

# marine sciences notes

Gathered at the Fourth Annual Meeting  
of the Marine Technology Society in Washington

## UNDERSEA VESSEL

### Spherical craft named Guppy

A glass fiber submersible its builders hope to sell at a price low enough for purchase by universities and other researchers was introduced by Sun Shipbuilding & Dry Dock Co. of Chester, Pa.

The new entry in the manned submersible field will be christened the Guppy, after the South American minnow. It will carry a pilot and an observer for offshore oil exploration and oceanographic research.

The spherical craft will be tethered to a support ship by an electric cable that supplies power for the maneuvering motors. It can stay submerged for up to 48 hours and down to depths of 2,000 feet.

Light for seeing will come from three spot lights and 13 flood lights; the sub will have at least three view ports.

## INSTRUMENTS

### Glass-titanium sphere for 30,000-foot depths

From Corning Glass works in Corning, N.Y., have come two new spheres designed for oceanographic work.

One, an instrument case, is made of chemically strengthened glass and is capable of withstanding pressures down to 30,000 feet and of surviving 4,000 plunges to 20,000 feet. The rim of each half of the sphere is seated in a titanium ring for easy assembly and disassembly.

The other is a flotation sphere to give buoyancy to cables and other equipment. The float provides about 12 pounds net buoyancy and has a 20,000-foot depth capability. In use, the glass sphere is fitted inside a two-piece polyethylene case.

## TECHNOLOGY

### Windows and hulls for man in the ocean

A summary of all the basic information pertinent to windows and transparent hulls of all operational manned submersibles has been developed by M. R. Snoey and J. D. Stachiw of the Naval Civil Engineering Laboratory.

Two general material categories, acrylic plastic and glass, have been used for viewports, but the former is now by far the most highly favored. They nevertheless compared 18 properties of the two materials for a range from tensile strength to light transmission.

## OCEANOGRAPHY

### Shallow water oceanographic research data

A pioneering project to record continuous oceanographic data automatically and on a routine basis is so far proving out, a Coast Guard officer reports.

Ensign Vincent L. Whitcomb of the Coast Guard's oceanographic unit says that the prototype Shallow Water Oceanographic Research Data, known as SWORD, is fulfilling an urgent need for an automatic monitoring

system. It is still undergoing tests on the offshore light station in Buzzard's Bay, Mass.

If operational experience continues to show that quantitative measurements can be made by such automatic stations, the automatic sensors could be installed on the six other offshore light stations and one large navigational sea buoy operated by the Coast Guard.

## FLUIDICS

### Propulsion maneuvering device

A fluidic bow thruster that can develop 2,500 pounds of thrust for surface vessels has been successfully tested in a one-tenth scale laboratory model.

The propulsion maneuvering device has no moving parts. It consists basically of a Y-shaped fitting, rectangular in cross section, with one inlet leg and two discharge legs. Sea water is pumped in through the inlet leg and flows out through one or both of the legs.

When water flows equally from both discharge legs, the net thrust is zero. The flow can be switched from this neutral position to either port or starboard by blocking a control port on either side of the device. Dr. R. E. Bowles of Bowles Engineering Corp. in Silver Spring, Md., reports.

## HYDRAIRPORT

### Using water resources to solve airport bind

A major problem of land-based air terminals is the inadequacy of transportation between the main terminal and passengers' destination.

An attractive solution to this problem reported by Paul R. Sutherland of General Dynamics/Electric Boat Division is to construct floating airports within the metropolitan region.

Inherent in its design is accessibility to deep water for large bulk carrier and passenger vessels, with provision for loading and off-loading, storage and redistribution of cargo. His model was worked out for a hydrairport in the middle of Long Island Sound.

## AQUACULTURE

### Crops from ocean gyres

A drifting or anchored station in the center of an ocean gyre, a large, slowly rotating body of water, was suggested as the best location for producing large oceanic crops that can compete favorably with such grain crops as wheat, rice and corn.

C. F. Veraa of Fairchild Hiller Corp. in Germantown, Md., says that to obtain the highest food production efficiency, aquaculture should be carried on at the earliest possible step in the ocean's food chain.

This would require cultivation and harvesting of phytoplankton, which contain chlorophyll and are capable of photosynthesis. If this proves impractical, the next step would be to cultivate the creatures that feed directly on phytoplankton.

27 july 1968/vol. 94/science news/83