

# Novel Uses for Acoustic Pingers

Military units and scientists are finding a broad range of applications for acoustic pingers, signalling devices that are attached to an underwater site or instrument package. Using a pinger receiver, carried by a diver or deployed from a boat, the sonar signal transmitted by the pinger is easily detected and followed to its source.

Researchers at Pukyong National University in Korea are working with scientists from the country's Hydrographic and Oceanographic Administration (KHOA) to study the affects of ocean currents. One of the instruments they employ is the Acoustic Doppler Current Profiler (ADCP) which is used to measure current flow. These devices have a wide range of uses from locating underwater 'tornadoes' that could damage oil platforms to attaching them to icebergs to measure the flow of melting fresh water. In a typical deployment the ADCP would be anchored to the bottom to calculate current flow rates all through the water column. Attaching a pinger to the ADCP ensures it can be recovered should it break free from the mooring.

Scientists at the US National Marine Fisheries Service put pingers on instruments that help them monitor the health of our oceans. There is never any concern about losing an expensive instrument such as a Conductivity, Depth and Temperature (CTD) probe when one of these beacons is attached. At the University of Delaware's College of Marine, Ocean and Environment, senior research technician Bill Parnella reports, "We use them to locate a small unmanned research sub when it doesn't do what its told."

US Navy's Underwater Warfare Center (NUWC) is using acoustic pingers at their training sites. NUWC performs research, development and testing of offensive and defensive undersea weapons systems. Torpedoes are the primary anti-submarine warfare (ASW) weapon deployed by ships, aircraft and other submarines. At test sites, ASW training targets are used to simulate submarines and inert (non-explosive) torpedoes are fired at these 'targets'. According to a Navy report, pingers are installed on all training platforms to track their position. Navy divers also use pingers to mark the site of explosive devices such as mines during combat operations. EOD (Explosive Ordnance Disposal) teams can then relocate the devices using the receiver, and disable or dispose of them. It's not uncommon for old bombs to be found during marine construction projects in areas that were targeted during World War II. When one of these bombs is uncovered, a pinger is deployed so EOD divers can quickly find and remove the explosive before any damage is done.

The pingers frequently used by these groups are JW Fishers SFP-1 single-frequency pinger and MFP-1 multi-frequency pinger. The single-frequency transmits only one frequency which is set at the factory. The MFP-1 can transmit any one of 60 different frequencies which can be set in the field. This allows many pingers to be set at different frequencies and placed in close proximity to each other. The PR-1 receiver will locate any pinger frequency between 3KHz and 97KHz.

For more information on Fishers equipment, visit [www.jwfishers.com](http://www.jwfishers.com).