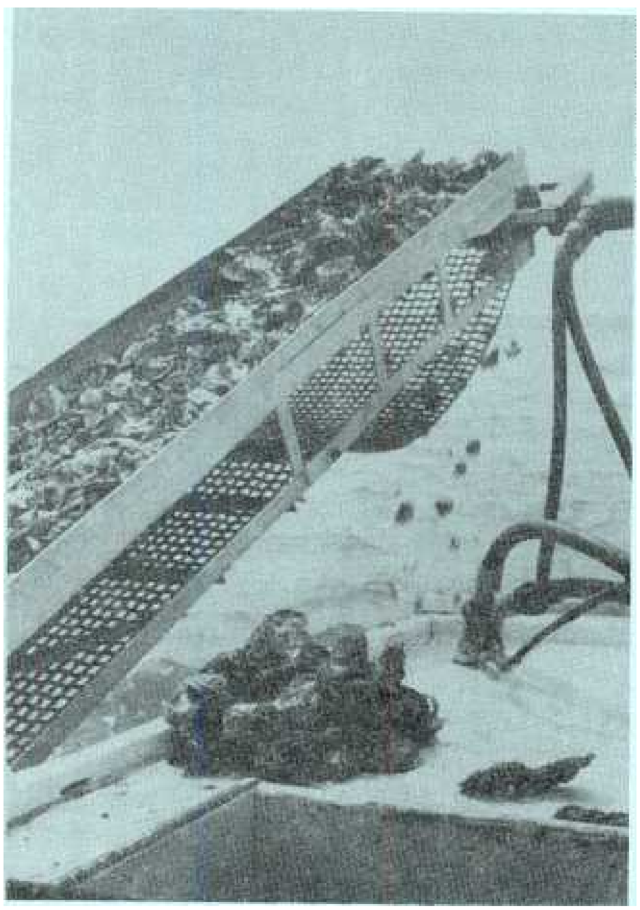
MARINE RESOURCE INFORMATION BULLETIN

A SEA GRANT ADVISORY SERVICE

Virginia Institute of Marine Science, Gloucester Point, Virginia 23062

Oyster Harvester Appears Ready For Industry

Field tests on oyster beds in the York and Rappahannock rivers have convinced scientists at the Virginia Institute of Marine Science that the hydraulic escalator developed to harvest oysters can be used commercially.



Unwanted shell moves along the escalator and falls back to the bottom.

The experimental prototype, developed by Dexter Haven, head of the Department of Applied Biology, utilizes the escalator system from the conventional Maryland-type soft clam harvester. To this has been added a completely new harvester head, designed to rake oysters from planted bottoms at a rate of up to one bushel per minute.

The harvester head consists of a rectangular steel box with an inside width of 36", and an overall length of 36". The box narrows to a width of 18" where it attaches to the escalator.

Inside this box are rows of flexible steel tines affixed to two steel cylinders which are rotated by an underwater hydraulic motor. As the box slides on steel runners over the bottom, the tines rake oysters and shells from the bottom. A horizontal jet of water washes them onto the escalator which carries them to the surface.

Since the mechanical harvester can be operated by two persons, it represents a savings in manpower over the conventional harvester which requires three workers. Also, unwanted shell falls directly back to the bottom which eliminates the need to pick it out or shovel it overboard.

The dredge causes no apparent damage to the bottom since it harvests only the top two or three inches. How-

The harvester head consists of a steel box with rows of flexible steel tines affixed to two cylinders.

ever, further testing will be done to evaluate the effects of the apparatus on the bottom.

Personnel at the Institute were assisted in the construction of the apparatus by Q. C. Davis of Hampton, a mechanical engineering consultant. The work was supported by VIMS, the Virginia Marine Resources Commission and the National Marine Fisheries Service.

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DAVID GARTEN EDITOR

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A VIMS educational service

marine mailbag

Q: Is VIMS working on measures to control the abundance of the summer sea nettle?

C. L.
Wilmington, Del.

A: Last year Chesapeake Bay jellyfish were more abundant than they have been in about 40 years. Although they are appearing several weeks later than in 1974, it appears they will be quite abundant again this summer. Their profusion results from natural causes such as favorable conditions for reproductive development and availability of food rather than from pollution or ecological imbalance.

Prospects for control of the stinging pests are poor since no practical and safe methods of control have been developed. Nets and screens are expensive and difficult to maintain. Jellyfish get tangled in the net and their tentacles, which bear the stinging cells, break off and pass through the net.

Chemical control threatens the ecological balance of the entire marine community. No poisons have been found which are selective for jellyfish without endangering other species. Biological control is not promising either. There are few natural predators, and the number of jellyfish they consume is insignificant.

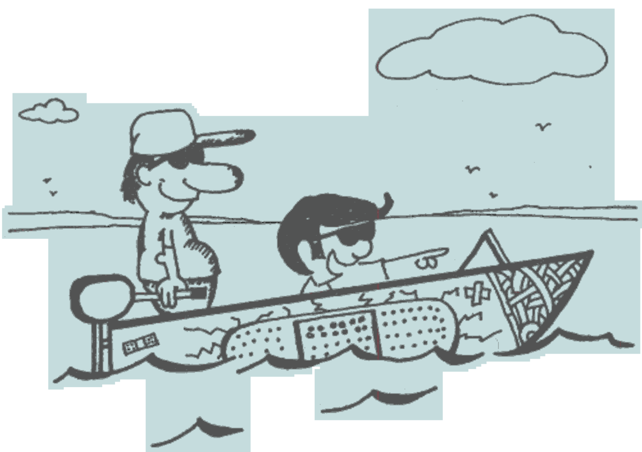
VIMS research has been aimed at finding a vulnerable point in the complex reproductive cycle. The medusa stage, which is the familiar stinging nettle with tentacles, produces eggs in summer. These eggs develop into free swimming planulae which settle on shells to grow as tiny blobs of "jelly" called polyps. In early spring, polyps constrict themselves into layers, which are released from the polyp body; each layer grows into a medusa within six to ten weeks. This layering process, called strobilation, is the best target for

Continued on page 3, col. 2

Improvise And Survive In Boating Emergencies

According to information published by the Texas Parks and Wildlife Department, improvisations during boating emergencies could save your life. In a boating emergency, those involved could be forced to make do with materials at hand and survival could hinge on the extent of the imagination employed under the circumstances.

An example of a bad situation is a broken fan belt on an inboard-outboard. Without the belt, the generator will not produce electricity and the water pump will not operate. If a replacement is not available, it's a toss-up whether



your battery will run down or your engine will burn up first. Unless you improvise, it could be a long wait until someone rescues you.

There is a solution. Just take some line or rope and tie it around the appropriate pullies using a square knot. Then test it. If your generator is turning and your fan is turning, you're getting to shore instead of drifting the other way.

Another common emergency is a broken pipe or hose. Merely bandage the rupture with rags or a piece of canvas and tie it with line or your belt. It will probably drip, but your makeshift repairs may help you get to shore.

A lost rudder need not be a disaster if you know how to rig a sea anchor. Tie a line to a bucket, deck cover or anything you can drag behind your boat. If you want to go right, shift the line to the right side of the boat. If you want to go left, shift the line to the left side of the boat. The line in the center of the boat will help you go straight.

An engine won't last long without oil and a sudden leak could spell trouble unless you keep your head. It may be possible to catch the oil in a pan or bucket and pour it back into the engine.

A complete electrical failure could leave you grounded, figuratively speaking. If there's still spark in the battery you can get going by "hot wiring" your engine. First, disconnect all electrical equipment from the battery except the large cables from the battery to the starter. Connect a length of wire from the battery post (positive or large posts) to the coil primary switch side and start the engine by grounding the small terminal on the starter solenoid with a screwdriver. To stop the engine, disconnect the coil wire.

In most cases you will not be able to proceed at high speed while nursing a sick engine, but the important thing is getting into port where permanent repairs can be made.

Continued from page 2

interruption of the life cycle. Inducing strobilation out of season (when natural conditions are inhospitable to developing jellyfish) could provide jellyfish control, as could inhibition of strobilation.

Funds for research have dwindled, however, and the problem is far from solved. Apparently we will have to share our waters with the jellyfish for some years to come.

U. S. Fishing Industry Economic Forecast

If present trends continue, the U.S. fisheries industry will grow only slightly in the next 10 years despite a rising demand for seafood products, according to the National Oceanic and Atmospheric Administration (NOAA), an agency of the Department of Commerce.

Further, the rising demand will be satisfied principally by imports of foreign fishing products, which have doubled in the last 10 years, unless the U.S. industry can lift its production to levels that meet the nation's future needs.

Prospects such as these are suggested in an economic forecast prepared by Synergy, Inc., of Washington, D.C., and currently being analyzed by the NOAA's National Marine Fisheries Service which is preparing a National Fisheries Plan to be published later this year.

A major objective of the plan is to establish goals and lines of action that will encourage increased U.S. production of fisheries products and thus reduce the heavy U.S. dependence on seafoods from abroad.

The Synergy report is a "baseline" economic forecast which examines historical trends and traditional practices in U.S. fisheries and projects these to show the conditions to be expected, if no changes or improvements take place by 1985.

The baseline study was designed to get a view of the future condition of U.S. fisheries to provide reference points for planning, according to NMFS spokesmen. The study took no account of the possibilities for expansion to be explored in the National Fisheries Plan or the possibilities of exclusive fisheries jurisdiction in waters up to 200 miles from the U.S. coast.

The baseline study clearly suggests that, unless there is informed and coordinated attention to national goals, U.S. fisheries will fall short of keeping pace with demand for seafood products.

While the total U.S. consumption of edible seafoods is projected to increase from 7.0 billion pounds (round weight) in 1973 to 9.3 billion pounds by 1985, the increase will have to be met by imports unless U.S. industry makes up the difference. The value of imports of edible products, which rose from $0.54 billion to $1.48 billion between 1967 and 1974, will further increase to $2.08 billion (in 1974 dollars) by 1985 if present trends are not altered.

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