



ROVs Work for Diving Companies



INSUB uses their SeaLion-2 to inspect buoy marine terminal offshore

Almost every commercial diving company is now employing an ROV in some part of their operation. Most recognize it is not a replacement for the diver, but rather a tool to help make the job safer, faster and easier. Inspecting a site with a remote controlled vehicle before sending someone below, allows both diver and topside personnel to better understand the nature and extent of the job.

One company successfully using the ROV is INSUB in Chile. Managing director Pedro Bizama Mundaca is an accomplished oceanographer, commercial diver and graduate of the Chilean Navy's Polytechnic Academy. INSUB offers a variety of services including bathymetric and hydrographic surveys, environmental impact studies, dredging, u/w welding, as well as inspection and maintenance of marine terminals and navigation aids. To assist in these projects the company acquired a JW Fishers SeaLion-2 ROV with SCAN-650 sonar and single function manipulator. The sonar scans a 360 degree circle around the ROV providing the operator with a detailed image of the underwater envi-

ronment, which helps in driving the vehicle to the target of interest until it comes within video range. In a recent offshore operation the ROV was put to work inspecting a buoy marine terminal, a floating hull with a rotating head to which vessels can moor. "The SeaLion-2 worked very well on this job" reports Mr. Mundaca. "We were able to examine the submerged hull, chain, and mooring without having to deploy a diver."

Another diving company utilizing an ROV is The Works of Diving Hong Kong Ltd, a member of the International Association of Diving Contractors. Co-owners Albert Lam and Tatsushi Kagaya have 30 years experience in marine engineering and the capability to execute all aspects of underwater construction, maintenance, repair, and demolition. The company has participated in many of Hong Kong's big infrastructure projects such as the intake installations at the Lamma Island Power Station and KCRC West Rail, and the Submarine Outfall (cont. on page 3)

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JW Fishers Pulse 8X detector



US Department of Homeland Security's SAVER (System Assessment and Validation for Emergency Responders) program was established to

assist emergency responders making procurement decisions. Located within the DHS Science and Technology Directorate, the SAVER Program conducts objective assessments and validations on commercial equipment and systems and provides those results along with other relevant equipment information to the emergency responder community. In a comparison of the 8 top underwater detectors on the market, Fishers Pulse 8X was rated number one. This detector is in use by law enforcement agencies, public safety dive teams, and military units worldwide including FBI and US Navy. See the full comparison at http://www.jwfishers.com/downloads/UWMD-SUM_0514-508/index.html



The Pulse 8X includes everything for both land & u/w detecting



Relocating U/W Sites Easy with Acoustic Beacons



*Diver with acoustic receiver,
Inset - Fishers MFT-1 transponder*

Attempting to relocate underwater objects in a low visibility environment can be a difficult and time consuming task. Acoustic pingers and transponders solve this problem.

EGS is a consortium with offices worldwide. They offer a broad range of technical services to the Oil, Gas, Telecommunications, Energy, and Marine Infrastructure markets. As part of a recent project EGS Asia had to deploy an Acoustic Doppler Current Profiler (ADCP) which measures water current velocities over a depth range. To ensure the ADCP could be recovered when it was time to retrieve the stored data, EGS's Roberto Ruiz attached a JW Fishers MFT-1 transponder. The transponder stays dormant until activated by a gun-like device called an Interrogator which displays direction and distance to the target. Ruiz reports, "We attach a MFT-1 to the tripod holding the ADCP before deployed in 15 to 35 meter of water. Using the interrogator the device can quickly be relocated and recovered."

Propipe Ltd in the UK is a leader in the design and manufacture of pipeline pigs. These "pigs" perform various maintenance operations inside the pipe and "pigging" is generally done without stopping the flow of material through the pipe. This is accomplished by inserting the pig into a "launching station"; an oversized section of the pipe that then narrows to the normal diameter. The pig is moved along by the pressure of the product moving through the pipeline, and is then removed at a receiving station, the "pig catcher". To ensure the pig's movement can be tracked, and its exact location determined should it become stuck, an acoustic pinger is attached. Propipe has acquired several of JW Fishers PR-1 pinger receivers so they can track their pigs and be sure they are safely recovered. **JWF**

International News

.....Genrule International Holdings has procured a Fishers SBP-1 sub bottom profiler for an undisclosed Chinese firm.

.....Petrosis Sdn Bhd, a Malaysian firm supplying geophysical & hydrographic surveys, is successfully using Fishers CT-1 cable tracking system.

.....Typhoon Construction in Israel is using a Pulse 8X detector in their marine construction projects.

.....Geotech Systems, a supplier of equipment to Korean Oceanographic and Hydrographic Association, acquired a Fishers SBP-1 sub bottom profiler.

.....Canada's Ministry of Natural Resources working with Vermont's Fish & Wildlife Dept. used a Pulse 8X metal detector in a turtle population study in Lake Champlain. Small transmitters were fixed to the turtles to allow researchers to follow their movements. At the end of the study the turtles had to be relocated to remove the expensive transmitters which is where the Pulse 8X came in handy.



*Diver prepares to enter water with P8X
Insets - recovered turtle, transmitter on shell*

.....Shanghai Power Safety in China has purchased Fishers PR-1 pinger receiver and MFP-1 multi frequency pinger.

.....Hi Target Surveying Instruments Co., a supplier of quality marine instruments in China, has procured several of Fishers Proton 4 magnetometers and dual frequency side scan sonars for their customers.

.....SIDMAR, an oceanographic services company in Spain with more than 15 years experience, is using Fishers MC-1 mini camera and underwater light systems to assist in their marine studies.

.....Aqua & Terra, a Colombian firm specializing in land and underwater surveys, is using Fishers Proton 4 magnetometer with Tracker software that shows the track of the boat moving over the area and records the mag readouts and position coordinates.

Marine Service Companies Track Pipes and Cables

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 position was a difficult and tedious task, fraught with error. It is important to know the exact location of existing lines before undertaking dredging operations or when new pipes and cables are laid down. The amount of overburden typically makes it impossible to find these lines with conventional metal detectors. 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 is powerful enough to detect a power or communications cable at more than 30 feet away.

New Jersey based Castle Group is employing both of these devices in their operations. Founder William Castle has been providing marine construction and engineering services for over 30 years, and is a member of the International Association of Diving Contractors (IADC). On a recent job the cable tracker proved an essential piece of equipment. Steve Gardner, dive supervisor and engineer for Castle said, "We received an emergency call from a contractor working in Jersey City. A section of a privately owned pier was in danger of collapse. It needed immediate repair to prevent collapse. The work included driving new steel sheeting into the bottom in an area with two high voltage underwater power lines. My team was tasked with locating and marking the cables to ensure they would not be disturbed while driving in the sheeting. For this job we employed our JW Fishers CT-1 cable tracking system. A diver with the CT-1 probe was deployed and he quickly located (cont. on page 4)



Castle diver with CT-1 cable tracker

Government Agencies, Universities & Military Perform U/W Searches

.....US Navy's Submarine Development Squadron, the command responsible for maintenance of subs & submersibles, has procured a Pulse 8X detector.

.....Prince William Sound Science Center in Alaska is using Fishers SFP-1 acoustic pinger to help relocate oceanographic instruments.

.....University of South Alabama acquired Fishers CMS cable management system for use with an u/w video system.

.....Brazilian Navy's UMI SAN that provides support services for navigation and engineering is using Fishers PT-1 pinpointing magnetometer.

.....North Carolina State University has purchased a Pulse 8X metal detector for their Scientific Diving Program.



SFP-1 Pinger deployed in the Cayman Islands

.....Scripps Institute of Oceanography used their SFP-1 pinger to ensure a hydrophone array deployed for a fish study in Cayman Islands could be relocated.

.....India's Institute of Technology is using Fishers MFP-1 multifrequency pinger with external cable for remote on/off switch in an undisclosed project.

.....Sultan Qaboos University in Oman purchased Fishers PR-1 pinger receiver and several MFP-1 acoustic pingers to aid in the recovery of u/w instruments.

.....US National Park Service in the Virgin Islands is using the Pulse 8X metal detector for u/w archaeology projects.

.....Michigan Dept of Natural Resources Alpena Fisheries Research Station is using Fishers SeaLion-2 ROV and side scan sonar to aid in their marine studies.

.....Naval Engineering & Test Establishment, the Royal Canadian Navy's principal test & evaluation center, has acquired several Fishers MLFP-1 low frequency pingers to keep track of equipment during open water testing. These pingers can be detected at 5 - 10 km. **JWF**

ROVs work for diving companies (from pg 1)



Works of Diving Hong Kong team lower ROV for tank inspection

Installation. Their extensive line of equipment includes a derrick lighter, tug boats, a full line of commercial diving equipment, and a SeaLion-2 ROV.

A recent project where the ROV proved essential was an inspection of water storage tank at a local power station. Among the obstacles Works of Diving had to overcome were devising a way to get men and equipment to the top of the 15 meter high structure and determining how to get inside the huge tank with an opening only 1/2 meter in diameter. The narrow steel tube leading into the dark interior was a tight fit for an average man, and would have been nearly impassable for a fully dressed diver. The solution proved to be the ROV which was easily lowered through the small opening, eliminating the need to send a person into the confined space. Operations supervisor Andrew Jenner reported, "The SeaLion-2 worked extremely well sending us back some great video of the tank's interior. It helped make this difficult job so much easier." **JWF**



Removing ROV from tank

Commercial News

.....Galcon Marine, a Canadian company specializing in marine construction projects, has acquired a Fishers PT-1 pinpointing magnetometer to locate and track pipelines.

.....Clean Ocean Initiative Inc, an environmental services company in Puerto Rico, is using Fishers Pulse 12 boat towed metal detector.

.....Resolve Marine Group is using Fishers Proton 4 magnetometer, TOV-1 towed video, and Pulse 8X metal detector in their salvage work.

.....SEACURE Marine construction is using Fishers Diver Mag-1 magnetometer in their search and salvage operations.

.....FA.RO.MAR, a commercial diving and marine contractor in Italy, is using Fishers CT-1 cable tracker to do route surveys of power and communications cables.

.....American Inshore Divers in Texas is using Fishers Pulse 8X metal detector and PT-1 pipe tracker for their search and survey projects.

.....Elos Marine in the Dominican Republic purchased a Pulse 8X metal detector for their salvage operations.



Hydromax team with SSS

.....Hydromax, a commercial diving & marine services company in the Philippines, is using Fishers dual frequency side scan for salvage & survey work.

.....ROVAS, a Norwegian company that performs technical inspections on land and underwater, attached Fishers RMD-1 remote metal detector to their ROV to search for parts of a crashed aircraft.

.....Seaprex in Japan has acquired Fishers Pulse 12 boat-towed metal detector to assist in search and salvage operations.

.....Seaway Diving & Salvage in NY used their PT-1 pinpointing magnetometer to locate and track a gas pipeline.

.....Marimex Japan, a company providing sales, rental, & training for a wide variety of marine equipment added Fishers CT-1 cable tracking system to their pool. **JWF**

Company News and New Products

New LED lights for ROVS



Old 100 watt halogen lights (L) compared to new 2200 lumen LED lights (R) on ROV

Fishers popular SeaOtter-2 and SeaLion-2 ROVs now come standard with LED lights on the front AND rear of the underwater vehicle. The two front lights have been upgraded from 100 watt quartz halogen bulbs to high intensity LEDs, each producing 2200 lumens, significantly more illumination than the old style bulbs. The intensity of the LED lights can be increased or decreased with the push of a button on the surface controller. The new lighting system employs a single-source COB (chip on board) LED which emits light from a single plane eliminating problems previously experienced with the multi-LED type light source. The color temperature of the new lights is 5000 degrees Kelvin; very close to the 5500K of natural daylight, and within the recommended range for shooting underwater video. Colors are illuminated more accurately with the LEDs than with the warm 3500K temperature of quartz halogen lights. The new lighting enhances picture quality and maintains a constant color temperature throughout the entire range of illumination intensity, something

not possible with the halogen lights. Another key advantage of the LED lights is their lifespan. Quartz halogen lights require regular replacement and can be damaged if the ROV is dropped or takes a hard shock. The LED lights last virtually as long as the ROV, rarely if ever needing replacement. Fishers is also offering an upgrade to new lighting for all existing SeaOtter-2 and SeaLion-2 ROVs.

Not only will the LEDs be included on new ROVs, these lights will also be a standard feature on Fishers new underwater video systems including the DV-2 drop video, TOV-2 towed video and DHC-2 diver-held video system. The new systems are the next generation of the company's popular drop, towed, and diver-held systems. The new units will also come standard with a color camera and Kevlar reinforced tow cable. **JWF**

• **New website now online: go to www.jwfishers.com**

• **Read articles about JWF equipment in use and see customer photos on the website. Click "Industry News" and "Photo Album" tabs at top of our home page.**

• **Get a \$100 gift certificate by sending us a good story or photo.**

New Tablet computer option

The other new addition to JW Fishers products is an optional tablet computer for use with their sonar systems and boat-towed detectors. The Microsoft Surface 3 tablet is mounted in the lid of the equipment's control console eliminating the need for a separate laptop computer to run the system software. Eliminating the external laptop and it's connecting cables is a key advantage, another is the tablet's high resolution and ultrabright display which makes it much easier to see even on sunny days. Having the tablet mounted in the console's lid provides protection from the elements and makes for a cleaner, sleeker equipment package. **JWF**



Sonar Processor Box with tablet in lid

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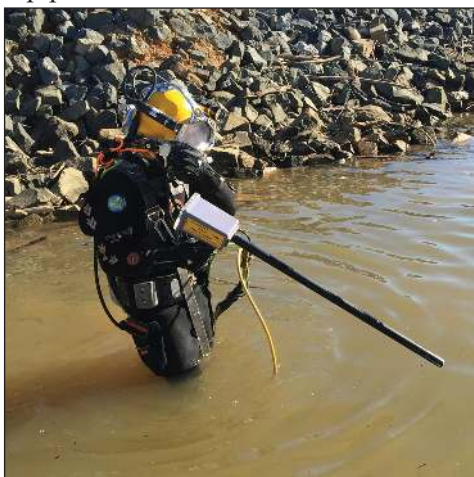
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Tracking Pipes & Cables (from page 2)

and marked their exact position.

Another company successfully using the cable tracker is Marine Technologies Inc. (MTI), a commercial diving company and heavy marine contractor in Baltimore, Maryland. President Terry Clark reports, "We recently used our CT-1 on a project in New York tracking utility lines running under the Hudson River near the new Tappan Zee Bridge. Once all of the existing lines were successfully located with the cable tracker, our team installed 15,000 feet of new fiber optic cable six feet below the natural bottom of the river. We chose Fishers cable trackers because of their reliability and ease of operation, which are important with the remote locations we often work in. We have several CT-1 trackers and have used them on projects in places as far away as South America and Europe. Over the years they have performed flawlessly for us."

Midco Diving and Marine Services has offices in Rapid City, South Dakota and Loveland, Colorado. They offer an extensive list of services including inspection, maintenance and repair of underwater structures, diver dredging, zebra mussel elimination, high-risk and haz-mat diving, as well as marine engineering and support. The company recently acquired a JW Fishers PT-1 pipe tracker to assist in locating a deeply buried 8 inch effluent pipe in South Carolina. Company president Robert Greenspan said the PT-1 worked well and was instrumental in helping their diver find and track over 800 feet of pipeline. **JWF**



Midco diver enters water equipped with JW Fishers PT-1 pipe tracker

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



**Anthony Morales with his Pulse 8X
"Underwater metal detecting makes
every dive a treasure hunt!"**

Many scuba divers are discovering the fun and excitement underwater metal detecting can bring to their diving. Taking a detector along turns the dive into a completely new experience. Even divers that have "done it all" are surprised with the thrill they get finding things with a detector. As one diver joyously exclaimed, "It doesn't take a gold bar to get the adrenaline pumping, any discovery feels like treasure."

Puerto Rico has a long rich history and is often referred to as "land of the pirates". It was "discovered" by Columbus on his first voyage to the new world in 1493. From the 16th century on, it became a strategic base in the power struggle for control of the Caribbean. By the 18th century the island had become a haven for pirates and smuggling was a major activity. Naval battles throughout the centuries, along with many fierce hurricanes that hit the area, have left the seafloor around Puerto Rico littered with shipwrecks. Today locals still search for pirate booty along with "treasures" lost by visiting tourists. People come to the island to enjoy the sunshine and beautiful beaches, however many often go home with less than came with. As one man aptly put it; "tourists come to the beach, slather their bodies with suntan lotion, put on every piece of jewelry they own, then jump in the ocean where it all falls off and gets lost." Some enterprising divers, like Anthony Morales, scan the sandy bottom with an underwater metal detector and recover loads of jewelry, rings, and coins. Anthony's detector of choice is JW Fishers Pulse 8X. He says, "I love my detector and tell friends; buy a metal detector and you'll find metal, but get a Pulse 8X and you'll have treasures in your hands!". **JWF**

Scuba divers have found the largest cache of gold coins ever discovered in Israel working on wreck site in the ancient harbor of Caesarea on the country's Mediterranean coast, reports the Israeli Antiquities Authority (IAA). The treasure trove of 2,000 coins weighs more than 20 pounds and dates back more than 1,000 years to the era of Fatimid Caliphate, which ruled much of the Middle East and North Africa from 909 to 1171. The coins are described as "priceless."

"It is probably the shipwreck of an official treasury boat which was on its way to the central government in Egypt with collected taxes" said IAA director of marine archaeology Kobi Sharvit. "Perhaps the treasure was meant to pay the salaries of the Fatimid military that was stationed in Caesarea to protect the city."

Also commenting on the discovery was Bridget Buxton, University of Rhode Island's Associate Professor of Ancient History and Mediterranean Archeology. "In 2011 we received a small grant to purchase a JW Fishers Pulse 8X metal detector to assist in archaeological work I was doing with the Israel Antiquities Authority. Buxton, an accomplished scuba diver, worked with IAA's Jacob Sharvit to investigate several of the country's known shipwrecks, and to locate undiscovered sites. One wreck that was uncovered appeared to be the remains of a famous lost warship from the Napoleonic siege of Acre in 1799, a wreck that historians have been trying to find for the last 50 years. Using their Pulse 8X metal detector the team located large copper nails, cannon balls, grapples, 18th century muskets, and other concretions.

"When the project ended, I left the detector with the antiquities authority" said Buxton. "When IAA divers got on the scene of this most recent discovery, they were using the Pulse 8X to locate and recover the bulk of the 2,000 gold coins." **JWF**



**URI's Buxton with the Pulse 8X,
Top inset: recovered gold coins
Bottom inset: diver with coins**

Fishers Sonars Help Police Dive Teams

Many police and public safety dive teams are finding sonars to be an essential piece of equipment in their search operations because they produce detailed images of the underwater environment regardless of water clarity. Side scan sonar covers hundreds of feet of ocean, lake, or river bottom with each pass of the boat allowing large areas to be searched quickly. It will locate sunken boats, submerged vehicles, and drowning victims.

One law enforcement agency utilizing the side scan in a different way is the New York Department of Environmental Protection (DEP) Police. Their primary duty is to protect and preserve New York City's water supply system. Members of this department are New York State police officers and they investigate more than 4,000 complaints each year including illegal disposal of hazardous waste. To assist in these investigations, the DEP Police acquired a JW Fishers SSS-600K side scan sonar. The sonar allows them to survey reservoirs to ensure no foreign objects are contaminating the city's water supply. Towing the side scan over an area produces a detailed map of the underwater terrain so officers know exactly what's on the bottom.



Alaska has thousands of square miles of ocean surrounding it, and many lakes and rivers scattered across its interior. Much of this water is frozen for a good part of the year. Alaska State Troopers must have the ability to respond to a variety of emergencies whether its a vehicle going off the road into water, or a snowmobile disappearing though the ice. The agency acquired both a SCAN-650 scanning sonar and the SSS-600K side scan for their varied call outs. The scanning sonar is easily deployed through a hole in the ice and scans a large circle on the bottom; a time consuming task for divers. **JWF**

Law Enforcement and Dive Rescue News



NY DEP Police with their JW Fishers side scan

.....St. Lucie County Sheriffs Dept in Florida is using a Pulse 8X metal detector with 8" x 48" boat-deployed coil. Fishers 8X is the choice of law enforcement agencies and military units worldwide.

.....Crown Point Fire Dept in Indiana has purchased Fishers SSS-1200K high frequency side scan with mapping software and splashproof computer, the ideal system for locating drowning victims.

.....Missouri Highway Patrol is using Fishers SeaOtter-2 ROV, TOV-1 towed video system and Pulse 8X detector in their search and recovery operations.

.....McGrath Native Village Council in Alaska has acquired Fishers SCAN-650 scanning sonar, an excellent tool to search for a snowmobile or vehicle that went through the ice or a drowning victim.

.....Beadle County Emergency Management Agency in South Dakota is using Fishers SSS-600K side scan sonar.

.....Snohomish County Sheriffs Dept in Washington used their SeaLion-2 ROV to inspect a submerged vehicle before sending in the dive team to recover the 2 victims.



Snohomish Sheriffs deputies prepare to deploy their SeaLion-2 ROV.

.....NY DEP Police use their JW Fishers side scan sonar to check for contaminants in the city's water supply.

.....North Carolina Justice Academy is using a Pulse 8X detector for evidence recovery ops.

.....FBI Washington DC division has purchased another Pulse 8X for their dive team.

.....Rochester Police and Wayne Fire Dept. in New York are both using their Fishers TOV-1 towed video system in u/w search operations. The TOV-1 can stay submerged indefinitely, reducing or eliminating the need to dive in some situations.

.....Washtenaw County Sheriffs Dept. dive team member Sgt. Paul Cook reports, "we have used the Pulse 8X with great success locating many items of evidence including shell casings, weapons, and property. It's a valuable piece of gear and we'd be lost without it."

.....Fall River Police Dept. in Massachusetts is using the SeaLion-2 ROV with scanning sonar for their u/w search ops.



Fall River PD with SeaLion-2 ROV

.....Jasper County Emergency Corps in Texas has replaced their old DV-1 drop video with a new DV-2 drop video system with color camera, Kevlar reinforced cable, and VRM-1 monitor & recorder.

.....Bingham County Search and Rescue in Idaho is using the SSS-600K side scan sonar with CMS cable management system and Sonar Map Coverage software which shows the track of the boat as it moves over the search area and width of the area being scanned to ensure nothing is missed.

.....Wichita Police and Laredo Fire Dept. in Texas have both purchased Pulse 8X detectors for their u/w search operations.

.....Alaska State Police are using the SSS-600K side scan sonar and SCAN-650 scanning sonar to search for drowning victims, submerged vehicles, and sunken vessels, saving hours of search time for divers.