Dedication

of the

NATIONAL OCEANOGRAPHIC DATA CENTER

Monday, 16 January 1961

Program

The National Anthem

INVOCATION

Captain Ernest Alva Ham, CHC, USN

SPECIAL MUSIC

INTRODUCTIONS

Rear Admiral E. C. Stephan
Hydrographer of the United States Navy

Representatives of Participating Agencies

Rear Admiral H. Arnold Karo
Director, Coast and Geodetic Survey

Mr. John J. Allen, Jr.
Undersecretary of Commerce for Transportation

Dr. F. W. Reichelderfer
Chief, U. S. Weather Bureau

Mr. Donald L. McKernan
Director, Bureau of Commercial Fisheries

Mr. Loren K. Olson
Commissioner, Atomic Energy Commission

Dr. Alan T. Waterman
Director, National Science Foundation

SPECIAL MUSIC

ADDRESS

The Honorable James H. Wakelin, Jr.
Assistant Secretary of the Navy
and
Chairman, Interagency Committee on Oceanography

BENEDICTION

MUSIC

U. S. Navy Band
Cdr. Charles Brendler, Conductor

U. S. Navy Hydrographic Office Choral Group
Mrs. Margaret L. Kanzler, Director

THE MISSION OF THE NATIONAL OCEANOGRAPHIC DATA CENTER

"WHEREAS, there is a recognized and demonstrated need for the establishment within our Government of a National Oceanographic Data Center organized for the purpose of acquiring, compiling, processing and preserving oceanographic data for ready retrieval, this need for oceanographic data, available at cost, being common to the agencies of Government and to public and private interests, both foreign and domestic;

. . . all parties . . . agree by and among themselves that only through their joint cooperation and coordination of means under their joint direction can this oceanographic data center be organized to serve effectively and economically the above purpose [and] . . . agree to sponsor a National Oceanographic Data Center to be operated for the purpose set forth in this agreement . . . "

DEPARTMENT OF THE NAVY
COAST AND GEODETIC SURVEY
BUREAU OF COMMERCIAL FISHERIES
NATIONAL SCIENCE FOUNDATION
ATOMIC ENERGY COMMISSION
WEATHER BUREAU

"The National Oceanographic Data Center shall . . .

. . . receive, compile, process and preserve appropriate oceanographic data submitted to it

. . . be responsible for acquiring by exchange, gift or purchase oceanographic data of scientific value from domestic or foreign sources

. . . establish procedures for insuring that the accuracy and general quality of the data incorporated into the Center's repository meet the criteria established by the Advisory Board and shall undertake analytical studies necessary for this purpose

. . . prepare data summaries and tabulations showing annual and seasonal oceanographic conditions

. . . prepare and make available to requestors, indexes of its holdings . . . perform or make arrangements for the performance of appropriate data processing services at cost

. . . promote and encourage the routine collection of time series and ocean-wide survey data

. . . exchange or sell to the general public, in accordance with existing law, summaries and tabulations prepared by the Center . . . "

Excerpts from the Charter of the National Oceanographic Data Center

THE NATIONAL OCEANOGRAPHIC DATA CENTER

A BRIEF HISTORY

Scientists of the United States have recognized the need for a centralized National repository for oceanographic data where the data will be available for everyone desiring to use them. Approximately two years ago formal action was begun to establish such a facility. At about the same time, members of Congress wished to have this capability to enhance the Nation's scientific research and defense potential, and introduced bills in the 86th Congress to establish a national oceanographic data center.

In April 1959 the Working Group on Data Recording and Standardization of the Coordinating Committee on Oceanography of the National Academy of Sciences reported on the needs for an oceanographic data center and the means by which it should be established. Acting on this report, the Interagency Committee on Oceanography recommended to the Federal Council for Science and Technology that the National Oceanographic Data Center be established and be sponsored, financed, and its policies determined jointly by the Navy, the U. S. Coast and Geodetic Survey, the Bureau of Commercial Fisheries, the National Science Foundation, and the Atomic Energy Commission. These recommendations were approved unanimously by the council on June 28, 1960.

On July 8, the Honorable James H. Wakelin, Jr., Assistant Secretary of the Navy for Research and Development and Chairman of the Interagency Committee on Oceanography, took the first steps to implement the Data Center, requesting the Chief of Naval Operations and the Hydrographer to undertake this new responsibility. On July 19 the Chief of Naval Operations directed the Hydrographer "... to establish at the earliest practical date a National Oceanographic Data Center." By order from the Chief of Naval Operations the National Oceanographic Data Center was officially established on November 1.

THE FACILITY

The necessary funds for renovation of space for the National Oceanographic Data Center at the Naval Weapons Plant were allotted on September 27. On November 1 the Potomac-River Naval Command assigned the third floor of Building 160 of the Naval Weapons Plant as the future home of the National Oceanographic Data Center. Construction began on November 14, and in slightly less than two months the Data Center was able to occupy its new quarters.

The National Oceanographic Data Center begins its work with a collection of oceanographic data started by the U. S. Navy Hydrographic Office. This collection consists of approximately 2,000,000 machine-punched cards for about 100,000 oceanographic stations (almost all of which are for the North Atlantic Ocean), about 3,000,000 current observations, about 600,000 bathythermograms, and several millions of wave and sea surface temperature observations in various forms. Considerably more data in various stages of processing are available.

In addition to data storage facilities of various types at the Data Center, there will be reproduction facilities including both photographic and machine card reproduction equipment. The Data Center employs the standard types of automatic processing equipment as well as a high speed computer for its processing work. The data files will be available for study in the library study rooms.

Activities in OCEANOGRAPHY *at . . . .*

THE U. S. WEATHER BUREAU

In support of the studies of the interactions between the oceans and the atmosphere, the Weather Bureau has inaugurated a series of meteorological-oceanographic measurements made by oceanographic survey vessels, ocean weather ships, and marine automatic weather stations. Analysis of the information obtained from these measurements is carried out partly by Weather Bureau research scientists, and partly through the support of research investigations and universities and other institutions. The principal studies include: (1) Investigations of the storm surges associated with hurricanes and other severe storms, (2) basic studies of the relationship between water surface temperatures in the tropics and the formation of hurricanes, and (3) studies of long-period changes in the atmospheric circulation and the relationship of these changes to the transfer of heat and moisture from the ocean to the atmosphere.

Some of the data for these investigations are obtained from the marine observational program which the Weather Bureau conducts in cooperation with other interested government agencies. In addition to meteorological observations, measurements are made of sea surface temperature, wave height, and direction of wave movement. Provision is also made for the reporting of ice conditions encountered by shipping.

During the past few years, these data have been supplemented by oceanographic surveys in which the Weather Bureau has participated with the Woods Hole Oceanographic Institution, Texas Agricultural and Mechanical College, Coast and Geodetic Survey, Coast Guard, and the Hydrographic Office of Argentina.

By using these and other data available at the National Oceanographic Data Center and the Weather Bureau's National Weather Records Center, Weather Bureau researchers expect to extend the present limited knowledge of the dynamics of the marine environment.

THE COAST AND GEODETIC SURVEY

The Coast and Geodetic Survey of the Department of Commerce has played an active role in the development of oceanography in the United States. Many of the early oceanographic instruments were developed by Coast Survey personnel to meet existing needs. These earlier instruments have given way to new and improved models, and the Coast and Geodetic Survey is utilizing these new tools to help provide the oceanographic data needed by the United States.

With modern oceanographic instruments, the ships of the Coast and Geodetic Survey are steadily adding to the growing fund of information on the sea. Serial temperatures, salinities, and chemical measurements from standard oceanographic stations, as well as many hundreds of bathythermograph observations, are already being contributed by the Coast and Geodetic Survey to the National Oceanographic Data Center. These data from systematic oceanographic surveys, plus those obtained for specific research projects, will continue to swell the volume of oceanographic information.

The establishment of the National Oceanographic Data Center provides a mechanism whereby this information, coupled with compatible data from other sources, will be readily available for use in solving the riddles of the sea. The Coast and Geodetic Survey is proud to be both a contributor of data and a financial sponsor of this new venture.

THE ATOMIC ENERGY COMMISSION

The Atomic Energy Commission has accepted the major responsibility for research concerned with the effects of radioactivity in the oceans. Our knowledge of the various factors which control the distribution of radioactivity in the ocean is only fragmentary. The Commission is now investigating various problems related to radioactivity in the ocean with as much vigor as funds will permit. The work now underway includes engineering studies in and near disposal areas, monitoring of disposal sites and their surroundings, and continuing research projects in most of the broad areas presented in Chapter Five of the National Academy of Sciences Report, "Oceanography 1960 to 1970."

Information is being gathered concerning the ultimate fate of long-lived radioactive isotopes in the ocean. The assessment of such factors as circulation and mixing rates, uptake and utilization of radioactive isotopes by biological organisms, and sedimentation and permanency of bonding are important areas which will receive increasing attention by scientists. Various assumptions and hypothesis of action are under study at this time.

For some of the more promising peaceful purposes, the tremendous nuclear power potential is likely to be used in now undeveloped ways. It is reasonable to assume that, with proper controls and experience, rivers may be relocated, earthen fills may be constructed, harbors may be dredged, canals may be dug and on a longer time scale, power may be produced for surface, middle, or deep ocean applications. In all of these cases a delaying factor in the development is the lack of adequate information about the ocean to evaluate properly the potential hazards. We expect that the Data Center will be of great help in providing this much needed information.

THE OFFICE OF NAVAL RESEARCH

The oceanographic program of the Office of Naval Research consists of numerous basic and applied research projects largely carried out by contract with universities and non-profit organizations. More than 16 ocean-going research ships and numerous coastal vessels are employed in these projects which will contribute data to the National Oceanographic Data Center and will draw heavily on its facilities. In the basic research program, the data vary from routine measurements of temperature and salinity to measurements of heat flow through the ocean floor and basic biological productivity. Geographically, the points of collection vary from the Arctic and Antarctic Oceans to the Equator, and from the shallow waters of Chesapeake Bay to the bottom of the Challenger Deep. Many problems require that a comprehensive series of data be taken for the empirical testing and modification of theoretical studies of oceanic features and processes. An excellent example of these data is the wave records which have been taken to verify the value of long period swell as a method of locating storm centers.

The oceanographic research program of the Office of Naval Research will benefit from the centralization of all available data at one location with facilities for rapid readout. With the establishment of the Data Center, the time and effort required to search the literature, to obtain, and to extract the data for use as background material for planning projects will be considerably reduced. In addition, the empirical verification or modification of theory concerning oceanic processes will be much easier. It is anticipated that this in turn will generate more interest in the examination of basic oceanic processes.

Activities in OCEANOGRAPHY *at* . . . .

THE U. S. NAVY HYDROGRAPHIC OFFICE

Since the 1840's when Lieutenant Matthew F. Maury first began the systematic collection of marine environmental data, the Hydrographic Office has for more than a century served the mariners through its oceanographic surveys and research. The investigations of Sigsbee, Littlehales, Fleming, and others have contributed in a marked degree to advance the science of the sea. The fullest value of the oceanographic data collections of the Office was not realized until shortly after World War II when the new Division of Oceanography began using these data to prepare oceanographic charts, manuals, and atlases and began applying them to the development of oceanographic prediction techniques.

Over the past decade and a half the Hydrographic Office has continued to collect and process systematically oceanographic data from all quarters of the world into its files, its present collection being one of the most comprehensive available. The Hydrographic Office is proud to contribute these data to the National Oceanographic Data Center to serve as its data nucleus. Here the data are available to all and can be of greatest use to the oceanographic community to extend the frontiers of science.

As part of the expanded national oceanographic program planned for the future, the Hydrographic Office will intensify its oceanographic surveying effort. In addition to classical oceanographic measurements, the future will see many of the newer kinds of data collected. For example, measurements of the entire wave spectrum, acoustic transmission losses, depths of sediment, indexes of turbulence, and radioactivity are probable. Furthermore, proposed instrument systems that will record data while the vehicle carrying them is underway will acquire new information more closely in space and more frequently in time. Surveys will be designed to provide information for those vast areas of the oceans now only poorly understood and to take into account the variability inherent in an area, greater variability demanding greater survey effort. To process this huge volume of diverse data in such a manner that it can be readily retrieved and treated statistically so as to best describe the marine environment will provide a formidable challenge to the National Oceanographic Data Center.

THE NATIONAL ACADEMY OF SCIENCES

The National Academy of Sciences has had a continuing interest in oceanography. The report of the first Academy Committee on Oceanography (submitted in November, 1929) stimulated the establishment of the Woods Hole Oceanographic Institution, the Department of Oceanography at the University of Washington, and other laboratories. The report of the second Academy Committee on Oceanography (1951) reemphasized the need for continued development of the marine sciences. The present Academy Committee on Oceanography has supported the establishment of the National Oceanographic Data Center. It is our belief that such a center, jointly supported by the Government agencies concerned with the marine sciences, can provide an important service to the agencies and to the scientific community. We are confident that scientists concerned with the physics, chemistry, biology, geology, and meteorology of the oceans will benefit from the data to be collected, processed, and disseminated by the National Oceanographic Data Center.

THE BUREAU OF COMMERCIAL FISHERIES

The Bureau of Commercial Fisheries of the Fish and Wildlife Service is interested in the ocean as a source of human food. It is studying estuaries, coastal areas, and the open ocean, seeking an understanding of all natural phenomena which affect the success of fishing.

The Bureau's tuna investigations, based in the Hawaiian Islands, have made significant contributions to oceanography. They have shown the relation of newly-upwelled, nutrient-rich water along the Equator in the mid-Pacific to productivity, plankton, and tuna abundance. In the area of the Hawaiian Islands salinity and temperature conditions have been used to predict spring and summer skipjack tuna catches. Of more far-reaching importance was the recent discovery of a major ocean current (the Cromwell Current) in the Pacific equatorial region, ranking with the Kuroshio and the Gulf Stream in magnitude. This discovery will lead to a vast improvement in our understanding of the circulation of the Pacific Ocean and so to a better knowledge of the movements and distribution of major fishery resources.

The Bureau has been accumulating physical, chemical, and biological oceanographic data much more rapidly than they can be processed and analyzed. There still exists the need, however, to obtain more continuous oceanographic observations to fill in gaps in time and space. The Bureau is cooperating with other agencies to develop automatic monitoring devices. These will soon be in operation and will yield a vast quantity of data that can be handled only by a specially equipped facility such as the National Oceanographic Data Center. The new Data Center will permit oceanographers and biologists to obtain an understanding of the interrelations and interactions of the physical, chemical, and biological properties of the sea to a degree that has not heretofore been possible. The Bureau is pleased to participate in the founding and support of this new cooperative enterprise.

THE NATIONAL SCIENCE FOUNDATION

As a co-sponsor of the National Oceanographic Data Center, the National Science Foundation is carrying out the provisions of the "National Science Foundation Act of 1950," as amended, which authorizes and directs the Foundation in part:

> To initiate and support basic scientific research and programs to strengthen scientific research . . . by making . . . arrangements to support such scientific activities . . . ;
>
> To foster the interchange of scientific information among scientists in the United States and foreign countries;

The National Science Foundation regards the creation of the National Oceanographic Data Center as an important step in fulfilling these missions in respect to the field of oceanography. Other oceanographic activities of the Foundation include the support of basic research, including the granting of funds for the purchase of the necessary equipment for conducting basic research (including ships); the awarding of fellowships for graduate study in science; the support of oceanographic journals, abstracts, and translations of foreign journals; and the maintenance of a national register of scientific and technical personnel.

DIRECTION
of the
NATIONAL OCEANOGRAPHIC DATA CENTER

Members of the Interagency Advisory Board
for the National Oceanographic Data Center

Mr. Boyd E. Olson
U. S. Navy Hydrographic Office

Dr. Arthur E. Maxwell
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Dr. Harris B. Stewart, Jr.
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Dr. Vincent Schultz
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Past Members and Observers of the Interagency
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Mr. Harold W. Dubach, Acting

The National Oceanographic Data Center is administered by
the U. S. Navy Hydrographic Office