



Fishers Sonars Help Search Teams, Scientists, and Salvors



Search Team prepares to deploy SBP-1 Sub Bottom Profiler on Yangtze River

A variety of sonar systems are now being used by law enforcement and public safety dive teams, universities and salvage companies for recovery operations, subsea surveys, and marine research. Side scans produce almost photographic images of the underwater environment regardless of water clarity. Sub bottom profilers transmit a sound wave that penetrates the soft mud and shows what lies buried in the bottom. Scanning sonar, which is similar to radar, can image a 200 foot diameter area on the bottom in less than a minute.

China's Yangtze River is the country's longest river and third longest in the world. It originates in the mountains of Qinghai Province and

runs from west to east terminating in Shanghai where it pours into the East China Sea. It is an economically important route for ships carrying freight from inland regions to the coast. The waters of the Yangtze are notoriously difficult to navigate with unseen submerged obstructions, treacherous cross currents, and whirlpools. Many ships have sunk and many others have lost precious cargo after being tossed about in the raging river. It is not unusual for large containers to be thrown overboard where they are quickly engulfed in the muddy bottom. With new improvements in underwater imaging technology, a concerted effort is now being launched to locate the many containers littering the bottom of the Yangtze. One of the tools being employed in these salvage operations is Fishers' Sub Bottom Profiler (SBP-1). This low frequency sonar can easily locate these containers buried in the mud.

Cong Zhao is an assistant professor at Dalian Ocean University's key Laboratory of Mariculture and Stock Enhancement. His research includes work on how changes in the ocean environment affect marine life in the East China Sea. This area is an important food source for the Chinese people. Two of the tools Zhao and his team use to gather data are Fishers SSS-100K/600K side scan sonar and the SeaLion-2 ROV. The side scan produces high resolution images of the sea floor allowing scientists to clearly see the varying bottom conditions in different areas. The ROV then allows researchers to view and document the variety of marine life that inhabit these unique benthic environments.

When two scuba divers went missing off Gonio, a resort town on the Black Sea, Domenti Apakidze was working on a research project with the State Hydrographic Service in the Republic of Georgia. Domenti and his team offered to assist in the search with (continued on page 5)



Domenti Apakidze on Black Sea with his SSS-100K/600K side scan sonar

INSIDE...

Page 2 - Underwater Video Systems Aid Aquaculture & Research

Page 3 - Government Agencies, Universities & Military Units Perform U/W Searches

Page 4 - "Trea\$ure Chest"

Page 5 - Law Enforcement and Dive Rescue News

Page 6 - Company News and New Product Info

Diving company tracks pipelines with Fishers PT-1



Northern diver with PT-1

Northern Divers USA in Illinois offers a broad range of commercial diving services including the repair and inspection of pipelines. Sometimes it's first necessary to locate the line. Two of the tools the company employs for these operations is Fishers Pulse 8X metal detector and PT-1 Pipe Tracker. The PT-1 was especially helpful in a recent project reports president Frank Frosolone.

"We had to locate two 60 year old water mains in Lake Decatur before dredging work could begin to install two new 16" pipes. They didn't want to hit the old ones while dredging so we used our PT-1 to locate and track the two 12" lines over 3,000 feet. Our diver followed the pipe to where it poked out of the bottom and he was right on top of it. The PT-1 was easy to use and worked great."

Acoustic Devices Help Researchers & Scientists



Acoustic pinger marks the location of a hydrophone in Cayman Islands

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. These devices are attached to an underwater site or instrument package and transmit a sonar signal. A diver equipped with pinger receiver can easily locate them.

Scripps Institution of Oceanography (SIO) is one of the oldest and largest facilities in the world for ocean science research. Dr. An Sirovic, an assistant researcher at SIO's Marine Bioacoustic Lab, studies the effects of ocean noise on marine life. On a research project in the Cayman Islands, Dr. Sirovic deployed an array of hydrophones to listen to the sounds of the underwater environment. To ensure the hydrophones could be relocated, their position was marked with a JW Fishers SFP-1 acoustic pinger.

The Naval Engineering and Test Establishment (NETE) in Quebec is an organization whose mission is to provide independent test and evaluation services to Canada's Armed Forces. To assist in the testing of some products for the navy, NETE acquired several of Fishers MLFP-1 multi-frequency pingers. The primary advantage of these pingers is that their low frequency can be detected at a distance of 5 - 10 kilometers, a very important feature when deploying mobile equipment in open-ocean and retrieval is essential.

The Prince William Sound Science Center is an independent, non-profit research and education organization in Alaska. The Sound has been called "Home of the World's Richest Waters". Changes in the marine environment can have a significant impact. Scientists at the center are using a variety of instruments to gather data including the moored profiler which travels on a cable between the surface and ocean floor taking measurements. **JWF**

International News

.....Mistras Group, a leading global provider of technology enabled asset protection solutions, has acquired Fishers PT-1 pinpointing magnetometer to assist in their pipe and cable tracking operations.

.....Moreno Servicios Submarinos, a commercial diving company in the Canary Islands, is using Fishers SeaLion-2 ROV for underwater inspections.

.....Aquatica Submarines, a manufacturer of personal recreational submarines in Canada, has purchased Fishers SCAN-650 scanning sonar for one of their subs. The sonar can produce a 360 image of the underwater environment around the sub.

.....Oceantech, a Korean company supplying equipment to the oceanographic, meteorological and maritime industries has purchased a large quantity of Fishers DHI-1 acoustic interrogators and MFT-1 transponders.

.....Russian marine construction company "Fertoing" LLC is using Fishers Pulse 8X detector in salvage operation in the port city of Sabetta reports diver Togo Filipp.



Russian diver with Pulse 8X performs search operation in port of Sabetta

.....Japan Mine Action Service, a non-profit organization involved in international humanitarian efforts to remove land mines and unexploded ordnance is using Fishers Pulse 12 boat-towed metal detector.

.....Petroseis, a Malaysian company specializing in geophysical and hydrographic surveys is using Fishers CT-1 cable tracking system to identify the exact position of subsea power and communications cables.

.....Nordic Subsea, a Norwegian company providing ROV and survey related services, has acquired Fishers RMD-1 remote operated metal detector and mounted it on their Outland Technology ROV.

.....DeOcean Electronics Technology in China has acquired a JW Fishers SSS-600K/1200K side scan sonar for their survey and salvage operations. **JWF**

U/W Video Aids Aquaculture and Marine Researchers

Many aquaculture farms are finding that an underwater video system is an essential tool in their operations. The camera transmits live video to the surface for viewing and recording allowing the aqua farmer to check the health of the finfish or shellfish, and the condition of the tanks cages or area where they are being cultivated. Operators can instantly see how the population is fairing, if nets need repairing, if predators have entered, the condition of ropes and anchors, the amount of waste material present and other important environmental factors.

One aquaculture operation employing this technology is Greig Seafarms in Newfoundland, Canada. The company has embarked on a \$75 million project to construct the largest salmon hatchery in the world. In addition to the land-based hatchery, Greig will also place a number of sea cages in Placentia Bay where fish will mature until ready for harvest. One of the first tools the company acquired to assist in this project is JW Fishers DV-2 drop video system which has a high resolution color camera mounted in a rugged corrosion-proof housing equipped with two high intensity LED lights. The camera is lowered from a vessel or platform and continuously transmits live video to the surface for viewing and recording. The subsea picture can be displayed on a TV, video monitor, computer or Fishers VRM-1 which has a built-in ultra-bright LCD monitor and digital video recorder. The system will allow the company and regulators to oversee construction of the farm and cages, and monitor conditions when completed. (Continued on page 3)



Greig Seafarms employee with their Fisher DV-2 drop video

Government Agencies, Universities & Military Perform U/W Searches



AAUS diver with DHC-2 camera

.....American Academy of Underwater Sciences (AAUS) worked with multinational corp. CH2M on an environmental survey project in Puerto Rico. Fishers DHC-2 diver-held video system with topside VRM-1 recorder & monitor captured the work being performed. "We are very pleased with the equipment. It is easy to operate and video quality is great" says dive safety officer Lora Pride.

.....Canada's Environmental Scientific and Technology Lab (ESTL) is using Fishers SAR-1 search & recovery metal detector reports Diving Operations Officer Bruce Gray.

.....US Navy's Submarine Development Squadron, the group responsible for the operation and maintenance of subs and submersibles, has a specialized research diving detachment. The team is using Fishers Pulse 8X metal detector.

.....University of Manitoba's Biological Sciences Dept. is using Fishers Pulse 10 boat-towed metal detector in a field research project in Palau.

.....Vietnam's Navy acquired a quantity of Fishers TOV-2 towed video systems with 500 foot cables, deep dive wings and VRM-1 for their search operations.

.....Chongqin Jiaotong University in China has purchased Fishers SBP-1 sub bottom profiler. The instrument shows objects buried under the seafloor.

.....University of Rhode Island purchased Fishers MC-1 mini camera. Dr. Bridget Buxton, longtime user of Fishers Pulse 8X metal detector, reports the camera will be used to film underwater archaeological sites. **JWF**

U/W Video Systems Aid (continued from page 2)

Scientists are also utilizing underwater video systems in their studies of the marine environment. The National Oceanic and Atmospheric Administration (NOAA) Office of Coastal Management is tasked with providing data to other government agencies, private sector organizations and the scientific community. One of the tools their scientists use to gather information on the health of our oceans is Fishers TOV towed video system which has a camera mounted in the nose of a torpedo shaped housing. The system is towed by a boat and the camera "sees" what a diver would see, but has the advantage of being able to stay submerged for an unlimited amount of time without concern of getting cold, running out of air, or need for decompression.

Mark Finkbeiner, Division Chief of Science and Geospatial Services, reports his team has been using the TOV for years and "it's still our workhorse. The camera was deployed in a shore mapping project for the state of New York where it surveyed parts of Hempstead Bay, Moriches Bay, and Great South Bay. In Hempstead we saw sea lettuce algae which can overwhelm these bays if nutrient levels are too high." The TOV was also instrumental in mapping California's Humboldt Bay to identify areas for possible marine protection and in San Francisco Bay where it mapped eel grass beds, an important habitat for juvenile marine species and the state has put priority on protecting which. **JWF**



NOAA scientist retrieves TOV after completing survey in Humboldt Bay

Commercial News

.....Nine Mile Point Nuclear Power Station in New York purchased Fishers SAR-1 metal detector to locate a tool that was lost when cleaning zebra mussels from an intake. The low visibility environment made the SAR-1 the best tool for the job.

.....Underwater Construction Corp. in Michigan is using a Pulse 8X metal detector in a cable tracking project for Consumers Energy Company.

.....Hebrides Marine Services, provider of commercial diving for renewables & aquaculture in Scotland is using Fishers DV-2 drop video.

.....Mistras Diving in Canada, provider of surveys, inspections, and maintenance of subsea and maritime assets is using Fishers PT-1 pipe tracker.



EXND diver with CT-1 cable tracker

.....EXND Diving Services in Florida successfully used Fishers CT-1 in a 2.25 mile cable tracking project for a local power company reports president Frank Lasch. The cable was buried 6 feet under the bottom.

.....SEA Engineering, provider of hydrographic & geophysical surveys, commercial diving and marine construction, is using the Pulse 8X detector in a project in Japan to locate and remove debris before excavation for subsea pipeline.

.....KOHYHT, a commercial diving company providing ship husbandry, salvage and subsea construction services in St. Petersburg, Russia has acquired a Fisher SSS-600K/1200K side scan sonar to assist in these operations reports GM Oleg Elihov.

.....Washington based AnchorQEA successfully tracked a subsea power cable in Victoria, Canada reports Partner & Principal Scientist Mark Larsen. "The CT-1 worked very well for us."

.....Adede, a belgium firm specializing in u/w archeology and recovery of UXO, is using Fishers DDW-1 with their towed equipment to allow deeper towing with less cable. **JWF**

Company News and New Products

New U/W Metal Detector



The SAR-1 search & recovery metal detector

Fishers has developed a new detector for 2017, the SAR-1 search and recovery Pulse Induction metal detector. Specifically designed for public safety dive teams, law enforcement agencies, and military units to locate metal objects in poor visibility underwater environments. The SAR-1 alerts the operator to the presence of metal by vibration which is transmitted through the handle. Even in zero visibility, the user can feel the intense vibration conducted through the detector's handle and into the diver's arm. In addition to vibration, the SAR-1 also has a high intensity LED display which is directly in front of the diver's face and easy to see in all conditions. Other key features are its "snareless" design with no external wires or cables, rugged construction, streamlined configuration and bright yellow search coil which helps guide the operator to the target in low visibility environments. The 8 inch coil has excellent detection capability on a range of targets from small shell casings to weapons and explosive devices. Whether detecting through air, water, sand, mud or rock, the detection range remains the same.

For a technical data sheet on the SAR-1 go to www.jwfishers.com. **JWF**

Letter from Fishers' COO, Brian Fisher



It has been more than two years since our founder, my father, Jack Fisher passed away. I would like to take this opportunity to thank all of our loyal customers, dealers, friends and staff for their tremendous support and dedication over these past two years.

• **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.**

The first few months were overwhelming, but we are happy to report the company is running at the same smooth rhythm it has maintained for the last 45 years.

Over these past two years we have continued to develop new products as well as make many improvements in our existing product lines. We are proud of the fact that all of JW Fishers equipment is designed and manufactured in our factory in E. Taunton, Massachusetts, USA.

My family and our entire staff are committed to providing our customers with quality products and the best, most reasonably priced equipment possible to meet their underwater search equipment needs. Jack Fisher dedicated his life to this company and the entire industry. He is greatly missed, but not forgotten. We plan to continue building on the tremendous legacy he created to make an even better JW Fishers Mfg. **JWF**



Jack Fisher at DEMA 14'

**Email us at
info@jwfishers.com
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Archaeologists Dive into History

Long Beach City College in California is one of the many institutions of higher learning that are expanding their underwater archaeology programs to give their students a broader education and better understanding of our maritime heritage. LBCC has just established the MAST program, Maritime Archaeology Science and Technology, combining these disciplines into one area of study. This specialty is led by Dr. Laurel Breece, an accomplished diver, member of Registry of Professional Archaeologists, and visiting professor at UCLA Cotsen Institute of Archaeology.

"I'm very excited about the new program and the opportunity it will offer students to learn how to do maritime archaeology and operate the equipment used in these projects."

Breece chose JW Fishers as the supplier for the needed equipment acquiring a sub bottom profiler, side scan sonar, magnetometer, underwater video system, and a Pulse 8X underwater metal detector.



Dr. Laurel Breece at Fishers factory with sonar engineer Brian Awalt

University of West Florida also has an active marine archaeology program. Dr. Gregory Cook, assistant professor of Anthropology, teaches Nautical and Shipwreck Archaeology. Like Breece, Cook is an avid diver and dedicated to the preservation of submerged cultural resources. Working in partnership with Florida's Bureau of Archaeological Research, Cook and his students are conducting remote sensing surveys along the Florida panhandle. Using JW Fishers Pulse 8X metal detector and Diver Mag 1 magnetometer they are investigate magnetic anomalies that could indicate a possible shipwreck site. Cook says, "Young people today are so immersed in technology, and using high tech tools for marine archaeology gets them really excited about learning." **JWF**

From the TREASURE CHEST

.....Scott Brady in Canada writes, "I run a metal detecting club in Halifax, Nova Scotia. One day a fellow named Kevin showed up with a Pulse 8X, a detector I had never seen before. Off we all went to the beach to go detecting. There were over 50 of us and since Kevin was new, he was following everyone as they worked their way down the beach. He was detecting the spots where the others had already been and he was gathering up all the stuff everyone else had missed. He was cleaning up! The Pulse 8X has to be one, if not THE best, PI machines we've ever seen."



Ancient coin found with Pulse 8X

.....Ken Thomas found this Tetra drachma from Gela, Sicily that dates back to 470 B.C. He says, "On one side is the river god Gelas, a bull with bearded human face, and on the other side is a two horse chariot with Nike overhead." Nice find Ken!

.....Don McNichols reports, "I recently found a Canadian Loonie (a one dollar gold colored coin) with my Pulse 8X. I couldn't believe how deep that thing was buried and the 8X picked it right up. I also found a nice gold wedding band with it. I really like that I can attach different size heads, especially the 8 x 48 coil that I can use from my boat. I have used other detectors, but that Pulse 8X out-hunts them all! "

.....John Brown writes, "I had a great time hunting in St. Martin with my Pulse 8X. I found a silver ring, some modern coins and as yet unidentified piece of metal encrusted in coral on a wreck from the 1800s. That Pulse 8X is fabulous!"



John Brown with his Pulse 8X



Diver works wreck site with Pulse 8X

.....Rich Werner, PADI Diver master and Captain of Endless Summer Charters in the Florida keys has been having great success hunting with his JW Fishers Pulse 8X metal detector. Werner and his team have worked on several archaeological projects including the recovery of artifacts from the HMS Winchester (<http://britishwarship.com>). More than 2500 items were recovered including small musket balls and brass pins, and were put into a large privately owned lagoon. In another project the Pulse 8X helped locate and follow a debris field in Cay Sal in the Bahamas "that led us to the remains of a paddle wheel steamer. That 8X is a great machine" says Werner. **JWF**



Pieces of old paddle wheel steamer

.....Diver, explorer, treasure hunter, museum exhibitor, writer and lecturer Nelson Jecas has pursued his passion of historic research and artifact recovery for many years. His detector of choice has long been Fishers Pulse 8X. His finds include historically significant coins, buttons medals, ancient figurines, an ornate dagger dating to the 1500s, and a mini teak treasure chest called a coffer. One of his most recent finds is an intricately engraved bronze sword hilt. It is a magnificent piece! **JWF**

Fishers Sonars Help Search (continued from pg 1)

their Fisher SSS-100K/600K side scan, a tool commonly used in hydrographic surveys. It creates a detailed map of the underwater terrain and any bottom obstructions that could pose a hazard to navigation. The side scan is also a tool commonly used by law enforcement and public safety dive teams to find sunken vessels, submerged vehicles and drowning victims.

Scanning sonar is another tool employed by search teams and salvage companies. The sonar can be lowered from a boat or pier, or attached to an ROV. It operates in water similar to the way radar operates in air. A sound wave sweeps a circle over the bottom and images of objects lying on the bottom are displayed on a topside computer.

Williamson Marine Service in Hong Kong has been doing commercial diving and underwater engineering work since 1968. The company utilizes an extensive list of high tech equipment in its operations including Fishers SCAN-650 sonar. Their sonar systems are used to inspect underwater structures and ship hulls, locate wrecks, survey archaeological sites, find lost anchors and propellers, examine pipelines and sewer out falls and much more. Mounting the scanning sonar on an ROV aids in navigating the vehicle to underwater sites beyond the visual range of the onboard camera.

Stanislaus Sheriff's Dept. in California, Savannah Fire Dept. in Georgia, and Rochester Police Dept. in New York are a few of the many teams using the SCAN-650 in their underwater search operations. This sonar has been instrumental in helping locate several drowning victims and a number of submerged vehicles. "The SCAN-650 has been a very useful tool for us" reports Deputy Mark Cardoza. **JWF**



Members of Rochester NY Police Dive Team with their Fisher SCAN-650 sonar

Law Enforcement and Dive Rescue News



Goodhue Sheriff's diver entering water with their Fishers SAR-1

.....Dive team leader Steve Sutton-Brown of Minnesota's Goodhue County Sheriff's Office reports, "We typically dive in zero vis looking for guns, knives, bullet casings, etc., which is why we chose the SAR-1. It works awesome and I would recommend it to any team. The high intensity LED was actually easy to see in near zero vis and the vibration feature was appreciated by all."

.....Los Angeles County Sheriff's Department has acquired Fishers TOV-2 towed video system with high intensity LED lights, 500 foot cable, CMS cable management system, depressor wing and VRM-1 monitor & recorder. "We have a ROV system now", reports diver Chris Young, "but it isn't an effective tool for conducting a video survey of an area. We believe the TOV will satisfy that need."

.....Saratoga County Sheriff's Office uses their Fishers SeaLion-2 ROV for search operations in the dark, cold waters of New York state. The ROV is equipped with a scanning sonar which can "see" much farther than the onboard video cameras allowing the operator to easily navigate the vehicle in low visibility conditions. "The ROV works great and Fishers team has provided excellent customer support" says Deputy Mike Rogan.

.....Gila County Sheriff's Office in Arizona purchased Fishers Pulse 8X metal detector with several interchangeable coils including two coils that can be deployed from a boat eliminating the need to deploy a diver until a target is located.

.....Morton County Sheriff's Dept. in North Dakota is using Fishers DV-2 drop video system with the VRM-1 monitor & recorder. The system allows them to search for drowning victims, sunken vessels or submerged vehicles without having to deploy a diver. They can also record video of underwater evidence or a crime scene.

.....Yankton County Office of Emergency Management in South Dakota used their JW Fishers SeaOtter-2 ROV equipped with scanning sonar to help local law enforcement authorities perform a search under the ice for a drowning victim. "This equipment has already proved its worth in the very first search operation", said director Paul Scherschligt.

.....Grayson Fire Department in Kentucky used their Fisher side scan sonar to locate a drowning victim in less than 2 days.

.....Salem Police Dept. in Massachusetts has a Fisher Pulse 8X. "This unit is invaluable for our search and recovery dives" says Capt. Frederick Ryan. He adds, "Your customer service is impeccable and the detector is extremely reliable."

.....Washtenaw County Sheriff's Dept. in Michigan is also using a Pulse 8X. Sgt. Paul Cook reports, "We've used the Pulse 8X with excellent success over the years. It has located many evidentiary items, the smallest was copper jacket from a bullet. We've also used it on land to locate spent cartridges in tall grass. It's a valuable piece of our kit and we'd be lost without it."

.....Myrtle Beach Police Department in South Carolina purchased Fishers SSS-600K/1200K side scan sonar for their search operations. The 1200K easily locates drowning victims.



Saratoga Sheriff's Deputy with their Fisher SeaLion ROV