

Detectors Aid Police & Commercial Divers



Diver with Indian River County Fire Rescue surfaces with metal detector and recovered evidence; Inset - Randive commercial diver jumps in with JW Fishers Pulse 8X metal detector to clear area of metal debris.

Many commercial diving companies and law enforcement agencies are acquiring underwater metal detectors to help in their search and recovery operations. Designed for use in the subsea environment, these detectors have a minimal number of controls making them extremely easy for divers to operate. They are an essential piece of equipment for locating and tracking pipelines, searching for lost tools and equipment, pinpointing the position of anchors and moorings, as well as finding weapons, evidence, and explosives.

New Jersey based Randive is one of the diving companies employing underwater metal detectors in their operations. In the five decades since its founding in 1959 by Randor Erlandson, Randive has continuously expanded their capabilities, and today its clients include some of the largest shipping companies in the world. They perform ship maintenance and repair, sal-

vage and survey work, inspection and repair of dry docks, piers and a variety of other tasks. The company is affiliated with a number of professional organizations including the Association of Diving Contractors International and the Society of Maritime Port Engineers.

In a recent cable laying project across New York harbor, Randive's divers used their JW Fishers Pulse 8X detector to locate metal obstructions and mark them for removal. For this job, the 16 inch search coil was attached to the detector's electronics unit providing greater penetration into the muddy bottom. In another project, the 8X proved beneficial in the search for a 8 foot wide stainless steel propeller lost from a towboat. Although buried deep in silt, Randive's Keith Michalski reports their experienced divers were able to quickly find and recover it. When the (continued on pg 3)

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Diver recovers 50 year old ring

Mike Drainville of Massachusetts loves metal detecting on land and underwater. His favorite places for detecting are the local beaches and swimming holes in nearby lakes and ponds, where he scours the bottom looking for lost coins and jewelry. Recently Mike was diving with his JW Fishers Pulse 8X in 15 feet of water, 50 yards offshore when it started to scream. He slowly put the machine down, then gently slid his hand into the mucky bottom. He felt something hard, rolled it around in his fingers, and immediately recognized it as a ring. As the silt cleared he raised his arm and was awe struck at the glinting gold in his hand. Returning to shore so he could more closely examine the find, Mike noticed the ring was engraved with a Peace sign and realized it must have been lost about 50 years ago during the 1960s, a period in American history marked by antiwar protests.



Mike Drainville with Pulse 8X recovered 1960s Peace ring

U/W Cameras Help Police and Commercial Divers



Tonawanda Sheriffs diver with Fishers DHC-1, Inset - WJ Castle commercial diver wearing the MC-1 helmet-mount camera

The Tonawanda New York Sheriffs Department is one of the many agencies using u/w video systems in their operations. Lt. Scott Sheehan, officer in charge of the 10 member volunteer squad, says with so many navigable waterways around the Twin Cities the service they provide is indispensable. Private donations allowed the team add several pieces of much needed dive gear including JW Fishers DHC-1 diver-held video. The items helped improve the squad's ability to accomplish the many tasks they're called out for, including recovery of weapons, shell casings, and stolen property.

"Recently we did a Homeland Security Drill at a local oil refinery and used the DHC-1 to film the it. The system worked great and everyone was impressed with the quality of the video we shot. With the limited bottom time, having a recording allows us to review the operation back at the office and discuss any changes we could make."

A private sector firm using video in their subsea operations is WJ Castle PE & Associates. Company founder William Castle has been providing marine and structural engineering services for over 30 years. Recently the firm was hired to do an inspection at the US Naval Academy in Annapolis, MD. Company engineer Steve Gardner reported, "We were working under the Nimitz Library. Our goal was to document the condition of the pile caps and grade beams supporting the building and develop a repair strategy based on the existing conditions. It was important to have good footage of the structure to share with all the stakeholders." To ensure satisfactory video was captured Castle's diver was equipped JW Fishers MC-1 mini camera with internal high intensity LED ring light. The compact unit was easily attached to the diver's full face mask. Topside the video was recorded on Fishers VRM-1 with built-in flat screen monitor and DVR. **JWF**

International News

.....Security contractor Agamco is using Fishers SSS-100K/600K side scan sonar in Iraq to search the River Euphrates for explosives and obstructions to navigation.

.....Taiwan Forestry Research Institute has a JW Fishers SeaOtter-2 ROV to assist in their field research.

.....Diver-S Marine is using their SSS-100K/600K side scan sonar in a survey project in Bahrain.

.....Synergy Subsea Engineering in Dubai, United Arab Emirates is using Fishers PT-1 pinpointing magnetometer to locate and track subsea pipelines.

.....Institute for Underwater Research in BC, Canada is using Fishers TOV-1 towed video system to perform scientific research and exploration expeditions.

.....China's Huazong University of Science and Technology is using JW Fishers SeaLion-2 ROV at the School of Naval Architecture and Ocean Engineering.



Diver scans reef for magnetic anomalies with Fishers Diver Mag magnetometer

.....Mexico's institute for u/w archaeology, Arqueologia Subacuatica Instituto Nacional de Anthropologia e Historia, is using Fishers Diver Mag 1 hand-held magnetometer in the field work reports Ricardo Borrero.

.....Marc-Richard Fortin, manager of submarine network engineering for Globenet, reports their JW Fishers CT-1 cable tracker worked very well on a project in Venezuela.

.....Ireland's Marine Institute, the national agency responsible for marine research, technology development, and innovation is using Fishers MFT-1 acoustic transponder and DHI-1 interrogator in their work.

.....Ashtead Technology, a global firm providing sales and rentals of u/w equipment as well as services, has acquired two of Fishers Pulse 8X diver metal detectors.

Tracking Pipes and Cables Easy with High Tech Tools

Utility companies have been laying pipes and cables across the ocean floor for more than a century. Prior to the introduction of GPS, marking their location was difficult, and position information often erroneous. It is extremely important to know where existing lines lie before undertaking dredging operations when new pipes and cables are laid down.

Two pieces of equipment that have proved most effective are the pinpointing magnetometer and the cable tracker. The pinpointing magnetometer is a very sensitive instrument that locates iron and steel pipes buried up to 16 feet in the bottom, and the cable tracker can detect a buried power or communications cable at a distance of more than 30 feet.

One company successfully using the cable tracker is Telkom South Africa. Recently the company was contracted to perform service on the East Africa Submarine Cable System (EASSy), a 10,000 kilometer submarine cable deployed along the east and south coast of Africa. The undersea fiber optic cable is the highest capacity system carrying voice, data, video, and internet between sub-Saharan Africa and Europe / North America. Verne Steyn, Chairman of EASSy's Terminal Party Work Group reports, "We purchased JW Fishers CT-1 cable tracking system to assist with locating our cable at Mtunzini near Durban in South Africa. The water visibility is near zero and annual surveys must be performed on the section that runs from a depth of 30 meters to the shoreline. The CT-1 enabled us to quickly and easily find the cable whereas previous dives aborted due to the poor visibility, which is expensive for the consortium. We also use the CT-1 to ensure the 25 Hz tone leaving the cable station can be found on the beach, confirming the cable is in good health up to this point. (contd. on page 4)



Diver scans area with CT-1 cable tracker

Government Agencies, Universities, & Military Perform U/W Searches

.....US Navy's Naval Surface Warfare Center is using Fishers SCAN-650 scanning sonar in undisclosed operations.

.....Johns Hopkins University has acquired a Fisher SeaLion-2 ROV with scanning sonar, manipulator, and cable management system.

.....US Dept. of the Interior, Bureau of Safety & Environmental Enforcement is using Fishers Pulse 8X metal detector and Diver Mag 1 magnetometer to search for hazardous materials, and also for use by the department's Federal Preservation Officer for marine archaeological work.

.....Bulgaria's Center for Underwater Archaeology is using Fishers TOV-1 towed video system with 500 foot cable, a deep dive wing, the VRM-1 monitor & recorder and a Pulse 8X metal detector.

.....SOPAC (Secretariat of the Pacific Community) Applied Geoscience & Technology Division in Fiji has purchased their 2nd Pulse 8X detector.

.....Students at the Indian Institute of Technology Bombay are using JW Fishers MFP-1 acoustic pinger on the AUV they are building for the AUVSI Robosub Competition held annually in San Diego.

.....CICESE, Mexico's Ensenada Center for Scientific Research & Higher Education, is using Fishers Proton magnetometer for marine archaeology projects.

.....Basarnas, Indonesia's National Search & Rescue Agency purchased a quantity of Fishers ROVs. New York based Lifeguard Systems provided on site training for some of the team. **JWF**



Basarnas team members with Lifeguard trainer and Fishers ROV

Detectors aid police & divers (contd from page 1)



Randive diver Keith Michalski with Pulse 8X detector & 16" coil; Inset - recovered propeller

target of interest is buried down more than 6 feet, Randive puts their Fisher PT-1 pin-pointing magnetometer to work. This powerful detector finds iron and steel objects up to 16 feet under the bottom. It proved indispensable in locating and tracking a deeply buried natural gas pipeline running under the Hudson River near Manhattan.

Commercial divers are not the only ones using underwater detectors, a number of law enforcement and public safety dive teams are putting these devices to work in their search operations. State Police and FBI dive teams across the US are using the Pulse 8X to locate weapons used in the commission of crimes and disposed of in a waterway. Criminals mistakenly believe that by throwing a gun or knife into a river or lake, it will be lost forever. In reality, law enforcement divers equipped with an underwater metal detector easily find these weapons. Detectors can also assist in the recovery of evidence as witnessed by Lt. Kyle Kofke with Indian River County Fire Rescue in Florida. Recently the dive team was tasked with searching the mucky bottom of the Indian River Lagoon with their Pulse 8X looking for possible evidence in a homicide investigation. The 16 inch coil was attached to the detector allowing divers to search a large area quickly. Lt. Kofke reported divers found the victim's cell phone which provided a time line for the day's events, a key piece of evidence needed to charge the defendant with murder. **JWF**

Commercial News

.....C&C Diving in Alaska has acquired a JW Fishers SSS-600K side scan sonar. The company specializes in locating and raising all types of submerged objects.

.....L-3 Maripro in California is using two of Fishers Pulse 8X metal detectors. The company provides marine services, u/w construction, cable laying and repair.

.....Dawson Construction in Ketchikan, Alaska has purchased Fishers DV-1 drop video system to view subsea structures.

.....Seaward Marine, based in Virginia, used their Proton 4 magnetometer to find a lost ship anchor. They had searched unsuccessfully for days with side scan, then realized the anchor must be buried in mud. Seaward's Bud Hall reports the anchor was very quickly located with the Proton 4.

.....Sound Ocean Systems, maker of buoy systems for oceanographic research, is using Fishers MFT-1 transponder. Should a buoy ever sink it can easily be located if a transponder is attached.

.....DOF Subsea, a global provider of integrated offshore services, is using JW Fishers TOV-1 towed video system with DDW-1 deep dive wing for deeper tows in their inspection and survey operations.



Commercial diver with recovered ADCP with attached JW Fishers SFP-1 pinger

.....A commercial diver was able to recover a current profiler that went missing because a University of Texas researcher thought to attach a JW Fishers acoustic pinger before deploying it.

.....National Marine Services in Oman is using Fishers SeaOtter-2 ROV for their inspection operations reports Commercial Manager Clement Sequeira.

Tracking Pipes & Cables (contd from page 2)

I then report to the offshore repair vessel we are confident the tone is leaving shore, which helps reduce fault finding time, in turn saving us money.”

LD TravOcean has been laying power and telecommunications cables under the ocean floor for the oil and gas industries for more than 35 years, and more recently for the offshore windfarm market. LD TravOcean is capable of burying cables of all types to depths up to 3 meters using trenchers, vibro-ploughs, high pressure water jets, and dredging tools. The company has successfully completed a number of high profile projects including laying 4 kilometers of cable for a tidal power plant near Paimpol, France and putting down 51 infield power cables in 50 meters of water for the Walney Windfarm in the Irish Sea. In addition to installations, TravOcean also provides submarine power cable repair as they did at Delma Island in the United Arab Emirates. One of the essential tools used in these operations is Fishers PT-1 pinpointing magnetometer. This highly sensitive detector of iron and steel objects is capable of detecting the steel armor used on many cables at depths up to 3 meters. A key advantage of the instrument is its ability to pinpoint the location of individual lines even when in close proximity to other cables.

Japan based NTT-WE Marine is also deep in the business of undersea cables. They assist in all aspects of a project from design and construction to permitting, negotiation with fishermen's unions, route surveys, installations and burial. In addition NTT-WE offers a variety of maintenance services to meet their customer's needs. When a line goes down; the location, environment, and nature of the failure are all determining factors in deciding the best way to fix it. In water depths greater than 20 meters, repairs are typically carried out on board the cable laying vessel. Before the line can be lifted onto the deck where repairs are more quickly and easily completed, it must first be located by a diver. The device NTT-WE relies on is Fishers CT-1 cable tracker. An audio alarm transmitted through an underwater earphone alerts the diver to the presence of the cable and a series of high intensity LEDs on the instrument's control panel light up as he gets closer. Takayuki Tanaka, manager of the Marine Operations Department reports his divers like the CT-1 because it is rugged, reliable, and easy to operate. **JWF**

..... From the TREASURE CHEST.....



Class ring found by Ken Johnson with JW Fishers Pulse 6X detector

.....Using his Pulse 6X detector Wisconsin diver Ken Johnson found this beautiful yellow-gold class ring that was lost 49 years ago. After doing a little research, he located the owner and returned the ring to him.

.....One of the richest ancient shipwrecks ever discovered has been located in Greece, the *Antikythera*. A multinational team from the Hellenic Ministry of Culture, Greece's Ephorate of Underwater Antiquities, the USA's Woods Hole Oceanographic Institute, and the Australian Centre for Marine Robotics is working the site. Recovered items include jewelry, coins, glassware, and life-size bronze and marble statues. The underwater metal detector helping to locate the artifacts is JW Fishers Pulse 8X.

****Canada's Lord of the Rings****

British Columbia resident Don Marshall loves to hunt the beaches and shallow water of area lakes with his Pulse 8X detector. He searches for anything the summer tourists may have dropped, but his primary focus is rings. Don says, "Of the thousands of people who flock to our beaches, chances are at least a few of them have lost prized jewelry."

With the electronics housing mounted on his waist, earphones on his head, detector in one hand and sand scoop in the other, Don wades slowly through the water carefully listening for the weak signals given off by small targets like rings and jewelry. Although he has only been detecting for about 3 years, Don has made some nice finds, including 5 rings he returned to their owners. One was a platinum heirloom engagement ring lost in the grass at the University of Victoria, another was wedding ring lost in shallow water by a woman playing with her kids. If he finds a new ring, he will advertise it on Craigslist or

.....Who says all the Spanish treasure is in Florida. John Cottrell reports finding a reale minted in Cartagena, Columbia dated 1812 off Stonington, Connecticut. He found it with his JW Fisher Pulse 8X.

.....NJ diver and historian Nelson Jecas recently located a Bronze-age pewter ring bearing a Celtic cross while detecting with his Pulse 8X in England. Other significant finds with the 8X include a 16th century ornamental dagger and a mini treasure chest with six 1800s British coins.

.....Argentinian Jose Luis Garcia used the Pulse 8X on an underwater archaeological project in Ecuador. He located a number of coins on a wreck site dating from 1654.

.....New Yorker Jim LaRock is making some interesting finds with his Pulse 8X. After receiving the new detector he reported, "I've got to say the quality is even better than I expected. You guys are unquestionably the best."



LaRock with Pulse 8X & "treasures"

Used Victoria to try to locate the owner.

Don says, "there's plenty to find along the towel line in the sand at local beaches", but mostly I like to wade in water up to neck deep just offshore". He doesn't have to worry about the detector or headphones getting wet, an advantage of a true underwater detector. He carries a scoop and a floating sieve to separate targets from mud and sand.

He purchased the Pulse 8X as a way to keep busy in his retirement. "It was a situation of needing to find something to do to stay out of the bars" he laughs, "but it turned out to be a great hobby that pays for itself!" **JWF**



Search Teams Use Scanning Sonars

When an SUV went off a Minnesota bridge and into a river in January the local sheriffs office was immediately notified and the Winona County Dive Team dispatched. Two bodies were quickly recovered from the vehicle, but two others were missing. The third victim was found the next day, but the fourth could not be located. Frigid water and limited visibility made a large scale search with divers nearly impossible. Nearby Washington County Sheriffs Department was called in with their JW Fishers SeaOtter-2 ROV which has two cameras, four powerful thrusters and a SCAN-650 scanning sonar. The SCAN-650 allows the operator to "see" much further than the video camera. The sonar's sound wave sweeps a 200 foot diameter circle around the ROV and produces an image of underwater objects on a laptop. The Washington team finally located the fourth victim 125 feet from where the vehicle entered the water and on the opposite side of the bridge.

Another department using scanning sonar is the Stanislaus County Sheriffs Department in California. Their dive team realized the value of the sonar when the car carrying a suspected kidnapper and his victim went into a drainage canal. The muddy water and swift moving current in the 50 foot deep, 75 foot wide canal made searching with divers extremely difficult and very dangerous. Instead the team was able to deploy their SCAN-650 from a small boat and troll up and down the waterway. To their surprise, they not only located the suspect's car, but also found 16 other vehicles. Team member Sgt. Mark Cardoza reports, "I love the sonar and believe it's a very good tool that saves lots of bottom time. It is ideal for the work we do in the California Aqueduct and Delta Mendota canals which are treacherous for divers, but the perfect environment for sonar." **JWF**



Car being pulled from drainage canal, Inset - Sonar image of car on bottom

Law Enforcement and Dive Rescue News

.....Boston Police Dept. Special Operations Group has acquired a SeaLion-2 ROV with scanning sonar. The team is responsible for security at all special events in the city.

.....Central Okanagan Search & Rescue Society in BC, Canada is using Fishers TOV-1 towed video system.

.....Orange County Sheriff Dept. Bomb Squad in CA

has purchased a quantity of JW Fishers Pulse 8X metal detectors; the detector of choice for law enforcement agencies and military units worldwide.

.....Ottawa Police Service in Canada is using Fishers Pulse 8X metal detector in their u/w search operations.

.....Toulemne County Sheriffs Dept in CA has upgraded their Fisher side scan and added the CMS-2 cable management system which allows cable to easily be reeled in & out while operating the unit.



Members of Croatia Navy with their JW Fishers SSS-100K/600K side scan sonar

.....Croatia's Navy has acquired Fishers dual frequency side scan sonar to find sunken vessels, locate mines, check waterways for obstructions, and search for drowning victims.

.....The Search & Rescue Society of British Columbia is using Fishers SCAN-650 scanning sonar and Pulse 12 boat-towed metal detector in their operations.

.....Sedgewick County Fire District 1 in Kansas used their JW Fishers Pulse 8X metal detector to locate a weapon used in a homicide reported Capt. Anthony Tracy. "We run into that situation a couple of times a year".



Members of Boston Police Dept. Special Operations team at JW Fishers factory with their new SeaLion-2 ROV.

.....Wayne Fire Dept. in NY is using Fishers TOV-1 towed video system with VRM-1 monitor & recorder and DDW-1 dive wing in their search operations.

.....Franklin County Sheriffs Office Dive Rescue Team in Ohio is using Fishers DHC-1 diver-held camera and MC-1 mini camera to view and record u/w crime scenes and inspect u/w sites.

.....Yell County Office of Emergency Management in Arkansas is using a JW Fishers SSS-600K/1200K side scan sonar for search & recovery operations.

.....Washtenaw County Sheriffs Office Underwater Search & Recovery Team is using the Pulse 8X detector in their operations reports Dep. Joel Gebauer.

.....Orleans County Sheriffs Office in NY is using the TOV-1 towed video in their search operations.

.....Officers from Dubai Police Dept. came to Fishers factory to receive training in the operation and maintenance of the SeaLion-2 ROV, SSS-100K/600K side scan sonar, Pulse 8X metal detector and Proton 3 magnetometer.



Dubai Police Dept. officers Almulla (l) and Alhammdi with their SeaLion-2 ROV.

Company News and New Products

New Low Frequency Pingers



SLFP-1 and MFLP-1 low frequency pingers

JW Fishers has added low frequency pingers to their extensive line of underwater search equipment. Attempting to relocate underwater objects in a low visibility environment can be a difficult and time consuming task. Acoustic pingers solve this problem. One advantage of using a LFP over a conventional pinger is distance the acoustic signal can be transmitted. LFP signals can be detected at a distance of 3 - 6 miles compared to a transmission range of 2 - 3 thousand feet with the standard pinger. The single low frequency pinger (SLFP) is available in frequencies of 11 - 16 kHz (specify frequency when ordering) and the multi-low frequency pingers (MLFP) can transmit any frequency between 11 and 16 kHz in 500 Hz increments. The standard pinger housing holds two alkaline or lithium 9 volt batteries. The optional extended housing holds six 9 volt batteries, and the optional Very Long Duration housing holds twelve batteries allowing the pinger to operate for years.

For a technical data sheet on all of the pingers go to www.jwfishers.com. **JWF**

New Sub Bottom Profiler

Fishers now has a sub bottom profiler; the SBP-1. By transmitting low frequency, high power sonar pulses into the bottom, the SBP-1 is able to produce images of objects buried under the ocean floor. Fishers sub bottom profiler has the advantage of either being mounted on a pole for shallow water searches, or towing it from the boat to search areas in deeper water.

The SBP-1 system includes the sonar towfish constructed of corrosion proof, high impact PVC, 150' of cable, the topside sonar processor box a laptop computer and GPS.

The 36 inch long by 24 inch wide towfish provides a very stable platform for the sonar transducer allowing the best possible images to be obtained. The SBP-1 is capable of penetrating up to 130 feet into the seabed. The sonar beam reflects off any solid objects in the bottom, returns to the transducer, and is sent topside for display and storage on the computer. An image is produced of any target of different density than the surrounding substrate. Optional Tracker software shows the path of the boat as it runs a search grid to ensure no part of the area is missed.

Ideal for cable and route surveys, dredge and hazard surveys, sediment classification, and detection of buried objects including pipes and cables.

Options for SBP-1 include cable lengths up to 1,000 feet, a tether management system, cable connector at the towfish (allows for easy field changing of cable lengths), a Splashproof computer (recommended when operating from an open boat), Tracker software, and a depressor wing (allows deeper towing with less cable).

To request a technical data sheet on the SBP-1 with complete specifications, send email to info@jwfishers.com or go to www.jwfishers.com.

- Read articles about people using JWF equipment and see customer photos at www.jwfishers.com; click "Industry News" and "Photo Album" tabs at top of the page.
- Get a \$100 gift certificate by sending us a good story or photo.

The SBP-1 like all of JW Fishers search systems is covered by a 2 year unconditional warranty and is backed by Fishers world class customer service. **JWF**



JW Fishers new SBP-1 sub bottom profiler

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