In This Issue

U.S. Coast Guard Investigating Recreational and Commercial Diving Accidents

By Steven M. Barskey
Greetings, 

This month we welcome two new sponsors, Black Laser Learning and Manta Sonar. As a personal note, I bought a Dive Ray unit a few years ago and used it once offshore to locate a wreck. It worked ok for that but I never considered using it for PSDiving. In zero visibility I assumed I would never be able to read the display. It got stored in a safe place in my garage and forgotten.

Last month my team was asked to recover some vehicles from a bayou. We had located a number of them last year and recovered a few. We experienced Hurricane Ike and never had an opportunity to go back. I was consolidating gear in my garage and found the bag that had my Dive Ray in it and on a lark, took it with me to the dive.

We located the cars on sonar and dropped a diver on top of one to tie off a marker rope. We swam the rope to shore and established our “path” back to the vehicles.

We pulled the first car out and let the gas and oil dissipate for a while. I took the time to get out my Dive Ray and when it was time, we went back into the water. Since we were following the line, we knew the direction to go but not how far. We would eventually run into the car we were tied off to. I pointed the Dive Ray forward and parallel with the rope and got a reading of 17’. Pointed away it read 38 to 47’. We moved forward a bit and I did it again. This time I got a reading of 7’. We were in zero vis but shoving the display against my AGA face piece I was able to make out the backlit number on the display. I told my partner we were 7 feet away and 7 feet later we were on the car. We were both impressed. The experience proved to me that the device is going to become a valuable tool for me in the future and I now regret taking so long to try it out for that purpose.

Just to clarify – I do not do product endorsements and especially do not do “reviews” for sponsor equipment. I have included my personal experience with this unit only because I bought it off EBay because I thought it was a good deal and that I might find a use for it.

It, embarrassingly enough, never occurred to me to talk to them about becoming a sponsor for the magazine.

It was coincidental that they contacted me at the same time I had found it in my garage and actually used it with success on a working dive in zero vis.
Vince Capone is a noted speaker and marine technology instructor. Whether training military units in the interpretation of sonar imagery for mine hunting or explaining marine technology to a group of students, Vince's informative and compelling programs are tailored to each audience's needs. With over 30 years experience as a diver, marine scientist, teacher, sailor and expert in marine technology, Vince's presentations are multi-layered, comprehensive, and insightful. Vince is also committed to providing leadership and inspiration to younger generations. He is available to school groups and other organizations, providing lectures and keynote speeches regarding the importance of career paths in marine science and science in general.

Manta Sonar
Manta Sonar makes a product called the Dive Ray. This is a simply point Dive Ray & pull the trigger - this produces a continuous, 15° Conical (cone shaped), sonar projection. This projection is then interrupted by solid objects which register as distance measurements on a large, illuminated, Liquid Crystal Display. Dive Ray lets you pinpoint exactly where you are in relationship to your surroundings:

- Determine depth from above or below the surface
- Locate your Dive Vessel to minimize swim distance after surfacing
- Map Topography and Reefs more accurately and more quickly
- Calibrate Gauges, Cameras and Strobes
- Locate your Dive Partner, Buoy Cables, Ship wrecks or a troubled diver.

Take the time to check out the companies who support us. Look at the technology and innovations that they have and consider how you could incorporate them into your team function. While some of the technology is expensive if you know it exists and find someone or some group who is willing to help – you might find yourselves looking for grants to satisfy a whole new equipment wish list.

Be safe,
Mark Phillips
Editor / Publisher
PSDiver Monthly
SPECIAL TO PSDIVER MONTHLY

U.S. Coast Guard Course on Investigating Recreational and Commercial Diving Accidents
*Special program taught by Steven M. Barsky, Marine Marketing & Consulting*

Steven M. Barsky of Marine Marketing & Consulting recently taught a course for the United States Coast Guard in San Diego on the techniques for investigating recreational and commercial diving accidents. The two-day program was held at the U.S.C.G. Sector Base on July 15 and 16, 2009. Attendees also included diving officers from Scripps Institution of Oceanography as well as members of the Oceanside Harbor Police.

Barsky is a co-author with Dr. Tom Neuman of the book, *Investigating Recreational and Commercial Diving Accidents*. The book does not deal with underwater crime scene investigation, but takes into account that in most fatal diving accidents, the diver’s body has been recovered and stripped of gear, often well before law enforcement arrives on the scene. In many cases, the diver may already have been transported for recompression treatment.

Many dive accident investigations take place well after the accident happened and both the vessel and the people involved have left the scene, particularly in coastal areas. For example, off the coast of California, it's not uncommon to have an accident take place aboard a vessel that is out on a multi-day dive trip.

“Different governmental and non-governmental organizations have different motivations and perspectives in their approach to investigating diving accidents,” notes Barsky. “For example, the Coast Guard’s mission differs from that of OSHA (Occupational Safety and Health Administration), although their interests and diving regulations for commercial diving are quite similar. Likewise, law enforcement takes a somewhat different approach to diving accident investigation.”

Barsky has performed numerous investigations of recreational diving accidents.
Barsky carries a wide range of tools with him when investigating accidents, including breathing gas analysis kits, 100-foot long fiberglass tapes, a hand-held GPS, digital cameras, and of course, a laptop and smartphone. He also carries items you might not expect, such as chalk for rubbing into the engraved serial numbers on regulators, a magnifying glass for reading very small serial numbers, and both work and latex gloves. The work gloves are for handling commercial diving gear like umbilicals, and the latex gloves are for handling items like diving helmets which may contain elements such as mold and bodily fluids.

"It’s vital to develop a stock list of questions to ask the people involved so that you have somewhere to start, but you also have to adapt your questions to the individual incident. In most cases, I have a good
amount of information before I go out into the field, but many times, I won’t know everything that happened so I’ll have to adapt and add questions on the fly,” explains Barsky. “Similarly, I have a stock set of gear inspection checklists, but these are modified for the specific incident, according to the gear that is involved.”

Diving is such a broad field it’s impossible for anyone to know everything about every type of diving. The smart investigator will get help when confronted with an accident involving equipment or a type of diving with which you may not be familiar. For example, if you have not used an Inspiration rebreather, it would be vital to enlist the assistance of an instructor who is knowledgeable in this type of gear. Similarly, if you have never been involved in commercial diving, it’s unreasonable to expect to be able to examine a commercial diving helmet and know if there is something wrong with it. “I’ll be the first to admit that I don’t know everything about every type of diving,” says Barsky.

Although people frequently assume that the equipment is usually at fault, this is rarely the case in most of the accidents Barsky has investigated. Rarely is equipment defective, but it is not uncommon to see gear that has been poorly maintained. In most cases, human error or a lack of training is at the heart of the incident.

Keep in mind that when it comes to regulators and diving helmets, the most testing that average dive shop can perform is to test the regulator using a magnehelic gauge. This is nowhere near as accurate as testing with a breathing simulator such as those used by the Navy. Unfortunately, at this time there are no private labs that are willing to test civilian dive gear following a diving accident.

Vital Traits
There are several talents that are essential to conducting a good diving accident investigation, and these include the ability to establish rapport with the people, tenaciousness, talent as a photographer, and the ability to write a narrative report. Without this combination of skills, it’s difficult to produce a good report.

You must be able to identify who you need to interview and why. In a sport diving instructional accident, you’re going to want to interview the instructor, any assistants, the divemaster, the boat captain (if the dive took place from a vessel),

This commercial diving helmet was worn by a diver who suffered a fatal accident. As an investigator, you must get people to help you if the equipment you are called upon to inspect exceeds your expertise.

(© Steven M. Barsky. All rights reserved.)
and the other divers aboard the boat. In a commercial diving accident, you’ll normally want to interview the diving supervisor, the tender, the standby diver, other members of the diving crew, and any members of the ship’s crew who may have been involved with the diving, if that’s where the dive took place.

Developing rapport with the people you interview is usually more productive than going in with a hostile or demanding attitude. Most people tend to clam up during a confrontation or get nervous and forget vital information. Similarly, if you need technical information regarding a particular type of diving equipment from a manufacturer, you’ll usually get far more cooperation by establishing rapport than by being demanding.

Good investigators don’t quit until they have collected all of the information they need to put together a good report. This often means going the extra mile and sometimes interviewing people who you may not think will have any substantial new information. It’s not unusual to find that the person who you thought might not have anything significant to add to your investigation has new or different information to add to the scope of your work.

Remember that as an investigator your job is to present the facts and remain objective. If you do a thorough job, anyone reading your report will discover all the available facts with no ambiguities. However, you should also realize there may be times where you will not be able to discover exactly what happened without extensive testing, something that most law enforcement agencies aren’t equipped to handle.

Ideally, someone with no diving background could read your investigation report and they would still be able to understand what happened. This means that you cannot use jargon and you must write at a level that is easily understood. If you expect to create a good diving accident report by merely ticking off checkboxes on a form, you are sadly mistaken.
Investigating with Compassion

In any diving accident, you’re always dealing with people, frequently people who are very emotional. No diving instructor wants to see a student get hurt. No commercial diving supervisor wants to see a diver he is responsible for die. Even if you feel the person in charge made mistakes, put yourself in their place and try to understand how they are feeling. Conducting a post-dive accident interview with someone who was in charge when an accident occurred is never a pleasant scenario.

Your Written Report is Your Product

You can be the best diving accident investigator in the world, but if you can’t produce a written report with top quality photographs and an intelligible narrative, then the time you have spent in the field will not have much value. You’ve got to be able to sit down and write a report that explains in clear language what happened to whom, when it happened, where it happened, and why it happened.

A good report will have a table of contents, a list of the people who were involved in the incident and how to contact them, a summary narrative that has been pulled together from the individual interviews of the people involved, a chronology of the events (timeline), individual interviews, charts, drawings, photographs of the gear, the autopsy, and logs from any emergency responders. An index is always a nice addition, if you have the software to create one.

Creating a meaningful report on a diving accident is hard work. If you’ve done a good job investigating, and have all the information you need, your job will be easier, but you’ve still got to take the time to write a good account. Make your report something you can point to with pride.

About the author...

As the author (or co-author) of 18 diving texts and the director of 7 diving videos, Steven M. Barsky is known for his ability to take complex topics and simplify them for easy understanding. First and foremost, he has always considered himself an advocate for divers and their safety. He has also written and produced numerous equipment manuals as well.

For more information on Marine Marketing & Consulting, or to reach Steve Barsky, check out his website at www.marinemkt.com or call (805) 985-4644. Marine Marketing and Consulting can also be contacted at 2419 E. Harbor Blvd. #149, Ventura, CA 93001.

Steven M. Barsky
(© Kristine C. Barsky. All rights reserved).
Police divers pull sunken vehicles from Detroit River


July 1, 2009 Santiago Esparza / The Detroit News

Detroit -- Police pulled a '70s-era, blue pick-up truck, Toyota Celica and a moped out of the Detroit River near Junction on the city's southwest side as part an effort to remove as many as 14 submerged vehicles. This is the highest number of cars they've ever taken at one time from the river. It's possible the vehicles have been in the water for two years or more, police say.

A crew of 10 divers from the Detroit Police Underwater Recovery Team took pictures of the vehicles under the water to mark locations and to connect steel cables and cloth straps so that the vehicles can be pulled out of the river by a large tow truck. No bodies were immediately visible.

The area where recovery is taking place is just off the shore of the river where it touches city water department property. "Once the vehicles are out of the water, police will check and see if the vehicles are stolen or have been used in other crimes," said Detroit Police Inspector Don Johnson. "A nearby petroleum company asked police to clear a vehicle from the water about a month ago," Johnson said. "During that process, divers discovered other vehicles, and plans were made for their removal," he said.

The divers also pulled a Ford Fairmont with gold trim and a Ford EXP out of the river today. The EXP tore apart on the divers' first attempt to get it out of the river. On the second attempt, it was pulled ashore before crumpling under its own weight.

Recovery team divers will work through this afternoon and resume searching the Detroit River Thursday for sunken autos.

A Ford EXP was among the vehicles taken out of the Detroit River in Detroit on Wednesday. (David Coates / The Detroit News)
Water rescue training completed
July 2, 2009 By Larry Hurrle - Independent-Enterprise

With the increase of usage of the Payette and Snake rivers locally, the Payette Rural Fire Department and the Payette County Sheriff’s Office teamed up last weekend to provide training for swift water rescue.

Payette Fire Chief Jeff Sands said his department has seen a dramatic rise in the use of the Payette River during not only the summer season, but also during winter with duck hunting and year-round with fishing.

“It’s amazing how many people are on the river,” Sands said. “They’re taking advantage of what we have locally.”

Sands and Payette County Sheriff Chad Huff began looking at water rescue and recovery incidents that have taken place in Payette County during the past few years and the rise in incidents encouraged both to provide a swift water training session.

Huff said they were able to secure Nate Ottis to head the class from the Park Wilderness Rescue out of McCall. The class was held in Payette County on local waters. The Payette County Sheriff’s Office was able to provide life vests, knives, throw bags and other equipment through a matching grant with the Idaho Department of Parks and Recreation. Other expenses in the class, including the class itself, were provided through funds from the Department of Homeland Security, led locally by former Payette County Sheriff Bob Barowsky.

Payette County currently has two boats and two jet ski personal watercrafts for use in rescue and recovery operations. In the future, Huff said, he could see the county outfitting boats with sonar and underwater...
cameras as well as having certified divers on staff within Payette County.

“We’re in a good position,” Sands said. “We can do most of our funding through grant funds and no taxpayer money.”

Last weekend’s training focused on operations and the technical aspect of making water rescues. Sands said eight people took the awareness level of the class, while another 18 took the full course.

Sands said Payette has been called out on nine or 10 rescue operations in the last 10 days of June. One incident, he said, involved four tubers who flipped over. Two of the people made it to an island, but were unable to swim and could not get back to shore.

Sands said the training will help local rescue personnel make sure everyone is safe in the event of a rescue operation. As well, he said, a training is in the works for ice water rescue, which will take place during the winter.

“The river is used more and more,” Sands said. “People are realizing what is right here. There are more duck hunters and people fishing on the river than ever before.”

Huff said the Payette County Sheriff’s Office will also begin patrolling the river, looking for people misusing alcohol and minors in possession of alcohol.

“People need to realize we will be out there on the river, not in uniform,” Huff said. “These will be plain-clothed officers on the river, doing random checks. They will be out there in T-shirts and shorts and will be carrying a ticket book.”

Body in harbour yet to be identified
11 Jul 2009 By Debbie Porteous and Sarah Harvey News: Dunedin

Police are investigating the death of a 20-year-old man after his body was found in Otago Harbour yesterday. Workmen fixing a broken plank in the wharf on the Fryatt St side of the Steamer Basin called police about 11am after they saw the body in the water below. The man’s hand appeared to be gripping the bottom of a ladder attached to the wharf.

The body was recovered by a police diver about 1.15pm. The officer in charge of the investigation, Detective Sergeant Brett Roberts, said last...
night police had not yet formally identified the body.

The cause or circumstances of his death had not been determined and police did not know how long he had been in the water. The man was well-dressed. The site where the body had been found was cordoned off yesterday, but was not under police guard.

Several officers working on the investigation had talked to people in the area, Det Sgt Roberts said. Customhouse restaurant staff said they were questioned by police yesterday afternoon about who was in the restaurant on Thursday night, what they were wearing and their age. Bar staff said the restaurant was quiet and no functions were held that night. People working at other Fryatt St businesses and on the wharf said they knew nothing about the body. It is understood the water in the basin was about 6degC yesterday.

A Maritime New Zealand spokesman said depending on their size and fitness, a person who fell into 6degC water had an expected survival time of as little as 30 minutes. Muscles starting shutting down quickly at that temperature. A relatively fit person could lose up to half of their muscle strength within 20 minutes, making it difficult to prevent slipping under the water.

Police Heroically Kill Zander Fish

Seattle, WA - Mini-Jaws is dead. For the last month, a zander fish has been terrorizing swimmers in Lac Majeur, a Swiss lake. The fish was captured and killed with a harpoon by the crack Swiss Police Diver’s Force (who apparently exist to kill zander fish).

The zander fish weighed almost 18 pounds and measured over two feet long at the time of its death. The fish was wanted for questioning by police in several biting attacks — some of the bites resulted in four-inch-long wounds that...
required hospitalization.

Local fish warden Fabio Croci suggested that the fish was “suffering from a hormonal imbalance,” causing its aggression.

As it is proper to honor a killed zander fish, tourists at the lake consumed the flesh of the dead beast. At the time of this article’s writing, there was no word on the zander’s stomach contents.

Kudos to the Swiss Police Diver’s Force for killing the biggest news story to come out of Switzerland since theologian John Calvin’s 500th birthday celebration.

**On or below the surface, area dive teams are ready to respond**


7/14/2009 by Ben Schwartz (North Platte Bulletin)

If the police force represents a community’s finest, and the fire department it’s bravest, then dive rescue teams are certainly the wettest.

These volunteer units stand at the ready to respond to salvage, body recovery, and underwater rescue calls. Often the training they undertake is done at their own expense and on their own volition.

While the budgets are tight for the divers, they manage to put well trained and well equipped individuals in the field on each call. The Bulletin took a look at four dive teams from the area, from North Platte to Lake McConaughy.

**Lincoln County Dive Rescue team**

The dive rescue unit in Lincoln County features two separate teams: the Lincoln County dive rescue team based in North Platte and the Sutherland dive rescue team out of Sutherland. The team in North Platte has between 10 and 15 active members.

Doug Johnston is the team president and has been a certified member of the dive team for over 10 years. Johnston said that the team has at its disposal wet suits, dry suits (for cold water diving), a five man Zodiac boat, and a jet-ski on loan from Kawasaki.

The number of calls that the
team responds to vary from year to year, Johnston said. One year, they may not get any calls, but the next year they could get seven or eight. Not every call is a matter of life or death. Johnston said that he was approached by a man who said that he had gotten upset and thrown his war medals in the canal. He wanted to know if the dive team could recover them.

Members of the team donated their time to the cause to do a good deed and for training purposes. “Any time we can get in the water for training, we’ll take that opportunity,” Johnston said.

The dive team entered the canal with underwater metal detectors and searched for the war medals. It was after that they learned that ten years had passed since the man had thrown them in the water.

Johnson also told the story of searching the canal to find a weapon for the Sheriff’s Department. “We found bikes, old safes, and microwaves. We also found a ceramic donkey lawn ornament that someone had thrown in there,” he said. What they did not find was the gun. “It wasn’t in the area we were searching,” Johnson said.

Evidence salvage dives are not always successful due to the murkiness of the water and the size of the object being sought. When the dives are successful, it provides investigators with the evidence they need to send criminals to jail. The Lincoln County team does receive some funding from the county. A few years ago, when the old ambulance the team was using as a dive vehicle broke down on a call, the county authorized the team to purchase a large enclosed trailer to hold their gear.

The Sutherland team has nine active members and is headed by Kent Lenz. Lenz holds a PADI (Professional Association of Diving Instructors) Master Scuba Diver Trainer certification. Lenz is qualified to train other divers in area pools and lakes. Team members no longer have to travel to the east part of Nebraska to receive certification.

Lenz said that two years ago the Sutherland team attempted to get funding from the county, but that county commissioners were reluctant to fund two dive
teams. In response, the Sutherland team entered into an agreement to share equipment and services with the Lincoln County team.

Along with a Zodiac and a jet-ski, the Sutherland team has a mobile cascade system that allows them to fill their air tanks right on site, instead of having to return to the fire department.

Lenz said that his team responds to anywhere from zero to five calls a year. The team responded to a call of missing tubers on the South Platte River Sunday, July 5. They conducted a search with ATVs and had just gotten their jet-ski in the water when the call came in that the tubers had been found. The other dive rescue team that responded to that call hailed from Paxton.

**Paxton Dive Rescue team**
Kyle Gartrell, the chief of the Paxton fire department, said that Paxton has had a dive team for six or eight years. The team boasts five certified divers. Unlike the Lincoln County team, Paxton requires that all dive team members must also belong to the volunteer fire department. Gartrell said that is due to insurance reasons.

The Paxton team uses an old ambulance as their dive vehicle. “With the price of everything going up, we’re trying to stretch our vehicles lifespan,” Gartrell commented. He said that a new ambulance will serve ten years as the primary emergency response vehicle, ten more as the secondary emergency response vehicle, and the ten years as the dive team vehicle.

**Lake McConaughy Dive Rescue team**
It stands to reason that the largest and best equipped dive team in the area would call the state’s largest body of water home. The Lake McConaughy dive rescue team boasts 17 total members with 10 certified divers.

The team is headed by Rob Moul, the chief of the Keystone-Lemoyne fire department. Moul was a charter member of the team when it started in 1985, Back in those days, he said, team members had to provide their own equipment and pay for their own training.
While the Lake McConaughy dive team does not receive any tax payer money, Maul said that they have become very aggressive in pursuing grants. Two years ago they received $30,000 in grant money, which they used to purchase six full sets of wet and dry suits, as well as wireless underwater communication headsets.

The Big Mac team has two jet-skis courtesy of the Kawasaki lend program and a 21 foot Zodiac boat. The Zodiac comes in handy when dealing with stranded boat rescues in rough water. “People don’t respect the water. They don’t respect the weather, and they get caught,” Moul said. The Zodiac is capable of navigating six to eight foot waves with ease.

When the team responds to a boat in distress call, a spotter is utilized to find the vessel so the Zodiac is not out on the water blind. The dive team also works closely with the Nebraska State Patrol air wing out of Ogallala. Moul said that having eyes in the sky makes operations on the water much easier.

The Lake McConaughy team responds to between 12 and 18 local calls a year. They also lend their expertise to other areas three to five times a year.

**Safety and communication**

All the team leaders the Bulletin spoke to stress the importance of safety. Divers will not go into the water if it is determined that there is an elevated risk of injury.

Life jackets are required to be worn at all times by both shore and boat personnel. When a diver goes in the water, there is always another diver suited up and ready to go in to lend assistance to the primary diver.

Johnston of the Lincoln County team also said that a third diver is on hand and can be suited up and in the water in minutes should it be required.

The divers communicate with their shore or boat tenders with ropes. For example, if a diver tugs on the rope three times, it means he has found something. If the tender tugs twice, he’s telling the diver to come back in. Even the Lake McConaughy team with their underwater...
communication sets utilizes the rope system as a back up. Communication between the divers and the shore not only promotes safety but also a more efficient search process.

Gartrell of the Paxton team said that there is a monthly meeting where team members go over the equipment to make sure that everything is in working order.

Whether it is searching for war medals that had been discarded long ago or trying to find a missing jet-skier on Lake McConaughy, dive team members hope for the best but are trained and prepared to handle the worst. The members of the area’s dive teams love being in the water, but as Johnston said, “We don’t want to see anybody get hurt.”

Next, a tethered robotic camera was sent underwater to videotape the surroundings. State police divers were only sent in at the very end to make the final confirmation.

Divers had spent hours and got nothing. But it took less than a half-hour to find Guzman's body yesterday using the equipment developed by a Salem company, Klein Associates. "It's incredible what these machines can do," Lawrence police Chief John Romero said. Divers might still be out there today if the Quincy, Mass., Police Department hadn't taken notice of Guzman's story on the news.

Quincy police Lt. Robert Gillan said the department is one of the only ones in the state with underwater imaging equipment. They drove it out yesterday morning to help. "Lawrence has assisted Quincy with several investigations," Gillan said. "We're all too happy to help Lawrence for a change."

Quincy has owned its underwater robotic camera for the past four years and is purchasing a side-scan sonar from Klein...
Associates. Quincy doesn't have the sonar yet. But Garry Kozak of Klein Associates volunteered to bring the sonar to the Merrimack River and assist in the search. "It really makes law enforcement's life easier," Kozak said. "And it's safer for the divers, too."

The sonar and camera, totaling about $120,000, was purchased through Homeland Security grants. Using the camera, Lawrence now has a videotape of the crime scene that it can use in the criminal investigation as evidence. "You think the water looks murky, but it comes in crystal clear," Lawrence police Capt. Shawn Conway said, marveling at the footage.

Finding a body in the river is not guaranteed. After days of searching back in April, search crews were not able to find the body of Jonathan Vazquez, who police believe jumped into the river off the Duck Bridge. His body turned up more than two weeks later in a section of the river in Haverhill. Romero said the Merrimack River is as much as 60 feet deep in some spots and is very wide.

Quincy police last used the equipment to recover the body of another veteran from the water just a month ago. Patrick Coughlin, 21, of Milton had just returned from Iraq and was killed after falling into the quarry at the Granite Links Golf Course in Quincy. He had planned to jump in with his friends, but slipped. "It shows you technology is now the only way to run an operation like this," Gillan said.

**Quincy police technology helps recover Lawrence drowning victim**

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QUINCY - The body was first detected by a sound-wave scan of the bottom of the Merrimack River. It appeared on a monitor as a white speck interrupting a copper-colored rendering of the riverbed.

The find was scanned from seven angles to confirm it was a human body. At 9:11 a.m. Wednesday, divers were sent in to retrieve the body, identified as Juan Carlos Guzman, 29, an Iraq war veteran. “When we found him, I was ecstatic, I was exhilarated, but also saddened for the family,” said Quincy police officer Ken Wood, who operated the scanner. “That’s four kids that don’t have a father anymore. But at least we brought him home.”

State Police divers had been hampered in their search by the river’s strong currents, heavy silt and poor visibility. That’s when Wood and other members of the department’s homeland security unit offered the use of their high-tech search and rescue equipment. In less than 30 minutes, the Quincy crew found Guzman. “This is miracle technology,” said Quincy police Lt. Robert Gillan, who supervises the department’s homeland security, scuba and marine units. “Without this technology ... basically you hope the diver bumps into what they’re looking for.”

Gillan said he knew of no other police department in New England with the equipment, which was acquired through a federal Homeland Security grant in 2005. Quincy was awarded the grant because of the amount of commercial traffic in Boston Harbor.
The technology is the same the department used to find the body of Patrick Coughlin, a 21-year-old Marine from Milton, on June 19. Coughlin died after slipping on wet rocks and hitting his head at a Quincy quarry. In Lawrence, the Quincy crew began by lowering a powerful “side scan” sonar device into the water around 8:40 a.m.

The device, used mostly to locate shipwrecks, was brought to the scene by a New Hampshire sonar dealer with whom Quincy police work. It used acoustic energy waves to generate remarkably clear images of large swaths of the riverbed. When it found Guzman, police were able to record the coordinates of the body with a global positioning system.

Then, a 15-inch-long, $80,000 device called a VideoRay was lowered into the river. Cameras and lights on the device, which is operated by remote control, spotted Guzman’s body about 30 feet below the surface. The device latched on to the corpse with a small mechanical claw to help divers find the body. “It was about 100 yards away from where we were looking initially,” Lawrence Police Chief John Romero said. “We would not have found the body today, I’m convinced, had it not been for the Quincy police.”

As Guzman’s body was brought to the surface, rescuers, among them veterans of the Navy and Coast Guard, paused to give a military salute.

Hare Bay man honoured by RCMP
http://www.ganderbeacon.ca/index.cfm?sid=269787&sc=305
7/16/2009 BY ANDREW ROBINSON The Beacon

A resident of Hare Bay was recently honoured by the RCMP for the significant risks he took 16 years ago in saving two police divers from the icy waters of Freshwater Bay. Reg Cooze received a special Commissioner's Commendation for bravery from the RCMP at a ceremony in St. John's on July 2.

In February 1993, divers were scouring the waters of Freshwater Bay in search of...
Jamie Parsons and his truck, which had gone off a cliff. The bay was full of ice at the time, and Mr. Cooze was using his boat to tow the two divers between pieces of broken ice. "It started to get a little bit scary, but they wanted to proceed," he said.

One diver encountered trouble with the ice, and was hauled in by Mr. Cooze and Carl Starkes, who was also on the boat. "He wasn't too bad - a little bit shaken up, but we managed to get him in," said Mr. Cooze. The other diver, meanwhile, had let go of the rope attached to the boat, and ended-up 30-40 feet away from Mr. Cooze's 18-foot aluminium boat. Broken pieces of ice were pushing against the main body of ice, and Mr. Cooze said the current was beginning to push the police diver underwater.

A native of Greenspond who grew up surrounded by ice flows and took part in the seal fishery, Mr. Cooze knew the situation was dire. "We were scared at the time that if he went under the main body of ice, he would get sent off a mile away and become history."

With his personal experience dealing with ice taken into consideration, Mr. Cooze took quick action. Taking two paddles, he tied a rope around his waist and crawled along the ice. Because walking was too dangerous, he used the paddles as leverage for moving along the ice. He fell through on a couple of occasions, but eventually was able to reach the diver.

Mr. Starkes, who received a letter of thanks from the RCMP, pulled the rope to bring Mr. Cooze and the diver, who was nearly unconscious. An ambulance was waiting for the group when they returned to shore. "It was a panic situation, and I guess more dangerous than I thought. The rope could have easily been cut on the sharp ice, and then it would have been a lot more serious, because then I would have been in the water with no diving suit on," said Mr. Cooze.

BRAVERY RECOGNIZED
Reg Cooze of Hare Bay was awarded a Commissioner’s Commendation for bravery in St. John’s earlier this month for his part in the rescue of a police diver 16 years ago in Freshwater Bay. Mr. Cooze said the award came as a shock considering the time that has past since that day in Feb. 1993. Andrew Robinson/The Beacon

PSDiver™ Monthly Issue 64
He was thanked at the time for his assistance with the body search, but was surprised to be invited to a ceremony 16 years after the fact. "It was a great thing ... I was a celebrity for a couple of hours," laughed Mr. Cooze.

Darlene Collins, the daughter of Mr. Cooze, went to school with Jamie Parsons and had not heard of the details of the rescue until the award ceremony took place. She said she was amazed to learn about the risks he took so long after the fact. "I always heard he had helped save a diver, but I never knew exactly what it was he did. At the ceremony, he said he did what he had to do. I've got two children of my own now, and I don't know if I would've gotten in there," she said.

"I always heard he had helped save a diver, but I never knew exactly what it was he did. At the ceremony, he said he did what he had to do. I've got two children of my own now, and I don't know if I would've gotten in there," she said.

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INFORMATION YOU CAN USE

Surviving the Streets
with Lt. Jim Glennon

Problem children:
Dealing with whiney, crybaby malcontents in your ranks

OK, OK, I get it — apparently I need to balance myself on opinion, so here it goes.

I've written a couple of articles over the past several of months about lousy supervisors, crummy commanders, stupid policies and micro-managing bosses. Not surprisingly, in response to those articles, I have received a few (okay, a lot of) e-mails from officers around the country who found themselves compelled to share their own tales of supervisor horror stories.

I also received a number of e-mails from my fellow supervisors who wished to broach the subject about the other side of the managerial abyss: problem employees. You know: the slugs, the call-dodgers, and the case dumpers. The guys that make traffic stops seconds after being assigned to hot, complicated, cluster calls. The guys that don't hear the radio when jobs come out in...
their areas. The gals (equal rights here) that “milk” basic calls and hide in the station all night. The bike officers that disappear for eight hours at a time. The officers that talk a big game but haven’t actually made an arrest in ten years. The K-9 officer that can’t come to work because his dog just ate another tennis ball.

One sergeant summed it up best: “I’d say that 90 percent of my guys are good, solid officers...but 10 percent of them are problem children: whiney, cry baby, malcontents that spend more time complaining than doing the job. What about them? They wear my ass out!”

Good question and observation. I do have to admit that I’ve been pointing the spotlight at the ineffective managers that have a tendency to suck the life out of both employees and organizations. But what about those line-level officers who do exactly the same thing? These employees do very much exist, and everyone knows exactly who they are. And it isn’t always the supervisor’s fault...or is it?

We have all been saddled with the whiners, the trouble makers, the officers who lack common sense, the cops who are unaware of their own incompetence, and the brickheads that argue about one line of their evaluation while being totally clueless to their complete uselessness. Isn’t their collective and continued existence still a by-product of poor leadership? I really don’t want to misplace blame and excuse inexcusable behavior, but how does such conduct exist and thrive in an organizational setting? Only one way: it’s allowed to.

Listen, I want to be liked by those in my charge. I admit it. I’m guilty. But I’m not liked by all those in my charge, and I’m fine with it because it ain’t my job to win popularity contests. My job is to lead officers in a direction designed to accomplish the overall mission of the organization. My responsibility is to teach, evaluate, coach, counsel, train, listen, encourage, create a climate of trust, and above all keep them safe. In order to do all of these things, I have to make decisions, hopefully balanced and sound decisions, but decisions nonetheless. And when you are the guy/gal making decisions for groups of
law enforcement officers, one or two of those officers will unquestionably disagree, experience unhappiness, and on the very rarest of occasions, actually complain.

Here is the point: sometimes officers use poor judgment and make a variety of mistakes, boo-boos and blunders. These mistakes can be dealt with fairly easily, and the skill is in the supervisory approach. It is important that errors be addressed in a measured and appropriate manner. Contrary to what some supervisors believe, an officer’s overall performance, effort, attitude and results absolutely need to be taken into consideration. So when addressing a blunder, sometimes a perturbed look will suffice. But sometimes a conversation with documentation is necessary. In my experience, 95+ percent of mistakes made are minor and should be addressed in a low-key fashion.

In my management and leadership classes I’ve categorized employees as belonging to one of these four groups:

1. The Self-Motivated
2. The Journeymen
3. The Bare Minimums
4. The Unproductive

For the purposes of this article let’s look at Group #4: The Unproductive. Now, some less-educated managers refer to this group as the Assholes, which is totally inappropriate. These unproductive workers are still human beings, and therefore should never be labeled in such a crude and politically incorrect way. I myself have never actually heard any supervisor use this term, but I am told it occurs on occasion in some far-away lands.

Anyway...

There are two reasons for someone belonging to this group: general incompetence and/or conscious disregard. Either way, their existence in an organization can not be allowed to go unchallenged. Serious mistakes or obvious patterned incompetence must be addressed and documented. To pretend it isn’t happening is akin to
organizational suicide. Ignoring the issue and hoping "it will all work out" is not the right attitude, either. Moreover, repeated warnings and direction with no consequence for failure to comply, or correction of inadequacies, creates an entitlement attitude in the employee that will eventually have a negative affect on unit synergy (teamwork). Because then all the working cops will know who the slug is, and they’ll want management to do something about him/her.

I admit that I, along with my fellow supervisors, have violated the most basic of rules once or twice myself. And most of the time it was because the officers weren’t purposely being jerks, but they were unquestionably incompetent. I’ll combine a couple of cases using a completely fictitious example to try and make a point.

This employee, we’ll call Bill Bupkiss, was a generally clueless police officer, but appeared as though he was trying. So we worked with this guy to the point of exhaustion: gently pointing out mistakes, giving him positive assurances and even giving him specialties in hopes that he would become a little more confident. Collectively as a supervisory group we got to the point where were literally begging the officer to improve and adhere to “suggestions.” (We didn’t call them “orders” as the word orders seemed to be just a little too harsh and we didn’t want to fracture this officer’s fragile psyche.)

But we were stupid. The guy was not only totally incompetent, but he was clueless to the reality and depths of his incompetence. And it was because of us. Instead of orders and consequences, we encouraged him to improve and praised him for inconsequential accomplishments. Not only did this foolish technique not work, it backfired. Besides the fact that the working cops thought we were nuts, over the years this officer actually wound up believing that he was entitled to his established work ethic. He astonishingly believed that he was doing great, so when we finally held him to agreed-upon work standards he became delusional and obstinate. And it was 100 percent our fault as supervisors. We created this inept and dense whiny monster.

Bottom line: leaders need to lead. Treat employees with dignity and respect, engage them, be involved, coach, counsel and train them. Let
them know that you view them as valuable human beings and assets to the organization. Focus and assign for talent. And finally, create a climate of trust. Trust is the foundation of an effective team.

But don’t be blind to the reality that a small percentage of employees will have problems. Whether those problems are because of genuine incompetence or are due to adult behavioral issues, your job as a supervisor is to deal directly and effectively with anyone in a position to destroy team cohesiveness. Understand that when you allow poor performance to continue, you actually encourage employees to fail. And such failure will eventually lead to team toxicity and, ultimately, mission failure.

Lt. Jim Glennon, the third generation in a family of law enforcement officers, has been with the Lombard, Ill., Police Department since 1980. Lt. Glennon has been an instructor in both the law enforcement field and private industry for more than 17 years. He teaches courses in the fields of interview and interrogations, communication skills, and leadership methods for police supervisors. Lt. Glennon is currently the lead instructor for the Calibre Press Street Survival Seminar. He has an undergraduate degree in Psychology and a Masters Degree in Law Enforcement Justice Administration. Contact Jim Glennon

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**FOUND ON THE WEB**

**Specially trained dogs to be used in Port Angeles archaeological survey**

7/12/2009 By Paul Gottlieb Peninsula Daily News

**PORT ANGELES** -- The city’s archaeologist, Derek Beery, intends to employ specially trained dogs to sniff for human remains at least a century old for his ongoing waterfront archaeological survey.

He is drafting requests for proposals for dogs and handlers schooled in "canine forensics," he said.

Beery said the contract probably will be advertised this week. "Historical human remains detection dogs" are specially trained to detect buried remains more than 100 years old, said Adela Morris, founder and president of the Institute for Canine Forensics, a Woodside, Calif.-based nonprofit organization founded in 1989.

The canines would trot and sniff through Beery's 872-acre archaeological survey study area -- a three-mile stretch from Ediz Hook up to and including the site of the former Rayonier pulp mill.

Canine forensics expert Adela Morris and her border collie, Rhea.
Beery already has a good idea of where human bones and other remains may lie buried. He used maps, studies, and environmental predictors such as proximity to water and available sunlight to determine general areas of high-, medium- and low-statistical probability that remains and artifacts exist. He's estimated 15 percent of the waterfront has a high statistical probability of containing Native American artifacts or remains and 35 percent a medium probability.

Lower Elwha Klallam Tribal Chairwoman Frances Charles said she was "not surprised" at the 50 percent medium or high probability of finding artifacts or remains and supported using canine forensics for the architectural survey as part of "a case-by-case process." Klallam people settled along the Port Angeles and Strait of Juan de Fuca shoreline thousands of years ago.

Beery said if a canine forensics contract is awarded, "we'd look for hot spots." He predicted the dogs would go to work this fall, since they work best in wetter weather. "This is not something that has been widely done up to this point in archaeology," he said. "We are going to give it a shot."

State and federal law can require higher levels of development review for areas that are believed to contain artifacts and remains.

Beery would not say where he believes archaeological deposits exist.

But artifacts and a burial site are believed to exist at the village site of Y'ennis, where the Rayonier pulp mill once stood, and they are known to exist on Marine Drive at the construction site of the state Department of Transportation's failed graving yard. That project was abandoned in 2004 at a cost of more than $90 million after the Klallam village of Tse-whit-zen was unearthed, and with it, more than 300 complete burial remains and more than 10,000 bones, bone fragments and artifacts.

Two archaeological studies failed to fathom the breadth of archaeology at the site. The first study, before digging began, concluded no artifacts and remains were at the site. Within the first month of construction, artifacts and remains were discovered.

Private and public developers would use the survey and a yet-to-be-written management plan for a sense of how much they would need to study a site before deciding whether to develop it.

The second survey concluded there were about two dozen burials, and work resumed. More than 300 complete burials eventually were uncovered before the project was shut down.

Join our PSDiver and Water Rescue Discussion Group at:
(Just click the link or copy and paste the url into your browser.)

Public Safety Divers Forum
http://groups.yahoo.com/group/PSDivers-
PublicSafetyDiversForum
for good little more than a year after the first soil was turned.

Morris, a former zookeeper, said in a telephone interview that she was contacted by an archaeologist who was working the Marine Drive site in 2003 when the project first started. "I was contacted before the disaster struck," Morris said.

Negotiations to come to Port Angeles had advanced to the point where she was looking for flights "and thinking how to do this," she said. "They decided at the time not to use the dogs and to stay with the traditional methods," Morris recalled. "They were concerned about money, and that here's a technique that has not been at that time 'tried and trued' for archaeological work for human burials. "When you look back at what happened, you think, 'Could we have made a difference?'"

About 100 graves were found at one burial site on the property.

But Charles said the soil at Tse-whit-zen was too churned up from repeated industrial development to have made canine forensics effective.

Morris agreed that the dogs are not as able to pinpoint graves when bones are dispersed. "What we would see the dogs do is, they will give us a huge area of where the scent is," she said.

Morris said few dogs are trained to do the work, which the dogs must do in a slow, methodical manner. "Besides our nine certified dogs, I know of 10 more dogs in the world who have done this work," Morris said. "It is a very small community."

Her dogs are trained for six months to two years, depending on the dog's age. When dogs discover buried remains, they "alert," or sit at the spot. They are trained to detect bones of at least 100 years old, but the dogs' noses must be in contact with the ground surface -- they can't detect through concrete.

They've identified a grave dating to 450 A.D., which was buried 5 feet deep, she said. That site was "the oldest known ever to be located by a dog," Morris said. "There
are able to pinpoint graves better because everything is contained," she said.

They also work better when employed in conjunction with ground-penetrating radar, she said.

Morris and her dogs have been discovering buried human remains for law enforcement agencies for more than 25 years, she said. "We know it works, but for the archaeological world, this is like a very new, weird concept." "Three papers are coming out" authored by archaeologists that will further validate her dogs' work, Morris added.

Morris said her dogs are not cadaver dogs, which are geared toward search-and-rescue missions and detecting fresh human remains. Her dogs include a German shepherd, an Australian shepherd, border collies and mixed breeds. "You want a high-drive dog who wants to do something," Morris said.

The institute frequently works with Native American tribes, Morris added. "They know there are burials in given areas," Morris said. "We will work the dogs, the dogs will be alerting, and [the tribe] will have no interest in digging them up. To them, that would be very disruptive, bad karma. "We done lots of projects where they know there are burials, but they don't know where they are. "The dogs say they are here, and the Native Americans say, 'That's good enough for us. You are not going to build here.'"

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

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

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

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

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

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

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

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

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

Diving First Aid for Professional Divers to be offered at select DUI events

DURHAM, NC – For the past few years, Divers Alert Network® (DAN®) has joined Diving Unlimited International (DUI) on the road for several DUI DOG Rally and Demo Days events. DAN hits the road with DUI once again in 2009, with a special offering added for Public Safety Divers.

At DUI events that include a special day for Public Safety Divers, DAN will offer training in its Diving First Aid for Professional Divers program. The course will be offered the day before the DUI event starts.

Designed for professionals who dive as part of their job description, Diving First Aid for Professional Divers includes the three required elements of the DEMP course (Oxygen First Aid for Scuba Diving Injuries, AEDs for Scuba Diving and First Aid for Hazardous Marine Life Injuries), along with workplace CPR and first aid (based on guidelines provided by the US Occupational Safety and Health Administration).

Participation in the Diving First Aid for Professional Divers course requires an affiliation with a public safety or scientific diving organization, commercial diving company or an aquarium. As proof of affiliation, participants will also be asked to provide a letter from the qualifying entity, outlining their diving role. The cost to complete the course at the DAN-DUI Public Safety Day events is $100, and registration is required.

“We’re looking forward to the chance to get together with Public Safety Divers,” says Eric Douglas, DAN Director of Training. “Not only to conduct training that can be of value to them, but also to tell them about all the resources they have available through DAN. We know a lot of these guys are funding themselves, and so comprehensive courses like the Professional Divers course and learning about resources like the Oxygen Grant Program can be a great opportunity for them.”
DAN will be offering the Diving First Aid for Professional Divers course at the following DUI Demo Days events:

- **Seattle/Tacoma, WA August 27**  (deadline: August 14)
- **Manatee Springs, FL November 12**  (deadline: October 23)

For information on Diving First Aid for Professional Divers, or to register for any of the DAN-DUI events, please visit [www.diversalertnetwork.org](http://www.diversalertnetwork.org) or call (800) 446-2671 ext.555.

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**NOAA/UHMS/USRF Physician's Training Course in Diving Medicine**

**AUGUST 10-21, 2009**

NOAA Diving Center, SEATTLE, WA

Registration: ONLINE  WORD  PDF

**NOTE:** Foreign Nationals must register & have all related papers in by JULY 10 in order to have access granted to NOAA facilities

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**Illinois SAR Conference (ISARC)**

**August 21 – 23**

[http://www.illinoissar.org/Conference.htm](http://www.illinoissar.org/Conference.htm)

ISARC will be held at Rend Lake Resort & Conference Center in Whittington, IL. Conference agenda, activities and registration info is now available online.

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**Arizona SAR (AZSAR) 2009 Conference**

**September 18 – 20**

This year’s Arizona SAR Conference will be held at the Salvation Army Camp Ponderosa in Heber, AZ. Classes include Man Tracking, K9, Mounted, ATV & UTV, helicopter safety, Wilderness First Aid, NASAR SARTECH Certification, CASIE (Computer Aided Search Information Exchange), Alzheimer’s, and swift water rescue. Meals, rooms, RV and tent camping on the facility are available. An online registration form should be up and running soon, but in the meantime, contact James Langston at (620) 464-6220

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**Canadian Underwater Conference and Exhibition**

[http://www.underwaterconference.ca](http://www.underwaterconference.ca)

September 13 to 15, 2009

Halifax, Nova Scotia, Canada

“Man & Machine Underwater: Operations and Initiatives”.

The conference addresses commercial diving and remotely operated vehicles working in the offshore and inland waters.

For more information, contact jim@calvesbert.ca

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**2009 International Association of Women Police Conference**

**September 20-24, 2009**

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PSDiver™ Monthly Issue 64
The 47th Annual IAWP Training Conference will be held in Seattle, Washington on September 20-24, 2009. The conference, held at the Westin Seattle Hotel, will feature four days of classes covering a variety of subjects, plus pre- and post-conference events. Open to all law enforcement professionals. [http://www.iawp.us/](http://www.iawp.us/)

**October 2-3**

**Southern California Association of Fingerprint Officers (SCAFO) Annual Training Seminar**

Burbank, CA  
[www.scafo.org](http://www.scafo.org)

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**International Symposium on Human Identification**

**THE REAL DEAL· OCT. 09**

**October 12-15, 2009**

**Las Vegas, NV**  
[www.promega.com](http://www.promega.com)  
[www.ishi20.com](http://www.ishi20.com)

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**SARCon 09**

**Oct. 15-18, 2009**

[http://www.clackamas.us/sheriff/sarcon/z](http://www.clackamas.us/sheriff/sarcon/z)

**Northwest SARCon** is a search and rescue conference developed for emergency responders and their supervisors, including: sheriff’s deputies, SAR team members, SAR volunteers, police officers from state and municipal agencies, firefighters, military and national guard personnel and Emergency Medical Services crews. At the conclusion of the conference, participants will have received hands-on training and participated in discussions on topics related directly to the conduct of search and rescue missions.

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Continuing Education Editor: **Chuck Elgin**

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What is GPS?
The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use. GPS works in any weather conditions, anywhere in the world, 24 hours a day. There are no subscription fees or setup charges to use GPS.

How it works
GPS satellites circle the earth twice a day in a very precise orbit and transmit signal information to earth. GPS receivers take this information and use triangulation to calculate the user's exact location. Essentially, the GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. Now, with distance measurements from a few more satellites, the receiver can determine the user's position and display it on the unit’s electronic map. A GPS receiver must be locked on to the signal of at least three satellites to calculate a 2D position (latitude and longitude) and track movement.

With four or more satellites in view, the receiver can determine the user's 3D position (latitude, longitude and altitude). Once the user's position has been determined, the GPS unit can calculate other information, such as speed, bearing, track, trip distance, distance to destination, sunrise and sunset time and more.

How accurate is GPS? (see also WAAS)
Today's GPS receivers are extremely accurate, thanks to their parallel multi-channel design. Most GPS's 12 parallel channel receivers are quick to lock onto satellites when first turned on and they maintain strong locks, even in dense foliage or urban settings with tall buildings. Certain atmospheric factors and other sources of error can affect the accuracy of GPS receivers. Most GPS receivers are accurate to within 15 meters on average.

Newer GPS receivers with WAAS (Wide Area Augmentation System) capability can improve accuracy to less than three meters on average. No additional equipment or fees are required to take advantage of WAAS. Users can also get better accuracy with Differential GPS (DGPS), which corrects GPS signals to within an average of three to five meters. The U.S. Coast Guard operates the most common DGPS correction service. This system consists of a network of towers that...
receive GPS signals and transmit a corrected signal by beacon transmitters. In order to get the corrected signal, users must have a differential beacon receiver and beacon antenna in addition to their GPS.

The GPS satellite system
The 24 satellites that make up the GPS space segment are orbiting the earth about 12,000 miles above us. They are constantly moving, making two complete orbits in less than 24 hours. These satellites are traveling at speeds of roughly 7,000 miles an hour. GPS satellites are powered by solar energy. They have backup batteries onboard to keep them running in the event of a solar eclipse, when there’s no solar power. Small rocket boosters on each satellite keep them flying in the correct path.

- The first GPS satellite was launched in 1978.
- A full constellation of 24 satellites was achieved in 1994.
- Each satellite is built to last about 10 years. Replacements are constantly being built and launched into orbit.
- A GPS satellite weighs approximately 2,000 pounds and is about 17 feet across with the solar panels extended.
- Transmitter power is only 50 watts or less.

For more information on GPS technology, visit GPS Explained at http://www.gpspassion.com/Hardware/explained.htm

**PSM-CE-64 GPS TECHNOLOGY**

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<td>8</td>
<td>Length in a minute</td>
<td>H</td>
<td>Data Base of expression</td>
</tr>
</tbody>
</table>
(9) GPS accuracy is limited to 15 miles, due to Military imposed satellite algorithms.
   (a) True
   (b) False

(10) Due to polar variations when heading in a north bound direction the GPS will actually lead you in a more westward direction.
   (a) True
   (b) False

(11) GPS is not accurate enough for PSD.
   (a) True
   (b) False

(12) GPS datums are equal and display the same information. Therefore you can use WGS84 and the reading from NADS 83 and find the same exact location.
   (a) True
   (b) False

TEAM DISCUSSION TOPICS:

1. Discuss your teams ability to use GPS for documentation purposes and why you would want or need to do so.

2. If GPS technology is not part of your team equipment, discuss what might be valid minimum entry level equipment for your team. Include discussion on how that purchase can be funded and the training necessary to accompany it.

3. Discuss possible benefits GPS technology purchased for your team would or would benefit your department if used for other purposes. Identify at least three benefits to the department that will help justify the purchase or budget expense of a GPS unit.

4. If your team is already using GPS technology, discuss ways it can be used other than for its' original intended purpose. How creative can your team get while staying within some bound of reason?

5. What technologies do you use, could you use that would integrate with GPS technology?
Little Johnny’s kindergarten class was on a field trip to the local police station, where they saw pictures of the 10 Most Wanted men tacked to a bulletin board.

One of the youngsters pointed to a picture and asked if it really was the photo of a wanted person.

"Yes," said the policeman. “The detectives want him very badly."

So Little Johnny asked, “Why didn’t you keep him when you took his picture?”

The Shoplifter...

A shoplifter was caught red-handed trying to steal a watch from an exclusive jewelry store.

"Listen," said the shoplifter, "I know you don't want any trouble either.

What do you say I just buy the watch and we forget about this?"

The manager agreed and wrote up the sales slip.

The crook looked at the slip and said, "This is a little more than I intended to spend. Can you show me something less expensive?"