

OCEANOGRAPHY

Survey of Sea Tides Set

► **THE DEEP SEA TIDES** that sweep the oceans twice a day may help scientists learn more about the earth's electrical field and even anticipate earthquakes.

A plan for an international study has just been endorsed by the Intergovernmental Oceanographic Commission, under the auspices of the United Nations Educational, Scientific and Cultural Organization. Created by members of the International Association of Physical Geography, the plan will be presented in 1967 at the general assembly of the International Union of Geodesy and Geophysics.

Designed to take from five to ten years, the tidal survey would be made on the basis of a grid whose squares would measure about 620 miles on each side. Scientists hope to make detailed calculations of the tidal ranges and obtain the first reliable estimates of tidal friction.

The energy of the attraction exerted on earth by the sun and moon can be calculated, but scientists do not yet know how it is consumed. Some of this energy goes into the tides; the rest affects the dry land.

By knowing the measurements of the earth's tides, researchers may be able to

anticipate an earthquake triggered, for instance, by the added pressure of a spring tide.

Scientists also hope to find out more about the earth's electrical field. The sea is a conductor of electricity. Tidal currents moving through the earth's magnetic field create a difference of potential, just as in any dynamo, that can be measured on the ocean bottom. This generated potential depends on conductivity within the earth. Once the tides are known, this conductivity can be estimated.

In order to take precise measurement of the earth's enormous tides, suitable instruments are being perfected to detect slight variations of pressure in the oceans. Two devices, one developed in France and another at the Scripps Institution of Oceanography at La Jolla, Calif., are being built to measure changing vibrations of a steel string caused by pressures of tides or passing storms. Instruments to detect tiny variations in temperature are also being perfected to be offered to ships that will participate in the tidal study.

• Science News Letter, 89:13 January 1, 1966

OCEANOGRAPHY

Navy Plans Rescue Craft

► **TO AVOID** a repeat performance of the tragic undersea Thresher disaster, the Navy is planning a rescue vehicle that can submerge and hover at depths that would crush a submarine.

The proposed vehicle is part of a five-year, \$200 million program called the Deep Submergence Systems Project, the biggest research project ever launched to extend man's rescue facilities under the sea and to probe his potential for living and working under the sea. The contract for building the prototype vessel, due to be finished in 1969, will be drawn up early next spring.

The vehicle, about 44 feet long, is designed to be fitted into a large Army transport plane and swiftly flown to the site nearest an ocean disaster. Once in the sea, it can be operated from a nuclear "mother" submarine or from a surface support ship.

The vehicle will have many advantages over the rescue ship Trieste. It will be free moving, faster and more mobile. It will navigate up, down and sideways, and will hover steadily in underseas currents while rescue operations are going on.

The Trieste was the rescue ship that sighted the remains of the Thresher.

With a crew of three men, the new vehicle will have three bubble domes: one for the navigator, one for the escape lock, and one in which the survivors will sit. It will be able to carry 12 to 14 people per trip to safety. A submarine has an average of 100 men aboard.

The Navy's Submergence Project includes research operations at two main levels in

the seas—the continental shelf down to about 1,000 feet and the deep ocean to depths of 20,000 feet.

Besides aiming at speedy and reliable rescue operations, the Navy also hopes to create ocean bases about 600 feet below the surface of the ocean, where divers may live and work for weeks or more at a time. New diving techniques also will be developed.

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TECHNOLOGY

Nuclear Desalting Seen To Overcome Drought

► **NUCLEAR POWER PLANTS** for taking the salt out of sea water have been proposed for Long Island and southern California, both areas desperately in need of water.

The current four-year drought in the northeastern United States has shown that water resources are not unlimited, Eugene F. Beckett of the Atomic Energy Commission told the American Institute of the City of New York. Man must turn to getting water from the sea or from waste water, after ground and surface water sources are fully developed.

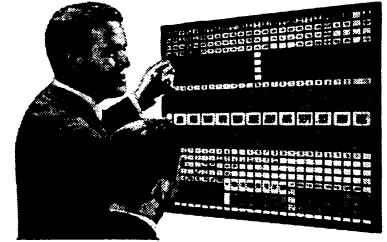
By using nuclear fuel as energy, scientists are considering various conversion methods, such as distillation, freezing, electrodialysis and reverse osmosis, each of which would separate fresh water from the chemicals that make it unfit to drink.

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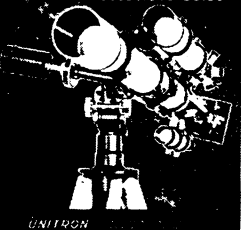
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