

# oceanology

## Gathered at the first International Oceanology Conference at Brighton, England

### EROSION

#### Sausage sea barrier successful

After a year of attack by shellfish, ultraviolet radiation, tides and ice drifts, a new type of groin, or water barrier, has proven itself at the mouth of the Ems River in Germany.

As a rule, groins (used to alleviate beach erosion), are made of rock, steel, wood or concrete which cost a lot to install. They slow the outgoing surf, causing heavier sand particles to drop out.

The new groin is a plastic tube made of woven strips. The tube is suspended on a series of piles and filled with a mixture of sand and water. The water works out of the fabric, leaving behind a sausage-like rampart full of sand.

As a result of the success at Ems, a dike 3,930 feet long was erected by the same method in the Ley Bay north of Emden, Germany, last fall. The dike has a number of gaps 48 feet long, so floodwaters can flow back into the sea.

The groin is not underwashed by high tides, and sand and mud accumulate on the inside. After about three years the deposits will be as high as the rampart, and will form a basis for land reclamation.

### AQUACULTURE

#### Plastic blanket for fish

The British are using a blanket of plastic balls to increase fish production. The plastic balls, which float on the surface, act as insulation and reduce heat loss from the water, a serious problem when the weather is cold.

The work is being carried out in fish tanks by the Whitefish Authority at a nuclear power station in Hunterston, England, which supplies the heat for the water. Sole are under study and have been reared to market size in two years instead of the usual four. The British hope to reduce this to 18 months.

At the test site, a flow of seawater comes to the fish tanks heated by the reactor. Under adverse winter conditions, a ball blanket keeps the temperature of a tank at 60 degrees F. This temperature is ideal for growing fish and about 13 degrees higher than the temperature of the open sea in winter.

The balls are made from chemically inert polyolefins in diameters of 20, 45 and 150 millimeters. For the Hunterston experiment, 150-millimeter balls are used.

### EROSION

#### Plastic seaweed to save beaches

Artificial seaweed made of tufts of plastic eight feet long is now being sown on British beaches to stop coastal erosion. Live seaweed has long been known to be a natural erosion preventive.

To stop the serious erosion of a boulder-clay cliff in northeast England, 2.5 acres of plastic fronds are being floated in the water after they have been anchored to the

ocean floor with ropes or chains. A few years ago in the U.S. the same thing was tried, but the moorings broke. The National Aeronautics and Space Administration is working on the seaweed idea at its Wallops Island, Va., station, which has an erosion problem.

In an earlier trial at Bournemouth, England, an overall build-up of three to four feet of sand was attained in six months. This occurred mainly in the winter, when erosion is strongest. Laboratory tests at the Government Hydraulics Research Station have shown that eight feet high tufts of buoyant polypropylene anchored offshore are practical.

### RADAR

#### New electronic beacon for ships

A new radar device, which fits on a buoy and transmits information on its position when triggered by a ship's marine radar signal, has been developed by British electronics engineers. The equipment provides a clear indication of areas to be avoided by shipping and simplifies navigation close to land or in the vicinity of underwater hazards.

Named Seawatch 300, the system has one of the best range performances for its size and weight of any equipment of its type yet introduced. It supplements the Seawatch Major range of radar beacons, which have been installed on lightships and lighthouses around the coasts of Ireland and Scotland. Seawatch Major is much larger and has an output of 20 watts, compared with 300 milliwatts for Seawatch 300.

### LOCOMOTION

#### Undersea vehicle planned

British engineers have designed (but not yet built) a four-wheeled vehicle to carry undersea workers. To be used for laying cable, surveying and other tasks, the vehicle, called SBV for seabed vehicle, can be floated to the work site. Then it drops an anchor to the seabed and descends along the mooring rope.

The SBV is attached to a mother ship by an umbilical cord, which conveys power and communications. Fitted with sonar, TV cameras and a gyroscopic compass, the SBV can house a crew of six for many weeks.

### HOVERCRAFT

#### Two-man hovercraft coming

The hovercraft, used in larger sizes to ferry passengers and cargo across the English Channel, is now within reach of anyone who can afford a high-priced car. A two-man vehicle, which moves over water or land on a cushion of air, is slated to be introduced in the United States in the spring.

Built by Hover-Air Limited in Crowland, Peterborough, England, the HA5 Hoverhawk is made of fiberglass and can carry a payload of 400 pounds.