

Greetings –

This month PSDiver Monthly is offering a different format. It is not likely to be repeated for quite some time and it is my hope that you will find great benefit from the work that has gone into this issue.

When we have guest articles we usually highlight them as “Special to PSDiver Monthly” so you will know that someone took the time and trouble to share information with us.

This issue is ALL “Special to PSDiver Monthly”. You will recognize some of the individuals’ names that wrote the articles. Each author was contacted and asked to volunteer their time to write a topic specific piece for this issue. Not a single individual I contacted refused to help. I would like to take credit for that but in reality, it is because of YOU that they are so willing to help.

PSDivers are the underdogs. You are the folks who are willing to put yourself in harms way just to help someone else. There is no glory in recovering a body, no big parade if you find a murder weapon or tie a tow cable on a truck at the boat launch. You do your job willingly with limited resources and more

times than we like to admit, with minimal safety gear.



In the past I have kept a database of news articles related to PSD Fatalities. Over the last few years we have gone into the files a few times to research for articles or just to add new information. It is always disturbing to me when I reread PSD Fatality reports especially when the fatality was caused by a simple mistake. Complacency kills. The wrong attitude kills. Poor planning kills. Unfortunately for us, we recognize water as dangerous but rarely relate it to other dangerous aspects of our job.

Consider that water is a chemical. One that when used correctly and properly respected is vital to the health and well being of all living things. But it is a chemical and we are familiar with chemical emergencies. If we replaced water with gasoline, urine or weed killer we would never consider diving in a pool of it with scuba gear or anything else for that matter. That may be a silly analogy but the fact remains that we cannot breathe water and it CAN kill us within minutes if we are not properly protected.

We will go through great lengths to train, equip, prepare and staff hazardous materials teams

because we acknowledge the potential dangers of a chemical spill yet we take for granted a response that takes place compactly submerged in a chemical and environment that will kill us completely and absolutely if we make one mistake too many. We must become more aware of the potential danger the Public Safety Diving poses and we must guard and fight against complacency.

This issue is about you – for you. We hope this issue will cause you to think, to reevaluate your team structure, training and goals and to heighten your safety. It is my sincere hope that in the following pages you will find elements that relate to your team or yourself and perhaps information that will be useful to facilitate greater awareness of your role as a Public Safety Diver. New attitudes, new equipment and technologies and a willingness to learn and adapt – are you ready?

Adequacy is no longer an option. You are professionals in your field and it will be professional attitudes and skills that keep you and your team alive.

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Dive Safe,

Mark Phillips
PSDiver Monthly

The Role of the Public Safety Diver

Mark Phillips

The role of a Public Safety Diver has changed little over the years but the responsibilities have. Gone are the days of groping around in the mud and muck and throwing an object to the bank to be picked up and bagged or tagged as evidence. Gone are the days when a group would get together in a line of boats and drag for a body with sharpened hooks. The role of Public Safety Diver has not changed but the technology available to us and the expectations placed on the skills of the team divers have. Many teams now have divers that are better trained and more proficient, supported by departments that provide adequate equipment for diver safety and technology that significantly lessens search time. These changes have come about through knowledge development from within our own ranks, by trial and error and in some instances a forced justification for existence of the team.

While not normally a problem, in the instance of Public Safety Diving, we find teams with the desire to do more based on their knowledge and skill levels who are hindered in their function by administrations that are unaware, afraid or resistant to the new job performance capabilities of their teams. Some teams with the ability to perform investigative skills are hindered by narrow views of their own agency or the agencies they work with. Fire department teams compete with police department teams for

justification of their own existence. Fire department teams are prone to be categorized as rescue teams while law enforcement teams are supposed to be underwater investigators. The arguments from each side usually centers on the responsibility of the team based on what kind of agency they work with or are associated with. Fire and EMS are supposed to be rescue oriented and Law Enforcement s supposed to be evidence recovery and underwater investigation. When the argument becomes the issue, the job function is lost. We are not Fire department divers or Police department divers we are, Public Safety Divers. Our identity is in that, not what type of agency we happen to work for. The territorial battles are not worthy of those who conduct them.

When we compare the skills and work provided by those involved in Public Safety Diving, we find a great deal of similarities. Certain techniques and skills that have been developed and implemented by different teams and even training agencies are remarkably similar and share basic commonalities. Only the nomenclature changes in some instances. At the base level, Public Safety Diving has numerous elements that are similar or identical only because through trial and error, the most efficient and safest means to an end were found. The logical progression of skill development to fulfill a common

need have created a reasonably similar basic skill set.

As we progress in time, we will eventually see national standards for Public Safety Diving. We will see safety, manpower, and equipment as well as haz-mat issues recognized and addressed. Some of our teams will be dissolved; others may be absorbed into county wide or regional teams. More importantly, I hope we see a recognized description of exactly what Public Safety Diving is. Standards and definitions are not going to be made by desk jockeys though they may attempt to influence them based on their own needs. What is truly going to define Public Safety Divers is what Public Safety Divers do! It is up to us to find balance in form and function and challenge those definitions that link us to anything other than Public Safety Diving. A true national standard will be created to fit what WE find to be the commonality between teams nation wide or

even worldwide. There will eventually be a baseline standard, and special needs or functions will be created as needed that will be incorporated into that baseline.

But what is a Public Safety Diver? Is a Public Safety Diver a rescue diver as some would say? Is a fire department team defined only for rescue and a police department dive team



defined for underwater investigation and evidence recovery? How practical would it be to call a fire department team out for a water rescue only to have it turn into a recovery that only the police department team had jurisdiction to perform? What is the true likelihood of the rescue of a submerged victim in zero visibility? What is the likelihood that a land based homicide investigator would call for a fire department crew to come to his scene to drag a body out from behind a dumpster so he can process the crime scene on the sidewalk? Common sense says this would never happen yet, there are more times than we would like to admit where that very scenario exists when the body is underwater.

A Public Safety Diver should be an underwater investigator capable of processing an underwater crime scene to the requirements and capabilities of investigation required by the local law enforcements investigation needs. A Public Safety Diver should have the ability and skills to perform rescue when possible and within their skill and equipment limits. A Public Safety Diver should have the ability to cross train in flood and swift water rescue. A Public Safety Diver should be able to represent and function as the underwater investigative branch of the local law enforcement agency. The responsibilities of the Public

Safety Dive team extend far beyond just recovery.

While this goes against the basic philosophy of a fire department team and some law enforcement teams automatically object to a fireman working on a crime scene, the bottom line is they are BOTH public safety agencies. If a municipality has the budget to fund a single team, common sense says they will fund the one with the most likely chance of performing rescue, not recovery. If that team is the fire department team, the local law enforcement agency will be dependent upon them for underwater recovery work and that must include potential crime scene investigation. As a Public Safety Dive team functioning as an underwater investigative branch, they can and should be trained to fulfill the investigative needs, or as close as possible, as an investigation on land.

The underwater environment itself will cause some problems and the worse the visibility and environment conditions get, the capabilities of any underwater investigator will be diminished. Common sense approaches to these challenges and knowledge of how evidence is deposited, identified, protected and collected should be part of the learning processes for Public Safety Divers.



It is my goal to challenge you to not only expand your potential but your concepts of Public Safety Diving. But in doing so, it is imperative that you treat the role of Public Safety Diver with great respect and common sense. It is a dangerous and unforgiving role where a single simple mistake can cost you your life or the life of one of your teammates.

A Simple Dive

"A PSD Fatality Report"

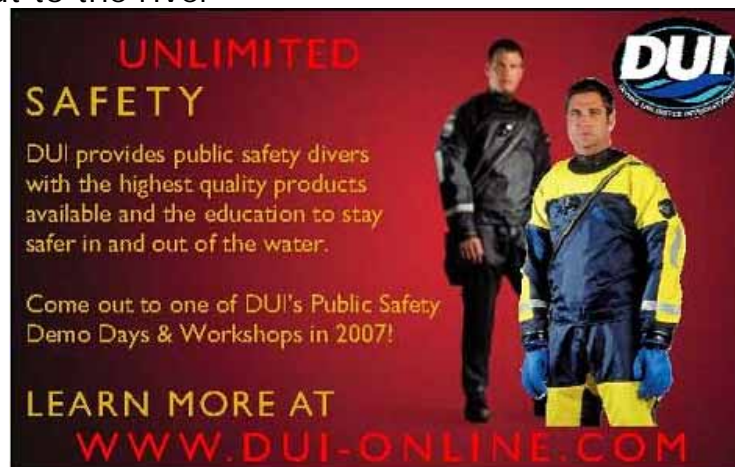
It was the last week of July. The sky was clear but it was hot, really hot. It had rained for the last three days and the humidity was so thick you could feel it on your skin and in your lungs when you breathed it in.

We had been asked to take the team out to the river to look for a rifle that had supposedly been used in a robbery earlier in the month. The call came in to dispatch early in the morning from PD and we got the word about two hours after our morning shift change. We had to shift manpower around to cover stations and since no one was in a hurry; it took about two and a half hours for us to get everyone and all the gear to the boat launch.

JB was there. JB was always there if we had an easy dive. Since he had not bothered to show up for training since last year, this was going to be the first time he had been in the water in nearly a year. The guys really ripped on him about that but JB is a good diver and we never really have to worry about him. Carl is a different story. Carl made the majority of the training days but this was his first real mission. Carl is a good diver but he was obviously nervous. He was going on and on about making sure his gear was right and was asking a lot of questions; mostly because he lacked confidence. JB finally told him to "Quit crying and shut the ___ up!"

The police met us at the boat launch and had a guy in handcuffs with them. He was supposedly the one who either threw the rifle in the water or was with the guy who threw it; we never really got that part clear. We just knew that he was supposed to be able to show us where the rifle was. Since it had been

thrown it from the bridge and it was too far from shore to do a shore-based search, we had to prepare for a mid-channel river search using the boat as our base. We don't practice that pattern very often so everyone was trying to talk it out. We had only done it once before but it had been a long



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time ago. As it turned out JB was one of the last guys to do it and the only one of us there who had. Carl and I both had never done it and had only seen it drawn out on paper.

In hindsight, you know what they say about hindsight, we probably should have been practicing that pattern and a few others a lot more often.

Anyway, our plan was to launch the boat, motor out into the river until the guy told us to stop. We would throw out a buoy to mark the spot and then gear up and send our divers down. We had the weights and ropes already laid out and a pretty good plan. The water was only about 40 feet deep but as usual, it was muddy as hell. The runoff from the rain was creating a bit more current than usual but it did not seem too bad.

We launched the boat and headed downstream. The bridge was about three and a half miles from the boat launch. Captain Angleton was driving the boat, Carl and JB were going to be the main divers and I was going to be their safety diver / line tender.

The idea was that JB would follow the buoy line to the bottom while carrying a weighted rope with a float attached to it. He would set the weight next to the buoy weight and surface. Carl would then hand JB a search line and a reference rope. JB was to go

back to the bottom. On the bottom, he was supposed to stretch out the reference rope then signal me that he was ready and I was to let out line for him when he signaled he needed more. On paper it looked like it would work pretty good. He, JB I mean, had a carabineer that he was threading his search line through that was going to attach to the weight line. That was supposed to be a pivot swivel and let him swim circles and let me keep in contact with him at the same time. The reference line was his marker to let him know he had gone a full circle and needed more line to move out for another turn.

Before we left the dock, we all put on our wet suits. The boat is too crowded and the damn things are too hard to put on when the boat is moving. We had all of our equipment ready and in place. JB stuck his stuff on top of the bow since

he was going in first. Carl had his gear on the floor and to try to make some extra room for the guys, my gear was stowed under the driver's seat out of the way. JB got in the boat and sat on the bow. Carl was squatted down in the front and I sat by Captain Angleton.

The Capt pulled out from the dock and was just putt putting downstream. JB started to gear up and put his weight belt on. Carl –the new guy Carl – actually scolded JB for putting on his weight belt before his



other gear. JB just glared at him and told him to "Shut the ___ up!" That seemed to be JB's mood of the day. We picked on Carl a little and accused him of pouting.

Carl got pissed, quit talking to any of us and started getting his gear ready. Captain Angleton told JB to get off the rail and to put on his BCD. I had to drive back to the station with JB so I kept my mouth shut, I still wasn't sure if he was mad or just messing with Carl because he was a rookie.

We got to the bridge and went past it. The guy kept pointing behind us so we drifted back a bit and when he got excited, we dropped our buoy. The current was too fast for the small weight we had on the buoy and it drifted downstream. We had to go get it and pull it up. We added ten pounds of lead to the weight just to make sure it would stay next time. Carl remarked that if the current was that strong, the line would have to be longer or else the buoy would just sink with the current. We had a hundred feet of string on the buoy so we were not too worried about that.

Once we reset, we motored back upstream to the bridge and the guy kept directing us until we were supposedly over the right spot. I threw the buoy out and it sank like a brick and the line played out just like we thought it would. I asked Captain Angleton if maybe we should anchor the boat near the buoy but he said we needed to be mobile in case one of the divers had a problem and we needed to go

downstream to him in a hurry. I kind of wondered what he meant since I might be one of the divers but I didn't push it, not my pay grade.

While we were setting the buoy, JB had already geared up and was sitting on the side of the boat. Carl was still getting his stuff on when JB rolled off the side. Captain Angleton got really pissed because JB hit the water before he was told to and Carl freaked out because he wasn't ready yet and he was supposed to be JB's backup. Even worse, Carl had not given JB the weighted rope yet. I grabbed the weight so I could give it to JB but when I looked over the side, JB wasn't there. We thought he was joking around and that really fired up the Captain. I thought he was going to have an aneurysm or something.

After about a minute, maybe less, JB still had not come up. I began to get a bad feeling and started to scramble to get my gear on. JB was a goof but he just wouldn't joke like this. Carl got his gear on first. It probably took him less than two minutes to finish suiting up. My stuff was under the seat and still in

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my bag. I got it out but by the time I did, we had drifted downstream and had no idea where to look for JB. None of us had thought to mark a spot on shore when JB hit the water and we had no idea how far we had drifted. After a few minutes, we were able to deduce an area where JB might be.

Before it was over we had to call out the rest of our dive team as well as the SO dive team. It took us six hours to find JB. Ironically, the first diver in the water found the rifle.

After we found him and got JB out, we tried to figure out what had happened. We think that JB fell in the water – not jumped on purpose. JB was one of the “old school” guys who always dove heavy and I guess he was compensating for the wetsuit and current. Anyway, JB had 34 lbs of weight on him. His scuba tank was found next to him. It was full of air and the regulator worked fine. He had not securely fastened the tank band on his tank and when he sat on the rail of the boat, his tank must have dropped out and somehow he lost his balance and it pulled him in. It must have pulled the regulator from his mouth but that would not have made a difference. His power inflator hose was still attached to his BC but the hose had bent around a tree branch on the bottom and got hung up. JB had not turned his air on.

We think JB hit the bottom and realized his air was off but could not get his hoses untangled. He might have tried to swim to the surface but couldn't get

free. One shoulder strap was undone and his cummerbund was open like he was trying to get out of it. I know both were intact when he was in the boat, I remember seeing them.

We sent his gear off to be inspected and processed but I don't think they will find anything. I think JB fell into the water accidentally. I think he probably managed to get a breath of air before he went under and went to the bottom really fast. His tank came out and caused him to get hung up. I think he knew what happened and tried to get free but either forgot to release his weight belt or tried to free the BC so he could turn on his air.

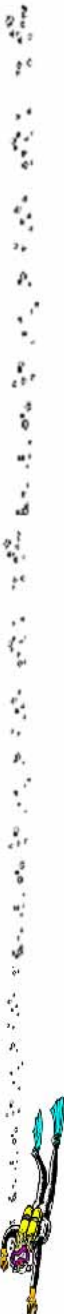
The autopsy report said he drowned.

Anyway, there is a department investigation going on and it looks like Captain Angleton is going to catch hell over this. He was supposed to be in charge of the dive operation. The police report said it was an accidental drowning but our department is turned upside down right now. All of the Special Teams are being reviewed and investigated.



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The EAP Doc I went to see told me I should keep some thoughts recorded over time it is supposed to be therapeutic or some crap. We'll see.

We buried JB a week ago now. It was a nice funeral. Since his was a Line of Duty Death, the media has really played it up. JB was single but his folks are still alive. I talked with them at the funeral for a while. His mom kept crying and hugging the flag they gave her. You could just tell how sad they were. I finally had to make an excuse to leave them before I started to cry too.

It has been 8 months since JB drowned. Captain Angleton took JB's death really hard and got off the team. The attorneys tried to blame him for the accident but ultimately cleared him from criminal charges. Imagine that, criminal charges. JB's family has refused to make any comments against the department or the dive team and even though it was an accident, Captain Angleton was made to look responsible by the media. He was really affected by all of that and took an early retirement. We had a retirement party for him last Friday; he didn't talk much and didn't stay long. Considering



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how I feel, I think I understand.

Our department decided to finally do something for our team and doubled the number of team members we can have. Most of the slots are already filled and our guys are now taking classes every month. Carl is even in an Instructor class. We have all new equipment and a dive team budget. We even have new stuff we never asked for and some of the new equipment we have no idea how to use yet.

We always joked that it would take one of us getting killed before we could by new o-rings. That just doesn't seem so funny now.

They asked me to be a Team Leader and even though I didn't really want the responsibility, I took the position. I cannot get the feeling of helplessness out of my system. We were trained divers and pretty good divers at that, yet JB died. I can't decide if I feel guilty because it took so long for us to find JB or if I feel guilty because I didn't speak up about things I knew were wrong. I just know if I am a Team Leader, I will have some authority to make things safer when I am there. I keep thinking, "If only I had done... something".

Victim Services Within Law Enforcement

William Petty, Ph.D.

"In a free society, we are absolutely dependent upon the aid of these victims to hold the criminal accountable. In return the victim deserves support and fair treatment."

(C.A.L.E.A. Standard 55 Victim/Witness Assistance)

Created in 1981, the long held mission of the Victim Services Division of the Austin Police Department is to respond to crime victim's psychological and emotional needs. This is achieved through crisis intervention, counseling, advocacy, education, information and referrals for victims of crime and trauma, the mentally ill, witnesses and communities. In addition to these primary responsibilities, the Division provides assistance to criminal justice personnel, the community and other non-crime situations. The overall mission is to positively impact the quality of life for the citizens of Austin. Austin has grown immensely since 1981. Still, Victim Services remains the doorway through which many victims, survivors, families and neighborhoods experiencing crime and trauma first receive any social services. Victim Services assisted 16,500 such people.

Victim Services is Structured to Meet the Needs of the Austin Police Department

There are two major components to the service offered by the division, crisis (on-scene) response and investigative support and follow up. This is accomplished through the work of three functional units, Crisis Team, Family Violence Unit and Centralized Investigations Unit.

Crisis Team

Crisis response provides mental health and practical intervention as close to the time of the event as possible. This intervention may include crisis counseling and stabilization, justice support, personal advocacy, emergency placement in shelter or protective services, and information and referrals to other helpful service providers. Crisis Response is provided all day, every day and requires the combined efforts of full time staff and volunteers. To accomplish this round the clock service Crisis Team employs twelve full time counselors. Rotating shifts covered by investigative support staff and volunteer team leaders provides additional coverage.

Most frequently, Crisis Team is requested to respond to victims of domestic violence. After a briefing from the officer on scene, the counselors speak with the victim to obtain an understanding of their needs. At this point, their mental health experience and



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training really becomes crucial. Many of these victims have been caught up in the cycle of violence and control, leading them to believe that they are not able to proceed in life without the involvement of their abuser. Many have lost sight of any options other than to stay in the abusive relationship and hope it changes for the better. Counselors help the victim explore alternatives, giving preference to their personal safety and the safety and welfare of their children, if any. Crisis Team responds to victims of numerous other crime types including child and elder abuse and neglect, sexual assault, robbery, kidnapping, homicide, and assault. All crime scenes are different; each victim has different needs. Crisis team counselors depend on their well-honed assessment skills to provide the best possible service.

Though Crisis Team is devoted to working with victims and witnesses of crime, they are available to respond to requests from any emergency service of the city. When Austin Fire Department or Emergency Medical Services encounter individuals needing mental health support or advocacy services, they are free to

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contact Crisis Team for immediate response.

Investigative Support and Follow-up

Working in conjunction with unit detectives, counselors provide investigative support and follow up to victims and witnesses of family violence, homicide, robbery, child abuse, sex crimes, traffic fatalities, missing persons and aggravated assaults. Utilizing a variety of skills, these counselors are instrumental in supporting victims and witnesses throughout the investigative process, leading towards successful prosecution and conviction of offenders. These skills are also used to assist victims put their victimization in a pro-healing context. For instance, it is important to assist a child victim of sexual abuse realize that the crime was not their fault. The counselor's activities include crisis counseling, information and referral (in person and by telephone), justice support and advocacy, personal advocacy, home hospital and school visits, assistance with Crime Victims' Compensation and Protective Order application, court accompaniment and community debriefings. The two investigative support units are the Family Violence Unit and Centralized Investigations Unit.

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Family Violence Unit

Currently there are nine counselors and one supervisor assigned to the family violence unit. They are the mental health component of a larger collaborative effort, the Family Violence Protection Team. This team brings together law enforcement investigators, counselors, Offices of the County and District Attorney, SafePlace (local domestic violence shelter), and legal services. Most of these functions are co-located. This arrangement employs the one stop-shopping concept that seeks to provide as many services needed by domestic violence and stalking victims as possible. These services include the giving of statements to law enforcement, crisis counseling, applications for orders of protection, emergency shelter, transitional housing, and longer-term counseling. Some of these counselors are housed in the larger police substations throughout the city. This allows them to also assist people in crisis that call or walk into the substations. They also provide victim services assistance to decentralized investigators.

Centralized Investigations Unit

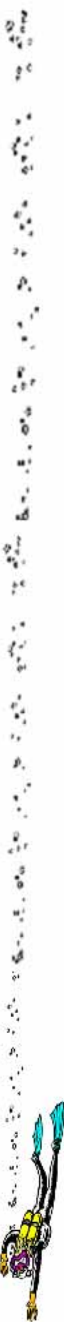
The Centralized Investigations Unit (CIB) supports victims throughout the criminal investigation process. In addition to keeping victims informed of the status of their cases they provide crisis

stabilization, personal advocacy and assist in the application process for Crime Victims' Compensation. Using their special skills, these counselors perform forensic interviews of children who have been abused or were witnesses to violence. They assist victims and witnesses develop composite drawings of suspects and in some cases help arrange for funeral services and transportation of deceased back to countries of origin. These counselors are often housed with the investigative units they support. They work closely with the Traffic, Child Abuse, Robbery, Sex Crimes, and Homicide units. Additionally, they are responsible for receiving those who call in or walk into Police Headquarters. This unit is staffed with seven counselors and one supervisor.

Both crisis response and investigative support and follow-up are often the first point of entry for people into the criminal justice, legal and social service systems. Strong collaborative relationships with other government and nonprofit organizations are essential to providing the necessary continuum of care that victims of crime deserve.

Interagency Collaborations are Essential

Over the years, we have come to appreciate the interdependency of local service providers towards



meeting the needs of victims of crime. Ideally victims could be supported by a single entity throughout their experience in the criminal justice system. This is just not possible, however. Victim Services within law enforcement is forced to depend on strong referrals to other agencies for continuum of care. This amounts to a series of agency hand-offs. The possibility of a disjointed response to victim's needs weakens our ability to be truly attentive to our community. Redundancies in services threaten the effective use of sparse funds needed to keep all of the programs viable. To combat this, local agencies in Austin and Travis County have formed collaborations in which concerned functions form teams to regularly meet and determine the best practices for offering of a seamless provision of services. A few of such collaborations in which APD Victim Services participates are the Family Violence Task Force (from which the Family Violence Protection Team was developed), Child Protection Team, Austin/Travis County Victim Services Task Force, Child Fatality Review Team, Adult Fatality Review Team, and the Central Texas Crisis Consortium.

Reliance on Volunteerism
Like many service-oriented agencies, ADP Victim

Services uses the talent and generosity of a volunteer staff to leverage our ability to provide service. The volunteer pool utilizes local professionals who, by virtue of their education, training and experience, are equipped to function in the intense environment associated with crime scenes and distraught victims. Volunteers are provided 40 hours of training and primarily serve as assistants to Crisis Team counselors. All are subjected to criminal background checks. With additional training, a select few advance to Volunteer Team Leader status. These team leaders function as Crisis Team counselors in which they respond requests for assistance by patrol officers, use police radios, on-board computers and drive unmarked police vehicles. Victim Services volunteers are a group of highly motivated and dedicated individuals. They are required to ride out at least once a month to remain on active status.

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Beyond Austin

Victim Services' resources are dedicated to meet the needs of the City of Austin. APD Victim Services' crisis response, however, has been deployed to other parts of the country when there have been incidents of great magnitude. Events such as the tornado in Jarrell, Texas and the bombing the Murrah Federal Building in Oklahoma

City quickly over burden the resources of local service providers. At these times, outside victim services providers are requested to provide relief to local agencies and continue the provision of on-scene crisis responders. In addition to the examples above, APD Victim Services has responded to such tragic events as the fall of the Texas A&M bonfire, the Luby's Massacre in Killeen, and the Branch Davidian siege in Waco.

A Final Word

It is not uncommon for people in the helping professions to focus their complete attention on the needs of the client. This focus is often repeated several times a day, across several successive days. If not replenished, this helping reservoir will eventually run dry. This process is dangerous to the well being of the caregiver. Repeated and/or prolonged exposure to human suffering weakens the ability to re-establish psychological equilibrium. Eventually the ability to attend to the needs of others is depleted, and the onset of second hand trauma, inevitable. Experience has taught us to never forget to offer the same services as received by victims to the caregivers themselves. Following especially tragic incidents, or a succession of heart wrenching calls it is imperative that mental health professionals not involved in the specific event debrief counselors. Fortunately, APD Victim Services counselors have access to other area mental health professionals who are willing help the helper, to refill the reservoir. For these people, we are thankful.

About the author

William H. Petty, Ph.D. is a native Texan who attended Austin College in Sherman, Texas. He earned a BA in Liberal Arts, concentrating in Biology. Working in the pharmaceutical industry he moved from Texas to Indiana and, later, to New Zealand. His career change occurred when he returned to the United States and entered the doctoral training program in Counseling Psychology at the University of Texas at Austin. He received a MA in Counseling along the way. During his studies there he was trained to provide therapy for children and adolescents, the LGBT community, and university populations. He is currently completing a clinical internship with the Austin Police in the Victim Services and Psychological Services divisions. His research interests include "The Transmission of Cultural Trauma Across Generations". William has been employed with the Austin Police Department's Victim Services Division since 1999 where he began as a Crisis Response Counselor. He later became the Division's Manager, a title he currently holds.

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Critical Incident Stress Management and Public Safety Diving

by Steve Treinish

Many team members are thankful for the support their families or spouses offer, but have the families ever suffered from the result of the divers taking missions? I would guess the answer is probably yes. Have you as a diver or team member ever tried to relate something and why it bothers you to a non-diving spouse or friend, but the spouse or friend just didn't get it?

Traumatic runs can create memories that flood back into our minds after being triggered by something in the present. Sounds, sights, even voices can all bring back memories or thoughts we would rather keep hidden. One problem in the Public Safety Diving world is how personal our diving can get. We can spend quite a bit of time on scenes, and they can get very personal. It can become very hard to keep our ability to go on "autopilot", like we do on house fires, car wrecks, etc. On many of those runs, we go in, we do our thing, and we are gone. On some PSD missions though, we may deal with long recovery times, and may have repeated contact with the victim's families. Our brain will try to muffle some of the stimulus

A defusing is just a very quick reminder talk by one mental health pro, or even a well trained peer reminding the responders of some signs of stress, to expect some signs, and how to manage it initially. It is not a structured debriefing that is done later. The defusings just touch on it, and give responders a way to start thinking some things through.

from these runs, and many times we can. But, if something triggers one of these unpleasant memories, it will flood the mind, and can cause problems in rescuers. The problems can range from mild to crippling and can be both physical and emotional. This is called Critical Incident Stress (CIS).

Dr. Jeff Mitchell, of the International Critical Incident Stress Foundation defines Critical Incident Stress as-

Any situation faced by emergency service personnel that causes them to experience unusually strong emotional reactions which have the potential to interfere with their ability to function either at the scene or later. All that is necessary is that the incident, regardless of the type, generates unusually strong feelings in the emergency workers.

Dr. Mitchell was a firefighter/paramedic in Baltimore, MD, and went on to earn his PhD in psychology, then started the ICISF. He understands what Critical Incident Stress can do in responders, and developed a comprehensive program to help rescuers deal with it. This program has been accepted around the world, at the ICISF Congress in February 2007, there were public safety personnel present from 17 countries.

There are resources and information to rescue agencies that may alleviate some of the Critical Incident Stress problems we commonly encounter after a mission is completed. Most public safety agencies are most familiar with Critical Incident Stress Debriefing teams. The basic make up of these teams is a Mental Health Provider or Advisor, and volunteer Peers. Together, they form a group that not only respond and help rescuers needing assistance, but do it with ideas and terms that we as rescuers are familiar with.

Mental Health Providers can be a source of help for signs and symptoms of CIS, and are one aspect of CISM teams. Mental Health Providers can recognize signs and symptoms with rescuers, and offer solutions or treatment. Mental Health Providers also bring the psychological knowledge to the table, and know how and when it is necessary to seek professional level help.

Peers are also trained to recognize when a one-on-one talk may be helpful. It is important for personnel to know who the CISM peers are, and to seek them out,

even if just for a few minutes to quietly talk. Peers are known, experienced, and respected co-workers, and are usually hand picked by their team. Having “Been there – done that”, they bring the ability to relate to the stressed rescuer into the mix.

Critical Incident Stress Management is used to help rescuers or personnel get through the tough times after missions. When we are most needed, the public tends to view emergency crews in a “movie hero” fashion. When things go bad, the public calls, and they want “rough and ready heroes” to rush in and

save the day; and we usually do. That is our job, and the public expects *us* to relieve *their* stress. That is why they call.

The problem is, if *we* absorb enough stress, or don't deal with it properly, something in us might snap. Critical Incident Stress Management comes into play by learning about this stress, how it affects us emotionally and physically and then learning to manage it properly. Our families usually do not know what “hits” us mentally, but the other team members do. Twenty years ago, when CISM first came onto the

Types of critical incidents
<ul style="list-style-type: none"> • Assault - Physical, sexual, psychological; patient, self, organizational member
<ul style="list-style-type: none"> • Abuse - Physical, sexual, emotional, child; patient, self, organizational member
<ul style="list-style-type: none"> • Life-threatening experience - Usually to self, maybe close coworker
<ul style="list-style-type: none"> • Perception of serious threat - Usually to self, maybe close coworker
<ul style="list-style-type: none"> • Serious injury - Self, organizational member
<ul style="list-style-type: none"> • Suicide and homicide - Organizational member
<ul style="list-style-type: none"> • Line-of-duty injury or death - Self, organizational member (prototypical; usually worst cause of CIS)
<ul style="list-style-type: none"> • Disasters - Natural, man-made, technological; especially if risk or damage involves self, family, or organizational members
<p style="background-color: yellow; margin: 0;">RECOMMENDED READING!</p> <p style="margin: 0;"><u>Critical Incident Stress Management</u></p> <p style="margin: 0;">http://www.emedicine.com/emerg/topic826.htm#section-critical_incident_stress</p> <p style="margin: 0;">by Stephen A Pulley, DO</p>

scene, most firefighters would chuckle about the “shrink stuff”. Now, emergency personnel are being educated about Critical Incident Stress and are more willing to ask for help. Those who are knowledgeable about the effects of CIS are able to recognize signs and symptoms in coworkers and offer assistance earlier.

Many Critical Incident Stress Management sessions are taking place quietly behind the fire truck or cruiser, one-on-one. Even on harder incidents, rescuers generally realize the benefits of Critical Incident Stress Management, and are more willing to take part.

Critical Incident Stress is a relative term. What is critical to you may not be a big deal at all to someone else. “Seasoned” responders can take missions that leave younger members reeling. Rookies and “newbies” just do not have the experience that older personnel have and it is that experience that helps them deal with what they see and do.

It is that same experience that causes us to manifest certain levels of CIS. Dive scenes tend to be more personal than a car wreck or a house fire. We tend to spend more time and involve ourselves more in the mission. Newer divers may not have seen many of the things common to

KEY POINT:
You are a normal person, having a normal reaction, to an abnormal situation.

dive runs, whether it is a badly decomposed body, or a family showing pure, unadulterated grief. The echoes of a screaming mother sounding across a lake can haunt for years.

Critical Incident Stress can be triggered by other events, memories, or even sounds. Team members dealing with drowned children may experience Critical Incident Stress due to the likeness of their own children. Those nasty past runs that get filed away behind mental curtains may suddenly come crashing back upon hearing a scream of anguish, or seeing the picture of the victim being searched for.

So, how or what can happen to us? Quite a bit it seems. Many rescuers will experience flashing memories or scenes being played over and over in their mind. Some will have nausea, lack of appetite, and bouts of insomnia. A common experience is a “short fuse” or irritability at home or work. Further down the line, emotional instability or a feeling of losing emotional control may appear. Some people will talk excessively and for hours, and other will

simply clam up. And if unchecked, Critical Incident Stress can even lead to an inability to function, both as rescuer and person.

Kay Werk, the mental health advisor for the team in the Columbus, OH Fire Department, once told me “Your mind is like a river, and a critical

Most municipalities have some type of **Employees Assistance Program (EAP)** available at no charge for employees AND their immediate family members. These programs are completely private and do not require other team members’ presence.

incident is a logjam. The logjam will back things up, but it should break up with time. The bigger problems occur when the logjam doesn't break up. We try to realize the stress signs and symptoms, and take action to break up the logjam before too much backs up."

A range of "bad" missions for us would include kids, actual witnessed deaths, fellow diver deaths, or Line of duty death, even if it not your team. A Line of Duty (LOD) death of team members or coworkers should automatically activate Critical Incident Stress Management.

A mission that is bad enough to consider possible CIS may need to have interventions before even leaving the scene. On very large incidents, such as bombings or natural disasters, Demobilizations are done right on scene, very quickly, and do not really get in depth, per se. They simply remind a very large group of responders about some of the possible affects they may experience, and some ways to deal with them in a manner considered healthy. These are quick talks away from the recovery site after things are cleaned up, but

The International Critical Incident Stress Foundation, Inc. (ICISF) info and information are available at:
<http://www.icisf.org/>

by doing so before everyone leaves, provides a general way to start a recovery process for responders. This quick talk lets the rescuers start to relax and "decompress" somewhat, but still touches on immediate information they can use.

Off scene, there are ways to deal with the effects of CIS. All CISM sessions are done somewhere quiet, with no interruptions, and always with privacy and respect at the utmost. If anyone is in the room that was not on the run, or not a part of the session, they are asked to leave. A standing rule on most CISM teams is anyone caught talking about what they were told in a session is dismissed from membership. What happens in the room MUST stay in the room, no exceptions. Peers will place themselves around the room, to integrate with the crews. No matter what rank they are there as fellow rescuers trying to help, not bosses and subordinates.

Higher-level officers are not immune from the effects of CIS. Peers in the higher ranks are essential. These sessions are referred to as "deffusings" or "debriefings." Critical Incident Stress Management group sessions are generally set up with a series of questions, with each



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person getting the opportunity to respond *if they choose*. Speaking of any sort of not required, and just being in the room listening can be a source of support to others, especially newer members. Sometimes just one member telling another member they feel the same way can make a huge difference in someone's thought process. A responder just willing to listen may help the younger, less experienced who have not built up their defenses yet. Just as some feel better by talking, some will feel better by listening.

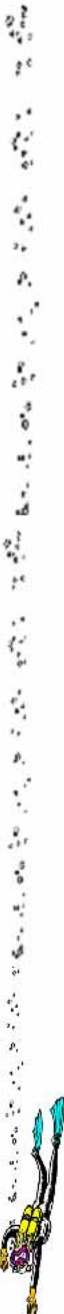
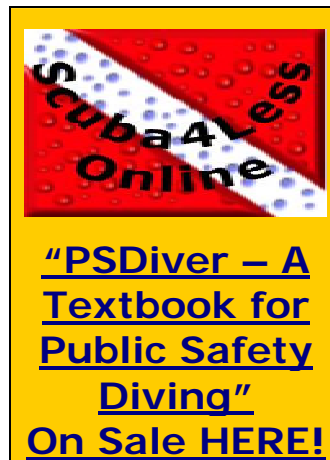
Defusings are done after the incident, but usually just a few hours after. It is very possible for a small crew to start feeling stressed after the initial adrenaline has worn off, but before their shift is over, or before they return home. This defusing is done quietly, and while they may offer some closure to some rescuers, they also allow the peers and mental health professionals some ability to triage people. One rescuer might be so hung on one aspect of the run he cannot get past it, and might warrant further contact from a team member, or a full debriefing may be offered later. Sometimes the entire crew will get enough relief from the symptoms that the process may end with the diffusing.

Debriefings are what more common to responders and most have participated in a debriefing of one sort or another. A Critical Incident Stress debriefing is usually held 1-4



days after the incident, in a location that lets responders and mental health pros talk in calm, quiet manner. Critical Incident Stress Management Peers will also be sitting in a debriefing. Peers are fellow responders selected by the Critical Incident Stress Management team. They generally have good field experience, are respected by others in their field, and have a good manner of dealing with people. They receive training in most aspects of CISM to become peers, and can relate to the mission, the way the responders are feeling, and the way CISM is properly handled. Very bad missions or incidents may require a second debriefing offered a few days after the first one.

Other things that can help include staying away from alcohol in heavy doses. Reality is bad enough at this point, it doesn't need manipulation with outside chemicals. Exercise can be very beneficial, and is a personal weapon of choice. Get copious amounts of rest. Sleep is essential. Tired brains will be sluggish to respond to anything, and your mind needs time to recover. Some insomnia is normal, but continued lack of sleep indicates a further need for help. It is very important to allow yourself to feel miserable. That is what makes us human! Lastly, ask for help. We are way past the days when someone would get heckled because they admit to having problems. Team leaders, other members,



doctors, or mental health groups may all have something to offer.

If a team does not have access to Critical Incident Stress Management trained personnel, there is help. Most larger cities or departments will have some way to contact a team. Many fire, law, and government agencies all consider Critical Incident Stress Management now when factoring needs on large responses, like disaster response, terrorism attacks, plane crashes, etc. The ICISF also has a 24-7 phone number to provide the closest team in an emergency situation. The number is listed below.

If an agency decides to form a CISM team, a properly trained, certified mental health professional should be in place to assist the team. Peers should be hand picked based on experience, mannerisms and professionalism, and attitude. There are training courses for peers in Basic and Advanced CISM, as well as other courses too. The ICISF offers classes worldwide and maintains a schedule on their website. Be aware of using peers that are not trained. An untrained peer, while meaning well, can have an issue blow up in his face by not recognizing deeper problems or other risks. Some other places to get information and knowledge are listed at the end of this article.

With proper pre-mission education and after mission deployment, critical incident stress can be

handled, with a minimum of responder problems. CISM teams are there for the benefit of other responders, and are a crucial part in the well being of emergency personnel. Remember, if you become affected by critical incident stress, there is help. For further information, contact-

The International Critical Incident Stress Foundation- A complete listing of teams, classes, certifications, and information. On the web at www.icisf.org, or call (410) 750-9600. They also offer an emergency line at (410) 313-2473.

The American Red Cross- The Red Cross can send disaster counselors to teams requesting it, and are well known across the world. www.redcross.org, or 1-888-309-9679.

The Search and Rescue association of British Columbia. A very nice website, with good info under the CISM links. www.sarbc.org

Victim Assistance Online – the web presence and point of service delivery for the services and projects provided through Victim Assistance Online Resources (Windsor) Inc. www.vaonline.org/cism.html

Steve Treinish is a firefighter with the Columbus, Ohio Fire Department with 20 years experience in the fire service. He serves as an instructor with the newly formed Dive Rescue Team, captain of the Fairfield County Special Operations Dive Unit, State Fire Instructor, and an advanced CISM peer.

Atlantic OccuPsych – specialists in Psychological Services to Public Safety Employees/Organizations & Occupational Risk Management. www.atlanticoccupsych.com/Pages/firepol.htm

Drowning Accident Survivors and Family Members: Crisis Intervention on Scene

By Nancy J. Rigg

Founder/Moderator, Drowning Support Network

Critical Incident Stress Management (CISM) specialists understand that all drowning deaths and other serious or fatal accidents in the aquatic environment automatically qualify as “critical incidents.” Sudden, powerful emotional trauma can have an immediate and long-term impact on surviving family members and other witnesses who are on scene, as well as water rescue and recovery personnel responding to these emergencies.

Research has shown that the sooner survivors are educated about the impact of trauma the better their chances are of making a healthy recovery, even from the most tragic loss. Water rescue personnel who are well educated in CISM also have a better chance of maintaining a long and healthy career in an environment that is not only dangerous physically, but taxing emotionally.

CISM peer support resources are being made available at an increasing rate to emergency responders nationwide. Unfortunately, for those who are most seriously affected by any given tragedy –

the families – crisis intervention information is scarce, if available at all, and at a time when they most need sensible, accurate information and guidance, they may have no idea where or how to find it.

CISM trained chaplains and crisis counselors need to be woven into the structural matrix of all water rescue and recovery teams, including the pre-planning process. These skilled volunteers can work with pre-set, automatic call-out protocols to avoid confusion and ensure that appropriate resources respond quickly. Crisis counselors can serve as liaisons with the families and others on scene, freeing dive rescue personnel to attend to other issues. They can also work with public information

officers (PIOs) to protect families from media intrusion, especially during prolonged recovery missions. This is something that is frequently overlooked in the pre-planning process, which can result in added stress and trauma for family members who are waiting at the edge of the water for news about their missing loved one.

By integrating CISM trained volunteers into your response

matrix, water rescue and recovery team members can also be buffered from the emotionally draining job of working with the families and others who are invested in the outcome of the mission. Trained



crisis counselors can aid families, watch for signs and symptoms of shock and other physical ailments that may need medical attention, and also keep an eye on the emotional well being of rescue personnel on scene.

Information: Too Much... Too Little

One of the more difficult judgment calls to make is how much information to share with families, the media, and other interested parties, and in what manner the information is relayed. It is rarely helpful to sugar coat the truth, but it can also add unnecessary layers of trauma when “too much” graphic information is presented to families who are aching for news, or when they are visually exposed to their deceased loved ones who may be maimed or disfigured or covered in silt and grime. If possible, remains should be secured in a closed body bag before being brought to the surface where both the media and anxious relatives of the victim are watching closely.

The media does not have an automatic right to cover every phase of the recovery process. Having both a PIO and crisis counselor on scene can help control interaction with members of the media who feel entitled to every aspect of “the story.” PIOs can aid the media in “getting the story,” in a way that is professional, but not intrusive either to the surviving



family members, or the deceased victim, who also deserves protection and to be treated with dignity.

CISM trained counselors, who also need to be educated in water rescue and recovery, can evaluate how best to interact with the survivors and what details to share with them. It is important to have a collaborative effort. Although it is not wise to withhold information, neither do you need to batter someone with gruesome details that can add to the

post-traumatic stress cauldron already brewing.

If a family member feels compelled to view their loved one’s remains, then this needs to be aided, not impeded, but the request should be

filtered through the issue of trauma exposure. An on-scene crisis counselor can assist in making this process the least vividly traumatic possible.

Death and dying pioneer, Dr. Elisabeth Kubler-Ross, always stressed that while viewing remains must be a choice open to the family, rescuers can make it less traumatic by making the remains as clean and presentable as possible. If the face is disfigured, Kubler-Ross recommends having the family view an arm or article of clothing. If there is severe decomposition, Kubler-Ross recommends against viewing the remains on scene, but rather viewing

them later in the morgue, using photos or other appropriate means. If family members can be accompanied by the on-scene CISM trained counselor when they go to the morgue, this can help maintain continuity of care and ease the shock and trauma of this experience as well.

Building Resources

In today's world, rescuers should not be expected to serve in the capacity of on-scene crisis intervention specialist, which is a discipline that requires specialized training that meets current disaster mental health standards. Some cities, including Los Angeles, have developed highly trained volunteer community crisis support teams that respond to homicides, fires, major traffic accidents, mass casualty incidents and other accidents and emergencies, and assist local agencies with death notifications. Volunteers receive specialized training necessary to provide immediate on-scene crisis intervention, emotional support, and referrals. Many volunteers are multi-lingual and sensitive to diverse cultures.

The American Red Cross is another invaluable resource through their Disaster Mental Health program. Tragedies do not necessarily need to be on the scale of a major disaster to involve skilled Red Cross specialists.

Nancy created a handout for victim's family members and friends. You are welcome to copy it and use it as your own as part of your service to the families. To download the file, click on the link below.

**[WHEN YOU HAVE LOST A LOVED ONE
IN A DROWNING ACCIDENT](#)**

For rescuers, the International Critical Incident Stress Foundation is an invaluable resource, with information about CISM programs and peer support teams nationwide.

At the very least, water rescue and recovery teams would do survivors a tremendous service by giving them a simple printed hand-out, like the one developed by the Drowning Support Network, with additional crisis counseling resources listed in the local community. Flashbacks, nightmares, and other symptoms of post-traumatic stress are normal in the aftermath of a sudden and traumatic drowning or other aquatic accident, but this is not well understood in the general community. Education is vital.

First responders are the first stop for surviving family members on the road to recovery. Your interaction, pre-planning, and coordination with crisis support resources can lay the foundation for families to begin a healthy recovery process even in the aftermath of the most devastating of personal tragedies.

ADDITIONAL INFORMATION:

Drowning Support Network

<http://health.groups.yahoo.com/group/DrowningSupportNetwork>

Los Angeles Crisis Response Team

<http://lafd.org/crt.htm>

How Much Risk Are You Willing to Take?

By Steven M. Barsky

Divers who work in public safety are accustomed to assuming risk as a daily part of the job. However, when you take risks that unintentionally expose others to dangers, you must think carefully about what you're doing, to see if those risks are justifiable.

Next to drowning, being exposed to contaminated water (water that contains biological, chemical, or radioactive materials) may be the most common risk that all public safety divers face. However, many public safety divers don't give contaminated water much consideration, or fail to recognize the dangers it may contain. There are many instances where divers have been exposed to contaminated water when they didn't have to take that risk, or with some common sense actions, could have limited the risk.

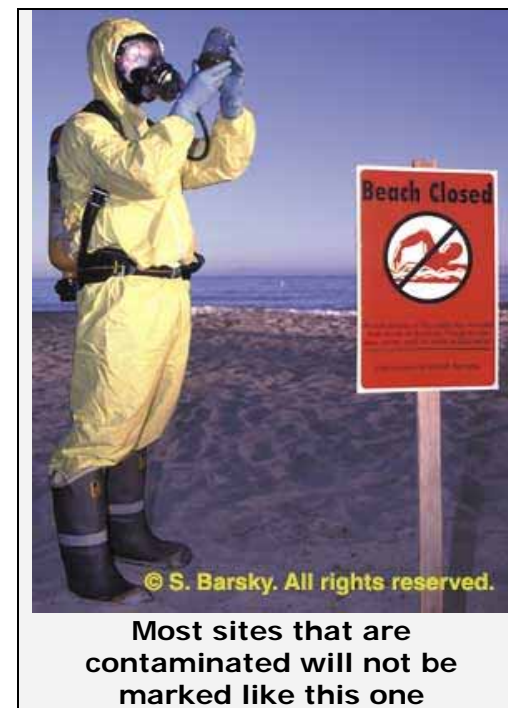
Why is Contaminated Water Dangerous?

As a diver, your exposure to contaminated water can be very high. If you are wearing a wetsuit, there are many chemical and biological contaminants that can be absorbed through your skin or enter through cuts or wounds. If your mask floods, you can inhale contaminants through your nose.

If your regulator is leaking, or you take your regulator out of your mouth, you can swallow or inhale contaminants. Just because the water doesn't look bad, or smell bad, doesn't mean that you can't be exposed to something that can cause permanent disability or death.

Some biological contaminants, such as fecal coliform bacteria (found in human and animal wastes) will usually only make you sick for a brief period, but there are others such as hepatitis or cholera, which can cause long term disability or death. There are also toxic dinoflagellates such as *pfisteria piscicida*, which are common along the southeastern seaboard of the U.S.

Part of the danger with exposing yourself to certain biological hazards (like hepatitis) is that they may not just infect you, but that you can also transmit pathogens to your family and



Most sites that are contaminated will not be marked like this one



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friends. When you expose yourself to these risks, potentially you are exposing everyone with whom you may subsequently come into contact. How bad would you feel if you infected your children with a permanently debilitating disease, or worse?

Toxic and cancer-causing chemicals enter the water through a variety of methods. These may include accidental spills, intentional illegal dumping, and run-off from streets and agricultural areas. In flood situations, septic tanks can overflow causing massive amounts of raw sewage to enter the run-off areas.

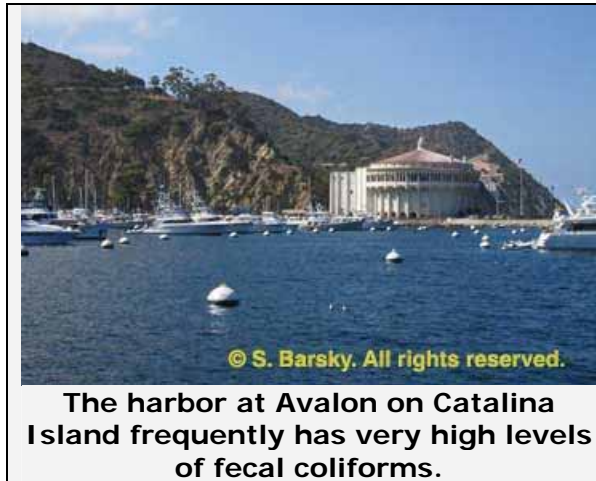
Scientists agree that the single largest contributor to the pollution of our ocean and other waterways is what is known as “non-point source pollution.” Non-point source pollution is the combination of everything that runs off our lawns, streets, farms, and waterways. It includes anti-freeze and oil from cars, pesticides and fertilizers from your lawn, pet wastes, paint flaking off houses, etc.

There are no records in the literature of divers who have suffered an immediate death as a result of exposure to toxic chemicals underwater; but there are two published reports of divers who have suffered cancer as a result of exposure to carcinogens while diving. The major epidemiological

report in this area involves Israeli Navy divers who were diving in the Kishon River (a major port) over a period of many years.

Divers who work in harbors are exposed to toxic boat bottom paint, battery acids, fuels, and other

chemicals that are intentionally or accidentally dumped there. Out of 682 Israeli divers who were followed for an extended period, 58 suffered tumors, and 21 (36%) died as a result of exposure. These are not good odds. There are also numerous anecdotal (undocumented) reports that I have received of divers and dive teams who have unusually high rates of cancer and other illness.



Contaminated Water is Everywhere

Probably the single most serious problem all public safety divers face when approaching a new dive site is trying to figure out whether the water is contaminated or not, and understanding what risks they are assuming when exposed to different types of contaminants. In some locations, there will be signs posted that identify the water as being contaminated, but in many places, there will be no warnings and no obvious signs of contamination. Most divers think of Catalina Island as one of the best places to dive in California, and it is one of my favorite spots. Yet, the harbor in Avalon appears consistently on the list of “hot spots” for high levels

of fecal coliforms, especially during the summer months. The water looks clear and it doesn't smell bad, but it can definitely make you sick. And, there are many other locations where the water is deceptively attractive, but hidden dangers lurk.

Several years ago, I was invited to present a seminar on contaminated water diving to the Canadian Navy, at the Defense Research and Development Canada (their equivalent of the U.S. Navy's Experimental Diving Unit.) It was the position of several of their officers, that since they didn't know what was in the water in most locations, the only safe way to dive was to assume that everywhere they dive is contaminated and to use a full-face mask and dry suit with attached dry hood and dry gloves as the minimum equipment for all of their dives. While this might seem a bit extreme, it's not an unreasonable approach.

In many areas, divers can enlist the help of their local public health agency or water quality department to get answers on what levels of contamination are present in their area. Ideally, dive teams should be in contact with these agencies regularly to find out the latest water conditions and potential levels of bacterial contamination.

How Can You Protect Yourself from Contaminated Water?

The best way to protect yourself from exposure to contaminated water is to avoid diving. This is the only 100% foolproof method of avoiding contact with contaminants.

By using a diving helmet with a mating dry suit and dry gloves you can effectively isolate yourself from most contaminants.



As a public safety diver, your choice of what equipment to use is normally dictated by what equipment your department provides. Haz-mat personnel don't usually provide their own equipment, nor are asked to enter the hot-zone of a contaminated site without proper protection. Yet, public safety divers routinely are asked to make dives, or volunteer to make dives, without being adequately equipped.

A diving helmet using surface-supplied air, with a mating dry suit, and attached boots and gloves, completely encloses the diver and provides the most protection for contaminated water diving. Obviously, using this equipment requires a big budget that includes specialized training and regular practice to maintain proficiency. Agencies like the Los Angeles County Sheriff's Department and Cuyahoga (Ohio) Fire Department use this equipment.

Full-face masks with scuba, and dry suits with attached dry hoods, boots, and gloves, are the most commonly selected gear for diving in polluted water, for their portability, economy, and ease of use. This equipment does not provide the same level of protection as a helmet with a mating dry suit, but in situations where it is known that the exposure will not cause long-term disability or death, it's considered acceptable. The hood and dry gloves are essential to help to protect the diver from chemical contaminants that can be absorbed through the skin.



wetsuit?" That's a tough call and nobody can make that decision for you.

In a potential rescue, you'll need to evaluate the situation quickly, but accurately. What is the likelihood you will be able to save a life? Do you know what contaminants are present? If you're exposed to the contaminants, what's the worst thing that can happen to you?

How long will you be exposed to the contaminants (this is normally impossible to predict)? How long will it take medical and haz-mat personnel to arrive at the scene?

It's important to remember that there is no one set of diving equipment that is compatible with all chemical agents. There are also numerous extreme hazard pollutants that should be avoided at all costs. If you're counting on your dive gear to protect you, it's vital to check the manufacturer's chemical compatibility tables to determine what environments are considered acceptable for exposure and for how long.

If you elect to dive with recreational scuba gear (not recommended!) there are some things that you can do to help protect yourself (but there are no guarantees). For starters, keep your regulator in your mouth at all times; when you enter the water, while you're in the water, and until you are back on the boat or dry land. Never remove your mask while you are in the water and don't allow water in to defog your mask. (Don't dip your mask in the water to defog it before your dive either! Use a commercial pre-packaged defogging solution.)

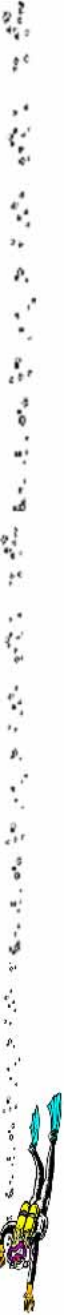
Of course, the question always arises, "What do I do if I am first on the scene of a potential rescue and the only equipment available is ordinary scuba gear, i.e., a standard regulator, scuba mask, and

Editor's Note:

Dry Suits with FFMs while offering more protection DO NOT provide the type of true exposure protection that is possible unless a DRY HOOD is used!

to defog it before your dive either! Use a commercial pre-packaged defogging solution.)

Stay on the upstream side of any source of pollution, such as a



leaking gas tank (good advice whether you're diving with scuba or surface-supplied gear). If you're diving any form of scuba, make sure that you reserve enough air to return to the surface and exit the water, as well as enough to cover any contingencies (use the rule-of-thirds used by wreck and cave divers). Divers using full-face masks with scuba should be equipped with a manifold block and a bail-out bottle as a back-up air supply.

When you exit the water following a contaminated water dive you will need to go through decontamination, whether you have been diving with scuba, or any of the other types of equipment listed here. Do not remove your equipment until you have gone through adequate decontamination. It's vital to practice decontamination procedures with your local haz-mat team.

For biological contamination, the most commonly used decontaminants include Betadine, Zeppamine, and tincture green soap. Different chemical agents will require various neutralizing agents depending largely upon the specific chemical agent.

Should You Dive in Contaminated Water?

Obviously, if you don't have to dive in contaminated water, you should avoid it. As a diver, you always have a choice not to dive, if you feel the situation is unsafe or beyond your training and abilities.

Unless you're performing a rescue, if you don't have the proper equipment, then diving in contaminated water should be avoided at all costs. Even if you do have the proper equipment, there are still serious risks, especially when you are diving in chemicals that can cause long-term disability.



The decision to dive in contaminated water is a highly personal choice. Only you can make the decision, considering whether you have the right knowledge, equipment, training, and attitude. My advice is to be conservative, because your life and the lives of those you love, may depend on your decision.

Steve Barsky is the author of *Dry Suit Diving, 4th Edition*, *Diving in High-Risk Environments*, and *Investigating Recreational and Commercial Diving Accidents*. His website is located at www.hammerheadpress.com.



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How WE Recognized the Need to Change

Bob Kinder

We have all spoken to the medic, police officer, fire fighter who has many years on the job; conversations that start or end with "I remember how we use to do it". How many fire fighters on the job today remember not using air packs, or medics whose only priority was load and go, or police officers who associated crack with a butt joke.

As a Public Safety Diver, I remember the day when double hose regulators, J-valves and swimming to the surface was the thing. We rarely wore weight belts and did not know what a BCD or buoyancy vest was. We used what we had, it worked and we had fun. If the water was cold, wet suits came in many colors as long as you liked black. This was diving in the old days and my contribution to "how we used to do it".

I remember seeing our county's dive team the first time at a drowning back in 1979. A couple of guys drove up in pickup trucks pulled out a Dacor Pacer regulator with a depth and pressure gage console and inflator hose, the bag had a

Dacor BCD, Mask, and weight belt, wet suit, steel 72 tank with J-Valve. As the new medic and not having any equipment with me, just watching the search get underway was hard. Two divers eventually got into the water and swam around until they ran out of air. No real search patterns, no interviews, no real dive plan.

The reason I bring up this call is that in many ways Public Safety Diving has not changed much. For those reading this magazine you have taken the first step, you have opened your minds to learning, you have a desire to learn. If you look at your own team and this type of response is familiar, then consider making a few changes. For our county, change was slow, each of our 6 rescue squads had it's own dive team, and two sets of equipment.

We had a few drownings each year, but no one ever practiced. You took a class and learned to dive, what

else was needed? EMS did not have a dive team we took care of patients. Of course a few of us enjoyed diving and would respond to the drownings in the county to lend a hand. More often than not, we were the more active divers, taking time to practice, making fun dives,

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staying familiar with our response area. During high activity weekends we would throw some gear on the ambulance - just in case.

Our skills and willingness to dive caused my partner and I to respond to our county's first PLANE in the LAKE call. In 1985 a Cessna making a low level flyover misjudged his altitude and crashed in 85 feet of water. As good PSD's we grabbed our gear and responded in our pickup trucks, (sound familiar?). A fisherman gave us a ride near the spot and said "I have something funny on my fish finder jump in and see what you get". We threw on our gear and descended with our puny little dive lights probing the darkness. On reaching the bottom we found paper and debris and we able to follow the trail right to the plane. We found the pilot after 10 minuets and extricated him for a quick trip to the surface. We immediately noticed that our skin had started burning, and not just a little. On reaching the surface we tied off the victim jumped out of the water and stripped, both of us had chemical burns from deicing chemicals. Lots of soap and fresh water flushing stopped the burning. But a lesson was learned, wet suits and chemicals are not good for a scuba diver. A year later this lesson was repeated when a couple of divers that stumbled on some chemical drums, near a local bridge. Remembering the burn, my

partner and I purchased dry suits.

The county team just kept doing the same old thing with the same old gear. This continued until 1994 when a good EMA director recognized a need for change. The first step was to make one county-wide team. The idea was to bring all the gear together, all the divers, and put them under one commander.

This was a good first step, but you should have heard the screams. They got even louder when folks had to start attending meetings, and go on training dives. We learned search patterns, refreshed on dive tables, and started making fun dives. Our divers started getting in the water for more than just finding a body. As a result of the increased time in water and training, we actually started finding what we where looking for when we were called out for a mission. We asked for funding for a few simple

things like weights and rope; total cost 600 dollars. You would have thought we had asked for a million dollars.

But at the year ended the county had a few dollars left over and we got the rope and a few weights. The next year a murder occurred and the body was dumped in our county. For the first time ever we set up a real search grid, and our team

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plowed the bottom finding every bottle cap and beer tab in the grid. We never turned up evidence that assisted the case but we proved that you could really search a designated area.

The Sheriff's department was impressed with how well the search had been conducted and made favorable comments to the powers at the top. We got a few more dollars added to our budget and purchased newer BCD's, with integrated weight systems, better lights, and added an alternate air source- an additional second stage. And yes added a few more wet suits.

While this had been going on I made a few extra bucks performing commercial dive jobs using SCUBA. Back in the day, a commercial diver used heavy dress or SCUBA and it depended on your instructor and the company you worked for what equipment you used. In 1993 I used a FFM (full face mask) for the first time with Divecomm wireless communications on a valve job. It was great; the folks on the top could help get the valve in the right position and talk me through positioning while I was underwater. I had to save up and buy one of these gadgets for myself.

This occurred just prior to the murder / body dump, and I used the

new gear during the underwater search. While glad for the new BCD's and an alternate air source, little did we know that a few folks had taken a hard look at the FFM and communications gear. A year passed and then several folks from the Police and other rescue squads started asking for underwater communications and FFMs on our behalf. In 1996 there was extra money at the end of the year, we were asked what we needed for the dive team and we said – communications gear. Next thing we knew, the bids went out and 3 EXO-26 BR masks arrived with OTS wireless communications and a surface unit. It took some time for our divers to get used to the new systems.

Working for a commercial dive company has its advantages. Earlier that year our company attended a conference and looked at all the new goodies. The vendors provided a wealth of information, which was stored for later use. Our company was performing a number of inland diving jobs that required a change to surface supplied air and the use of video equipment. The job requirements for using surface supplied air enabled several of us to attend training sessions on the company's various systems. In no time the commercial dive company embraced this as the only acceptable way to work underwater.



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Our team then had the “Drowning from Hell”. It was in the wilderness corridor, in a class 5 rapid, and we could not locate the victim. Our local diving contractor was contacted and agreed to loan out their new Video Camera system. The county assumed liability for the equipment and we borrowed it for the duration. We had to pack in the camera equipment and a cobbled together small surface supplied system, with 4 wire communications.

We managed to locate the victim in an area that was not accessible for recovery, but the victim’s father was persistent. Another team was asked to check out the area, to confirm the victim’s location. Prior to returning to the river I remembered a system made by Deep Sea Power and Light that was more portable and did not require a generator for use, a call was made, and once again the commercial dive guys came thru. A loaner system was sent in that would fit inside a 1 ½ inch diameter pole. Both teams worked to relocate the victim in the end she still was not accessible. We were finally able to make a recovery after more than a month. This was high profile incident, and the powers at the top saw wired communications, surface supplied air diving, and diver carried video at work.

The next year we received communications rope, an Amron Two-Diver Radio, and the same model camera system we borrowed from Deep Sea Power and Light. No surface supplied air yet, but we had a

lot of other good equipment that improved our safety. About this time Steve Barskey had started speaking loud and clear about the risks of diving in Hazmat conditions and the associated hazards to our health.

Within a year, our county had an 18-wheeler crash into a major lake.

A recovery of the driver was made using FFM, Dry Suit, Hard Wired Communications, Dry Gloves, High intensity Lighting. This time there were no chemical burns, no nasty chemicals in our mouths, and the Hazmat team did a fine job of decontamination. Our biggest problem was using scuba for the air source. In less than 24 hours our local commercial dive company had the job of recovering the truck. Time to change hats, now diving as a commercial diver, using company equipment I was back in the water. Once again the big wigs started looking at what was going on. My boss took time to explain the safety advantages of surface supplied air, and how if we were going to use communication rope then we should also have an air source. They watched what was going on listened to the communications between the divers, crane operator and diving supervisor finally agreeing that our divers needed the added safety offered by surface supplied air.

No we did not get a blank check. For the next two years we purchased equipment and supplies until we had two umbilicals, with an air supply hose, pneumo hose for depth, a communications wire and strength

member, as well as a two-diver air control box. We also purchased gas blocks made by Kirby Morgan, allowing for an emergency air supply. We started training with these new systems and found all kinds of tricks that made searching on SSA our preferred method of splashing divers. We changed our protocols to require SSA on all cars in the water. This system also helped support our argument for change from wet suits to dry chemical resistant suits, manufactured by Viking.

We lobbied for and finally got commercial dive harnesses and then modified them by adding BCD's, allowing our divers to become neutral while searching. We spent more on the Divex harnesses than for some of the other brands but figured that we could use them for river diving or confined space diving in the future. This choice in harnesses allowed our team to repel a diver down a cliff to affect a recovery and later search 2 different wells for evidence in a murder. We learned from each call, from commercial divers and from experts in their fields. We kept changing based on perceived or actual risks, providing our divers greater degrees of safety. We started this change without a countywide team, using rudimentary basic equipment, now we had great gear but still had room for improvement.

Law enforcement became educated as to our capabilities and how we assessed risk. A drug runner dumped cocaine into the lake as he ran from the law. We were called to make a recovery of the evidence, some of which was floating. The officer remembered a conversation concerning the risks of handling or being exposed to cocaine in the water, and as a result, we made the recovery fully dressed out. No skin contact occurred and the evidence was presented to a happy officer with zero exposure to the diver.

All this leads to our final big equipment push; once again an 18-wheeler runs off the highway into a bridge bent and submerges into one of our lakes. I had been diving a company Kirby Morgan 27 and had finally purchased my own helmet a brand spanking new KM-37 with a mated Viking Dry suit. The first commercial job was pure heaven, two dives real comfortable, then the truck accident happens. This time I am able to respond with a fully encapsulated diving system, to a scene with contaminants all over the water.

That night we dove for five hours, performing bridge inspections, located the victim, and even calculated rigging requirements using diver carried color video. This capability



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resulted in reopening of the bridge 24 hours sooner than expected. A state bridge inspector was able to view the damage to the bent and direct the diver during an under water inspection. The Highway patrol and coroners office was able to direct the underwater investigation and the crane operator was directed by voice and camera as the load was rigged.

In the end our department destroyed over \$9000.00 worth of equipment that had to be replaced due to contamination and time limits being reached on several of our dry suits. But there were no injuries. During the debrief the question was asked what equipment will be needed in the future based on this call. Our answer was Helmets mated to dry suits rather than FFM for contaminated water diving, an ROV to assess the underwater risks prior to deploying the diver into a contaminated water dive, and Helmet mounted video cameras.

Over the next three years, we managed to get this requested equipment, set up a training regimen that covered basic skills, but allows for advancement into more advanced equipment as divers' skills progress. It now takes the average diver 3 years to gain proficiency with all of the diving systems. Not all divers will want to or

are able to use all of the diving systems. This being said, as we advanced in skills and technology, our need for topside support also increased. This created positions for non-divers on our team and now our surface support crews are just as involved in the divers' safety and the success of the mission as our divers.

This path can be the path of any team. You must recognize the need to change how you dive just as fire fighters accepted the need for air packs, and ambulance drivers became medics and with ALS units bring the emergency room to the roadside. Part of your development will be based on the risks in your response area and your ability to convince the folks with the money that you must change. Use OSHA standards to support your need for safer equipment. Since last August, you now have a confirmed public safety diver exemption that may protect you from a fine, but it will not protect you

from injuries or death, when making more than basic dives.

Public Safety diving is closer to commercial diving or scientific diving than it is to recreational diving. Why do so many dive teams continue to dive like recreational divers? Part of the reason is budget, part is



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ignorance, and part is “we have always done it this way”. The starting point is basic scuba gear and training. With new technology and equipment, there may not be an end. Helmets mated to dry suits, Surface Supplied Air and Hardwired Communication with video capability is where we are now – but there will be something new and better just around the corner. Just remember with more advanced equipment, comes a greater responsibility to train and remain proficient. The cost in dollars will be higher than for basic SCUBA equipment, but the increase in diver safety is definitely worth the expense.

Technology Application for Dive Team Situational Awareness

G. Grant Fletcher III - BlueView Technologies Inc.

One of the most common concerns voiced to me by Dive Team Leaders over the last two years is the ability to track a diver or dive team members, and have real-time situational awareness from the surface. The technology to do so now exists in a portable affordable package.

As we know, when a diver is in trouble it is essential to have the best information to determine a course of action in a timely manner that will help the diver, and not put others at risk in that effort, especially if it is an air emergency. Using the BlueView Miniaturized Multi-Beam sonar a team leader can now see sub-surface with real-time imagery to guide

a rescue diver to the distressed diver even in turbid waters.

For general situational awareness or Search and Recovery, the ability to “see” underwater from topside is a wonderful tool for dive team safety, efficiency and mission success. Last year outside the Port of Los Angeles divers combed the bottom for several hours in zero visibility looking for a drowning victim. The Port of Los Angeles police arrived on scene with their boat mounted BlueView P450E system and were able to guide the divers to the body within 11 minutes of deployment. Videos of this and other uses are available at BlueViewTech.com.

The P450E-15 and P900E-20 systems have maximum ranges of up to 140 meters and 50 meters respectively, and can be deployed on boat mount, ROV and Diver Hand Held systems. The base sonar systems start at \$21,500.

An Optimal Combination of Technologies

by Sgt. Wendell Nope, Utah DPS Dive Team Trainer

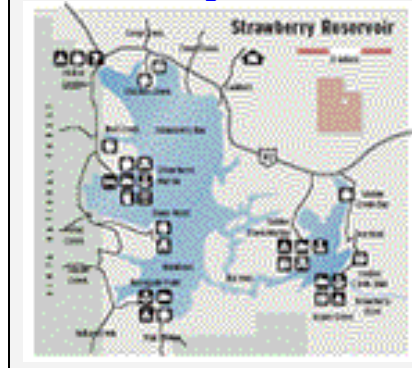
Side-scan sonar, sector-scan sonar, remotely operated vehicles, and divers ... at first glance one might think that these technologies are in competition with each other. I suggest that they complement each other. This is certainly the experience of the Utah Department of Public Safety

Dive Team in a major deployment over an eight-day period s in November 2006.

A young couple and two friends began their day on 8 November with intentions of fishing on one of Utah's most well known high-mountain fisheries, Strawberry Reservoir. Their flat-bottomed aluminum fishing boat served them well until the weather suddenly changed for the worse. Strong winds quickly produced waves that swamped the boat and left them on their own in the frigid water. The conditions were not in their favor: strong winds and waves dashed against them as they swam against the wind/waves, the 40+ degree water drained their body heat, and they eventually slipped below the surface as they attempted to get back to the boat launch. Their two companions from the fishing boat were able to make it to the opposite shore safely by swimming with the wind and letting the waves work in their favor, even though their chosen route appeared to be a further distance away.

Local Search and Rescue assets, including numerous volunteers, were deployed the moment the survivors reported the incident. A rapid sweep of the shoreline produced no sign of the young couple. Unfortunately, no good "Point Last Seen" was evident, but a huge search perimeter was nonetheless established. The Wasatch County Sheriff's Department, under the command of Chief Deputy Todd Bonner, quickly

Strawberry Reservoir



recognized the immensity of this search and sent out a request for all possible manpower and technology to assist. With the winter freeze approaching, this couldn't have been a wiser move. Within mere weeks, Strawberry Reservoir would normally be

covered in a layer of ice, sometimes more than three feet thick. A rapid and efficient search and recovery effort was critical, or else the alternative was to wait until spring. No one was willing to accept that alternative and a determined sense of urgency settled in among the searchers.

The Sheriff's Department maintained a marine unit, which consisted of

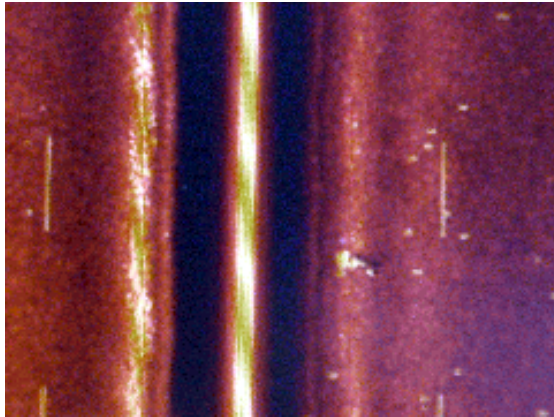
watercraft and surface personnel. The neighboring Summit County Sheriff's Department, under the command of Captain Alan Siddoway, responded to the call with a sophisticated ROV system. The Utah Department of Public Safety Dive Team, under the command of Captain Doug McCleve, responded with a side-scan sonar unit mounted on its Almar Boat, along with its team of eight divers. Of note is that this is a front-mounted stainless steel towfish built



heavy enough to cause the fish to 'fly' directly under the boat, regardless of depth.

A strategy was developed which seemed to make the best use of each asset's strong points - sonar, ROV, and divers. The side-scan sonar would be used to sweep the search area a quadrant at a time. When a viable target was identified by the side-scan, a buoy would be tossed out and the ROV (deployed from another boat) would go to the site and check out the target with its video camera. Then, the divers would initiate the recovery when a body was confirmed.

Over the next two days, this procedure was employed. No divers were used for the first couple of days. The ROV was used to determine if a possible target was a log, debris, etc. Just at dark, on November 10, the ROV settled down next to the final viable side-scan target of the day and confirmed it to be a human body. Chief Deputy Todd Bonner called for a briefing in the command center to establish a dive plan for the recovery. The body was in 90' of near-zero visibility water and darkness was settling in, as was the below-freezing night temperature. As a dive plan was



being discussed, all these elements suggested waiting until the next day to do the dive. Then came a startling announcement ... the body had a thin layer of silt on it and did not have the appearance of either of the two intended victims!

After a brief discussion with the Chief Deputy Bonner, the ROV operator offered another option. It might be possible to grasp this unknown victim's clothing with the 'manipulator arm' and bring him to the surface via the ROV. The consensus was to make the attempt.



Using the video camera to carefully guide the manipulator arm, the victim's clothing was grasped and he was carefully brought to the surface. Dental records subsequently showed this to be a victim of a 2001-drowning incident, whose body had never been found. Due to the climate and water conditions, this was considered a



huge success, although it wasn't one of the victims being sought after.

A strategy was adapted with this new option. The side-scan sonar would ID a target; a buoy would be tossed, and then keep scanning without stopping. This increased the coverage considerably. Since they were known to have been dressed in thick winter clothing, the ROV would attempt recovery of the bodies, and so it continued until the next day, when a winter storm struck.

After three days of storm, the weather finally cleared and our operation resumed. The new strategy continued to produce viable side-scan sonar images that were then checked out by the ROV. The combination of the two technologies allowed almost non-stop imaging by the side-scan. Then, an image showed up that was so clear it even displayed what appeared to be a head, arms, and legs. The ROV deployed to the buoy and dove to the bottom. From its camera was clearly seen a human body, except it was in the advanced stages of decay. Shortly after, the side-scan imaged what appeared to be a large boat and then later, another body. Chief Deputy

Strawberry's Toll

Six people disappeared in three separate mishaps between September 1995 and November 2006 on Strawberry Reservoir. Searchers have recovered the bodies of five:

- * **Catheryn Roundy**, 23, who was in a boating accident with her husband on Nov. 8.
 - * **Steven Roundy**, 29, who disappeared with his wife.
 - * **Drake McMillan**, 46, who was last seen diving from a boat in August 2001.
 - * **Phillip Shepherd**, 26, who disappeared with two companions in a boating accident in September 1995.
 - * **Daniel Maycock**, 19, who disappeared in the 1995 accident.
- Still missing is Austin Lloyd, 19, who disappeared in the 1995 accident.

Bonner then remembered an incident from 1995 in which three young men drowned in a boat crash and had also never been recovered. After careful consideration, the ROV was chosen to grasp the clothing of one victim and recover him.

Just as the body broke the surface, a wallet containing ID floated away from the body and was able to be recovered. This was instant confirmation that this was the site of the 1995 boat crash. The second body was then recovered via the ROV in a similar manner. Although both bodies were partially skeletons, the intact clothing caused them to remain relatively intact. I would like to stress that it is a tribute to the skill and patience of the ROV operator in both these cases, or the bodies would certainly have

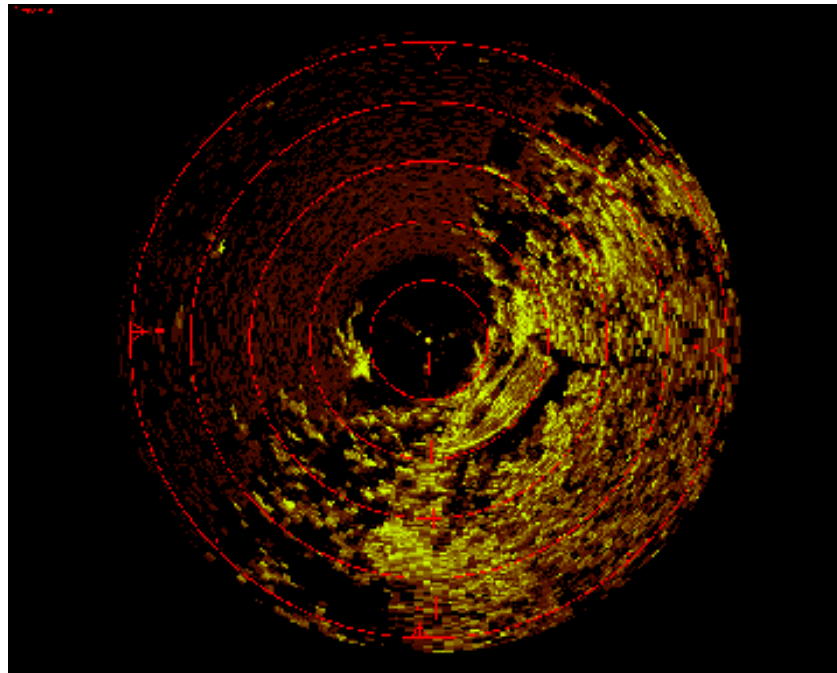
broken apart. The third victim of this crash was not found near the boat and remains unaccounted for.

Finally, on 17 November, the bodies of the young couple were located by the side-scan sonar and recovered via the ROV. Their images on the computer screen were not nearly so human-like as the previous three bodies. Nonetheless, their

recovery via ROV was simple, as their clothing was bulky and easy to grasp, there was no decomposition, and the bottom was free of debris.

Some tremendously valuable lessons were learned from this incident. When side-scan, sector-scan, ROV, and diver technologies are employed in collaboration; a most efficient search and recovery operation can be conducted. Over 12.5 square miles of lake bottom were searched during this deployment. It is very, very beneficial to have an ROV with a manipulator arm to make a recovery, especially in deep-dark-frigid water.

In situations where trees or debris block the ROV's access, divers are the answer. In cases where the body is likely to break apart, divers are the answer. If no manipulator arm is available, divers are the answer. If criminal behavior is suspected, divers are clearly the answer. In most types of recoveries, divers are necessary to facilitate a proper recovery. In fact, during the Strawberry Reservoir deployment the ROV got tangled up in a rope attached to the submerged boat. Divers were gearing up to go down



and free it, when it broke free of the entanglement.

Lastly, when an ROV has no manipulator arm or if debris is present, a diver guided via voice-comms to a target via a Sector-Scan Sonar unit it is one of the most efficient practices one can imagine. The diver may be guided to items as small as handguns. This is recognized in the graphic when you realize the slats in the floorboard of the submerged boat are easily recognized.

Finally, the overall objective of this article is to present issues relating to these technologies being used to complement each other. The deployment itself was quite fantastic, but the strategy was only successful because of the willingness and inspiration to use all the available technologies to enhance one another.

Further questions or comments may be directed via email to Sgt. Wendell Nope at wnope@utah.gov.

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PROPER and CONSISTENT TRAINING

Kevin LeVezu

Public Safety Dive teams nationwide are examining their training programs, their operating guidelines and their team roster qualifications. What are they looking for? Panic prevention.

Panic is a natural reaction to the unknown. When a person panics, their primitive brain takes over. This has been known for many years since initial studies on reaction to stress were conducted by the military after WWII. In more recent studies of police officer's responses to deadly force situations conducted in 1999, researchers found that the body's unpredictable responses to stress and fear of death causes the rush of adrenaline and increased heart rate to make a person "the most clumsiest". In other studies, the response is referred to as Survival Stress Reaction (SSR).

In public safety diving, black water, searching for and finding car wrecks, bodies, loaded firearms, etc. can and will create unknown situations thus adding to a divers potential for a primitive brain reaction. According to Dr. Taylor, Diving Safety Coordinator at the University of Michigan, when a diver is in a primitive brain situation, "their primitive brain driven land-survival instincts say 'Take me to the air I have breathed throughout all my life.' The primitive brain KNOWS there is air on the surface." So a diver's first

reaction is often to head there as quickly as possible. "It takes much in-water training time for the primitive brain to learn that air can be obtained from this mechanical thingy in the mouth."

Having a panicked, clumsy public safety diver who is bolting for the surface in the worst of water and entanglement conditions is not something any dive team wants to face.

It is a team's responsibility to prepare each diver in every way to handle the unknown. First by elimination of many of the unknowns, second by programming the diver to react "instinctively" to his or her equipment and team mates, and finally by understanding not only the individual diver's skill set but also their psychological ability handle stressful and unknown situations.

Eliminating the unknowns

Published in 1995 in the journal of medicine, a ten-year study was conducted on recreational diver fatalities and the panic associated with a diver in trouble. In the study, Dr. Morgan, President of the Division of Exercise and Sports Psychology in the American Psychological Association, found that there was usually an objective, observable stimulus responsible for the behavior, such as the sudden appearance of a shark, loss of visibility, entrapment, etc. These were situations that were unknown to the diver and thus the diver reacted in an irrational manner in many cases.



To combat this, a team must eliminate the unknowns by creating reality based training scenarios in conditions similar to those that will be found on actual missions. Putting a public safety diver in a pool and having him or her do search patterns on the bottom will do little to prepare the diver for diving a slow moving muddy river bed looking for a submerged vehicle.

Studies in law enforcement, military and firefighting have long shown reality based training works to help someone handle an aggressive person, pull the trigger when faced with the decision to use deadly force and run into a burning building all without panicking because "they have done this before" it is not an unknown situation.

Public safety dive training around an existing submerged vehicle in a black water environment should be the first choice for ongoing training verses a "day in the pool." The exception to this might be the learning of a new skill or technique, but after that, it is time to get back to "reality" so that the unknown's are limited.

Programming a diver

Since the studies done by Pavlov in the 1830s, people have known that responses to various conditions can be trained. Today that area of study is termed behavioral psychology and has been researched in depth. With all of the research,

however, the basic premise has remained the same. By repeatedly putting a subject into a situation where the repetition of a skill or set of skills will earn a reward, the subject will respond faster and more "instinctively" with each time they are placed in the situation.

Dive teams have been and should continue to use these theories as well; specifically in two areas. First in the area of

repetition, of the four major dive teams that were interviewed for this article, all of the teams reported minimum standards for number of in the water dive trainings a diver must attend per year to remain an active diver. Each team reported that divers were required to "get wet" a minimum of 6 times a year in team-sponsored training.

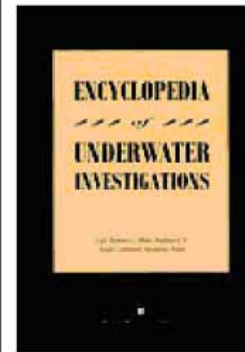
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Additionally, for at least two of the teams, during each training attended a diver must also practice line signals, entangled diver and out of air procedures.

Secondarily is the area of reward. In a dive team situation that usually comes in the form of team status. A dive team member who is proficient at all the skill sets and has repeatedly demonstrated that ability is rewarded with the highest ranking of the team (rescue diver for example). Someone who is new to the team and has not had the repetition may be labeled a training diver. The reward comes with the increased status a team member receives by participating in repetitive training and becoming proficient (instinctive) in response to what to non-public safety divers would be considered unknown situations.

Knowing your divers

Finally a team must look at the diver's individual personality to help prevent panic. Even with the best training available, divers react differently to the unknown. Known as "trait anxiety" each individual has a different level of stability within their personal make up. Psychologists can measure trait anxiety through a clinical testing program, but it is not practical for most dive teams to screen each diver through psychological testing. So, dive teams must use the tried and true measure of long-term observation. Team members should be observed from the day they join the team to discover their

natural response to the unknown. Do they fight it or do they "go with the flow"?

Individuals who need everything to be the same way every time may panic more easily than people who can adapt to a changing environment quickly. A diver, who will only dive with a specific partner, or his "specific" equipment, should be observed closely in a potentially unknown environment, as he or she may show a larger propensity to panic than other divers.

It is easily argued that the greatest threat to individuals in public safety diving is the divers themselves and his or her ability to handle the unknown. Each team must take panic into consideration when planning their training programs and be sure to observe their divers in repetitive real live scenarios as often as possible to truly prevent harm to its members.

Kevin LeVeze has been in public safety diving for over 15 years. He is the past president of the Washoe County Sheriff's Hasty Team and is the Author and Course Director for the State Of Nevada's Post Certified Public Safety Dive Academy.



Care and Feeding of Dive Gear

John P. Hott

It's the beginning of another summer season, with people heading to the great outdoors with the hopes of having a good time on the water. Unfortunately, it doesn't always turn out that way. While public safety diving is a year round vocation, for many teams, the summer months are the busiest. For this reason, it's important that your gear is ready.


All dive equipment is life support, not just the regulator and full-face mask. Maintaining the equipment or having it maintained is as important as anything else in PSD. I can't tell you how often I see Interspiro masks come in to the service technician's class, or into our service department, that in no way, shape or form should be in a diving inventory. Yet the masks have water in the regulators indicating that they were recently dived. You can train and be the best diver out there, but if your equipment doesn't hold up, it will not only put the operation at risk, but, more importantly, it will put you and your safety divers at risk.

Depending on the methodology of your agency, whether you are individually responsible for your equipment or have an equipment specialist,

maintain a complete record of your equipment. This could be as simple as a spiral ring notebook divided for each piece of gear. List the manufacturer, model, size and date acquired. It's not a bad idea to keep any warranty records here as well. Also list when any maintenance was done, what was done, such as a full rebuild or a simple repair. This record should also be signed off by the service technician that performed the work, or you can attach the maintenance receipt from the shop or technician that performed the work.

There are several reasons for this exercise. First, the document is better than your memory. It allows you the means to easily keep track of the maintenance of your gear as well as proof of history. If you are the one tasked with maintaining the records for your team or agency equipment, you're in the hot seat. If one of your divers were to ever be involved in an incident such as drowning, near drowning or other, you can bet that all of your records and practices are going to be scrutinized. It

is invaluable to be able to go to the cabinet and simply hand your records over (be sure to make copies). Even if the incident has nothing to do with the equipment, your records will be needed. If you have no records on the maintenance of your gear, well, stand by...



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Most divers are pretty good about maintaining their regulators. Manufacturers generally recommend that the first and second stages be overhauled once a year or more often if dived rigorously. However, many pieces of equipment are often overlooked when performing annual maintenance. The following list is not all-inclusive, but let's start at the bottom with the most common equipment and work our way up.

Fins: While there are not many moving parts, always inspect the straps and buckles regularly. Never wait until a strap or buckle fails to replace it. More often than not, as with any equipment, failure occurs at the most inopportune time. Of course, always carry spares.

Dry suits: When you have a hole in a suit it is obvious that there is required maintenance. However, the fabric of the suit is not the only thing to be concerned about. Seals fail, as do zippers and valves, both exhaust and inflator. While a bad zipper or a torn seal might be a major inconvenience, failure of an inflator can and has caused accidents resulting in injury and death. Constantly inspect and treat your seals and zippers. Proper maintenance on these components will not only



insure a margin of safety, but will also extend the service life of your suit.

BCDs: Here is one of the most ignored pieces of equipment. Other than a rinse after the dive, when was the last time you had your BCD inspected and maintained? In general, I would bet that the only time most divers have the inflator and exhaust valves worked on is when they start having problems. If you wait until this occurs, you run the risk of a runaway inflator or a bladder that won't hold air when you need it most.



Tanks: As everyone knows, SCUBA bottles require hydrostatic testing every five years and visual inspection annually. Never skimp on these inspections. Under some circumstances, you might consider having them done more often. Another neglected item is the tank valve. Valve seats, wheels, and o-rings wear out often on these stressed components. Check them often, have them maintained on a similar schedule as the rest of your equipment and don't forget to rinse them thoroughly, especially if you're diving in salt water.



Regulators: If you're diving a full-face mask, such as an Interspiro Divator MKII (AGA mask), don't forget the other components. Always have the first stage, hoses, gauges, LP inflators and alternate air sources overhauled and inspected at the same time by a certified technician. If you are using a swivel on the mask, don't forget to have this maintained on a regular basis as well. Insure that it is in very good working condition with no dragging or resistance on rotation. Failure to maintain and inspect a swivel can lead to a catastrophic failure of your system when it unscrews itself off of your mask. Contact M&J Engineering for maintenance, as these should never be disassembled unless you or your technician has been properly trained. The cost of maintenance by the manufacturer of the Omniswivel is very reasonable.

Full Face Masks: As with your other regulators, your mask needs to be maintained annually by a certified technician. The regulator should never be disassembled except by a technician, however there are user level tasks that should be done routinely. Cleaning and drying of the exhaust assembly, as described in the Interspiro user manual, should be done prior to storing the masks after diving. Routine and pre-dive inspection should include all of the outer components of the mask, the straps, buckles, skirt, visor and frame as well as the regulator



and hose. Don't forget to inspect the one-way valves on the inside of the inner mask, the equalizing assembly and microphone (as well as its position).

Communications: The inspection and maintenance of communications gear is for the most part similar, but does depend on the type you have. With wireless, inspect the all the cables for wear and damage. If you're diving OTS communications, examine the microphone (ME-16R Hotmic) for any corrosion on the terminals. This can be disassembled and cleaned with a bronze brush. Look for any rust on the inside of the microphone. If you see any, this would indicate that the microphone has been damaged by water intrusion. It's always a good idea to have an extra microphone on hand. The microphones should be rinsed along with the rest of the mask. Contrary to rumor, these are waterproof microphones. You should not submerge them and take them to depth though. They need to breathe to equalize as they are taken to depth. Examine the microphone wires and o-rings for any damage or wear. Clean and treat or replace o-rings as necessary. Insure that any Hi-Use connectors are cleaned and lubricated with silicone grease. Also examine the communications units themselves, be it the diver units (Buddy Phone, SSB and ear microphone assembly) or the surface stations for any damage or wear. Examine any wired battery packs at the clips and the connections to the unit. Always change these batteries on a flat

surface, don't hang the batteries by the wires. If you have any problems with your system, don't hesitate to call Ocean Technology Systems and ask for advice and assistance. Also look for a future article specifically on the use and maintenance of underwater communications equipment.

Accessories: There are many accessories to the basic dive kit. Almost every piece of equipment comes with maintenance instructions. Follow them as recommended and you will find that the equipment will perform as required and it's useful life will be extended. Keep your cutting tools sharp and ready. Maintain the batteries and o-rings in your lights to prevent failure when you need them.

For the experienced Public Safety Diver, the above points are well known. Still, equipment failures due to lack of maintenance occur far too frequently. Surprisingly few agencies or individuals keep detailed records of the equipment they dive. While it is the responsibility of the individual diver to ensure the equipment he or she dives is inspected and in good working order, the agency has the obligation to see to it that divers have the safest equipment to perform the tasks required. Failure to do so not only leaves divers at risk, but in this litigious society we all know what rolls uphill: vicarious liability.

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PSDM CONTINUING EDUCATION

This month we offer you the opportunity to build training from the entire issue. The questions posed below relate to the individual articles and are designed to be used in a teaching environment. We suggest that you use this issue of PSDiver Monthly as an ongoing source for training ideas and materials and have offered the questions below as a means to jump-start your creativity. Our regular CE questions and answers are still included for those of you who use the CEs as part of your monthly training.

The Role of the Public Safety Diver

Knowing what skills and functions a Public Safety Diver possess and should be capable of providing, if you critique your own team, where are your weaknesses and what can you do to improve them?

Describe the relationship that should occur between a fire department dive team and a local law enforcement agency. How does that compare with your relationship with the other department?

Considering those areas of communication that are weak, what can your team do to improve the communication between agencies that will make your team more effective?

A Simple Dive "A PSD Fatality Report"

Captain Angleton retired from the fire service and:

- A. Divorced his wife a year later and moved away.
- B. Committed suicide
- C. No one has heard or see him since his retirement Party
- D. Sold everything and moved to a suburb just outside of Phoenix, Arizona.

WHY did you choose that particular answer?

Was the equipment selection for the dive appropriate? What changes would you recommend?

Related to the weather, what were the contributing factors that led to the PSD fatality?

Related to the dive operation itself, what were the contributing factors that led to the PSD fatality?

Given the information in the report, have your team create a viable boat search, circle pattern.

If you recognize parts of your team or team members within the report? What changes are most important to make immediately?

The boat was obviously crowded with three people on board. How would you reconfigure the manpower, equipment or method of transportation to more safely conduct this dive? How would you do it if you only had that particular boat?

Given the initial call and local conditions, if your team had to make this dive, in the capacity your normally function, what would you do differently?

If you were the dive officer on this call, how would you plan the mission to best protect your team members?

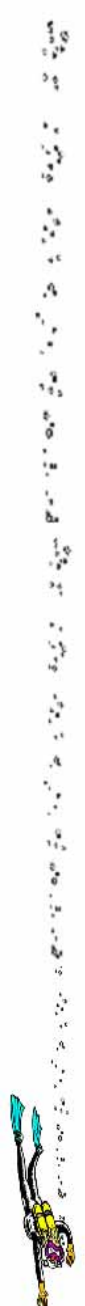
Victim Services Within Law Enforcement

How could a crisis team be used during SAR ops for your department?

Though Crisis Team is devoted to working with victims and witnesses of crime, they are available to respond to requests from any emergency service of the city. What processes are necessary for you or your team to activate the Crisis Team?

Critical Incident Stress Management and Public Safety Diving





A “defusing” is important for SAR ops but may not be commonly used. In your team structure, who at the dive scene would be most qualified to conduct a defusing? Why do you feel that person is the most qualified?

Critical incident stress management is used in specific time frames relative to a traumatic event. We all have particular memories of traumatic incidents. Would a defusing session on scene have made a difference for you?

When stress is not managed properly emergency personnel will show signs and symptoms. If you have to be honest with yourself, how often has stress from an incident affected you or your family? How can you reduce that stress in the future and how can you help educate your family on Critical Incident Stress?

There is a difference between defusings and debriefings. Are you uncomfortable talking about a mission at a debriefing? Why? Do you feel you get more out of a debriefing by talking or just listening? Why?

If your team does not have a CIS program in place, what options for assistance exist?

Who makes up a typical Critical Incident Stress Debriefing team? If your department has one, how do you access it?

Should your Critical Incident Stress Debriefing Team be called out on every incident or just those involving fatalities? What is the difference?

If your department or municipality has an Employee Assistance Program (EAP), how do you access it?

Drowning Accident Survivors and Family Members: Crisis Intervention on Scene

What do you consider qualifies a “critical incident”?

At a water related tragedy, whom do you think will be most affected? What provisions has your team / agency made to help them?

If a family member feels compelled to view their loved one’s remains, what protocols or procedures has your team prepared to help them?

How can your team provide continuity of care for the family? Do you do it already? Why not?

How Much Risk Are You Willing to Take?

Next to drowning, what is the most common risk Public Safety Divers share? How does your team reduce that risk?

When wearing just a wet suit and basic scuba gear, how many ways can your diver be exposed to contamination?

When wearing a dry suit and a full-face mask, how many ways can a diver be exposed to contamination?

In your community, how many different ways can pollutants, chemicals or biological contaminants enter the bodies of water you typically dive in?

What diseases are your divers inoculated against as part of their requirements of membership? In your opinion, are they sufficiently protected through such inoculations? If not, what else would you suggest be done?

Who does water quality testing in your community? What could you learn from water quality reports?

Recognizing that the ultimate protective dive gear may be outside the limits of reason for some teams, what limitations do you place on when, where and under what conditions your divers will dive?

When a decision is made to dive in potentially contaminated water, what steps can be taken prior to the dive to minimize the exposure to the diver or lessen the time of exposure to the divers?

What decontamination procedures are written into your dive team operational guidelines? Are they practiced and are they adequate?

What would be the signs and symptoms of a fecal coliform bacteria exposure?

What are the signs and symptoms of hepatitis?

What are the signs and symptoms of tetanus?

How WE Recognized the Need to Change

How often should a team inspect ALL of the dive gear to be used? How often does your team make this inspection?

How often does your team actually practice search patterns? How can the gap between what should happen and what is actually happening be closed?

Are the search patterns you use sufficient to all of your needs? What other search patterns do you think should be added to the "tool box" and what, if any do you think should be removed?

If a multiple water fatality occurred, what outside resources are available to you? How can you access them and how effectively do they respond? What improvements would you recommend?

Reviewing your current dive gear, what parts or pieces of commercial dive gear could you add that would increase your safety? How could you find out?

Technology Application for Dive Team Situational Awareness

In a zero visibility environment if your primary diver loses contact with his search line, what are your procedures for a "lost diver"?

Historically the cost of electronics has come down while technology has continued to advance. What technology does your team have that might allow your team to locate a "lost" diver in zero visibility water? Have you tested your theory in real training scenarios?

An Optimal Combination of Technologies

What is the difference between side-scan sonar and sector-scan sonar?

An ROV fitted with a manipulator arm is capable of grasping a body. What power requirements or accessories would be required for an ROV to do this and bring it to the surface?

What is the weight limitation of a ROV? What does it depend on and how would you find the specifications and compare them?

In your area, what bodies of water would be suitable for using side-scan sonar technology or ROVs?

Who in your area has this equipment? If it is not available locally, where could you get it? Borrow it? Rent it? Buy it?

PROPER and CONSISTENT TRAINING

Time underwater and training will develop a divers' skills and confidence underwater. No matter how much or how hard you train, stuff happens. What elements of training do you feel your team needs to add, modify or eliminate to better train your divers?

Your team members should be required to do a minimum number of real water dives every year to maintain their skills. Do you have written guidelines for team membership that states these requirements? Do you feel they are realistic and provide enough training through the year? What do you recommend to improve them?

A dive team is rarely called upon for a diver emergency. We practice and prepare for diver emergencies to rescue our own team members. Are



you confident that the training is sufficient if you are the diver in distress?

What is your redundant air supply?

How does your primary diver access this air?

Care and Feeding of Dive Gear

Dive gear is considered life support. The task of maintenance, records keeping and inventory control is a huge responsibility. How are the administrative duties of your dive team distributed?

When was the last hydro-stat performed on your cylinders? How old is your oldest air cylinder?

If the power inflator fails on a BCD, what is most likely to happen? How often do you practice reacting to this emergency?

If a second stage regulator fails underwater, what is most likely going to happen? Can you breathe from it?

If the high-pressure hose leading to your SPG fails, what will happen? What should you do if it occurs underwater?

How can you find "dry rot" on fin straps?

How do you find "dry rot" on a corrugated BCD hose?

What lubricating agent do you use on your wetsuit zipper? Dry suit zipper? Bootie zippers?

Does your BCD have a bladder? What is the difference between a bladder design and a bladderless designed BCD? What are the most likely failure points of each?

Can either be patched or repaired in the field if they get cut or develop a leak? Do you have the necessary materials in a field kit?

Other than rinsing the outside, how else can you thoroughly clean a BCD? Inside and out?

Without an o-ring, a standard K-Valve will not seal. If a twenty-cent item has the potential to prevent a diver from diving, how many do you have in storage on your dive truck or in your dive bag?

What maintenance can the dive team perform on a full-face mask?

Why is it important to allow them to dry completely before storage?

What effect will water have on the hotmic?

What kind of batteries does your communications gear use? How often are they replaced? Where do you keep your fresh spares?

What kind of batteries do your flashlights use? Where do you keep your fresh spares?

ISSUE 38 - Continuing Education



The Public Safety Diving Association (PSDA) recognizes and approves of the PSDiver continuing education program. Each month's Q&A program is equivalent to 1 CEU for renewal. PSDA & Water Rescue members may submit up to a maximum of 3 CEUs from this source for each year's renewal.

- 1) There has been little change in the role of the PSD over the years.
 - a. True
 - b. False
- 2) Post traumatic incidents may require the administration of a _____ provider.
 - a. C.S.M.D.
 - b. V.S.C.T.
 - c. V.S.&P.S.
 - d. C.I.S.M.
- 3) Multi tool usage can be a combination of?
 - a. Divers, Boats, television
 - b. Sonar, Radios, Rov's
 - c. Mechanical, Electrical, Molecular
- 4) _____ is a natural reaction to the unknown.
 - a. Sweating
 - b. Confusion
 - c. Panic
 - d. Decision Management



- 5) R.O.V. stands for
 - a. Really Outstanding Visions
 - b. Reliable Operated Vehicle
 - c. Remote Operated Visuals (TV cameras)
 - d. Remote Operated Vehicle
- 6) Search management is best when using ____
 - a. A variety of tools
 - b. Only the best tool
 - c. Only what you have
 - d. Outside help
- 7) When Sidescan, SectorScan, ROV's and diver technology are employed in collaboration
 - a. The cost is often prohibitive
 - b. An efficient search and recovery operation can be performed
 - c. A single team must have all the tools
 - d. It takes too long to bring the mission to a closure
- 8) Training thru repetition exercises will cause the diver to _____.
 - a. React Instinctively
 - b. Panic most of the time
 - c. Cause boredom and loss of skills
 - d. Has little value for the PSD

- 9) Critical Incident Stress
- Occurs immediately at the scene
 - Can be delayed days
 - Can be delayed weeks
 - All of the above
10. Contaminated water contains
- Biological, Chemical or radioactive material
 - Only human related elements
 - Is not as harmful as Hazmat water
 - Requires no special protective barrier
11. The best way to protect yourself from exposure to contaminated water is _____
- A Dry Suit
 - Dry Suit, FFM
 - Commercial Diving Suit
 - Avoid Diving

12. OSHA exemption may protect against a fine however _____
- Death or Injury can still occur
 - Civil LawSuits can occur
 - Exemptiion prevents Injury
 - A & B but not C

Essay Section:

- Describe the Types of Critical Incidents
- Contrast the usage of Sidescan and SectorScan sonar
- Describe the types of environments that can effect the diving equipment used
- Describe issues that can make changes to your diving SOG/SOP.
- What is the difference between a defusing and an a debriefing

PSDiver Monthly is edited and published by [Mark Phillips](#)

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[Public Safety Divers Forum](#)

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Galveston Police Department Dive Academy

Next Scheduled Class is: Underwater Crime Scene Investigation 1 June 29- July 1, 2007 Galveston, Texas

The Underwater Crime Scene Investigation 1 Specialty from the Public Safety Diving Association is designed to present a new aspect of Public Safety Diving to Fire, Police and SAR Dive Recovery Teams. The course is an AWARENESS level course with real practical skill added. While the UWCIS-1 is an entry-level course, it is demanding. Participants will be introduced to a variety of new skills and will be shown and allowed to practice, safety measures and techniques that will hopefully enhance their skills and abilities.

Participants will gain classroom knowledge on evidence handling, terminology, safety issues, standards information and concepts of the job of a Public Safety Diver. Participants will practice those classroom skills to an acceptable level of proficiency in a clear water pool using blacked out masks and will gain real experience in methods

of underwater search and recovery in the simulated zero visibility environment. Participants will successfully perform a search and evidence recovery of at least one weapon and will successfully perform a body recovery. Participants will also be challenged with an underwater obstacle / confidence building course that will test their ability to handle a variety of stressors including entrapment problems and self rescue issues.

To complete the program, the final day of the UWCIS-1 course will be a series of in-water training scenarios where participants will take the learned skills and apply them in a real dive scene environment. Each participant will take part in a body recover as well as a weapon recovery. Each scenario will be a separate crime scene and the participants will be responsible for assessing the site, gathering intelligence, setting up the dive and recovering either a weapon or a body.

Each team must complete the recovery and submit all documentation related to their task to successfully complete the UWCIS-1 Course.

**Advanced Registration Seminar
Fee \$125.00
After June 1, \$150.00**

**[UWCIS 1 Summer 2007
Seminar Flyer](#)**

**[Galveston PD Dive Academy
REGISTRATION FORMS](#)**

