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CARD-INDEXING AND FILING  
OF INFORMATION  
PERTINENT TO MILITARY HYDROLOGY

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MILITARY HYDROLOGY BULLETIN 5  
JUNE 1957

A  
CORPS OF ENGINEERS  
RESEARCH AND DEVELOPMENT REPORT

PREPARED UNDER DIRECTION OF  
CHIEF OF ENGINEERS

BY

MILITARY HYDROLOGY R & D BRANCH  
U. S. ARMY ENGINEER DISTRICT, WASHINGTON

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<p>Military Hydrology R&amp;D Branch, U. S. Army Engineer District, Washington, D. C.  <b>CARD-INDEXING AND FILING OF INFORMATION PERTINENT TO MILITARY HYDROLOGY</b>, June 1957, 20 pp. 7 exhibits (Military Hydrology Bulletin 5)                  DA R&amp;D Proj 8-97-10-003                  Unclassified Report</p> <p>This bulletin, the fifth of a series dealing with hydrologic problems encountered in military operations and methods of solution suitable for military use, outlines a systematic procedure for use in extracting, card-indexing, and filing data pertinent to military hydrology, including recommended standard-subject and geographical-area index systems.</p>	<p>UNCLASSIFIED</p> <ol style="list-style-type: none"> <li>1. Military Hydrology</li> <li>2. Indexing &amp; Filing System</li> </ol> <p>I. U. S. Army Engineer District, Washington, D.C. Military Hydrology Bulletin 5</p>	<p>Military Hydrology R&amp;D Branch, U. S. Army Engineer District, Washington, D. C.  <b>CARD-INDEXING AND FILING OF INFORMATION PERTINENT TO MILITARY HYDROLOGY</b>, June 1957, 20 pp. 7 exhibits (Military Hydrology Bulletin 5)                  DA R&amp;D Proj 8-97-10-003                  Unclassified Report</p> <p>This bulletin, the fifth of a series dealing with hydrologic problems encountered in military operations and methods of solution suitable for military use, outlines a systematic procedure for use in extracting, card-indexing, and filing data pertinent to military hydrology, including recommended standard-subject and geographical-area index systems.</p>	<p>UNCLASSIFIED</p> <ol style="list-style-type: none"> <li>1. Military Hydrology</li> <li>2. Indexing &amp; Filing System</li> </ol> <p>I. U. S. Army Engineer District, Washington, D.C. Military Hydrology Bulletin 5</p>
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PREPARED IN CONNECTION WITH  
RESEARCH AND DEVELOPMENT PROJECT NO. 8-97-10-003

FOR  
ENGINEER RESEARCH & DEVELOPMENT DIVISION  
OFFICE, CHIEF OF ENGINEERS

BY  
MILITARY HYDROLOGY R&D BRANCH  
U. S. ARMY ENGINEER DISTRICT, WASHINGTON  
CORPS OF ENGINEERS

JUNE 1957

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PREFACE

This bulletin is the fifth of a series dealing with the various aspects of hydrology involved in military operations and with the hydrologic techniques and methods of analysis which are considered most suitable for army use. A number of these techniques were developed in the course of Research and Development Project No. 8-97-10-003, assigned to the Army Engineer District, Washington on 14 March 1951 by the Office, Chief of Engineers. Printing of this Bulletin was authorized by Office, Chief of Engineers, on 9 May 1957.

Mr. A. L. Cochran of the Office, Chief of Engineers formulated the objectives, scope, and detailed outline of this bulletin. Mr. H. H. Helm of the Military Hydrology Branch, Washington District, assembled the material and prepared the text of the bulletin, under the supervision of Mr. R. L. Irwin.

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LIST OF EXHIBITS

<u>Exhibit Number</u>	<u>Title</u>
1	Organization Chart of Standard-Subject Index (with explanation of seven primary categories)
2	Primary Subdivisions of Standard-Subject Categories
3	Primary & Secondary Subdivisions of Standard-Subject Categories (In 4 Sheets)
4	Index-Card & Evaluation Sheet (Sample)
5	Instructions for Completion of Index-Card & Evaluation Sheet
6	Geographical Area Index Numbers (List)
7	Map: Index of Army Map Service Library Area Classification (AMS Map 150827; Correct to Feb 1952)

## SUMMARY

Basic data on the characteristics of watersheds, stream channels, flood plains, dams, levees, and other artificial control structures, as well as records of meteorologic and hydrologic events, are pre-requisite to the reliable solution of military hydrology problems in any potential theater of operations.

Time available for the solution of military hydrology problems is usually very short. Therefore, it is of the utmost importance that essential basic data be easy to locate and that an effective means be available for selecting information that is most applicable to the particular problem. Language difficulties must be overcome in many cases by translation and analysis of technical data, and elimination of extraneous materials, well in advance of the time they are required for military use. A convenient means is needed for extracting, evaluating and indexing pertinent items of information from many different magazines, books, technical reports and other documents, many of which do not bear titles related closely to hydrology or hydraulics. Such action will make it possible to readily procure data from established library sources when needed, and thus reduce the quantity of reference material that must be retained in special military hydrology files.

The indices, forms, and procedures presented in this manual have been specially designed to help meet the problems mentioned above.



Par. 1a

CHAPTER I  
INTRODUCTION

1. Nature and Scope of Military Hydrology. a. In broad terms, hydrology is the science which treats of the phenomena of water in all its states; of the distribution and occurrence of water in the earth's atmosphere, on the earth's surface, and in the soil and rock strata; and of the relation of these phenomena to the life and activities of man. Hydraulics is closely allied with hydrology, being a branch of engineering which comprises the study of the flow of fluids, especially the flow of water in rivers, canals, etc.

b. Military hydrology includes all phases of hydrology and hydraulics relating to any aspect of runoff, streamflow, and ground water that may have an important effect on military planning and operations. As a military assignment, the subject includes the following principal activities:

(1) Selective collection, compilation, and professional evaluation of information on physical characteristics of watersheds, river channels, flood plains, and water control structures insofar as these have a major influence on hydrologic and hydraulic phenomena.

(2) Analysis of hydrologic data, and professional appraisal of streamflow characteristics that may affect military operations.

(3) Prediction of natural floods, within a few hours, days, or weeks in advance of actual occurrences, in order to permit precautionary measures to be taken for protection of military operations or installations in active military theaters. This activity includes the organization and establishment of flood prediction services for specific areas when required.

(4) Preparation of estimates of the extent and probable hydraulic effects of artificial floods that might be created in specific areas by demolition of high dams, manipulation of regulating gates or control structures, breaching of levees, diversion of streamflow by damming operations or obstruction of canal flows, and similar operations.

c. Information, studies, and services of the nature outlined above may be needed for any potential theater of military operations in the world.

2. Scope of This Bulletin. This bulletin presents:

a. A detailed list of "standard-subjects," numbered in systematic order, for use in extracting, card-indexing, and filing data pertinent to military hydrology.

b. An area-index numbering system, developed by the Army Map Service Library, for use in associating subject-indexed data with the geographical area to which it applies.

c. A sample "Index-Card & Evaluation Sheet" specially designed for use in indexing individual items pertinent to military hydrology and for extracting information from individual documents in codified form.

d. Specific suggestions and instructions regarding the indexing and filing of information pertinent to military hydrology.

Par. 3

3. Related References. Other publications on military hydrology are available in the Military Hydrology Bulletin series and Department of the Army Technical Bulletins of the 5-550 series, as follows:

Military Hydrology Bulletins

- MHB 1: Applications of Hydrology in Military Planning & Operations
- MHB 2: River Characteristics and Flow Analyses for Military Purposes
- MHB 3: Stream Gaging Methods and Equipment for Military Purposes
- MHB 4: Transmission of Hydrologic Data for Military Purposes
- MHB 5: Card-Indexing and Filing of Information Pertinent to Military Hydrology
- MHB 6: Directory to European Sources of Information on Military Hydrology
- MHB 7: Glossary of Terms Pertinent to Military Hydrology
- MHB 8: Selected References on Military Hydrology
- MHB 9: Flow Through a Breached Dam
- MHB 10: Artificial Flood Waves
- MHB 11: Regulation of Stream Flow for Military Purposes
- MHB 12: Handbook of Hydraulics

Department of the Army Technical Bulletins

- TB 5-550-1: Flood Prediction Services
- TB 5-550-2: Compilation of Intelligence on Military Hydrology
- TB 5-550-3: Flood Prediction Techniques

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Par. 4a

CHAPTER II  
STANDARD-SUBJECT INDEX

4. Development, Sources, Foreign Languages and Uses. a. In the development of any practical system for indexing data covering a broad technical field, it is advisable to formulate a concise basic list of "standard" subjects under which items of a similar nature can be grouped appropriately for convenient identification. Otherwise, the list of individual index subjects becomes so long as to be unwieldy and generally ineffective. This is particularly true in regard to the indexing of information pertinent to military hydrology, because of the diverse nature of the material involved.

b. Solution of hydrologic and hydraulic problems pertinent to military activities requires information on watershed features, topography, characteristics of river channels, details of dams, reservoirs, levees, bridges that obstruct streamflow, and other physical conditions affecting runoff and streamflow in specific areas, in addition to information on meteorological influences, rainfall and snowfall amounts, streamflow records, flood-characteristics, and other phenomena ordinarily associated with engineering hydrology and hydraulics. These data must be assembled from many sources, few of which are directly identifiable as "hydrologic" or "hydraulic" references. For example, reports pertaining to the social or economic development of a country often contain data on rivers, dams, reservoirs, etc. that are pertinent to the solution of military hydrology problems. In fact, some data pertinent to military hydrology may be found in almost any newspaper, technical publication, or document selected at random, as well as in private reports and papers, without subject titles indicating any association with hydrology or hydraulics as such. The "standard-subject" index presented hereinafter provides a means of card-indexing any individual item of information pertinent to military hydrology, regardless of its source or the title of the document in which it is found.

c. Language difficulties enter into the problem of locating and evaluating data pertinent to military hydrology in foreign areas. Many of the engineering and scientific terms used in American practice do not have equivalent technical meaning when translated verbatim into foreign languages. Accordingly, specialists, who have the necessary knowledge of the languages involved as well as of military hydrology, are needed to index pertinent items under the "standard-subject" index in terms familiar to American engineers.

d. In addition to serving as a basis for card-indexing of documents and individual items of information, the "standard-subject" list and related number system described herein may be utilized for physically filing data assembled for specialized military hydrology uses. This is a very important function in view of the relatively large volume of data retained even in a small office and the importance of avoiding lost time in locating such data when needed for military purposes.

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## Par. 5

5. Basic Requirements. A standard-subject index and numbering system for military hydrology should be:

- a. Expressed in terms familiar to American engineers.
- b. As concise as practicable for sake of convenience and simplicity, but sufficiently definitive to extract from sources indexed the information of special significance in military hydrology.
- c. Stable in basic framework but adaptable to expansion and progressive subdivision as future needs dictate.
- d. Suitable for card-indexing of publications and other sources of information, for identifying individual items of information contained in card-indexed sources, and for use in arranging and numbering material for actual filing.

6. Main Subject Categories. a. Organization Chart. To meet the general requirements outlined in paragraph 5, information pertinent to military hydrology has been sub-divided into seven major "categories" for the purpose of card-indexing and filing. The scope of information included under such category is stated in Exhibit 1, and is indicated in considerable detail on Exhibits 2 and 3. These three exhibits should be thoroughly reviewed before any subject indexing of data is undertaken.

b. Category Numbers. The main subject categories are numbered serially from 1 through 7, and may be referred to as Category 1, Category 2, etc.; when more convenient, the same categories may be designated numerically as 100, 200, 300, etc., the first digit corresponding to the category number, and the two ciphers indicating that classification of the data by sub-divisions of the category has not been undertaken.

c. Discussion of Categories.

(1) Category 1 (General Administrative Matters) is for use in indexing and filing administrative correspondence, regulations, personnel data, and various items used primarily in routine operations of a military hydrology unit including administration of technical studies conducted by such units. Blocks of numbers pertaining to certain administrative subjects are shown on Exhibits 2 and 3. Additional numbers and subjects may be added by offices concerned as needs dictate.

(2) Category 2 (Water-Resources Developments: General Coverage Documents) is used for indexing books and other documents that are broad in coverage, including information valuable in connection with military hydrology but not confined strictly to scientific aspects of hydrology, hydraulics, or meteorology. Examples: Survey Report on Columbia River, by Corps of Engineers (H.D. 531, 81st Congress, 2d Session) or technical magazines, such as Engineering News-Record (No. 27-1131), which deal with many aspects of engineering, including but not limited to hydrology and hydraulics. In addition to indexing such documents under Category 2 numbers, component items of such documents may also be indexed under other category numbers when considered advisable.

(3) Category 3 (Special Military Hydrology Reports and Bulletins) is primarily a "convenience" file to permit the grouping of reports prepared in final form expressly for military purposes. Considered on the basis of subject matter only, such reports might be filed under other categories, but the special grouping has distinct advantages in facilitating reference.

## Par. 6c(4)

(4) Category 4 (Hydrology, Hydrometeorology and Hydraulics: General) applies to handbooks, textbooks, standard references, technical magazines and other information that deal primarily with hydraulic techniques, procedures, equipment, etc., not distinctively and essentially associated with specific river basins or groups of basins. In general, Category 4 applies to the class of material normally considered as basic technical references needed by a military hydrology unit regardless of the particular drainage basins to which specific assignments pertain. Some articles dealing specifically with hydrology and hydraulics of sample or representative watersheds or broad geographical areas, such as the "arctic", may be included under Category 4 if they are basic references pertaining to scientific methods primarily, but all information that is of value expressly because of its relation to specific areas should be indexed under Categories 5, 6 or 7.

(5) Categories 5, 6, and 7 are explicitly associated with individual river basins, groups of river basins, or designated geographical areas. Although the term "individual drainage basin" is most commonly applicable, the term should be interpreted as including any geographical area specifically designated (such as "coastal regions of Western Europe", etc.).

(6) Category 5 (Drainage Basin Features and Water Regulation Structures: Individual River Basins) applies to information primarily or predominantly associated with the "physical" characteristics of structures and watershed features in a specific geographical area, as contrasted to the strictly hydrologic and hydraulic phenomena in the area. In classifying documents under Category 5, it will often be found that a substantial amount of purely hydrologic and hydraulic data are included with data on physical characteristics of structures and the watershed. Decision as to proper indexing must be based on an appraisal of which type of data is of predominant importance; if the "physical" characteristics of structures and watershed constitute the most important elements of the document, it should be indexed under Category 5, with appropriate identification of contents of the document by use of "secondary" numbers on the index card, or by cross-referencing to another category, if necessary. (See paragraph 9)

(7) Category 6 (Hydrology and Hydrometeorology: Individual River Basins) applies to information wherein hydrologic and meteorologic data and analyses associated with specific drainage basins or geographical areas are the distinguishing and most significant features, as contrasted to information on structures and physical characteristics of the watershed.

(8) Category 7 (Hydraulics: Individual River Basins) applies to highly specialized hydraulic analyses associated with specific drainage basins or geographical areas, such as hydraulic model studies, streamflow velocities and currents, flood routing and backwater curves, sedimentation and erosion, artificial flood waves and hydraulic obstacles, and tidal hydraulics. These studies may overlap hydrologic studies indexed under Category 6 in some cases; decision as to proper indexing will rest on an appraisal of which phase of the studies (hydraulics vs hydrology) predominates in the specific case.

Par. 7a

7. Primary Subdivisions of Standard-Subject Categories. a. List. Primary subdivisions of each of seven main subject categories are listed on Exhibit 2, and additional details are given on Exhibit 3 as secondary subdivisions.

b. Numbering. Primary subdivisions of each subject category are numbered serially with three-digit numbers, the first digit corresponding in all cases to the number of the category involved. For example, the subject index number "412" refers to "Stream Gaging Methods: General," as shown on Exhibit 2, which is one primary subdivision of Category 4.

8. Secondary Subdivisions of Standard Subjects. a. List. Exhibit 3 (in 4 sheets) gives a complete list of subject categories, primary subdivisions, and "secondary" subdivisions.

b. Numbering. "Secondary" subdivisions of each primary subject are represented by two-digit decimals following the primary subdivision number; e.g., number 412.04 applies to "Stream Gaging Methods and Special Computation Procedures: General," as shown in Exhibit 3 (Category 4).

c. Adjective Suffixes to Index Numbers. Although not a part of the standard-subject index presented herein, individual offices may desire to supplement the numbering system by parenthetical expressions in special cases, particularly in setting up files of data. For example, the number 412.04 cited above, might be supplemented to read 412.04 (Slope-Area Computations).

9. Use of Standard-Subject Numbers. a. Purposes. The basic purposes to be served by the "standard" subjects selected for use in indexing and filing information pertinent to military hydrology are discussed in paragraph 4. The following subparagraphs describe certain specific uses of the numbers assigned to the standard subjects.

b. Card-Index Headings. Exhibit 4 presents a sample "Index-Card & Evaluation Sheet" and Exhibit 5 contains detailed instructions for completion of the form. The standard-subject number to be filled into the space designated as (a) on Exhibit 4, which corresponds to the standard-subject heading indicated in space (b), permits a convenient grouping of index cards that relate to the same standard-subject. (See also paragraph 14b and c.)

c. Identification of Document Contents. Standard-subject numbers may be used to indicate in considerable detail the technical nature of information contained in any document or compilation of data, as illustrated in space (p) on Exhibit 4. In this manner, the numbers serve as convenient "codes" to identify individual items or classes of data contained in the indexed document that are of particular significance in military hydrology but are not revealed in most cases by the official title of the particular document (particularly those in foreign languages). It is not necessary or intended that the standard-subject numbers used in space (p) identify all items in the indexed document that might be of interest in military hydrology, but rather a representative sampling of the contents as well as those items that are most likely to be of major importance.

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Par. 9d

d. File Numbers. Standard subject numbers, with or without written subject headings, may be used in setting up file repositories (cabinets, book shelves, etc.) in which indexed data are placed, and the indexed items may be individually marked with applicable standard-subject numbers to facilitate filing operations as well as later identification of the items. The standard-subject numbers alone may adequately meet the filing requirements of small offices. However, if filing of a large quantity of items bearing identical standard-subject numbers is involved, accurate identification of each indexed item is obtained by suffixing to the standard-subject number a serial number, which is placed on the object to be filed and also in space (f) of Exhibit 4. Parenthetical names or phrases may be used in lieu of serial numbers, if preferred. (See Chapter IV for additional details.)

10. Additions to Standard-Subject Numbers. a. In order to provide for future addition of any standard subjects that experience may prove to be needed, all standard-subject numbers shown in Exhibits 2 and 3 consist of even numbers; new listings may therefore be added as odd numbers without destroying logical sequences.

b. Unofficial additions of standard-subjects and related numbers may be made as indicated above by using Services; however, such additions should be held to the minimum definitely needed and should be reported through appropriate channels to the District Engineer, Washington District, for consideration in connection with any future revisions of this bulletin.

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CHAPTER III  
GEOGRAPHICAL-AREA INDEX

11. Purpose. A system is presented in this Chapter for indexing information related to military hydrology according to the geographical area to which the information pertains.

12. Geographical Index Areas. a. Bases for the Index. A system for indexing information on military hydrology according to geographic area is a necessary element to efficient operation. Any logical system could be employed; in some cases, it might be advisable to conform to the standard area index system used by geographic area, devised by the Army Map Service Library, Corps of Engineers, has been adopted by the Military Hydrology R&D Branch, Washington District, Corps of Engineers and has proven to be quite adequate for military hydrology use. Under this system the world is considered as one area, with three alternative methods of subdividing the world area as follows:

- (1) by Hemispheres
- (2) by Continents
- (3) by Theater Areas

In addition to the Army Map Service area-indexing system, a subdivision according to river basins is used for indexing information or documents applicable to individual river basins. Of the alternative procedures listed, the one that most precisely locates the area of interest in a particular case would be used; e.g., if the document indexed pertains to one theater area only, the "theater" system of area indexing would normally be used, rather than the "continental" or "hemisphere" systems covering a much larger area. Details of the mechanics are explained in paragraph 13, and the map presented as Exhibit 7 shows graphically the principal subdivisions referred to herein.

b. World Area. Documents or publications containing general information not limited in applicability to a particular continent, country, or other region, and those containing information applicable to continents in more than one hemisphere, are classified under "World Area." Numeral "1" is used to identify the world area as a unit.

c. Division by Hemispheres. The world area (Area 1) is subdivided into four hemispheres as follows:

- 11 Eastern Hemisphere
- 21 Western Hemisphere
- 31 Northern Hemisphere
- 41 Southern Hemisphere

Because this is a breakdown of "Area 1," the digit "1" continues throughout, and digits "1" through "4" occur as prefixes for the hemisphere divisions. The hemispheres are defined as east or west longitude from Greenwich, and north or south latitude from the equator.

Par. 12d

d. Division by Continents. As one alternative to division by hemispheres, the world area is subdivided into eight continental areas which are identified by one-digit numbers as follows:

2 Africa	6 Europe
3 Antarctica	7 Latin America
4 Arctic Regions	8 North America
5 Asia	9 Pacific

Continental area subdivisions are tabulated in Exhibit 6 and designated in Exhibit 7 as the "first file position", shown in blue color.

e. Division by Theater Areas and Subdivisions Thereof.

In lieu of division by hemispheres or continents, as outlined above, the world area is divided into twenty-five "theater areas" which are identified by capital letters of the alphabet, designated as "second file position" in Exhibit 7 and outlined in red color (e.g., "M" for the European Theater). Each theater area is then divided into ten or fewer subareas, (generally according to political boundaries) which are identified by green numerals in Exhibit 7 and prefixed to the appropriate theater-area letter (e.g., "8M" for Azores and Iberian Peninsula). The theater subareas are in turn divided into ten or fewer parts, which are identified by prefixing an additional digit (e.g., "28M" for Iberian Peninsula). This process is repeated until the desired unit area is obtained (e.g., "228M" for Spain); these theater-area subdivisions are tabulated in Exhibit 6, but are not shown on Exhibit 7, because the size of map is too small. Larger maps, one for each of 25 theater-areas and subdivisions thereof are available from the U. S. Army Map Service under the title: Army Map Service Library Area Classification.

f. River Basins. For indexing documents which contain information pertaining mostly to an individual river basin, the particular river basin is indicated in addition to the geographical area designation. (See paragraph 13d).

13. Mechanics of Area-Index System. a. Application. Geographical area identification numbers, discussed in paragraph 12, are applied as follows in referencing information pertinent to military hydrology with respect to geographical areas.

b. Basic Procedure. Data are referenced according to the smallest areal subdivision to which substantially all of the subject material contained is primarily applicable.

(1) If the information applies to the entire World area, or to areas in more than one hemisphere, use numeral "1" without prefix or suffix letters.

(2) If the information applies to an entire hemisphere, or to two or more continents in a hemisphere, use the two-digit "hemisphere" numerals without prefix or suffix letters (e.g., "11" for Eastern Hemisphere, or "31" for Northern Hemisphere).

Par. 13b(3)

(3) If the information applies to a continent, or to two or more theater areas in a continent, use the single "continent" numeral without prefix or suffix letter (e.g., "2" for Africa, or "5" for Asia).

(4) If the information applies to a theater area, or to two or more major theater-area subdivisions, use the capital letter identifying the appropriate "theater" without prefix or suffix numbers (e.g., "P" for North Africa, or "K" for the Near East).

(5) If the information applies to a major subdivision of a theater area, or to two or more secondary theater-area subdivisions, use the capital letter identifying the theater area with a numeral prefix for the major subdivision (e.g., "3M" for the Low Countries, or "1L" for China).

(6) If the information applies to a secondary theater-area subdivision, or to two or more divisions within the secondary subdivision, use the theater-area capital letter with prefix numerals for both the major and secondary theater-area subdivisions (e.g., "13M" for Belgium, or "4L" for Manchuria).

c. Subdivision of Area Index to Smaller Units. The geographical identification system presented in this bulletin covers the identification of areas down to three subdivisions of theater areas. For organizations concerned with indexing information relating to only one theater area or to one country, it may become desirable to classify data into smaller units than those presented herein. This can be done by subdividing the smallest area tabulated in Exhibit 6 (these areas, to the third, fourth, or fifth file position, are illustrated in the Army Map Service Library Area Classification Sheets, available for individual theater areas from the U. S. Army Map Service) and assigning numbers to their subordinate political subdivisions or to logical groups of these so that no more than ten subareas are indicated for any one file position. The numerals designating these new subdivisions should precede the highest file positions assigned by the Army Map Service Library (see paragraph 12e).

d. Identification by River Basins. If the information contained in a document primarily concerns an individual river basin, it may be indexed under the name of the river basin suffixed to the geographical area index system described above. An "individual river basin" is interpreted to mean a separate drainage area or any designated group of drainage basins when considered collectively. For example, a document containing information principally concerning the Ruhr River and its tributaries may be indexed with respect to geographical area as "4M(Ruhr River)," the "4M" associating the information with the theater sub-area of Germany, and the term "Ruhr River" indicating that the information applies specifically to the Ruhr River basin. On the other hand, if the document were broader in coverage, dealing extensively with information pertaining to other major tributaries of the Rhine River, the area index identification would be "M (Rhine River)," the letter "M" identifying the continent of Europe, inasmuch as the Rhine River basin is not confined to any one subdivision of the theater area "M".

Par. 14

14. Use of Geographical-Area Index. a. Application. The mechanics of assigning area-index numbers to specific items of information have been described in paragraph 13. This paragraph outlines certain specific applications of the area-index numbers. (See also Chapter IV).

b. Card-Index Headings. Spaces (c), (d), and (e) of Exhibit 4 provide for insertion of geographical-area index numbers. All three of these spaces should be filled in, if applicable, indicating the smallest area subdivision that fully covers the applicability of the information indexed, as well as all larger area designations. For example, in the illustrative example presented as Exhibit 4, the smallest geographical area subdivision applicable is shown in space (e) as "53L (Pukhan R.)" which associates the indexed information with the Pukhan River basin in the geographical area of Korea. The number 53L (Pukhan R.) accurately designates the area to which the information pertains; accordingly, the "continental" number in space (d) and the "hemisphere" number in space (c) are not actually required for area identification purposes. However, insertion of the appropriate numbers in spaces (c) and (d) takes very little time and materially facilitates the sorting and arranging of index cards according to major geographical areas when a large number of cards must be handled.

c. Arrangement of Index-Cards According to Geographical Areas. Index-Card and Evaluation Sheets may be grouped by geographical areas according to area-index numbers shown in spaces (c), (d), or (e) of Exhibit 4. As a rule, only the larger geographical areas, such as "theater" areas or larger, would be considered for this purpose, but in special cases, smaller sub-area groupings may be desirable. Cards applicable to each selected geographical area would then be arranged according to standard-subject numbers, as explained in paragraph 9.

d. Area-Index Markings or Material for Filing. Area index numbers marked on documents and other material to be filed, or on boxes and other containers, permits accurate and convenient identification of data according to the geographical area to which it applies. Marking of individual items of data, file folders, etc., according to the geographical area involved is usually desirable, even though such data are not actually filed according to geographical area. The area-index numbers supplement standard-subject index numbers described in Chapter II.

e. Arrangement of Files According to Geographical Sub-Divisions. If the filing of a relatively large amount of material is involved, it may be advisable to subdivide the files according to major geographical subdivisions. However, an unnecessary number of area-subdivisions should be avoided, since too many subdivisions will complicate rather than aid in filing and extracting of data.

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CHAPTER IV  
CARD-INDEXING & FILING OF INFORMATION

15. Purpose. Chapter II of this manual describes in detail the purpose, organization, and general use of the standard-subject list designed specifically for use in indexing, analyzing, and filing of information pertinent to military hydrology. Chapter III presents procedures and instructions for indexing information according to the geographical area to which it applies. This Chapter summarizes certain details previously discussed, and outlines procedures applicable in utilizing the subject index and geographical index together.

16. Index Card & Evaluation Sheets. a. Forms. Exhibit 4 illustrates one form of index card and evaluation sheet; used as a full letter-size sheet (8 x 10 1/2), ample space is provided for relatively detailed abstracts and comments on the lower half and reverse side. When this 8 x 10 1/2 sheet is used, a copy is usually attached to the document analyzed and other copies are inserted in loose-leaf folders to serve as index cards. The same format may be used on a 5 x 8 card, the front side conforming to the upper half of Exhibit 4 and the back side being the same as the lower half (Abstracts & Comments) of Exhibit 4. For some uses, the standard size 3 x 5 is preferred; in this case the front side of the card only is printed, with the format conforming essentially to the upper half of Exhibit 4 except that the headings are condensed to save room. Any abstracts and comments included on the 3 x 5 cards are written on the back of the card.

b. Instructions for Completing Forms. Step-by-step instructions for completing index card and evaluation sheets are presented in Exhibit 5. Details regarding standard-subject and area-index numbers are contained in Chapters II and III, respectively. Paragraphs 17 to 24 discuss certain details of special importance under each of the main headings indicated on Exhibit 4.

c. Arrangement of Index Cards in File. If the number of index cards to be handled is small, it is advisable to arrange the cards according to standard subject numbers, without subdividing the file by geographical areas. The geographical area numbers are still useful, inasmuch as they provide a concise identification of the geographical area involved. However, in offices handling a large number of index and evaluation cards, it is usually advisable to subdivide the card file by major geographical areas; within each major area subdivision selected, cards would then be arranged according to standard subject numbers.

d. Preparation of Index Cards and Evaluation Sheets. These cards will be prepared by various military units engaged in military hydrology assignments or general engineering intelligence activities covering all material available. However, it is also desired that any individuals having knowledge of documents and other information particularly pertinent to military hydrology, complete forms similar

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to Exhibit 4 and forward them to the Military Hydrology Branch, Army Map Service, Corps of Engineers, Washington, D. C., for inclusion in a general file that is gradually being developed. Such voluntary contributions can be of major value to national defense, particularly when items of information not readily available from public sources are involved.

17. Selection of Card-Index Headings and Numbers. a. Standard-Subject Headings. Only the "primary" subdivisions, identified in Exhibits 2 and 3 by whole numbers (e.g., 410, 416, 524, etc.) should be used as index headings in spaces (a) and (b) of Exhibit 4, as a general rule. In some cases, the use of category numbers only (e.g., 200, 300, 400, etc.) may suffice, but these should be used only where most appropriate and not simply to avoid the effort required to select a more definitive primary subdivision. The primary subdivision selected as the index heading for a particular document should be the one that most clearly identifies the over-all contents of the material as it pertains to military hydrology. Component items of the indexed material that are of special significance should be indicated by use of standard-subject numbers (whole numbers, with or without decimals) inserted in spaces (p) of Exhibit 4. (See also paragraph 9c).

b. Geographical Area Numbers. The smallest geographical area that can be identified by numbers discussed in Chapter III of this manual, and all larger subdivisions, should be inserted in spaces (c), (d), and (e) of Exhibit 4. These area numbers may or may not be used for arranging index cards and files, as discussed in paragraphs 14 and 16c.

18. Serial Numbers. a. As Supplements to Standard-Subject Numbers. A large number of separate documents and other items of data will be card-indexed under the same standard-subject heading. When filing the material, each of these separate items should be marked with an appropriate serial number and the same number placed in space (f) of Exhibit 4. The standard-subject index number is written first and the serial number second, separated by a slash (Example 412/35). It is generally desirable to identify the office assigning the serial number by means of letter abbreviations prefixed to the serial number. For instance, serial numbers assigned by the North Atlantic Division, Washington District, may be prefixed by NAW, making the preceding example read 412/NAW35. When used as described above, serial numbers associated with each standard-subject number (primary subdivision number) may begin with 1 and progress upward. Hence, both the standard-subject number and the serial number will be necessary to specifically identify each item filed.

b. Acquisition Serial Numbers. In some offices, items of information are numbered and filed in continuous sequence as received, with little, if any, regard for subject matter. To facilitate physical filing of the material as received, the serial numbers may be subdivided into blocks such that one block applies to large items, such as books, other blocks to maps, etc. However, the exact numbers are never

Par. 18b

repeated under the different headings. With this system, items of information would be card-indexed according to standard-subject headings in the same manner as heretofore described, but the material so indexed would be placed in file containers according to the serial numbers assigned without regard to standard-subject numbers.

c. Discussion. Each of the systems of assigning serial numbers described above have certain advantages and disadvantages. The procedure outlined in subparagraph "a", above, permits the actual filing of information according to standard-subject numbers, providing more convenient access to data of a similar character; hence, this method is usually preferred by military hydrology units having need for frequent reference to the data files. The procedure described in subparagraph "b", above, (Acquisition Serial Numbers) permits more rapid logging-in of data as it is received, deferring review and card-indexing of the data to a later date when personnel specially trained to recognize and evaluate data pertinent to military hydrology are available; hence, it is sometimes used by offices responsible for handling a relatively large amount of data in a short time. A number of variations in methods of assigning serial numbers are feasible; however, in any event the material should be carefully evaluated and card-indexed as soon as possible in order to make the information contained therein easy to locate when needed in connection with military hydrology assignments.

19. Identification of File Containing Indexed Material. Space (g) of Exhibit 4 is for designation of the file cabinet, book shelf, map file, storage box or other container in which the indexed item is actually placed in the using office. In the indexing of classified material, due consideration should be given to security regulations that may limit the degree of identification of data repositories.

20. Description of Indexed Item. a. Accurate description of the indexed item is highly important. Foreign publications should be listed precisely in the language involved, followed in parenthesis by an English translation of the title. Any standard form of bibliographic listing is acceptable in space (h) of Exhibit 4, but all information indicated should be included insofar as applicable (i.e., Title of article, author, document in which the article is printed, agency and/or publisher of document with address, and date of document or article). If the item indexed is of a miscellaneous or non-standard form, describe it concisely (e.g., chart comparing profiles of Ruhr River, Germany, with Rhine River in Switzerland, 30 Nov 1944, by Hq. ETOUSA, size 21 x 32 inches).

b. Instructions for completion of spaces (l) through (n) of Exhibit 4 are presented in Exhibit 5.



Par. 21

21. Repository References. Present in space (o) any available information that may assist authorized persons in obtaining copies of the indexed item, particularly if the sources are not commonly known; if the source of information is classified, refer to appropriate military channels for acquisition. If the repository file numbers for the indexed item are known, these should be included in the reference.

22. Identification and Evaluation of Document Contents. a. The standard-subject number and adjective heading given in spaces (a) and (b) of Exhibit 4 indicate the general nature of the indexed item but usually do not adequately reveal technical details of the material or its probable value in connection with military hydrology. Accordingly, supplementary standard-subject numbers should be inserted in spaces (q) to pin-point specific items of information contained in the document that are considered particularly relevant to military hydrology. The primary subdivision numbers shown on Exhibit 2 may adequately define the type of information in some cases, whereas the decimal subdivisions of these primary headings, as shown on Exhibit 3 will be needed in other instances. The numbers chosen for spaces (q) should reflect a representative sampling of the contents of the document indexed that are pertinent to military hydrology, even though some items may appear to be of lesser importance; the apparent importance of each item so designated is then indicated by an "Evaluation Rating," as described in subparagraphs "b" and "c" that follow.

b. The following evaluation ratings have been selected for use in analyzing data pertinent to military hydrology:

- A = Extraordinary value probable
- B = Routine value probable
- C = Potential value not well-defined
- D = Already sufficiently known
- E = No important value apparent

c. In assembling, indexing, and filing a relatively large quantity of information pertinent to military hydrology, it will be necessary to prepare index cards and file some information without the thorough technical review required to accurately evaluate the importance of the contents of each document. In such cases, a general inspection of each document by experienced personnel will usually provide a sufficient basis for evaluating the importance of many items within approximate limits. It is important that those using the index cards for future reference be informed regarding the thoroughness of the evaluation review. Accordingly, all evaluation ratings inserted in spaces (q) in Exhibit 4 should be prefixed by the letter "P" if based on a relatively detailed technical review of the data involved, whereas, no prefix letter will be shown if the evaluation is based only on an inspection of the contents. This arrangement is followed in order that initial or "preliminary" evaluations of importance ratings can be inserted on the basis of

Par. 22c

relatively brief inspections and the letter "T" added after a detailed technical review of the data has been made, this indicating a more reliable appraisal of the data.

23. Abstracts and Comments. Abstracts and comments should be in English and as specific as practicable, high-lighting the most significant items of information. In general the statements should supplement and clarify, not simply repeat information already indicated by standard-subject numbers listed in space (p) of Exhibit 4. Where comments pertain to items listed in space (p), the pertinent numbers should be listed under "Item Ref" in space (r).

24. Cross-Indexing and Supplemental-Indexing. a. In general, "cross-indexing" refers to the listing of the same item of information under two or more index headings on separate index cards and is resorted to when the contents of the indexed item might logically be referenced under any of the alternative subjects. Cross-indexing should be used with considerable discretion. When required to assure location of the indexed item when needed, cross-indexing is important, but excessive use of cross-references may result in inconvenience rather than convenience in maintaining an up-to-date index file. Inasmuch as the index cards will usually carry information regarding location of material in the files, and may be subject to revision and additions from time to time, considerable effort would be required to keep numerous cross-reference cards up-to-date.

b. Whereas "cross-referencing" refers to two or more separate listings of the same item, "supplemental-indexing" refers to separate indexing of component parts of the main item. For example, a general coverage document pertinent to military hydrology may be indexed under standard-subject Category 2 and various individual items of information in this single document may be indexed individually under various headings falling under Categories 5, 6, and 7, in order to identify these items directly with their technical subjects. It is very important that such supplemental indexing be accomplished when data of unusual importance are involved that might otherwise be overlooked. However, caution is again required to avoid excessive use of the procedure on items of relatively routine importance. A careful listing of appropriate standard-subject numbers in space (p) of Exhibit 4 reduces the need for supplemental-indexing of component items of an indexed document by indicating the technical contents of the indexed document; however, the separate indexing of certain component items of unusual importance is still desirable in some cases in order that more detailed information can be presented and the index card placed under its most appropriate subject heading.

25. Maintenance of Card-Index File. a. Every unit engaged directly or indirectly in military hydrology assignments should assemble and progressively develop a file of index cards and evaluation sheets covering the subject and geographical areas with which

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they are concerned. Some of the cards may be obtained through established military intelligence channels; others should be prepared as new data are acquired by individual units. The index file will never be complete, inasmuch as new problems are constantly arising and additional information for solving them is required, but a sufficient subject coverage should be attained to meet primary operational needs.

b. A file of index cards completed in accordance with instructions presented herein greatly reduces the need for accumulating large libraries for individual units that are engaged in military hydrology assignments, particularly where the units have effective communications with intelligence libraries and other established sources of data. The index cards provide an effective means of locating data for a specific problem; the indexed documents can be called for when needed and returned to the library for other uses as required. This is a great advantage, not only because of the savings in effort and expense required to maintain complete copies of data that might be needed, but also because such material is often pre-empted for other priority uses and cannot be made available for military hydrology units alone. The index and evaluation cards also provide an effective means of "screening" less important material and thus making conveniently available, data most pertinent to a particular problem. This advantage is particularly important when research is complicated by foreign languages. The index cards are also very useful in connection with the filing and recall of such material as must be retained by military hydrology units.

26. Filing of Information. a. Purpose. Although the proper use of index cards will greatly reduce the volume of material that must be retained and filed by military hydrology units, a substantial amount will still be accumulated over a period of time. A systematic filing system is essential to prevent loss of documents or such confusion as to seriously impair the usefulness of the data.

b. Security Requirements. Some of the information connected with military hydrology assignments is of a classified nature, whereas a substantial volume may be unclassified. Unless the total volume of material is small enough to be accommodated in lock-files to conform with security regulations, file systems must be established to accommodate unclassified and classified material separately. In some cases the problem may be simplified by establishing an unclassified file for large bulky items only, using lock-files for all correspondence, small reports and written material which is difficult to disassociate with classified matter. Regardless of the file division, a card-index provides a reliable and convenient means of locating any item needed if maintained systematically and continuously.

c. Filing Facilities. Following is a check list of containers that may be required for filing of information:

- (1) Card-file boxes
- (2) Letter-file cabinets
- (3) Shelves and Bookcases
- (4) File boxes and bulky package wrappings
- (5) Flat files (for maps, charts, etc.)
- (6) Roll files (tubes for maps, etc.)
- (7) Micro-film Files (for protection against fire and moisture)
- (8) Special file facilities (e.g., vaults with temperature controls, etc.)

d. Marking of Data for Filing. The following steps are usually involved:

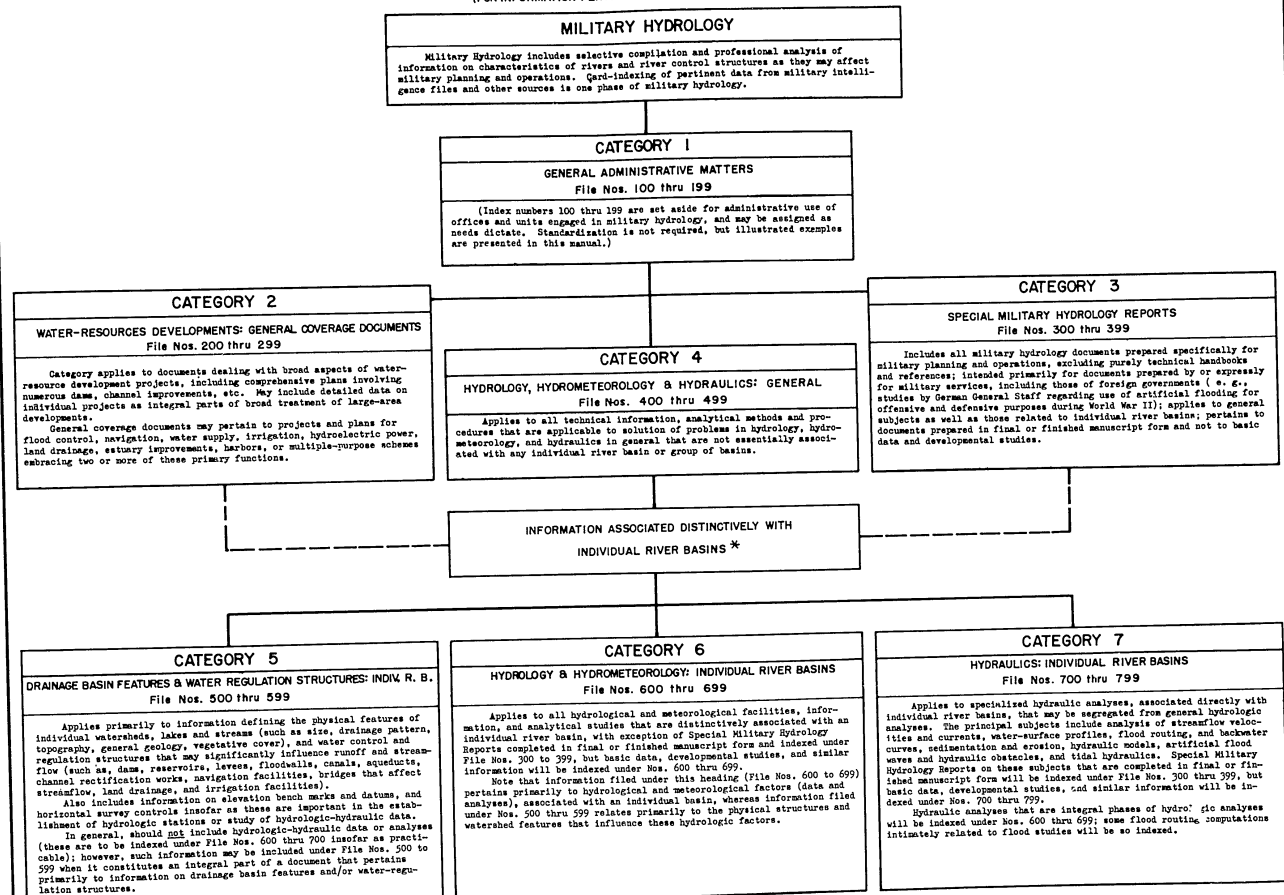
- (1) Separate classified items from unclassified, as required. (See paragraph "b", above.)
- (2) Separate large items from small, and group according to general similarity of form (i.e., books and book-size items suitable for shelf storage are usually separated from other items, etc.)
- (3) Mark each item according to appropriate standard-subject number and geographical-area number (see paragraph 9d, 14d, and 17a), presented in paragraphs 16 to 23, and Exhibit 5.
- (4) Combine small items pertaining to similar standard-subjects into appropriate folders, envelopes or other containers to facilitate filing, prevent loss and save filing space.
- (5) After the most orderly arrangement of material practicable has been made, add serial numbers as suffixes to the standard-subject numbers (see paragraph 18) and immediately insert this serial number in space (f) on Exhibit 4.
- (6) Arrange the material marked in step (5), above, for insertion in appropriate file containers, number the containers and add the number of the container as a suffix to the standard-subject number and serial number already marked on each item; insert the file container number in space (g) of Exhibit 4. The complete marking on each item should read "Standard-subject index number/serial number/file container number." Example: 412/NAW35/BOX#6.

27. Recording Extractions of Data from Files. a. Once a file is properly organized, it is essential that all additions and extractions be carefully recorded. Temporary withdrawals should be indicated by insertion of "sight sheets" in the space from which the item is removed, properly identifying the item removed by means of complete file number and concise description; the withdrawal should also be recorded in a log book maintained for that purpose, including name of person making the withdrawal, date and any other pertinent data.

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b. Permanent withdrawals from files, or indefinite loans of material should be recorded on the index card (Exhibit 4); proper receipts for classified material should, of course, be required.

**EXHIBIT I. ORGANIZATION CHART OF STANDARD-SUBJECT INDEX**  
(FOR INFORMATION PERTINENT TO MILITARY HYDROLOGY)



DEPARTMENT OF THE ARMY

CORPS OF ENGINEERS

EXHIBIT 2. PRIMARY SUBDIVISIONS OF STANDARD-SUBJECT INDEX CATEGORIES  
(See Exhibit 3 for secondary subdivisions)

Index Number	Subject	See also Index Number	Index Number	Subject	See also Index Number
100 to 199	CATEGORY 1. GENERAL ADMINISTRATIVE MATTERS		500 to 599	CATEGORY 5. DRAINAGE BASIN FEATURES AND WATER REGULATION STRUCTURES: INDIVIDUAL RIVER BASINS	
	(A) OFFICE ADMINISTRATION (MOS. 101 to 149)		502	Indiv. R. B. - Drainage Basin Features: General Information	
102	Correspondence & Memoranda (Unit Admin.) . . . . .	160	504	Indiv. R. B. - Survey Controls, Vertical and Horizontal	626
106	Organization & Personnel (Unit Admin.)		506	Indiv. R. B. - Topography and Watershed Descriptions	
110	Orders & Regulation: General		508	Indiv. R. B. - Lakes and Marshes . . . . .	
114	Property, Supplies & Quarters (Unit Operations)		510	Indiv. R. B. - Land Conditions Affecting Runoff	
118	Finances (Unit Operations)		512	Indiv. R. B. - Stream Channels and Flood Plains	
122	Travel (Unit Operations)		514	Indiv. R. B. - Levees and Floodwalls	
	(B) PROGRAM ADMINISTRATION (MOS. 150-199)		516	Indiv. R. B. - Navigation Developments (Rivers and Canals)	
152	Receiving & Dispatch File (Processing of Data & Reports)		518	Indiv. R. B. - Dams, Reservoirs, & Appurtenances (Excluding Navigation Dams Covered in 516)	
156	Special Intelligence Reports (Temporary Hold File)		520	Indiv. R. B. - Land Drainage, Irrigation, & Water Supply Facilities (Excluding Dams & Reservoirs)	
160	Correspondence & Administrative Memoranda (Program Admin.) . . . . .	102	522	Indiv. R. B. - Tidal Estuaries	
164	Technical References & Data (Indexes, Procurement, etc.)		524	Indiv. R. B. - Bridges Crossing Major Streams	
168	Programming Technical Studies by Unit		600 to 699	CATEGORY 6. HYDROLOGY AND HYDROMETEOROLOGY: INDIVIDUAL RIVER BASINS	
172	Technical Studies by Unit (Drafts & Misc.)		602	Indiv. R. B. - Hydrology and Hydrometeorology: Miscellaneous Information	
200 to 299	CATEGORY 2. WATER-RESOURCE DEVELOPMENTS: GENERAL COVERAGE DOCUMENTS		604	Indiv. R. B. - Stream Gaging Stations and Records	
202	Water-Res. Dev. - Miscellaneous	104	606	Indiv. R. B. - Meteorological Stations and Records	
204	Water-Res. Dev. - General Coverage Books and Large Printed Documents, Non-Recurring . . . . .	104	608	Indiv. R. B. - Transmission of Hydrologic Data	
206	Water-Res. Dev. - General Coverage Pamphlets and Small Printed Documents, Non-Recurring . . . . .	106	610	Indiv. R. B. - Hydrometeorological Analyses	
208	Water-Res. Dev. - General Coverage Periodical Magazines and Publications. . . . .	106	612	Indiv. R. B. - Weather Forecasting	
210	Water-Res. Dev. - General Coverage Documents in Manuscript and Small Distribution Form		614	Indiv. R. B. - Hydrologic Analyses: General	
220	Water-Res. Dev. - Sources of Information and Intelligence		616	Indiv. R. B. - Snow and Ice Affecting Streamflow	
230	Water-Res. Dev. - Military Engineering		618	Indiv. R. B. - Reservoir Operations . . . . .	518
300 to 399	CATEGORY 3. SPECIAL MILITARY HYDROLOGY REPORTS AND BULLETINS		620	Indiv. R. B. - Flood Predictions	
302	Special Military Hydrology Reports: Miscellaneous	104	622	Indiv. R. B. - Water Supply (Surface Sources, Yield, Quality)	
304	Military Hydrology Research and Development Reports . . . . .	104	624	Indiv. R. B. - Ground Water	
306	Official Field Manuals and Technical Manuals . . . . .	104	626	Indiv. R. B. - Limnology (Lakes)	
308	Special Military Hydrology Reports Related to General Engineering Intelligence Activities		700 to 799	CATEGORY 7. HYDRAULICS: INDIVIDUAL RIVER BASINS	
310	Special Military Hydrology Memoranda & Bulletins Re General Engr. Intelligence Activities		702	Indiv. R. B. - Hydraulics: Miscellaneous Information	
400 to 499	CATEGORY 4. HYDROLOGY, HYDROMETEOROLOGY, AND HYDRAULICS: GENERAL		704	Indiv. R. B. - Hydraulic Functions of Stream Channels and Canals. . . . .	512
402	Hydrology, Hydrometeorology, and Hydraulics, General: Miscellaneous Information	300	706	Indiv. R. B. - Velocities of Streamflow	
404	Handbooks and Technical References on Hydrology and Hydraulics: General . . . . .	208	708	Indiv. R. B. - Water Surface Profiles of Streams	
406	Periodical Publications on Hydrology and Hydraulics: General . . . . .		710	Indiv. R. B. - Hydraulic Models	
408	Standard Forms and Computation Aids re Hydrology and Hydraulics: General		712	Indiv. R. B. - Artificial Flood Waves and Hydraulic Obstacles	
410	Instruments, Materials, & Equipment re Hydrology & Hydraulics: General Data & Instructions		714	Indiv. R. B. - Sedimentation and Erosion	
412	Stream Gaging Methods: General		716	Indiv. R. B. - Tidal Hydraulics. . . . .	522
414	Transmission of Hydrologic Data, Techniques and Procedures: General				
416	Hydrometeorology: General				
418	Limnology (Lakes): General				
420	Hydrologic Analyses: General				
422	Flood Prediction, Techniques and Procedures: General				
424	Reservoir Operations: General				
426	Water Supply: General				
428	Drainage of Lands: General				
430	River Hydraulics: General				
432	Winds, Waves, and Wind Tides (Inland Waters): General				
434	Tidal Hydraulics: General				
440	Hydraulic Structures and Hydraulic Design				
450	Hydraulic Agencies and Institutions				

DEPARTMENT OF THE ARMY EXHIBIT 3. PRIMARY AND SECONDARY SUBDIVISIONS OF STANDARD-SUBJECT INDEX CATEGORIES CORPS OF ENGINEERS

CATEGORY 1. GENERAL ADMINISTRATIVE MATTERS (Files 100 to 199)				CATEGORY 2. WATER-RESOURCE DEVELOPMENTS: GENERAL COVERAGE DOCUMENTS (Files 200 to 299)				CATEGORY 3. SPECIAL MILITARY HYDROLOGY REPORTS AND BULLETINS (Files 300 to 399)			
Index Number	Subject	Remarks	Index Number	Subject	Remarks	See also Index Number	Index Number	Subject	Remarks	See also Index Number	
102.00	(A) OFFICE ADMINISTRATION CORRESPONDENCE & ADMINISTRATIVE MEMORANDA (UNIT OPERATIONS)	Includes all correspondence and administrative memoranda pertaining to operations of the military hydrology unit involved, excluding items specifically indicated under other numbers in the 100 to 199 group; additional subdivisions (including decimal subdivisions (.02, .04, etc.)) should be made as required for convenience in separating typed correspondence, miscellaneous letters and similar material in subject groups. Note that correspondence and memoranda relating to technical studies conducted by the particular military hydrology unit are to be filed under appropriate numbers in the 100 to 199 number group.	202	WATER-RES. DEV. - MISCELLANEOUS (See Footnote)	Miscellaneous items pertinent to Category 2 that are not distinctly identifiable under any one subject number of group (200 to 299).	302	SPECIAL MILITARY HYDROLOGY REPORTS: MISCELLANEOUS (See Footnote)	Miscellaneous items pertinent to Category 3 that are not distinctly identifiable under any one subject number of group (300 to 399).			
106.00	ORGANIZATIONAL & PERSONNEL (UNIT OPERATIONS)	All matters pertaining to administrative operations of a specific military hydrology unit. Additional subdivisions of each subject should be made to conform with requirements of the particular unit.	204	WATER-RES. DEV. - GENERAL COVERAGE BOOKS AND LISTS PRINTED DOCUMENTS, NON-ENGINEERING (See Footnote)	Books, and printed documents of comparable size, that pertain to broad aspects of hydrology designed to utilize or develop water resources; does not include maps, etc., issued at regular intervals; does not include books and documents dealing with specialized technical phases of hydrology and hydraulics (see 400).	206	MILITARY HYDROLOGY RESEARCH AND DEVELOPMENT REPORTS (See project numbers and titles in lieu of supplementary index numbers)	Includes all reports prepared in final or finished manuscript form under official R & D projects.	404		
110.00	GRANTS & REGULATIONS: GENERAL		206	WATER-RES. DEV. - GENERAL COVERAGE PERIODICALS AND SMALL PRINTED DOCUMENTS, NON-ENGINEERING (See Footnote)	Subject coverage and limitations same as for File 204, the size of printed document being the distinguishing feature. (Separation of these documents from large books, etc., is for convenience in filing.)	204	OFFICIAL FIELD MANUALS AND TECHNICAL MANUALS (See official document numbers and titles in lieu of supplementary index numbers)	FW's, SW's, etc., issued in final or finished manuscript form by Military Services for general use. (May include documents intimately related to or required in connection with military hydrology assignments, regardless of technical nature.)	400		
118.00	PROPERTY, SUPPLIES & QUARTERS (UNIT OPERATIONS)		208	WATER-RES. DEV. - GENERAL COVERAGE PERIODICALS, MAGAZINES AND PUBLICATIONS (See Footnote)	All magazines, pamphlets, printed reports, etc., issued at fixed intervals (i. e., weekly, monthly, annually) that pertain to broad phases of water-resources developments and projects. (Does not include periodicals dealing primarily with technical hydrology, hydraulics, and hydrometeorology.)	406	SPECIAL MILITARY HYDROLOGY REPORTS RELATED TO GENERAL ENGINEERING INTELLIGENCE ACTIVITIES (See official document numbers and titles in lieu of supplementary index numbers)	Major reports and studies prepared by or expressly for military services for use in military planning studies or operations; applies to general analyses as well as individual river basins; pertains only to documents prepared in finished manuscript form and not to basic data and developmental studies; includes comprehensive basin studies, and analyses of artificial flooding potentialities (flood waves, anti-water barriers, drainage obstacles, induced streamflow variations); items substantially duplicating subjects shown elsewhere, should be appropriately cross-referenced in card index.	310		
119.00	PROPERTY, SUPPLIES & QUARTERS (UNIT OPERATIONS)		210	WATER-RES. DEV. - GENERAL COVERAGE DOCUMENTS IN MANUSCRIPT AND SMALL DISTRIBUTION FORM (See Footnote)	Subject coverage and limitations are generally comparable to Files 204 and 206, but File 210 is intended specifically for reports and manuscripts prepared by governmental or non-governmental agencies, private engineers, etc., for special purposes, without wide distribution.	206	SPECIAL MILITARY HYDROLOGY MEMORANDA AND BULLETINS RELATED TO GENERAL ENGINEERING INTELLIGENCE ACTIVITIES (See official titles and/or standard-subject index numbers as suffix to 310 in lieu of supplementary index numbers)	Subject coverage and limitations same as for File 308, the size and format being the distinguishing features.	308		
120.00	FINANCES (UNIT OPERATIONS)										
122.00	RECEIVING & DISPATCH FILE (PROCESSING OF DATA & REPORTS)	Relates to information handled by a military hydrology unit in the course of technical studies.									
122.00	RECEIVING & DISPATCH FILE (PROCESSING OF DATA & REPORTS)										
.02	General Information										
.04	Log of Incoming & Outgoing Data & Reports										
.06	Receipts for Classified Material										
.08	Loans of Data & Reports										
.10	Temporary Hold-File: Incoming Material										
.12	Temporary Hold-File: Outgoing Material										
136.00	SPECIAL INTELLIGENCE REPORTS (TEMPORARY HOLD FILE)	Intended primarily as an "over-night" file for safe-keeping of intelligence reports and similar data received for inspection or brief retention in unit; intelligence data intended for permanent files should be indexed and appropriately filed according to standard-subject categories 2 to 7.									
.02	General										
160.00	(B) PROGRAM ADMINISTRATION CORRESPONDENCE & ADMINISTRATIVE MEMORANDA (TECHNICAL PROGRAM)	Includes all correspondence and administrative memoranda relating to technical studies and reports prepared by the military hydrology unit involved during course of preparation. Additional file-number subdivisions should be added to meet requirements of particular units; does not include technical memoranda on specific studies (see 192).									
164.00	TECHNICAL REFERENCES & DATA (INDEXES & PRO-COVERNOPS)	Consists primarily of index cards and evaluation sheets, and miscellaneous information pertaining to acquisition and handling of reference material for studies by the military hydrology unit involved; this number is not for permanent filing of data properly classed under Categories 2 to 7.									
.02	General Information										
.04	Index Cards & Evaluation Sheets										
168.00	PROGRAMMING OF TECHNICAL STUDIES BY UNIT										
.02	General										
.04	Urgent Directives										
.06	Suspense Dates										
.08	Work Assignments										
.10	Progress Schedules										
.12	Status Reports										
192.00	TECHNICAL STUDIES BY UNIT (DRAFTS & MISCL.)	Intended primarily as a working file, to be used during course of studies; includes drafts, rough composition sheets, etc., pertaining to individual studies. Final results and organized files of data should be filed under Categories 3 through 7, as appropriate.									
.02	General										
.04	Memoranda for Record on Technical Studies										
.06	Project Bulletins by Unit										
200	WATER-RES. DEV. - MISCELLANEOUS (See Footnote)		220	WATER-RES. DEV. - SOURCES OF INFORMATION AND INVESTIGATIONS	Descriptions of information sources on water-resources development and projects which include reports such as organization, function, and scope of activity; may include government agencies, private institutions, engineer firms, contractors, and individual scientists and students; does not include specific coverage.						
			230	WATER-RES. DEV. - MILITARY ENGINEERING	Particularly Military Engineering with reference to studies and experience associated with water-resources developments or activities.						

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EXHIBIT 3. PRIMARY AND SECONDARY SUBDIVISIONS OF STANDARD-SUBJECT INDEX CATEGORIES (cont'd)

CATEGORY 4. HYDROLOGY, HYDROMETEOROLOGY, AND HYDRAULICS: GENERAL  
(Files 400 to 499)

Index Number	Subject	Remarks	See also Index Number:	Index Number	Subject	Remarks	See also Index Number:
402.00	HYDROLOGY, HYDROMETEOROLOGY, AND HYDRAULICS, GENERAL: MISCELLANEOUS INFORMATION	Misc. items pertinent to Category 4 that are not distinctively identifiable under any one subject number of the group (400 to 499).		418.00	LIMNOLOGY (LAKES): GENERAL	Information concerning the physical, chemical, meteorological, and biological conditions of lakes in general.	508 626
404.00	HANDBOOKS & TECHNICAL REFERENCES ON HYDROLOGY & HYDRAULICS: GENERAL	Refers to books, pamphlets, manuscripts, etc., published one time only (incl. revised editions), but not to periodical publications covered in 406; excludes PM's, TM's, and R & D reports prepared in final or finished manuscript form, which are filed under Category 3 (particularly 304 and 306).	204 206 300	420.00	HYDROLOGIC ANALYSES: GENERAL	Information pertaining primarily to methods and techniques suitable for general application; does not apply to detailed data related to individual river basins (see 614).	614
.02	General Information, Bibliographies, etc.			.02	General Information		
.04	Publications by Private Authors			.04	Hydrograph Analyses and Computations: General		
.06	Publications by Professional and Technical Societies			.06	Statistical Analyses of Hydrologic Data: General		
.08	Publications by Trades Organizations (Commercial Firms, etc.)			.08	Infiltration Indices: General		
.10	Publications by Non-Military Governmental Agencies			.10	Evaporation and Transpiration: General		
.12	Publications by Military Agencies			.12	Snow and Ice Affecting Streamflow: General		
406.00	PERIODICAL PUBLICATIONS ON HYDROLOGY AND HYDRAULICS: GENERAL	Excludes documents filed under Category 3	300	.14	Runoff Forecasting: General		422
.02	General Information	Refers to books, pamphlets, magazines, etc., published at regular intervals, and dealing specifically with hydrology, hydraulics, or hydrometeorology; as contrasted to those dealing with general field of engineering filed under 208.	208	422.00	FLOOD PREDICTION, TECHNIQUES AND PROCEDURES: GENERAL		620
.04	Periodicals by Private Agencies			.02	General Information		
.06	Periodicals by Professional and Technical Societies			.04	Flood Prediction Services: General		
.08	Periodicals by Trades Organizations (Commercial Firms, etc.)			.06	Flood Prediction Techniques and Procedures		
.10	Periodicals by Non-Military Governmental Agencies			424.00	RESERVOIR OPERATIONS: GENERAL		618
.12	Periodicals by Military Agencies			.02	General Information		
408.00	STANDARD FORMS AND COMPUTATION AIDS RE HYDROLOGY AND HYDRAULICS: GENERAL			.04	Reservoir Maintenance: General		
.02	General Information			.06	Reservoir Regulation Plans: General		
.04	Meteorological Forms and Aids			.08	Reservoir Regulation Reports: General	Information on methods, etc., not specifically associated with individual river basins.	520 622 624
.06	Hydrologic Forms and Aids			426.00	WATER SUPPLY: GENERAL		520
.08	Hydraulic Forms and Aids			.02	General Information		
410.00	INSTRUMENTS, MATERIALS, AND EQUIPMENT RE HYDROLOGY AND HYDRAULICS: GENERAL DATA AND INSTRUCTIONS	Applies to trades catalogs, operating and maintenance instructions, plans, bills of materials, and similar data, but not to complex analyses, and highly technical data dealing with basic methods and procedures covered elsewhere.	604 606 608	.04	Water Quality: General		
.02	General Information			.06	Water Treatment: General		
.04	Meteorological Equipment: General			428.00	DRAINAGE OF LANDS: GENERAL		520
.06	Snow Measuring Equipment: General			.02	General Information		
.08	Stream Gaging Equipment: General		412	.04	Design Criteria: General		
.10	Sediment Sampling Equipment: General			.06	Drainage Techniques and Procedures: General		
.12	Hydrologic Data Transmitting Equipment: General		414	430.00	RIVER HYDRAULICS: GENERAL	Technical information, analyses, & procedures for solving hydraulic problems in general.	700
.14	Hydrologic Equipment Specially Designed for Military Use: General			.02	General Information		
412.00	STREAM GAGING METHODS: GENERAL			.04	Stream Current Velocities & Distribution: General		
.02	General Information		430	.06	Flood Routing Techniques: General		
.04	Stream Gaging Methods & Special Computation Procedures: General			.08	Backwater Computations: General		
414.00	TRANSMISSION OF HYDROLOGIC DATA, TECHNIQUES AND PROCEDURES: GENERAL	Information concerning the transmission of meteorological data, river stage reports, etc., incl. methods for codifying data & reports for transmission in general; does not include data associated primarily with individual river basins.	608	.10	Flood Waves in Rivers and Canals: General		
.02	General Information			.12	Sedimentation and Erosion: General		
.04	Telephone Reporting Hydrologic Stations: General			.14	Hydraulic Models: General		
.06	Radio Reporting Hydrologic Stations: General			432.00	WINDS, WAVES, AND WIND TIDES (INLAND WATERS): GENERAL	Analytical principles and procedures re the formation of waves on lakes, reservoirs, estuaries, etc., in general.	626
.08	Remote Recording Hydrologic Gages: General			.02	General Information		
.10	Coding and Classification of Hydrologic Data: General			.04	Special Wind Analyses: General		
416.00	HYDROMETEOROLOGY: GENERAL	Technical information and analyses regarding weather factors affecting runoff or streamflow in general.	606 610 612 614	.06	Waves: General		
.02	General Information			.08	Wind Tides (Sea-Laps): General		
.04	Climatology: General			434.00	TIDAL HYDRAULICS: GENERAL		522 716
.06	Meteorology: General			440.00	HYDRAULIC STRUCTURES AND HYDRAULIC DESIGN	Information with wide application on hydraulic structures. Principles of design and criteria for large dams, weirs, outlets, gates and other hydraulic works.	
.08	Analyses of Storm Rainfall: General			.02	General Information		
.10	Weather Forecasting: General			.04	Hydraulic Criteria, general		
.12	Quantitative Rainfall Forecasts: General			.06	Design Principles, general		
.14	Weather Factors Affecting Snowmelt: General			.08	Structural Features, general		
450.00	HYDRAULIC AGENCIES AND INSTITUTIONS	Descriptions of government or private agencies and departments of educational institutions, which are primarily concerned with hydraulics and hydrology, to include organization, functions, and scope of present and past activities; does not include information and intelligence sources on water-resources developments (See 220)					

FOOTNOTES:  
(a) Note that all information indexed or filed under Category 4 numbers are of general application in hydrology and hydraulics: comparable data essentially associated with individual river basins should be indexed under Categories 5, 6, or 7.  
(b) Subdivisions of Nos. 404 and 406 refer to agencies rather than technical subjects for sake of convenience in filing; appropriate standard-subject "identifier" numbers should be shown on index cards to identify subject and/or items of special significance in military hydrology.

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EXHIBIT 3. PRIMARY AND SECONDARY SUBDIVISIONS OF STANDARD-SUBJECT INDEX CATEGORIES (cont'd.)

CATEGORY 5. DRAINAGE BASIN FEATURES AND WATER REGULATION STRUCTURES: INDIVIDUAL RIVER BASINS  
(Files 500 to 599)

Index Number	Subject	Remarks	See also Index Number:	Index Number	Subject	Remarks	See also Index Number:
502.00	INDIV. R. B. - DRAINAGE BASIN FEATURES: GENERAL INFORMATION	Incl. items pertinent to Category 5 that are not distinctively identifiable under any one subject number of the group (500 to 599).		514.00 .02 .04 .06	INDIV. R. B. - LEVEES AND FLOODWALLS General Information Layout Maps Cross Sections, Grades, Design Details		
504.00 .02 .04 .06	INDIV. R. B. - SURVEY CONTROLS, VERTICAL AND HORIZONTAL General Information Elevation Datums and Bench Marks Horizontal Surveys and Control Points	Refers to survey data that are important in the establishment of hydrologic stations or in making hydrologic-hydraulic studies in individual river basins.		516.00 .02 .04 .06 .08 .10 .12 .14	INDIV. R. B. - NAVIGATION DEVELOPMENTS (RIVERS AND CANALS) General Information System Plans and Operations Locks and Dams in Rivers: Details Navigation Canals and Appurtenances Harbor Facilities (Inland Waterways) Navigation Channel Markers and Aids Navigation Clearances, Vertical and Horizontal		
506.00 .02 .04 .06 .08	INDIV. R. B. - TOPOGRAPHY AND WATERSHED DESCRIPTIONS General Information Topographical Maps and Data on Watershed Drainage Area Sizes and Patterns Photographs of Terrain	Applies to all data on topography and watersheds of individual basins, not readily separable into other subject subdivisions of Category 5.		516.00 .02 .04 .06 .08 .10 .12 .14	INDIV. R. B. - DAMS, RESERVOIRS, AND APPURTENANCES (EXCLUDING NAVIGATION DAMS) General Information Dams and Appurtenances: Details Reservoirs: Details Hydroelectric Facilities Dam Failures and Destruction Protection of Dams and Appurtenances Against Enemy Action Operation & Maintenance of Dams & Reservoirs	Excludes low-head dams on navigable streams that are exclusively or primarily elements of navigation developments.	424 516 618
508.00 .02 .04 .06 .08 .10 .12 .14	INDIV. R. B. - LAKES AND MARSHES. . . . . General Information Maps and Charts of Individual Lakes and Marshes Photographs of Individual Lakes and Marshes Area-Capacity Data on Lakes Regulation Structures in Lakes Shoreline Developments (Harbors, Beaches, etc.) Drainage Features		626	520.00 .02 .04 .06 .08	INDIV. R. B. - LAND DRAINAGE, IRRIGATION, AND WATER SUPPLY FACILITIES ( EXCLUDING DAMS AND RESERVOIRS) General Information Irrigation & Drainage Canals & Appurtenances Pumping Stations and Appurtenances Water Supply Facilities		
510.00 .02 .04 .06	INDIV. R. B. - LAND CONDITIONS AFFECTING RUNOFF General Information Soil Classification and Cultural Use Vegetative Cover and Forests	Data depicting types & areal extent of soils and vegetation that are of particular importance in estimating runoff in individual river basins.		522.00 .02 .04	INDIV. R. B. - TIDAL ESTUARIES General Information Tidal Channels and Developments		
512.00 .02 .04 .06 .08 .10 .12 .14 .16 .18	INDIV. R. B. - STREAM CHANNELS & FLOOD PLAINS General Information Thalweg and Bank-line Details Cross-Sectional Details (Widths, Depths, Banks) Longitudinal Profiles and Mileage Data Geological Characteristics (Bed and Banks) Areal Extent & Configuration of Flood Plains Cultural Development of Flood Plains Military Installations in Flood Plains Trafficability Characteristics of Flood Plains			524.00 .02 .04 .06	INDIV. R. B. - BRIDGES CROSSING MAJOR STREAMS General Information Bridge Plans and Related Data Hydraulic Effects of Bridge Structures	Intended primarily for indexing data on bridges that obstruct or otherwise affect streamflow to a significant extent.	



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EXHIBIT 3. PRIMARY AND SECONDARY SUBDIVISIONS OF STANDARD-SUBJECT INDEX CATEGORIES (cont'd)

CATEGORY 6. HYDROLOGY AND HYDROMETEOROLOGY: INDIVIDUAL RIVER BASINS (Files 600 to 699)				CATEGORY 7. HYDRAULICS: INDIVIDUAL RIVER BASINS (Files 700 to 799)			
Index Number	Subject	Remarks	See also Index Number	Index Number	Subject	Remarks	See also Index Number
602.00	INDIV. R. B. - HYDROLOGY AND HYDROMETEOROLOGY: MISCELLANEOUS INFORMATION	Misc. items pertinent to Category 6 that are not distinctively identifiable under any one subject number of the group (600 to 699).	612.00	INDIV. R. B. - WEATHER FORECASTING	426	INDIV. R. B. - HYDRAULICS: MISCELLANEOUS INFORMATION	Misc. items pertinent to Category 7 that are not distinctively identifiable under any one subject number of the group (700 to 799).
604.00	INDIV. R. B. - STREAM GAGING STATIONS AND RECORDS		614.00	INDIV. R. B. - WEATHER FORECASTING: GENERAL INFORMATION	426	704.00	INDIV. R. B. - HYDRAULIC FUNCTIONS OF STREAM CHANNELS AND CANALS
.02	General Information		.02	Weather Forecasting Facilities & Procedures - Civil		.02	General Information
.04	Stream Gaging Stations (Type, Location, Operational Data, Equipment, Observers)		.04	Weather Forecasting Facilities & Procedures - Military		.04	Channel Roughness Coefficients
.06	Records of Stages Only		.06	Weather Forecasting Facilities & Procedures - Military		.06	Stage-Discharge Estimates
.08	Records of Stages and Discharges						
.10	Direct Discharge Measurements		614.00	INDIV. R. B. - HYDROLOGIC ANALYSES: GENERAL INFORMATION	420	706.00	INDIV. R. B. - VELOCITIES OF STREAMFLOW
.12	Indirect Discharge Estimates	Includes stage-discharge (rating) curves established by observations; observed velocity data.	.02	General Information		.02	General Information
.14	Special Reports on Streamflow Observations	Discharges computed by slope-area method, etc. Applies to special reports on major floods, droughts, etc., based primarily on observed data.	.04	General Basuff Characteristics of Basin		.04	Current Velocity Studies and Data
			.06	Stage and Discharge Hydrographs			
			.08	Major Floods: Details			
			.10	Infiltration Indices (Rainfall-Runoff Ratios, etc.)			
			.12	Evaporation and Transpiration			
			.14	Unit Hydrographs and Comparable Data			
			.16	Flood Frequency Estimates and Data			
			.18	Flow-Duration Curves			
			.20	Flood Criteria Used in Design of Water Control Structures			
606.00	INDIV. R. B. - METEOROLOGICAL STATIONS AND RECORDS		616.00	INDIV. R. B. - SNOW & ICE AFFECTING STREAMFLOW	420	708.00	INDIV. R. B. - WATER SURFACE PROFILES OF STREAMS
.02	General Information		.02	General Information		.02	General Information
.04	Meteorological Stations (Type, Location, Equipment, Observers)		.04	General Information		.04	Water Surface Profiles: High and Low
.06	Snow Courses & Gages (Location, Type, Equipment)		.06	River and Lake Ice		.06	High-Water Profiles and Marks
.08	Climatological Records and Summaries	Routine records and related summaries of rainfall, temperature, barometric pressure, etc. Excluding data files under 606.08.	.08	Snow-Cover Characteristics		.08	Low-Water Profiles
.10	Rainfall Data		.10	Snowmelt Dates, Quantities, etc.)		.10	Profiles of Navigable Stages
.12	Snow and Ice Data					.12	Backwater Computations
.14	Air Temperature Data (Surface)		618.00	INDIV. R. B. - RESERVOIR OPERATIONS	426	.14	Flood Routing Computations (Excluding Artificial Floods)
.16	Barometric Pressure Data (Surface)		.02	General Information			
.18	Wind Data (Surface)		.04	Reservoir Maintenance Data			
.20	Upper Air Data		.06	Reservoir Regulation Plans and Facilities			
.22	Special Meteorological Observations		.08	Reservoir Regulation Reports			
608.00	INDIV. R. B. - TRANSMISSION OF HYDROLOGIC DATA		620.00	INDIV. R. B. - FLOOD PREDICTIONS	420	710.00	INDIV. R. B. - HYDRAULIC MODELS
.02	General Information		.02	General Information		.02	General Information
.04	Codeifying Hydrologic Data		.04	Flood Prediction Services: Civil		.04	Hydraulic Models of River Channels
.06	Hydrologic Networks - Planning and Operations		.06	Flood Prediction Services: Military		.06	Hydraulic Models of Structures
.08	Headline Transmission Facilities						
.10	Radio Transmission Facilities		622.00	INDIV. R. B. - WATER SUPPLY (SURFACE SOURCES, TYPED, QUALITY)	426	712.00	INDIV. R. B. - ARTIFICIAL FLOOD WAVES AND HYDRAULIC OBSTACLES
.12	Snow Gaging and Automatic Transmission		.02	General Information		.02	General Information
			.04	Surface Sources and Yield		.04	Artificial Flood Studies: General
			.06	Water Quality and Temperature		.06	Major Flood Waves from Dam Breaching
610.00	INDIV. R. B. - HYDROMETEOROLOGICAL ANALYSES					.08	Streamflow Variations by Manipulation of Dam Control Gates
.02	General Information		624.00	INDIV. R. B. - SECOND WATER	426	.10	Still-Water Barriers and Debris Obstacles
.04	General Meteorological and Climatological Studies of Basin	Applies to analyses of weather factors affecting runoff or streamflow in individual river basins, as contrasted to routine observations listed under 606.	.02	General Information			
.06	Analyses of Major Basin Storms of Record		.04	Surface Sources and Yield			
.08	Frequency-Frequency Estimates		.06	Water Quality and Temperature			
.10	Snow-melt Analyses re Basin						
.12	Rainfall Estimates for Design of Airports, Dams, etc., in Basin		626.00	INDIV. R. B. - LIMNOLOGY (LAKES)	428	714.00	INDIV. R. B. - SEDIMENTATION AND EROSION
.14	Wind Analyses re Basin		.02	General Information		.02	General Information
.16	Temperature Analyses re Basin		.04	General		.04	Basins: General
			.06	Waves and Wind Tides		.06	Tidal Effects on River Stages

EXHIBIT 4 INDEX CARD & EVALUATION SHEET (SAMPLE)  
(See Exhibit 5 for Completion Instructions)

STANDARD SUBJECT INDEX				GEOGRAPHICAL AREA INDEX			
(a) Index No.	(b) Index Heading	(c) Hem.	(d) Cont.	(e) Theater & Sub.			
712	Artificial Flood Waves & Hydraulic Ob.	11	5	53L Pukhan R.			
(f) Cross Ref. Serial Number		(g) Identification of File Containing indexed material					
NAW 64		LF # 4, Rm. 2					
DESCRIPTION OF INDEXED ITEM	(h) TITLE OF ARTICLE, AUTHOR, DOCUMENT, PUBLISHER & ADDRESS, ITEM INDEXED DATE: "Operations at the Hwachon Dam, Korea", by Delbert M. Fowler, Capt., CE, The Mil. Engr., Soc. of Amer. Mil. Engrs., The Mills Bldg., Penn. Av., 17th St., N.W., Washington 6, D.C., Jan.-Feb. 1952 Vol. XLIV, No. 297, pp 7-8						
	(i) Language	(j) Form	(k) Dimensions	(l) No. Pages	(m) Sep. Incl.	(n) Security	
	English	Magazine	8.5x11x.25	2	None	Unc.	
(c) REPOSITORIES: Washington District Library 623.05, 1-2/52 1st & Douglas St. N. W., Washington, D. C.							
CONTENTS	(p) Standard-Subj. No.	518.04	518.06	518.10	518.12	706	712.08
	(q) Quality Evaluation	B	B	B	B	B	B
	(r) Standard-Subj. No.						
	(s) Quality Evaluation						
ITEM REF.	(r) ABSTRACTS & COMMENTS						
Gen.	Describes artificial flood on 9 April 1951 caused by enemy operating spillway gates on Hwachon Dam, Pukhan R., Korea; summarizes effects.						
518.04 518.06	Hwachon res. surface 13 sq. mi.; cap. 436,000 acre-ft; concrete-gravity dam 275 ft. high; spillway 826 ft. w/18 crest gates 32 ft. high; four pictures of dam.						
518.10	In May UN Air Force damaged gates Nos. 1, 9 and 12 by torpedoes; in June dam was captured by UN and gates 1, 9, 10, 13 and 14 were removed.						
706	Artificial flood velocities 7.5 to 12.5 ft/sec at floating bridge sites below dam.						
712.08	Flood wave and debris broke log boom and damaged bridge; observed 1 1/2 ft stage rise in 10 min, 5 1/2 ft in hour, with max 7 feet, about 30 miles downstream from dam.						
(s) ANALYSIS BY: Military Hydrology R&D Branch Washington District, Corps of Engineers, Washington, D. C.							
						DATE OF ANALYSIS 15 June 1954	

EXHIBIT 5. INSTRUCTIONS FOR COMPLETION OF INDEX CARD & EVALUATION SHEET

<u>Item of Exhibit 4</u>	<u>Instruction</u>
(a)	Fill in standard-subject under which the index card and the item indexed will be filed; also show in lower block the cross reference no., if any, under which same item is also card indexed (See Par. 24 of Bulletin).
(b)	List standard-subject heading corresponding exactly to index number shown in (a); abbreviate, if required.
(c) to (e)	Fill in hemisphere, continent and theater subdivision numbers, respectively, if applicable, according to instructions contained in Chapter III of Bulletin; under (e), Theater & Sub; include designation of river basin, if appropriate.
(f)	When item is filed, insert assigned serial number in space (f) as explained in Chapter IV of Bulletin.
(g)	When item is filed, insert in space (g) the number and/or other designation of the file cabinet, book shelf, map file, storage box or other container in which item is placed.
(h)	Fill in according to the appropriate standard format illustrated in Exhibit 4. Title in a foreign language should be followed by English translation in parenthesis.
(i)	Indicate language or languages used in item indexed; if article has been translated from another language, so indicate.
(j)	Indicate general nature of item indexed (e.g., book, pamphlet, bulletin, magazine, map, etc.)
(k)	Approximate size (e.g., length, width, thickness in inches).
(l)	List approximate number of pages in main volume of indexed item, including all illustrations contained as an integral part thereof.
(m)	List number of appendices, maps, charts, tabulations that are essential part of indexed item but not physically attached thereto.
(n)	Indicate security classification of item indexed (viz unclassified, confidential, secret or higher).

EXHIBIT 5 (CONT)

Item of  
Exhibit 4

Instruction

- (o) List at least one "repository" (library, public or private agency, publisher, etc.) where copy of indexed item might be secured or information obtained regarding its acquisition. Include the repository file number, if known.
- (p) List standard-subject numbers that identify specific items or classes of information contained in the indexed item that are believed to be of special significance and value in connection with military hydrology. (See Chapter II of Bulletin).
- (q) Place a quality evaluation rating on line (q) underneath each standard-subject number listed on line (p), prefixed with letter "T" if rating is based on reasonably detailed technical review of specific item (e.g., "TA") or no prefix if rating is based on general inspection only (e.g., "A", "B", etc.). Use following evaluation code, and rate on basis of appraised importance to solution of problems in military hydrology:
- A = Extraordinary value probable
  - B = Routine value probable
  - C = Potential value not well-defined
  - D = Already sufficiently known
  - E = No important value apparent
- (r) Present concise abstract (in English) of item indexed, or pertinent comments on nature and important details of individual items identified by standard-subject numbers on line (p). Use supplemental sheets if required.
- (s) Give official address of office or individual responsible for preparation of index and evaluation sheet, and show date completed.

CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY

GEOGRAPHICAL AREA INDEX

Table with columns: 1 WORLD, 2 AFRICA, 3 ANTARCTICA, 4 ARCTIC REGIONS, 5 ASIA, 6 EUROPE, 7 LATIN AMERICA, 8 NORTH AMERICA, 9 PACIFIC. Each column lists geographical areas with corresponding map grid coordinates.

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