Mass Disaster Water Operations

Disease Transmission from Dive Gear

NEWS & EVENTS
Dive Medicine
CONTINUING ED.
Greetings,

Our saga seems to never end. The only thing I have learned how to do that I did not know I could do is bleed money. It seems like every time we turn around something else is broken or needs to be replaced.

I used to be a flooring contractor. As a firefighter, I had to have a part time job to make ends meet. We did custom work for around 17 years. Now it hurts me too much to do the work and I have to contract it out. This has taught me a valuable lesson – one that my friend Buck Buchanan has been hammering me about for years.

20 years ago when we had our home built, we did a lot of the work ourselves. We installed all of our own wood flooring and tile. Now we are replacing a lot of the flooring in the house and I wanted to salvage some of the wood floor in the front of the house and use it in what used to be our kids’ rooms. That way the back of the house would all have the same flooring and the main room would be changed out.

While not a simple proposition, I know how to do it and, back in the day, would have easily managed such a project. Since I cannot do it now because of my recent injury, I was fortunate enough to find a flooring contractor who knew what I wanted done and actually knew how to do it. We negotiated a price that was agreeable to both of us and set a tentative date. For two weeks prior I tried to call and confirm the schedule. On the day before they were supposed to come, I got him on the phone. Apparently he had gotten very sick and went to see a doctor. It turns out he has cancer in his sinuses and is now out of business indefinitely. I feel really bad for him, he is one of the good guys that knows his craft. I truly hope he beats the cancer and recovers.

We mange to find another contractor who says he can do the job. He has been in the business for 30 years he says. We talk and he understands what I want to do and seems like he knows how to do it. The next day he gives me an outrageous bid and tells me he is unsure he can do the job but will try... “Forget it” I say, we will just spend the extra money and put down new flooring. (2K worth).

Later that night I start thinking about how I would have done that job if I had been asked to do it. It would have been pretty simple. All you have to do is X, Y, Z. I know how to do it. It is not something most installers would normally run across but my experiences over the years with the various products we installed gave me the knowledge and ability to do it and do it right. Apparently that knowledge has been lost – at least round here.

Buck keeps hammering me about getting out and around more and sharing knowledge about Public Safety Diving. He says it is our responsibility to share our knowledge with others so it will not be lost. He does not mean just me, he means ALL of us who have been doing the job for more years than we want to remember. If those tricks and tips we learned by our
own trial and error die with us, we leave nothing for those who come after us.

On the PSDiver Discussion group, CLICK HERE TO JOIN, there is a discussion going on about dragging for bodies. There are a variety of thoughts on the matter from “hooks are tools in the toolbox” to “It is the 21st century – get rid of hooks.”

My team has a set of drag hooks as well as a variety of individual hooks that can be tied to a small line, weighted and thrown. I have been a member of my dive team for 33 years and in that time we have never used any hooks. When I was new on the team I can remember some of the older guys talking about using hooks and the problems they caused. When I first started on the team the team leader did not like using hooks and refused to let them be used. His thought was we should use the dive team to dive – not fish.

In the years that have passed, I have seen less and less hooks used to attempt a recovery of a drowned victim. One predominate train of thought and one that I subscribe to is that if someone else is using or has used drag hooks before a dive team arrives, it is very possible that the victim may have been inadvertently moved from the LSP. When that is the case, splashing a dive team is no longer worth the risk.

But there are instances where hooks have been used and used successfully so we cannot negate their potential. After all, if a drag operation recovers a body and we do not get our divers wet, are we not keeping our divers out of harms way?

So we have a dilemma. On one hand we don’t want to use hooks but if hooks can be successful, we do not have to put our divers at risk. What do we do?

We educate ourselves and those who work the water with us. If an incident is going to require a dive team, no dragging operation should be started and divers should perform a recovery operation.

If the situation is too dangerous for a dive operation and no other option exists or dragging is the best of the remaining options, then drag. But once started, the dive team should stand down completely. Join the discussion group and voice your opinion on this subject.

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In the last issue of PSDiver Monthly, I mentioned that I was looking for more of you to join our publishing team. I had a few folks contact me but have yet to have the time or opportunity to follow up with them. If you sent me an email about working with us, I promise I am not ignoring you and will get with you as soon as I can.

Dive Safe,
Mark Phillips
Editor / Publisher
PSDiver Monthly
www.PSDiver.com

If you would like to discuss this topic or any other, join our discussion group: CLICK HERE TO JOIN
Special To PSDiver

We’ve been dispatched to what?!!
Mass Disaster Water Operations

Walt Butch Hendrick with Andrea Zaferes - Team
Lifeguard Systems

Most dive teams started with a few firefighters or police officers with recreational scuba certifications who wanted to help their communities when a drowning took place. They dove for fun in the local lake or quarry, so how hard could it be to rescue, or more likely, recover, the body of a drowning victim from the same water? So they combined their fire or law enforcement know-how with their sport diving experience and equipment to operate as search divers.

The problems with this are many. Sadly people do not only drown in water considered safe for sport diving. They drown in fast moving rivers and contaminated water, they drown in submerged vehicles, and sometimes die under very thin ice. And as the country tragically saw this summer, dive teams may be dispatched to a mass disaster like a bridge collapse. The difference between diving in a local neighborhood lake and a bridge collapse disaster, is equivalent to the difference between fighting a small house fire and working a fully-involved high-rise with realistic collapse potential.

The mission of this article is to get all Public Safety Diving teams to sit down and have serious discussions about what are the most high risk types of water operations that could occur in their jurisdictions. The next step is to have a realistic examination of what is the team capable of safely doing now? What types of operations does the team want to grow towards and what needs to be done to accomplish that? And lastly, what are no-go potential operations that every officer and team member understands is truly a ‘stay out of the water’ incident. A bridge collapse will be the example used here.

Public Safety Diving (PSD) has come from being an ‘exotic’ within a fire or police department to the norm. The size of the department, career or volunteer, or the amount of water in their jurisdiction doesn’t really seem to matter for whether or not a team exists. As the number of teams increases so do the types of operations they perform, causing an increased need for funding, equipment and training.

Despite the growing number of teams with decades of experience, the key question of the day sadly is the same as it was over twenty years ago when I wrote my first articles...
for Fire Engineering Magazine: What is the mission of a PSD team and what level of training and maintenance is required for the operations they intend on performing?

The norm still seems to be to take a basic sport diving class, which is not designed for our type of work at all and only provides the basics for recreational diving, and you are in business, you can go underwater. This is not withstanding that the sport diving course could have been one of today’s 16-hour, weekend wonders, as opposed to the endangered 35-45 hour open water program that taught strong basic skills. After a period time fumbling and not being sure how to make it all work, as well as not conducting the safest public safety dives in the country, the realization that a professional basic public safety dive class might be a good idea enters the game plan. There are professional companies that do this type of training, such as TeamLGS, D.R.I., ERDI and PSDA.

The key word to start with is ‘basic,’ because that is what the vast majority of dive teams who have any actual PSD certifications have as their maximum level of training. Basic PSD certification does not get you in a fast moving river or contaminated water. And basic certainly does not make a team prepared to dive around, over, and under major debris in still water, let alone moving water.

So let us first look at a few examples of what basic low to zero-visibility PSD involves.

- Confident, reflexive, strong entry-level skills such as powerful kicking skills, comfortable underwater breathing without a mask, a nice relaxed breathing rate of 6-12 breaths per minute during basic searches, good neutral buoyancy control skills, and 2 second/foot black water ascent rates.
- You should learn how to create an operational plan and how to institute a command for diving operations
- Solo-tethered-tender-directed diving with diver harnesses that allow divers to search with both hands simultaneously
- Conduct arc, dock walk, and vertical box searches\(^1\) from shore in water moving less than .5 knots (50 feet/min), and from boats or other platforms in water moving less than 1.25 knots (125 feet/min).
- Teach tenders how to calculate and document a diver’s breathing rate to figure out how much air a black water diver has at any point during the dive within about 200 psi.
- Teach tenders how to manage line snags

\(^1\) For bottoms with tall grass or heavy debris
• Hands-on black water contingency plans for out-of-air situations, entanglement, out-of-air with concurrent entanglement, and injury.

• Practice using a true alternate air source – a quick release pony bottle, followed by a contingency bottle or contingency surface supplied air.

• Learn how to use basic cutting tools to save yourself or another diver

• Black water communication between primary and backup divers when electronic communication systems fail or are not available.

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2 We say ‘situation’ rather than ‘emergency,’ because if divers are properly trained, are wearing quick-release pony bottles, and have a contingency bottle on scene, then a loss of primary air is simply an inconvenience, not a life-threatening emergency.

3 A common misconception: pony bottles are entanglement hazards. This is not true when the bottles are worn properly. And, if you think for a second divers could become entangled, how dare we let them in the water without a true alternate air source?

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• Draw accurate search profile maps as the diver moves to document what ground was covered and what was not.

• Produce court-ready documentation after each dive to show whether or not a diver’s search area can be secured or needs to be re-searched in part or whole. This will tell subsequent tenders where to put their divers.

• The specifics of determining the most likely location of the search object(s) based on scene evidence, witness re-enactments, interviews; witness written statements, and environmental conditions and variables.

• Accident prevention such as duct-taping outside fin straps, wearing gauge and drysuit hoses under the arm through the BCD arm hole, maximum dive times in good conditions of 20-25 minutes, always returning home with at least 1000 psi, maximum depths of 50-60 feet, maximum tether line length 125 feet, diving at a 45 degree angle away from the tender to keep the line continuously taut.
ditching weights before exiting the water, proper weighting, making sure inflated BCD’s do not float divers face down on the surface, pre-dive facial acclimation, documenting diver breathing rates every 5 minutes, documenting diver movements with pre-measured and marked tether lines, and standard operating procedures that list what teams can and cannot due with their current level of training and equipment.

- And most of all is capable of realizing when to say this operation is beyond our scope training and capabilities!

These are just some of the many skills divers and tenders should learn in an entry-level PSD training program. But now your team wants to conduct advanced dive operations such as, submerged vehicle operations, ice diving; moving water operations, large area or deep extended range dives, contaminated water, the list goes on and on. Sadly, for some reason many teams believe once they have the basics, they have it all.

Even if the advanced training was available, team members or budget decision-makers do not see the necessity for it. This is amazing when you watch the tens of thousands of firefighters who pour into such excellent shows as FDIC every year to take HOT programs, purchase training materials, and attend seminars to not only strengthen basic firefighting skills, but to learn advanced skills. It is understood in the fire service and the land-based rescue community that advanced training and equipment is required for advanced operations. Why is this not so with water operations?

And even if a department does seek advanced dive operation training, they will discover that the more advanced the training the fewer and fewer insured professional companies there are to teach it safely. And then comes something so big that that we don’t even want to think about it. A catastrophic disaster, a bridge collapses with trucks, cars, trains and human bodies. There is twisted metal, cables, concrete, with debris scattered and pilled on top of each other in every direction, some in the most tenuous of ways.

Suddenly the term USAR/R Underwater Search and Rescue / Recovery or (WSAR/R Water Search and Rescue / Recovery) takes on a whole new meaning. A bridge collapse water operation is similar to Urban Search and Rescue / Recovery with added dynamics.

What are these dynamics? First, water adds pressure differentials⁴ that can cause lung over expansion injuries, ear barotrauma, and other minor to potentially life-

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⁴ 0.432 psi/ffw, 0.445 psi/fsw
threatening gas bubble injuries. There is a constant need for a breathing gas source that is used up more quickly with increasing depth.

There may likely also be:

- zero visibility and even blackwater\(^5\)
- the lack of visibility means that in addition to not being able to visualize the debris that may be sharp, hanging tenuously, or ending in a seriously confined spaces, divers now require highly trained tenders to continuously guide and monitor them
- And remember that the just as the divers cannot see, the tenders cannot see the divers unless they are using specific types of very expensive sonar, which may not work when they are inside the debris.
- currents
- both floating and hidden hazmat problems in which divers are immersed
- the requirement of operational platforms such as boats or floating barges, that need to be properly anchored

\(^5\) To understand blackwater go into a dark room, enter the closet, and then put your hands over your eyes, and then realize that you would not be able to see even a strong flashlight aimed at your eyes.

- short search times (a maximum of 15-25 minutes) because of air management, diver and tender concentration capabilities, cold stress\(^6\), loss of hand dexterity from heat loss, dehydration, diver rotation, and other issues
- aquatic animal concerns such as water moccasins, alligators, snapping turtles, and less threatening critters such as eels and fish that bump you in the blackness giving you a jolt of the heebee jeebies

Urban Search and Rescue / Recovery teams can come from all over the country and are trained in similar techniques and operations. There are training facilities around the world like Recivick Iceland that teach similar procedures as those taught in the collapse school in Calgary Fire Departments Training Academy in Canada. Urban SARR teams have a trained, unified command structure. Urban SARR teams understand safety procedures and how to use the proper equipment for the job at hand. They have trained back up teams.

Underwater Search and Rescue / Recovery teams are rarely similar. Within a single county you can have teams wearing wetsuits, sport masks, and octopuses that may use hand held tether lines with buddy divers, and other

\(^6\) We lose heat at the same rate in 80 degree F water as we do in 42 degree F air. So imagine what 50 or even 60 degree F will do, and then add greater convective loss from currents.
The majority of dive teams have basic training only, they dive in sport diving configured equipment, they have poor and often table-top-only self rescue plans, and there is poor funding at best for professional training and equipment. Where can PSD teams even go to get training for such large scale incidents as a bridge collapse when they realize they need this training? Lifeguard Systems offers such training, perhaps one or two other agencies do, but these are far and few between.

And then another question arises – where does OSHA State or Federal come into play. Are PSD teams still exempt when it comes to confined space operations as bridge collapse dives can be? Are they exempt when the job really requires commercial diving or military diving capabilities with divers and tenders who have hundreds or thousands of hours experience, rather than PSD divers with less than 50 - 100 dives?

Let’s examine in greater detail the basic points of how Underwater SARR differs from Urban SARR.

What are the benefits? In Urban SARR victims have been saved after days of entrapment, which is very different from Underwater SARR where the only people who can be saved are the ones on the surface. Victims submerged in vehicles have no air pockets in which to breathe or survive. In order to survive, submerged bridge
collapse victims would have to be in a totally encapsulated air tight pressurized environment. And as much as we all wish they could be they are not.

Visibility:

On land: Once the dust has settled artificial lighting can be introduced in any number of ways, anything from hand-held to stationary halogen. Portable high intensity lighting is carried by pretty much every fire and rescue company in our country. Thousands of feet of cable can be run to support a single light source or a passage for access. Once lighting has been established rescuers can see and focus on specific items of danger. Rescuers can plan the reaction of an action - how to support an item in order to remove another item. Visibility allows for planned movements, thereby reducing the extent of the unknown danger.

Underwater: If there is no visibility due to turbulence or particles destiny in the water there is no amount of light that can change it. 10,000 candle watt and you won’t know it is there. Without light, every movement is a danger, actions can require three times the amount of planning and measuring before anything can be done. Unless they have been taught some tricks divers may not even be able to monitor their own remaining gas supply. Visibility or the lack of it is our number one issue.

Sonar can be used to help map out areas of debris that can be viewed by the sonar. But, sonar cannot read through concrete or other materials, it does not work like an x-ray machine reading through a body. So where an Urban SARR technician can hold a light around a corner to peer into another space, sonar may be completely ineffective. The key difference is that Urban SARR technicians see the collapse for themselves live time. Divers only have access to sonar pictures when they are sitting on land or on a platform. They cannot access these visuals while they are diving.

Currents

On land: There are no currents in Urban SARR. And if an Urban SARR scene floods, then it becomes an Underwater SARR scene.

Underwater: Currents can and are a major issue. First, any movement of water greater than one half knot should be dove in a down stream manner, since movements greater than a half a knot makes it very difficult to move divers back and forth parallel to shore.

The accuracy of the search can seriously compromised and divers can become over-exerted with far greater air consumption rates. Most importantly though, what is the contingency plan to perform an effective rescue of your own when diving from shore in currents greater than one half knot?
We have met teams who perform such dives, but we have not met teams who can physically and realistically demonstrate effective contingency plans for divers who are entrapped or entangled in fast water dives performed from shore.

Currents have the potential of moving debris at any time; the constant force is an unknown on all objects underwater. Put a diver in the wrong place and at the wrong angle to a current of as little as 1 knot\(^7\), and a force can result such that the diver may require assistance to get out.

One knot is a physical movement of 100 ft of moving water per minute or 1.7 ft per second, and a force of approximately 15 psi on the diver’s body.

A force of 3 knots equals 16.8 psi on the legs and 33.6 psi on a body that is stuck or not physically moving.

\(^7\) The minimum current considered to be swiftwater according to NFPA 1670 standards. What may be minimal for surface swiftwater operations though, can be considerable for underwater operations.

In moving water such as urban rivers there is the constant threat of surface and sub-surface moving debris such as logs, couches, and tires. Their impact on a diver can be physically damaging. If a diver becomes trapped by such debris, the force pushing against the diver can be increased by the additional surface area of the item that is also affected by the current. And keep in mind that in a low to zero-visibility river none of this is visually avoidable!

The risk that a diver becomes entrapped against debris by current increases when the amount of debris or the current increases. Bridge collapses definitely increase the amount of debris and obstructions, which in themselves can increase currents. So it is a double risk.

Without sufficient advanced training a typical PSD diver can hardly work in water moving faster than 1.25 knots even from a platform. We can dive in water faster than one half knot from platforms because tending from upstream allows divers to perform arcs across the current or vertical box searches when the current becomes more severe. Tending from upstream allows for effective contingency plans.

“When the entangled backup diver taps the primary diver’s hand on the backup diver’s regulator second stage in the LGS blackwater contingency plan, he’s tell the primary diver that he is out of air and is on his pony bottle” “Photo - Andrea Zaferes © 2011
A functional support rescue plan in 2 knots or greater requires significant practice. It is not uncommon for bridges to span waterways with such currents. What is astounding is the number of PSD teams with such water in their jurisdictions who were never taught how to calculate a current to even begin to make safe and effective ‘go’ or ‘no-go’ decisions. We meet teams all the time who were taught to look at water movement in CFS (cubic feet per second), which is a volume rather than a speed, which cannot be calculated on a scene by a team, and which does not help teams calculate how far a diver or victim will drift in “x” time and “y” depth. What is the maximum CFS for operations from shore or from a platform?

In addition to entrapment, entanglement, and injury, current can cause significant over-exertion if dives are not conducted properly. A diver who typically has a good 8-10 breath per minute rate with a 20 psi/min surface air consumption (SAC) rate in still water, can find themselves breathing 22-25 bpm in a 1-2 knot current with a SAC rate increase to over 100 psi/min. Overexertion can greatly increase the risk of panic, which is one of the most common causes of diver fatality.

And if all that is not enough, current can cause other problems.

- Tenders will find it difficult to impossible to pull divers in against a current greater than 1.5 knots, and can find themselves flying into the water if they try. Surface support training and equipment for moving water dives is critical.
- Divers who attempt to dive in half masks can find them ripped off their face if they turn sideways to a 4 knot current.
- Counting a diver’s breathing rate by watching the bubbles becomes increasingly difficult as current increases, which is one of the many reason why electronic communications should be used.
- Chase boats downstream become necessary in case a tender falls in or an accidental diver disconnect occurs.
- Upstream spotters for in-coming surface debris may be needed.

And lastly, divers have a tendency to overweight more than usual if not well trained when they dive in currents. Over weighting is dangerous and certainly is a factor in too many diver fatalities.

Floating and hidden contaminants

On land: Obviously there are many different contaminant concerns on land and in confined space rescue that we will simply accept the fact that they are there and can be problematic.
Underwater: Contaminated water diving is not a joke. There can be fuel oils from cars, trucks, buses, and tankers. Are the now-submerged trucks and train cars carrying any hazardous materials? Divers cannot read hazmat placards on submerged tankers!

Just think of the procedures used on land to determine if a truck-involved accident is safe to approach. Think about what is taught to every basic EMT and responding fire rescue company. Look for hazmat signs, approach up wind, approach uphill, stay at least 100 feet away.... Yet what happens when divers are asked to submerge on a collapsed bridge incident with the dozens of unknown vehicles – with the likely badly damaged vehicles, laying in all different directions and positions on the bottom?? Divers enter the water hoping there isn’t a truck laying in its side, leaking a chemical that could cause serious harm. Or perhaps they are not even thinking about it.

What is the team’s contingency plan if there is a such a truck? Is a hazmat team on standby on the scene ready to take care of divers and surface personnel? Are EMS personnel prepared to handle possibly contaminated victims if the operation is still in rescue mode?

These considerations are in addition to the river’s normal contaminants. When the team arrives, some contaminants may have already begun gravitating to the surface while others are just waiting for a slight movement to be released and begin their dilution in the water.

Standard scuba does not belong in this environment; this is not a simple car in the water quick in quick out. Hazmat dry suits that have extensive reported testing such as Trelleborg Viking are mandatory. Full face masks are mandatory and are the minimum. Surface supplied gas might be mandatory depending on what is potentially in the water.

Should divers be carrying and training how to use knives or shears/wire cutters? You might wonder what that has to do with the contaminated water issue. When you have seen more than one diver surface with a slash in a drysuit after working an entanglement with a knife, the answer becomes obvious. That is just one example of many contaminated water diving issues that are too often overlooked.

Pressure differentials:

On land: Unless the operation’s location is at high altitude, atmospheric pressure is not a real concern.

Underwater: Pressure increases by .432 psi per foot of fresh water and Boyle’s law says that pressure and

8 For a free CD of testing results for a variety of chemicals call Trelleborg Viking at 800-344-4458.
volume are inversely proportional. This means that the deeper you go the gas you breathe becomes denser so you breathe that much more gas with each breath.

Hence, depth directly effects how long a diver’s air lasts. The deeper you go, the more air you consume, so the shorter the dive time. Combine that fact with increased work load and the air goes even faster. As stated earlier, in poor or zero visibility most divers have no way of monitoring their own gas supply.

Unless divers are on surface supplied gas where gas supply can be monitored, or if you have a tender who knows how to use breathing rates and depth air consumption rates to make a fairly close air consumption calculation, there may be no way for divers to know how much of their life support systems are left. And even the best tender in the world can’t figure air consumption if the diver or his exhausted bubbles go under something prior to reaching the surface without an electronic communication system.

Because divers breathe ambient pressure air at depth they are subject to the risk of serious injury or even death should they ascend more than 3-4 feet while holding a full breath. Such lung overexpansion injuries as pneumothorax, tension pneumothorax, subcutaneous emphysema, mediastinal emphysema, or arterial gas embolism can be the result.

There are other forms of barotrauma that Urban SARR never have to be concerned about such as perforated ear drums, round window rupture, sinus squeeze, and suit squeeze.

In operations at altitudes above 1000 ft depth the pressure differential is compounded by the reduced atmospheric pressure. At some high altitudes in Colorado for example, instead of having to go to 34 feet in a sea level lake, a diver only has to go to 25 feet to reach a second atmosphere absolute, to increase the pressure by twice that of the surface. The high altitude diver at only 25 feet will use the same amount of air when at 34 feet sea level.

Debris

On land: Debris hung or supported tenuously is dangerous no matter how you look at it. Of course there is the fact that you can look at parts or all of it on land, and more often than not

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9 A too hard Valsalva maneuver performed during equalization difficulties can cause the round window between the middle and inner ear to perforate. This can result in serious, long lasting vertigo, vomiting, and infection.
Underwater we cannot.

**Underwater:** Not only can we not see the debris, but our movements can affect it. For the most part we as PSD divers are bottom dwellers, we crawl along the bottom. As an industry PSD divers do not typically understand buoyancy control or suspended weightless diving. PSD divers have a tendency to be well-overweighted, and may not understand how little a movement it takes to alter a suspended object in the water. We typically remove an average of 6 lbs of lead from our PSD students, and it is not rare for us to remove as much as 10, 15, or even 20 lbs from a diver.

Most PSD divers do not have midwater skills capable of allowing them to be physically quiet in the water column. Due to the lack of visibility we often do not know when we have moved into or under something. Until we touch it we don’t know it is there. The simplicity of removing a human body can alter an entire support system. We cannot know how our exhausted bubbles are affecting the objects above us, whether they are eroding support or allowing contaminates to be released.

Unless you have had extended penetration wreck diving experience or training in this type of large debris environment this is a whole new ball game and you do not belong there.

Debris that is sharp or jagged can cause injury. Debris can cause entanglements and entrapments. How many divers have practiced swimming through hula hoops or obstacle courses while being blacked out? Far too few. Yet not having done so would not stop enough teams from attempting to dive a bridge collapse incident.

**Support Vessels**

On land: Knowing where to place support vehicles and how to access the operational area is of key importance.

**Underwater:** Underwater operations require well placed vessels / platforms that are multi-anchored properly so they become little islands, placed in proper positions for direct line / umbilical access to operational area based on

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"Once the primary diver learns that the backup diver is breathing on his pony bottle, the primary diver places the backup diver’s hand on his the primary diver’s quick release pony bottle for the backup diver to remove and use while the backup diver goes back for the 80 cuft contingency bottle. The backup diver then places the primary diver’s hand on the entanglement site."  

*Photo - Andrea Zaferes © 2011*
depth and speed of water, all mathematically calculated. The average dive team, if they have a boat does not have the proper anchors, chain and length of line to secure a vessel in this faction and then very few teams know to properly secure a three or four point anchoring system. A properly anchored platform needs to be able to adjust position (in, out, left, right) on command but not by accident. Such platforms need to be environmentally all conditions capable, and contain all needed life support.

**Mutual Aid**

**On land:** The small and major disasters that have occurred over the last two decades demonstrated that urban collapse teams can come together from all over the country, and even from all over the world, to work effectively together. A team from northern California can work with a team from southern Florida.

**Underwater:** This is definitely not true for PSD teams. As described earlier teams in neighboring counties are likely to have very different equipment, and are also likely to have such different procedures that working together would be very difficult. For example, Lifeguard Systems trains divers with a blackwater hand signal system so a primary diver can communicate “I am entangled here,” “I am hurt here,” “I am out of air (which means the diver is breathing on pony bottle air),” and “I am ready to ascend with you”. Most other training agencies only teach backup divers to go down and figure out what the problem is, which can result in lost time, higher stress, dislodged regulators/masks, and further impalement of a fish hook. Such different contingency plans are not compatible.

**Tenders / trained surface support staff**

**On land:** Support or operational personnel need training in the specific operational needs. Again land teams train all the time members practice their skills. Operations and technicians members know how to work together and what to expect from each other, they can count on each other.

**Underwater:** A good tender may even need to be a higher trained person than the diver. Tenders are professionally trained not someone off the street who you gave the diver’s tether line. A tender is responsible for every aspect of the diver’s safety including all equipment and procedure issues. A tender is also responsible for putting the diver in the correct search area and for deciding if a searched area can be secured or if it needs to be re-searched. A diver only has two jobs – keeping the tether line taut and using their mind’s eye to search. Tenders are keeping track of times, breathing rates, diver locations, tether line distances, diver air consumption, snags, diver search speeds, and much more.
Tenders can feel every movement of the diver and understand how to respond to that need. They know when the divers tether or umbilical is entangled and what to do about it. They know how to communicate through a line when the electronic communication system goes down to keep their diver safe. They know how to dress the diver they truly understand everything about the job and the dangers the diver may encounter. They can run professional contingency plans. A good tender can make a lesser diver look good get the job done and be safe the whole time.

After training divers around the world in all kinds of environments for over forty years, I tell every team we train, ask yourself:

“Are we capable of this job? Is there a life that can be saved, other than your own? Have we trained for this type of operation? What can possibly go wrong? And do we have a realistically trained and practiced plan on how to get our own out?” If not, then don’t go!! If you do not know how you would get your own people out, then do not put them in.

Very few teams have the equipment, the training, the practiced contingency plans to perform a fast moving water bridge collapse operation effectively and most importantly safely. If communities want PSD teams to respond to such incidents and enter the water, then they need to provide the funding for teams to do it right, to make sure they can do the most important job of all – go home.

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**NEWS**

Guns and sword found in Middle Level Drain on Norfolk fenland
http://www.bbc.co.uk/news/uk-england-norfolk-16541738
13 January 201

Police divers have recovered a haul of weapons including guns and a sword during the search of a Norfolk river.

They were discovered after reports that a shotgun had been thrown into the Middle Level Drain at Terrington St John.

The weapons included two loaded rifles, a loaded semi-automatic shotgun and a double-barrelled shotgun.

Officers are now investigating to see if they can be linked to any historical crimes.

A reproduction short sword, similar to those used by Viking and Saxon battle re-enactors, and more than 300 12-bore shotgun cartridges were also found.
Lincolnshire diving squad was called in for the operation on Tuesday.

**Mich. Firefighter Rescues Teen From Car in River**


January 31, 2012 By Jason Volentine and Jonathan Seely

WXMI-TV, Grand Rapids, Mich.  **VIDEO ON SITE**

A Hopkins firefighter charged into the frigid water to save the teen.

HOPKINS, Mich. -- A teen was rescued from her car Monday afternoon after the car left the roadway, and rolled into a nearby body of water.

The crash happened around 3:20 p.m. near the intersection of 130th Ave. and 18th St. in Hopkins, Allegan County. Rescuers were able to pull 17-year-old Allie Teed out of the car, which was flipped over on its roof in the river.

Teed was on her way home from Martin High School when she lost control and ended up in the river.

"I saw water start rushing in the car and my first though was, okay, this is not going to be good," said Allie Teed, who added she though she would drown.

Allie said she lost control on slush and ice while driving home from school. Soon, she was going backward down 130th street before crashing through a guard rail and ending up upside down in a creek.

"Took off my seat belt, sat up straight in the car and tried to get the door open -- screaming and crying -- trying to honk my horn but it wasn't making much noise so I gave up on that. Tried kicking the door but it wasn't moving," Teed said.

A person passing by called 9-1-1 and minutes later a Hopkins firefighter who lives near the crash site was charging into the frigid water surrounding Teed and her SUV.

"I Had to get her out of the water," said Ed Wamhoff, a Hopkins firefighter. "It's cold and cold water kills real quick."

Both recall what happened next in vivid detail. "They got the passenger side door open, someone grabbed my hand," Teed said.
"Told her if she wanted to come out she'd have to let go with her other hand, go under the console, go under the water and get out," said Wamhoff.

"And I said, 'well, I want out, so I'm going under the water.' Teed couldn't feel her body and couldn't talk when rescuers got her to the bank. But amazingly, once she warmed up she was fine. Teed was even able to skip a trip the hospital in favor of leaving with her parents. She has a special message for her rescuer.

"Thank you for everything, like, oh my gosh," said Teed. "He jumped in there to get me out... it takes someone special to do that."

Rescue crews arrived on scene and reported having the woman out of the vehicle a short time later. Police say the woman was not injured.

**Man dies after 90 minutes in iced-over pond in Fountain**

01/15/2012 The Denver Post

FOUNTAIN — A man who spent more than 90 minutes under the ice of a Fountain pond was located by divers Saturday and rushed to the hospital, where he was declared dead.

Firefighters were called to a pond near Interstate 25 and Mesa Ridge Parkway just after noon when a 911 caller reported that a man had plunged through the ice while chasing his runaway dog.

"If he would have had a leash on his dog, this wouldn't have happened," said Fountain Fire Chief Darin Anstine.

The man reached the dog and managed to throw the pit bull onto the shore before going under, Anstine said.

In water that cold, drowning victims can be revived after much as much as two hours under the ice, he said.

The Fountain Fire
Department called in rescue divers from Colorado Springs in a frantic search of the murky 39-degree water. Altogether, about 28 firefighters responded.

Anstine said the water below the ice was so murky that divers had to feel their way along the bottom to find the man, who wasn't immediately identified.

The water was about 12 feet deep where he was found, roughly 20 feet from shore, Anstine said.

After the man was located, he was pulled to the shore, where medics began efforts to revive him. The dog was picked up by a loved one, Anstine said.

Firefighters Pull One Patient from Submerged Vehicle

January 22, 2012 FOR IMMEDIATE RELEASE

Orange County, Fl., - Orange County Firefighters have transported one patient who was removed from a car in a retention pond in the Islebrook community in the Meadow Woods area of southern Orange County.

At 11:00 this morning, the first 9-1-1 call reporting the crash came into Orange County Fire Rescue Communications. Residents in the area of the pond reported seeing the car, with the driver still at the wheel, drive into the water and sink in the middle.

Firefighters responded quickly with surface water rescue equipment and a boat. The first firefighters to arrive on scene made valiant efforts to dive down and rescue the trapped driver. The water proved to be too deep, cold and murky to affect a rescue with the available equipment. They were able to locate the car and mark its location. A special dive team from City of Orlando Fire Department was called and removed the driver from the vehicle. Once on shore, firefighter/paramedics began aggressive life-saving procedures on the adult male patient and transported him to an area hospital.

Orange County Sheriff’s Office divers will remain on scene to assist in removing the car. Florida Highway Patrol is also on scene to investigate.

Orange County Fire Rescue maintains a fleet of boats located strategically throughout the county to respond to emergencies of this nature. Firefighters conduct regular training on water rescues.
Gruesome beach find: cleaners discover torso weighed down in bag


27 Jan, 2012 NICK RALSTON

A black bag containing a dismembered male torso body has been found on the shore at Kyeemagh, just south of Sydney Airport.

The St George and Sutherland Shire Leader reported that a black body bag had been removed from the shore opposite General Holmes Drive and been taken away for examination.

Police divers are searching for further clues.

The remains were wrapped in a white sheet, which was placed in what appeared to be a black zip-up bag that also contained rusty, circular weights.

It was found by people cleaning up the beach at 10.20am today.

Police divers are at the scene scouring the water for further clues.

"We are getting examinations done at the moment to see what it is," the police spokesman said.

"Police have taken [the remains] to the morgue."
One onlooker told the Leader he saw four police officers lift the body bag on to a stretcher.

**Beaumont Fire Fighter Dives into Cold Water to Save Man's Life**
http://setxhomepage.com/fulltext?nxd_id=170732
January 27, 2012 By: Karen Rumery

A man drove his car into Pine Allen Bayou around 9 Friday night.

Beaumont Fire Captian, Reagen Crawford arrived quickly to the scene and dove into the cold winter water to save the man's life.

He went in with an ax, broke one of the car's windows, and pulled the man out.

The man has been transported to CHRISTUS-St. Elizabeth Hospital with minor injuries.

Captain Brad Penisson told Fox 4 it looks like the man was driving along a service road next to Eastex and drove straight into the bayou.

Divers have been sent into the water to see if anyone else was in the vehicle.

**Subject: Firefighter Rescues Driver From Car in Bayou**
http://www.beaumontpd.com/firefighter_rescues_driver_from_car_in_bayou.htm
Posted: 01-27-2012 at 10:57 PM

On Friday, January 27, 2012, at approximately 8:56 PM, a car drove from the north bound Eastex Freeway service road into the Pine Island Bayou. Witnesses called 911 to report the accident and emergency services responded. The first unit on the scene was Beaumont Fire Engine 14. When firefighters arrived, the vehicle was in the water and the driver was still inside the vehicle. Captain Reagan Crawford, a 35 year veteran firefighter, donned a life jacket and entered the water. Captain Crawford used an axe the break the window and help the driver escape the vehicle.
Firefighters and Beaumont EMS paramedics treated the driver on the scene. The driver was then transported by Beaumont EMS to St. Elizabeth Hospital. Injuries to the driver were not serious. The driver was identified as 50 year old Reynaldo Smith. Beaumont Fire Department divers then checked inside the vehicle for any other victims.

Once it was determined that no one else was in the vehicle, the divers then assisted local wrecker company personnel in securing the vehicle in order to remove it from the bayou. Beaumont Police are continuing to investigate the cause of the accident.

**Seagrave Builds Dive/Rescue Apparatus for Louisville, KY**

Seagrave Fire Apparatus received an order for a Seagrave dive/rescue unit from the Louisville Fire Department/Jefferson County Metro Government, Kentucky.

"Seagrave supplied over 100 fire apparatus units for Louisville since 1908. This dive/rescue unit is a good example of Seagrave’s capabilities in building apparatus with unique requirements," said Seagrave Chairman & CEO A. Joseph Neiner. "Louisville is a long time, valued customer we have been proud to serve for over 100 years. We are excited to supply them with this new innovative apparatus, built to the highest safety and durability standards."

The Louisville Fire Department is situated on the Ohio River and protects many businesses, a large number of commercial and pleasure craft and the McAlpine Locks and Dam. The Department utilizes a "task force" concept with an existing aerial ladder and pumper to respond with the rescuetruck to water related emergencies. The new unit will run out of Louisville Fire Department's headquarters and will replace a 1990 light duty vehicle that served as dive rescue response vehicle.

Lieutenant Colonel Doug Recktenwald said, "The Louisville Fire Department has a greater need for a heavy rescue apparatus that will enable it to carry additional res..."
cue equipment and better withstand the demands of emergency response."

This single axle apparatus falls within Seagrave's Specialist Rescue configuration with modifications for unique requirements. The apparatus will be constructed of Seagrave's Marauder II chassis with a Cummins ISX 500 HP, Allison EVS 4000 transmission, Harrison 20kw hydraulic generator and a Command Light tower for on-scene lighting. The 154" stainless steel split-tilt cab has seating for six, features 16" raised roof and a cab-to-body walk-through. The rectangular-tube steel roll cage sub structure of the Marauder II cab provides the safest environment for firefighters to and from the scene. The Matrix body is stainless steel with a walk-in/walk-around configuration allowing the responders to put their gear on inside. Some of the features include ceiling lighting, a bench seat, coat rack bar, interior heat and air conditioning, body side windows, a transverse compartment and a large rollout tray in the back of the unit where the dive packs will be mounted.

Recktenwald concluded, "Both Seagrave and their Sales Representatives at Public Safety Equipment have been very responsive to all Louisville Fire Department requests, from the bid process through delivery of the apparatus and beyond."

Delivery of the new Seagrave dive/rescue unit will take place in spring 2012.

Seagrave, founded in 1881, is the oldest continuous manufacturer of fire apparatus in North America and has built a reputation for safety, dependability and durability in the most demanding Fire Departments across the nation. Product brand names include Marauder II, Sentinel, Meanstick, Force, Apollo II, Aerialscope II and Optimum (commercial apparatus). For more information, visit seagrave.com.

**Police divers search Fla. lake after teens find human skull**

Jan. 28, 2012 By Casey Glynn

(CBS/WFOR)  
HOLLYWOOD, Fla. - Police divers are searching a Florida lake for the possibility of human remains found in a Hollywood lake on Sat. Jan. 28, 2012.
after two teens found a human skull while swimming Saturday, reports CBS Miami.

According to the mother of one of the teens, they were in the water trying to clean up some of the garbage and debris in Oakwood Lake when they made the disturbing find.

"They were swimming around the lake. They found a shopping cart and they removed the shopping cart. They went back searching around and they found a clay vase and brought it up and started dumping out the dirt and sticks and everything else and out rolled a skull," Brandy Fischer told CBS Miami.

Fischer reportedly said she knew the skull was human because she is a medical technician. She immediately called 911.

Broward Medical Examiner is trying determine the person's identity and cause of death, if possible, reports CBS Miami.

Department disbands dive team
Sunday, 29 January 2012 Written by Susan Hunter

DERBY — The Derby Fire Department has disbanded its dive team, Fire Commissioner Kelly Curtis told aldermen at their Jan. 26 meeting.

Curtis presented a memo addressed to the aldermen saying he’s decided “that the liability outweighs the need for a dive team within the department.”

He said interest in the team has dwindled and members don’t have the time to take the training or certification necessary “to operate in a safe and effective manner.”

“These guys don't have the extra time,” Curtis told aldermen.

He said the dive team is a recovery, rather than a rescue team and the area dive teams can handle issues as they arrive.

The recent recovery of the body of a Woodbridge man demonstrated that several other teams responded to the incident, he said, and the Derby Storm Ambulance Corps has a dive team. There are also teams from Newtown, Fairfield and the State Police.

“This was not an easy decision to make, but I do feel it is in the best interest of the Derby Fire Department,” Curtis wrote in the memo.

The decision to disband the team is an administrative matter handled by the fire department, said Aldermen Ken Hughes.

Curtis “presented it to us as a courtesy,” Hughes said.

Relying on mutual aid is an accepted practice among fire departments, he said.
A man is being questioned on suspicion of murder after two bodies were found in a pond near an Army barracks.

The bodies are believed to be those of missing 17-year-old Hugo Wenn and Daniel Lloyd, understood to have been in his 20s. Police are working on the theory that the pair and the 54-year-old suspect knew each other.

The two bodies were found almost 10 hours apart in Reed Pond, behind Howe Barracks in Canterbury, Kent, on Monday.

The first, understood to be Hugo, was spotted by a member of the public at around 12pm and the second was found by police divers at 9.40pm.

The deaths are being treated as unexplained pending post-mortem examinations and formal identification has not yet taken place.

A Kent Police spokeswoman said: "Police search and forensic teams remain at the scene at this time, and officers from the Kent and Essex serious crime directorate major crime team have set up an incident room to investigate these deaths."

Tributes were paid to 6ft 3in "gentle giant" Hugo by friends and teachers at the Archbishop's School in Canterbury, which he left after sitting his GCSEs last summer. He was described as an accomplished beatboxer and busker who excelled in drama, sport and music at school.

His former head teacher Michael Liddicoat said there was a "sense of complete shock at this loss" at the school, adding: "In many ways, Hugo was a gentle giant who was about 6ft 3in so you couldn't miss him around school. He was fantastic with the younger students and he will be missed."

Reed Pond is on Ministry of Defence land behind Howe Barracks but MoD officials ruled out any connection between the deaths and the armed forces.

Chief Inspector Steve Barlow, the district commander for Canterbury, appealed for anyone who may have been near Reed Pond between 5pm last Friday and 11am on Monday to contact police.

**Lifesaving society honours teen, Winnipeg police divers**

Kole Devisscher pulled 10-year-old Robert Chartrand Jr. from the icy Red River in December 2010. (DAVID LIPNOWSKI / WINNIPEG FREE PRESS ARCHIVES)
First, the boys’ mother thanked them.

Now the Lifesaving Society of Manitoba has honoured Kole Devisscher, the teenager who pulled 10-year-old Robert Chartrand Jr. from the icy Red River in December 2010, and the Winnipeg Police Service diving team, led by Sgt. Rob Riffel, which searched so diligently for weeks in an attempt to recover the body of six-year-old Nathaniel Thorassie, the rescued boy’s brother.

Devisscher, who was 16 at the time, was passing by the area close by the Disraeli Bridge when he saw the older brother struggling in the water and used a tow-rope from his truck to rescue the child.

It would be late September, more than nine months after he disappeared, before Nathaniel’s remains were discovered and police divers would be dispatched again, this time to the riverside near the 2100 block of Henderson Highway.

"I just want to thank them from the bottom of my heart," the boys’ mother, McLaine Flett said at that time, "and I pray for them every day."

Devissscher and the police dive team were among 11 recipients of the life-saving society’s honoured for displaying exceptional courage in a half-dozen water-related incidents.

The awards were handed out Tuesday evening at Government House.

**Police divers recover body from truck in SE Houston pond**


Feb 5, 2012

Divers have recovered the body of a man who lost control of his pick-up truck and landed in a pond in southeast Houston around 10:15 a.m.
Neighbors told the Houston Police Department that a red pick-up truck was speeding near the 12880 block of Kurland near Freehill when the driver lost control of the vehicle and hit a curb.

The truck landed near a fountain in the neighborhood pond. A neighbor tried to rescue the male driver, but wasn’t able to pull him from the water. The good Samaritan lost his grip on the driver and couldn’t reach the bottom of the 30-foot deep pond, HPD spokeswoman Jodi Silva said.

“We just heard a loud noise. I just thought it was a transformer,” said Oscar Cisneros, 57, another neighbor watching the recovery.

Another neighbor, 28-year-old Daniel Sanchez, said he’s notice many speeding cars and street racing in the area. He said he wishes police would increase patrol and that speed bumps would be added to the neighborhood.

The HPD dive team said the driver appeared to be a Hispanic male. His name and age have not been released.

Dead woman's family says thanks
http://www.stuff.co.nz/national/6398733/Dead-womans-family-says-thanks
10/02/2012 BLAIR ENSOR AND BRONWYN TORRIE

The family of Karori woman Edna Mae Cairns, found dead at Scorching Bay, have thanked police, searchers and the community for their support.

Mrs Cairns, 74, was last seen at her Standen St home on Monday night, but police think she went missing on Tuesday.

Detective Sergeant Corey Watts of the Wellington CIB said a formal identification and post-mortem examination had confirmed the body was Mrs Cairns.

"We can confirm that we do not believe that Mae Cairns was the subject of foul play and there are no suspicious circumstances surrounding her death."
For two days up to 40 people from police, Land Search and Rescue and Karori Community Patrol scoured the Karori cemetery and surrounding bush near Mrs Cairns' home.

However the search was suspended yesterday after a woman's body was found lying on the rocks at Scorching Bay about 1.50pm.

The body was removed from the scene last night.

In a statement, Mrs Cairns' family thanked the community and police for their support.

"It is obviously a very difficult time for us as we come to terms with Mae's death, but it is comforting to know how much other people care and are prepared to be involved. We would particularly like to thank Scott Simpson of Karori Police who has shown great compassion in his liaison work with us."

They also thanked the searchers who scoured the Karori Cemetery for Mrs Cairns.

"We give heartfelt thanks that you gave so unstintingly of your time and energy. We know Mae always felt Karori was a special place."

A local cafe worker said the body was found on the rocks by an elderly Wellington couple who had eaten lunch at Scorch-O-Rama before going for a stroll.

They returned to the cafe "suitably stressed" to use the phone to call police, the worker said.

Idaho Bridge Jumper Recovered From Icy River
Feb. 07 Sandra L. Lee Source: Lewiston Tribune, Idaho

An apparently suicidal man who jumped from a bridge in Lewiston was rescued from the river and given CPR from the rescue boat, up the launch ramp and into the back of the awaiting ambulance.

A 49-year-old Lewiston man stopped his car in the middle of Southway Bridge just before 1:30 p.m. Monday, got out, waved at passersby and jumped -- dropping about 80 feet into the icy cold Snake River.
A note was found inside the car leading police to believe it was a suicide attempt, Nez Perce County Sheriff's Sgt. John Hilderbrand said. He declined to reveal the contents of the note, however.

Witnesses attempted to keep watch on the man in the water until rescuers arrived, Hilderbrand said.

The man was listed in critical condition at St. Joseph Regional Medical Center later Monday, Hilderbrand said. Little additional information, including his identity, was released Monday pending notification of family members. The man was in the water for just minutes. According to the U.S. Geological Survey Anatone gauge, it was just 36.5 degrees.

The cold water is an advantage because the body goes into a preservation mode, said Lt. William Madison of the sheriff's department. The national standard is one hour in a cold-water drowning, but it gets longer the more the temperature drops below 70 degrees, he said.

In one case where the water was 54 degrees, rescuers estimated they could have up to two hours to locate the person in the water and resuscitate him, Madison said.

The first call came into dispatchers at 1:28 p.m. Asotin County Fire District 1 had the first boat in the water, followed quickly by one piloted by Brice Barnes of Riverview Marina.

Nez Perce County’s boat arrived at the Southway Boat Ramp, just downstream from the bridge, as the man was being brought to shore.

Barnes, general manager of Riverview Marina on Snake River Avenue, said he's not sure who called the business, but it's frequently notified when there's a water emergency. "They called and said somebody jumped and they needed a boat, so we just blew down here."

His boat, a 29-foot Customweld with a drop-nose front, had already been out Monday morning to retrieve a boat that had hit something and had to be beached below Chief Timothy Park Sunday evening. "So we were halfway ready," he said. "Two in one day."
Two Lewiston policemen, officers Eric Olson and Michael Rigney, were waiting when Barnes and Luke Anderson of Lewiston backed down the ramp. "It was pretty simple," Barnes said. "I knew they were jumping on the boat. We were gone."

A few hundred yards upstream and not far below the bridge, Olson spotted something small in the water, apparently at the same time someone on the Asotin County boat saw it. They converged on the spot, and the Asotin County diver jumped into the water with the unconscious man, the front of Barnes boat was lowered and the cops grabbed both people, pulling them onto the flat deck and starting CPR, Barnes said.

CPR efforts were continued all the way back to shore and as the man was placed on a gurney and put into the back of an ambulance backed part-way down the ramp.

"I didn't get to see much," said Barnes who was concentrating on running the boat. "It was fast."

The boat is a cargo-hauler and perfect for rescue work, he said, but the credit goes to the rescue workers. "We have the best water patrol around," he said, listing Nez Perce, Asotin and Clearwater counties as well as Lewiston and Clarkston police and medics.

"Our water patrol guys are top-notch, all of them, so if the guy lives, it's because of them."

Traffic was reduced to one lane westbound for about 45 minutes while authorities had a blue Ford Focus towed from the bridge.

**Boston Fire Department Puts Rescue Dive Boat Into Service**


February 09, 2012

The Boston Fire Department has put into service a new Rescue Dive Boat for use in Boston Harbor and the waterways of the City.

The boat is a specialized 30' RIBCRAFT 9.0 dive boat. RIBCRAFT®, the United States manufacturer of professional grade rigid inflatable boats (RIB) for fire departments, law enforcement, safety professionals and military agencies is based in Marblehead, MA.

The mission specific RIB was delivered to the Boston Fire
UNDERWATER CRIME SCENE SERIES

BODY & WEAPON RECOVERY

APRIL 27 - 29, 2012

Sponsored by:

Travis County Emergency Unit Volunteer Dive Team

Training Conducted at:

The University of Texas
at Austin’s
Lee and Joe Jamail Swim Center
646 E Martin Luther King Jr. Blvd
Austin, Texas 78701

Open Water Training at:

Bob Wentz Park,
Lake Travis, TX

PREPAID Advanced Registration –
$250.00 per person

After April 1, 2012, Registration
$300.00

TO BE ENROLLED - ALL PREPAID
REGISTRATIONS MUST BE IN BY April
13, 2012

Payment is required at the time of registration.
Please make check or money order payable to:
Travis County Emergency Unit
PO Box 141592
Austin, Texas 78714-1592
512-771-6075

For more information, email to:
info@tceudt.org or ncrump93@austin.rr.com
Department's Rescue Dive Team for search and rescue operations. Given the large active harbor with considerable commercial and recreational traffic, countless wharves and marinas, and many harbor islands and recreational areas within the city's jurisdiction, the new boat will provide the department with improved response times and enhanced on-water coverage.

"This boat is specifically designed to support the Dive Team when responding to on-water rescue situations. It's speed and maneuverability is unparalleled and will greatly enhance our response capability" Boston Fire Commissioner Roderick Fraser stated. "We were very happy to have it built locally by RIBCRAFT USA."

Designed and built specifically for the Boston Fire Department, the 30' professional grade RIBCRAFT 9.0 is capable of supporting ten divers plus crew. It features a partially enclosed pilothouse with extended aluminum top, a drop down canvas enclosure for all weather protection, a large open aft deck, integrated dive ladder with platform, and secure storage for over 12 dive tanks. The vessel is intended to support the department's dive operations year round. With durability, reliability, and safety as one of the fire departments primary requirements, the RIB features a reinforced vinylester hull and a heavy duty Hypalon tube with multiple air chambers, pressure relief valves, high profile rubstrake, and tube reinforcing. It is equipped with twin 225HP Evinrude E-TEC outboard engines capable of reaching speeds in excess of 50 mph.

Divemaster / Marine Pilot-Firefighter Steve Murphy, who heads up the Rescue Dive Team states" We were able to be part of the design process. Our divers have years of experience and used it to have a boat built to meet our needs. With water incidents minutes count. This boat will allow us to arrive on scene in a quick and safe manner."

The boat was funded by a grant from the Department of Homeland Security and cost $214,000.00.

The boat will be referred to as MARINE UNIT 3 and will be docked at Burroughs Wharf in the North End. It is named the Captain John F. Kenney. The late Captain Kenney was a 29 year veteran of the Boston Fire Department and a member of the Rescue Dive Team. He died at the age of 48 after a long battle with cancer.

**About the Boston Fire Rescue Dive Team**
The Boston Fire Rescue Dive Team is the only Rescue Dive Team in Boston Harbor that is manned 24 hours a day. It is made up of 20 firefighters from the neighborhood firehouses of the city. They have extensive experience with dive operations and must pass a rigorous test to be considered for the team. Some have military diving experience. Boston Fire always has several divers on duty and can respond quickly to an incident. Each diver carries their gear in their vehicles when off duty. They have also trained with the US Coast Guard for deployment from their helicopters if needed. The team has also responded to incidents outside of Boston and Massachusetts when requested.

**About RIBCRAFT**
Headquartered in Marblehead, Massachusetts, RIBCRAFT designs and builds safe, durable, performance oriented rigid inflatable boats (RIBs) that fulfill the most
demanding professional and recreational applications. A leading manufacturer of professional grade RIBs and inflatables for safety professionals, military agencies, yacht clubs, and tour operators throughout the world, RIBCRAFT offers vessels starting at 14’ capable of fulfilling most any mission.

**Sydney bar fight: brawling man dies after falling into water**


February 12, 2012  Jonathan Swan

![Fatal brawl ... police arrested three men.](image)

A fight broke out between a group of men inside Pontoon Bar - a waterfront drinking hole on the Sydney city centre side of Pyrmont Bridge - about 12.45am today, a police spokesman said.

The scuffle spilled onto the Cockle Bay boardwalk, and "a number of men" joined in, police said. Two female officers tried to break up the melee but were assaulted, police said.

Four of the brawlers fell in the water, and while three of them swam out, the fourth vanished, police said.

A number of people, including police, dived into the water, but no one could find the 19-year-old man, police said. Divers discovered his body about 3.15am. Assistant commissioner Mark Murdoch said the death was being treated as suspicious.

Fight ... police divers search for the man.

Police divers pulled a dead man from the harbour at Cockle Bay this morning after a brawl erupted inside a bar and ended in the water.
"We are canvassing a quantity of CCTV," he said. He said police were trying to determine whether the man fell into the water or was pushed.

Mr Murdoch said the man's family were devastated.

Three men - a 22-year-old from Berala, 23-year-old from Macquarie Fields and 24-year-old from Birrong - are being held in custody. The three men were off-duty security guards who work at a Cockle Bay bar.

NOT BEING FAMILIAR WITH EQUIPMENT LEADS TO CLOSE CALL AT ICE DIVE
February 12, 2012

Sunday, February 12, 2012 I was the 90% diver on an ice dive, using SSA as well as the safety diver. The primary diver (different dept) was using conventional SCUBA(80cf) with a pony bottle(19cf) bail out system on an Omni switch block.

All divers are in dry suit and Divator FFM. The primary diver had some challenges with weight issues and equipment configuration. The tenders in this case are new and we are boat based in about 10ft of water with thin ice conditions. After a few attempts due to equipment issues the primary diver starts his dive. We allowed him to go only about 20 lateral ft due to the challenges he had. We had him on hard wire communication and after about 5 sweep patterns we advised him to start a slow ascent and we would due a lost diver drill with the safety diver. Suddenly and with out any communications or rope signals the primary diver started to pull himself in towards the boat. We noticed an emergency and told the safety diver to start towards the primary. The tender was told to pull the diver in also. The primary diver suddenly surfaced and removed his mask stating he had a mask failure. We had him exit the water and place his gear in the boat for examination. The primary diver suffered no injury. On inspection of the dive gear, he had 2500 psi in his 80cf cylinder. His octopus worked fine. His FFM did not have any air going to it. We checked the Omni switch block and noticed it was in the position for the pony bottle. I removed the regulator from the pony bottle and found it was empty. The diver was diving on his pony bottle system the entire time and sucked it dry. He did not attempt to switch the block position, he stated he would have removed his FFM and use his octopus, in ice water this is not as easy as it sounds.
Later discussion found he had not been trained on the use, had no pool time, and was not aware of the operation of the switch block. We are fortunate the diver was limited to lateral distance of 20ft. If he was at a greater distance he may have had different results, not for the better.

Each diver must be trained and knowledgeable with their own gear. When the "domino" effect starts to take place, don’t push on just to complete the dive. Gut feeling in this case limited the diver to only go out 20 lateral ft. Follow your gut! Each member of a division/county wide team must communicate with each other regarding gear issues. We don’t all have the same stuff, but must be aware of each teams configurations. This diver learned the hard way to get into the pool first with new gear.

**Letters To The Editor**

I would ask you to help promote the second annual Danbury Hospital diving medicine Conference. Last year we over 170 diver in attendance. At 50% of the attendees were public safety divers including FBI dive team Ct state police dive team and many municipal dive teams. This is an important program that will help promote safe diving.

Click here for information: [Diving Medicine Conference](http://www.scuba-doc.com).

Regards,
David Charash DO, FACEP, UHM
Medical Director
Wound Care and Hyperbaric Medicine

Transmission of disease via scuba gear probably does not happen often -- but the thought arises in the minds of those who fear using rental scuba gear or buddy breathing. There are many transmissible diseases that have the capability of being passed on to another through the use of unclean equipment. These conditions are caused by viruses, bacteria and fungi - some short-lived on inanimate objects, and some lurking and living in the moist confines of the crevices and tubes of unwashed scuba gear. Included among the viruses are HIV, HCV (Hepatitis C), influenza and herpes simplex. Bacterial infections include staphylococcus aureus, salmonella choleraesuis, pseudomonas aeruginosa, klebsiella pneumoniae and mycobacteris (tuberculosis); fungal infections include candida albicans.

The specter of getting HIV from CPR practice dummies has even caused a study to be done -- with live HIV virus.
This study conclusively showed the use of routine cleansing methods (Propanol) to be effective in removing all traces of virus.

HIV is not spread by casual contact, such as shaking hands, hugging, touching objects handled by a person with AIDS, or by spending time in the same house, business, or public place. HIV is not spread by mosquitoes or through food handled by a person with HIV. There is absolutely no risk of getting HIV from donating blood. HIV dies quickly outside the body and easily killed by soap and by common cleansers and disinfectants such as bleach.

**Buddy Breathing**
This time-honored safety technique apparently is not even being taught in some courses. One wonders how much the HIV/AIDS epidemic has had to do with it's near demise. Here presented is a very good discussion of disease transmission risk by Larry "Harris" Taylor, Ph.D., Scuba Instructor, U of MI:

"Most people are concerned about HIV (AIDS) and herpes. That's fine ... but the reality is that, for the most part, these disease causing critters are fairly weak and not terribly robust. The major concern, as I understand it, is hepatitis ... a far more robust virus and one known to survive in saliva.

We believe buddy breathing is an essential survival skill ... by the end of our term, the students routinely are buddy breathing without mask, without one fin, and with the tank unsecured. Even though we believe the risk in a chlorine pool to be small, it is NOT zero. SO, we conduct our buddy breathing single regulator exchange exercises in the following manner:

The regulators are initially configured so that both come over the student's right shoulder. The octopus regulator has a longer hose. Prior to initiation of practice, the octopus regulator is removed from its holder ... its hose is placed through the space on the primary regulator that runs between the exhaust housing and the body of the regulator. This places the regulators side-by-side. The donor breathes off the primary ... the recipient breathes off the secondary. In this manner, the exchange process, the blowing bubbles while regulator is out of the mouth, the rhythm of the exchange and ability to swim and ascend while doing a single regulator exchange can be practiced. Since divers are breathing off different regulators, the risk of disease transmission is much lower than breathing from a common reg. It is the closest simulation that we have been able to develop. By the way, there are vaccinations available for hep B ... its a good idea for those dealing with lots of exposures to humans to consider these.
shots (mine was a series of three spaced over several months)-- "

Addendum: It is probably not a good idea for the diver infected with HIV to take the Hepatitis B vaccine. When possible, live virus vaccines should be avoided in persons who are infected with HIV. Gastrointestinal illnesses may be more frequent and severe than in other travelers. Food and water precautions, and a treatment course of an antibiotic will minimize the risk of severe disease. Many diseases, such as tuberculosis, leishmaniasis, and syphilis are more common and/or severe in immunocompromised hosts. HIV-infected travelers should be instructed to seek medical attention for pulmonary symptoms or fevers.

**Rental Gear**
This might be a problem if a dive shop had a large HIV positive clientele. However, the HIV virus is somewhat fragile, does not live long in saliva (due to immune globulins), and certainly would not seem to pose a hazard unless there had been blood admixture. Any risk at all would be due to the possibility of bleeding from regulator or snorkel injury to the gums or nosebleeds into the mask. It is this possibility that should cause dive shops to have a protocol of rental gear cleansing and sterilization. Let me finish by saying that there have been no reported cases of HIV infection by the transmission of saliva. Transmission must go directly from one person to the other very quickly. The virus does not survive more than a few minutes outside the body. Human bites with blood, yes -- but none with coughing, openmouthed kissing. CPR dummies, or scuba gear.

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**SPONSOR NEWS**

**DUI RECEIVES #1 DRY SUIT AWARD IN GERMANY FOR THE 7TH TIME!**
February 2, 2012 Düsseldorf, Germany

DUI was again honored to receive the #1 drysuit in Germany from Tauchen Magazine, Germany’s Premier Diving Magazine.

This presentation is made at the Tauchen Awards attended by over 300 people. The event takes place during the Boot Show which is the world’s largest boat show. A 9-day show, diving has one of the enormous 16 pavilions exhibiting all of the splendors of diving to consumers throughout Europe and the world.

“We are very honored to receive this readers-choice award again for the 7th year,” says DUI President Susan
Long. This award is voted on by readers in Germany, Austria, Belgium and Switzerland. “This award is a culmination of efforts throughout the entire DUI Team. It is combining a premier, quality product with exceptional service. The DUI Team consists of the factory in San Diego as well as our partner and friends at Beyond the Shore, our European distributor. It also includes a remarkable and dedicated dealer network as it is through them that we are able to bring our products to German-speaking divers. On behalf of our European dealers, our distributor BtS and the entire Team in San Diego, we thank Tauchen Magazine for the Best Drysuit Award for the 7th time.”

For more information, contact:

**Diving Unlimited International, Inc.**  
1148 Delevan Drive, San Diego, CA 92102 USA  
(800)325-8439 (619)236-1203 (619)237-0378 Fax  
[WWW.DUI-ONLINE.COM](http://WWW.DUI-ONLINE.COM)

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**February 2012 * Press Release***

**EdgeTech** is excited to introduce a new sonar solution specifically designed for AUV’s, ROV’s, USV’s and other hosted platforms. The new 2205 Series is the latest generation of electronics, transducers and software specifically optimized for the demanding size, power and cost constraints present in hosted platform systems. With hundreds of sonar systems installed on numerous AUV, ROV and USV platforms around the world, EdgeTech has incorporated years of experience in this latest generation of OEM components. The new system runs the full range of EdgeTech side scan sonar frequencies from 100 kHz to 1600 kHz, sub-bottom profiler frequencies from 500 Hz to 24 kHz and swath bathymetry at 230 kHz or 540 kHz making it the most versatile sonar imaging solution on the market focused on the underwater vehicle group. Additionally, the new 2205 is available with EdgeTech’s unique Dynamic Focusing (DF) and Multi-Pulse (MP) technologies. EdgeTech is also excited to introduce new Powered Arrays designed to provide better ranges and noise immunity. For more information call us or come see us at Oceanology booth H120 this March.
SALEM, N.H., February 22, 2012 – L-3 Klein Associates, Inc. has introduced a new lightweight, rapidly deployable side scan sonar (SSS) for search and recovery (SAR) applications. The state-of-the-art HydroScan® implements advanced technologies not previously available in side scan sonars, resulting in a highly compact profile that delivers much higher quality imaging and range performance than other small SAR SSS systems.

We will be displaying the newly released HydroScan at Oceanology International –Stand G500.

From shallow water applications to deep water surveys, L-3 Klein has the right equipment for the job. Side scan sonar is our core business area, and we continue to provide innovative solutions that meet 21st century demands.

Our worldwide reputation is built upon more than 40 years of experience providing quality products and excellent customer service.

For more on how L-3 Klein is making the oceans transparent, call (603) 893-6131 or visit us at L-3com.com/Klein.

FOUND ON THE WEB

Finnish Scuba Divers Fishing under Ice
http://www.youtube.com/watch?feature=player_embedded&v=VIs00QjiJZQ
04 Feb 2012

Click on the photo to launch. Three intrepid scuba divers have posted a video on YouTube of an interesting underwater fishing expedition in a frozen lake, in Saarijärvi lake in Vaala, Finland.

Just go watch it – If you are a diver, you will definitely get a kick out of it! ~ Editor
EVENTS*

DUI Offers Special Training Workshop for Public Safety Dive Teams

Diving in CONTAMINATED WATER is a vast and complex topic. DUI’s program is based on our 49 years of industry experience keeping divers protected in some of the world’s harshest environments. DUI’s Dive Ops program is conducted as part of the annual DUI Drysuit Demo Tour. The workshop gives Dive Teams access to equipment and training to keep them safer, tips on grant writing, the ability to network with other teams, as well as the opportunity to TEST DIVE the equipment.

Mar 9    San Diego, CA    La Mesa Community Center
Mar 30   Pelham, AL       Dive Alabama
May 4    Gloucester, MA    Stage Fort Park
May 18   Bethlehem, PA    Dutch Springs
Aug 10   Mukilteo, WA     Lighthouse Park
Sept 7   Ottawa, OH       Gilboa Quarry
Sept 21  Metropolis, IL   Mermet Springs
Oct 19   Rawlings, VA     Lake Rawlings
Nov 2    Chiefland, FL    Manatee Springs
Nov 9    Terrell, TX      Clear Springs Scuba Park

International Conference on Hyperbaric Medicine, Cape Town, South Africa
Mar 16 thru Mar 19

2012 Joint Undersea Warfare Technology Spring Conference
http://www.ndia.org/meetings/2260/Pages/default.aspx
Event Date 3/19/2012 to 3/22/2012
Event Location Admiral Kidd Conference Center (San Diego, CA) Contact Ms. Kimberly Williams kwilliams@ndia.org

EDAM (Emergency Diving Accident Management) Course, Avalon, Catalina Island, CA, USA
Mar 15 thru Mar 20

NOTICE!!

Public Safety Diving Conference
Friday, March 23, 2012 Beneath the Sea’s Public Safety Diving community will spend the day taking into account:

The Risk Factor for Public Safety Dive Teams
It is impossible to eliminate risk for public safety dive teams. It does not matter how you look at it, how you hold it up and examine it, it is a dangerous, and a risky job. However, new technology and new information can help you minimize your risk, help keep you and your team safer. This daylong program covers some of the most timely topics in public safety diving. Each one designed to help you be safer in the water.
NFPA Contaminated Water Diving Standards
Presented by Faith Ortins of DUI Drysuits and Captain James Murray FDNY NFPA 1953 is ready to go out for comment. This seminar will address the questions of how the new proposed standard affect you and how you can get involved in the final development of the standard.

What We Can Learn From Success Stories In Public Safety Diving.
Presented by Blades Robinson of International Association of Dive Rescue Specialists
Public Safety Diving fatality statistics have allowed the PSD community to identify trends and implement safety measures. Consequently the number of PSD deaths has decreased in recent years but a new disturbing trend is emerging. Let’s learn from the past so we can work towards a safer future.

Managing the Scene
Presented by Shawn Harrison of ERDI
Learn how surface support personnel can make all the difference in safety and effectiveness for a dive team.

Using Surface Supply Systems To Minimize Your Risk As A Dive Team
Presented by Bengt Kjellberg of Interspiro
One of the biggest risks Public Safety divers face is the possibility of an out of air emergency. Is surface supplied air a possible benefit to your team’s safety and operational readiness? Bengt Kjellberg from Interspiro will discuss this topic and demonstrate how safe and easy surface supply can be.

Integrating Rovs With Side Scan Sonar To Maximize Effectiveness
Presented by Erik Estrada of Video Ray
Erik Estrada will discuss how ROV technology can increase the efficiency and safety of dive teams. He will demonstrate how to best utilize these emerging technologies as well as discuss their realistic limitations using real life examples.

The Managing of the Physical and the Mental Demands of Public Safety Diving
Presented by Tom Greenhalgh of NPSS
Medical and physical complications are the number one contributing factor to public safety diver fatalities. Tom Greenhalgh is a recognized expert in this field and a long time PS diver from Massachusetts. He is working with the Undersea Hyperbaric Medical Society to develop a medical standard for public safety divers to go along with the physical fitness standard recently implemented by NFPA

This conference is held as part of the Beneath the Sea Show at the Meadowlands Exposition Center in Secaucus, NJ. Presentations begin at 9:00 AM and doors open for on-site tickets sales at 8:30 AM. Lunch is provided for all ticket holders. The PSD Conference ticket also includes entrance to the Exhibit Floor on Friday evening (6PM to 9PM), admission to the Technical Diving Seminars and the Tec/Wreck Party after the show in the Embassy Suites Hotel.

Beneath the Sea is a not-for-profit and more speaker bio’s, information and ticketing is available on the BTS website at www.BeneathTheSea.org.

You can also email Jeff Heim, a Senior Director for the Beneath the Sea Show, directly at jeffh31903@gmail.com.
Diving Medicine Conference
Saturday, April 14, 2012
8:00 AM to 6:00 PM - Danbury, CT

The Diving Medicine Conference is made up of two sessions.

The morning program will offer insight and education in key topics in Diving Medicine led by experts in the field of diving medicine.

The afternoon session will offer certification courses in both advance oxygen and neuro assessment by Divers Alert Network.

3rd Annual UNDERWATER CRIME SCENE SERIES
BODY & WEAPON RECOVERY SPECIALTY
APRIL 27 - 29, 2012
Sponsored by:
Travis County Emergency Unit Volunteer Dive Team
The University of Texas at Austin - Lee and Joe Jamail Texas Swim Center, 646 E Martin Luther King Jr. Blvd, Austin, Texas 78701

PREPAID Advanced Registration – $250.00 per person
After April 1, 2012, Registration $300.00

TO BE ENROLLED - ALL PREPAID REGISTRATIONS MUST BE IN BY April 13, 2012

The Underwater Crime Scene Series programs are stand alone courses and can be attended in any order. Payment is required at the time of registration. Please make check or money order payable to:

Travis County Emergency Unit
PO Box 141592
Austin, Texas 78714-1592
512-771-6075

For more information, email to:
info@tceudt.org or ncrump93@austin.rr.com

Catalina Chamber Day/Evening 2011, CA, USA
May 4

25th Annual Scuba Show, Long Beach, CA, USA
May 5 thru May 6

11th European Conference on Underwater Acoustics
http://www.ecua2012.com/

The new Red Cross Lifeguarding manual is now available to download for FREE!!!!!

To obtain your copy click on this link:
http://www.editiondigital.net/publication/?i=95090

PSDiver Monthly Issue 92
Continuing Education
PSDM-CE-92

1) Basic openwater recreational certification is all that is needed to form a dive team.
   a. True
   b. False

2) As you descend in the water column you use more air from your tank.
   a. True
   b. False

3) Pressure increases under water at a rate of _____ psi for fresh water.
   a. .431
   b. .432
   c. .455
   d. .412

4) Dry Suits configuration must contain a dry hood and dry glove arrangement.
   a. True
   b. False

5) Primary communications between a diver and another person should be...
   a. Line pulls
   b. Loud yelling in the mask
   c. Electronic communication devices
   d. Banging rocks together

6) All of the following are lung expansion injuries except:
   a. Pneumothorax
   b. Tension pneumothorax
   c. Subcutaneous emphysema
   d. Mediastinal emphysema
   e. Glacoma

7) Procedure for cleaning diving equipment after a dive should include de-con to prevent any passing of bacteria or disease such as HCV.
   a. True
   b. False

8) On site support for PSD should include which of the following?
   a. Direct 911 communication
   b. EMS unit
   c. Re-hab support
   d. Spare equipment
   e. All of the above

9) Dive teams differ from each other because of:
   a. Equipment
   b. Training
   c. Experience
   d. Ability
   e. All of the above

10) Diving in currents greater than ½ knot should employ a _______ pattern.
a. Down Stream  

b. Bank Tendered  
c. Surface Tendered Buoy  
d. Line Tendered 1” rope  
e. All of the above  

11) When diving at altitudes above 1000 feet above sea level a different set of dive tables should be used..  
   a. True  
   b. False  

12) When conducting dive operations in current it is a good idea to have a “chase” boat down stream.  
   a. True  
   b. False  

13) Water operations  
   a. Have different risk levels  
   b. Are all created equal  
   c. Can be handled by open water scuba certified divers  
   d. Should not be attempted by police or fire departments  

14) Dive teams should have  
   a. A policy to always dive an incident when called  
   b. A realistic view of what the team is capable of  
   c. Jurisdiction over bridges  
   d. The Lifeguard Systems manual  

15) Basic PSD training should teach divers  
   a. Mask clears, regulator retrievals, Fin pivots  
   b. Ditch and recoveries, bailouts  
   c. A very specific skill set to ensure safety during team water operations  
   d. How to blow bubble rings and tenders to count them  

16) After a basic PSD class with a professional training agency, divers should be able to  
   a. Dive in any water operation encountered  
   b. Begin to safely gain experience  
   c. Confidently assess their capabilities to participate at an appropriate level during the operation  
   d. Both “b” and “c”  

17) Find the statement that best describes the following situation: The backup diver bangs the primary diver’s hand on the backup diver’s chest three times to say “I’m hurt” and then puts the primary diver’s hand on the injury.” (There may be more than one correct answer)  
   a. It is important to have redundant communication protocols in case of equipment failure  
   b. Trained public safety divers can’t get hurt  
   c. It is important to include deaf divers on your team to comply with equal opportunity regulations
d. I do not trust divers on my team to use that signal appropriately

18) In the event of a bridge collapse
   a. Only urban search and rescue teams should dive recovery ops since they have more training
   b. Only divers with a basic Lifeguard Systems certification should be called to dive
   c. Dive teams should seriously assess the training, equipment and experience level of divers before participating in recovery operations
   d. OSHA divers are the only ones qualified to dive

19) Comparing Urban SARR to Underwater SARR
   a. There is little difference
   b. Urban SARR is much more complicated
   c. Underwater SARR has a greater success rate for rescues
   d. Underwater SARR has a greater level of complexity and danger

20) Mark all of the following that carry a higher risk in Underwater SARR than in Urban SARR
   a. Entrapment
   b. Low or no visibility
   c. Contamination
   d. Falling

21) There are at least ______ professional training agencies specializing in public safety diving
   a. 1
   b. 2
   c. 3
   d. 4

22) The person who manages a line to a diver is called a(n)
   a. Tenor
   b. Tender
   c. Tetherer
   d. Assistant Scuba Supervisor

23) In an ambient temperature of 50 degrees F, who is at a greater risk of losing body heat?
   a. Urban SARR
   b. Underwater SARR
   c. Policemen
   d. Firemen

24) Which of the following statements is correct?
   a. All dive teams in a county have the same operating procedures
   b. All the dive teams in a county use the same standardized equipment
   c. All dive teams in a county will have the same type and level of training
   d. Dive teams within a county may differ in SOPs, equipment and training
Team Discussion:

1. As a team, sit down and have a serious discussion about what are the most high risk types of water operations that could occur in their jurisdictions.

2. As a team, discuss and have a realistic examination of what is the team capable of safely doing now.

3. Discuss what types of operations the team want to grow towards and what needs to be done to accomplish that.

4. As a team, discuss the mission of your PSD team and what level of training and maintenance is required for the operations they intend on performing?

5. As a team, hold a training class on out of air emergencies, entanglements and unconscious diver emergencies. As a team do a post class review and evaluation and discuss the class. Focus on ways to improve and the methodology to do that.

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.

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

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

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

**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.

**Lifeguard Systems – TEAM LGS**

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

Why bother carrying an additional melee weapon when you've already got one on your gun? The guys at DoubleStar brought out their J&T Zombie AK, fitted with an electric chainsaw on the barrel. The AK features a drum mag with an Aimpoint red dot sight, plus a rechargeable battery pack for the limb collector on the end – after all, when the zombies are mere feet away, there's no time to set your gun down and rev up your gas-powered chainsaw.

Video:
SHOT Show 2012 DoubleStar Corp Zombie-X AK with Chain Saw

PSDM 92 CE Answers

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PSDiver Monthly is the magazine for PSDiver and is edited and published by Mark Phillips

Associate Editors:
Lynn Wright Dominique Evans-Bye

Continuing Education Editor: Chuck Elgin

For advertising and sponsor rates, please email: psdivermonthly@aol.com

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Police Stop at 2:00 A.M.

An elderly man is stopped by a police officer at 2:00 A.M.

The officer asks, 'Sir, where are you going at this time of night?'

The man replies, "I'm on my way to a lecture about the evils of alcohol abuse and the detrimental effects it has on the human body."

The officer then asks, "Really? Just who is giving this lecture at this time of night?"

The man replies, "My wife."