NAME OF SYSTEM:

National Marine Data Inventory (NAMDI)

ORIGINATOR:

National Oceanographic Data Center (NODC)

2nd and M Streets, S.E.

Washington, D.C. 20390

OBJECTIVE. To establish and operate a system that will assure rapid and economical storage, retrieval, and dissemination of marine (oceanographic) data in various formats to meet a wide variety of user needs.

BACKGROUND. The National Oceanographic Data Center (NODC) was established in 1960 under the sponsorship of 10 Federal agencies, including the Atomic Energy Commission, Coast Guard, Bureau of Commercial Fisheries, Geological Survey, and the National Science Foundation. It was organized to fill the needs of Government, industry, academic and research institutions, and the public for "an efficient mechanism for processing, exchanging, and storing globally collected marine data and information." The collection of oceanographic data originates with many domestic and foreign organizations. The information collected encompasses such subject matter as geological sampling, marine biology, surface ocean current information, and oceanographic station data.

Because NODC's in-house data processing capabilities were originally unable to satisfy the information storage and retrieval requirements, the Center for many years shared computer time with the Naval Research Laboratory and the Department of the Treasury. As national interest in environmental and oceanographical disciplines increased during the latter half of the 1960's, it became apparent that NODC would need to augment its in-house computer processing capability. Consequently, the Advisory Board to NODC recommended acquisition of a "medium scale" third-generation computer system. A System 360 Model 40 was installed in late 1969 and is now handling many of the Data Center's more demanding data processing requirements.

THE NEW METHOD. The National Marine Data Inventory (NAMDI) system is but one of many data and information collection and disseminating services offered by NODC to the wide diversity of interests in the oceanographic field. The NAMDI inventory contains quantitative information on all types of "ocean station" data and samples collected during 1,500 U.S. research and survey cruises occurring since 1960. The information is compiled from summaries provided by about 40 Federal and institutional activities. A policy of expanding the source base of inputs has been pursued for some time, with a view to eventually including the entire U.S. marine data-gathering effort.

The basic inputs to the program cover three categories of information and data as follows: the "Master Card Record," concerning the cruise, station, and associated surface meteorological data; an "Observed Depth Card," containing data observed at a particular depth in the ocean; and a "Standard Depth Card," covering both computer and observed interpolation of values. The information is periodically forwarded to the Data Center for conversion to punched card format for entry into the computer data bank. The inventory file is now updated monthly as a result of the recent increase in computer capabilities.

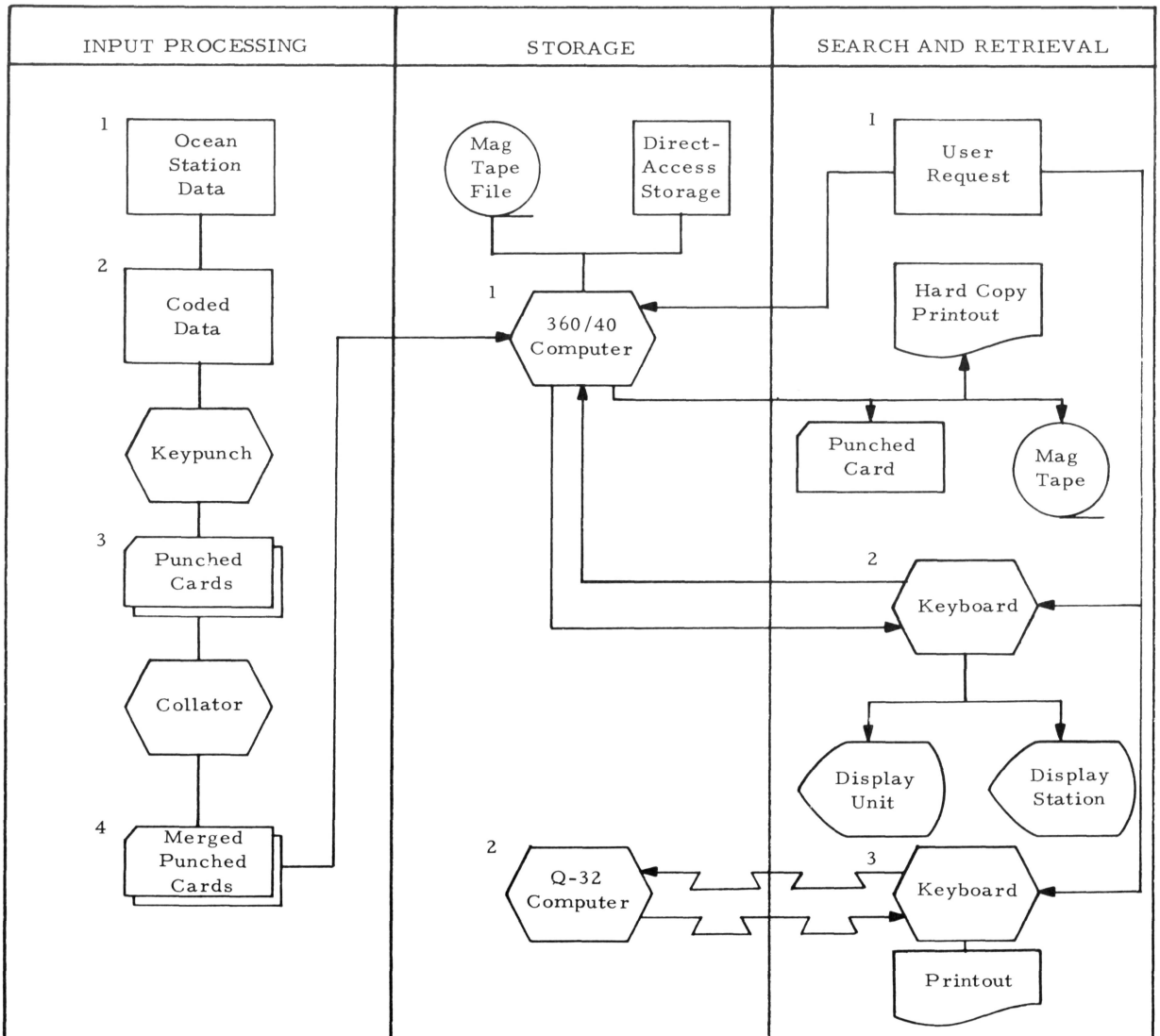
The full NAMDI inventory comprises 13 separate program libraries, tailored to meet individual user's needs. An archival file is maintained in both punched card and magnetic tape formats. The inventory data can be provided to users on machine-generated printouts, punched cards, and magnetic tapes.

As a result of daily requests from the oceanographic community for specific data, the NAMDI has been processed into a remote time-sharing computer. Communication with the computer is by NODC teletype-dataphone, in English, followed by simple rules

for sentence construction, which obviates the need to use programing language.

REMARKS. The new on-line direct access storage facility provides the Data Center with the capability to retrieve in a given moment large volumes of information in the form of summaries, inventories, and large segments of the basic file. The new computer capability also provides expanded programing capacity required to serve the needs of the oceanographic community and permits closer interaction between users and the new NODC facility.

NATIONAL MARINE DATA INVENTORY



1. Data forwarded to NODC in specified format.

2. Data in coded form is key-punched, verified, and converted to punched card format.

3. Punched cards are merged with working deck and held for monthly updating action.

4. New updated punched card deck converted to magnetic tape format.

1. The National Marine Data Inventory File is contained on punched cards and magnetic tape. Selected data is stored on direct access replaceable magnetic disk packs.

2. Generalized data stored on vendor Q-32 timesharing computer in Santa Monica, Calif.

1. User may obtain complete updated file of inventory data in a variety of formats to include hard copy printout, punched cards, and magnetic tape.

2. User desiring selective graphic displays of data and information may communicate directly with computer through graphic input-output consisting of a CRT, light-pen, and functional keyboard, or alpha-numerical information on display station.

3. User desiring selective data may communicate with computer from remote teletype-dataphone.