



Deadly Dives

Take A Look at the ATF Underwater Explosives Recovery Team and its Specialist Training School

BY MARK NORRIS, ATF SPECIAL OPERATIONS DIVISION

PHOTOS BY BOYD CRAUN, ATF VISUAL INFORMATION BRANCH



Black water so dense you can't see your outstretched hand. Bottom mud so thick and silty it takes three complete flush-outs to clean your gear. Entanglements so stiff you have to tug back to the line tender's harried tuggings to assure him you're still there.

These are just three conditions that separate sport and rescue diving from underwater explosives search and recovery. Add to the recovery mission a fourth dive factor - submerged explosion, speed-of-sound shock waves that could rip your internal organs

apart at 1,100 miles (1760 km) per second - and you understand why underwater explosives recovery diving is for a stalwart, highly trained few.

Eight of these stalwarts make up the ATF Underwater Explosives Recovery Team. The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) is part of the federal government's law enforcement arm of the U.S. Department of Justice. ATF divers have trained some 130 other divers from police and fire departments around the country. Today they stand ready to deal with submerged ordnance when a criminal investigation discovers it.

How And Why The Team Formed

The ATF UERS (*Underwater Explosives Recovery Specialist*) school, instructed in coordination with the Edmond, Oklahoma, Police Department, has trained certified bomb technicians in the skills of underwater explosives recovery since 1996. Students accepted into one of the 16 class positions competed for annually must be experts in explosives disposal and experienced scuba divers who hold advanced diving certification. Once accepted, ATF pays 100 percent of the costs and graduates students with full UERS certification.

The school began with a handful of interested cops. Initiated in 1996 by then-Oklahoma City ATF Field Office Resident Agent in Charge Dewey Webb, and Edmond Police Department forensic investigator Rocky Yardley, it's a prime destination for the adventurous in law enforcement. Today news of the school is circulated nationally through bomb tech publications such as The Detonator, and those who meet the criteria are standing in line to get in.

“ATF is the only federal agency that provides this kind of training to local law enforcement, and has a qualified federal team that responds to underwater explosive incidents,” said Webb, now Special Operations Division Chief at the Bureau’s Washington, D.C. headquarters. “In 27 years of working explosives cases, I found that many times the suspect would admit to throwing explosives into a lake, river or other body of water, but there was no one trained and available to recover them. This training fills a void that for years had been overlooked.”

“We believe it is an excellent investment,” said ATF Explosives Technology Branch Chief Mark Murray, “particularly in light of today’s heightened terrorist threat. These men are not only being trained to process crime scenes for evidence-gathering. They’re also learning how to recover, and if necessary, to dispose of discovered explosives that regular rescue divers know nothing about. ATF thinks the more dive-capable explosives enforcement officers, the better.”

In most instances, eyewitnesses who come forward with testimony help determine explosives recovery search areas. In the case of weapons or explosives, most are thrown from a shoreline or pier. Once an area survey recommends a mission, a search technique is determined and the next stage of planning begins.

How Operations Work

Blackwater invisibility isn't the only potential problem UERS divers encounter. Underwater entanglements such as trees



ATF Diver Training:

(Top) Airing the lift bags.

(Center) Learning to lift.

(Bottom) Face masks are foiled during line training to simulate the zero visibility of blackwater dive conditions.



ATF Diver Training: Safety is paramount.

Underwater explosions can move through and destroy vital human organs because of shared viscosity in the human body and water.

or floating dock lines can produce unseen hazards that aren't discovered until a diver encounters them. To help offset these hazards, all recovery divers are secured to a line controlled and directed by a line tender, who is in turn supported by a standby diver and a mission recorder.

The line tender maintains surface control of the diver with coded tugs or hardwire communications. The recorder plots the search area and tracks the diver's progress, logging evidence as it is recovered. The diver's search area is planned and maintained by an assigned diving supervisor who oversees all dive-related positions during the operation.

Each team member is trained and prepared to act as backup for every team position, in the event an emergency forces them into a rescue mode. Because the average amount of time individuals can hold their breath is 52 seconds, the standby diver is trained to reach the primary diver within 45 seconds of a signaled emergency.

To help protect them, UERS divers wear drysuits to help shield them from underwater "overpressure" produced by an underwater blast. Unlike atmospheric explosions that can deflect around objects in their shockwave path, underwater explosions can move through and destroy vital human organs because of similar densities in the human body and water.

Nothing could insulate a diver from a sufficiently large underwater explosion, but drysuits can protect from overpressures near 50 psi. Exposure to overpressures greater than 300 psi will cause bowel and lung tearing, and even death. Drysuits combined with full-face regulators also protect from the cold and underwater contaminants.

As is true with all explosives work, only one bomb tech at a time enters the search area. This is the primary recovery diver. The line tender communicates with him through a coded pattern of line tugs or voice communication and brings him up from sweeps that last no longer than 20

minutes. If the primary diver is unable to locate a recovery item within that 20 minutes, a fresh diver submerges to continue until the team is confident an area has been thoroughly searched.

The Science of Lift

Once they identify and select an item for removal, pneumatic salvage lift bags designed to raise everything from handguns to downed jetliners are the UERS diver's salvage mode. UERS students learn the general rules of proportionate lift in relation to estimated size and weight of recovery articles, and must raise multiple items, including a midsize car, during recovery dive training. Once attached to a line and lifted to the surface, the diver leaves the water and assists onshore team members to remove and render it safe.

To date, some 130 state and local bomb techs have been shown the ropes of this extremely hazardous type of diving. Last year's class, held in mid-September, was made up of law enforcement officers from 11 states.

The ATF Underwater Explosives Recovery Team

Formed to assist the Bureau of Alcohol, Tobacco, Firearms and Explosives and other law enforcement agencies with the mission of explosives and explosive devices recovery, ATF's Underwater Explosives Recovery Team comprises explosives enforcement officers who regularly support land-based explosives investigations.

Since its inception, Explosives Enforcement Officer Roy House has been on the team. A former Navy Explosive Ordnance Disposal Technician and Gulf War veteran, House also coordinates the Bureau's UERS course and writes most of its curriculum. Four of the seven other team members are also former Navy EOD. The other three were highly skilled, civilian-trained divers when recruited.

The team, formed in 1996 following the downing of TWA Flight 800 off the coast of Long Island, stands ready to serve ATF and other law enforcement agencies with its unique recovery skills.

"Once an assignment is approved we can respond to any recovery operation request within 24 hours," says UERS team leader Rich Campbell.

Training

Stationed at individual field divisions throughout the country, each dive team member is responsible for developing and hosting quarterly training. Sessions always include refresher studies in dive medicine, physics, underwater explosives, and search and recovery. They then apply their classroom studies in dive-related scenarios.

Activation

When an investigating agency suspects explosives of being placed (or they are reported) in contact with a body of water, the agency can contact a local ATF field division for assistance. ATF special agents then work with local officials to determine a need for UERT activation.

Once the sides agree on a need, the field division contacts Murray, to request team activation. From there team leader Rich Campbell assigns a dive team supervisor to survey the site and make preparations for the team's arrival.

As in every ATF investigation, local law enforcement support is sought during the preliminary survey and actual mission. If a UERS-trained diver or rescue diver in a local police or fire department is available in the area, ATF enlists such personnel to provide backup support. They also consult local scuba shops regarding water conditions in the dive area.

Once approved, the same principles of crime scene investigation are applied underwater until evidence is recovered and removed. If evidence pertains to an

ongoing court case, the same legal rules of collection apply to ensure it will hold up in court.

Safety First

Because the nature of UERS is recovery, not rescue, no dive is ever undertaken in an area that preliminary scouting has determined to be life-threatening. Stories of untrained recreational and recovery divers solicited by local law enforcement who "never came up" hound the profession.

For example, officials are still confused concerning what actually happened during an auto recovery mission that two years ago took the lives of two recovery divers and two backup safety divers.

Another incident, a parasailing tragedy, claimed the life of an untrained diver who got caught in the drowned parasailer's tangled parachute cords. This is why ATF underwater explosives recovery training emphasizes the worst possible diving conditions with the types of complicated recovery scenarios recreation and rescue divers rarely confront.

If life-endangering water conditions are discovered at a requested dive site - whether their nature is biological, currents or obstructions, for example - a mission determination favors the life of the diver. In some cases, remotely operated vehicles (ROVs) can be used to photograph and even retrieve recovery items. This was the case when the ATF Dive Team investigated fires that burned the boats of President-elect George W. Bush and Secretary of Commerce-designate Don Evans the night Bush's election was confirmed in December 2000.

The team was dispatched after ATF's Houston Field Division requested assistance with its fire investigation. Initial dives proved the area was too hazardous for safe diving. The team then used an underwater ROV with scanning sonar capabilities to identify and recover



**(Top) Diver training; learning to lift a mid-size car.
(Bottom) An ROV recovered the tarp that proved an accelerant-induced arson on the boats of President-elect George W. Bush and Secretary of Commerce-designate Don Evans in 2000.**

wreckage. Recovered evidence proved the use of an accelerant and led to the arrest and conviction of an arson suspect.

Most of the recovery items assigned to the team are stolen explosives that have been ditched into a body of water. Other missions over the years have included the recovery of firearms, blasting caps and dynamite. More than 400 pounds (180 kg) of dynamite and 963 blasting caps were recovered in a

mission near Louisville, Ky., leading to the arrest of a suspect who had dumped them into a muddy pond.

The Importance of UERS

“We’re trained and standing ready to assist with any potential terrorist threat in which underwater booby traps or other explosive devices are discovered in any local or federal investigation that needs them removed or neutralized,” says team leader Campbell.

“I hope this article alerts more of the nation to our availability and puts us on the short list when underwater explosives recovery diving can help solve an important case or diffuse a potentially hazardous situation,” adds team member House.

The expertise of ATF’s UERS team ranks them without peer, and should place them on the short list when emergency conditions exist within their mission mandate. Posse Comitatus laws restrict the Navy’s involvement during criminal investigations except where military ordnance is involved. ATF is the only federal law enforcement agency with the underwater explosives recovery skills that can conduct UERS investigations.

“We’re here to uphold ATF’s federal mandate to serve and protect our nation,” says Murray. “If that means mustering the team to assist the FBI in a terrorism-related explosives case or coming alongside the Omaha Police or the Los Angeles Sheriff’s Department to recover underwater explosives endangering their area, we are prepared to meet the need to keep America safe.”

For more information on ATF’s Underwater Explosives Recovery Team, contact the Bureau of Alcohol, Tobacco, Firearms and Explosives, Explosives Technology Branch, at +1-202-927-8030.

The Bureau of Alcohol, Tobacco, Firearms and Explosives, Explosives Technology Branch

ATF’s Explosives Technology Branch (ETB) is the Bureau’s primary point of technical assistance and support in all explosives matters. ETB’s explosives enforcement officers (EEOs) who serve throughout the Bureau’s 23 field divisions “render safe” and disassemble explosive and incendiary devices.

ETBs also prepare destructive device determinations for court proceedings, and provide expert analysis and onsite investigative technical assistance at bombing and arson sites. Highly technical training in explosives handling, explosive threat and vulnerability assessments, and federal explosives storage regulations, are also made available to law enforcement agencies and the public through this vital ATF branch.

