

Project Name: Diego Garcia POL Pipeline

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Organizations/People Involved:

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UCT One; LCDR Weyler, LCDR Erchul, LCDR Wood, BUC Scott

Date:

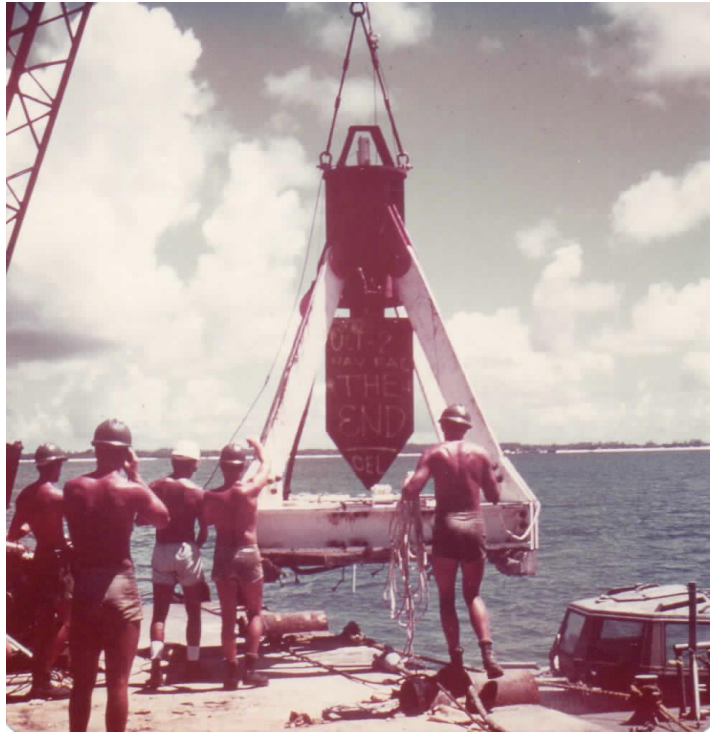
Planning 1972, Construction 1975

Project Summary:

In Diego Garcia, UCT One installed two 2500-foot pipelines to carry petroleum, oil and lubricants from tankers moored offshore to the island. The team also constructed and installed a permanent mooring system for the tankers. Propellant-actuated embedment anchors were used as the primary holding power for the mooring system.

On a causeway extending out from the shore into the Diego Garcia lagoon, 20-foot sections of steel pipe encased in 1-inch of concrete were welded together and then pulled out into the lagoon by a winch on a barge moored in the lagoon. On the causeway the pipeline was pulled along a wooden channel made of plywood and 2x4's to guide it and reduce friction. Since the concrete-encased pipeline weighed 110 pounds per foot, net buoys were attached to the pipeline as it entered the water at intervals that reduced the in-water weight to 2 pounds per foot, which allowed divers to move the pipeline off and around obstructions. With the pipeline fully in place along its route into the lagoon, the net buoys were removed.

This was the first use of propellant-actuated embedment anchors in a fleet mooring, and they proved to be a cost-effective solution to a difficult problem. These anchors were ideal for the hard coral seafloor found in the atoll's lagoon, where conventional drag-type anchors were ineffective. The anchors' projectile assemblies were launched downward by propellant gases at a force of up to 35,000 pounds, achieving peak velocities that exceeded 400 feet per second. The anchor flukes penetrated more than 30 feet into the coral seafloor and were proof-tested to 150,000 pounds of pull. This successful embedment anchor installation added another valuable technique to the Navy's capability to install mooring systems quickly in environments where less than optimal bottom conditions exist.



Project Report Link: None