Deep Dive Wing Facilitates Deep-tow Surveys

One of the problems encountered when towing oceanographic instruments is the cable length required to get the equipment to the optimal depth. A typical ratio of cable length to tow depth is 4 to 1, which means 400ft of cable is needed to tow at a depth of 100 feet. Increase the tow speed, and even more cable is needed. A downrigger weight or depressor wing is commonly used to solve this issue. The advantage of the wing is that it operates on the principle of hydrodynamic depression, to overcome the limitation of conventional downrigger systems. When using a wing, the ratio of cable length to tow depth is halved which means the equipment can be towed at a depth of 100ft using only 200ft of cable.

Advantages of using a wing are; no big piles of cable on the boat deck, cost savings of buying shorter cables, elimination of the need for a large, expensive cable handling system.

In the past, many of these depressors were custom made to fit specific equipment. This meant the wings were expensive and had limited applications. USA-based JW Fishers saw the solution as a universal wing that could be used with any type of equipment and developed the DDW-1 deep dive wing. Now universities, salvage companies, government agencies and military units worldwide are using this wing to tow a variety of oceanographic equipment including side-scan sonar, magnetometers, metal detectors, video systems, hydrophones, and more.

UXO Survey

One company successfully using the DDW-1 is ADEDE in Belgium. They employ a team of highly specialised professionals equipped with the latest hardware available to locate and recover subsea unexploded ordnance (UXO), as well as conduct geophysical and archaeological surveys. A recent project involved the archaeological survey and search for UXO prior to installation of a windfarm off the coast of Germany. The area was extensively mined by both the Germans and Allies during the first and second World Wars. In WWII the Allies had a bomber route running over the area, making it highly likely the space contained aerial bombs, unexploded anti-aircraft shells, and crash sites. Extensive side scan and magnetometer surveys of the area were conducted, and the DDW-1 made it easier to tow the equipment at the required depth reported geophysical surveyor Alexander Cattrysee.

Deeper Oceanographic Observations

The National Institute of Aquatic Resources is part of the Technical University of Denmark and is known as DTU Aqua. Their mission is to conduct research, provide information, educate, and contribute innovation to the field of aquatic resources management. DTU Aqua's scientists strive to find the best approach to utilise the country's aquatic resources in a way that is ecologically sound and sustainable. They conduct research in variety of areas including oceanography, ecosystem dynamics, fisheries management, and aquaculture. They employ many different types of observation technology in these operations. One tool is a towed hydrophone which can be used to gather data on the seabed and the acoustic sounds emitted by various marine creatures. To tow their array at greater depths with less cable, Fishers DDW-1 is being used reports senior researcher Bjarne Stage.

Mikel Inc. is a high-tech company that does contract work for U.S. Navy's Undersea Warfare Center in Newport, Rhode Island. They are actively engaged in the research, design, development and manufacture of advanced technology products, systems and services for the navy. Recently the company acquired a DDW-1 deep dive wing to tow an experimental sonar array in deep water testing in the Caribbean.

Offshore Energy Surveying

Over the past 30 years Netherlands based DUC Diving has grown from an inshore commercial diving company to a fully functional marine contractor and offshore construction services provider that operates globally. The company has diversified across a broad spectrum of industrial sectors completing projects in offshore renewable energy, oil and gas construction, submarine cable installations and salvage. To assist in their these operations DUC purchased a JW Fisher side scan sonar and DDW-1 deep dive wing. "We are very pleased with the sonar's performance and support of Fishers team", says DUC Diving's owner Henk Kapitein.