vomiting occurs. The head down position allows more blood to flow to the brain.

If advanced rescue equipment is available it can be administered by those trained in its use. Warm humidified oxygen should be administered by face mask.

Immediately attempt to rewarm the victim’s body core. If available, place the person in a bath of hot water at a temperature of 105 to 110 degrees. It is important that the victim's arms and legs be kept out of the water to prevent "after-drop". After-drop occurs when the cold blood from the limbs is forced back into the body resulting in further lowering of the core temperature. After-drop can be fatal.

If a tub is not available, apply hot, wet towels or blankets to the victim’s head, neck, chest, groin, and abdomen. Do not warm the arms or legs.

If nothing else is available, a rescuer may use their own body heat to warm a hypothermia victim.

January 17, 1984 Jimmy Tontlewiez and his Dad went out sledding on an ice covered embankment on Lake Michigan. The 4-year old boy lost control and went out onto the ice. His dad tried to get him and they both broke through the ice. Jimmy's dad was pulled to shore. It took divers at least 20 minutes to find Jimmy. He was technically dead. He woke up 8 days later and left the hospital in April.

Today Jmes, is doing well despite some lasting developmental problems. He grew up to be about 6 feet tall, is still blond and, surprisingly, likes water. He lives with his mother and works as a janitor.

To Read Click Here
Never give alcohol to a hypothermia victim.

**Some Important Facts To Remember**

Most persons recovered in cold water "near" drowning cases show the typical symptoms of death:

- Cyanotic (blue) skin coloration
- No detectable breathing
- No apparent pulse or heartbeat
- Pupils fully dilated (opened)

These symptoms, it was discovered, did not always mean the victim was dead. They were, on the other hand, the body's way of increasing its chances of survival through what scientists call the mammalian diving reflex. This reflex is most evident in marine mammals such as whales, seals or porpoises. In the diving reflex, blood is diverted away from the arms and legs to circulate (at the rate of only 6-8 beats per minute, in some cases) between the heart, brain and lungs. Marine mammals have developed this ability to the point where they can remain under water for extended periods of time (over 30 minutes in some species) without brain or body damage.

Humans experience the diving reflex, but it is not as pronounced as in other mammals. The factors which enhance the diving reflex in humans are:

- Water temperature - less than 70 degrees or colder, the more profound the response and perhaps the more protective to the brain
- Age - the younger the victim, the more active the reflex
- Facial immersion - the pathways necessary for stimulating this series of responses seem to emanate from facial cold water stimulation.
- The diving reflex is a protective mechanism for humans in cold water immersions, but it may confuse the rescuer into thinking the victim is dead. Resuscitative efforts for these victims should be started immediately utilizing CPR in accordance with your training.

An 11 year old boy tried to cross an ice covered river. He didn't make it. The ice thinned and he broke through and was spept under the ice.

The fire department lauched a boat and broke through ice desperate to locate the boy. Finally one of the rescuers snagged a piece of clothing and they brough the boys body out of the water. In 1986 the boy had gone past the accepted time limits of survival. Doctors used a hear-lung machine to warm him and force in air and pump out water. Alvaro Garza Jr. left the hospital 17 days later and became the Miricle Child.

To Read More Click Here  Watch Video Here
Remember, numerous children have been brought up from freezing water after 30 minutes and been successfully resuscitated.

**Drowning and Near Drowning**

http://www.patient.co.uk/doctor/Drowning-and-near-drowning.htm

*PatientPlus articles are written by UK doctors and are based on research evidence, UK and European Guidelines. They are designed for health professionals to use, so you may find the language more technical than the condition leaflets.*

**Our resources on Drowning and Near Drowning**

- **Drowning** is death within 24 hours from suffocation by submersion in a liquid, normally fresh water or seawater.
- **Near drowning** is survival for more than 24 hours (even if temporary) from suffocation by submersion.
- **Secondary drowning** is a nonspecific term for death after 24 hours from complications of submersion.
- **Immersion syndrome** is sudden cardiac arrest on cold immersion. It may be vagal response coupled with vasoconstriction.
- **Recovery syncope** is syncope immediately following removal from cold water. It may be due to cold diuresis and loss of external water pressure, leading to reduced central perfusion.

### Expected Survival Time in Cold Water

<table>
<thead>
<tr>
<th>Water Temperature</th>
<th>Exhaustion or Unconsciousness in:</th>
<th>Expected Survival Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>70–80° F (21–27° C)</td>
<td>3–12 hours</td>
<td>3 hours – indefinitely</td>
</tr>
<tr>
<td>60–70° F (16–21° C)</td>
<td>2–7 hours</td>
<td>2–40 hours</td>
</tr>
<tr>
<td>50–60° F (10–16° C)</td>
<td>1–2 hours</td>
<td>1–6 hours</td>
</tr>
<tr>
<td>40–50° F (4–10° C)</td>
<td>30–60 minutes</td>
<td>1–3 hours</td>
</tr>
<tr>
<td>32.5–40° F (0–4° C)</td>
<td>15–30 minutes</td>
<td>30–90 minutes</td>
</tr>
<tr>
<td>&lt;32° F (&lt;0° C)</td>
<td>Under 15 minutes</td>
<td>Under 15–45 minutes</td>
</tr>
</tbody>
</table>

**Pathophysiology**

After an initial gasp, with possible aspiration, or a period of breath holding, apnoea eventually exceeds breaking point and stimulates hyperventilation, causing aspiration and a variable degree of laryngospasm. This leads to hypoxia and resultant acidosis, and the patient eventually loses consciousness and develops cardiac arrest. In 85% of cases, asphyxia leads to relaxation of the airway before inspiratory efforts have ceased, and the lungs fill with water. This is called *wet drowning*. In the remainder, laryngospasm is maintained and this is called *dry drowning*. In young children, sudden immersion in cold water (<10°C) can stimulate the protective diving reflex and produce apnea, *bradycardia*, and preferential shunting of blood to the coronary and cerebral circulation, which may improve the victim's chances of survival.
**Pulmonary oedema** is a common insult. Surfactant loss occurs, producing areas of atelectasis and exudate can flood the alveoli. Further fluid shifts into the alveoli as pulmonary vessels constrict in response to the hypoxia and intravascular pressures rise. This may take minutes to days to develop but results in marked V/Q mismatching. In addition, foreign body aspiration, laryngospasm or bronchospasm may worsen the hypoxia.

**Hypothermia**, if it occurs, leads to a slowing of the metabolic rate but respiration is slowed even more so and hypoxia and hypercapnia develop.\(^1\) Prolonged hypoxia can lead to CNS and renal damage.

In addition, haemolysis occasionally occurs after freshwater near drowning. Freshwater drowning can be much faster than saltwater drowning. Salt water has a higher osmolarity than plasma and tends to draw water out of the erythrocytes. Fresh water is hypotonic; water is drawn into erythrocytes that swell and burst releasing potassium. This induces hyperkalaemia that can stop the heart.

Experimentally observed differences between freshwater and saltwater drowning are unimportant in terms of management.

**Epidemiology**
Worldwide, drowning is the fourth most common injury after road traffic accidents, self-inflicted injuries and violence. It is more common than war deaths. It is the second or third most common cause of accidental death in children in the UK, Australia and the USA. Incidence peaks for toddlers and teenage boys. The latter are the risk-taking group. It is also a common form of suicide.\(^2\)

**Risk factors**
This depends on age. In children under one year, unattended buckets of water and the bath account for most cases of drowning. Between one and five years, unattended swimming pools\(^3\) account for most cases of drowning.

In early August, 2011, a 12-year old boy on a church trip to the beach became trapped in a sudden rip current and was pulled into the Pacific Ocean. It took at least twenty-five minutes for him to be found and rescued. His body was limp and he had no vital signs.

CPR was started and he was flown to an Oregon hospital where he remained in an induced coma. Within days he was conscious. Dale Ostrander has not recovered to be the boy he once was. He is still learning how to walk and talk and will likely never be able to be on his own.

Alcohol use, water sports and unsupervised swimming, particularly in open water, are risk factors in adults.

In very cold water, hypothermia is a very potent aggravating factor that will rapidly inhibit the ability to swim. If a person falls into water at about 4°C, as in the North Sea in winter or the Arctic Ocean, rescuers have approximately four minutes to
rescue the person from drowning. Cold can be a significant contributory factor to deaths in water, even with the temperature well above 4°C. In general terms, water below 15°C is more likely to be associated with hypothermia. However, other factors such as age, body fat and activity will affect the speed at which hypothermia develops.

**Immediate action**
If a victim is in water and not breathing, resuscitation should be started by the rescuer whilst still in the water, as this improves outcome.

- **Start Basic Life Support at the scene.**
- **Remember the cervical spine may be injured.**

**History**

**Note the following:**
- Mechanism and duration of submersion.
- Type and temperature of water.
- Time to institution of CPR.
- Time to first spontaneous breath.
- Time to return of spontaneous cardiac output.
- Vomiting.
- Likelihood of associated trauma, other precipitants (arrhythmia, myocardial infarction, seizure, nonaccidental injury, etc.).

**Examination**
- Temperature, **pulse oximetry**.
- Cardiac rhythm.
- Respiratory pattern.
- Look for evidence of pulmonary oedema.
- Head or neck injuries.
- Intra-abdominal and thoracic injuries are also possible (if water entered from a height).

**Treatment**
This will involve several important modalities of treatment.

- Instigate or continue resuscitation as required. Intubate if unconscious.
- Oxygen.
- Treat hypothermia, **hypoglycaemia**, seizures, hypovolaemia, and hypotension, if they occur.
- If the patient is awake and alert, observe for at least 6 hours. Pulmonary oedema may develop late (it usually develops within four hours).
- Otherwise, the following may be needed: continuous positive airway pressure (CPAP), intubation and mechanical ventilation with high positive end expiratory pressure (PEEP), or even extracorporeal membrane oxygenation (ECMO) for severe pulmonary oedema.
- Nasogastric tube +/- urinary catheter.
- Artificial surfactant, hyperbaric oxygen and inhaled nitrous oxide therapies are all of unproven value.
- Dialysis for renal failure.
- Prophylactic antibiotics are unproven. They should be given if fever develops or there is grossly contaminated aspirated water, and then targeted towards the likely pathogens. Pneumonia can be a major problem and even a fatal complication, and atypical organisms are an important consideration.
Do not be too eager to abandon resuscitation as hopeless, especially with co-existent hypothermia. Even very profound hypothermia with asystole can be treated by cardiopulmonary bypass.\(^8\) Children, especially, can have remarkably good recovery after prolonged resuscitation, with no neurological problems; however, the outcome is variable. It is not possible to predict at an early stage who will have good outcome and so aggressive resuscitation should be given to all.\(^9\)

**Complications**

There are many possible complications:

- Cardiac (cardiac arrest, bradycardia, myocardial infarction).
- Pulmonary (pulmonary oedema, pneumonia).
- Neurological (stroke, cerebral hypoxia, cerebral oedema).
- Renal (renal failure).
- Haematological (haemolysis).
- Metabolic (hyperkalaemia, acidosis).
- Infective (pneumonia, septicaemia).

**Prognosis**

Many have investigated and reported on outcome and possible predictors.\(^10\),\(^11\),\(^12\) However, no single system is comprehensive and there are pitfalls in the methodologies used.\(^13\)

One example is the Orlowski Scale for paediatric drowning and near drowning.

**Criteria:**

- Age less than three years.
- Submersion for longer than five minutes.
- CPR delayed for more than ten minutes after rescue.
- Coma on arrival in A&E.
- \(\text{pH} < 7.10\) on arrival in A&E.

If one or two criteria are present, then 90% achieve a good recovery.

If three or more criteria are present, only 5% recover.

Generally, the intuitive view stands: the shorter the submersion time and the shorter the delay to CPR, the better the outcome.

- Prognosis is ultimately related directly to the duration and magnitude of hypoxia.
- The most significant impact on morbidity and mortality occurs before arrival at hospital.
- Poor survival is associated with the need for continued cardiopulmonary resuscitation efforts in hospital (35-60% die in the emergency department and 60-100% have long-term neurological sequelae).
- The neuroprotective effects of cold water drowning are poorly understood. Neuroprotective effects seem to occur only if the hypothermia occurs at the time of submersion (and if very rapid cooling occurs in water with a temperature of less than 5°C).
- Even with hypothermia, intact survival of comatose patients is still quite uncommon. However, there are some remarkable case histories where, even after over an hour of submersion and with initially
no vital signs (rectal temperature 13.7°C), full recovery has been achieved.\textsuperscript{[6]}  

- In warm water immersion, those who were not doing well at 24 hours have a poor neurological outcome.\textsuperscript{[14]}  
- Prevention  
- Fences around swimming pools.\textsuperscript{[3]} This is a legal requirement in some countries.  
- Teach children to swim.  
- Adult supervision of children swimming.  
- Wearing of life jackets in water sports, including yachting, water skiing and jet skiing.  
- Alcohol and swimming do not mix.  

Even good swimmers should not swim alone as, if they develop cramp or have any other trouble, there is no one to raise the alarm. Rivers can be treacherous, with eddies and reeds. Alcoholic intoxication is a major risk. Those who go swimming alone after a night of drinking are at very high risk. Night-time and intoxication also increase the risk of diving into shallow water, producing head or neck injuries.

Infants and small children may drown in the bath. The most significant factor is inadequate supervision. A study from Canada found that contributory factors were inadequate adult supervision (89%), co-bathing (39%), the use of infant bath seats (17%), and co-existent medical disorders predisposing the infant or child to the drowning episode (17%).\textsuperscript{[15]}

Further reading & references
- Verive M; Near Drowning, Medscape, Apr 2009  
- Shepherd SM et al; Drowning, Medscape, Jun 2010

6. Harries M; Near Drowning (Review) BMJ 2003; 327:1336-1338  
FROM YOUR SPONSORS

**EdgeTech 2205 AUV Side Scan Sonar Payload Selected for Polish Armed Forces AUV’s**

February 18, 2014

EdgeTech, the leader in high resolution sonar imaging systems and underwater technology, continues to make great strides with the ever growing field of smaller sized AUV systems around the world. With the introduction of the 2205 AUV-based sonar system, manufacturers and operators of smaller sized AUV systems have embraced the high quality sonars which were traditionally only available in larger sized AUV systems. One area that continues to see an adoption of the smaller size vehicles is the military community. High performance compact sonar systems have helped that growth curve.

The recently delivered Teledyne Gavia AUV’s to the Polish Ministry of Defence for mine countermeasure’s (MCM) were equipped with the latest EdgeTech 600/1600 kHz simultaneous dual frequency side scan sonar payloads. The very high frequency EdgeTech systems were selected for the long range detection and the ultrahigh resolution classification capability for MLO’s (mine like objects). The EdgeTech 2205 classification frequency of 1600 kHz is capable of producing near photographic quality images of targets making MLO target classification very easy as shown in the attached MLO sonar image. Other 2205 attributes that contributed to the selection of the EdgeTech systems were low power, small electronics’ volume and compact transducers making integration on the small AUV’s possible and easy.

EdgeTech sonar systems have now been installed on a number of manned portable autonomous underwater vehicles used in Navy operations and commercial surveys. System configurations include a range of side scan sonar frequency offerings such as 400/900 kHz frequency pairs or 600/1600 kHz frequencies which are unmatched in the high resolution capabilities. Additionally the system can be configured to provide bathymetry on top of the dual frequency side scan sonar solution.

**EdgeTech to Introduce the 6205, Next Generation Bathymetry System at Oceanology International**

February 28, 2014

EdgeTech, the leader in underwater technology, will launch the 6205 Combined Bathymetry and simultaneous Dual-Frequency...
Side Scan Sonar at Ocean International. The new product offering is the next generation of bathymetric technology for shallow water hydrography and benthic mapping. With EdgeTech’s enhanced bathymetry capability and the latest lightweight packaging, the 6205 offers unprecedented resolution and precision measurement of the sea floor with co-registered, simultaneous dual-frequency side scan imagery. Multiple frequency options are available to address all coverage requirements from 0 to 200 meters of water depth. The 6205 is the only combined bathymetry and dual-frequency side scan system with no nadir gap. The EdgeTech 6205 incorporates a 10-element receiver and unique technology and software to enable 200° swath coverage and superior multi-path rejection.

To learn more about the EdgeTech 6205 please visit EdgeTech, booth # H150, at Oceanology International in London, March 11-13, 2014 or contact EdgeTech at info@edgetech.com.

x7ix Underwater Victim Recovery System is now Available!

MCHENRY, IL. — February 27, 2014 — After numerous Beta tests of the new recovery system and design, the x7ix Underwater Victim Recovery System is now available! This system was invented by a Public Safety Diver and tested by Public Safety Divers who made recommendations for physical modifications as well as user friendly techniques. The system was tested in numerous venues including the Annual Body and Weapon Recovery Seminar held in Austin, Texas and taught by Mark Phillips. The many advantages of the x7ix Underwater Victim Recovery System are being seen around the country. Victim recoveries with current body bags can be cumbersome and difficult in the best circumstances. The ease of use of the x7ix is gaining recognition among Public Safety divers and other organizations that do zero visibility victim recoveries. It also allows for the recovery of floating victims with limited contact. The x7ix allows the diver to make a rapid recovery while still preserving evidence. Sales of the x7ix Underwater Victim Recovery System continue to grow in 2014 and are up over 200% from 2013. With two major sales from Illinois MABAS response teams as well as the State of Florida the advantages are obvious.
TESTIMONIALS

Grand Prairie Fire Department
Grand Prairie Texas
Bill Murphy, Battalion Chief

Grand Prairie Fire Department recently purchased the x7ix underwater bag system to be placed on our rescue boat. Within five days of delivery, we had a drowning possibly involving foul play at the lake we service. We located the victim on sonar in about twenty feet of water. Two divers were deployed with the new bag system and easily recovered the victim in a matter of minutes. Not only was this system quick and easy, with possible foul play involved, it helped preserve any evidence. We have placed an order for several more bag systems and will continue to make them part of standard equipment on our boat.

Perquimans County Technical Diving & Recovery
Perquimans County, North Carolina
Chief Symons

Another dive team gave us the bag to try today. We recovered a 275lb man in 25ft.of water with zero visibility. The bag worked perfect. Thanks.

Joliet Fire Department
Joliet, Illinois
Captain Kozlowski

...“I think it is a vast improvement over the previous bags that we had because it is more of a side load approach rather than trying to get the bag entirely under the recovery subject. With more practice it will be a much more efficient operation. I think that we would have had to put a diver in the water if we didn’t have this new style bag.”

For more information on the x7ix Underwater Victim Recovery System, go to: http://www.x7ix.com

Or email Chris Smith at: Email: chris@x7ix.com
Phone: 815-861-2625 Fax: 847-949-5455

FOR IMMEDIATE RELEASE:

Distributors Wanted!
Weeb Enterprises, LLC knows that saving lives for a living is what you do. You rely on your rescue gear. A new heavyweight in rescue equipment was built by Weeb and it doesn’t weigh much at all — the Penguin Ice Ladder.

The world’s first ice ladder is an example of how Weeb is changing the dynamics of water rescue equipment. The ladder is a stainless steel diving supply apparatus that’s designed to get a diver out of the water during a rescue mission unassisted.

The versatile rescue safety ladder, which weighs less than 65 pounds, is a helpful rescue tool whether it’s an ice rescue operation, a pier or dock mission in New York or on a boat in Florida. Plus, it takes only minutes to put together and store after the mission or training exercise is completed.

The Penguin Ice Ladder is one-of-a-kind rescue safety equipment built by rescuers for rescuers. The ladder was invented by Chris Smith, a diver/firefighter for the
McHenry Township Fire Protection District in Illinois. His creation provides an efficient way to carry out a water rescue operation.

The ice ladder built by Weeb creates a much safer rescue environment for everyone involved. It allows the rescue team to work fast and without the threat of injury from sprains and strains. Until now, those injuries occurred when rescue personnel pulled divers from the water. But no more thanks to the Penguin Ice Ladder from Weeb.

Here is what Lt. Todd Rishling, MABAS Division 1 Water Rescue Team Leader, had to say:

The Penguin Ice ladder makes entry and exit EASY! I would much rather walk out of an ice hole on my own than have to be pulled out by shore support. That is always safer for everyone involved and much easier on our gear.

The ladder eliminated the need to have my dive gear torqued and needless abused by a forceful "yank" out of the ice hole. It allows for safe exit of the diver, eliminating the need to manhandle the diver our or the water. It reduces the potential for our shore support to hurt themselves by pulling a diver out on slippery ice. It is a win-win for all involved. Better yet, depending on the thickness of the ice, we can eliminate the need for "extra" shore support to aid in diver removal. We have used the ladder on ice as thin as 2 inches and as thick as 2 feet.

Now expand the capability of the ladder to pier structures, break walls, and boats. The ladder eliminated the need to relocate because of the "lack of access". We eliminated the need for a ladder from a fire engine or truck company (which would place the roof or extension ladder on unknown subsurface terrain). We eliminated the diver being pulled over the side gunnel of the boat. This ladder has allowed for easy entry and exit from a wide range of environments and structures.

The construction quality is custom - every piece is custom made here in the USA. Every weld is precise and quality is of the highest regard. Better yet, customer service is exceptional.

Our ladder was modified for quality improvements. More importantly, the ladder was designed and manufactured by a public safety diver. We have been very happy with our purchase of the Penguin Ice Ladder.

The use of the Penguin Ice Ladder has been widely accepted in our area. So much that we feel all 15 Level A MABAS response teams in Illinois should have one. Those teams will receive delivery this spring with funds to purchase them through statewide MABAS funding!

I just used the Penguin Ice Ladder yesterday at an ice dive, because it works!

For more information on the Penguin Ice Ladder or to become a distributor, go to: http://iceladder.com/

Or email Chris Smith at: Email: chris@iceladder.com
Phone: 815-861-2625    Fax: 847-949-5455
MANY ARE COLD
BUT FEW ARE FROZEN:
ANOTHER LOOK AT HYPOTHERMIA

BY
DR. JOLIE BOOKSPAN

The topic of human response to cold water presents many questions. Does body fat matter? Does surface area to mass ratio matter? Is cold adaptation limited to commercial divers of the Orient? Will pouring warm water in your suit help or hurt? Why are women not at greater risk of hypothermia than men? Why are men’s hands and feet often warmer in winter than women’s and what does that have to do with penguins?

DOES THE DIVE REFLEX PROTECT?
In the dive reflex, your heart rate and limb blood flow decrease. Careful science (that means we didn’t accidently step on the thermisters) shows time and again...
that the dive reflex does not reduce your need for oxygen underwater as it does in marine mammals (Bove, 1979; Craig & Medd, 1968; Furedy, et al., 1983; Heistad & Wheeler, 1970; Rapper et al., 1967).

Field studies (where you're allowed to step on the thermisters) indicate that the dive reflex does not extend breathholding time (Pierce, 1969). Occasional cases of human survival after very cold water near-drowning are not due to the dive reflex. Cold is the likely mechanism behind the reduced metabolism that permits survival (Hayward et al., 1984).

Decreased heart rate from the dive reflex does not reduce metabolism or the oxygen demands of your body's vital organs. The lowered heart rate and sometimes abnormal heart rhythms resulting from the dive reflex may contribute to blackout underwater, not save you from it (Bove et al., 1973; Landsberg, 1975; Thornton et al., 1964; Tuttle & Templin, 1942). The medical term for this is death, which ends these personal dive reflex experiences prematurely. What good is the dive reflex in human divers? The blood vessel constriction in your limbs reduces heat loss.

**HOW MANY WAYS DO YOU LOSE HEAT?**

You lose heat all the time. You have to lose heat because your body generates heat in the process of being alive. If you didn't lose heat you'd literally cook to death. Losing heat doesn't mean you are in danger of cooling. It depends on how much you keep and how much you lose.

Your body loses heat in four specific ways: radiation, conduction, convection, and evaporation. When you lose heat to the environment though breathing, sweating, peeing, or through your skin, you do it combinations of those four ways. In respiration for instance, you lose heat though evaporation, conduction, and convection. There is no single respiratory heat loss pathway per se.

These pathway distinctions don't matter a jot to a freezing person, as Robert Falcon Scott and his entire Antarctic expedition party would readily attest to from the grave. However this differentiation is far from mere semantics. The key to knowing which gas mixture to breathe, which to inflate your dry suit with, what materials to make protective garments from, and which survival protocols to entrust to your troops, depend on knowing which heat pathway determines what effect.
WHAT IS HYPOTHERMIA?
Cold hands, feet, or skin does not mean you have hypothermia. Shivering and teeth chattering do not mean you have hypothermia. Feeling cold does not mean you have hypothermia. Someone who loses more heat than someone else is not necessarily more susceptible to hypothermia. Only core temperature below 95 degrees F (35 degrees C) determines hypothermia. People can become incapacitated by cold without ever going hypothermic (Bridgman, 1990). Hypothermia is not a common event in diving. Well before you become hypothermic, just getting cold, which what scientists call it because we were unable to be any cleverer about it, reduces the safety and fun of diving.

Hypothermia from water immersion is sometimes called immersion hypothermia. It is not a reflex and has nothing to do with the dive reflex. Like heat loss pathway names, distinctions among cold injuries are also not semantics. Successful treatment depends on proper identification.

WHAT'S A KEY CONCEPT IN HEAT TRANSFER?
The complex science of heat transfer can be simply summed up: heat energy flows naturally in only one direction, from areas of higher temperature to lower temperature. When the difference is large, more heat flows than when it is small. Temperature differences called gradients exist all over your body. Two are important to understanding heat loss in the cold. One is between your insides and your skin, called your core-to-skin gradient. The other is between your skin and the outside environment, called the skin-to-environment gradient. Here is where thermoregulation gets really interesting.

WHAT'S THE DIFFERENCE BETWEEN SKIN TEMPERATURE AND CORE TEMPERATURE?
Your skin temperature is not 98.6 degrees F (37 degrees C). That familiar number is the average temperature of your insides called your core. Core temperature drops a degree or two in early morning and rises three to six degrees during exercise. Healthy core temperature maintains a narrow range. Skin is cooler and marvelously changeable. In the cold, skin temperature quickly drops...
to that of the surrounding air or water, which is a good thing.

A skin temperature close to the surrounding temperature decreases the gradient and with it, heat loss. Two concepts follow: the surrounding temperature need not be 98.6 degrees F to be thermoneutral, and cooler skin, common to women, is an advantage in the cold to lose less core heat. Men with higher skin temperature lose more heat in the cold. An analogy is if you stand outside your house in cold weather, touch the outside wall and find it warm, you would notice the expensive waste of heat and know your home needed better insulation.

WHAT INSULATION DO YOU HAVE?
Polar animals have bodily insulation plus the equivalent of protective clothing. The fur of arctic seals and bears is an effective wet suit. It adds exterior insulation to their thick fat layer by trapping a two to ten millimeter water layer near their skin. The feather pelt of penguins, on the other hand, works like a dry suit, maintaining an insulative layer of air. Even the hairiest New York cabbie can't match it. Humans insulation consists of fat, muscle, and the thickness of your 'shell.'

WHAT IS YOUR SHELL?
It's useful, though oversimplified, to think of your body as a central core surrounded by an adjustable temperature insulating shell. Shell thickness changes with the amount of blood flowing through it. Your body's first response to skin cooling is to decrease circulation to your shell. You do this by constricting blood vessels. Decreased blood flow from this vasoconstriction does two things. It transforms skin and subskin tissues to up to two inches of additional insulation. Lowered skin temperature decreases your skin-to-environment gradient further restricting heat loss.

Studies of cold water immersion report lower skin temperature in women than men. That does not mean women were at increased risk of hypothermia. The lower temperatures were of the surface skin, not the deep skin layers or, more important, the core. Deep skin temperatures remained higher compared to those of men under the same laboratory cold conditions (Malkinson, et al., 1981). Women's better insulation and vasoconstriction at the surface reduced deep heat loss. Cool extremities are not, in this case, the result of 'poor circulation." It's a healthy vasoconstrictive adaptation.

DOES FAT MATTER?
There's a growing body of opinion (that means that two people have said it) that fat does not keep you warm, or does not help unless you are obese. However, research
consistently substantiates body fat as a major deterrent to heat loss.

Body insulation increases directly with the average thickness of the fat layer under the skin (Park et al., 1984) and with deep body fat (Carlson et al., 1958). People with thicker fat layers lose less core heat at rest and during exercise both in cold air and cold water (Dulac, 1987; Wolff, 1985). Thicker people tolerate a lower temperature before shivering, and their core temperature does not drop as fast during swimming in cold water compared to thinner people (Veicsteinas & Rennie, 1982). Thin people raise their metabolic rate higher than fatter people in a none too successful attempt to keep as warm as the more calorically challenged (Keatinge, 1960). There is no question that the advantage is to the young and the globular.

DO MUSCLES MATTER?
Muscles are wonderful. Nothing wrong with having more muscle than less. However the statement that muscle is somehow 'better' than fat at insulation doesn't lend itself to sweeping conclusion. Muscle and skin provide less thermal resistance than fat (Veicsteinas et al., 1982). During exercise, muscle rapidly convects away the heat it produces, making fat a better insulator during exercise in cold water like scuba diving (Rennie, 1988).

DO PENGUINS MATTER?
Penguins stand around in ice and snow in their little bare feet with negligible heat loss. The arteries and veins in their feet closely intertwine. Warm arterial blood going to their feet warms the cool venous blood coming back. Cold venous blood returning from the feet cools the outward bound arterial blood. Heat is not lost to the feet, and cold blood from the feet does not cool the penguin's core. Penguin feet are nearly the temperature of the snow. The arterial-venous swap meet is called counter current heat exchange, and is not limited to penguins. This example demonstrates how cool feet can be a healthy adaptation to cold.

DOES SURFACE AREA TO MASS RATIO MATTER?
The term surface area to mass ratio is thrown around a lot when cold exposure is mentioned. Like the term 'thermal coefficient' which can mean just about any number, the phrase 'surface area to mass ratio' has high dazzle value. It sounds intellectual enough to invest the speaker with instant thermal authority. Equivalent oral footwork occurs when yet another military jet impacts unfavorably (crashes) and energetically disassembles (explodes) causing the pilot to have an unfavorable shift in health status of high magnitude (die), but they'll take the problem under consideration (just as soon as hell freezes over).
Now what does surface area to mass ratio mean? It's the amount of surface that can lose heat compared to the internal mass that holds and, in animals, generates heat. Car and home heat redistributors are built to have long thin shapes so their high surface area to mass ratio gives off, or radiates, lots of heat. Imaginatively, they are called radiators.

Spaghetti cools rapidly. Baked potatoes stay hot. Like spaghetti, your fingers and ears are relatively long and thin with much exposed surface. Fingers and ears chill faster than your torso. Your torso, very much like a potato, has relatively high internal mass compared to its outer surface of skin giving it a lower surface area to mass ratio. Even though fingers have less total surface than your body they have a higher ratio, and more capacity to radiate heat.

Do women have a larger surface area to mass ratio than men putting them at greater risk of hypothermia? The ratio is not the main determinant of chilling, it is much less important underwater than above, and it is only one star in a constellation of temperature regulating mechanisms.

The ratio is also not determined by gender. A tall thin man's ratio might exceed that of a shorter heavy woman. Short thin men have a high ratio compared to large men. A large man will also lose more total heat from his larger skin surface area than a smaller man or woman. If a given woman has a higher ratio than a man, like all warm blooded creatures women have more than one protective mechanism against cold. No single heat loss pathway creates a global risk of hypothermia.

The ratio becomes an interesting player in the heat where lower ratio people have an odd habit of overheating more than larger ratio people. That is for another article on heat. When is the ratio a serious player in the cold? In fingers and ears compared to bodies. In jockeys compared to linebackers. In children compared to adults. Otherwise the ratio matters, just not as much as you've heard.

DO CURVES MATTER?
The statement that women have more curves than men and therefore increased surface area to mass ratio to lose heat, and consequently higher susceptibility to chilling should be taken with a millimole of NaCl.

For one thing, curves don't always increase the ratio. As moderate math can show, both the surface area and the mass increase with curves. The ratio could stay the same or change in either direction. A sphere, for instance, can
have a lower surface to mass ratio than a cylinder. Then too, men's bodies are full of curves, from muscles to other normal structures. Men's genitals don't fare well in the cold for similar reasons as fingers and ears. Here is where surface area to mass ratio comes home to the, ahem, heart. 'Frostbite Shorts,' under various names, is a documented medical malady.

Moreover, thermal influence about another male consideration, namely fertility, was known anecdotally for centuries. The, dare I say it, seminal work in this area was conducted on pearl diving men of the South Seas. Their fertility dived after cold water excursions for two cool reasons.

WILL POURING WARM WATER IN YOUR DIVE SUIT HELP OR HURT?
On the whole, pouring warm water in your dry suit would enjoy a spectacular lack of success. On the other hand, (arm, leg) with wet suits it helps. Adding warm water to your wet suit is the principle behind hot water suits used commercially. You will not overheat or begin to vasodilate or sweat. That would occur only past a certain heat load that could not be reached from a few cups of warm fluid. The small heat load gained is that much more in the BTU bank for later when you're back in the water spending heat or trying to warm up between after diving.

CAN YOU TRAIN FOR COLD RESISTANCE?
Cold acclimatization or habituation is a process of gradually increasing your resistance to cold injury through regular cold exposure (McMurray & Hovath, 1979). Following the recommendation of the International Union of Physiological Sciences, the term acclimatization is distinguished from acclimation. Acclimatization refers to adaptive change due to seasonal or geographical exposure; acclimation, if produced in a laboratory.

Anyone can acclimatize, if you'll excuse the expression, to a degree (Shephard, 1985). The extent varies among individuals (Kundu et al., 1977). You'll miss out on this natural phenomenon if you spend each winter in a heated home, sleep nestled in comforters or heated water beds, and bundle up like a kid in a snowsuit thereby remaining in artificial tropics.

DO YOU ALWAYS GET COLDER BY EXERCISING IN THE WATER?
In some cases physical exertion in cold water intensifies cooling. But not all cases. Exercise in cold water can generate enough heat to match (Doubt & Smith, 1990) or surpass the heat you lose, depending on water temperature in some work, (Toner et al., 1985) and in other work regardless of temperature (McArdle, 1984). Arm and leg exercise prevents a fall in core temperature (Craig Dvorak, 1969) benefiting individuals with a low shivering response (Hayward & Keating). Exercise prevents core heat loss particularly in fatter subjects (Pugh, et al., 1960) again demonstrating the benefit of

How to Survive Falling Through the Ice
body fat in keeping warm. It is noteworthy that these studies are all of subjects exercising in cold water with no protective garments. Divers wearing exposure suits are more likely to benefit from the heat generation of exercise.

It is also possible to overheat, as swimmers doing laps in warm pools and divers sweating into their masks can tell you. A recent Navy study looked at overinsulated divers swimming in cold water and found they needed a bit of heat extraction to prevent overheating (Beckett MB, Hodgdon JA, Derion T, Moffatt RJ, Webb P, 1993).

DOES REST AND EXERCISE CHANGE COLD TOLERANCE?
Studies confirm women protect their core temperature equally or better at rest in the cold than men (Bagian & Kaufman 1990; Bolstad et al.,1991). Although still true during activity, (Bolstad et al.,1991; Mannino & Kaufman 1986; McArdle et al., 1992) the extra variables introduced, particularly during immersion, make understanding exercise in cold water an eyeglazing knee-bone's-connected-to-the-thigh bone affair, yielding answers as definitive as those of the psychic advisor eightball "situation unclear try again later," the details of which we needn’t go into here.

In general, male and female swimmers in a long distance cold water swimming competition displayed similar metabolic and hormonal responses in a 1987 study (Dulac et al., 1987). They also differ in several aspects. Women have greater ability than men to limit heat loss through the skin due to greater constriction of skin blood vessels, and thicker subcutaneous fat layer. Men lose more heat through radiation and their poor vasoconstrictor response, but counter with increased heat production. Men display a greater blood pressure response than women to cooling the hand or the face (Graham 1988). Women seem to be more likely and willing to get out of the cold.

Indianapolis divers rescue woman
WHAT IF YOU DON'T KNOW YOU'RE COLD?
When a diver gets out of the water saying she's cold, what information do you have? One, that the buddy still in the water is not stating that he's cold, and two, that he's not getting out of the cold water. Without thermisters up some funny places, that's all you know. In military ops, (that's 'ops' as in operations, not 'oops' as in military decision making) the ranks suffer more hypothermia cases than the officers. What information do you have? Are officers more resistant? Turns out they're less exposed.

What about studies and observations that African Americans have lower skin and core temperatures in the cold, and Black soldiers suffer more cases of cold injury than White soldiers? (Iampietro et al., 1959). I'm not touching that one. It's all yours.

A thermal stress workshop held at the Institute for Naval Medicine in England by the Diving Medical Advisory Committee discussed what they called the 'non-responder to cold.' They stated, "It is still not known what the differences are between the man who responds to and complains of the cold, and another man who cools and is unaware that he is cooling. Presumably this latter type of diver is a potential hypothermic casualty."

DOES SCIENCE REFLECT REAL LIFE DIVING?
American statesman Daniel Webster said, "There is nothing so powerful as truth — and often nothing so strange." What good is it to clarify that the dive reflex does not conserve oxygen in humans, that women protect their core temperature in the cold as well or better than men, and fat is a major help to keep you warm? Does this information make us build a better automobile than the Japanese? Furthermore, scientists are not so ivory tower that they have never seen a woman leave the water saying she's cold.

Scientists don't just sit in small dark labs worrying if the term 'anal retentive' takes a hyphen. They use several approaches to try to understand what occurs in the real world. Only one is the experimental method of putting small numbers of cheerful volunteers in freezing vats of water. Another well defined method is careful description of large numbers of triathletes during races in cold open water, marathoners running in the heat, or hundreds of divers using computers on a liveboard. Actual observation of the real life absence of males among the Korean breath hold divers led to the conclusion that males may have an inherently poorer tolerance to cold than females (Hong, Rennie, Park, 1986).

In life many interactions confuse what is cause and effect, and what is correlation. Science tries to determine if what you see is due to what you think it is, to something else entirely, or to pure chance. Science works by separating things that go together or not, so that causality is not
misattributed. If an isolated factor like surface area to mass ratio determines one avenue of heat loss, science clarifies how much is important and what is background noise. Best of all, it's nothing personal. In reporting science, it's just the facts, Ma'am.

In conclusion: if a woman leaves a cold environment before a man, it may be for reasons other than gender or even physiology, and if a fat person chills faster than a thinner person in one instance, it's not because their fat didn't help.

But do people listen? Noooooooooo. If people listened to scientists, the Spielberg movie would be called "Cretaceous Park", and it would be men who ride side saddle. There are still unanswered questions like "Does interpolation mean being buried in the polar ice cap?" and "Do two thermal people make one thermocouple?" At least we can tell you what will happen if you stick your tongue on the ice tray.

**About The Author**

Dr. Jolie Bookspan earned Master's and Doctoral degrees in exercise physiology and underwater physiology, a fellowship in cold immersion, and post docs in saturation decompression and altitude. Five years of her work involved unraveling the results of extension of oxygen tolerance research in humans.

Far from the ivory tower, her father taught her to dive in the Hudson River in the late 1960's. After serving in the Army she went on to become research scientist for the Navy, demonstrating that even skilled scientists can make the same mistake twice. She taught anatomy at a college in México in the mountains where the entrance exam was getting up there without a nosebleed, and has conducted intensive work in cold chambers and other scientific thing-a-ma-bobs which funding organizations have gone out of their way to meticulously ignore.

**REFERENCES**


2. Beckett MB, Hodgdon JA, Derion T, Moffatt RJ, Webb P. Body heat, energy expenditure, and respiratory heat loss in dry suited divers swimming in cold water. Abstract 7-10 July 1993 Suppl to Vol20; Undersea and hyperbaric medical society annual scientific meeting. UHMS: Bethesda MD. 77
20. Keatinge WR. The effects of subcutaneous fat and previous exposure to cold on the body temperature, peripheral blood flow and metabolic rate of men in cold water. J Physiol (Lond) 1960; 152:166-178
2014 EVENTS

If you have an event to share for 2014, email the information to PSDiverMonthly@aol.com
Subject Line – EVENTS

DUI
Diving Unlimited International
February 7-8, Clinton Township, MI
We have an amazing workshop planned. Join speakers from DUI, Interspiro and Dive Rescue for a rewarding weekend. Friday and Saturday offers pool workshop with drysuits, full face mask, surface supplied, ROV demonstration. View seminar flyer by clicking here

FOR DETAILED INFORMATION visit DUIDIVEOPS.COM
Want to be part of the CREW? Click here http://www.dui-online.com/demo-tour/volunteers/ for more information and to sign up!

EACH DIVEOPS EVENT INCLUDES
• Contaminated water diving workshop
• Training opportunity for your team – certificates awarded
• TEST DIVE DUI’s CXO Drysuit designed specifically for contaminated water & public safety dive operations
• Hands-on testing of surface supplied equipment
• Equipment demonstrations in surface support including line tending and communication
• Get fitted by DUI factory professionals and expert dealer staff
• Network with teams nationwide to review field-proven methods
• Free barbecue lunch
• Free collectors Special Operations cap

Additional event sponsors:

DUI 2014 DIVEOPS Calendar.

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<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Event</th>
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<tbody>
<tr>
<td>Friday, April 25</td>
<td>Pelham, AL</td>
<td>Dive Alabama</td>
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<tr>
<td>Sunday, May 4</td>
<td>Eureka Springs, AR</td>
<td>Beaver Lake</td>
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<tr>
<td>Friday, May 9</td>
<td>Gloucester, MA</td>
<td>Stage Fort Park</td>
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<td>Friday, May 30</td>
<td>South Beloit, IL</td>
<td>Pearl Lake</td>
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<tr>
<td>Saturday, Aug 23</td>
<td>Black River Falls, WI</td>
<td>Wazee Lake</td>
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<tr>
<td>Friday, Sept 5</td>
<td>Ottawa, OH</td>
<td>Gilboa Quarry</td>
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Sunday, Sept 21 Metropolis, IL Mermet Springs
Friday, Sept 26 Bethlehem, PA Dutch Springs
Friday, Oct 10 Portland, ME Kettle Cove
Friday, Oct 17 Rawlings, VA Lake Rawlings
Friday, Nov 7 Chiefland, FL Manatee Springs
Friday, Nov 14 Terrell, TX Clear Springs Scuba Park
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<tr>
<td>Apr 5 thru Apr 6</td>
<td>Scuba &amp; H2O Adventure Show, Seattle, WA, USA</td>
<td>May 26 thru May 31</td>
<td>Dive BVI 5th Annual Wreck Week 2013, Virgin Gorda, British Virgin Islands, British Virgin Is.</td>
<td>Jun 7 thru Jun 8</td>
<td>Long Beach Scuba Show, Long Beach, CA, USA</td>
<td>Jul 24 thru Jul 26</td>
<td>The Miami Spiny Lobster Tournament... mini season 2013, South Florida, FL, USA</td>
<td>Aug 6 thru Mar 31</td>
<td>Florida Lobster main season, Statewide, FL, USA</td>
<td>Aug 16 thru Aug 24</td>
<td>&quot;Dive Away&quot; Diving and Hyperbaric Medicine Conference, Dauin-Dumaguete, Philippines</td>
<td>Oct 4 thru Oct 5</td>
<td>St. Louis Dive Show, St. Lewis, MO, USA</td>
<td>Nov 30 thru Dec 1</td>
<td>Georgia Dive Show, Smyrna, GA, USA</td>
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### December 2014

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<tr>
<td>Dec 7 thru Dec 8</td>
<td>LA Country UICC (Underwater Instructor Certification Course), Arcadia, CA, USA</td>
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### January 2015

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<th>Date</th>
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<tr>
<td>Jan 25 thru Jan 26</td>
<td>Baltimore Dive Show, Baltimore, MD, USA</td>
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### February 2015

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<tr>
<td>Feb 5</td>
<td>In-water Recompression: Pros and Cons, Durham, NC, USA</td>
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<tr>
<td>Feb 14 thru Feb 16</td>
<td>Our World Underwater 2014, Rosemont, IL, USA</td>
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<tr>
<td>Feb 21 thru Feb 23</td>
<td>The Outdoor Adventure Show, Toronto, Ontario, USA</td>
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<tr>
<td>Feb 22</td>
<td>Minnesota Dive Show, Brooklyn Center, MN, USA</td>
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### When using a generator on ice you must ensure a good _______.

- a. gas supply
- b. longer than normal cables
- c. no less than a 240 volt supply
- d. ground

### Optimal ice sonar scanning is best achieved by _____________.

- a. throwing the transducer in the different directions and pulling it back
- b. using a wide sonar beam
- c. multiple overlapping circles
- d. adding several transducers to the sonar head

### As water depth increases ice scanning sonar radius decreases

- a. True
- b. False

### Ice thickness of _____ inches is generally considered safe for a small vehicle to drive upon.

- a. 4 to 8
- b. 6 to 10
- c. 8 to 12
- d. 24 or greater
5. Cold water robs the body of heat _______ times faster than air.
   a. 15
   b. 25
   c. 32
   d. 50

6. Expected survival time in water 50 to 60 degrees (F) unprotected by a thermal suit is _______
   a. 1 to 2 hours
   b. 4 to 5 hours
   c. 6 to 10 hours
   d. indefinitely

7. Metal tools should be inspected, oiled and dried at least once a month unless heavier usage indicates greater frequency.
   a. True
   b. False

8. The most serious consequences of an immersion accident is _______.
   a. dryness of the skin
   b. hypoxia
   c. rapid breathing
   d. diarrhea

9. A generally accepts water temperature of ______ or less is considered to be “cold water”.
   a. 98
   b. 96
   c. 80
   d. 70

10. The diving reflex is a protective mechanism for humans in cold water immersions, but it may confuse the rescuer into thinking the victim is dead.
    a. True
    b. False

11. Always lay the cold water immersion victim in a _______ position unless vomiting.
    a. feet up high
    b. head down
    c. on their stomach
    d. sitting Position

12. Children in good health are the highest survivors of cold water immersion.
    a. True
    b. False

13. When setting up a sonar search grid, the clarity of the water is an important consideration.
    a. True
    b. False

14. If advanced rescue equipment is available it can be administered by those trained in its use. ________________________________should be administered by face mask.
    a. Albuterol
    b. 100% oxygen
    c. Warm oxygen with albuterol
    d. Warm humidified oxygen
Team Discussion / Training

1. As a team, discuss your policies for cold weather and cold water diving.

2. As a team, discuss the equipment readily available for deployment for a cold water dive mission.

3. Assign someone to visit with the local ER and discuss their method of treatment for a victim of cold water drowning. Then as a team, discuss any elements your team needs to change or adapt in order to work fluidly with the ER team. If necessary, include the responding ALS or BLS service in your discussion.

4. If your team has the necessary sonar equipment, bring it into your classroom and mock out a scenario and discuss and determine how it can be deployed and used in a top side supported sonar search. Keep in mind that related equipment, tools and support may be needed. If your team does not have sonar available, locate the nearest to you and build a cooperative team training event.

5. As a team, draft out a mock scenario for your local body of ice covered water. Include EMS and the ER in your scenario if possible. Afterwards, debrief and discuss the outcome and identify areas that worked well and areas that need to be reviewed and revised.

6. If your team does not dive or operate in ice conditions, include ALL of items 1-5 that you can and discuss your team capabilities to dive in cold water.

7. As a team, inventory ALL of your exposure suits and PPE that could be used. Be attentive to the seals and zippers. ROLL material to check for leaks!

8. As a team, devise a mock scenario and conduct a cold water rescue. Include EMS and the ER in your drill and discuss and debrief after the scenario is completed.

“Under Stress, You WILL Perform As You Trained”

IMPORTANT NUMBERS:
Chemical spill information can be obtained by calling 1-800-424-9300.
DAN Medical Information Line at 1-919-684-2948
DAN operates a 24-hour emergency hotline (1-919-684-9111) to help divers in need of medical emergency assistance for diving or non-diving incidents
Centers for Disease Control and Prevention
1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636)
cdcinfo@cdc.gov
These training agencies have recognized PSDiver Monthly as a valued addition to their programs and Continuing Education requirements. We welcome all training agencies and organizations to participate. For details, email PSDiverMonthly@aol.com.

**Public Safety Diving Association (PSDA)** 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.

**Life Saving 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.

**Dive Rescue International**
Dive Rescue International has remained exclusively committed to providing training and equipment for all public safety professionals involved in aquatic incidents.

**RANDOM THOUGHTS**

Never raise your hands to your kids. It leaves your groin unprotected.

I’m desperately trying to figure out why kamikaze pilots wore helmets.

Ever wonder if illiterate people get the full effect of alphabet soup?

I always wanted to be somebody, but I should have been more specific.

Did you ever notice when you blow in a dog’s face he gets mad at you? But when you take him in a car he sticks his head out the window.

Have you ever noticed? Anybody going slower than you is an idiot, and anyone going faster than you is a maniac.

The reason most people play golf is to wear clothes they would not be caught dead in otherwise.

I have six locks on my door all in a row. When I go out, I lock every other one. I figure no matter how long somebody stands there picking the locks, they are always locking three.

I had a linguistics professor who said that it’s man’s ability to use language that makes him the dominant species on the planet. That maybe, but I think there’s one other thing that separates us from animals. We aren’t afraid of vacuum cleaners.

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