

**Instrument and Equipment Records, 1892-1970
(Bulk 1905-1945)**



**Carnegie Institution of Washington
Department of Terrestrial Magnetism Archives
Washington, DC**

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DTM-2005-08

Introduction

Abstract: This collection contains technical documentation, inventory records, and correspondence regarding the instruments and equipment created, purchased, tested, or used by the Department of Terrestrial Magnetism (DTM) at the Carnegie Institution of Washington (CIW). Although the department was formed in 1904, the dates of the records span 1892-1970.

Extent: 23 linear feet; 9 records center cartons, 11 shoeboxes, 15 map folders.

Acquisition: The records have been in the possession of the Department of Terrestrial Magnetism (DTM) since their creation.

Access Restrictions: There are no access restrictions to this collection. Material within this collection stamped as confidential, restricted or secret is no longer classified.

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Administrative History

The Department of Terrestrial Magnetism (DTM) of the Carnegie Institution of Washington (CIW) was established in 1904 to study the earth's magnetic field. To achieve this, magnetic measurements were taken around the world at survey stations and observatories on land, as well as on oceanic expeditions. As the department developed, other fields of study were investigated. They have included the earth's ionosphere, atmospheric electricity, nuclear physics, isotope geology, seismology, astronomy, and biophysics. During World War II, DTM was especially occupied with defense work, including the development of the proximity fuze, in addition to other projects that supported the war effort.

To support these expeditions and the department's diverse fields of study, specialized instruments and apparatus were required. Integral to DTM's history were the gifted engineers and instrument-makers who designed and constructed equipment to facilitate the work of the scientists in their distinct studies. Not only were instruments created by DTM personnel, but "GFMs" (government furnished material) were utilized to accomplish the goals of the department.

Scope and Content Note

This collection contains technical documentation, inventories, and correspondence detailing the specialized instrumentation and equipment needed to support the wide-ranging research conducted by DTM for nearly 80 years. The materials include equipment specifications, instrument drawings, constants, and standardization tests that provide the researcher with a broad survey of the history, complexity and enormity of instrumentation used for geophysical research in the twentieth century.

Arrangement

This collection is arranged in three series, following the format of the materials. The majority of the files are arranged alphabetically, with the exception of the national defense materials, which are maintained in the order received by Archives.

Series 1. Cahiers, 1905-1943

Series 2. Card files, 1905-1968

Series 2, Subseries 1: *Carnegie* (Ship) Inventory Cards, 1909-1929

Series 2, Subseries 2: Department Inventory Cards, 1905-1968

Series 2, Subseries 3: National Defense Inventory Cards, 1940-1947

Series 3. Technical Documentation and Correspondence, 1892-1970, n.d.

Series 3, Subseries 1: General Technical Documentation and Correspondence, 1892-1970, n.d.

Series 3, Subseries 2: National Defense Technical Documentation and Correspondence, 1943-1949

Series 1: Cahiers, 1905-1943

This series contains laboratory notebooks which document the technical parameters and intercomparison test results of geomagnetic instruments. Because of the bulk of materials in this series, they were heavily weeded. A representative sample of each major category of instrument used at DTM was retained. Five extant instruments used at DTM which are represented in this series can be found at the following institutions:

National Museum of American History; Smithsonian Institution, Washington, DC:

Earth Inductor No. 3

Magnetometer No. 8

Universal Magnetometer No. 21

Fredericksburg Magnetic Observatory; U.S. Geological Survey, Corbin, VA:

Deflector No. 4

Dip Circle No. 202

There are also miscellaneous cahiers that include memoranda, summaries of tests, special observations.

Series 2: Card files, 1905-1968

The materials in this series are index card inventories of instruments and equipment used in the management of DTM's scientific research, and are arranged in three subseries.

Series 2, Subseries 1: *Carnegie* (Ship) Inventory Cards, 1909-1929

These materials include an index card system which documents the existence of instruments and equipment used on the ship *Carnegie* in its mission to gather data on the

earth's magnetic field. The cards are organized into four groups; an alphabetical listing, followed by Captain James Percy Ault's alphabetical listing of equipment, followed by an alphabetical listing of items loaned by the ship. The materials end with a miscellaneous group of cards, presumably not yet filed by the property clerk.

Series 2, Subseries 2: Department Inventory Cards, 1905-1968

This subseries contains index cards of instruments and equipment used by DTM, filed alphabetically. Items include absorption boxes, books, foghorns, magnetometers, non-magnetic tents, potentiometers, and much more. The cards contain the date and place of creation, cost, and other specifications. Some include more details regarding the dates and locations of loans or transfers to other posts, as well as information regarding the history of the item's usage, and whether or not the item was expended.

Series 2, Subseries 3: National Defense Inventory Cards, 1940-1947

The index cards in this subseries include instruments and equipment used by DTM in its government defense contract work during and after World War II. The cards contain the date and place of creation, cost, and other specifications. Many include more details regarding the dates and locations of the transfer to other assigned posts, information on the history of the item's usage, and whether or not the item was expended. The records are presumably arranged by a special coding mechanism based on locations, contract numbers and a lettering scheme. They remain in the order which they were received by the archives. Please see the list of codes at the end of this finding aid for a key to the meanings of some of the codes in this subseries.

Series 3: Technical Documentation and Correspondence, 1892-1970, n.d.

This series contains correspondence; technical drawings and schematics; National Bureau of Standards and DTM's tests and measurements; shipment orders; and inventory listings of instruments and equipment used by DTM for nearly 80 years. This series is arranged into two subseries.

Series 3, Subseries 1: General Technical Documentation and Correspondence, 1892-1970, n.d.

The files in this subseries are arranged alphabetically and include correspondence regarding the instruments and equipment used by DTM, documentation of tests and measurements of DTM's and others' equipment. Also included are instructions for using the equipment; operating manuals; instructions for magnetic, atmospheric electric, auroral, and ionospheric observers; as well as instructions for field surveys. Due to the bulk of documentation on magnetometers, they are organized numerically, beginning with the DTM-owned first; followed by magnetometers owned by other organizations. The potentiometers are arranged in numeric order only.

Series 3, Subseries 2: National Defense Technical Documentation and Correspondence, 1943-1949

This subseries contains listings and descriptions of government furnished and DTM created equipment; memos; inspection reports; correspondence; War Department manuals; transfers of accountability for instruments; and equipment for government related contracts

that DTM completed during and immediately following World War II, including the operation of ionospheric stations. The records are presumably arranged by a special coding mechanism based on locations, contract numbers and a lettering scheme. They remain in the order which they were received by the archives. Please see the list of codes at the end of this finding aid for a key to the meanings of some of the codes in this subseries.

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 Inventories
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Related Collections

Department of Terrestrial Magnetism General Files, 1904-Present. Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D.C.

Department of Terrestrial Magnetism Photograph Collection [unprocessed]. Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D.C. See:

INSTRUMENTS SERIES

Partial list of National Defense codes

NOrd	Naval Ordnance Laboratory
ND-WF	National Defense [?] – Wright Field
NOas	Naval Ordnance [?] – Aviation Supply
NObs	Naval Ordnance [?] – Bureau of Ships
NDC	National Defense Contract [?]
NSC-B	Navy Signal Corps: Bureau of Standards [?]