GENERAL SCIENCE

Maritime Industry Weak

➤ THE LAGGING United States maritime industry will require a big research program to compete successfully with foreign ships, the Maritime Research Advisory Committee of the National Academy of Sciences-National Research Council reported.

U. S. flag ships now carry only one-tenth of our sea-borne commerce. This means that at a time when the cold war is expanding, the country is in the vulnerable position of having to rely on foreign fleets for most of its ocean shipping needs.

Concern over this prompted the U. S. Maritime Administration to ask for a study and recommendations from the Academy's Maritime Research Advisory Committee of 55 senior scientists and engineers, headed by Louis H. Roddis Jr., president of the Pennsylvania Electric Company.

Automation is the principal means of achieving the goal of a U. S. merchant fleet of such technological superiority that it could compete independently in international trade without requiring Government support by subsidies, the Committee reported.

It recommends that the Maritime Administration request appropriations of 10 to 12 million dollars anually during the next decade for research conducted through outside contracts, particularly by universities, in order to promote maritime-related education. The Maritime Administration is urged to encourage the maritime industry itself to invest more money in research.

The Committee's conclusions and recommendations range from a suggestion to study bridge-to-bridge radiotelephones to establishing a mathematical model for the prediction of future world shipping requirements.

Other major conclusions and recommendations by the Committee include:

1. One of the most serious problems of the U. S. merchant marine is the high cost of U. S. shipbuilding. Savings can be made through simplification and standardization in design. Government policies leading to more efficient shipyards should also be fostered.

2. The Maritime Administration should frequently sponsor the construction and operation of advanced concept ships that can demonstrate the feasibility of new developments. Such ships built within the near future should incorporate automation of most shipboard operations, unitized cargo operation and more economic machinery.

Prof. Harry Benford of the Academy-Research Council staff served as executive director of the Committee study.

• Science News Letter, 78:152 September 3, 1960

ASTRONOMY

Supports Planet Theory

➤ NEW EVIDENCE has been reported to support the theory that the earth and other planets were formed by condensation of material once a part of the sun.

Dr. Thomas Gold, head of the astronomy department at Cornell University in Ithaca, N. Y., said the high amounts of lithium on earth compared to the sun suggest that the solar system planets were previously part of a far-flung disk of the sun.

He believes that a careful search of the heavens might reveal a star and its surrounding material in a state corresponding to that before the sun's planets condensed.

Dr. Gold's theory is based on a recent observation by Dr. W. K. Bonsack of California Institute of Technology and Dr. J. L. Greenstein of Mt. Wilson and Palomar Observatories that certain stars whose brightness varies irregularly are abnormally rich in lithium.

They estimate there is at least ten times as much lithium per ounce of material on the surface of these stars as there is in the surrounding material.

Because of this high abundance of lithium, Drs. Bonsack and Greenstein suggest that these stars must be capable of manufacturing this element, the lightest of all known metallic elements. One such manufacturing process could be through high-energy magnetohydrodynamic processes in the star's atmosphere, resulting from the release of energy residing in the original magnetic field.

Dr. Gold now proposes that the sun in its early stages would, as a result of shedding its magnetic energy, have formed an atmosphere rich in lithium as the T Tauri variable stars are observed to do. The planets then formed out of this solar material would have a high abundance of lithium, he suggests in the Astrophysical Journal, 132:274, 1960, published in collaboration with the American Astronomical Society.

• Science News Letter, 78:152 September 3, 1960

MEDICINE

HEW Official Named Lasker Award Winner

➤ THE DIRECTOR of the Office of Vocational Rehabilitation of the U. S. Department of Health, Education and Welfare, Mary E. Switzer; Dr. Paul W. Brand, a missionary at Vellore, South India, and Dr. Gudmund Harlem, Oslo, Norway, have been named winners of the Albert Lasker Awards, one of medicine's highest honors.

The awards will be presented to the winners Sept. 1 at the Eighth World Congress of the International Society for the Welfare of Cripples in New York. They are given every third year by the Albert and Mary Lasker Foundation through the International Society "for outstanding achievement in the development of services for the physically disabled."

Of Miss Switzer the awards committee said, "During the ten years of her leadership, approximately three-quarters of a million disabled persons have been rehabilitated to useful employment in the United States."

Of Dr. Brand, medical missionary and orthopedic surgeon, the Committee said, "In 1947 he performed his first operation on the hands of patients with leprosy, transplanting healthy tendons to do the work of paralyzed ones."

Dr. Harlem, Royal Minister of Health and Social Affairs of Norway, the Committee hailed as an "articulate spokesman for and champion of human dignity and social justice throughout the world . . . a man of action in the Norwegian resistance movement."

The awards consist of $2,500 each, a citation and a silver statuette of the Winged Victory of Samothrace, symbolizing victory over death and disease.

• Science News Letter, 78:152 September 3, 1960

NUTRITION

If Well Fed, Avoid Overdoses of Vitamins

➤ IN A STRONG EDITORIAL, the Journal of the American Medical Association, 173:1831, 1960, warns well-fed Americans against gulping down vitamin pills.

The editorial says overdoses of vitamin A can lead to irritability, skin eruption, enlargement of the liver and loss of appetite. Too much vitamin D may cause gastrointestinal symptoms.

The Journal says that "only in a deficiency state or in an anticipated deficiency state are vitamin supplements necessary."

• Science News Letter, 78:152 September 3, 1960

GENERAL SCIENCE

About $1,000,000,000 Spent for Basic Research

➤ ABOUT A BILLION DOLLARS was spent in the United States on scientific research and development during the 1959-1960 fiscal year, the National Science Foundation estimates.

The estimate is based on a statistical evaluation of the money spent for basic research in the U. S. during the period from 1953 through 1958, reported for the first time. This statistical series shows that, throughout the period, the funds spent for basic research were about eight percent of the total expended for all research and development. The total spent for basic research increased from $430,000,000 in 1953 to more than $830,000,000 in 1957-58.

The survey was made to provide a factual background for the formation of U. S. scientific policy, a primary responsibility of the National Science Foundation. Detailed and summary survey information is now available on major aspects of research and development in various types of organizations throughout the economy, the Foundation reports.

These organizations are grouped into four: colleges and universities, other nonprofit institutions, industry, and the Federal Government.

• Science News Letter, 78:152 September 3, 1960