Project Name: SOSUS Cable Repair and Cable Laying Projects

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Organizations/People Involved:

UCT-1 & UCT-2: Lt Mike Weyler; LCDR. John Stamm; LCDR. Peter Marshall; LCDR. Geoff Cullison; LCDR. John Wood; LCDR. Tim Bandenburg; LCDR. Frank DiGeorge; LCDR. Buzz Shelzer; LCDR. JR Reddish; LCDR. Tom Christensen; LCDR. Troy Pyles; LCDR. Mike Praskievitz; LCDR. Steve Duba

FPO-1: Caesar Project Officer: Lt. Bob Mayer; Lt. Scott Guthrie; Lt. Pete Marshall; Lt. Mike Praskievitz; Lt. Buzz Seltzer; Lt. Mark Samuels; Lt. Bill Beary.

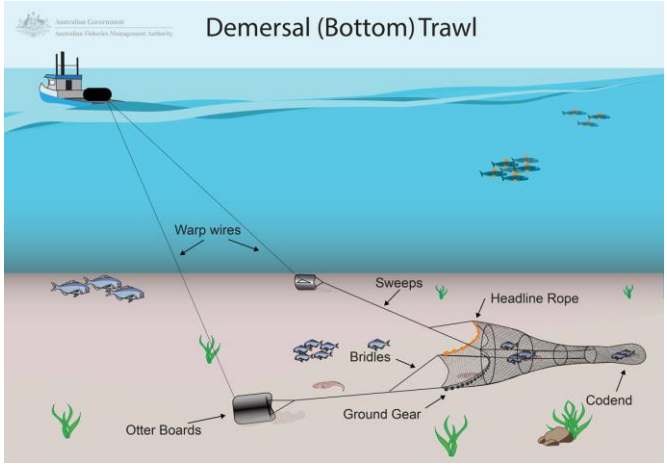
Date: 1972-1990

Project Summary:

The development of the Navy's Ocean Engineering and Construction capability included the project office to engineer, plan and execute the projects and a Seabee capability which became the Underwater Construction Teams (UCT). All the Navy Seabee divers were reassigned from the Mobile Construction Battalions (MCB) to the teams. UCT-One was established on the east coast and UCT-Two on the west coast. Initially, the teams had one officer and twelve enlisted divers. Today, almost fifty years later, those teams now have five officers and over 60 enlisted assigned.

One of the first assignments for the UCT's was to be on call for emergency operational repair of Undersea Surveillance cables where they transition the sea/shore interface. The cables are most vulnerable where they come ashore because of fishing activities and harsh environmental conditions. The Undersea Surveillance System was known as the Sound Surveillance System (SOSUS) and was a highly classified system especially where the cables came ashore. These systems were located all over the Atlantic and Pacific Ocean area so being able to deploy to one of these sites on a moment's notice required a major planning effort to move the team and all their needed equipment to perform a repair operation.

The Project Office had one junior officer assigned to coordinate the UCT planning and to assist them in getting the necessary tools and equipment to perform repairs. Several of these systems with their cables were located in heavily fished area. The fishermen drag large nets on the bottom held open by large otter boards to keep the nets on the sea bottom. These otter boards cutting through the seafloor is what caused the



Bottom Trawling Otter Boards

cable breaks. Even though there were Notices to Mariners and Fisherman not to drag anchors or to fish in the vicinity of the undersea cables, they still did and many cables were broken. Because these cables were providing tracking information for Russian submarines, it was critical to get the cable repaired quickly.

Most of these cables were armored with layers of steel wire wrapped around the cable and then covered with cast iron split pipe to protect the cables. When the cable was broken near shore, the Seabees had to work with cable engineers to get the cable retrieved from the seafloor to allow a new section to be spliced in and then the cable was returned to the seafloor to be secured in place. Now that there was more cable on the seafloor, it was even more vulnerable. More split pipe had to be lowered to the seafloor and secured around the cable using the basic of tools to get the job done. Some of these sites were in very cold seawater conditions so operating for long periods of time in the ocean were difficult.

Split Pipe Cable Protection Near Shore

The UCT's were deployed annually several times to repair cables on an emergency basis. To improve their abilities to repair the cables, new tools were urgently needed.

When the UCT's were formed, their tools and equipment mainly consisted of ones that were powered by electricity and air. None of these could be used underwater so a whole new concept in tool development was needed. The Navy Civil Engineering Laboratory (NCEL) was tasked with development of tools and equipment to support the UCT mission. One of those tool developments resulted in the Multi-Function Tool System. Using seawater as a hydraulic fluid, NCEL developed a revolutionary interchangeable 3 horsepower motor that can operate multiple tools for underwater operations. The motor is powered from a diesel generator on the surface that directs 2,000 psi seawater fluid to the motor in a single hose to provide tool functionality. There is no torque from the motor implied to the diver who is neutrally buoyant. The motor can be coupled to a portable bandsaw, a rotary disc grinder, a rotary impact wrench and drill and a rock drill. Many other tools were developed to enhance the UCT capabilities to work in an undersea environment.

New Cable Installations

Beginning in the mid-1970's, the SOSUS Program began adding new undersea surveillance systems to its existing network for tracking Soviet submarines. Some of these systems were associated with the new SD cable which supported multiple surveillance arrays. Others were built using recovered older cable assets which supported only one array. The UCT's landed these cables in the near shore area and installed armor protection for the cables. These sites include Dam Neck, VA, Centerville, CA, Whidbey Island, WA, Adak, AK and others.

Project Report Link: None