

A Trec on the Ocean's Floor

TREC stands for Tethered Remote Camera. It is a square box without walls, jammed with cameras, floodlights and sophisticated electronic equipment. It can send video pictures from the ocean's floor to a ship on the surface.

It is made by International Submarine Engineering Ltd. (ISE) of Port Moody, British Columbia, whose cinder block buildings look more like a big village auto repair shop than the headquarters of an international high-tech company that has pioneered the design and manufacture of unmanned submarines. There are about 150 such submersibles in use around the world, costing between \$135,000 and \$1,000,000, and ISE built half of them.

TREC is 45" by 35" by 38", weighs 450 pounds and can dive to 1,200 feet. When the Ixtoc 1 oil well blew out in the Gulf of Mexico in 1979, it was a TREC that found the wellhead.

TREC has several sisters:

TROV (Tethered Remotely Operated Vehicle) has a crab-like mechanical arm which can close valves, recover torpedoes or carry sonar. A TROV found the sunken ship in the North Atlantic that for a few exciting days last summer was assumed

to be the *Titanic*.

DART (Deep Access Reconnaissance Television) is more compact, 40" by 18" by 12", weighing 100 pounds, and it can slip into underwater pipes and other narrow places.

Sea MARC (Sea Mapping and Remote Characterization) scans and maps the bottom of the sea, discovering and depicting geological hazards to shipping. The United States Geological Survey used Sea MARC to map 1,200 square miles along the slope of the eastern continental shelf in seventeen days.

The company was put together by its president, Jim McFarlane, who retired from the Canadian Navy in 1971 and began building manned submersibles. He formed ISE in 1974 when high-density integrated circuitry became available. Less than a year later he had the first TROV. He sold a dressed-up model to the Canadian Environment Department for \$100,000.

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