Register of The Drawings Of Russell W. Porter, 1928-1945

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Descriptive Summary
Title: Register of The Drawings Of Russell W. Porter, 1928-1945
Dates: 1928-1945
Collection Number: 10002-MS
Creator/Collector: Charlotte E. Erwin
Extent: 5.75 linear feet
Repository: California Institute of Technology Pasadena, California 91125
Abstract: The drawings of Russell W. Porter in the Caltech Archives represent only a small portion of his output, but they range over a variety of subjects from his California period, beginning in 1928. The works have been divided into series and subseries; for example, building designs for Caltech are further subdivided for individual structures. Highlights of the collection include original design proposals for the 200-inch telescope mount, in both schematic and three-dimensional/cutaway form, plus a series of drawing of Hale's spectrohelioscope. Some of Porter's military drawings are also represented, as well as miscellaneous drawings of Caltech engineering projects such as the Hydrodynamics Laboratory.
Language of Material: English
Access
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Preferred Citation
Register of The Drawings Of Russell W. Porter, 1928-1945. California Institute of Technology
Biography/Administrative History
Although trained as an architect, Russell Williams Porter (1871-1949) made his principal mark in the field of astronomy, in both the technical and popular realms of the discipline. He served as a member of the design team for the 200-inch Palomar telescope-then the biggest telescope in the world-but he is also widely recognized in the U.S. as a leader in the amateur telescope making movement. Porter was born in Springfield, Vermont, on December 13, 1871, and attended the Massachusetts Institute of Technology, where he studied to be an architect. While still at MIT he attended a stereopticon lecture by Robert E. Peary in 1892-this was some years before Peary's discovery of the North Pole. Smitten with "arctic fever," Porter urged Peary to include him in his next expedition, but Peary declined. However, over the next thirteen years Porter would make six arctic forays, three of these with Peary. On the last of these, with the Fiala-Ziegler expedition, the party lost their ship to ice floes and were marooned in Franz Josef Land for two years. Porter himself never reached the North Pole, but during these arctic excursions, he taught himself celestial navigation and timekeeping by the stars. He also recorded in many drawings and paintings his own adventures in, and impressions of, the arctic world. These are published in part in The Arctic Diary of Russell Williams Porter, ed. Herman Friis (Charlottesville, 1976). Porter returned from Franz Josef Land to Maine, married and established himself as an architect, building a little community at Port Clyde on the coast. By 1910 he had begun to study telescope making, and he would continue to study and build instruments, and to encourage other amateurs to do so for the rest of his life. In 1915 Porter returned to Boston to teach architecture at MIT. Towards the end of World War I, he was called to the National Bureau of Standards to put his knowledge of optics to use. Then, having been invited by his childhood friend James Hartness to work in the latter's precision tool manufacturing company, Porter returned to his old home in Springfield, Vermont. During these years in Springfield, Porter's fame as a telescope maker spread. His local club, the Telescope Makers of Springfield, with their clubhouse Stellafane (temple of the stars, completed in 1924), was written up in The Scientific American. That magazine's editor, Albert G. Ingalls, collaborated with Porter in the writing of the book, Amateur Telescope Making, which became a bible in its field. Annual conventions began to take place during summers at Stellafane. In 1928, Porter was recruited by George Ellery Hale, the Director of the Mount Wilson Observatory in Pasadena and himself a famous solar astronomer, to work on the construction of the new 200-inch telescope. The world's largest telescope would eventually be operated by the California Institute of Technology in cooperation with the Carnegie Institution of Washington. Funded by the Rockefeller Foundation, the construction of the observatory and telescope on Palomar Mountain in San Diego County took approximately twenty years. During these years, Porter undertook the architectural designs for the necessary shops, labs and offices on the Caltech campus, and he
contributed substantially to the mechanical and optical design work for the telescope. Almost every summer he managed to return to Vermont for the annual conventions at Stellafane. One particular aspect of Porter's genius was his ability to do three-dimensional cutaway drawings of all kinds of mechanical objects. He had perfected this skill during work on the 200-inch telescope. With the outbreak of World War II he found that his draftman's skills were highly desired by the military to demonstrate the design of rockets and other ordnance and equipment prior to the building of prototypes. Porter also became closely involved in the design and production of the so-called roof prism, used in new, high-precision optical sights on artillery. Although he had suffered a serious heart attack as early as 1935, Porter hoped to live, and did live-unlike Hale-to see the completion of the 200-inch telescope, which was dedicated on June 3, 1948. Porter died at his home in Pasadena on February 22, 1949. For a complete biography, see Berton C. Willard, Russell W. Porter (Freeport, Maine, 1976)

Scope and Content of Collection

The drawings of Russell W. Porter in the Caltech Archives represent only a small portion of his output, but they range over a variety of subjects from his California period, beginning in 1928. The works have been divided into groups and series defined generally by subject (see Table of Contents); building designs for Caltech are further grouped as much as possible for individual structures. Highlights of the collection include original design proposals for the 200-inch telescope mount, in both schematic and three-dimensional/cutaway form, plus a series of drawings of Hale's spectrohelioscope. Some of Porter's military drawings are also represented, as well as miscellaneous drawings of Caltech engineering projects such as the Hydrodynamics Laboratory. Most of the drawings in the Caltech collection are originals. However, some works are represented only by photographic reproductions. In each case, the best version of a drawing, whether original or reproduction, is listed in the catalog that follows. Duplicates and copies have been placed at the end of the collection in a separate box. (An exception has been allowed when copies are too large to fit in the duplicates section; this applies only to items 2.4-1 through 2.4-4.) In the catalog, the number at the left margin is a unique identification number for the item listed. Duplicates or copies have the same number as their original, but with an additional identifying element of A, B, C, etc. For example, in Group I, Series I, item number 10 has the ID number 1.1-10A. A photographic copy of this drawing is assigned the ID number of 1.1-10A. The latter is boxed at the end of the collection with other duplicate copies. No attempt has been made to differentiate between varieties of copies; some are high-quality matte photos while others may be low-quality Photostats or Xeroxes. The bulk of the Porter material in this collection was acquired from the Astronomy Department at Caltech in the 1980s. In 1993 the Archives received a small amount of material from the estate of Helen Holloway, which included Porter drawings. Miss Holloway had been secretary to Robert A. Millikan during his later years as head of Caltech, and after his death in 1953 she moved to the Astronomy Department. Among her papers were fourteen original Russell Porter drawings and twenty-four photographic reproductions. One item, a drawing of the machine and optical shop for the 200-inch telescope (Group I, Series I, item 1.1-29), was added to the Porter collection in January 1999. The remaining pieces were integrated into the collection in the appropriate groups and series in July 2000. The notation [H. Holloway gift] identifies these supplementary items. See also: Helen Holloway, Historical Files. In May 2003, Dorothea Harrington donated fourteen original Porter studies and sketches, along with twenty-two photographic reproductions. The materials were in the possession of her husband, R. T. Harrington, who was employed as photographer in the Astronomy Department at Caltech. Mrs. Harrington herself also worked for a few years as secretary in the department. The Harrington donation includes some architectural sketches, sketches of the 200-inch telescope (various parts), studies for a grinding and polishing machine for the 200-inch mirror, and studies for a two-mirror coelostat. These materials have been incorporated into the appropriate sections in the Porter drawings and have been identified by the notation [D. Harrington gift]. In March and April of 2005, additional copies and some new photos were moved into the Porter collection from the Caltech Photo Archives. Those photos have now been renumbered within the Porter collection. Finally, in April 2014, nine technical drawings were transferred to the Archives from Thomas Laboratory. These are classified under miscellaneous technical drawings, numbers 4.4-9 through 17. Many of the drawings have been reproduced and scanned into the Caltech Archives' Image Archive (searchable at http://caltech.discoverygarden.ca/islandora/search/mods_location_shelfLocator_mt%3A%28RWP%29page=1). RELATED COLLECTIONS: The papers of George Ellery Hale (http://www.oac.cdlib.org/findaid/ark:/13030/kt067nb6q6/), Palomar Papers.

Indexing Terms
Astronomy, telescopes
Astronomy, solar
Architecture
Drawings, technical
Drawings, military
World War II

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Porter, Russell W.
Hale, George Ellery
California Institute of Technology
Palomar Observatory
Drawings

Container List