

# *Administration of Cartographic Materials in the Library of Congress and National Archives of the United States*

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Maps and related cartographic materials have been collected and accumulated by libraries and archives for almost 2500 years, but it has been only with the relatively recent establishment of national public repositories that the basic principles of modern map curatorship have evolved. In the United States, the two national institutions that have played dominant roles in these developments are the Library of Congress and the National Archives and Records Service (NARS). In both institutions separate departments for maps were established at an early date in recognition of the distinctive visual quality, large format, special subject content, and mathematical scale of maps, which set them apart from other library and archival materials. A comparative review of these two map departments will reveal both their nature and the basic principles distinguishing map libraries from map archives.

The Geography and Map Division of the Library of Congress has the largest and most comprehensive cartographic collection in the world, numbering 3.7 million maps and charts and 46,000 atlases. It was established as a distinct administrative unit in 1897 under the direction of Philip Lee Phillips, although collections of maps, charts, and atlases were housed in the Library of Congress from the time of its establishment in 1800. The son of a distinguished lawyer, Phillips had a classical education and briefly studied law, but, like other professional librarians of that period, he had no specialized training in librarianship.<sup>1</sup> His basic knowledge of library techniques and principles was acquired by working as a book cataloger in the Library of Congress from 1875 until he assumed responsibility for the map collection about 1895. During the period from 1897 to 1902, Phillips devised the fundamental policies of the Library of Congress with respect to the acquisition, classification, and cataloging of library maps. His system for organizing and controlling maps was first described in the *New York Tribune* on 26 November 1899 in an article entitled "Preservation of Maps." A more detailed statement appeared in Charles Cutter's fourth edition of *Rules for a Dictionary Catalog* in 1904, which

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1 Walter W. Ristow, "Philip Lee Phillips, Cartobibliographer," *Surveying and Mapping* 32 (1972): 349-361.

was issued by the Library of Congress as an expanded, separate publication in 1915 and again in 1921 entitled *Notes on the Cataloging, Care and Classification of Maps and Atlases*. While the basic principles devised by Philips still guide the acquisition and processing of cartographic materials in the Library of Congress, his successors expanded or modified acquisition, classification and cataloging procedures to take advantage of changing technologies.

The Center for Cartographic and Architectural Archives of the National Archives and Records Service serves as the official repository for records produced or accumulated by the Federal government. It has custody of some 1.6 million maps, 300,000 architectural drawings and plans, and 9.7 million aerial photographs. The act authorizing the establishment of the National Archives of the United States in 1934 provided for a separate Division of Maps and Charts "because the special scientific problems involved call for supervision by an expert geographer and cartographer."<sup>2</sup> W.L.G. Joerg, the first chief of the Division, was educated in German and Swiss universities and had worked as a research assistant at the American Geographical Society in New York City for twenty years before joining the National Archives in 1937.<sup>3</sup> As a result of his academic training and professional experience, Joerg was receptive to the idea of appraising, organizing, and describing official maps and charts in accordance with archival principles. Joerg did not publish any works devoted entirely to his conceptual approach but an article in 1941 sets forth his reasons for favoring provenance and *respect des fonds* as organizing concepts for archival maps. Joerg's ideas were further developed by Herman Friis, his assistant and successor, and systematized by Theodore Schellenberg in his classic work, *The Management of Archives*.<sup>4</sup>

#### ACQUISITION/ACCESSION

One of the fundamental curatorial functions of a map repository is acquisition, which is generally defined in the broader context of institutional policies and goals. The acquisition policy of the Geography and Map division is "to acquire for its permanent collections at least one copy of each edition, revision, or reproduction of every currently available map which makes any significant contribution to knowledge."<sup>5</sup> This broad guideline allows the Division to collect domestic and foreign official and commercial maps in order to provide Congress, Federal Agencies, and the general public with the most comprehensive collection of cartographic reference materials available for current and historical research. Guided by this policy statement, the Geography and Map Division acquires about 100,000 maps, charts and atlases each year, half of which are added to its

2 U.S., National Archives, *First Annual Report of the Archivist of the United States for the Fiscal Year Ending June 30, 1935* (Washington: Government Printing Office, 1936), 16.

3 Herman R. Friis, "W.L.G. Joerg, 1885-1954," *Annals of the Association of American Geographers* 43 (December, 1953): 255-283.

4 W.L.G. Joerg, "Archival Maps as Illustrated by Those in the National Archives," *American Archivist* 4 (1941): 188-193; Herman R. Friis, "Cartographic and Related Records; What Are They, How Have They been Produced and What Are Problems of Their Administration?," *American Archivist* 13 (April 1950): 135-155; Theodore Schellenberg, *The Management of Archives*, New York, 1965), pp. 302-343.

5 U.S. Library of Congress, Research Services, "Acquisitions Policy Statement No. 20. Cartographic Materials." Draft Revision, February 1977.

permanent collections. Like most map libraries, the Division obtains its cartographic materials from diverse sources.<sup>6</sup> Current maps are received through copyright deposits, government deposits made by Federal and State map producing agencies, solicitation programs directed towards local government agencies and associations, and direct purchases and exchanges of foreign maps and charts through Library of Congress field offices or the U.S. Department of State. Retrospective maps are secured through government library transfers of outdated and surplus maps, gifts, direct purchases, duplicate exchanges with other research institutions and rare maps dealers, and interlibrary transfers from other departments in the Library of Congress, notably the Microfilming Preservation Office where large folded maps are removed from deteriorated books which are being microfilmed as part of the Library's preservation program.

The four procurement programs that provide the bulk of cartographic materials are authorized by statute. The copyright law, which became effective in 1870, states that the copyright owner of a work published in the United States is required to deposit two copies of the work in the Copyright Office for disposition in the Library of Congress. Most of the Division's domestic commercial maps are received in this manner. The transfer of unwanted library materials from Federal libraries is authorized by U.S. Code 40, Sections 471 and 472, and government deposits by U.S. Code 44, Sections 1718 and 1719. Authority that enables the Library of Congress to enter into domestic and international exchanges and to dispose of materials no longer needed by the Library derive from U.S. Code 2, Section 131 and 136.

With the exception of copyright and direct purchase, most Library map procurement programs were initiated or recommended by Phillips. The government map deposit program began in 1897 when Phillips urged the Librarian to request "all the Government bureaus issuing maps...to send copies of same as soon as issued, to be placed on file for reference."<sup>7</sup> The following year Phillips was able to report that letters requesting maps had been sent "to the various map publishing departments of the government" and that "all have complied except the Geological Survey."<sup>8</sup> In 1898 he also requested State Department embassy officials to obtain certain current foreign maps, recommended a duplicate exchange program for rare and current maps and suggested that government departments deposit non-current maps in the Map Division "either on loan or as a gift."<sup>9</sup> The foreign acquisition program was expanded substantially after World War II when the Map Division, as it was then named, proposed that all Federal agencies interested in acquiring foreign maps coordinate their activities in an effort to re-establish foreign contacts disrupted by the war. As a result, the Library of Congress and other interested Federal agencies created the Interagency Map and Publications Acquisitions Committee (IMPAC) in 1947; a systematic foreign acquisition program was begun

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6 Donald A. Wise, "Cartographic Acquisition at the Library of Congress," *Special Libraries* 69 (December 1978): 486-490.

7 Phillips to Librarian of Congress, 22 September 1897, in U.S. Library of Congress, Geography and Map Division, *Official Reports*, Vol. 1 (hereafter cited as G&M).

8 Phillips to Librarian of Congress, 5 March 1898, Vol. 1, G&M.

9 Phillips to Librarian of Congress, 9 September 1898, Vol. 1, G&M.

the following year.<sup>10</sup> Foreign service officers of the Department of State who are specialists in geography and maps serve as procurement agents for the joint committee.

The transfer of surplus Federal maps was codified on 23 February 1903 when Congress passed an act which authorized government agencies "to turn over to the Librarian of Congress, for the use of the Library of Congress, any books, maps or other material in the Library of the Department, bureau, or commission no longer needed for its use."<sup>11</sup> This act led to the immediate transfer of maps from the Smithsonian Institution and the State Department. Subsequently, several hundred thousand maps were transferred from major Federal map libraries, particularly after World War II. Also, in 1902 Phillips initiated a nationwide domestic solicitation program by sending circular letters to almost 3,000 county post offices requesting local maps. Since this initial effort, solicitation letters have been sent to highway offices, county surveyors, chambers of commerce, and city engineers in 1914, 1920, 1946, and since 1958 at approximately five year intervals.<sup>12</sup>

Potential additions to the permanent map and atlas collections in the Library of Congress are reviewed on an item-by-item basis by Division selection officers who consider their potential research value. For current materials, research value is defined primarily in relation to geographic area or place, and secondarily in terms of subjects that relate to the phenomena of geographic area or place. Retrospective maps are further evaluated for their design, printing or reproduction techniques, construction material and aesthetic significance. Cartographic materials that are donated to the Division may be appraised for tax purposes after they have been received.

Because the Geography and Map Division serves as a multipurpose map library, all types of cartographic materials are sought but special emphasis is placed on acquiring large scale topographic map sets, intermediate scale city plans, current and retrospective maps of the United States, and thematic maps. To ensure that appropriate categories of maps and atlases are retained, current research interests are monitored by periodic user studies. Cartographic materials that have no reference value or that are available in more useful forms, such as daily weather charts, are not acquired.

While the permanent collections are generally complete, lacunae are identified and missing items acquired if possible through transfer, exchange or purchase. Phillips noted as early as 1899 that publishers' catalogs were "diligently examined in order that gaps in our collections may be filled."<sup>13</sup> Government deposits and transfers are also systematically checked against existing sets to fill gaps and to replace or upgrade worn copies with copies that are in better condition. Duplicate maps and those not selected for addition to the permanent collections number about 50,000 copies a year. These are either exchanged, distributed to other libraries in the United States or destroyed. A priced-for-exchange collection consisting of

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10 Annual Reports for 1946 (Vol. 5, p. 4), 1948 (Vol. 5, p. 7), G&M.

11 Quoted in David C. Mearns, *The Story Up to Now: The Library of Congress 1800-1946*, (Washington: Library of Congress, 1947), pp. 178-179.

12 Annual Reports for 26 September 1902 (Vol. 1), 1920 (Vol. 3, p. 2), 1946 (Vol. 5, p. 4), 1947 (Vol. 5, p. 14), G&M.

13 Phillips to Librarian of Congress, 15 July 1899, Vol. 1, G&M.

duplicates of rare and valuable maps and atlases has been established in order to exchange for retrospective maps of similar value with other institutions and antiquarian map dealers. The majority of duplicates, however, are distributed to other libraries through the Special Processing Project that has been held each summer since 1950. In this program qualified map librarians, faculty members and students, sponsored by cooperating university and college library and geography departments, work with permanent staff members of the Geography and Map Division on various tasks related to Division functions. In exchange for this service, participants are allowed to select from surplus duplicate stocks, maps, charts, and atlases for transmittal to the sponsoring institutions. During the thirty year history of the project, more than 1.5 million duplicate maps have been distributed to some sixty college and university libraries in the United States.

Although the original act creating the National Archives authorized the accession, purchase and exchange of maps, current statute limits the acquisition of cartographic materials to non-current official records created or accumulated in connection with agency business or resulting from agency program responsibilities.<sup>14</sup> In contrast, cartographic materials transferred to the Library of Congress from government libraries are predominantly reference maps, charts, and atlases, although some agency program map files have inadvertently been placed in government map libraries and some library reference maps have been found in agency program files.

Cartographic records are accessioned by the National Archives either through direct or scheduled transfers. Prior to about 1979, the majority of cartographic records were offered directly to the cartographic archives unit following termination or reorganization of agency programs or departments. The cartographic archives unit also undertook government-wide, agency surveys to identify non-current cartographic materials; two of these were carried out by Joerg in the late 1930s and by Friis from 1949 to 1952. The creation and termination of many agencies during the New Deal and World War II periods contributed to the direct transfer of many cartographic records. To guide cartographic specialists and agency records officers, Friis prepared a general records schedule in 1954 that listed the principal categories of cartographic and photogrammetric records common to all agencies and provided instructions for their disposition; it was revised in 1977 in order to incorporate new cartographic formats such as maps on microfilm, computer assisted maps and remote sensing imagery.<sup>15</sup>

Currently, comprehensive agency records disposition schedules provide for the continuing transfer of segments of non-current cartographic program files.<sup>16</sup> These schedules are based on the systematic inventorying of all agency records by teams of cartographic archivists and agency records officers. After each cartographic file is described, its disposition is specified in accordance with the general records

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14 U.S., National Archives, *First Annual Report*, 16; United States Code 44, Section 2103, Chapter 21.

15 U.S., NARS, *General Records Schedule 17 Cartographic, Photogrammetric, and Related Records* (1954); NARS, *General Records Schedule 17 Cartographic, Remote Sensing Imagery, and Related Records* (Federal Property Management Regulations), 18 March 1977.

16 U.S., NARS, *Disposition of Federal Records* (Washington: 1981), pp. 88-89.

schedule. Disposition may involve transfer to the National Archives for permanent preservation, storage in a National Archives record center for a temporary period or disposal.

In contrast to the Library of Congress, cartographic materials accessioned by NARS are appraised collectively rather than individually. Cartographic program files are evaluated first in relation to cartographic production processes and then in terms of administrative, legal and informational value. In general, NARS has determined that the following classes of cartographic materials have enduring value: (1) original manuscript maps based on field surveys or primary source materials from which published maps are produced and which often include more information than found on the resultant published maps; (2) printed or processed maps which have been annotated for record purposes or which bear manuscript signatures to indicate official approval; (3) a record copy of each edition or variant of each printed or processed map issued; (4) index maps, card indexes, catalogs or other related finding aids, and map and chart histories; (5) related textual records such as field notebooks, project folders, and map histories; and (6) aerial photography and remote sensing imagery, which in modern mapping replaces the original manuscript field surveys. Classes of cartographic materials that are not accessioned include products of intermediate compilation and printing processes such as overlays, color separations, color pulls and proof copies. Representative samples of these processes, however, are retained to illustrate new surveying, drafting and printing techniques.

Because program files rather than individual items are accessioned by NARS, identical maps are often found in two or more different series. Although these maps may "duplicate" one another in a geographic sense, they are retained in order to maintain the integrity of the accessioned series. The significance of any map in a series is derived not from the geographical information which it portrays but from the reasons for which it was created and placed in the series, reasons which may or may not be documented by annotations on the map or by information contained in related textual records. Duplicate maps are removed only when two or more identical maps are filed together within the same file unit. For the same reasons, missing or deteriorated maps are not replaced or upgraded by better copies. A map that has been removed from one agency program file and added to that of another is not returned to its original file upon transfer to the National Archives. For example, certain maps and plans of military posts originally prepared in the 19th century for the U.S. Army Corps of Engineers were transferred to the National Park Service in the 20th century when that agency was given responsibility for restoring military posts located in national parks. Both files are now in NARS where some of the original maps and plans of military posts are filed among the records of the Office of the Chief of Engineers and some among the related records of the National Park Service. The latter maps and plans include additional annotations by the engineers and historians who used them for restoration purposes. Maps found in textual program files are normally appraised as part of those files. If such maps are not physically attached to textual documents or if they have deteriorated because of folding, they are often transferred to the cartographic archives unit for proper storage and preservation but their original order and file numbers are retained.

## CLASSIFICATION/ARRANGEMENT

Map and atlas collections in the Geography and Map Division of the Library of Congress are organized according to geographic area and then by subject, date and authority or author. As these items are acquired by the Division, they are classified in accordance with this predetermined arrangement system and added to one of the following existing permanent collections: atlas collection, single sheet "titled" map collection, single sheet MARC map collection, set map collection, or special collections of rare maps and atlases stored in the vault. The set chart collection is arranged by issuing agency.

The single sheet "titled" map collection consisting of approximately one million small and intermediate scale maps of diverse origin are individually classified by "titling," a language classification system that simply provides in writing on each map folder the name of the appropriate geographic area, subject, date, scale and author. The "titled" collection was originally organized by continents and then alphabetically by country. Each country was further divided according to special purpose maps, arranged alphabetically by subject; general maps of the country as a whole arranged chronologically; counties and provinces arranged alphabetically; cities and towns arranged alphabetically; and miscellaneous maps.<sup>17</sup> This classified filing system was subsequently rearranged to place special purpose maps and miscellaneous maps after general maps of countries. Since 1968, only a few maps have been added to the "titled" collection.

Phillips devised this systematic and functional system for grouping maps in the Library of Congress in 1897 when he was faced with organizing some 50,000 maps which had been transferred from the original library facilities in the Capitol to the new Library and "dumped into the Hall of Maps and Charts in absolute confusion."<sup>18</sup> His basic objective was to make maps and charts easily and quickly available to readers without the aid of indexes or catalogs. "From chaos this great collection has been so systematized," Phillips was able to write later, "that within a few minutes all maps and atlases are accessible."<sup>19</sup> By arranging "titled" maps in geographic order, Phillips developed an ingenious system in which the file arrangement served as its own index and shelflist.

The remaining map and atlas collections in the Geography and Map Division are classified and filed according to the Library of Congress Class G schedule, as listed in the fourth edition of the Library of Congress's *Classification, Class G: Geography, Maps, Anthropology, Recreation* (1976), an amplification of Phillips's basic classified filing arrangement; it substitutes alphanumeric designations for written descriptions of area, subject, and authority.

Phillips's classification and filing system worked fairly well until many political boundaries were altered after World War I. As a result, Lawrence Martin, who succeeded Phillips, published an expanded map classification scheme in 1936, but it

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17 Clara E. LeGear, "Early Years in the Map Division, Library of Congress," in Richard W. Stephenson (ed.), *Federal Government Map Collection: A Brief History* (Washington, D.C.: Chapter Special Libraries Association, 1969), p. 22.

18 Phillips to Librarian of Congress, 5 March 1898, Vol. 1, G&M.

19 Phillips to Librarian of Congress, 9 September 1898, Vol. 1, G&M.

was still without number assignments.<sup>20</sup> At the beginning of the Second World War, Martin created a new position of map cataloger. The first person appointed to this position, Charles W. Buffum, began work on an alphanumeric classification scheme for maps. Little was accomplished, however, until 1946 when the Army Map Service developed a depository program designed to disperse the large number of surplus maps acquired during the war. Between 1946 and 1950, basic map collections of some 20,000 sheets each were distributed by the Army Map Service to 150 academic and public libraries. As part of this program, the Library of Congress was asked to classify and catalog the maps comprising the basic collection. To facilitate classification, Buffum prepared the preliminary draft edition of the G schedule in 1946, entitled *Classification Class G Maps 3160-9999*. "So far as history is concerned," Buffum later noted, "this project crystalized...map classification."<sup>21</sup> The complete edition of the first classified G schedule was printed in 1954, reprinted with additions and corrections in 1966, and revised in 1976. Since 1968, all accessioned single sheet maps and map sets, numbering over 70,000 titles and 250,000 sheets, and all atlases have been classified and filed according to the class G classification system.

Arrangement of cartographic records in the National Archives, by contrast, is based on the archival principles of provenance and *respect des fonds* rather than geographic area. "The regional principle, at least as a primary principle of classification and arrangement," Joerg observed in 1941, "is not appropriate for an archival map collection. To have applied the regional principle would have merged together maps derived from different agencies and would have broken down the agency of derivation structure. As a corollary, it would have cut across the threads connecting the maps with their related textual records."<sup>22</sup>

In accordance with the organizing concept of provenance, cartographic records in the NARS are grouped on the basis of their origin and arranged in descending order by record groups, subgroups, series, filings units, and individual documents. A typical record group consists of the documents produced by a Federal administrative unit at the bureau level and a subgroup represents those of a specific office such as a division. Records that cannot be assigned to a specific office are grouped and designated as "General Cartographic Records." Subgroups are subdivided into series—the third and basic level of arrangement. A series is composed of filing units having some unifying functional or institutional cartographic series are central map files of agencies or maps accumulated by administrative units at the division level. Currently, some 2000 series comprise the 150 record groups that are in the custody of the Center for Cartographic and

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20 Lawrence Martin, "A Tentative Scheme of Classification for Maps in Library of Congress," in A.F. Kuhlman (ed.), *Public Documents. Papers Presented at the 1936 Conference of the American Library Association* (Chicago: American Library Association, 1936), pp. 123-126.

21 Charles Buffum, "Map Cataloguing: An Informal Review", *Special Libraries Association Geography and Map Division Bulletin* 88 (June 1972): 37. For a history of the Army Map Service Depository program, see Frank T. Nicoletti, "U.S. Army Topographic Command College Depository Program," *Special Libraries Association Geography and Map Division Bulletin* 86 (December 1971): 2-3.

22 Joerg, "Archival Maps," p. 190.

Architectural Archives. The following is an example of map arrangement by the record group concept:

Record Group 48, Records of the Office of the Secretary of the Interior.

Subgroup a. General Cartographic Records.

Series 1. Maps relating to southern and western U.S.

Series 2. Maps relating to states and territories.

Series 3. City maps.

Series 4. Maps of mineral lands.

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Series 25. Maps of project areas.

Subgroup b. Office of Explorations and Survey of the War Department—  
Pacific Railroad Survey.

Series 26. General Survey and Exploration Records.

Series 27. Routes near the 47th and 49th Parallels.

Series 28. Routes near the 41st Parallel.

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Series 34. Published maps.

Subgroup c. Pacific Wagon Roads Office.

The principle of *respect pour l'ordre primitif*, a French archival term for maintaining the original order of documents, guides the arrangement of file units within series. File units consist of single maps or assemblages of maps varying in size, scale and type of material brought together for a specific purpose. Occasionally cartographic records are accessioned which do not have any apparent system of arrangement. In these instances "artificial" cartographic series are devised and arranged in the most practical manner for easy servicing. Generally this involves some form of "titling" and filing procedures based on geographic area and subdivided by subject or time period.

Creating or receiving agencies may have arranged and classified maps by area, number or subject. Some series combine two or more of these elements. The central map file of the records of the Office of the Chief of Engineers, Secretary of War, for example, is arranged according to an alphanumeric classification system devised in the late 1850s. It begins with the New England states (Maine and New Hampshire are classed by the letter "A," Massachusetts by "B," and Rhode Island by "C") and progresses southward and westward to the Pacific Coast (California, Oregon and Washington are classed by the letter "W") following the general settlement pattern of the United States. Within each letter class, maps are arranged numerically in order of receipt and designated A-1, A-2, A-3...A-213. The complete file designation for a map in this series is: RG 77, Civil Works Map File, Map A-1. The central map file of the records of the Bureau of Indian Affairs, on the other hand, are classed in a simple numerical sequence.

## CATALOGING/DESCRIPTION

In the Geography and Map Division of the Library of Congress four types of major finding aids are currently employed to access and retrieve maps and atlases. These are "titling," cartobibliographies, machine-readable catalogs and graphic indexes. In addition to "titling," which is described above, Phillips also inaugurated a cartobibliography program that provided quicker access to special categories of high reference interest and also aided acquisition work. One of his earliest major works was *A List of Maps of America in the Library of Congress*, compiled between 1887 and 1897. In this list, Phillips included maps from the Library's manuscript collections, maps printed separately and "all maps relating to America which I have personally examined in books, atlases, documents, parliamentary papers and geographical magazines."<sup>23</sup> Descriptive entries are arranged geographically in alphabetical order and thereunder chronologically. Phillips's other major work was *The list of Geographical Atlases in the Library of Congress*, which Herbert G. Fordham proclaimed in his pioneering *Studies in Carto-Bibliography* (1914) as "a first effort" in the "systematic bibliography" of atlases.<sup>24</sup> Four volumes were compiled under Phillips's direction between 1909 and 1920, and four volumes by Clara E. LeGear between 1958 and 1974. In both works, Phillips listed all individual atlas sheets relating to America and those from particularly significant atlases. "The most important reason why these maps in atlases should be so described," Phillips observed, is the much too frequent manner of tearing them from their original places and selling as separates, at frequently a greater price than the complete atlas from whence taken."<sup>25</sup> With these two lists, Phillips laid the foundation for the Division's cartobibliography program and set a standard of excellence for this branch of bibliography.

From 1896 to 1981, almost fifty separate cartobibliographies have been published by the Geography and Map Division and several have been reprinted or revised, one as many as four times.<sup>26</sup> An additional small number of cartobibliographies remain in typescript or mimeograph form, serving as finding aids for internal use. The form and content of these cartobibliographies range in detail from simple lists arranged in geographical and chronological order to complex descriptive bibliographies with extensive notes and indexes. During Phillips's era eighteen printed and four typescript cartobibliographies were prepared. These were devoted primarily to specific geographic areas (countries, states, and cities) special categories (atlases, large scale set maps), or special collections (for example those of Kohl and Lowery). Following Phillips's death in 1924, the compilation of lists and bibliographies ceased while greater emphasis was placed on acquisition and reference activities and the analysis of individual maps. The cartobibliography program was reactivated after World War II when LeGear was appointed bibliographer. From 1950 to the present, twenty-seven cartobibliographies have been published but only four have focussed on geographic areas; the majority have

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23 Phillips to Librarian of Congress, 2 December 1897, Vol. 1, G&M.

24 Annual Report, 1915, Vol. 2, p. 10, G&M.

25 Annual Report, 1908, Vol. 1, p. 20, G&M.

26 Andrew M. Modelski, "List of Officially Published Works of the Geography and Map Division," in Helen Wallis and Lothar Zögner, *The Map Librarian in the Modern World: Essays in Honour of Walter W. Ristow* (New York: K.G. Saur, 1979), pp. 91-105.

described maps pertaining to specific subjects such as fire insurance, land ownership, military activities, railroads, treasures and urban sites.

The Division's cataloging program has evolved through three separate phases: handwritten and typed cards used for internal access from 1878 to the present; printed cards made available to other libraries on a subscription basis from 1908 to the present and machine-readable cataloging (MARC) from 1968 to the present. The preparation of catalog cards for internal use dates from 1878 when Phillips began a modest cataloging program in preparation for his published cartobibliographies. He also devised standardized cataloging rules for maps and atlases, first published in 1904 and later amplified in response to numerous requests from other librarians.<sup>27</sup> Phillips apparently followed the British Museum in preparing both author and subject cards, with the latter devoted to geographic areas or features.<sup>28</sup> Catalog cards for sheet maps included these elements: author, title, scale, edition, size, place of publication, publisher and date.

Various forms of simplified cataloging were proposed by Phillips's successor, Martin, who sought to increase the number of maps and atlases cataloged in an effort to reduce the growing backlog. One such form was a pre-printed map catalog card which he designed in 1925. Although this card was apparently never used on an extensive basis, abbreviated or less than full cataloging was later applied to rare maps housed in the vault.<sup>29</sup> In addition to the rare vault items, selected categories of maps in the single sheet "titled" collection have been recently classified and cataloged on a "preliminary" basis for use in the Reading Room. "Preliminary" cards contain classification numbers and full bibliographic description but no added entries and subject entries.

Although printed atlas cards were first prepared in the early 1900s for the Library's book catalog subscription programs, printed catalog cards for single sheet maps were not produced until after World War II. As part of its depository program in 1946, the Army Map Service had planned to provide participating libraries with punch cards suitable for recording each map in an automated system but few libraries had the necessary equipment to produce punch cards. At the request of the Army Map Service and the American Library Association, the Library of Congress agreed to catalog these maps and to make the catalog cards available in printed form. With the Library's book cataloging program as a model, map card sets were furnished to depository libraries on a subscription basis. A set of cards for each title was produced with over-printed headings and call numbers for filing in a dictionary catalog. Although the elements of these cards were based on new unpublished descriptive cataloging rules devised specifically for maps and atlases by the Division Cataloger, their form was controlled to some extent by the Library of Congress Processing Department and the Government Printing Office, which was responsible for publishing and distributing all printed cards. The major change from Phillips's cataloging rules was the substitution of author for area on the main entry card.<sup>30</sup>

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27 Annual Report, 1916, Vol. 2, p. 9, G&M.

28 Phillips to Librarian of Congress, 6 July 1899, Vol. 1, p. 3, G&M.

29 Annual Reports for 1925 (Vol. 3, p. 13), 1941 (Vol. 5, p. 6), G&M.

30 Annual Reports for 1946 (Vol. 5, p. 14), 1947 (Vol. 5, p. 16-17), G&M; Buffum, "Map Cataloging: An Informal Review," p. 37.

For more than four decades a card catalog of copyright maps was maintained in the Division by clipping copyright entries pertaining to maps and atlases and pasting them onto cards until in 1947 the Copyright Office initiated a map cataloging project to prepare printed cards for maps received by that office. Under this arrangement, descriptive cataloging was done in the Copyright Office but the classification and subject headings were added in the Geography and Map Division.<sup>31</sup> Since 1969 all newly acquired maps and map sets of significant reference value and selected retrospective maps have been fully cataloged in machine-readable form and added to the MARC Maps data base, a computer-assisted map cataloging system developed at the Library of Congress under the direction of Walter W. Ristow and David Carrington.<sup>32</sup> During the past 12 years nearly 70,000 separate map bibliographic descriptions (175,000 individual pieces) have been added to this data base, which is available to library subscribers who may receive the data in the form of magnetic tapes or printed cards. While basic cataloging principles for maps and atlases remain unchanged, the need for precision, comprehensiveness and compatibility created by automation has contributed to efforts to standardize map classification and cataloging rules. These activities have resulted in revision of the Class G schedule (1976), development of a data preparation manual (1971), publication of specifications for magnetic tapes containing catalog records for maps (1970, revised 1976) and international participation in the preparation of the forthcoming *Anglo-American Cataloging Rules for Cartographic Materials*. The set map collection of intermediate and large scale maps, numbering over two million sheets, is classified and cataloged on a preliminary basis, but index maps are used as the primary finding aid to locate individual map sheets. This collection was originally described by Phillips in a published list issued in 1904 under the title *Check List of Large Scale Maps Published by Foreign Governments (Great Britain Excepted) in the Library of Congress*, and controlled to some extent by color-coded graphic indexes filed with each map set. In order to control the large quantities of foreign topographic maps and hydrographic charts that were transferred to the Library of Congress after World War II, the Division devised a distinct graphic index reference file by storing all set map finding aids in one place for easy reference.<sup>33</sup>

Cartographic records in the National Archives and Records Service are controlled quite differently from those in the Library of Congress. Standard archival control devices such as collective descriptions are used by cartographic archivists to ensure that cartographic materials are easily integrated with related maps and textual records. Traditional map library cataloging and cartobibliographic techniques, however, are also employed on a selective basis in recognition that geographic area is the primary subject of cartographic materials. As a consequence, a variety of finding aids exist for approximately 150 record groups containing cartographic materials, the majority of which have not been published. These

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31 Phillips to Librarian of Congress, 4 October 1900, Vol. 1, G&M; Annual Report, 1947, Vol. 5, p. 9, G&M.

32 David K. Carrington, "Information and Recent Developments of Interest to Users of MARC Map," *Inspel* 14 (1979): 62-67; Janet Swan Hill, "Developments in Map Cataloguing at the Library of Congress," *Special Libraries* 68 (April 1977): 149-154.

33 Annual Report, 1946, Vol. 5, p. 7, G&M.

include findings prepared by the government agencies that created or received the cartographic materials; accession descriptions prepared by National Archives appraisers; and finding aids compiled by cartographic archivists.

When cartographic records are transferred to NARS, the agency of origin is required to furnish archivists with all related finding aids that will facilitate research. These finding aids vary from one record group to another but may include manuscript registers, shelf lists, card catalogs and map indexes. For instance, both manuscript registers and manuscript descriptive cards accompanied the transfer of the central map file of the Office of the Chief of Engineers; manuscript map indexes were received with field notebooks from the Bureau of Land Management, and printed map indexes were bound in volumes with Coast and Geodetic Charts.

Accession descriptions, which are prepared during the appraisal process, have been maintained for each separate accession since the establishment of the cartographic materials have been entered onto the NARS-A1 system, a computer assisted inventory system which is designed to generate up-to-date inventories. Agency generated finding aids and accession descriptions are normally arranged in record group and series order and maintained in spiral bindings located in the public research room for easy access.

The basic forms of collective descriptions are inventories and guides in which series or groups rather than individual items of cartographic materials are described. Cartographic inventories are devoted to single record groups or subgroups such as the records of the American Commission to Negotiate Peace, records of the Bureau of Census, or records of the Provisional Government of Cuba. Each cartographic inventory includes a brief introductory essay outlining the administrative history of the agency that created the records and entries describing the individual series, which may be based on area, subject (roads, soils), type (cadastral plans, charts), activity (surveys, exploration) or a combination of these categories. A descriptive entry usually consists of two parts: a title-line providing information on area, subject, date, and number of items; and a descriptive paragraph furnishing information that helps to explain the series, such as its arrangement, physical form, missing documents, finding aids, administrative origins, and significance in terms of related functions and activities. Fifteen inventories describing cartographic records have been published by NARS between 1952 and 1981.<sup>34</sup>

The cartographic archives unit has also produced two printed guides which contain collective descriptions for more than one record group. The *Guide to Civil War Maps in the National Archives* is divided into two sections: in the first part, maps are described by record group and thereunder by area, subject or origin; in the second part, maps of "exceptional interest" are described on an individual basis with full bibliographic details. *The Guide to Cartographic Records in the National Archives*, which was published in 1971, serves as a general introduction to all cartographic series and record groups.

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34 U.S., NARS, *Cartographic Records in the National Archives* (General Information Leaflet No. 26), 1976.

## REFERENCE AND PRESERVATION

Reference and preservation activities are administered in much the same way in both the Library of Congress and NARS. Because of the unique physical properties of cartographic materials, each cartographic unit has established a separate research room equipped with oversize tables for examining large maps in detail and light tables for comparing and copying. Preservation is a major concern, and has been treated much the same way. Staff members in both units are trained to encapsulate heavily used maps in polyester envelopes; all other maps are gradually being placed in acid-free folders for permanent protection from handling. The National Archives and Records Service has microfilmed one large cartographic series at 105mm; the Library of Congress is currently microfilming rare atlases at 35mm and plans to begin shortly a major 105mm microfilming program for maps that have been described in cartobibliographies.

Trained reference specialists aid researchers by guiding them to appropriate materials. In the Library of Congress reference service normally takes the form of assisting readers to locate maps of related geographical areas. In the National Archives and Records Service, cartographic reference service is more likely to be undertaken in an historical context where the reference archivist assists the researcher in integrating maps with related textual materials that are in the custody of other divisions. For these reasons, map librarians generally have academic training in geography and library science whereas cartographic archivists have degrees in history and/or historical geography. As part of a two-year training program, cartographic archivists are required to work in various textual divisions within NARS for extended periods of time to acquaint them with related materials.

In addition to the published finding aids already cited, each cartographic unit has issued general research tools to aid readers and researchers. The *Bibliography of Cartography*, another monumental work begun by Phillips, lists some 120,000 articles and books devoted to maps, mapmaking, and the history of cartography. It has recently been published in seven volumes by G.K. Hall and Company, Boston. Analytical works devoted specifically to the history of cartography include "Source Materials for the History of American Cartography," *American Studies: Topics and Sources* (1976) by John A. Wolter, and a *Guide to the History of Cartography; an annotated List of References on the History of Maps and Mapmaking* (1973) by Ristow. A number of exhibit catalogs have also been prepared by the Geography and Map Division of the Library of Congress for reference purposes. The National Archives and Records Service has issued several short monographs as part of their reference information papers series; these analyze maps from different record groups that deal with special subjects. Cartographic subjects treated include exploring and surveying maps, maps of urban areas, agricultural maps, maps pertaining to American Indians, postal maps, and transportation maps.

Several major restrictions limit the reproduction and use of cartographic materials. In the Library of Congress, all cartographic materials produced by commercial organizations since 1907 may be subject to copyright protection and reproduction is permitted only with the written approval of the author or publisher. While the copyright law does not apply to cartographic maps produced and published by local, state, or federal governments, the use of official maps at both the Library of Congress and NARS may be limited by restrictions imposed by originating agencies. NARS also has custody of cartographic materials bearing

national security classification markings that are closed or restricted under the terms of either a statute of Congress or executive orders issued by the President.

What general conclusions can be drawn from this comparative survey? Both institutions have responsibility for all basic curatorial functions normally associated with cartographic departments in large libraries or archives. This concentration of functions has led to a high degree of curatorial specialization. Both have also striven to establish standards for certain functions such as rules for classifying and cataloging maps at the Library of Congress and guidelines for appraising and disposing of official cartographic materials at NARS. And both units have adopted automated processing techniques in order to control and retrieve bibliographic data in machine readable form.

Comparison of these two cartographic repositories also reveals that their acquisition and processing programs have developed differently, along two distinct paths, in response to the policies and procedures initiated by the first directors, the influence of traditional library and archival principles, and the institutional framework within which each unit operates. The map collections at the Library of Congress are composed of discrete maps or discrete map sets that are processed separately, and that are generally significant in terms of their own unique content. The map archives at NARS, by contrast, are composed of organic groups of maps, processed together as groups; individual maps within each group derive much of their meaning from their relationships to the agency that produced them and to other maps in the same group. The Library of Congress "collects" new and retrospective maps from diverse sources through gifts, purchases, exchanges, deposits, and transfers, while the National Archives "receives" groups of maps through scheduled transfers directly from the agencies that produced or accumulated them. The activity of collecting implies an active role in gathering and bringing together in one place maps from various sources while the activity of receiving suggests a more passive role involving the acceptance of maps gathered together by some other authority. The third distinction concerns the theoretical basis for classifying, arranging, and describing maps. In the Library of Congress, the fundamental unifying concept for processing maps is geographic area; in NARS, it is provenance. The former serves to organize and integrate geographic information in a spatial context, the latter in an historical context.

## APPENDIX I

**COMPARISON OF FUNCTIONS IN GEOGRAPHY AND MAP DIVISION  
AND CENTER FOR CARTOGRAPHIC AND ARCHITECTURAL ARCHIVES**

| <b>Curatorial Functions</b>   | <b>Library of Congress</b>  | <b>National Archives &amp;<br/>Records Service</b>  |
|-------------------------------|---|---|
| 1. Acquisition/Accession      |   |   |
| Published Guidelines          | Policy Statement  | Records Disposition<br>Schedule   |
| Sources                       | Worldwide   | U.S. Government   |
| Methods                       | Copyright Deposits<br>Government Deposits<br>Solicitation Programs<br>Federal Library Transfers<br>Direct Purchases<br>Gifts<br>Exchanges | Direct Transfers<br>Scheduled Transfers   |
| Appraisal Unit                | Individual Items  | Collective (Program Files)  |
| Value                         | Information (Geographic,<br>Subject)  | Administrative, Legal, &<br>Informational   |
| Duplicate Items               | Exchange or transferred<br>to other libraries   | Retained  |
| Replacement Items             | Used for upgrading  | Not added   |
| 2. Classification/Arrangement |   |   |
| Organizing Principle          | Geographic  | Provenance  |
| Organizing Method             | New items from different<br>sources added to pre-<br>determined system  | Original order of program<br>files maintained   |
| Classification                | Class "G" Schedule<br>Titling   | Record Group  |
| 3. Description                |   |   |
| Programs                      | Titling<br>Cartobibliography<br>Cataloging<br>Map Index   | Agency Producing Finding<br>Aids<br>Accession Inventories<br>Collective Description<br>Inventories<br>Guides<br>Special Lists<br>Index Cards<br>Graphic Index Cards |
| 4. Reference                  |   |   |
| Approach                      | Search Related<br>Geographic Areas  | Integrate with Related<br>Textual Materials   |
| Training                      | Geography and Library<br>Science  | History and Geography   |

|                             |  |  |
|-----------------------------|--|--|
| Published Finding Aids      | Bibliography of<br>Cartography<br>Exhibit Catalogs<br>Select Bibliographies and<br>Checklist | Reference Information<br>Papers<br>Exhibit Catalogs        |
| Restrictions                | Copyright<br>Agency Restrictions   | Agency Restrictions<br>National Security<br>Classification |
| 5. Preservation<br>Programs | Encapsulation<br>Microfilm   | Encapsulation<br>Microfilm                                 |

## Résumé

Il y a une comparaison entre le système de conservation de cartes à la Library of Congress et celui des National Archives aux Etats-Unis pour faire connaître la nature des cartes et les principes fondamentaux aussi bien que les pratiques qui séparent les bibliothèques des archives de cartes.