

Malfunction in Oceanography Congress Reluctant To Finance Ocean Study Program

Editor's note: This is the last in a series of five articles on the government's venture into the field of oceanography.

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Washington — America's long-range program to intensify oceanographic research — to beat the Soviets to the bottom of the sea in the broadest sense — is in distress.

It's not because the federal oceanography program is being deliberately torpedoed but apparently because, like the ill-fated submarine Thresher, it is jeopardized by malfunctioning in critical parts.

One malfunction is evident on Capitol Hill. Congress on the one hand has been passing bills which exhort the President to undertake a comprehensive, long-term oceanographic program; but Congress, on the other hand, has been chopping millions of dollars from President Kennedy's oceanographic budget which was to implement such a comprehensive program.

Like exploration in outer space, oceanographic exploration in the inner space of the deep oceans is a relatively new concept to Congress. President Kennedy has asked Congress for funds to more than double the government's effort in both fields. After assuming office in 1961, Kennedy sent Congress a special message on oceanography to support his request for a \$106 million program. He said:

"Knowledge of the oceans is more than a matter of curiosity. Our very survival may hinge upon it. Although understanding of our marine environment and maps of the ocean floor would afford to our military forces a demonstrable advantage, we have thus far neglected oceanography. We do not have adequate charts of more than one or two percent of the oceans.

"The seas also offer a wealth of nutritional resources. They already are a principal source of protein. They can provide many times the current food supply if we but learn to garner and husband this self-renewing larder.

"Mineral resources on land will ultimately reach their limit. But the oceans hold untapped sources of such basic minerals as salt, potassium and magnesium in virtually limitless quantities. We will be able to extract additional elements from sea water, such as manganese, nickel, cobalt and other elements known to abound on the ocean floor, as soon as the processes are developed to make it economically feasible.

"To predict, and perhaps some day to control, changes in weather and climate is of the utmost importance to man everywhere. These changes are controlled to a large and yet unknown extent by what happens in the ocean. Ocean and atmosphere work together in a still mysterious way to determine our climate. Additional research is necessary to identify the factors in this interplay.

"These are some of the reasons which compel us to embark upon a national effort in oceanography."

Congress offered no basic quarrel with this stated objective. It gave Kennedy \$101 million of the \$106 million he asked for oceanography that year.

Moreover, Sen. Warren G. Magnuson (D-Wash.) became a vocal champion of intensified oceanographic research after conducting extensive hearings in the Senate Commerce committee of which he is chairman. Magnuson in July, 1961, brought from his committee a bill to authorize a 10-year oceanographic buildup of research ships and shore facilities.

Opponents charged that the cost of the Magnuson bill, estimated at \$891.5 million over 10 years, was excessive in view of other defense expenditures. They also noted that the government agencies said the bill wasn't necessary because authority in law already existed to carry out such a program. Magnuson claimed the bill would give them "legislative guidance" and the Senate passed the bill 50 to 32.

The House buried Magnuson's bill and last year passed one of its own to create a National Oceanographic Council to develop and coordinate a long-range oceanography program.

The House bill didn't mention how much, if any, should be spent, except for adding a \$19,000 appointee to the White House staff to assist the President's science advisor in oceanography. Kennedy pocket vetoed it without explanation. Magnuson says he conferred with Kennedy at the time and agreed the veto was a suitable fate for this relatively meaningless bill.

A new bill, with administration backing, was approved a few weeks ago by the House Merchant Marine and Fisheries committee. It declares that it is U.S. policy "to develop, encourage and maintain a coordinated, comprehensive and long-range national program in oceanography for the benefit of mankind, defense against attack from the oceans, and operation of our own surface and subsurface naval forces with maximum efficiency, rehabilitation of our commercial fisheries, and increased utilization of these and other resources."

Moreover, this bill says "furtherance of this policy requires that adequate provision be made for continuing systematic research,

studies and surveys of the ocean and its resources, and of the total marine environment, the development of new and improved techniques, instruments, or equipment for oceanographic research and surveys, the education and training of scientists and technicians through a sustained and effective program, and encouragement of international cooperation in marine research and surveys in the national interest."

The bill would require the President to develop such a program by assigning various oceanographic duties among federal agencies. Kennedy has done this.

The bill would require the President to report to Congress each February on the

general status of the oceanography effort, the amount of funds Congress should appropriate for marine sciences for each federal agency, and future plans including any new legislation required to meet the national oceanographic goals.

Such an annual appraisal could provide a meaningful picture if it were candid enough to point up shortcomings as well as advances. For example, one of the most needed items in the Navy program is new ships, and yet Congress this summer "saved" \$20 million by rejecting two of the three new ships the Navy requested.

With the present oceanographic fleet available to the Navy, its bottom mapping and other tasks would take 30 to

40 years. To reduce this time period, the Navy figures it needs three new ships annually — but only Congress can provide the funds.

The desire to economize is always popular, but it hasn't crippled the race to the moon as noticeably as it has the race to the bottom of the sea.

But congressional short-changing isn't the only handicap oceanography suffers — and some say it's not the most serious problem.

"Our main problem is getting qualified oceanographic personnel," said a Navy official.

He and others have made hundreds of talks in high schools to stimulate interest in oceanography as a career. A measure of the expansion of education in this field is that before World War II only three colleges offered degrees in oceanography, while today 17 offer degrees in marine sciences and about 35 have an oceanography curriculum.

The most widely recognized include University of Washington, Oregon State University, UCLA, and Scripps Institution at La Jolla, Calif., on the Pacific Coast; Texas A & M and the University of Miami in the South; and Johns Hopkins, Columbia University, University of Rhode Island, and Woods Hole Oceanographic Institution on the Atlantic Coast.

Despite the expansion in oceanographic curricula, it is difficult to secure sufficient teaching staffs because most skilled oceanographers would prefer to be engaged in actual research. Fewer than 100 degrees in oceanography are awarded yearly.

Kennedy's 10-year program optimistically anticipates an annual 10 per cent growth in oceanographic manpower compared to about a seven per cent growth rate for all sciences. This is expected to result from transfer of scientists from other basic fields such as physics, geology, chemistry, biology, math and engineering.

The worst shortages are expected in the areas of physi-

cal and meteorological oceanography, with scarcities also in systematic biologists, marine geophysicists and geochemists. Marine biologists and geologists are being trained at an adequate rate.

The Soviet Union also has manpower shortage problems. Her professional oceanographic staff is estimated at 500 to 700 scientists and 1600 technicians, smaller than the American staff.

Despite the cold war rivalry and the national security emphasis on the buildup of oceanographic research by both the United States and Russia, both governments are cooperating with 30 other nations in the International Indian Ocean Expedition, a 5-year effort to learn more about the least known of the world's oceans. Another such effort is the International Cooperative Investigations of the Tropical Atlantic. The U.S. plans to invest \$70 to \$80 million in such cooperative ventures in the coming decade.

While Russia and the U.S. lead in oceanography research, Japan, the United Kingdom and Canada are also making substantial efforts and 39 other countries are active in the common

quest to solve the riddles of the deep.

And although military strategy is the impelling force in the major efforts of the big powers, the oceanography efforts of the small nations suggest the universal urge to participate in this bold adventure of man in the alien environment of the ocean depths which is destined to bring back magnificent treasures for generations to come in a world stabilized by peace.



FAREWELL PARTY — Retiring after 15 years as stenographer for the real estate and escrow department of the Medford branch of the First National Bank, Mrs. Fern Dow was honored by fellow employees Thursday. A gift of a tea cart was presented to her. Shown above, left to right, preparing to cut a cake are Dick Payne, real estate officer of the local branch, Mrs. Dow, and Robert Ross, vice president and general manager of the Medford branch.



BUILDING CITY—Jack Foster, 61-year-old businessman, is "too excited to sleep". The cause of his sleeplessness is a city, the first one that Foster has ever decided to build. Called Foster City, it is located on Brewer Island, near the San Francisco Peninsula 20 miles south of the city. (UPI)

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