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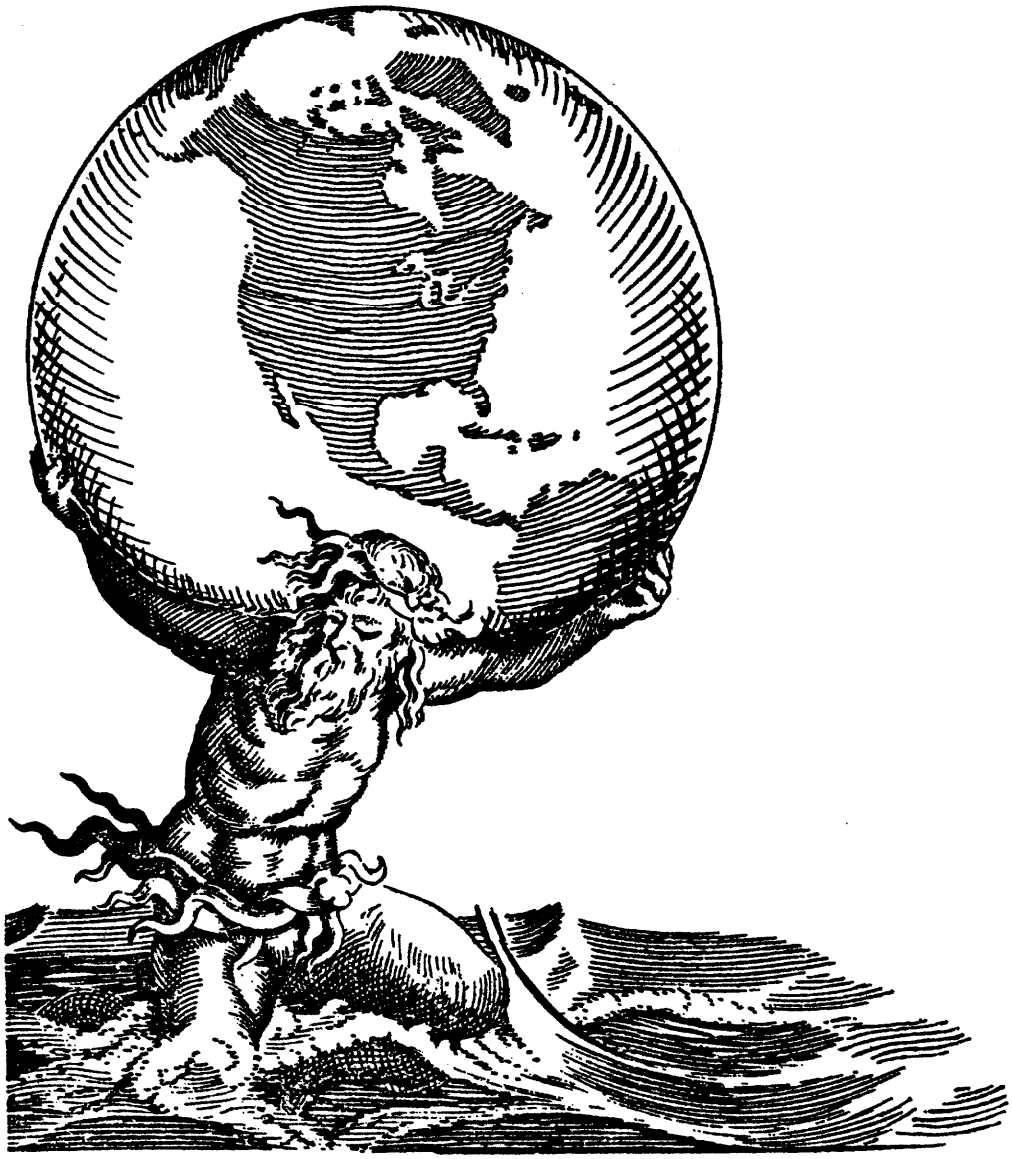

Western Association of Map Libraries

"... to encourage high standards in every phase of organization and administration of map libraries..."

Western Association of Map Libraries

Volume 23 Number 3 — *Information Bulletin* — June 1992

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FROM THE EDITOR

As I put this issue together, I'm looking forward to the WAML meeting in Chico at the end of April (which gives you some idea of the lead time required to put the IB together!), and looking even farther ahead to the November WAML meeting in Hawaii - I hope to meet with as many as possible of you at both. And the only other point I have to bring up is the following from the February 1992 *Geotimes* - for your amusement, and to show you that every discipline has its own doubletalk:

The Text:
What is actually being said:

It has long been known that..
I think I read this somewhere

To present a comprehensive overview..
Let's ignore the details.

The timing of the last interglacial period and its relation to orbital forcing is disputed.
I'm not sure what I think, either.

Correlation with the predicted curve is excellent.
... fair.
.. good
... poor.
.. satisfactory
... doubtful.
.. fair
... imaginary.
.. as good as could be expected.
... non-existent.

(there's more - all just as funny - see p. 67 of that issue for the full effect!)

§

The schedule for
WAMLs 25th Anniversary Meeting
in Hawaii
appears on page 227

Conservation of Cartographic Materials

by

James B. Rhoads
Director, Graduate Program in Archives and Records Management
Western Washington University, Bellingham, Washington

Presented at the WAML Fall Conference, September 19, 1991

Perhaps it would be well for me to begin this presentation by declaring what I am not. I am not a conservator. I am not a paper chemist. I am not a cartographer. In the course of my discussion I fear I shall give you ample proof of all of these caveats. And I am not even a map librarian, although at one time I held a job that was similar in many respects.

My talk this morning will contain elements of a personal narrative and it will, in part, be retrospective. Early in my career at the National Archives, I secured a position as a junior archivist in what was then called the Cartographic Records Branch. This was the unit having custody of all maps and related materials created by Federal government agencies that had been formally appraised as being of permanent value. At that time, in the mid 1950s, the branch had custody of about one million maps.

I came to be responsible for appraising, arranging, describing, and providing reference service on maps created by the old War Department, the State Department, and the Interior Department, among others. This meant that the most interesting and active collections in my care were those of the Army Corps of Engineers, which included both maps and plans of fortifications and military posts, and the Bureau of Indian Affairs. Most of these were manuscript maps, many of them created by famous military officers and important explorers of the American West. Some were real works of art. Many of them were more than a century old and some, because of extensive and careless use long before they came into National Archives custody, were damaged or in fragile condition. Because they were popular with researchers, some of them continued to suffer through heavy use in spite of our best efforts to protect them.

An archivist, like a librarian, has two functions that are inherently in conflict: protection and conservation of valuable information sources; and encouraging the use of those resources. If anything, this conflict is more acute for the archivist, because he or she is usually dealing with unique, one-of-a-kind items, while the librarian is often able to replace from other sources a published item that is lost or damaged. So conservation and repair of our holdings was a very serious and important problem for us.

In the Cartographic Records Branch of the National Archives in the mid-fifties, none of the staff was formally trained in map conservation and repair. However, we learned early on which treatments were most appropriate under varying circumstances so that we could prescribe the treatment to be given our maps in the preservation services laboratory which served the entire National Archives. Occasionally the technicians in the lab would suggest an alternative approach, and we usually listened respectfully, but in the end what we insisted upon was done. We, after all, were professional archivists and the people in the lab were simply technicians.

When we, the professional archivists, received a new accession of maps, there were several things we normally did. If the maps were flat, we placed them in buffered kraft paper folders, about fifteen or twenty in each folder, labeled the folders, and placed them in horizontal map case drawers, usually about three inches deep. This was a very efficient form of storage, because one could often get several hundred maps in just one drawer. If one were strong enough to securely attach the dust covers, this also aided in compaction and creating even greater storage capacity.

The only problem was that whenever a researcher wanted to see a map, it was invariably in the bottom folder, and we had a devil of a time getting it out in one piece, and putting it back.

As time permitted, we would stamp the backs of the individual maps with a stamp about three by four inches and with blue pencil write in the individual map number. The stamp-pad ink, we were assured, was of a special kind that would not harm the maps. Unfortunately, some maps were created on thin or porous paper, and others on semi-transparent map cloth. The show-through didn't look very well, but we were, after all, taking the important security measure of individual map identification.

During the course of this process we identified and laid aside those maps that were seriously damaged or especially fragile. We also laid aside any maps too large to be filed flat in our map cases. These we scheduled to go to the preservation services lab - the damaged maps to be laminated, and the oversize ones to be cut, and perhaps laminated as well.

When we encountered rolled maps, and this was not an infrequent occurrence, we first attempted to flatten them by unrolling them and placing them under weights. If they were too stubborn, or if they cracked, they were sent to the lab, as well, for humidification, flattening under laboratory conditions, and perhaps lamination.

Thermoplastic lamination, as a conservation measure, had been pioneered on a large scale by the National Archives shortly after its establishment in the mid-1930s. Simply described, it involved placing a document between two sheets of cellulose acetate foil, and applying sufficient heat and pressure so that the three layers of material were fused. This provide the document with a protective surface and took care of tears and fraying edges. When an oversize document such as a map was laminated, any existing cloth backing was carefully removed, and a new cloth backing applied. Occasionally, the National Archives' laminating presses overheated, and the finished product would emerge with a healthy tan. We professional archivists said that such items were "cooked."

I should mention that by the 1950s the chief manufacturer of laminating presses, William J. Barrow of Richmond, Virginia, was advocating that before laminating a document it should always be deacidified, by immersion in an alkaline bath. For some reason, few of the documents emerging from his presses were "cooked." This coincidence apparently escaped the notice of those who controlled the lamination process at the National Archives, and for some years to come we did our lamination the old-fashioned way - without deacidification.

In spite of what I have said, the people in the preservation services laboratory did not deserve to be held up to ridicule. There were some wonderfully skilled technicians there who could take a map that had disintegrated into literally hundreds of fragments and painstakingly reassemble it so that it could be laminated and made useable once again. The guy with the long fingernails, I forget his name for the moment, was one of the best. And deacidification was not a proven process, as I understand it, at that time. Sometimes inks are not fast, and will run when dampened. Also, routinely performing an additional conservation process takes time. Time is money, and with a limited conservation budget the National Archives would not have been able to laminate as many items with deacidification as without.

Needless to say, this rationale did not survive indefinitely. Within a few years, deacidification became a standard part of the lamination process, and not long after that, lamination itself began to be questioned as the conservation method of choice.

The fact is that conservation in both archives and libraries has experienced revolutionary change in the thirty-five years since I left the Cartographic Records Branch. Today, so much more is known about the causes of degradation in paper and other recording materials. New conservation and repair methods and materials have become available. A new generation of conservators has been trained, although there are still far too few of these valuable professionals. New conservation approaches have been accepted, focusing not so much on individual document repair and treatment, and more on what might be called preventive medicine. Here I am referring to conservation management concepts, and promoting good storage conditions for all of an institution's holdings, with emphasis on a benign environment and acid-free storage containers and enclosures.

These advances, of course, must be balanced against the problem of a veritable explosion of new record media, particularly electronic media, many of which are inherently short-lived or whose durability qualities are not yet knovn. Nevertheless, librarians and archivists are far more knowledgeable and aware of conservation problems and needs than they were a

generation ago, and institutional funding sources are beginning to respond with more generous allocations to meet what is coming to be perceived as an urgent and universal problem.

Earlier this summer I spent a few days in the Washington, D.C. area, and, because I was beginning to think about the content of my remarks here this morning, I decided to revisit the Cartographic Records Branch to learn first-hand something about what had changed on the conservation front since my own days there.

First of all, I should note that this unit has a new title, the Cartographic and Architectural Branch, in recognition of greatly expanded holdings of architectural drawings. In fact, its holdings now include over eleven million maps, charts, aerial photographs, architectural drawings, patents, and ship plans.

Furthermore, it is no longer located in the National Archives Building in downtown Washington. During my time as Archivist of the United States, it was determined that the Cartographic Records Branch occupied all of the available floor space in the building that had sufficiently high floor-load ratings to accommodate heavy map cases, and that any future expansion would have to be in another facility. At about this time we learned that the Geography and Map Division of the Library of Congress, located in a renovated warehouse in Alexandria, Virginia, would soon be vacating those quarters to move into its new home in the James Madison Building on Capitol Hill. The National Archives thereupon assumed the lease of the Alexandria warehouse, and subsequently moved into it not only its Cartographic Records Branch, but also the well-known papers and tapes of the Nixon administration. These quarters proved to be quite satisfactory in most respects, but they did create an inconvenience for researchers using both maps and the textual records located in the National Archives Building.

The move of the cartographic records to Alexandria was symptomatic of a larger problem that had been growing in severity for a number of years, namely, that the National Archives Building was chock full. To make a long story short, approval has been obtained for a new, additional archives building, to be located on the campus of the University of Maryland in suburban College Park. Construction is well under way, and occupancy is scheduled for 1993. Known informally as Archives II, it will be the largest archives building in the world, with 1.7 million square feet of floor space. Its design, construction, and equipment will all be state-of-the-art.

All of the holdings of the Cartographic and Architectural Branch will be relocated to Archives II, so my visit this summer came in the midst of an intense period of planning. This planning was not limited to the logistics of the move itself, which are currently the focus of attention. It extended back to the design of storage areas and research rooms, and included testing and selecting various kinds of equipment, including storage units. Because the branch now possesses so many kinds of physical media, several different kinds of environments are needed in its storage areas. In addition to air filtration, which will operate throughout the structure, there is great concern to house materials in environments having optimum temperature and humidity levels. Accordingly, paper-based maps will be stored in areas with a temperature of seventy degrees Fahrenheit, plus or minus two degrees, and a relative humidity of forty-five percent, plus or minus five percent. Color aerial film will be stored at twenty-five degrees, plus or minus two degrees, and a relative humidity of 30 percent, plus or minus 3 percent. Other photographic materials, including black-and-white aerial photography, will be located in areas maintained at sixty-five degrees, plus or minus two degrees, and a relative humidity of thirty-five percent, plus or minus three percent.

As you can well imagine, a great deal of this planning has had conservation implications, and has to some degree already affected current conservation practices. It is these, the current practices, that I should nov like to address. Contrast them, if you will, with the practices of the mid-1950s that I described a bit earlier.

Today, the treatment of choice for fragile maps is not lamination, but encapsulation. As you all probably know, this involves placing a map between two sheets of Mylar and sealing the edges. The map is thus protected without subjecting it to the possibly harmful effects of heat and pressure. Initially, a double-sided tape was used as the sealant, but now an ultrasonic welder is used in most instances. In almost all cases, the map is deacidified prior to encapsulation, through use of a methyl magnesium carbonate spray.

Except in very unusual circumstances, lamination has been abandoned; it is occasionally used to hold fragmented documents together until they can be

filmed. A generally preferred approach is to attach the fragments to Japanese tissue with wheat starch, and then to encapsulate the whole. Occasionally, cloth or paper backing is applied to a fragile map before encapsulation.

I should mention at this point that the Cartographic and Architectural Branch now has its own dedicated conservation laboratory, staffed by skilled professional conservators, and equipped to deal with the whole range of map conservation problems. It should also be said that there is much greater concern today than was evident in the 1950s for the esthetics of cartographic conservation; it is more in line with the conservation of works of art, which, indeed, many manuscript maps are. Oversize maps, I must assure you, are no longer cut. Rather, they are wrapped around acid-free paper tubes, and protected by an exterior wrap of acid-free paper.

I was interested to learn, parenthetically, that maps laminated in the 1950s have generally held up well, especially smaller items that have not been subjected to heavy use. Large maps that have been heavily used have fared less well. Such items, still laminated, are often now encapsulated in heavy, 4-mil Mylar.

Most new accessions these days require a substantial amount of flattening and refoldering. The kraft paper folders of my day have given way long since to non-acidic Permalife folders.

Archivists have long considered microphotography as an important conservation tool. It is a relatively inexpensive way to save the informational content of documents that have no intrinsic value, as well as to reduce storage requirements. Accordingly, there has been some experimentation with 105-mm film as a means of map conservation, but it has not been implemented on a large scale. One of the dilemmas is that when maps bear significant colors they are lost on black-and-white film. The dyes in most commercially available color films are fugitive, and will fade or change color in a relatively short span of time unless they are stored to very exacting standards, i.e., frozen. The Canadian National Archives has used Cibachrome in some situations. This film involves a dye-transfer process as opposed to the layered film found in Kodak products. Unfortunately, the processing of Cibachrome is sensitive, difficult, and expensive.

As I mentioned earlier, much thought has gone into the plans for Archives II, in order to create an environment there which will slow down the degradation of paper and other recording media, and to ensure that equipment for storing, transporting, and using the maps is gentle and as hazard-free as possible. The new building will contain storage space for about 70,000 cubic feet of maps, plans, and aerial photographs. In order to achieve maximum efficiency of storage, the new equipment to be procured for the Cartographic and Architectural Branch will be of the compact, moveable variety. All map drawers will be shallow, and at least a part of the new map cases will be wider than those now in use, sixty-four inches versus the present fifty-five inches. There will also be some hanging cases for especially large items. Much of the branch's present equipment inventory will be transferred to Archives II and it, too, will be installed on specially designed moveable mechanisms.

The conservators are concerned about the so-called "off-gassing" that emanates from wooden, rubber-tired map carts that are used to bring maps from the storage areas to the research room. These essential items of equipment are due to be replaced by carts fabricated from other, less problematic materials. The new research room will be equipped with 6'x6' tables, also presumably constructed from benign materials.

Chemists have expressed concern about the oil-based enamels now used for metal map cases. So new coatings, perhaps some form of vinyl, may be the wave of the future in map storage equipment.

As my visit drew to a close, one more conservation problem, as yet largely unaddressed, was mentioned - the conservation of digital data. Much effort is being expended by archivists on the problem of long-term preservation of electronic records and information, and this work certainly promises to benefit the map archives and libraries of the future. But there are unique problems with Geographical Information Systems (GIS). At what point or points, for example, should data be taken out of a GIS for permanent archival purposes?

We didn't get into an in-depth discussion of this and related questions, but the fact that they are being asked suggests that the evolution of map-conservation processes and concerns is far from over. It also suggests that the career of the map librarian and the cartographic archivist are certain to be fraught with both challenges and rewards.

I should be grateful if you would allow me to conclude on a personal note. Since I left the Cartographic Records Branch in the late 1950s, I have been responsible for other kinds of archival materials, have been in administrative and managerial positions, have had a consulting business, and eventually entered the halls of academe. All of these experiences have been rewarding and valuable. But if I could go back to the job that really fascinated me, the one I really loved, you would find me in the old Cartographic Records Branch of the National Archives. Except for the pay, the rewards there tremendous. So believe me when I say that I feel at home with you this morning.

§

PRESERVATION NEWS

From *Computerization Project of the Archivo General de Indias, Seville, Spain : a report to the Commission on Preservation and Access*, by Hans Rütimann and M. Stuart Lynn, March 1992 (get your own copy of the report from the Commission at 1400 16th Street, N.W., Suite 740, Washington, D.C. 20036-2217; 202/939-3400; fax 202/939-3407): 7,000 maps and blueprints (from Spain's four hundred years in power in the Americas) are part of this massive project (45,000,000 documents!). From p. 4, "All materials in color, primarily maps, are first microfilmed by a service bureau in Madrid using Cibachrome. Then the fiche is digitized and, upon request, prints are produced off the fiche. According to Pedro González, the color quality of the prints is still unsatisfactory, and he hopes to improve on it. As a side-product of the scanning process, then, a valuable color microfiche collection becomes available. A print service is planned for both the bibliographic information and images."
NOTE: This is a new address and telephone number for the Center.

Wonderful though Post-Its (TM) are, the adhesive on them can cause staining and permanent damage, since they are designed for short-term use on items one doesn't intend to have around for very long. The adhesive hardens after about a month or so, and leaves a film that becomes acidic (From *C&RL News*, 2/92, p. 125).

The lead article in the Winter 1992 issue (v. 4, no. 1) of *News, Northeast Document Conservation Center* (100 Brickstone Square, Andover MA 01810) is, "Big is Beautiful: Treatment of Oversized Objects," by Mary Todd Glaser, Director of Paper Conservation. If it's ever bogled your mind as to how large, frail, rare old maps can be treated to preserve them, read this article - it's fascinating.

From *OCLC Pacific Network News Update* #70:31-32: CD-ROMs have their data digitally encoded onto aluminum embedded in plastic. Recent statements by the U.S. National Archives and Records Administration have set the expected lifespan of an aluminum CD at 3-5 years. Ken Thibodeau of the National Archives stated that the aluminum is vulnerable to oxidation; oxygen permeates the plastic coating around the aluminum, and then the aluminum oxidizes and breaks down. Oxidation begins during the manufacturing process itself because there is no attempt to evacuate the air between the aluminum and the plastic coating; preventing air from being introduced during manufacture is cost-prohibitive. The only coating presently available that could possibly protect against oxidation is glass, which has other problems, e.g., breakage.

How about some more bad news? From *Directory, information sources on scientific research related to the preservation of books, paper, and adhesives*, section 18 on preservation (a report from the Commission mentioned above; 1991), p. 23: Under accelerated aging conditions at a high temperature and high relative humidity (90°C and 50% RH), we have observed that acidic paper ages faster when it is isolated from the environment, as for example, when paper is sealed within a polyester envelope. ... However, alkaline paper does not age any faster inside an air-tight envelope. The adverse effect of containment on acid paper can be nullified either by deacidifying it, or by inserting a sheet of alkaline paper in contact with it.

Hermon Dunlap Smith Center assistant director James Akerman and the Newberry Library's Curator of Local and Family History David Thackery have recently concluded a two-year state-funded project dedicated to the preservation of selected copies of nineteenth- and early twentieth-century landownership atlases of Illinois counties. Through this project, about 180 atlases representing almost every county in the state, drawn from small and large public libraries, historical societies, and major institutional libraries received conservation treatment.

This treatment included minor repairs, cleaning, deacidification, encapsulation, and sturdy rebinding. In all, Akerman and Thackery visited over 200 libraries and examined over 2,000 atlases. Along the way they gathered holding information which they have included in bibliography and union list of Illinois landownership maps and atlases (to 1930) co-edited by Michael Conzen, Professor of Geography at the University of Chicago. This bibliography/union list is to be published by the Illinois Cooperative Collective Management Coordinating Committee in 1992.

Cataloging News

Sometime in 1992, 500 map records, of maps in the United Nations' Dag Hammarskjold Library, will be loaded onto RLIN (*ALCTS newsletter* 3(2):12).

Common Sense — *continued from page 173*

very good chance of being much better than it has been in the past. No matter what LC might end up doing, it would be well advised to keep in mind Sheila Intner's wise dictum:

> Perhaps we should go back to what ought to be the basis for all subject heading principles: Observations about the search behavior and expectations of subject heading users (4).

When, over two hundred years ago, the other Thomas Paine wrote his treatise on common sense, it intellectually facilitated the course of the American Revolution and the establishment of the world's greatest nation. It is hoped that an abundance of common sense will inspire LC in its planning for the future. The use of common sense will substantially aid the flow of the present subject-cataloging revolution and quite possibly reshape LC from the world's most important subject access system into the world's undisputedly greatest.

NOTES

1. For more on this letter, see: Studwell, William. 1991. "Somethings going on at LC, or, A code by any other name would still be a code." *Technicalities* 11(7):10-11.
2. For more on this letter, see: Studwell, William E. 1992. "LC's full plate: a time for decision-making about LC subject headings." *Technicalities* 12(4).
3. For details on the conference and its recommendations, see: *ALCTS newsletter* 2(8):84-86, 1991.
4. Intner, Sheila. 1988. "AACR: The American Cataloging Rules (Part 1)." *Technicalities* 8(7):7.

CARTOBIBLIOGRAPHY: Purpose and Rationale

by

Anne O'Donnell

[Research Paper for a Map Librarianship class taught by Stan Stevens at San Jose State University Division of Library & Information Science. August 1991]

Maps can be intimidating. How many of us, when lost on the road, would rather pull into the nearest gas station to ask directions of a total stranger, with unproved knowledge of local roads, than unfold and consult the map in the glove compartment? And how often has a student chosen to tackle a tedious volume of population statistics rather than ask the map librarian for a map with the same information, graphically presented? More distressing, how many general reference librarians fail, at appropriate times, to refer patrons to the map room? In the library or anywhere else, maps are too often neglected as resources.

Even people who love maps and devote their careers to the collection, organization and dissemination of them admit maps are "difficult objects to catalogue, store, conserve, and service" (Robert Karrow, ed., *Checklist of printed maps of the Middle West to 1900*; Boston: G.K. Hall, 1981-1983; vii). The obvious question for the map librarian is how to overcome the inclination of library patrons to ignore maps in favor of any other alternative in cases when a map is, in fact, the best choice. One answer to this question is the cartobibliography.

In this paper I shall discuss the purpose and rationale of cartobibliography. The terms "purpose" and "rationale" are inextricably linked; the difference between them is subtle but significant. In my discussion, "purpose" refers to the objective one seeks to attain; "rationale," defined by Webster's as "an explanation of controlling principles of opinion, belief, practice or phenomena," refers not only to the reasoning behind one's purpose but also to one's opinion of the best way to attain one's objective (or purpose). In the case of cartobibliography, rationale depends on purpose. After a brief discussion of the history of bibliography and cartobibliography, I shall examine the different purposes for which cartobibliographies have been developed, and then look at the different rationales behind them.

History

Although one can only speculate on the exact origins of bibliography, some scholars believe that it may have preceded the invention of printing (Barbara Hale, *Subject bibliography of the social sciences and humanities*, 1st ed.; Osford: Pergamon, 1970; 4). Ninth-century bibliographies describe books with maps; the sixteenth century produced catalogs of map dealers (Wolf, "Cartobibliography," 29). Although Herbert George Fordham first coined the term "cartobibliographical description" in 1914 (Coolie Verner, "Carto-Bibliography," Western Association of Map Libraries *Information bulletin* 7(2)31-37, 1976; 31), cartobibliography as we know it today has existed for less than two hundred years (Wolf, Eric W. "Cartobibliography, whither and why." Special Libraries Association, Geography & Map Division *Bulletin* 144: 29). Publication of cartobibliographies has increased dramatically in the last fifty years; as Eric W. Wolf tells us, "More cartobibliographies have been published since World War II than in all the preceding centuries" (Ibid.).

Although cartobibliographies, not surprisingly, have much in common with bibliographies, the two differ to some extent. The difference results from the fact that information in maps is much more highly concentrated than information in books. Wolf observes that because maps are so "information intensive" - combining numbers, graphics and text - they require much more time, space and effort to describe bibliographically. In addition, continues Wolf:

> maps are part of an evolutionary process; they are a part of history and cannot, in general, be described satisfactorily in isolation. They must be related to their sources, their derivatives, and to the events and personalities involved. In addition, it is often necessary to consider related technical and economic developments (paper, printing, watermarks, methods and costs of production, the map trade). The relationship of maps to other maps is much closer than it is for books. (Wolf, 28).

One result of these characteristics of maps is that cartobibliographies are more expensive to produce than bibliographies (Ibid., 29).

Purpose

The ultimate purpose, arguably, of any cartobibliography, is twofold, to increase use of and appreciation for maps both as sources of information, and as historical documents. But the lofty and ideal ultimate purpose of cartobibliography finds its fulfillment in the practical projects - each with its own specific purpose - that are the heart of cartobibliography. Wolf divides cartobibliographies into a few broad categories, which:

> reflect the purpose they are intended to serve. These are: holdings of an institution or an individual; maps of a particular theme, subject, area, period, author, or publisher; exhibition catalogs; and union lists. (Wolf, 30).

Another purpose closely related to the ultimate purpose of cartobibliographies is to achieve cartobibliographic control or "effective access to sources of information" (William Katz, *Introduction to reference work*, 4th ed.; New York: McGraw-Hill, 1982- ; 58). Establishing bibliographic control of maps, especially older maps, is frequently difficult. Older maps are often missing from indexes; printing and publishing information on maps is often confusing or missing altogether; and incorrect or confusing cataloging and classification practices often make maps difficult to find within a collection.

Riley Moffat notes that the largest producer of maps in the United States, the United States Geological Survey:

> has left some gaps in maintaining bibliographic control of its voluminous production of maps. A major gap in my experience was that the Survey allowed out-of-print topographic quadrangles to drop off their state map indexes. (Peter Stark, *A Cartobibliography of separately published U.S. Geological Survey special maps and river surveys*; Santa Cruz: WAML, 1989, ix).

Moffat corrects this problem in his *Map index to topographic quadrangles of the United States, 1882-1940.*

Another problem cartobibliographers seek to correct is missing or confusing information about the printing and publishing history of a map. Peter L. Stark kept this objective in mind when compiling his *A cartobibliography of separately published U.S. Geological Survey special maps and river surveys*:

> Sadly, many sources consulted for citations have not expressed map dates consistently. One source uses the survey date, another the edition date, a third, the reprinting date. (Stark, xviii)

In compiling their "Compiling the Bibliography of Milwaukee city maps, 1836-1935" (Special Libraries Association Geography and Map Division *Bulletin* 159:2-8, 1990), Carl Baehr and Mary Turk encountered the same problem; of the 167 maps included in their bibliography:

> 43, or 26%, had publication or copyright years different from the years represented in map titles, or lacked one or both of these dates entirely. (Baehr/Turk, 5).

Incorrect dating of maps precludes the fulfillment of two other functions of cartobibliography as described by Coolie Verner: the authentication of maps as valid historical documents; and the development of the history of map printing (Verner, 32-33).

Another function of cartobibliography has to do with the establishment of responsibility for cataloging purposes. Baehr and Turk encountered much confusion about statements of responsibility when tracking down maps for their cartobibliography:

> Twenty-six percent of the maps studied ascribed solo responsibility to the publisher, without mention of an author or compiler.... Approximately 20% of the maps studied included the name of an engraver or lithogra-

pher in addition to a publisher statement, creating further room for confusion. In one such case, a map produced by a prominent publisher/author was assigned a call number cuttered instead for the name of the engraver, thus physically separating the map from other versions and editions. (Baehr and Turk, 5).

Rationale

Is a cartobibliography simply a list of maps, or is it more than that? Wolf argues that cartobibliographies should be much more than lists:

> a cartobibliography should be a window through which the reader learns all that is known, all there is to know, and all that is not known about the maps described. It should inform, arouse interest, and give direction for further study. (Wolf, 31).

Wolf also notes the importance of commentary in the ideal cartobibliography:

> Cartobibliographies that are strong on description and weak on commentary are plentiful. They include a vast number of catalogues and lists of holdings. To a large extent, these are management tools. When they catalogue the holdings of an individual, they can also be ego trips. Their principal usefulness is that they make us aware of the existence of maps we might not otherwise have known about, they tell us where they are located, and they help us identify maps. But they do not, by themselves, increase our knowledge about maps. They do not display the significance of their wares. (Ibid.).

Baehr and Turk also note the importance of annotation in cartobibliographies (Baehr and Turk, 2-3).

On the other hand, those cartobibliographers who focus on providing indexes, catalogs and union lists have a purpose that is perhaps less grand but certainly no less useful than Wolf's ideal; their rationale is that one cannot begin to know "all there is to know" about a map if one does not know that it exists in the first place.

Because of the differing rationales and purposes behind cartobibliography, applying a standard cataloging format has been difficult. Baehr and Turk, in deciding on an entry format for their bibliography of Milwaukee city maps, reviewed other similar cartobibliographies and found that they, "provided little insight, as entry format differed from publication to publication" (Baehr and Turk, 6). In 1976, Coolie Verner expressed the hope that "new rules for cataloging will be developed as carto-bibliographical description becomes more universally employed" (Verner, 32). Verner's hope seems to have been answered in *Anglo-American cataloging rules* (2d ed., rev.), but it is too soon to tell whether cartobibliographers will embrace it. Baehr and Turk eventually settled on AACR2 but noted that the format required some "adjustments" (Baehr and Turk, 6). Stark used his own eight-item citation format; Moffat used a graphic-index format; and Karrow, whose checklist was well under way when AACR2 appeared, employed a manual based on AACR1 with revisions from the International Standard Bibliographic Description. Wolf attributes "enormous differences in style, format, and the depth and breadth of coverage among cartobibliographies" to not only the large amount of information presented in a map:

> but even more so the close relationships of maps to non-cartographic elements (history, events, people), [that] make the compiling of a cartobibliography a very personal undertaking - one that makes it difficult to adhere to a rigid and limiting format. (Wolf, 30).

Conclusion

Maps, although bibliographically and physically awkward, present valuable information in much more concentrated form than books. Cartobibliographies, reflecting the complexity of maps, come in many varieties, depending on the purposes and rationales behind them. The purposes of cartobibliographies range from a simple list of the holdings of a particular collection to descriptive and heavily annotated attempts to present the reader with everything that is known about a group of maps. Finding a standard bibliographical format for cartobibliographies has not been easy due to the diverse purposes of cartobibliographies; it remains to be seen whether *AACR2* will be accepted as a standard among cartobibliographers. In the future, librarians and cartobibliographers will be wise to consider the consequences of adopting any strict standard regarding cataloging or any other aspect of cartobibliography. Such a standard might stifle the rich diversity that currently exists in the field of cartobibliography.

Map Libraries and the Possible Collapse of the Cataloging Process

by

William Studwell
Northern Illinois University, DeKalb IL

In the first of several articles on the problem (1), this author alerted the library community to the possible implosion, collapse, or disintegration of the cataloging function. Since then, several other catalogers have expressed strong agreement with and support for this observation.

To summarize the ideas outlined in the "first alert," there are eight indicators that cataloging faces some danger down the road. Indicator one is the growing trend toward "least effort" on the part of library users with the implication that library staff must compensate with greater effort. Indicator two is LC's apparent changing attitude toward cataloging. Among the signs of this shift are various cataloging simplification proposals, minimum-level cataloging, and a seeming decrease of interest in doing the lion's share of the world's cataloging.

Indicator three is the question of whether LC subject headings, the most important subject-access system on our planet, will survive the strong dissatisfaction with its present state and the fears for its future direction. Indicator four is the increasing complexity of cataloging rules, compounded by the growing complexities associated with automation.

Indicator five is the decreasing supply of trained and qualified professional catalogers. Some persons have proclaimed that libraries can function satisfactorily without a significant number of well-educated and highly skilled catalogers, but such a view has been refuted by reality in recent years. Indicator six is the rapidly proliferating scale of on-line catalogs, on-line information services, and - most importantly - bibliographic utilities such as OCLC. The massive size of such systems makes them increasingly vulnerable to all kinds of forces, whether natural, technical, economic, social, political, or military.

Indicator seven is the growing instability of library processes, perhaps most notably in technical areas such as cataloging. Indicator eight is the current and cyclically reoccurring reductions in library budgets, which exacerbates the difficulties of the previous seven situations.

All of these eight indicators have directly or indirectly appeared in recent literature (2). Some persons may agree that the signs collectively point to a possible implosion of the cataloging function, while others may believe that the evidence only suggests a moderate degree of dysfunction in the future. Ironically, widespread knowledge about the potential crisis and sensitivity to remedying the problems will tend to lessen the negative effects, so we may never really know what may have happened if the entire situation had been totally ignored. But it is always better to be aware of and prepared for something which may not happen than to overlook and not be prepared for something which has a good chance of occurring.

Map librarians can help mitigate the problems, whether the difficulties are perceived as very serious or just moderate concerns. On the international level, LC can be encouraged to continue to do quality cataloging on a large scale, and to upgrade and modernize its subject access system. On the national or regional level, efforts can be put forth that will reduce the vulnerability to on-line catalogs, on-line information services, and bibliographic utilities. On the local level, working toward a more positive attitude about cataloging and catalogers can have very beneficial results; if cataloging is recognized as an increasingly complex activity requiring superior human and technological resources, local cataloging functions will be strengthened.

Most vital of all is awareness. As suggested above, being cognizant of the possible collapse of cataloging is the best way to counteract dangers. If the effectiveness or frequency of map cataloging is significantly reduced, the overall effectiveness of map libraries will suffer a similar fate.

Notes

1. Studwell, William E. 1991. "The coming implosion of cataloging: how real? how dangerous?: first alert." *Technicalities* 11(12):14-15.

2. For a partial survey of the literature, see the above article.

Common Sense
(in Planning for the Future of LC Subject Headings)

by

Thomas Paine in-the-Neck
(AKA W. E. Studwell)

As one of the primary gadflies hovering around the Subject Cataloging Division of the Library of Congress during the past decade, I have observed some interesting institutional behavior. In developing and operating the world's most important and most dominant subject-access system, LC too often acts in an unexplainable or questionable manner. When logic, practicality, utility, or common sense would seem to dictate a certain course of action, LC sometimes follows an opposing path.

The purpose of this essay is to dwell not upon LC's faults, but rather upon its many strengths. In recent years, LC has - the majority of the time - gone in the right direction, improving terminology, structure, specificity, and application. Within the past two years or so, LC has actively pursued planning for the long-range future of its subject access system.

In a May 1990 letter to me Lucia Rather - former Director of Cataloging at LC - indicated some of the actions which LC has actually carried out, and some of the possibilities which LC staff have discussed in long-range planning for that entity (1). Later on, in in August 1991 letter to me, Glenn A. Zimmerman - Director for Technical Services Research at LC - updated the earlier communication (2).

Among the positive events touched upon in the Rather and/or Zimmerman letters were:

1. the formulation of a broad set of principles to describe the LC subject system as it now exists; this document was prepared in 1990 by Lois Chan, University of Kentucky, under contract with LC;

2. in late 1990, the recruitment of outside position papers on LC subject access, and the profession-wide solicitation of commentary on those papers; and

3. the convening of a Subject Subdivisions Conference in Washington, D.C., by LC in May 1991 (3).

The recommendations of the conference include: the continuation of indirect geographic subdivisions; improvement of chronological subdivision; the overall simplification of subdivisions; and - most importantly - the establishment of a standard order for subdivisions under topical headings. The suggested standard order is: topic; subtopic(s); place; date(s); and form.

Example: Minorities—Education—History—United States—20th century—Congreesses.

Note that as of early 1992, LC has not clearly made any of the above actions or documents official LC policy and practice.

If LC shows common sense by seriously considering and adopting the suggestions from the conference plus various other ideas offered to them - including the development of a full, comprehensive, detailed subject code - subject access in the future has a

continued on page 168

CUTTERS

A List Contributed by

Arlyn Sherwood
Illinois State Library

Over the years, the Geography and Map Division of the Library of Congress has derived cutters when I've requested them; here's what I've received so far.

[ED: A special thanks to Arlyn for sending these to me in the form of a typed, carbon-ribbon, Library-Elite-type ORIGINAL - if I can't get contributions on diskette, that's the next best, since the Kurzweil scanner I use is very picky.]

U.S.

Admiralty Inlet (Wash.)	4282	.A3
Afognak Island (Alaska)	4372	.A23
Agattu Island (Alaska)	4372	.A24
Agattu Strait (Alaska)	4372	.A2S
Akutan Bay (Alaska)	4372	.A259
Akutan Pass (Alaska)	4372	.A26
Alitak Bay (Alaska)	4372	.A466
Altamoha Sound (Ga.)	3922	.A46
Alvord Desert (Or.)	4292	.A29
American Falls Reservoir (Idaho)	4272	.A4
Anadarko Basin	4022	.AS
Angayuch Mountains (Alaska)	4372	.AS4
Atchafalaya Bay (La.)	4012	.A6S2
Atka Island (Alaska)	4372	.A74
Atlantic Intracoastal Waterway	3709.32	.A8
Banana River (Fla.)	3932	.B19
Barren Islands (Alaska)	4372	.B3S4
Beaver Creek Wilderness (Ky.)	3952	.B4
Beaver River (Utah)	4342	.B45
Beaver River Resource Area (?)	4342	.B46

Big Cliff Lake (Or.)	4292	.B54
Boundary Pass (B.C. and Wash.)	3512	.B65
Bruneau River Wilderness (Idaho)	4272	.B74
Budd Inlet (Wash.)	4282	.B83
Buldir Island (Alaska)	4372	.B86
Cape Flattery (Wash.)	42S2	.F58
Cedar River (Iowa)	4152	.C4
Chaik Bay (Alaska)	4372	.C29
Chatham Strait (Alaska)	4372	.C428
Chequamegon Bay (Wis.)	4122	.C49
Chilkoot Trail (?)	4372	.C512
Chugach Mountains (Alaska)	4372	.C518
Chugach State Park (Alaska)	4372	.C525
Cimarron Mountains (Ariz.)	4332	.C47
Clifty Wilderness (Ky.)	3952	.C6
Cold Bay (Alaska)	4372	.C625
Core Sound (N.C.)	3902	.C64
Cross Sound (Alaska)	4372	.C7
Croton River (N.Y.)	3802	.C785
Cumberland Sound (Ga. and Fla.)	3922	.C84
Cyrus H. McCormick Experimental Forest (Mich.)	4112	.C9
Dakota Aquifer	4052	.D3
Dall Island (Alaska)	4372	.D16
Damariscotta River (Me.)	3732	.D27
Davidson Inlet (Alaska)	4372	.D24
Dexter Lake (Or.)	4292	.D49
Doboy Sound (Ga.)	3922	.D6
Drakes Bay (Calif.)	4362	.D69
Drier Bay (Alaska)	4372	.D75
Duwamish Waterway (Wash.)	4282	.D87
East River (N.Y.)	3802	.E35
East Sidney Reservoir (N.Y.)	3802	.E37
Edwards Aquifer (Tex.)	4032	.E3
Elliott Bay (Wash.)	4282	.E42
Ernest Sound (Alaska)	4372	.E73
Estero Bay (Calif.)	4362	.E75
Fall Creek Lake (Or.)	4292	.F3
Fern Ridge Lake (Or.)	4292	.F4

Florida, Straits of	9112	.F45
Floridan Aguifer	3867	.F55
Foster Lake (Lynn County, Or.)	4292	.F62
French River (Mass. and Conn.)	3762	.F5
Grafton, Mount (Nev.)	4352	.G65
Grand Gulch Primitive Area (Utah)	4342	.G67
Green Peter Lake (Or.)	4292	.G75
Green River Formation	4222	.G72
Gulf Intercoastal Waterway	3862	.G8
Hagemeister Strait (Alaska)	4372	.H26
Hammond Reservoir (Pa.)	3822	.H22
Hanapepe Bay (Kauai)	4382	.H284
Haro Strait (B.C. and Wash.)	4052	.H3
Hiawatha Pioneer Trail	4062	.H5
High Plains (U.S.)	4052	.HS
Hoonah Sound (Alaska)	4372	.H63
Indian Peaks Wilderness (Colo.)	4312	.I6
Inside Passage (Alaska)	4372	.I74
Inyo Mountains (Calif.)	4362	.I48
Isanotski Strait (Alaska)	4372	.I77
Jackson Mountains (Nev.)	4352	.S4
Jefferson, Mount (Nev.)	4352	.J4
Kachemak Bay (Alaska)	4372	.K23
Kigluaik Mountains (Alaska)	4372	.K466
Kill Van Kull (N.J. and N.Y.)	3812	.K46
Knikarm (Alaska)	4372	.K69
Krenitzin Islands (Alaska)	4372	.K776
Kruzof Island (Alaska)	4372	.K784
Laguna Madre (Tex.)	4032	.LI8
Lake Bay (Alaska)	4372	.L17
Lake Chelan-Sawtooth Wilderness (Wash.)	4282	.L32
Lake Sharpe (S.D.)	4182	.L55
Latir Peak Wilderness (N.M.)	4322	.L37
Laurel Highlands (Pa.)	3822	.L24
Lavaca Bay (Tex.)	4032	.L32
Ledyard Bay (Alaska)	4372	.L43
Lisianski Inlet (Alaska)	4372	.L544
Little Calumet River (Ind. and Ill.)	4092	.L49
Long Valley (Mono County, Calif.)	4362	.LS25

Macatawa Lake (Mich.)	4112	.M15
Mamala Bay (Hawaii)	4382	.M28
Marquette Bay (Marquette County, Mich.)	4112	.M39
Massacre Bay (Alaska)	4372	.M28
Massive Mountain (Colo.)	4312	.M3
Mobjack Bay (Va.)	3882	.M54
Morro Bay (Calif.)	4362	.M824
Morzhovoi Bay (Alaska)	4372	.M67
New River (Onslow County, N.C.)	3902	.N425
Newfoundland Mountains (Utah)	4342	.N48
Niantic Bay (Conn.)	3782	.N5
North Carolina Zoological Park	3902	.N65
North Lake (Ont. and Minn.)	3462	.N6
North Loup River (Neb.)	4192	.N63
North Stansbury Mountains Wilderness (Utah)	4342	.N65
Nueces Bay (Tex.)	4012	.N8
Ocracoke Inlet (N.C.)	3902	.03
Ossabaw Sound (Ga.)	3922	.083
Oyster Bay (N.Y. : Bay)	3802	.095
Pavlof Bay (Alaska)	4372	.P365
Peard Bay (Alaska)	4372	.P37
Pecos Wilderness (N.M.)	4322	.P45
Pelican Bay (Del Norte County, Calif.)	4362	.P335
Pentagon Mountain (Mont.)	4252	.P28
Pere Marquette Lake (Mich.)	4112	.P38
Peril Strait (Alaska)	4372	.P38
Perry Lake Trail (Kan.)	4202	.P45
Petaluma River (Calif.)	4362	.P383
Piceance Creek (Idaho)	4312	.P44
Pike Creek Gorge (Pa.)	3822	.P56
Piper Peak (Nev.)	4352	.P5
Pleasant Bay (Mass.)	3762	.P555
Pole Mountain (Wyo.)	4262	.P5
Port Canaveral (Fla.)	3932	.P65
Possession Sound (Wash.)	4282	.P67
Powder River	4262	.P6
Powder River (geol.) Basin	4262	.P62
Prado Dam (Calif.)	4362	.P7
Pueblo Mountains (Or.)	4292	.P85

Rainy Lake (Minn. and Ont.)	4142	.R3
Ramsey's Draft Wilderness (Va.)	3882	.R19
Red Buttes Wilderness (Or. and Calif.)	4292	.R44
Resurrection Bay (Alaska)	4372	.R34
Rhode Island Sound (Mass. and R.I.)	3762	.R3
Rosario Strait (Wash.)	4282	.R64
Sabine, Cape (Alaska)	4372	.S13
Sabine Bank (La. and Tex.)	9112	.S25
Sacramento Mountains (Calif.)	4362	.S11
Saint Catherines Sound (Ga.)	3922	.S16
Saint Croix River (Me. and N.B.)	3732	.S245
Saint Joseph Sound (Fla.)	3932	.S237
Salisbury Sound (Alaska)	4372	.S177
San Juan Channel (Wash.)	4282	.S318
San Luis Obispo Bay (Calif.)	4362	.S2292
San Nicolas Island (Calif.)	4362	.S2295
San Pedro Channel (Calif.)	4362	.S314
Santa Catalina, Gulf of (Calif.)	4362	.S328
Santa Cruz Channel (Calif.)	4362	.S339
Santa Rosa Lake (N.M.)	4322	.S45
Sapelo Sound (Ga.)	3922	.S285
Sea Otter Sound (Alaska)	4372	.S2945
Seaman Range (Nev.)	4352	.S4
Sheep Creek West Wilderness (Idaho)	4272	.S59
Sheepscot River (Me.)	3732	.S5
Sinclair Inlet (Wash.)	4282	.S46
Sitkinak Strait (Alaska)	4372	.S57
Skasit Bay (Wash.)	4282	.S49
Skedaddle Mountain Wilderness (Calif. and Nev.)	4362	.S615
Snake River Plain (Idaho and Or.)	4242	.S65
Solomons Island (Md.)	3842	.S525
Stillwater Lake (Pa.)	3822	.S73
Swift Bay (Wyo.)	4262	.S96
Tanaga Bay (Alaska)	4372	.T345
Temnac Bay (Alaska)	4372	.T387
Thunder Mountains (Hev.)	4352	.T5
Tillamook Bay (Or.)	4292	.T55
Tioga Reservoir (Pa.)	3822	.T54
Tioga State Forest (Pa.)	3822	.T57
Togiak Bay (Alaska)	4372	.T53
Trans - Pecos (Tex.)	4032	.T69
Turkey Hill Wilderness (Tex.)	4032	.T82
Tuscarora State Forest (Pa.)	3832	.T83

Uinta Basin (Utah and Colo.)	4342	.U39
Umatilla, Lake (Or. and Wash.)	4292	.U48
Unimak Pass (Alaska)	4372	.U64
Upland Island Wilderness (Tex.)	4032	.U6
Wando River (S.C.)	3912	.W28
Wassaw Sound (Ga.)	3922	.W32
Welcome Creek Wilderness (Mont.)	4252	.W29
Wenaha-Tucannon Wilderness (Wash. and Or.)	4282	.W37
West Rim Trail (Pa.)	3822	.W396
Westport River (Mass.)	3762	.W515
Wheeler Peak Wilderness (N.M.)	4322	.W45
White Mountain Wilderness (N.M.)	4322	.W4
Whitefish Bay (Mich. and Ont.)	4112	.W55
Whitewater Bay (Alaska)	4372	.W34
Whitlow Ranch Dam (Ariz.)	4332	.W48
Whitlow Ranch Flood Control Basin (Ariz.)	4332	.W49
Whittier Narrows Dam (Calif.)	4362	.W525
Willapa Bay (Wash.)	4282	.W65
Wind River Basin (Wyo.)	4262	.W553
Worthington Mountains (Nev.)	43S2	.W6
Wrangell Mountains (Alaska)	4372	.W68
Yaquina Bay (Or.)	4292	.Y26
Yucca Mountain (Nev.)	4352	.Y8
Zimovia Strait (Alaska)	4372	.Z54
FOREIGN		
Abd Allah Inlet (Kuwait and Iran)	7602	.A2
Agat Bay (Guam)	9417	.A34
Agua de Pau Volcano (Sao Miguel Island, Azores)	9132	.A31
Akita-shi (Japan)	7964	.A38
Alexandroupolis (Greece)	6814	.A4
Almirante Bay (Pamama)	4872	.A5
Apra Harbor (Guam)	9417	.A6
Bandar Abbras (Iran)	7624	.B43
Baranis (Egypt)	8304	.B36
Bungo Channel (Japan)	7962	.B8
Buton, Strait of	8072	.B77

Cabot Strait (Canada)	3412	.C3
Camocim (Brazil)	5404	.C32
Campeche, Bay of (Mexico)	4412	.C35
Chan-chiang shih (China)	7824	.C34
Charlotte Amalie (V.I.)	5014	.C5
Corinth, Gulf of	6812	.C6
Crete, Sea of (Greece)	6812	.C72
Davao Gulf (Philippines)	8062	.D34
Duero River (Spain and Portugal)	6562	.D8
East China Sea	9237	.E3
Furnas Volcano (Sao Miguel Island, Azores)	9132	.F82
Georgia Strait (B.C.)	3512	.G4
Guanabara Bay (Brazil)	5592	.G8
Guayaquil, Gulf of	5302	.G89
Ilichevsk (Ukraine)	7004	.I54
Imari-shi (Japan)	7964	.I45
Iwakuni-shi (Japan)	7964	.I815
Kachchh, Gulf of (India)	7652	.K3
Kavieng (Papua New Guinea)	8164	.K37
Kii Strait (Japan)	7962	.K47
Klaipreda (Lithuania)	7004	.K5816
Little Minch (Scotland)	5772	.L53
Lofoten (Norway)	6942	.L58
Magellan, Strait of (Chile and Argentina)	5332	.M33
Malta Channel	6712	.M32
Mona Passage	9112	.M6
Nakagusuku Bay (Japan)	7962	.N34
Navassa Island	4912	.N3
Palmas, Gulf of (Italy)	6712	.P17
Panama, Bay of (Panama)	4872	.P15
Panama, Gulf of (Panama)	4872	.P18
Placentia Bay (Nfld.)	3437	.P5
Porto (Portugal)	6694	.P67
Queen Charlotte Sound (B.C.)	3512	.Q41

Richelieu River (Quebec)	3452	.R4
Sado River (Portugal)	6692	.S2
Saint Vincent, Gulf of (S. Aust.)	9012	.S25
Serpent's Mouth	9112	.S4
Sete Cidades Volcano (Sao Miguel Island, Azores)	9132	.S46
Shatt-al-Arab (Iraq and Iran)	7612	.S5
Shimabara Bay (Japan)	7962	.S54
Sicily, Strait of	6712	.S43
Spencer Gulf (S. Aust.)	9012	.S72
Storebelt	6922	.S8
Suda Bay	6812	.S8
Sunda Strait (Indonesia)	8072	.S86
Surigao Strait (Philippines)	8062	.S86
Suruga Bay (Japan)	7962	.S9
Thracian Sea (Greece)	6812	.T52
Tiree Island (Scotland)	5772	.T5
Trieste (Italy)	6714	.T82
Trieste, Gulf of	6712	.T78
Tuapse (R.S.F.S.R.)	7004	.T8
Valparaiso Bay (Chile)	5332	.V3
Ventspils (Latvia)	7004	.V44
Villefranchesur-Mer (France)	5834	.V573
Vina del Mar (Chile)	5334	.V5
Welland Canal (Ont.)	3462	.W4
Western Isles (Scotland)	5773	.W45
Yaeyama Islands (Japan)	7962	.Y25
Yatsushiro Bay (Japan)	7962	.Y4
Yucatan Channel	4392	.Y8

§§

CUTTERS LIST, CALIFORNIA Cutter 4362 and 4364

University of California at Berkeley's SUPPLEMENT TO
LC GEOGRAPHIC CUTTERS LIST - CALIFORNIA March 1992

Contributed by
Phil Hoehn

[ED: Thanks to Phil Hoehn for providing this list (on diskette, yet!).
NOTE: Each Cutter is preceded by a full stop, e.g., .A15 in actual use.]

4362	
A15	Abbott Lake (Sutter County)
A67	Arena, Point
A79	Asuncion, Rancho
A98	Azusa, Rancho
B643	Bohemian Grove
C3132	Canada de Los Alisos, Rancho
C3138	Canada de Los Nogales, Rancho
C3252	Canada de San Miguelito, Rancho
C3253	Canada de San Vicente y Mesa del Padre Barona, Rancho
C3257	Canada del Corral, Rancho
C369	Castac, Rancho
C487	Cienega o Paso de la Tijera, Rancho
C628	Conception, Point
C64	Constantine Rock
C672	Corral de Quati, Rancho
C693	Cosumnes, Rancho
C79	Cuca, Rancho
D42	Deer Creek (Tehama County)
D698	Dry Canyon (Ventura County)
E4586	El Chorro, Rancho
E4587	El Conejo, Rancho
E468	El Rincon, Rancho (San Bernardino and Riverside Counties)
E469	El Rincon, Rancho (Santa Barbara and Ventura Counties)
E9	Ex Mission de San Francisco, Rancho
E93	Ex Mission San Buenaventura, Rancho
F77	Fresno River
G9	Guadalasca, Rancho
H75	Huerta de Romualdo, Rancho
I77	Island or Peninsula of San Diego, Rancho
J3	Jamacho, Rancho
J46	Jewel Lake [Contra Costa County]
K27	Kearney Park [Fresno County]
K42	Kern River Oil Field
L134	La Bolsa Chica, Rancho
L142	La Laguna, Rancho (Riverside County)
L143	La Laguna, Rancho (Santa Barbara County)
L147	La Mission Vieja de la Purisima, Rancho
L15	La Nacion, Rancho
L167	La Puente, Rancho

L17	La Purisima Mission State Historical Monument
L182	La Sierra (Yorba), Rancho
L23	Lafayette Reservoir Recreation Area
L24	Laguna Rancho (San Luis Obispo County)
L525	Lompoc, Rancho
L528	Los Alamitos, Rancho
L529	Los Alamos, Rancho
L5292	Los Alamos y Agua Caliente, Rancho
L544	Los Encenitos, Rancho
L58	Los Nogales, Rancho
L78	Los Vallecitos de San Marcos, Rancho
M378	Mendocino, Cape
M68	Monserate, Rancho
M858	Mugu, Point (not P56)
N53	Nipomo, Rancho
N59	Nojoqui, Rancho
P338	Pauba, Rancho
P339	Pauma, Rancho
P485	Pismo, Rancho
P66	Potrero de Felipe Lugo, Rancho
P678	Potrero Grande, Rancho
P76	Providencia, Rancho
P82	Punta de la Concepcion, Rancho
P88	Putah Creek
R562	Rincon de la Brea, Rancho
R564	Rincon de los Bueyes, Rancho
R578	Rio de Santa Clara, Rancho
S138	Salinas River (and River Valley)
S148	Salt Slough
S173	San Andres, Rancho
S1973	San Bernardino, Rancho
S1982	San Bernardo, Rancho (Monterey County)
S1983	San Bernardo, Rancho (San Diego County)
S1984	San Bernardo, Rancho (San Luis Obispo County)
S198	San Carlos de Jonata, Rancho
S2144	San Dieguito, Rancho
S215	San Emidio, Rancho
S2232	San Francisco, Rancho
S22328	San Francisquito, Rancho (Los Angeles County)
S2234	San Francisquito, Rancho (Santa Clara County)
S2247	San Geronimo, Rancho (Marin County)
S2248	San Geronimo, Rancho (San Luis Obispo County)
S2266	San Jacinto Viejo (Rancho)
S2267	San Joaquin, Rancho (Orange County)
S2268	San Joaquin, Rancho (San Benito County)
S2274	San Jose, Rancho (Marin County)
S22745	San Jose Addition, Rancho
S2276	San Jose del Valle, Rancho
S2278	San Julian, Rancho
S2292	San Luis Obispo Bay
S22943	San Luisito, Rancho
S2295	San Miguel Island
S22957	San Miguelito, Rancho (San Luis Obispo County)
S3115	San Pascual, Rancho
S3194	San Vicente y Santa Monica, Rancho
S3232	Sanjon de los Moquelumnes, Rancho
S3236	Santa Ana, Rancho
S3237	Santa Ana del Chino, Rancho
S3238	Santa Ana del Chino Addition, Rancho
S333	Santa Clara del Norte, Rancho
S344	Santa Gertrudes, Rancho
S345	Santa Manuela, Rancho
S374	Santa Rosa, Rancho (Riverside County)
S375	Santa Rosa, Rancho (Santa Barbara County)

S3913	Santa Ysabel, Rancho (San Diego County)
S3914	Santa Ysabel, Rancho (San Luis Obispo County)
S43	Sespe, Rancho
S578	Simi, Rancho
S7	Sotoyome, Rancho
S72	South Belridge Oil Field
S89	Suey, Rancho
T23	Tajauta, Rancho
T25	Temecula, Rancho
T49	Tinaquaic, Rancho
T58	Todos Santos y San Antonio, Rancho
T77	Tujunga, Rancho
V22	Valle de San Jose, Rancho (San Diego County)
4364	.....
A138	Adela
A315	Allendale
A43	Altamont
A56	Anita
A578	Antelope
A734	Arena
A844	Athlone
B27	Batavia
B494	Berg
B677	Birds Landing
B787	Bradley
B872	Buckeye (Tehama County)
C2743	Camptonville
C2755	Cannon
C413	Chico Landing
C48	Chualar
C484	Cicero
C5227	Clay
C725	Cooper
C784	Cortena
S6:2C6	Coyote (San Jose, Calif.)
C87	Cross
S5:2C68	Cow Hollow (San Francisco)
C875	Crows Landing
D466	Delevan
D46715	Denair
D4673	Denverton
E2413	Eckley
E2414	Eddys Ferry
E655	Elmira
S5:2E92	Eureka Valley (San Francisco)
S5:2E94	Excelsior District (San Francisco)
E93	Ewing
F34	Fallon
F414	Farmington
A2:2F4	Fernside (Alameda)
O2:2F67	Forest Park (Oakland)
F717	Fort Ross
F95	Fulton
G347	Genevra
S5:2G48	Glen Park (San Francisco)
G66	Grand Island
G79	Greenwood (Glenn County)
G82	Grimes
H246	Harrington
H248	Harris (Santa Barbara County)
H513	Herndon
H515	Hershey
H58	Hills Ferry
H754	Honcut
H756	Hood
H758	Hooker
H784	Howell's Landing
J16	Jacinto
K64	Kirkwood (Tehama County)
K78	Knights Ferry
L167	La Graciosa
L613	Logandale

L64	Lomo
L663	Lompoc Landing
L824	Los Berros
L897	Lyman
M23	Madison
M279	Malton
M4143	McIntosh Landing
M422	Meins Landing
T245:2M4	Mendocino State Hospital [Talmage]
M5134	Merritt
M516	Metz
M537	Miles
M556	Milton
M64	Mokelumne City
M69	Monroeville
M827	Moons Ferry
M843	Moro Cojo
M9:2C3	Castro City (Mountain View)
S617:2	Mulford Gardens (San Leandro)
N55	Nicolaus
N625	Norman
N78	Norton (Yolo County)
P88	Port San Luis
S5:2P62	Portola (San Francisco)
P957	Proberta
R528	Reed
R62	Richvale
S557	San Joaquin City
S717	Santa Rita Park
S741	Schellville
S7618	Sesma
S7663	Sheridan (Placer County)
S786	Snelling
S7963	Soto
S855	Spence
S892	Steele
S997	Sycamore (Colusa County)
T245	Talmage
T57	Toland Landing
T575	Tomales
T724	Traver
T73	Tremont
V3165	Valley Home
V385	Vega
F78:2W3	Warm Springs (Fremont)
W32	Waverly
W94	Wolfskill
Y5	Yolo
Z2	Zamora

§§

Be Sure to see the Announcement of details for

WAML'x 25th Anniversary Meeting in Hawaii

on Page 227 of this issue.

PUBLIC RELATIONS

Sounds racy - but it's a basic of successful library work. One good way to reach your public is to write up something on a topic on which you are most often asked questions; it also saves you from that "this has been a recorded announcement" feeling that has been known to pervade the mind of even the most diligent and devoted of map librarians when answering the same question for the tenth time in one hour. Following - courtesy of Glen Creason, Map Librarian - is a handout of this type for the Los Angeles Public Library's map collection.

LOS ANGELES PUBLIC LIBRARY 433 S. Spring Street Los Angeles, CA 90013
Central Library Holdings
Department: History, Genealogy (213)612-3314 September, 1990
Subject: **Maps of Los Angeles**

The History Department of Los Angeles Public Library maintains a large collection of maps covering the city and surrounding areas. The map collection covers land, sea, and air, and contains material from the founding of the pueblo to the present. Such graphic representation of the city as it existed and as it exists now can be a very valuable resource in understanding the constantly changing face of Los Angeles. The History Department has:

- Over one hundred flat maps of the city cataloged under the Dewey decimal number 917.941 L88l covering the Los Angeles area, from the original Ord survey of 1857 to current tourist maps. Twenty rare maps of Los Angeles are kept in the Rare Books Department. A card file index is maintained for this collection in the department.

- A microfilming project is underway to preserve sixty large rolled maps that were damaged by the Central Library fire in 1986. These are mostly detailed city maps going back to the 1880's.

- A file of historic street guides of Los Angeles by Thomas Brothers, Gillespie, Renie and others. This group includes a 1923 street guide by the Lyon Moving Company, a 1931 Renie guide, a 1938 Hill's, and Thomas Brothers guides from 1946 to the present.

- A collection of vertical-file foldout maps published by the Auto Club and oil companies dating back to the 1940's covering the Los Angeles Metropolitan area.

- The entire set of **Maps of the City Clerk** which were made for the City Engineer and show bridges, dams, sewers, tunnels, etc., from 1847 to the 1900's. Also **Historical Maps of Greater Los Angeles** compiled for the Bureau of Engineering covering the city from 1847 to the 1960's. This very valuable set contains over one thousand maps on aperture cards which are mounted slides.

- **Sanborn Fire Insurance Maps** of Los Angeles and surrounding cities. This tremendous resource was purchased in early 1990 and gives a finely detailed look at each building on the city streets in four different time periods: 1888, 1894, 1906 to 1930, and 1950. This collection is on microfilm and represents the holdings of the Library of Congress covering the entire state of California. The department also has paper copies of some Los Angeles Sanborn Maps.

- In addition to the Sanborns, several other real estate atlases covering the city including:

Baist's Real Estate Atlas of 1910, 1921 and 1923.
The Reality Map and Ownership Service Company atlases
The New Los Angeles Plat Book for 1940, 1947 and 1953
The Garland Atlas of L.A. City Maps in the 1940's

The Los Angeles Map and Address Company Property Book for 1917 and 1925.
The Saunders Geographic Atlas of the San Fernando Valley for the 1950's.

- A full complement of current nautical charts for waters off the coast of Los Angeles including the National Ocean Survey charts for Los Angeles and Long Beach harbors.

- The *Mariner's Atlas for Southern California* by A.P. Balder (912.7940 B176), a handy collection of nautical charts covering coastal waters in southern California published in 1989.

- A complete set of U.S.G.S. topographical maps at 1:24,000 scale showing Los Angeles and surrounding areas. A retrospective file is maintained on Los Angeles back to the 1920's. This set is complemented by the Geographic Name Information System, which breaks down all California topo maps into fine detail identifying points on the landscape across the state.

- National Oceanic and Atmospheric Administration aeronautical charts covering the Los Angeles area. These charts are at 1:500,000 scale.

New Zealand Map Society/Australian Map Circle

The New Zealand Map Society will be holding a
Joint Conference
with the Australian Map Circle in 1993.

Venue: University of Canterbury, Department of Geography.
Tuesday, 2nd February - Friday 5th February 1993.

Accommodations will be at the University Halls, University of Canterbury.

Contact: W. H. Cutts, Map Library, Department of Geography, University of Canterbury, Private Bag, Christchurch, New Zealand.

For FAX communication: 64 3 642 907 or 64 3 642 999.

Accessing the World of Digital Spatial Data

by

Mary L. Larsgaard
Map & Imagery Laboratory, Library, UC Santa Barbara

Presented at COSML (Committee on Southeast Map Libraries), SEAAG (South East division, Association of American Geographers), Columbia SC, November 19, 1990

Abstract: Base spatial data - e.g., large-scale topographic map series - are increasingly being put in digital form, and seem to be nearing the point of being in hard copy on demand only. Map collections are thus seeing a drastic change in format for this essential data. The object of this paper is to state generally the basics of servicing spatial data in digital form.

One matter which has been discussed, or at least warily noted, over the last ten years by map librarians is the increasing tendency for base spatial data (e.g., large-scale topographic maps) to be in digital form, and in some cases to be nearing the point of being available in hard copy on demand only. While hardcopy (or, as they are sometimes called, analog) products will be around for a long time, spatial data in digital form can be (and certainly will become more so in future) quicker and easier to revise, far more manipulable, and - given newer technologies (e.g., optical disk) - take far less storage space; most notably from the user's point of view, one may perform operations using spatial data in digital form that are simply not practical when done manually - e.g., comparing pixel values for 4 spectral bands for each pixel (512 x 512) of a Landsat satellite scene. Certainly this all has considerable implications for map libraries and for anyone who works with cartographic materials.

During the last two years, I've had the good fortune to be working at an institution where this trend is taken very seriously, and where strong efforts are being made to provide an environment where users may obtain spatial information in any form (be it map or remote-sensing image, analog or digital) and overlay information as needed - in what I think of as a user-structured geographic information system (GIS). Speaking as a map librarian with 20 years of experience, I am most pleased to be working toward a time when instead of listening to library users tell me that a map is too large/too small, too detailed/too general (and of course the scales and the projections are different) I can instead work with them to create the product that exactly suits their needs.

At the time I interviewed for the position I now hold - Assistant Head, MIL - I KNEW that what MIL was (and is) doing is exactly the way matters should go in what is modestly called a map library, but I knew merely the outlines of theory, and none of the practicalities. I already believed that "map library" is a classic understatement, perhaps appropriate in a country where the producer of a mammoth number of topographic maps is called the U.S. Geological Survey; but that what we are aiming toward is a spatial-data collection.

In the process of educating myself as to what is going on in the world of digital spatial data - a process that bids fair to continue for as long as I am employed in this line of work - I've put together some information in a form that I think is useful to other map librarians, and that's what I'll be presenting here.

One of the first tasks I had was to learn the vocabulary; a glossary is included as an appendix to this paper.

To give you a general idea of how this paper is structured - first I'll discuss software, then hardware, then output, then data; I emphasize that this is a

general outline of the digital-spatial-data world, and from someone who is still struggling up the learning-curve slope. Also, there are certainly other ways to approach this - one pamphlet (by DEC) I picked up at a GIS/LIS (Geographic Information Systems/Land Information Systems) conference in early November of 1990 states that the elements of a spatial information system are base-level computer systems, networks, data management systems, applications, and user interfaces - the following is how it is most understandable for me at this time.

Previously I had considered analog spatial data as being in two large subcategories - maps; and remote-sensing imagery. Now I am accustoming myself to think of it as two other subcategories - raster and vector - which are the two major ways in which spatial data is recorded in digital form. Vector data refers to data that is collected in what I find it convenient to think of as line segments, while raster data is cell data, with the pixel as the basic element (pixels are normally organized in rectangular arrays called rasters, with pixels numbered starting in the upper left corner, and rows called lines and columns called samples).

As it happens, cartographic data tends to be stored as vectors (e.g., DLGs - Digital Line Graphs, a USGS product; TIGER files; plotters and digitizers), while remote-sensing data tends to be stored as raster data (e.g., Landsat and SPOT satellite images; scanners), but this is a very general observation, and it does not always hold true (e.g., DEMs - Digital Elevation Models, another USGS product - are raster data). Beyond the point that some forms of computer peripherals record data in raster form and others in vector form, software to be used seems to be the most immediate implication of this division. Software also very obviously is dictated by the complexity of the work you need to do and by the computing power you can afford.

Doubtless there is something in my makeup that delights in placing objects in classes and from that producing orderly lists, because that is what I've attempted to do here. For the purposes of this paper, I've divided up software for working with spatial data as to whether it is image processing or GIS; CAD (computer-assisted design) software will work with vector spatial data, but is not GIS. Incidentally, in a DEC brochure on spatial-data processing that I obtained at the previously mentioned GIS/LIS conference, spatial information systems in digital form are considered to be GISs, AM/FM (automated mapping/facilities management) applications, digital terrain modeling, remote sensing applications, and image scanning, all of which I've covered herein (however glancingly) except AM/FM , which I decided technically speaking map libraries don't do - we provide spatial data and the equipment to use it, but we aren't (at least at present) a facility whose main purpose is to make maps. Image processing may be defined as "the enhancement or manipulation of pictures to bring out details that are not accessible to your eyes" (Rivenbark 1990 p. 25).

A few general comments about GIS: A GIS is considered to be a computerized system to capture, analyze, and display spatial data, doing this by integrating a wide range of data (e.g., maps; remote-sensing images; numerical or descriptive data that is geo-coded). GISs tend to have extensive I/O (input/output) requirements and heavy CPU requirements. According to Star and Estes (p. 249), a GIS should be able to work with large, heterogeneous spatial databases; be able to query databases about the existence, location, and characteristics of a wide variety of objects; operate efficiently; be able to be tailored (both to applications and to users); be able to "learn" about data and a user's objectives; and be able to supply a readily interpreted output product. Its five essential parts are: data acquisition; preprocessing; data management; manipulation and analysis; and product generation.

So far, the software that I've heard most about and either seen used or very briefly used myself (Applepips and IMDISP) are the following (there are many more - apparently well over 100, more than 30 calling themselves GIS software):

a. image-processing software

1. APPLEPIPS (Telesys Group, 5455 Wingborne Court, Columbia MD 21045; ? this is a 5-year old address and may not be correct): for use on Apples; raster; introduces beginners to the idea

2. ERDAS: (Advanced Technology Development Center, 2801 Buford Highway, Suite 300, Atlanta 30329): available for microcomputer or minicomputer (VMS, DOS, UNIX); raster

3. VICAR (Jet Propulsion Lab): mainframe; raster

4. IMDISP (Jet Propulsion Lab): very small subset of VICAR; for microcomputers; raster

b. GIS software

1. ARC/INFO (ESRI, 380 New York Street, Redlands CA 92373): micro or mini (DOS/OS2, VMS, UNIX); vector; powerful but difficult to learn; GIS designed for resource and record management, land use and land planning - integrates maps and tabular information in common spatial data base. As a side note, a recent WorkStation ARC/INFO brochure from ESRI has a "Map Library" at various places in "An example of distributed data management across geographically distributed networks with ARC/INFO Map Librarian in a local government" - and they don't mean the kind of map librarian with which we are familiar!

2. SPANS (TYDAC Technologies Corporation, 1655 N. Ft. Myer Drive, Suite 320, Arlington VA 22209): DOS/OS2

3. GRASS: public domain; vector

4. LAS: Landsat Analysis System (formerly Landsat Assessment System); EROS and NASA work on it jointly; raster; UNIX based

5. ATLAS/GIS (Strategic Mapping; 4030 Moorpark Avenue, Suite 250, San Jose CA 95117-1848)

6. IDRISI (Department of Geography, Clark University, Worcester, Massachusetts).

A brief side note here on software manuals: they're written by persons who already know all the answers, and who therefore assume that the user is familiar with image processing or GIS principles. What we need are software manuals written by persons who have with difficulty clawed their way up from slavery/beginner status to scarred veteran. As a small gesture in this direction, if you'll send me a formatted diskette, I'll send you my "Using IMDISP" guide; while the manual discusses each command, it does so in alphabetical order, not in the order you need to structure your commands, and doesn't tell you which you'll use often and which scarcely at all.

Let's move from software to hardware. For those of us accustomed to considering map cases as the only kind of equipment needed, where all one does is buy more of it every few years, this is quite a wrench; library budgets traditionally have miniscule equipment budgets for just this sort of reason - and another problem is that stacks and map cases don't require replacement, upgrading, or a maintenance person, while advanced computer software and hardware very definitely do.

What kinds of equipment are we talking about?

1. CPU of some kind (micro, mini, workstation, mainframe) - must be graphics capable

2. high-resolution monitor (preferably color) (EGA; VGA; 8-bit display is affordable - in contrast to 24-bit and 32-bit displays - and for many applications will be sufficient)

From Dr. Jeffrey Star's (Geography Remote Sensing Unit, UCSB) handout for a late 1980s class on image processing:

> "There are some de facto standards in the format of digital images. In a moderate-quality system, the 8 bits in a byte are all used to describe a single pixel. In a black-and-white image, this would mean there are 256 unique gray levels for each pixel. One way of describing color in an 8-bit-per-pixel system would be to use a separate color look-up table ... For example, we could analyze a color photograph for the 256 dominant different colors found in it, and represent the image by only those 256 different colors. Another way to describe 8-bit-per-pixel color would be to use 3 of the 8 bits for the red level, 3 of the 8 for the green, and the remaining 2 for the blue level. In this way, we have 256 unique colors extracted in a reasonably uniform way from all possible colors.
>
> The highest quality color systems use three 8-bit bytes for each pixel. These systems are sometimes referred to as 24-bit deep true-color systems. In such systems, each byte represents the value for one of the 3 primary colors. Thus, there are 256 levels each of red, green, and blue, or a total of 256 x 256 x 256 = 16.8 million unique colors. This is certainly more colors than [we human beings can perceive] and more than we can uniquely display on an image processing system. However, such a system gives us tremendous potential dynamic range and flexibility, and has become a *de facto* standard in the industry for true-color display."

3. peripherals to:

a. change analog information into digital form

b. change digital information into analog form

(A new Murphy's law for map libraries: Whatever form you have spatial data in, the user needs it in the other one)

4. peripherals to read digital data in various media, e.g., diskette; magnetic tape; CD-ROM; etc.

Number 1, above, can be at several levels, depending on sophistication and applications:

a. pc/desktop - under $10,000

b. workstation - e.g., Sun, DEC, IBM (RISC based), Hewlett-Packard; $10,000-$70,000

c. minicomputer and mainframe - can support 10 or more users; about $60,000 and up

Number 3, above, deserves special attention for a couple of reasons.

Three (a), above, refers to the situation we all are in - cases and cases full of analog data, which to be analyzed digitally are going to have to be changed into digital form. Digitizers do this, or more correctly, a very bored human being operating the digitizer does this; and it is not an exact copy by any stretch of the imagination. Scanners can do this - at some cost, naturally; an Eikonix scanner (4,000 lines; 45M color file resulting) costs around $40,000.

Three (b), above, refers to the current situation, which is that those of use wise in the ways of library users know that where data is used demand for reproduction inevitably follows. If it's a matter of computer speaking to computer, and especially if the client has a relatively small data set (e.g., under 1M), then it's simple - just copy onto diskette and you're done. Another possibility is to send digital information via Ethernet or modem to the computer of your choice (but keep in mind that the same operating system must be at both ends of the wire). By the way, for an almost readily-understandable explanation of sending digital information over/through telephone lines, see Green. But what if the client needs a hard copy - in color, of course - to present, not to a computer, but to human beings (and this is true a good deal of the time) -

"Far from ushering in the paperless office, computers have stimulated users' demands for high-quality output that resembles what they see on their screens." (Kellner p. 29)

then what? The options are:

a. photography: photograph the screen; this is the least expensive by far (Hasselblads are $4,000 or so; a good 35mm with a macro lens is about $1,000); it requires a certain level of skill that may be beyond some of your users; also, the resolution and clarity are dependent on several variables (e.g., processing; lens quality; monitor resolution). A macro lens is intended for close-up photography; it has a flat focus and therefore does not distort at the edges as other lens do.

b. filmwriter: got a spare $20,000? then this is for you. It takes an image (lovingly manipulated by a user) directly from disk, and writes it to film (normally prints or transparencies). Filmwriters go up to $300,000 (McDonald Detweiler)

c. printers: black and white printers are nowhere nearly as pricey, probably more like $2,000 - the higher the resolution, the higher the cost. Color printers are very expensive indeed at the top - $100,000 (Eastman Kodak's Coloredge), but $15,000 printers (with 300 dots per inch; color laser - for example, Kodak XL770, a digital continuous tone printer, and Mitsubishi's CHC-645 thermal transfer color printer) are showing up now and over the two years or so (Kellner p. 34). Printers are judged on resolution, ability to handle volume, speed, and operating costs.

So here we are with a beginning list of software and hardware. You may note one slight omission - where is the data we're going to be using all of this software and hardware for? I've compiled a beginning list of digital spatial data bases, included elsewhere in this issue of the IB, and in a previous issue I've listed the CDs that MIL has.

Once we have the data, all sorts of Pandora's boxes begin to fly open. The biggest is, surprisingly enough, a matter dear to most librarians' hearts (including mine) and something at which the library world excels, and that is standards. If one is recording spatial data in digital form, then it is likely that more than one person or one piece of hardware or software needs to be able to use it. And this will happen only if the data is recorded in a standardized fashion. This is a very complex matter. A recent

document on it by the Consultative Committee for Space Data Systems has a clear intent - to set a standard default graphics character set (ASCII)

> "designed for universal application to enable digital data transfer in a heterogeneous open data system environment" (Foreword).

But beyond that, matters get technical and complicated. At times while reading the document I understood each word individually (with a few exceptions), but the whole certainly meant less to me than the sum of its parts. Nonetheless, I was able to comprehend that this is a vital task, easily as essential as AACR2/MARC/ISBD. I particularly appreciated (from p. I-1 of "Part One, Fundamental Support Level") that,

> "The standardization being planned and implemented for space information systems stresses interoperability - the attempt to make interfacing [of different data bases] seamless. When there is a requirement to obtain information from another agency or an archive, there is a parallel need to transmit a complete description [NOT bibliographic; technical]. This description is the function of a Data Interchange Language (DIL)."

I've gone quickly through the basic areas involved in working with spatial data in digital form. We in the university map library world have a good deal to do - mainly (at least in my case) in educating ourselves in the very first place. How fortunate that we've been working with different formats for many years and therefore - accustomed as we are to concentrating on data and not just on format - adding digital items to our collections does not require a massive change in mindset.

One point I would like to emphasize - using digital data is NOT always the best way to go; in fact, often analog products do the job far better. The point is that we all already know how to work with analog products, and have for years, so there's no point in my harping on that. What we're working toward is an understanding and an awareness of working in and managing a digital environment, and an appreciation of the full potential of developing digital spatial-data systems.

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Two of my most frequently consulted sources for the preceding paper are Larry Carver (Head, Map and Imagery Lab, Library, UCSB) and Dr. Jeff Star (Geography and Remote Sensing Unit, UCSB). Without their considerable knowledge - and equally considerable patience in conveying that knowledge to me - I could never have written this.

SPATIAL DATA BASES IN DIGITAL FORM

A Sampler

compiled by

Mary L. Larsgaard

4/92

I. World (in no particular order)

a. World Data Base I and II: generated from 1:1M ONC's; available through NTIS; magnetic tape
b. MundoCart: also generated from 1:1M base data; work originally done by Petroconsultants; now marketed by Chadwyck-Healey; CD-ROM;
c. DCW (Digital Chart of the World): ESRI is under contract to DMA; prototypes have been made; final version, in 4 CDs, should be out mid-1992
d. ETOPO5: sold by NOAA; magnetic tape
e. World Vector Shoreline (WVS): DMA product; designated for public sale; contains shorelines, international boundaries, and country names; originally on magnetic tape, but prototype on CD

II. U.S.

a. USGS products

i. DEMs (Digital Elevation Models): elevation data from topos (1:24,000; 1:250,000); complete for 1:250,000
ii. DLGs (Digital Line Graphs): line data (e.g., roads; hydrography) from previously mentioned topos

NOTE: American Digital Cartography sells digital versions of some topos.

b. U.S. Bureau of the Census

i. TIGER
   a. Census Bureau
   b. various commercial vendors, e.g.,
      i. Klynas (Streets)
      ii. Strategic Mapping (ATLAS/GIS)

c. state products:

many geological surveys have digital data files and products

d. commercial firms, e.g., Geovision

III. Foreign countries

Mary Larsgaard is at the data-collecting point here; countries that come immediately to mind are Great Britain (the Ordnance Survey), Australia (the country's Census, which uses Supermap software), and Canada (both on the national and the provincial level - cf. BC's Minfile, Ontario's various geochemical surveys).

Glossary

to accompany Mary L. Larsgaard's
Accessing the World of Digital Spatial Data

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and anything else I could lay my hands on.

Glossary

ADAR: Airborne Data Acquisition and Registration

ADRG: Arc Digitized Raster Graphics (CD-ROM products of U.S. Defense Mapping Agency)

AI: Adobe Illustrator "flavor" of PostScript, to get images to and from the Mac

AM/FM: automated mapping/facilities management; applications are used primarily to manage geographically distributed facilities (e.g., waters, pipelines) that deliver service to customers

analog: the representation of continuous numerical quantities (e.g., voltage, current, brightness, etc.) as opposed to discrete or "digital" units; usually refers to items in hard copy (e.g., paper, microform)

application: a computer program written for a specific purpose, such as work processing or page layout

ARC/INFO: GIS (sold by Environmental Systems Research Institute, ESRI), designed for resource and record management, land use, and land planning that integrates maps and tabular information in a common spatial database

array processor: a specialized computing device (used with a general-purpose computer), which performs mathematical operations on rectangular arrays of data very quickly; frequently used for image processing

ARC digitized raster graphics: (raster) digitized replicas of hard-copy source maps and charts that DMA (U.S. Defense Mapping Agency) produces on CD-ROM, e.g.:
- ONC at 1:1M;
- TPC at 1:500K;
- JOG at 1:250K;

best suited for use as raster background images for GIS applications; term also used for raster image of paper map or chart, supported by ancillary raster images of chart-specific marginalia and text dat; collected as nominal 100-micron pixels in 24-bit rgb (red-green-blue)

artifacts: undesired results from a process

ASCII: American National Standard Code for Information Interchange; a generic code representing alphanumeric characters that permits the exchange of text between different operating systems

ASCII delimited: appropriate for using with a specific software, e.g., LOTUS

ASCII flat file: just the data

attributes: all thematic information that defines "what" a map feature is; attributes are termed non-spatial because they do not themselves represent locational information; attributes may be stored as: proprietary file structures; non-relational dbs; relational dbs; object-oriented dbs

automated geographic information system: a GIS based on digital computers

band: a range of wavelengths of electromagnetic radiation; also called channel

band interleaved by line (BIL): band data values are stored in sequence for each line of a raster before the set of values for the next line; a method of data storage for multivariate raster datasets

band interleaved by pixel (BIP): all band data values for one pixel are stored before moving on to the values for the next pixel; a method of data storage for multivariate raster datasets

band sequential (BSQ): the complete array of data for each separate variable or band is stored independently of all other variables; a methods of data storage for multivariate raster datasets

baseline: an imaginary line on which the letters in a line of type sit

baud: a unit of data transmission speed measured in bits per second; modems are rated according to baud, such as 1200 or 2400

BIL: Band Interleaved by Line

BIOS: Basic Input/Output System; manages communications between the computer and peripherals, such as keyboard and monitor

BIP: Band Interleaved by Pixel

bit: basic unit of information in a computer. Each number and letter that goes into a computer is translated into a unique series of electronic impulses. Each impulse, actually a level of voltage coursing through the computer's circuitry, is usually represented on paper by a 1 or a 0 (zero), and is called a bit.

bitmap: a matrix of dots, all of the same density, that forms an image; schema for computers to display binary graphics (as opposed to ASCII/text); cf. object-basic or vector-basic graphics

BITNET: Because It's Time Network; low-cost, low-speed network started at City University of New York; popular electronic-mail system

bit string: a string of data bits that reprsents a "yes" or a "no" for a particular attribute for a record (e.g., whether the title in a bibliographic record is in English). Bit strings are employed to make certain seraches in online systems such as MELVYL faster.

bits per inch (BPI): number of bits of information per inch on magnetic tape or other magnetic storage

bits per second (BPS): number of bits of information transmitted or communicated

BPI: Bits Per Inch

BPS: Bits Per Second

bridge: processes connecting protocols to enable them to communicate with each other as if they were compatible

BSQ: Band Sequential

buffer: electronic storage space (temporary) for computer memory

B/W: black and white

byte: compsed of eight bits (with 2 to the 8th, or 256, unique values - often given as a whole number between 0 and 255); this combination of bits representing a number or a letter; unit of measurement used to rate storage capacity of disks:
1,000 bytes is a kilobyte (1K)
1,000,000 (actually 1,048,576) bytes is a megabyte (1M)
1,000,000,000 bytes (actually 1,073,741,824) is a gigabyte (1GB)
1,000,000,000,000 bytes is a terabyte -
THE EQUIVALENT OF EVERYTHING IN THE LIBRARY OF CONGRESS (1T)
1,000,000,000,000,000 bytes is a petabyte (1P)

CAC: Compressed Aeronautical Chart (U.S. government)

CAD: computer-assisted design; does not have descriptive data assigned to information (NOTE: also used to mean computer-aided drafting)

cathode ray tube (CRT): electronic data-display device; the display surface is covered by a material which will emit light when struch by an electron beam

CCT: Computer Compatible Tape

CD-ROM: Compact Disc-Read Only Memory; 600M of data, with playback to CD-ROM drive unit

CGA: Color Graphics Adapter; relatively low-resolution color adapter board, standard for IBM-PC and clones

CGM: Computer Graphics Metafile format; popular graphics-file interchange format (binary file format for storing and transferring images); first used by Graphics Standards Planning Committe of the ACM SIGGRAPH in its final report

channel: see Band

chips: integrated computer microprocessor circuit etched onto a silicon chip; building blocks of a computer

CIR: Color Infrared

COGO: coordinate geometry

computer compatible tape: magnetic tape containing data in computer-readable form; most common is 9-track (9 parallel data-recording tracks); densities are most often 1,600 or 6,250 BPI

computer system: computer and its attached peripherals (e.g., disk drives, monitor, keyboard, printer, etc.

contrast enhancement: procedure which artificially increases the contrast in an image, so that certain features may be more easily seen

CPU (central processing unit): the "Brain" of the computer, which interprets computer instructions

CRT: Cathode Ray Tube

CZCS: Coastal Zone Color Scanner

D/A: Digital to Analog converter

DAT: digital audiotape; high capcity and relatively fast data access rates; standard for data-intensive applications such as network backup and general purpose data storage, and now used for multimedia applications and image storage; can store 2 gigabytes of data on one 4mm DAT cassette - with data compression, one cassette can store 8 gigabytes; data transfer rate of 11 megabytes/minute (with data compression, 44M/minutes); to increase of a single cassette may increase by the mid-1990s to 32 gigabytes

data: in the computer context, the information produced by a computer

data base management: enables computer to store large amounts of informaiton and then sort it

dataset: a collection of like-formatted records with like information; may be from more than one data source

dataset granule: a segment of a dataset; smallest element of information useful to viewer

DBDB: Digital Bathymetry Data Base (U.S. government)

DBMS: database management system

DCW: Digital Chart of the World (U.S. DMA)

DEC: Digital Equipment Corporation

DEM: Digital Elevation Model (USGS)

desktop mapping: display, analysis, and management of geographic data on pcs

desktop publishing: use of personal computers and software applications to produce publication-quality documents

DFAD: Digital Feature Analysis Data (U.S. government)

DIFAX: digital facsimile map; standard circuit of weather information, produced by the National Weather Service

Digital Elevation Model (DEM): raster array of elevation values; available from USGS for 1:250,000-scale series of U.S. and for selected 1:24,000-scale sheets

Digital Line Graph (DLG): a vector data set; available from USGS for same series as DEMs; non-elevation data from these series

digital number: *in remote sensing, the numerical value of a specific pixel*

digital orthophotograph: airphoto that has been scanned and digitally rectified to remove distortions, resulting in a computer-compatible data set that can be manipulated, overlayed, displayed, plotted, etc., using image processing and GIS software

digital terrain model (DTM): producing models of surface or subsurface that appear to be three-dimensional

digital to analog converter: a device that converts digital computer values to analog voltages, e.g., when digital values are converted to analog signals for a video display

digitizer: device used to convert analog information into digital form; a digitizer for flat graphic material is either flatbed or scanning; the image is converted into rasters or vectors that can be read, stored and manipulated by the computer.

DIME: Dual Independent Map Encoding (U.S. Bureau of the Census)

disc or disk: floppy or hard disk? use "disk" - if media that cannot be written to (e.g., CD-ROM), use "disc;" magnetically coated object that stores programs and data files; the two main types are hard disks and floppy disks

disk drive: used to store information; looks like a small record player and turns a circular piece of plastic, called a disk. As the drive spins the disk, it can either take information from the disk (reading) or put information onto it (writing). The drive either creates magnetic patterns on the disk's surface as it writes data on the disk, or it reads patterns already there. Some drives put information on both sides of a disk - these are called double-sided drives; singel-sided drives record only on one side of the disk. Drives with double-density capacity store more data than do single-density drives. Density refers to the number of tracks of information encoded on a disk. The tracks are arranged in concentric circles.

dither: process of adding dots to a small area in order to smooth the appearance of an image

DLG: Digital Line Graph (USGS)

DMA: U.S. Defense Mapping Agency

DN: Digital Number

DOS: operating system for IBM PCs

dot-matrix printer: forms letters by striking the paper with small pins, forming each letter with a pattern of dots.

dots per inch: a measure of a peripheral's resolution. For example, a laser printer's resolution is 300 dpi; some monitors are about 72 dpi.

download: the a t of transferring files from one computer to another, or of loading fonts from a computer to a printer

downsizing: mo ing from a few large time-shared computers to network-based computing with clients and servers; ir ent is to improve quality of operations while drastically lowering costs

DPI: Dots Per In h

DTED: Digital T rrain Elevation Data (U.S. government)

DTM: Digital Te rain Model

Dual Independe t Map Encoding (DIME): vector data structure used by the U.S. Bureau of the Census for the 1980 C ensus

dumb terminal: onsists of monitor and keyboard; does little more than send and receive data

DXF: Drawing I terchange File; commonly used in CAD/CAM (e.g., AutoCAD) systems to exchange data between systems

EDUCOM: a n nprofit consortium of colleges, universities, and other institutions, founded in 1964; object is to facilitate t e introduction, use, and management of information technology in higher education

EGA: Enhanced Graphics Adapter; high-resolution color graphics adapter for IMG-PCs and clones

eight-bit machi e: microcomputer having CPU that works with information 8 bits at a time

electronic mail: nessages exchanged among computer users on a network

e-mail: electron mail

end of file (EOI : a computer code that indicates the end of a dataset

EOF: End Of Fil

EOS: Earth Obs rving System; planned NASA satellite program

EPS: Encapsula d PostScript format; permits image preview and placement in desktop publishing

EROS: Earth Re ources Observation Satellite; refers to data collected by the various Landsat satellites

ESA: European pace Agency

ESRI: Environn ental Systems Research Institute; one well-known product is ARC/INFO

Ethernet: local- rea networking hardware system (cables, connectors, etc.) developed & licensed by Xerox Corporation; ow widely accepted as a standard and manufactured by a number of companies; 10M/second

false color composite: image formed by assigning colors arbitrarily to two or more b/w images of a single scence, with the object of pinpointing differences and similarities; often made from data derived from different wavelength bands of a multispectral sensor such as Landsat

FDDI: Fiber Digital Data Interface; 100M/second communications standard

file server: processor with large disks, attached to network; allows data in network to be centrally organized and managed; other devices (e.g., terminals; workstations) on network can transparently access data from the file server

floppy disk: thin, flexible, plastic disk

frame grabber: computer expansion board with the ability to digitze a single video or TV image for use in digital photography

FTP: File Transfer Protocol; computer program for transferring files across a network

full-duplex circuit: communication over telephone lines where data is transmitted in both directorions simultaneously

gateway: protocol converter which communicates with connecting protocols using their own languages

GBIS: Geo-Based Information System

GEM: Graphics Environment Manager; graphics-based operating environment designed by Digital Research for IBM-PCs and Atari computers

GEMPAK: General Meteorological Package; analysis and display package developed for meteorological data by Severe Storms Branch of NASA Goddard Space Flight Center

geocoding: conversion of spatial information into computer-readable form

geographic information system (GIS): "the complete sequence of components for acquiring, processing, storing, and managing spatial data" (Star & Estes, p. 267) in digital form; combination of spatially related data and software application tools to create, maintain, retrieve, manipulate, and analyze data. Applications tend to be analysis of natural resources and demographics to support decision making

GIF: Graphics Interchange Format; graphics compression and storage standard, developed and copyrighted by CompuService Information Service and H&R Block Company

GIS: Geographic Information System

GKS: Graphic Kernal System; a computer graphics standard

graphics expansion board: computer expansion board that allows creation of graphics on a monitor

GUI: Graphical User Interface

half-duplex circuit: communications over telephone lines where data is transmitted in only one direction at a time; channel is reveresed for transmitting data in other direction

hard-disk drives: rapidly spin hard, metal disks that store much greater amounts of information than do floppy disks

hard copy: readable without use of computers, e.g., maps or imagery on paper or film

hardware: physical parts of a computer, including CPU, memory, tape drives, etc.

HDDT: High-Density Digitla Tape

high-density digital tape (HDDT): analog system for storing data; not directly compatible with general-purpose computer systems

icon: image that graphically represents an object, concept, function, or message on the computer screen

IGES: Initial Graphics Exchange Specification

IGIS: Integrated Geographic Information System

image: "a two-dimensional data representation," constituting a picture or graphic (Star & Estes, p. 268); may refer more specifically to aerial photography or satellite imagery

image classification: analysis of digital image values into categories of information

integrated geographic information system (IGIS): a GIS that works with remote-sensing data

Internet: collection of all interconnected computer networks that use TCP/IP protocol; an informal national network, interconnecting local area, regional, and national backbone networks. Networks in the Internet use the same telecommunications protocol (TCP/IP) and provide mail, remote log-in, and file transfer functions;

Internet address: a unique number assigned to each host computer in the Internet

inter-record gap (IRG): empty distance between records on magnetic tape

I/O: input/output

IP: Internet protocol

IRG: Inter-Record Gap

ISO: International Standards Organization

K: abbreviation of kilobytes) actually 1,024 bytes, but usually rounded off to 1,000)

LAN: Local Area Network

languages: machine language is lowest level (1's and 0's of binary code); next is assembly language (machine language represented in letters and numbers); high-level languages use easily understood letters, words, and numbers, and turn these into machine language for the computer's use (e.g., BASIC, COBOL, FORTRAN, C)

laser printer: high-speed computer printer that produces letter-quality hardcopy of data using laser technology

line map: topograhic, land-use, planimetric maps

LIS: Land Information System; comprehensive system centered on spatially oriented information;

examples: single-user workstations running GIS software; or entire organization networked to several computers running numerous types of software. The U.S. Bureau of Land Management is working on a large LIS which is intended to interrelate identity, use and attributes of land parcels, maps, and paper records, integrated with a geodetic reference framework which forms a unifying foundation by linking component layers of cartographic data.

listserver: computer program that, in simplest form, automatically mail messages to an electronically maintained mailing list; for example, one may send an electronic mail message to the listserver and subscrbie to a particular list, send a message to the list and have it resent to all subscribers

local area network: a way of linking computers to that they may share information and peripheral equipment such as printers; usually within a given area (e.g., a department in a building)

main-frame computers: the biggest computers made, in terms of memory and storage capacity

MARK-II: topologically structured data base, to collect and maintain the U.S.'s National Digital Cartographic Data Base (NDCDB) and to generate products from it as required

mass storage devices: computer data storage devices such as hard drives, optical-magneto dirves, etc., capable of storing large amounts of information

MC&G: Mapping, Charting, & Geodesy (U.S. Department of Defense)

metadata: data that describes data (e.g., cataloging records)

microprocessor: thousands of microscopic electronic circuits in very samll space; made microcomputer possible

minicomputer: between microcomputer and mainframe in size and abilities

MIPS: Million Instructions Per Second; used to characterize CPU performance

modem: device that converts electronic signals from the computer into sounds that can be carried over a telephone line, and also converts the sounds back into electronic signals. The term is a combination of "modulator" and "demodulator." An acoustic coupler is a modem into which a telephone can be placed.

motherboard: main circuit board in a computer; holds primary processing chip, main memory, and other vital components

mouse: small, handheld device which one moves around on a flat surface in order to position the cursor on a video display

MSS: Mulstispectral Scanner

multiuser server: minicomputer attached to a LAN; allows users to log in on the LAN

NAD: North American Datum (geodetic)

NADCON: North American Datum Conversion

NASA: U.S. National Aeronautics and Space Administration

NCGIA: National Center for Geographic Information and Analysis (headquartered at UC Santa Barbara; other offices at U. Maine, Orono, and at SUNY Buffalo)

NDCDB: U S.'s National Digital Cartographic Data Base; will contain digital represtnations of the 1:24,000-, 1;100,000-, and 1:2,000-scale map series

NFS: Network File System; a communications protocol based on IP, for file sharing among dissimilar computers on a LAN; allows cooperating computers to access each other's file systems; originally developed by Sun

NGS: U.S. National Geodetic Survey

nibble: half of a byte

NOAA: U.S. National Oceanic and Atmospheric Administration

NOS: U.S. National Ocean Survey

NSF: U.S. National Science Foundation

NSFnet: national computer network established by NSF and managed by University of Michigan and MERIT, Inc.; NSFnet is part of the Internet

object-oriented programming: encapsulates both data and procedures within an object; the feature thus "knows" its geometry, attributes, and topoglogy (what its relationships with other objects are)

OCR: Optical Character Recognition

optical character recognition: a method of scanning typewritten, rpinted, or handwritten documents and translating the data into editable text

operating system: software procedures that tell a computer how to operate programs; may also be called a disk operating system. MS-DOS (IBM), VMS (DEC), and UNIX (developed by Bell Labs, written in C; intended to be a universal OS) are examples.

optical drive: removable mass-storage device employing a laser beam to write, erase, and rewrite information on a disk

OS: Operating System

OSE: Open System Environment concept; for portability and interoperability of applications software

OSI: Open Systems Interconnect model; ISO's seven-layer (physical; data link; network; transport; session; presentation; application) protocol model

OS/@: a multitasking operating system developed by IBM for its PC-class computers

page description language (PDL): computer code that tells a printer where to put a page

parallel port: computer interface sending and recieving information 8 bits at a time

PCX: graphics file generated by some software (e.g., PCPaint)

PDL: Page Description Language

PDR: Preliminary Design Review (U.S. government)

peripherals: accessories to computers (e.g., printers)

PICT: standard format used for object-oriented graphics (graphic made up of distinct objects that can be individually manipulated) on the Mackintosh

picture element: see Pixel

pixel: smallest discrete unit in an image

plotter: device that records information on paper or film

ports: channels through which computers send and receive date. They are either serial or parallel; that is, they send or receive data one bit at a time (serially) or several bits at a time (parallel).

POSIX: Portable Operating System Interface for Computer Environments; not an operating system but rather an interface between an OS and an application, intended to rpovide applications portability at the source-code level

POSIX: Portable Operation System Interface for Computer Environments; standard that defines the functional interface between an operationg-system environment and applications

PostScript: page-description programming language developed by Adobe Systems specifically designed to hanlde placement of text and graphics on a page

preprocessing: manipulation of digital data in preparation for analysis

printer: there are two basic kinds of printers for microcomputers - dot matrix and letter quality (laser printers); the latter are generally slower than the former

protocol: name given to software functions that manage information transfer in a data communications network

RAM: Random Access Memory; computer memory used for storing data

random access memory: internal computer memory for programs and data that may be altered; information in RAM will be lost if it is not saved before the computer is turned off

raster: information collected as cells rather than as lines (compare with vector)

RBMS: Relational Database Management System

read-only memory: parts of computer's memory used to store permanently programs whose contents can be read but not altered

RISC: Reduced Instruction Set Computer (in contrast to CISC, Complex etc.)

ROM: Read Only Memory

SAR: Synthetic Aperture Radar

SCSI (small computer system interface): industry standard for connecting peripheral devices to personal computers

SDTS: Spatial Data Transfer Standards; in development since 1983; NIST (National Institute of Standards and Technoloy) has given USGS's NMD (National Mapping Division) development responsibility

serial port: computer interface that transfers and receives data 1 bit at a time

server: computer that provides a central file-storage area, and may control printers as well as other network services

shareware: software that is freely distributed for evaluation, but requires a small fee from those who decide to keep it

SIF: Standard Interchange Format (for graphics files)

signal-to=noise ratio (S/N or SNR): ratio of signal to noise for a measured value; the more noise, the lower the qulity of the informtaion

signature: set of characteristics - most often spectral - for a spatial area that identify a type of information or feature in remote-sensing data

sixteen-bit machine: microcomputer whose CPU works with information 16 bits at a time; faster than an 8-bit machine

smart terminal: terminal that can do more than send data to a computer and display data from it

SMTP: Simple Mail Transfer Protocol; Internet standard protocol for transferring electronic mail messages from one computer to another

SNR or S/N: Signal to Noise Ratio

soft copy: computer ouput on a medium such as magnetic tape, disk or diskette, that cannot be read without computer equipment

software: instructions by which a computer operates, also known as programs

spatial data: geographically referenced features, described by geographic positions; may be hardcopy or digital

spline: mathematically defined cure; described two- and three-dimensional objects

SPOT: Systeme Probatoire d'Observation de la Terre (French satellite)

spread sheet: a program that sets up an eletronic spread sheet in which lines and columns are automatically calculated according to formulas chosen by the user; when one number is changed, the program automatically will change all the sums and multiples that are affected

SQL: Structured Query Language

style sheet: a collection of specifications used for formatting text (e.g., typeface, type size, paragraph indents, spacing)

tape drive: reads magnetic tapes

tag: any one discrete field in a database

TARGA: TrueVision Advanced Raster Graphics Adapter; graphics expansion board designed for digital photography

TCP/IP: Transmission Control Protocol/Internet Protocol; telecommunications suite

telecommunications: electronic communications from one computer to another, via telephone lines

TELNET: the part of the TCP/IP suite of protocols that handles remote log-in to other computer systems on the Internet

texture map: two-dimensional placed on 3-D object, to give a texture, such as marble

throughput: amount of information being transported per unit of time

TIFF (Tagged Image File Format): standard graphics format, developed by Aldus, for storage of high-resolution (greater than 72 dpi) scanned images that can be imported into a page-layout program; comes in many different flavors

TIGER: Topologically Integrated Geographic Encoding and Referencing (U.S. Bureau of the Census; spatial-data files for the 1990 Census)

TIN: Triangulated Irregular Network; data structure for representing digitally a continuous surface of the Earth; apparently may be generated from DTMs

TM: Thematic Mapper (on later Landsat satellites)

topology: interrelationships between features and spatial constructs, specifying how featrues are related to other features

TRN file: an INFO (i.e., ARC/INFO) data file; stores node number, from-arc number, and to-arc number for every possible turn in the network coverage

UNIX: computer operating system developed by AT&T and modified extensively by UC Berkely

user interface: system by which information is exchanged between user and computer

UTM: Universal Transverse Mercator projection

UV: Ultraviolet

vector: "generally, a quantity possessing both numerical value and direction. In terms of GIS, typically representing a boundary between spatial objects" (Star & Estes, p. 277). A line, in contrast to raster data, which is collected as a cell.

VGA: Video Graphics Array; standard for IBM PC ATs; supports resolution of 320x200 pixels, with 256 colors (8-bit) of a a 256,000 color palette

VICAR: Video Information Communication and Retrieval; image processing and GIS system; raster; developed by Jet Propulsion Lab

virtual reality: application of set of high-end technologies for interactive three-dimensional modeling, combined with input mechanisms that sense a user's gestures and movements

visualization: ability to see multiple views of the same data set (cf. Windows)

VMS: operating system for DEC equipmentWDBII: World Data Bank II

windowing: ability to display simultaneously a collection of materials (text, graphics) on a computer screen

WMF: Windows Metafile

workstation: from the outside, a workstation looks like a PC, and in fact may be used like high-performance PCs - and in fact a high-performance workstation and an IBM PS/2 Model 80 are similar in their hardware capabilities. The difference is the operating system; PCs run MS-DOS (or perhaps OS/2), while workstations run UNIX (except for DEC VAXstations, which run VMS). Workstations are designed to run both in a network and as stand-alone systems, while PCs were designed as stand-alone sytems and therefore have limited networking capabilities. Workstations use the X Windows standard for screen display; no such standard exists for PCs.

WPG: vector form of WordPerfect's image forma

WVS: World Vector Shoreline (DMA)

WYSIWYG (what you see is what you get): an accurate screen representation of final output; pronounced "wizzywig"

Bench Marks !

The Hihn Archive Endowment Funded at UCSC

Stanley D. Stevens, Map Librarian at the University of California-Santa Cruz, on May 20, 1992, announced the receipt of a gift of $25,000 from Louis E. Hihn to support research, cataloging, and indexing of the Hihn Archive at the University's Map Room. Mr. Hihn, of Santa Cruz, has also designated the bulk of his Estate to be added to the Endowment.

This was a triple-event; simultaneous with the funding of the Hihn Archive, the Archive published the autobiography of the donor on his 89th birthday: *Louis Edwin Hihn — From Childhood to My Last Hurrah: My Memorable Experiences — An Autobiography.* His "Last Hurrah" is the establishment of the Endowment. This is the first publication of The Hihn Archive. Stevens edited the autobiography and has several related projects under development.

The Hihn Archive is a collection of land ownership maps, deeds, agreements & leases, business papers, letter books, and personal memorabilia of a California 1849er, a German immigrant, Frederick A. Hihn, and his decendants. Louis Hihn is a great nephew. F. A. Hihn, arrived in Santa Cruz in 1851 after an unsuccessful attempt to find a fortune in the gold fields, was a hotel operater in Sacramento, and was burned out of a druggist business in the disastrous San Francisco fire of May 4,1851, which destroyed almost the entire city. Later that year he settled in Santa Cruz with little money which he parlayed into $30,000. by 1857, and at the time of his death in 1913 he was worth several million dollars. He was a County supervisor, State legislator, railroad developer, lumberman, banker, merchant, water purveyor, and land developer. He owned over 18,000 acres of land in Santa Cruz County, founded the town of Capitola, developed Aptos, and Felton, owned hotels in San Francisco, and was well known throughout California. He was one of the three founding Trustees of California State Polytechnic University at San Luis Obispo; he selected and purchased the land, and wrote the deeds for the Cal Poly campus. The headlines of the *Santa Cruz Surf* newspaper, at the time of his death, August 23, 1913, proclaimed "DEATH OF F. A. HIHN — Foremost Map in Santa Cruz County for Sixty Years! — A MAN OF MILLIONS — Acquired by a Long Life of Persistent Endeavor Along Many Lines of Business."

CONVENTIONS

Are you hosting a forthcoming convention? Please let your IB Editor know your plans (no matter how preliminary), so that prospective attenders will be able to plan well ahead.

November 7-9, 1991 "Imaging the City," the **Tenth Kenneth Nebenzahl, Jr., Lecture in the History of Cartography**, was held at the Newberry 7-9 November 1991. Each day, more than 100 attended the lectures, given by Naomi Miller, Nancy Steinhardt, Richard Kagan, Martha Pollak, David Buisseret, and Gerald Danzer, and covering diverse aspects of the historic interplay between urban cartography and urban planning in the West and China. Ken Nebenzahl opened the proceedings Thursday night. After welcoming those in attendance, he announced that the Nebenzahl Prize had been awarded to Roger Kain of the University of Exeter (England) and Elizabeth Baigent of Oxford University for their work entitled Cadastral Maps in the Service of the State: A History of Property Mapping in Europe and Her Colonies. This book is now at the University of Chicago Press for publication. As an important sidenote - the Smith Center established the Nebenzahl Prize in 1978 for book-length manuscripts in the history of cartography. Submissions for this award may be sent at any time to the Smith Center. Any manuscript judged worthy of the Prize will be published by the University of Chicago Press, and the Prize carries a monetary award of $1,500. The first Nebenzahl Prize was awarded to Professor Josef Konvitz of Michigan State University. His book, *Cartography in France, 1660-1848: Science, Engineering, and Statecraft*, was published in 1987. Following the opening lecture by Naomi Miller, a reception in the Newberry's lobby allowed attendees to obtain their first view of Martha Pollak's exhibit of early modern fortification manuals from the library's collection. The lectures ended on Saturday with a particularly animated roundtable discussion including about 25 scholars. The lectures themselves will eventually be published by the University of Chicago Press. The eighth and ninth series, "Monarchs, Ministers and Maps and Rural Images," are currently being edited for publication.

February 12-15, 1992 **College Art Association**, Chicago. David Buisseret, Director of the Hermon Dunlap Smith Center for the History of Cartography, chaired a session on "Perceptions of Landscape and the Art of Mapping." For information about the conference write the College Art Association, 275 Seventh Avenue, New York, NY 10001 (phone 212/691- 1051).

June 2-4, 1992 **International Workshop on Standards for the Exchange of Geographic Data**, Toronto (*Delta Meadowvale Resort & Conference Centre*, Mississauga, Ontario), presented by Land Information Management Committee, Canadian Institute of Surveying and Mapping in cooperation with Institute for Land Information Management, University of Toronto. Tony P. Sani, CISM Land Information Management Councillor, c/o Northway Map Technology Ltd., 44 Upjohn Road, Don Mills, Ontario M3B 2W1 Canada.

June 2-6, 1992 **Association of Canadian Map Libraries and Archives** (ACMLA) Annual Conference, University of Calgary. June 2, committee meetings and evening icebreaker.

June 3: Keynote speaker, Patrick McGlammery; "Integrating Spatial Data into Cartographic collections," Carol Marley; "Choosing a Geographic Information System," Dr. Nigel Waters; "Evaluating Spatial Data," rep from the Dept. of Survey Engineering of the University of Calgary; "Encyclopaedia of Global Change," rep from Canada Energy, Mines and Resources; "Providing SErvice in the 1990s," Helen Clarke

June 4: "Mundy Map Company, History," Ron Whistance-Smith; "Mapping the Canadian Rockies," Frances Woodward; "Visualization of Information," Doug Phillips; "Hisotircal Atlas of Railways of Alberta," Geoff Lester of University of Alberta; "Report from the National Archives," Betty Kidd; Tour of Glenbow Museum Map Collection

June 5: "Alberta's Land Resources Information System: A Public Provincial Geographic Information System," "GADS: A Geographic Assisted Design System," Frank Thirkettle; "Producing the Banff-Canmore Tourism Map," Greg Kovacs; "Joys and

Sorrows of Map Acquisitions Work for Map Retailers," Jack Joyce of ITMB World Wide Maps; annual general meeting; annual banquest (speaker is Aphrodite Karmitsanis, Geographical Names Programme Coordinator, Alberta Culture)

June 6: field trip to Royal Tyrrell Musuem of Paleontology and the Alberta Badlands

June 6-11, 1992 **Special Libraries Association**, San Francisco. Preliminary listing of Geography and Map Division programs: Sunday, June 7th - 4:30-7pm, G&M Executive Board meeting; 8pm-midnight - G&M open house

Monday, June 8th: 9-noon - reports from cttees and reps of other organizations; 1:30-4pm - Seismic Mapping and Earthquake Engineering ("Seismic Mapping," Stuart Allen, Raven Maps; "Earthquake Engineering Research Center," Katie Frohmberg); 5:30pm - G&M reception at UC Berkeley Map Collection

Tuesday, June 9th: noon-1:30pm, luncheon and speaker ("Ifla and the Coup," David McQuillan); 1:30-3pm, "AGS Optical Disk Project (Christopher Baruth) and "Canadian CD-ROM Developments" (Carol Marley); 3pm, G&M business meeting; 5:30pm, G&M reception at W. Graham Arader III Gallery

Wednesday, June 10th: 1-4pm, contributed papers ("Military Maps of the Pacific in Unpublished Documents," Dan Blewett; "Use of Map Collections by Genealogists," Joanne M. Perry; "Fitting Information Service into a Mapping Production Environment," Emily Breese and Christine Hoffman of ETAK Inc.)

Thursday, June 11: Field trip to Stanford University, Monterey, Pacific Coast Highway

Contact: Jim Gillispie, Eisenhower Library, Johns Hopkins University, Baltimore MD 21218.

June 15-17, 1992 **First Thematic Conference on Remote Sensing for Marine and Coastal Environments**, "Needs and Solutions for Pollution Monitoring, Control, and Abatement," New Orleans. Contact: Nancy Wallman, ERIM, Box 134001, Ann Arbor MI 48113-4001; fax 313/994-5123.

June 20, 1992 **California Map Society** southern California meeting, California State University, Los Angeles. William Bowen (CSUN) on "Mapping California's Populatin," Ali Modarres (CSLA) on "A Cartographic Representation of the Changing Ethnic Communities of Los Angeles County, 1980-1990," Norman Thrower (UCLA) on "Projections of the Maps of the 15th and 16th Century European Explorers," and William Warren, past president of Paul L. Armstrong Company, on "Reality or Fantasy - Some Early West Coast Maps." Following lunch and the business meeting will be a visit to the Huntington Library for a special presentation of early Los Angeles and California maps arranged by Alan Jutzi, Librarian.

June 25-July 2, 1992 **American Library Association**, San Francisco (yes, that's right - SLA and ALA are meeting in the same city). For Map & Geography Round Table meetings, contact: Jim Walsh, O'Neill Library, Boston College, Chestnut Hill, Massachusetts.

Combine two biggies:

1. August 2-14, 1992, **XVII Congress for ISPRS** (International Society for Photogrammetry and Remote Sensing), Washington, D.C.: ISPRS 1992 Congress, P.O. Box 7147, Reston VA 22091-7147.

2. August 9-14, 1992 **27th International Geographical Congress**, Washington, D.C.: the biggest, the best - the prospectus alone is nearly 1/2" thick, and includes a colorful separate handout that has that National-Geographic-Society look. Dr. Anthony R. de Souza, Secretary General, 27th International Geographical Congress, 1145 17th Street, N.W., Washington, D.C. 20036.

October 1992 **Groupe des Cartothquaires de Ligue des Bibliothques Europeenes de Recherche**, "Diffusion and Promotion of Cartographic Materials," Barcelona.

October 13-17, 1992 **Arizona State Library Association and Arizona Educational Media ASsociation**, "Mapping the Future", Phoenix. Contact person: Melinda Conrad, Chandler Public Library, 75 E. Commonwealth Avenue, Chandler AZ 85225; fax 602/786-1156.

November 4-7, 1992 **WAML Fall meeting, Hawaii.** Riley Moffat, program planner, says: The Executive Board will meet on Tuesday Afternoon (November 3) at BYU-Hawaii in Laie. Wednesday morning will be the WAML business meeting and sounding board. Wednesday afternoon and evening will be spent at the Polynesian Cultural Center, including a traditional luau. Thursday will be spent at the University of Hawaii at Manoa in a paper session. We are working on a tour of the Institute for Geophysics as well as on a WAML banquet. On Friday morning we will fly to Hilo on the big Island of Hawaii and drive to Hawaii Volcanoes National Park, where we will be hosted by the USGS Observa-

tory, who will give us a special tour of the volcano area. We hope to be able to stay at the Kilauea Military Camp overnight and continue our field trip by visiting the Kapoho and Kalapana areas which have been over-run by lava, and possibly the observatory complex on the summit of Mauna Kea. I will reserve a block of rooms at the Laniloa Lodge in Laie for Tuesday, Wednesday, and Thursday nights. Those who would be interested in group rates flying from the Mainland, please contact Carli and Stan Stevens, who are willing to try to put together a package from the West Coast. Also, if anyone would like some ideas for activities before or after the conference, they are welcome to get in touch with me, as are interested vendors. Riley Moffat, Box 1966, BYU-Hawaii Library, Laie, Hawaii 96762; fax 808/293-3877.

November 6-12, 1992 **GIS/LIS**, San Jose Convention Center; GIS/LIS'92, 5410 Grosvenor Lane, Suite 100, Bethesda MD 20814-2122.

February 8-11, 1993 **Ninth Thematic Conference on Geologic Remote Sensing: Exploration, Environment, and Engineering**, Pasadena CA. Contact: Nancy Wallman, ERIM, POB 134001, Ann Arbor MI 48113-4001; 313/994-1200 x3234; fax, 313/994-5123.

Spring 1993 **WAML** at San Francisco

April 4-8, 1993 **25th International Symposium on Remote Sensing and Global Environmental Change**, Graz, Austria. Contact: Dorothy M. Humphrey, ERIM, POB 134001, Ann Arbor MI 48113-4001.

May 3-9, 1993 **16th International Cartographic Association**, Cologne. Program: "Maps for Knowledge, Action, and Development." AKM, Congress Service, Clarastrasse 57, CH - 4005 BASEL.

June 21-25, 1993 **XV International Conference on the History of Cartography**, Chicago/Milwaukee. Hermon Dunlap Smith Center for the History of Cartography, The Newberry Library, 60 West Walton STreet, Chicago IL 60610.

Last week of July, 1993 **ACMLA** at St. Johns, Newfoundland. Alberta Auringer Wood, Map Librarian, Queen Elizabeth II Library, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3Y1.

Fall 1993 **WAML** at Albuquerque NM

October 22-23, 1991 Third Annual Conference, **"Earth Observations and Global Change Decision Making: A National Partnership,"** Washington, DC. Contact: Dr. Robert H. Rogers, ERIM, POB 8618, Ann Arbor MI 48107-8618; 313/994-1200 x3234; fax 313/994-5123.

Spring 1994 **WAML** at Riverside CA

Fall 1994 **WAML** at Jackson Hole WY (co-sponsored by University of Wyoming and University of Idaho)

Late Spring 1995 **WAML** meets with **ACMLA** at Vancouver

See also

Announcement of

New Zealand Map Society/Australian Map Circle Joint Conference

on Page 188

EMPLOYMENT

MAP AND GEOGRAPHY LIBRARIAN, UNIVERSITY OF ILLINOIS, URBANA IL 61801: Position available: August 21, 1992; a full-time, tenure-track position.
Responsibilities: Under the general direction of the Director of Library Collections, the Map & Geography Librarian is responsible for the administration of the Map & Geography Library, staff supervision, reference and information services, cataloging, collection development, the application of new technologies, and other services identified to meet the needs of the faculty, students, and others using the collection. The librarian maintains a strong working relationship with the Department of Geography faculty, the library administration and faculty, and the faculty of other related units.
DEPARTMENT: The Map & Geography Library is part of the Library's Special Collections unit, and the librarian is a member of the General Services faculty. The Map & Geography Library contains approximately 16,000 books, 280 periodicals, 400,000 maps, and 160,000 aerial photographs. The collection is complemented by extensive holdings in the central stacks, the Geology Library, and the Rare Book and Special Collections Library. The staff consists of one full-time librarian, one half-time librarian primarily responsible for cartooning, one full-time library technical assistant, and several student assistants.
QUALIFICATIONS: Required - a Masters degree in Library Science from an ALA-accredited library school, of its equivalent. A minimum of 3 years professional library experience, including administrative experience, in an academic or other research library. Familiarity with cartography materials. Ability to provide service to a diverse research-oriented clientele. Evidence of ability to meet university standards of research, publication, and service. PREFERRED: Advanced academic training in geography, cartography, or related fields. Experience in cartographic reference service and collection development. Experience or familiarity with automation and geographical information systems.
SALARY & RANK: Librarians have faculty rank. Salary for this position is $28,000 upward for appointment as Assistant Professor and $31,000 upward for appointment as Associate Professor, depending upon qualifications, experience and scholarly credentials. Librarians are faculty and must demonstrate excellence in librarianship, research, publication, and university/professional/community service in order to meet university standards for tenure and promotion.
TERMS OF APPOINTMENT: Twelve-month appointment; 24 work days vacation per year; 11 paid holidays; 12 days annual sick leave; health insurance, requiring a small co-payment, is provided to employees (coverage for dependents may be purchased); participation in the State Universities Retirement System is compulsory upon appointment (8% of staff member's salary is withheld and is tax-exempt until retirement); newly hired university employees are now covered by the Medicare portion of Social Security, and are subject to its deduction.
CAMPUS & COMMUNITY: Urbana-Champaign, located about 135 miles south of Chicago, is a university community of over 100,000 inhabitants, including a student population of over 35,000 and an administrative, academic, and support staff of over 12,000. Many departments and colleges have outstanding reputations for research achievement. The Library ranks first in size among state university libraries and third among all universities in the country.
APPLY: Send letter of application and complete resume with the names, addresses, and telephone numbers of five references to: Allen G. Dries, Library Personnel Manager, University of Illinois Library at Urbana-Champaign, 1408 West Gregory Drive, Urbana IL 61801; phone 217/333-5494.
DEADLINE: For maximum consideration, applications and nominations should be received no later than June 30, 1992.

MAP CURATOR, YALE MAP COLLECTION, STERLING MEMORIAL LIBRARY Minimum rank: Librarian III. Serves as the Library's principal authority on maps and directs the Yale Map Collection. Selects materials for the Collection, manages its budget, leads its staff, oversees map cataloging and preservation, offers reference service, and is responsible for teaching exhibits, and publications based on the collection. Qualifications: MLS degree from an ALA-accredited library school or the equivalent experience. Advanced academic training in history, geography, cartography, or related subjects. Minimum of five years of increasingly responsible professional experience in a library, research organization, or

comparable institution related to maps. Successful managerial experience, including demonstrated ability to plan and implement projects and services, lead library staff and work effectively with other members of a research-oriented academic community. Strong analytical and interpersonal skills. Excellent oral and written communication skills. Understanding of map cataloging practices and knowledge of current trends in computerized mapping are required. Experience with providing classroom instruction at the college level is strongly preferred. Salary from a minimum of $35,600 dependent upon qualifications and experience. Applications received by June 15, 1992 will be given first consideration; applications will be accepted until the position is filled. Please send letter of application, resume, and the names of three references to Diane Y. Turner, Director, Library Personnel Services, Yale University Library, POB 1603A Yale Station, New Haven CT 06520. EEO/AA.

EMPLOYMENT SOUGHT:

Christopher Thiry Objective; to find employment which utilizes knowledge of geographical information systems, information sciences and maps

Education: MSL, University of Michigan, Spring 1992 - concentration on GIS, maps, cartography
- related course work in image processing, cataloging of non-book materials, library automation, Federal government documents
B.A., American History, April 1989

Experience: Cataloger, May 1991- , Maps Library, University of Michigan, Ann Arbor
(also did reference work)
Intern, William Clemens Library, January 1992-spring 1992;
worked under the supervision of the rare-maps librarian

References: available upon request or by contacting:
School of Information and Library Studies, University of Michigan, 306 West Engineering, Ann Arbor MI 48109-1092 (313/764-9376; fax 313/764-2475)

Address: 709 Lawrence, Ann Arbor MI 48104-1229; 313/769-7989; email christopher_thiry@um.cc.umich.edu

NEW MAPPING OF WESTERN NORTH AMERICA

Compiled by

Joe Crotts
California State University, Chico

Contributors:

KN	Klaus Neuendorf
LN	Linda Newman
Others	The Author

Alaska

Alaska Division of Geological and Geophysical Surveys. *Multiple glaciation and gold-placer formation, Valdez Creek Valley, western Clearwater Mountains, Alaska.* 1990. Prof. Rept. 107. 1 map + 29p text. 3700 Airport Wy., Fairbanks, AK 99709-4699. $4.50.

Arizona

United States. Forest Service. *Coronado National Forest, Arizona and New Mexico.* 1986. 1:126,720. Both sides of sheet 82x65 cm. G4332 C6E63 U5. Sudoc A 13.28:C81/9/986. Forest Service map class A. Washington, GPO.

Colorado

United States. Bureau of Land Management. *1989 transportation plan, Little Snake Resource Area, Craig District, Colorado (East 1/3).* 1989. 1:126,720. 119x65 cm. G4312 L5G46 1989 U5 East. Sudoc I53.11:T 68/east. Shipping list 91-513-P. Washington, GPO.

Kansas

Kansas Geological Survey. *Geologic map of Sedgewick County, Kansas.* 1991. 1:125,000. Computer generated revision of 1958 map. 1930 Constant Ave., Univ. Kansas, Lawrence, KS 66047.

Nevada

Bonham, Harold F., Jr. *Bulk-mineable precious-metal deposits and prospects in Nevada.* 1991. 1:1,000,000. 3rd ed. Map 91. Nevada Bureau of Mines and Geology. University of Nevada, Reno, 89557. 702-784-6691. $6.00. (LN)

United States. Bureau of Land Management. *State of Nevada.* 1990. 1:500,000. col. Nevada Bureau of Mines and Geology. University of Nevada, Reno, NV 89557. 702-784-6691. $9.00. (LN)

New Mexico

New Mexico Bureau of Mines and Mineral Resources. *Geology and paleontology of the Santa Fe Group, southwestern Albuquerque Basin, Valencia County, New Mexico.* 1991. 1:24,000. 3 sheets + 36p text. Bulletin 132. New Mexico Bureau of Mines, Publications Rm. 107, Socorro, NM 27611. $12.00.

_____ *Stratigraphy, sedimentology, and paleontology of the lower Eocene San Jose Formation in the central portion of the San Juan Basin, northwestern New Mexico.* 1991. Scale varies. 1 sheet b&w, + 45p text. Bulletin 126. New Mexico Bureau of Mines, Publications Rm. 107, Socorro, NM 27611.

United States. Bureau of Land Management. *Artesia, New Mexico, 1990.* Metric, 1:100,000 scale series (topographic). Public access edition. 56x94 cm. Universal transverse Mercator proj. G4322 A7G5 1990 U53. Roswell, NM, BLM Roswell District and Washington, GPO.

United States. Forest Service. *Carson National Forest, New Mexico, 1991.* 1:126,720. Both sides of sheet 112 x91 cm. G4322 C32E63 1991 U5. Sudoc A 13.28:C 23/6/991. Shipping list 91-0670-P. Washington. GP0.

Oregon

Beeson, M.H., et. al. *Geologic map of the Portland quadrangle, Multnomah and Washington Counties. Oregon and Clark County. Washington.* 1991. 1:24,000. 27x40 in. col. DOGAMI GMS-75. Oregon Dept. of Geology and Mineral Industries, 910 State Office Bldg., 1400 SW 5th Ave., Portland, OR 97201-5528. 503-229-5580. Fax 503-229-5639. $7.00. (KN)

Oregon Department of Geology and Mineral Industries. *Earthquake-hazard geology maps of the Portland metropolitan area, Oregon.* 1990. 1:24,000. 8 maps, ea. 25x30 in. + 21p text. Each map covers 7.5' quadrangle showing geology, faults and sediments with high quake hazard potential. Open-file report O-90-2. Oregon Dept. of Geology and Mineral Industries, 910 State Office Bldg., 1400 SW 5th Ave., Portland, OR 97201-5528. 503-229-5580. Fax 503-229-5639. $10.00.

United States. Bureau of Land Management. *Upper John Day River public lands.* 1991. 1:100,000. Both sides of sheet 66x97 cm. G4292 J67G5 1991 U51. Washington, GPO.

Oregon Minerals Report

The Oregon Placer Minerals Technical Task Force has released its final report, *Preliminary resource and environmental data: Oregon marine placer minerals.* The 231 page report, including sections on geology, mineralogy and biology, "failed to show any rich or unique mineral resources offshore southern Oregon that would justify further resource effort at this time...." Open-file report O-91-2. Oregon Dept. of Geology and Mineral Industries, 910 State Office Bldg., 1400 SW 5th Ave., Portland, OR 97201-5528. 503-229-5580. Fax 503-229-5639. $10.00. (KN).

Washington

Washington Division of Geology and Earth Resources. *Geologic map of Washington—northeast quadrant.* 1991. 1:250,000. 3 sheets + 36p text. Mail stop PY-12, Olympia, WA 98504. $10.28.

ATLAS & BOOK REVIEWS

edited by

Greg Armento
University Library
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Pollak, Martha D. ***Military architecture, cartography and the representation of the early modern European city: a checklist of treatises on fortification in the Newberry Library.*** Chicago: The Newberry Library, 1991. 119p. $17.65. ISBN 0-911028-45-5

In November of 1991, the Tenth Series of Kenneth Nebenzahl, Jr., Lectures at the Newberry Library presented an opportunity to compose a checklist of the library's holdings as an accompanying exhibit. The author arranged alphabetically the holdings by authors, wrote a description and added comments about where other copies might be found. Her brief introduction summarized the impact of military architecture on art and city planning in the Renaissance and Baroque periods. The list of authors reads like a survey of great artists of the period. Far too often we forget they were practical craftsmen plying their trade to patrons for contracts. Despite the crude search for commissions, the artists remained artists, and with the help of the new breed of scientific surveyors and cartographers they produced accurate and beautiful fortification and city plans. Pollak's essay gracefully traces the changes in the treatises without any bias and with a keen eye for historical nuances.

This is an excellent research source and a delight to view, although some of the black and white plates are tiny. The inclusion of many of the title pages and the disposition of extant copies adds to its value. All research libraries will need a copy.

Edward L Homze
Professor of History
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Lincoln, Nebraska 68588-0327

Porter, A.N., editor. ***Atlas of British overseas expansion.*** New York: Simon and Schuster, 1991. 272p. $45 LC: 91-17405. ISBN: 0-130519-88-X

To bring an account of all of Britain's multitudinous excursions overseas under one roof, so to speak, is quite an achievement. To do it with accompanying maps so that the geographic components can be seen is definitely admirable.

In this atlas, the comings and goings of Britons during the past five centuries are condensed into cohesive units, each of which is outlined in a page or so of text and illustrated by one or more maps — in most cases full-page. There are almost one hundred of these units followed by twenty which focus on individual cities at some significant point in their history. A simple uniform style is used for the black-and-white maps. Though at times the format or lack of color reduces their effectiveness, the cartographer is to be congratulated for presenting so many, sometimes complex topics with a most acceptable clarity.

British overseas expansion has taken many forms; from outright occupation to the more subtle kinds of presence brought about by trading enterprises, missionary endeavors, and global lines of communication, as well as by the millions of individuals who - like this reviewer - chose to emigrate. These many differing intrusions, both direct and pervasive, are described and mapped so that this atlas is the place to find not only the British generated happenings in an particular region, but also world-wide networks and multilateral activities. Military involvements are mostly overlooked, the emphasis is on a more permanent presence. Oceans however, as the title implies, are the vital link between Britain and the rest of the world; their importance is the focus of many maps.

There are no defined sections to the atlas. The order is as chronological as is possible with overlapping

events. Regional coverage for some areas - in particular that for North America - appears in sequences. But some topics are scattered, and sometimes it can be difficult to determine where they are included. There is an extensive index; many of the entries refer to place names on the maps and include basic latitude/longitude. In some cases entries may be found only under a group heading, such as "rivers" or "trade," or "Indians (North American)."

Approximately one-third of the atlas deals with the period from 1480 to around 1800; another third covers 1800 to 1914; of the remaining units, more than one-half concentrates on the retreat from Empire. The text and maps were prepared by fifteen specialist contributors. They have put much into the explanatory pages and - for those who want more - sources and further readings are listed for each text/map unit.

As the editor acknowledges in the preface, there are many omissions, the final results being influenced by the demands of undergraduate instruction. Bearing in mind this additional British emphasis, the atlas will be used more easily by individuals with some prior knowledge of British history. As a reference atlas in a map collection it could be an invaluable source of maps to augment or enlarge on those in other historical atlases.

Muriel Strickland
Head, Map Collection
San Diego State University
San Diego CA 92182-0511

Collins, N. Mark, Jeffrey A. Sayer, and Timothy C. Whitmore, editors. ***The conservation atlas of tropical forests: Asia and the Pacific.*** New York: Simon and Schuster, 1991. 256 p. $85. LC:90-675139 ISBN 0-13-179227-X

This attractive volume offers much to those seeking general information on the current environmental health and status of Asian and Pacific tropical rain forests. The belt of the forest lands discussed here extends from the Western Ghats of India on the shores of the Arabian Sea to the region of New Guinea, including three major island groups: Fiji, Vanuatu and the Solomon Islands. Northernmost closed- canopy rain forest examined are in southern China, and southernmost are in Australia's Queensland.

This is the first of three tropical-rain-forest atlases that are being produced by the World Conservation Union (IUCN), which changed its name from International Union for the Conservation of Nature and Nature Resources in 1988. The IUCN has developed this atlas to focus attention of the loss of tropical rain forests and to outline conservation efforts. This work details the causes of deforestation and the rationale for the rain forest protection policies of the IUCN, the UN Environment Programme (UNEP), and the World Wide Fund for Nature(WWF).

The atlas is arranged in two parts. Part one is comprised of eleven chapters which describe forest use, degradation, and protection. The interaction and intermix of flora, fauna, and human cultures within the Asian and Pacific region are described. These chapters introduce readers to the political predicaments of respective countries, the kinds of human population pressures on the forests, the nature of forest degradation, and the activities of international agencies ~ which are attempting to arrest deforestation and minimize human misery.

Part two consists of eighteen separate chapters, each one focusing on one country, its forests, and providing maps of that region. Accompanying the maps are tables, statistics and descriptive text. Topical articles about a country's forest depletion or conservation fortify the text. The maps were produced by ARC/INFO software donated by the Environmental Systems Research Institute. Also used was the world digital mapping database of Petroconsultants Ltd., *Mundocart*. Most of the country maps are at 1:4,000,000, a scale that well matches the general nature of the atlas. Maps have a sharp and clean appearance with nice line quality and resolution. Most maps cover the entire faces of two pages (10 x 16 in.) The textblock lies very flat for easy mapreading and photocopying.

Actual forest conservation units are not so easily read. Types of rain forests and monsoon forests - up to seven types in one country - are indicated in greens. Conservation areas are shown in shades of red or brown, for existing or proposed reservations respectively. The red and brown colors are superimposed on greens (representing forest types), and the resulting shades of sienna and umber force the reader into some subjective interpretations of their meaning.

The atlas includes a general index; it also indexes species and acronyms. Bibliographies at the end of

each chapter list documents produced by international government agencies, published and unpublished works of academicians, consultants, and environmental groups, and even those that are sometimes opposed to IUCN policy.

Unfortunately, some map legends indicate that sources of cartographic data are small-scale maps which are twenty years old. This is difficult to understand in an atlas whose purpose is to describe the status of remaining rain forests in the named regions. Still, the editors, who have written authoritative works on Asian and Pacific tropical forests, assure us that the best sources available were used. And though the maps are of fair value, the text is of high value for those wanting a broad overview of this sort. The atlas will be valuable in undergraduate collections especially.

Joseph K. Herro
Branner Earth Sciences Library
Stanford University
Stanford, California 94305

[Review Editor's note: Although the titles of the two other conservation atlases were not mentioned, at least one other has been published under auspices of the World Conservation Union: *The conservation atlas of tropical forests: Africa*, edited by N. Mark Collins, et. al., Simon & Schuster, 1992. This will be reviewed in a later issue of the *IB*.]

PUBLISHERS' ADDRESSES

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c/o Kathryn Womble
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University of Washington
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Carson City, NV 89712
(702) 687-3451

New Zealand Map Society
c/o Kevin Moffat, Secretary, NZMS
22 Sandgate Avenue
Howick, Auckland
NEW ZEALAND

Newberry Library
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Chicago, IL 60610
(312) 943-9090

Pergamon Press Inc.
Maxwell House, Fairview Park
Elmsford, NY 10523
(800) 257-5755

Scottish Library Association
Motherwell Business Centre
Coursington Road
Motherwell, Scotland ML1 1PW
UNITED KINGDOM
Tel. 44 (698) 52526 or 52057

Simon & Schuster
1230 Avenue of the Americas
New York, NY 10020
(212) 698-7000

Book Review Guidelines

Review format: The review should be presented in three sections: 1) **the bibliographic citation**; 2) **the review**; 3) **identification of the reviewer**. Please submit your reviews on paper; an 8 1/2" x 11" bond original and one copy are required. Please do not send your reviews on floppy disks or by fax machine.

1.

The bibliographic citation should include: Author's name, title edition (if applicable), place of publication, publisher, date, number of pages, price, LC number (if known), and ISBN number (if known). An example, including correct punctuation, is given below:

Lock, C. B. Muriel. Geography and Cartography: A Reference Handbook. Third edition, revised and enlarged. London: Clive Bingley, 1976. 762 p. $32.50. LC: 76-8273 ISBN: 0-208-01522-1

2.

The review should be double-spaced and follow the usual principles of paragraphing. If you compare reviewed material with other works, please include author's name, title, publisher, and date of publication within the review itself rather than utilizing footnotes.

3.

The review should be followed by your name as you wish to be cited and place of employment, including city and state.

Editorial Policies: The opinions and judgements appearing in WAML reviews are those of the author and do not reflect official sanction of WAML. The Book Review Editor retains the right to make alterations in reviews submitted. If minor revisions do not alter the reviewer's intent, they will be made without further communication. However, if the Book Review Editor feels that extensive revisions are needed, or if changes would result in altering the reviewer's intent, such editing will be made only with the knowledge and agreement of the reviewer.

Review Content: To a certain extent the contents of a work must be described; but the reviewer should avoid making the review a list of the work's contents. Rather the review should emphasize analysis, evaluation, and comparative criticism. Questions which should be considered in the review process include: What is the purpose of the work? Has the content as described by the title been fulfilled? Has the author's intent as described in the work's preface and/or introductory remarks been realized in its content? How much of the work's content is cartographic? Or, is it primarily text supported by a few maps? How important is this work for research in geography and cartography? Should it be included in library collections, and what kind? The **length** of your review should be determined by the importance of the item being reviewed.

Thank you for your attention to these guidelines. Additional reviewers are always welcome. Please feel free to recommend other qualified reviewers who might be interested in submitting reviews to the *Information Bulletin*.

Greg Armento
Book Review Editor, WAML *Information Bulletin*
University Library
California State University, Long Beach
Long Beach CA 90840-1901
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PUBLICATIONS RECEIVED

Compiled by

Greg Armento

Danzer, Gerald A. *Images of the Earth on three early Italian woodcuts: candidates for the earliest printed maps in the West.* Chicago: Newberry Library, 1991. (*The Hermon Dunlap Smith Center for the History of Cartography Occasional Publication;* no. 5). 35 p. $8.00. ISBN 0-911-028-47-1

This short essay presents an in-depth examination of three early woodcuts dating from 1450 to 1470 which are located in the Biblioteca Classense, Ravenna. They pre-date the earliest commonly accepted European printed woodcut/map, that being the 1472 T-0 world map from Isidore of Seville. The woodcuts that are the focus of the thirteen pages of essay are photographically reproduced. Facing each photograph, an enlarged black-and-white outline of the cartographic element serves to underscore the text. Illustrations are typically reproduced at an average size of 6 x 5 inches. Five later woodcuts, including the Isidore of Seville print, are also reproduced, described, and analyzed. This scholarly publication should be of interest to large academic and public libraries, highly focused geography and history collections, and major map collections.

Nevada map atlas. Eighth ed. Carson City: Nevada Dept. of Transportation, 1991. 190 p. $12.

The latest edition of this essential Nevada state publication, which is typically published every three years, is simple in format and detailed in content. It contains black-and-white reduced-size maps, which are published separately at a larger scale by the Nevada Department of Transportation. The atlas consists of four sections, each section following a similar format. Sections begin with an easy-to-read quadrangle index. The main portion of the atlas contains approximately 140 quadrangle maps of the

entire state at a scale of 1 inch to 4 miles, (approximately 1:250,000). A second section contains 24 quadrangles of the more populous Carson/Reno region at a scale of one inch to two miles (approximately 1:125,000). The third and fourth sections focus on the major metropolitan areas of Reno and Las Vegas. These sections comprise five and twelve quadrangles respectively, and are at a scale of one inch to a mile (1:63,360). Section dividers contain base maps of the state, each overlaid with the route and description of an historic trail. The atlas also contains an index to over five hundred Nevada place-names, and population statistics for the state's major cities. A recommended overview atlas for all map libraries and academic libraries within the WAML region.

Taylor, D. R. Fraser, editor. ***Geographic information systems: the microcomputer and modern cartography.*** Oxford, England: Pergamon Press, 1991. (Modern cartography vol. 1). 247 p. $100 hardcover, $39 paper. LC: 90-7762 ISBN: 0-08- 040278-X (hardcover).

Dr. Taylor writes in the preface, "The purpose of this book is to consider the impact of two important technological changes on the discipline of cartography .. the technology of Geographic Information Systems ... [and] the dramatic impact of the microcomputer revolution" (p. vii). The book consists of twelve chapters, each written by highly regarded specialists and academicians in the field. The lead chapter, written by Dr. Taylor, reflects the book's title. Other chapters include:

Cartographic Data Capture and Storage;
Developments in Equipment and Techniques;
Microcomputer Graphics Environments;
The Cartographic Workstation;
Methods for Structuring Digital Cartographic Data in a Personal Computer Environment;
Mapping Software for Microcomputers;
Expert Systems in Cartographic Design;
Digital Geographic Interchange Standards;
Cartographic Data Display;
Micro-Atlases and the Diffusion of Geographic Information: An Experiment With Hypercard;
Vehicle Navigation Systems;
Cartographers and Microcomputers.

Most chapters contain graphs, tables, illustrations or maps. All are thoroughly footnoted and include useful bibliographies. Although this work is not for the general or casual reader, it should be an important, useful and educational work for those with knowledge of, or interest in, geographic information systems. Recommended for all college and large public libraries.

Wilkes, Margaret. ***The Scot and his maps.*** Motherwell: Scottish Library Association, 1991. 48 p. 4.5 £ ISBN 0-099649-81-X

This glossy paperback booklet contains thirty facsimile maps of Scotland, ranging from the fourteenth to early twentieth centuries. Most maps appear in black and white, except for five color maps - four on the inside and one on the back cover. Maps were selected for publication by Ms. Wilkes on the basis of their beauty, the notoriety of the cartographer, uniqueness of theme, or from the desire to exhibit a relatively unknown map. Map reproductions are clear and pleasantly presented, and the composition of the lively text corresponds to the non-chronological map presentation. Its eight brief chapters are entitled: Shaping Scotland; Looking At Land; Charting The Coast; Facing The Foe; Learning Through Play; Lines and Links; Town's Time; and Chief Cities. All examples selected for publication can be found in the National Library of Scotland's Map Library. An eleven-item reading list at the end of the book provides an overview bibliography of Scottish historical cartography. Recommended for major map and academic libraries and those libraries with a particular interest in the geography of the British Isles.

Directory of New Zealand map collections. 1989. Auckland: New Zealand Map Society (Kevin Moffat, Secretary). 44 p. NZ$12.00.

Among the most valuable of reference works for the map librarian are directories of map collections; how often has each of us called or written (or, most recently, e-mailed!) a colleague in order to find the answer to a library user's question? Here is a provisional directory of map collections in New Zealand. Bravely noted in the Introduction are its shortcomings: e.g. inconsistent area coverage; and probable inaccuracies due to major government organization. These are relatively minor in comparison to the overall usefulness of the volume. Collections are arranged firstly by geographical area, and then alphabetically within each area. Each entry has the following information: institution name; address (street and postal); telephone number; name of person in

charge of collection; holdings; series (major); nature of collection; depository; hours open to public; facilities (including reproduction) available. This will find a home with the other spatial-data-collection directories on the reference shelf.

Clark, Suzanne, et al. 1991. ***Cartographic citations: a style manual.*** Chicago: ALA MAGERT. (*MAGERT circular* 1) $10.00 (check made out to ALA/MAGERT)

How many times has a map user said, "How do I put this map in my bibliography? There aren't any examples in [fill in the name of almost any style manual]." Now, at last, directions and examples on how to cite almost any kind of spatial data appear in this brief pamphlet.

TRADING POST

Topographic quadrangles of California,
divided up by county; seem to date from 1950s through mid-1970s; request by county from:

Mary L. Larsgaard,
Map & Imagery Lab, Library,
University of California,
Santa Barbara CA 93106;
804/893-4049;
email lb08mll@ucsbvm.bitnet;
fax 805/893-4676 or 8620.

Psst! Need some APSRS (Aerial Photography Summary Record System) microfiche indexes? Get in touch with Mary Larsgaard and you can get APSRS on fiche for the entire U.S., as of 9/91; it's about 2 inches of fiche.

"... it is believed the maps are accurate."

The following statement was printed on the flyleaf of a Soil Survey, published in 1900:

> Owing to a fire in the establishment of the lithographers to whom the contract was awarded for furnishing the maps to accompany this report, most of the original drawings were injured and some of them were destroyed. Fortunately the work had progressed so far that either the lithographic stones or the proofs were available for the reproduction of the entire set of maps, though with some delay. The loss of the original copy made it difficult to read the proof of the maps, and necessitated in some cases a comparison with the original field records. Every care has been taken in reading the proofs, and it is believed the maps are accurate. It is possible, however, that some errors have been overlooked, although this is not probable. — M. W.

contributed by Stan Stevens

News: States and Provinces

Arizona

An early eighteenth century map, dated ca. 1732 and drawn by Johannes Baptista Homann, has been donated to the Map Collection at the University of Arizona.

Be sure to get a copy of the December 1991 (vol. 23, nos. 2 & 3) of *Pimeria : bulletin of the Map Collection, University of Arizona Library* - it's a special exhibit issue, with an excellent cartobibliography by Jack Mount, called "Maps of the Pimeria: early cartography of the Southwest from the University of Arizona Library Map Collection." (Map Collection, University Library, University of Arizona, Tucson AZ 85721).

Update on Title II-C Grant at the University of Arizona: The Map Collection is completing its one-year U.S. Department of Education Title II-C grant entitled, "Application to Strengthen Research Library Resources: Latin American and Hispanic Cartographic materials in the University of Arizona Library." The grant was scheduled to run from January 1st to December 31st, 1991; we have been approved for a no-cost time extension to February 29, 1992. We have exceeded the cataloging goal stated in our grant proposal. As of December 31st, 1991, we have cataloged or converted 1,897 titles, representing approximately 4,759 sheets. Since our last report we've had a change in our grant staff; Greg Roselle, our Library Assistant - Senior left in July to start graduate school at the University of Wisconsin. When Greg left, the majority of the retrospective conversion was completed; therefore, the responsibilities of the position changed somewhat. His replacement, Janet Nevins, provides 050 and 090 cataloging and some original-cataloging support for the cataloging section of the grant.

One of the challenges of the grant was that many of the cities and regions did not have geographic cutters. We contacted the Library of Congress' Geography and Map Division, and they agreed to establish any needed cutters. We will publish geographic-cutter lists for Mexico, Central America, and South America after completion of the grant.

Overall, the grant ran very smoothly. We started just a few weeks late, and have achieved our goals. Some of the challenges included: shift from OCLC FIRST to OCLC PRISM; turnover of personnel (Greg and student assistants); and cataloging a major set of planning maps of Mexican cities. At the completion of the grant, we plan on writing an article on our experience with this grant, so stay tuned! (Chris Kollen, Grant Cataloging Supervisor)

California

The California State Mapping Advisory Committee met on December 17, 1991; a primary point of discussion was the Assembly Bill which creates a geographic Information task force to examine geographic and land information systems issues.

The Bay Area Regional Office of the Division of Mines and Geology returned to San Francisco on August 12, 1991, after 7 years in Pleasant Hill. The new location is 1145 Market Street, between 7th and 8th streets.

A newly constituted Earth Sciences and Maps Library was formed at the University of California, Berkeley, effective January 6, 1992. The Library, which results from the consolidation of the former Earth Sciences Library in the Earth Sciences Building and the Map Room in the Main Library will continue at present to exist in 2 locations. Discussions leading to a physical merger in the Main Library this summer are underway. The new library will be a unit of the Science Libraries; the Map Room had been a unit of the Government Documents Department. Phil Hoehn, Head of the Map Room, will serve as head of the Library. Other staff are operations managers John Creaser (Map Room) and Fatemeh Van Buren (Earth Sciences) plus 2 additional FTE library assistants. Librarian Randal Brandt and a library assistant continue in the California Map Conversion Project. Phone numbers and email addresses remain unchanged for the present. The new, combined operation will result in more efficient and effective use of scarce personnel and monetary resources, and free space in the Earth Sciences Building for Geology/Geophysics laboratories (from MAPS-L, January 11, 1992).

[*see more California News on p. 226*]

Remote Sensing News

The National Land Remote Sensing Policy Act of 1991 (H.R. 3614) was introduced in Congress by Rep. George Brown (D-CA) last October. The legislation is designed to address - among other matters - Landsat data distribution at a lower price to colleges, universities, and other non-profit users of satellite data. It also proposes that the Landsat program be split between DoD and NASA, with NASA overseeing civilian use of the data.

NASA has acquired aerial photography (from high-altitude ER-2 aircraft) of certain selected study sites in Europe (e.g., Austria, France, Germany, Iceland, Italy, Spain, Switzerland, Netherlands, UK). This imagery will be made available for sale to the public. Addition information may be obtained from the Aircraft Data Facility, NASA-Ames Research Center.

AVHRR (Advanced Very High Resolution Radiometer) imagery of western Canada is now available on CD-ROM; $225 to university research establishments, all others $250. Space Commerce Canada, 27011-1 Lombard Place, Winnipeg, Manitoba R3B 3K1.

Digital News

Applied Optical Media has an atlas on CD, America Vista, for $79.95 (no address accompanies this information, irritatingly enough).

The Kentucky Geological Survey is working on developing a natural-gas database and atlas for the Appalachian Basin; it's a 3-year project, funded by the U.S. Department of Energy.

The Wisconsin State Cartographer's Office has sample digital orthophoto demonstration diskettes, available free of charge; send 2 blank, formatted HD diskettes (either 1.2M 5.25" or 1.44M 3.5") to: State Cartographer's Office, Room 160, Science Hall, 550 North Park Street, University of Wisconsin, Madison WI 53706-1404.

Lotus Development Corporation's canceled MARKETPLACE is back, as Marketplace-Business, with information on approximately seven million U.S. businesses. The cancelled Marketplace-Household (which was to have had information on more than eighty million households) was withdrawn because of loudly voiced invasion-of-privacy concerns by the general public.

According to page 84 of the November 1991 *GIS World*, the Editor of that periodical got in touch with the Editor of the National Geographic Society's *Magazine* to see if NGS were interested in doing a feature on GIS. The response - amazingly enough - was a (polite) "no."

Brewster Kahle's Wide Area Information Server (WAIS) system is a set of products, supplied by different vendors to help Internet users find and retrieve information over the net. It includes everything from weather maps to U.S. Supreme Court reports. For more information: Thinking Machines Corporation, 245 First Street, Cabridge MA 02142-1264.

News

by

Mary L. Larsgaard

The British Ordnance Survey, in collaboration with the Hampshire County Geography Team, has put together a course of Map Skills for Teachers; for further details: Mr. P. J. Mellor, Room N333A, OS, Romsey Road, Maybush, Southampton, Hants S09 4DH, UK.

More news from the other side of the pond, in this case from the Royal Geographical Society's Library: it looks as if RGS obtained its federal grant for 1992-1993 sometime in April. The Society will need to submit a corporate plan in order to have the grant continue.

And from the southern hemisphere: a letter dated March 12, 1992, from Robert L. Senter, concerning the 1:250 000 Unified Hemispheric Mapping Series reads as follows -

"I would like to explain the extremely long delay between newsletters. First, the DMA Inter-American Geodetic Survey, of which I was a part, was eliminated as a component of DMA late in 1989. My position as program manager was also purged; however, I was asked to be the caretaker of the program in addition to my assigned duties until the future of the .. program was resolved - unfortunately, a decision still has not been made and you, as subscribers, have not had any recent news. ...

"I am sure you are aware of the 'Peace Dividend' and the down-sizing of the Defense Department. As part of this plan the DMA San Antonio Field Office will be closed on the 30th of June 1992 and the Distribution Center in Clearfield, Utah will close on 30 September 1992. If DMA continues to support the Hemispheric Mapping Program, it will be managed from the Washington, D.C. area and distribution will be made from Philadelphia, Pa. In the event DMA withdraws from the project, I believe it will be phased out slowly.

"I am aware of ten map sheets from the following countries that are either in Clearfield, Utah, [or] are in the process of being shipped there for distribution: Uruguay 3, Ecuador 2, Argentina 3, Peru 1, and Colombia 1 (Bogota). In addition to the above, a grand total of 382 hemispheric maps from 14 Latin American countries have been distributed and they have received over $450,000 in compensation for their effort. We have come a long way from one map of Mexico and no distribution.

"I believe this program has been beneficial to all concerned and I would like to thank all PAIGH subscribers for their support."

And from the northern hemisphere: In the spring of 1991, Senior Management of the National Archives of Canada decided to amalgamate the Cartographic and ARchitectural Archives Division with the Moving Image and Sound Archives Division. The Director of the new division - Cartographic and Audio-Visual Archives Division - is Betty Kidd. Many congrats to Betty for becoming Director of the new division! Congratulations also must go to Ed Dahl (Early Cartography Specialist in the Division) who in October of 1990 was promoted to Historical Research Officer 5, the highest non-administrative level an archivist can achieve in the federal government. Ed's was the first appointment to the HR-5 level for a staff member of the National Archives, and he was the first staff member to jump two levels in one promotion.

And from the south & eastern hemispheres: Dr. Viban Ngo is working on cartobibliographies of Nigeria, Chad, Benin, and Niger, and would appreciate lists of maps of these areas held in libraries. Your Editor has already used his cartobibliography of the Cameroons, and it is very useful. Get in touch with Dr. Ngo at: 6 Regency Close, Woodville Gardens, Ealing, London, W5 2LP, United kingdom.

Interested in the ethics of library and information science? The Editor of *Journal of Information Ethics*, Robert Hauptman, is looking for papers on the topic; get in touch with him at Learning Resources Services, St. Cloud State University, St. Cloud MN 56301.

See the *Bulletin* of the American Association of Petroleum Geologists, 75(7), July 1991, for a 1:5M map, "The Arabian Plate: Producing fields and undeveloped hydrocarbon discoveries." It's also in *AAPG Studies in geology* 33.

From the U.S. niche in the northern hemisphere:
(Thanks to J. Akerman, Editor of *Mapline*, for the following)
Hermon Dunlap Smith Center for the History of Cartography (at the Newberry Library) director David Buisseret participated in a paper session entitled "Cartographic Resources for the Study and Teaching of History," as part of the American Historical Association's (AHA) annual meeting (27-30 December 1991). Dr. Buisseret and Smith Center volunteer par excellence Art Holzheimer are together preparing a facsimile edition of the so-called Ramusio map of 1534 showing the New World and the Atlantic Ocean. The full-color reproduction and historical commentary will hopefully form part of the Occasional Paper series. David Buisseret chaired a session on "Perceptions of Landscape and the Art of Mapping" during the annual meeting of the College Art Association convening here in Chicago 12-15 February 1992.
The Smith Center welcomed four new research fellows 12/91 and 1/92. Two long-term fellows have come to stay, each for six months. Dr. William Wilkie, a professor of history at Loras College in Dubuque, Iowa, arrived in early January to work on his book, *Mapping the Mississippi 1500-1830: A Human History*. The focus of the book will be on the "human channels through which information about the Mississippi, gathered in large part from the Indians, eventually appeared on maps published in Europe." Dr. Wilkie is attempting the often difficult task of writing a scholarly book that will appeal to a popular audience, possibly even juvenile readers. The second long-term fellow is Tom Clark Conley, from the Department of French and Italian, University of Minnesota. Professor Conley has written on a wide range of subjects including medieval and early modern literature, modern literature and the arts, and film. Currently, he researching and writing a book, *The Self Made Map: Literature and Cartography in Early Modern France*, which addresses relationships between cartography and vernacular literature in early modern print culture. The book examines the ways literature, the arts, and cartography interact and evolve in forming "ideas of national space, idiom, and literature." Professor Valerie Irene Flint began her three-month tenure as a short-term fellow in early December. Her research will contribute to the completion of a short book which she calls, *The Medieval Cosmology of Christopher Columbus*. As the title suggests, Dr. Flint is interested in medieval written texts, oral accounts, and maps that influenced Columbus' decision to sail west for the East, his attempts to reconcile what he encountered with his expectations, and the nature of the Christian cosmology which "informed Columbus's explorations as a whole." Dr. Flint is Professor of History at the University of Auckland, New Zealand. Former Smith Center Administrative and Research Assistant Dalia Varanka (working on her dissertation at the University of Wisconsin-Milwaukee) returned for a one-month visit starting in mid-December; she is studying English atlases with texts ca. 1700 to learn how the maps and texts (and the relationship between the two) of the atlases helped to structure and diffuse information about North America. Finally, Anne S. Chapple, a doctoral candidate in English literature at the University of Chicago, began a two-month fellowship at the library in late January. Ms. Chapple's research here will contribute to her dissertation examining cartographic representations and literary references to the human body and animal figures as maps.

Exhibitions
- The Hispanic Society of America is mounting an exhibition entitled, "Maps, Charts, Globes: Five Centuries of Exploration," from 26 February to 8 May 1992 featuring important printed and manuscript maps from its collection. The exhibition is sponsored in part by the Program for Cultural Cooperation Between Spain's Ministry of Culture and United States' Universities. For information contact: The Hispanic Society of America, Broadway between 155th and 156th Streets, New York, NY 10032 (212/926-2234).
- The Brevard Museum, Cocoa, Florida, opened a special exhibition of maps of Florida on 1 March 1992, to continue through the summer. Called, "Where in the World Are You?," the exhibit will contain over sixty historic maps, some of them rare. It will also examine the science and history of cartography. The museum is located at 2201 Michigan Avenue, Cocoa, FL 32926 (407/632-1830).
- Not an exhibition, but news about a museum probably few of us have heard of. The Winter newsletter of Jonathan Potter, Ltd., an antiquarian map house in London, brought to *Mapline*'s attention the American Museum near Bath, England. The museum, which is consists primarily of American room settings from the seventeenth to nineteenth centuries, is also noteworthy for its use of original maps "to illustrate and emphasise the white man's experience in the coun-

try." A new gallery at the museum also displays selections from the collection of Dr. Dallas Pratt, "one of the most comprehensive in private hands [concentrating] on maps pre- 1600 illustrating the great discoveries and the cartographic development of the Americas." For information about the museum contact Jonathan Potter Ltd., 21 Grosvenor Street, Mayfair, London W1X 9FE.

- Just a bit more on the Columbian celebrations. "Maps and the Columbian Encounter," an exhibit of map facsimiles and other imagery commemorating and interpreting the meeting of the Western and Eastern Hemispheres, continues to tour the libraries in the Midwest and elsewhere. The exhibition is accompanied by the commentary of the late J.B. Harley and organized by Mark Warhus, both from the Office for Map History, the University of Wisconsin. It has been mounted with the financial support of the National Endowment for the Arts. The currently scheduled appearance of this exhibit for 1992 are as follows:

JANUARY: Library, UCLA; Bradley University, Peoria, Ill.
FEBRUARY: Emory University, Atlanta; Eau Claire Library, Eau Claire, Wis.
MARCH: University of Houston; Rock County Historical Society, Janesville, Wis.
APRIL: University of Wisconsin Center, West Bend
MAY: HJemKost Center, Moorhead, Minn.
JUNE/JULY: Ohio State University, Columbus; McLean County Historical Society, Bloomington, Ill.
AUGUST: Liberty State Park, Jersey City, N.J.
SEPTEMBER: Public Library of Cincinnati and Hamilton County; Ripon College, Ripon, Wis.; Rockford Museum, Rockford, Ill.
OCTOBER: Denver Museum of Natural History; University of Wisconsin Center, Rice Lake
NOVEMBER: Milwaukee Public Library
DECEMBER: Dayton and Montgomery County Public Library, Dayton, Ohio

A briefer tour of the original maps upon which this facsimile exhibition is also planned for 1992. This tour began at the Newberry Library on 15 May.
An illustrated guide to the facsimile exhibition written by Dr. Harley is available from the Office for Map History for $12.95 plus $2 shipping/handling, as are an exhibition videotape (29 minutes, $35 plus $2) and an 20x30-inch full color exhibition poster featuring a leaf from the Newberry Library's manuscript Lopes atlas of 1566 ($10 plus $1). For more information about the exhibitions and related publications write Beth Schaefer, Office for Map History, Golda Meir Library, University of Wisconsin-Milwaukee, P.O. Box 604, Milwaukee, WI 53201 (phone 414/229-4101).

Map Societies

- The Israeli Map Collectors Society *Journal* includes news and short articles dealing primarily with the cartography of Israel. Issue number eight, published summer 1991, features an article by Arrigo A. Barac entitled, "Ophir: A Well Kept Secret from the Time of Solomon," and "Holy Land Maps and Views by German Speaking Cartographers," by G. & E. Wajntraub. Information about the society and its journal may be had from The Israeli Map Collectors Society, 4, Brenner Street, Jerusalem 92103, Israel.

- The Cartographic Library and Institute of the Italian Marches: The "Cartoteca storica regionale delle Marche" was founded in 1987 with the aim of acquiring and cataloguing cartographic documents relating to the Italian Marches (the Ancona and Urbino region). The Cartoteca is shortly to move into a restored palace in Serra San Quirico, a little town near Fabriano. Plans for 1992 include the mounting of a permanent exhibition of regional maps and publication of facsimiles of the sea charts produced by members of the Benincasa family of Ancona in the fifteenth and sixteenth centuries, supported by critical essays. The Cartoteca is run by two historians of cartography, Giorgio Mangani (a publisher) and Valerio Paci (an architect). They are editors of the historical atlas of the Marches, whose second volume (1982) dealt with the history of cartography. Among other activities, they mounted an exhibition on the cartography of the Ancona region in 1989. (Contributed by Tony Campbell, The British Library, Map Library and Giorgio Mangani)

Collection Announcements:

- The John Carter Brown Library (Brown University, Providence) has received as a gift the papers of Lloyd Brown, author of the classic general history of cartography, *The Story of Maps* (1949), and several other books on the history of cartography and cartobibliography. Brown was curator of maps at the William L. Clements Library at the University of Michigan before he became librarian at the Peabody Institute in Baltimore. The "JCB" newsletter observes that the library does not actively seek the papers of twentieth-century figures, but this collection of Lloyd Brown's published works, his correspondence, and unpublished bibliographical and historical manuscripts was willingly accepted, central as is it to the JCB's cartohistoric interests.

- The University of Southern Maine has announced the establishment of a new historical map library, the Osher Map Library, dedicated to the care and enhanced use of two major donated map collections. The Osher Collection, compiled by Dr. and Mrs. Harold L. Osher, and the Smith Collection, compiled by Mr. and Mrs. Lawrence M.C. Smith, both concentrate on Maine and New England, but also include other important North American and Western Hemisphere materials. The new library's holdings will include more than 1,000 sheet maps and atlases published prior to 1800, with as many or more published after that date, more than fifty globes, and over two hundred geographies, gazetteers, and histories. Funds to establish a library facility were pledged to the university by Dr. and Mrs. Osher in 1989 at the time their collection was donated to the university. The Osher Map Library will form an integral part of the new University of Southern Maine Library, in Portland, and will contain exhibition areas, a seminar room, and facilities for research and study. Interested members of the public are invited to join the Osher Library Associates, which has been organized to support the library's activities. For information about this group write: Alf Jordan, Secretary-Treasurer, 28 Blueberry Cove, Yarmouth, ME 04096.

New periodicals:

From the February 1992 *Geotimes*, summaries on topographic and geologic map publication in foreign countries, by Russell Guy of Geoscience Resources; see pp. 19 fol.

Australian Map Circle *Newsletter* 58, February 1992
- report on 1992 conference (which was held in November of 1991 to facilitate a joint meeting with members of the International Map collectors Society). Some statements could come right out of any U.S. map-library publication, e.g., from p. 4 "The difficulties speakers had with the A/V systems point to the need to have a resident expert on hand. Secondly, it is essential that a list of registrants be provided at the start of the conference, to enable members to identify people they meet and to follow up contacts afterwards," and from p. 5, "He felt that maps were not highly regarded by librarian colleagues." Then came some very bad news, from p. 6, ".. the auto/gratis distribution of Australian topographic maps, on which most of the collections had come to depend, was terminated without notice about the time that National Mapping was reorganised as AUSLIG. In 1991 AUSLIG has resumed its auto/gratis distribution to State Libraries, but has not extended this to University collections. The Australian Survey Corps has assured the Circle that it has not doscontinued the auto/gratis distribution." A copy of the Constitution of the Circle was also included with the newsletter.

Special Libraries Association Geography and Map Division *Bulletin* 167, March 1992:
"Compacting Your Collection: Innovative Strategies in Map Storage," by HelenJane Armstrong
"What Several Non-Fiction Best-Sellers Suggest for Research and Teaching in Human Geography," by Norman Berdichevsky; Announcements, news, catalogs received, book reviews.

The History of Cartography Newsletter 15, 13 January 1991:
- notes that volume 2 (*Cartography in the Traditional Islamic and South Asian Societies*) of this ambitious project is moving along well; book 1 is to be out this spring, and books 2 (*Cartography in the Traditional East and Southeast Asian Societies*) will go to the copyeditor.

NEMO (North East Map Organization) Newsletter, # 5:
- minutes of the annual meeting, which included, "The topographic setting of Paris: historic maps compared to present topography," by Susan Goodman, "Map memorabilia," by Kathy Keefe, "Keynote address," "Atlas of Massachusetts River Systems," "ESIC at UMass Amherst," "Women's atlases."

Research & exploration, special issue for 1991: "Environmental Consequences of the Persian Gulf War, 1990-1991, Remote Sensing datasets of Kuwait and Environs."

continued from page 226

Pasadena (818/795-3626); Travelers Depot, 1539 Garnet Avenue, Pacific Beach (619/483-1421); Map Centre Inc., 2611 University Ave., SAn Diego (619/291-3830); and Maps Etc., 21919 Sherman Way, Canoga Park (818/347-9160).

Magellan Geographix (Santa Barbara; Chris Baker, executive vice president, formerly worked at Map Link) offers maps to its customers via a computer network.

Oregon

The *Wall Street Journal* appreciates the good things in life, as evidenced by an article on 2/18/92 (p. A22), titled, "World's most beautiful maps," by Amy Gamerman, about Stuart Allan and Raven Maps.

News
U. S. Federal & State Governments

U.S. GOVERNMENT

Bureau of the Census

From MAPS-L, 3/31/92, a letter to Barbara E. Bryant, Director of the Bureau: Dear Ms. Bryant: The Government Publications Librarians of New England (GPLNE) is a group of documents librarians who represent all ninety-six New England federal depository libraries. As Chair of GPLNE, I am writing to express the group's opposition to the decision to produce the 1990 Census [hard copy] maps solely upon demand and at a price which is prohibitive to most libraries. ... The members of GPLNE strongly recommend that the Census Bureau reconsider its decision regarding the maps. At a minimum, maps for each depository's region should be distributed free of charge through the depository system. Otherwise, we fear that Census information will be forever inaccessible to all but the few who can afford to pay for the maps. Sincerely, Janice Schuster, GPLNE Chair, 1991-92, Head of Public Services, Providence College, Phillips Memorial Library, 401/865-2631

Defense Mapping Agency

According to a message in early April on MAPS-L, from Wendy Hassibe (USGS), DCW (Digital Chart of the World) will be about $200 for 4 CDs; DMA is responsible for distribution to depositories.

Geological Survey

February '92 order form from USGS, called "Cartographic Applications Software," includes Plane-PC (interactive gird coordinate conversion for personal computers). The order form may be returned to any Earth Science Information Center.

The Global Land Information System (GLIS) accesses information about available satellite imagery from EROS; for a free brochure, EROS Data Center, GLIS User Assistance, Sioux Falls SD 57198 (605/594-6099; 1-800-252-GLIS). GLIS can be accessed via pc on the Internet: $TELNET glis.cr.usgs.gov

Government Printing Office

The GPO Wide Information Network Data On-line (GPO WINDO) Act (H.R. 2772), introduced by Rep. Charlie Rose (D-NC) on 6/26/91, would establish on-line access to public government information through GPO. Its purpose is to make it more convenient for the public to obtain low-cost access to government information. Initially, it would consist of a group of core databases, e.g., Federal Register, Congressional Record, DOE Energy, U.S. Supreme Court opinions, etc.

National Geophysical Data Center

NGDC has a March 1992 flier listing its extensive gravity data base products; while most of them are digital (e.g., the new prototype gravity CD-ROM), there are some hardcopy maps. NGDC, NOAA, E/GC1, Dept. 883, 325 Broadway, Boulder CO 80303-3328.

National Ocean Service

Two new 3-dimensional physiographic images of the continental margin - off central CA; off Louisiana - are available. They are computer-generated images derived from NOAA multibeam echosounding surveys within the U.S. EEZ. The central CA image is PI-1, the LA image is PI-2. Apparently these will be available on depository - if you can't stand the suspense of waiting for them to make it through the pipeline, it's $10 each from: Distribution Branch, N/CG33, NOS, NOAA, 6501 Lafayette Avenue, Riverdale MD 20737 (301/436-6990).

STATE NEWS

California

GeODE Graphics, 3463 State Street, Suite 350, Santa Barbara CA 93105 (805/965-2969), has 2 attractive, reasonably priced prints of high-altitude aerial photos - "High over the west side of Los Angeles" (Print 002), for $6; and "High over Mammoth" (Print 003), for $7.

Away from home and need a map-fix fast? If you're in southern California, you have a good many choices, for example: Southern California Map and Travel Center, 3211 Pico Blvd., Santa Monica (310/829-7902); Pacific Travelers Supply, 529 State Street, Santa Barbara (805/963-4438); Geographia, 4000 Riverside Drive, Sherman Oaks (818/848-1414); Pasadena Map Company, 1778 E. Colorado Blvd.,

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TENTATIVE WAML SCHEDULE

25th Anniversary Meeting

Brigham Young University-Hawaii
Laie, Oahu

Tuesday,	Airport shuttle in evening?	
November 3:	6-9pm	Executive Board, Aloha Center Conference Room
Wednesday,	9-9:30am	Registration, AC155
November 4:	9:30-noon	Business meeting
	noon-1pm	Lunch, Banyan Room
	1-6pm	PCC Villages
	6-7:30pm	PCC Luau
	7:30-9pm	PCC night show
Thursday,	7:30-9am	Bus to University of Hawaii;
November 5:		meetings will be in Ballroom
	9:30-noon	Paper session
	noon-1pm	Lunch
	1-4pm	Paper session
	4-6pm	Tour, Hawaii Institute of Geophysics
	6-7pm	Bus to Kaneohe
	7-9pm	Banquet, Chao Phya Thai restaurant

Wed. & Thurs. am - spouses, etc., golf with Boy Manipon at Kahuku*

Friday,	7-8:30am	Bus to airport
November 6:	9-10am	Fly to Hilo
	10-noon	Bus to Volcanoes National Park
	noon-1pm	Sack lunch, Visitors Center
	1-5pm	Tour, Volcano Observatory, Kilauea Crater, Thurston Lava Tube
	7-9pm	Dinner at KMC or Volcano House
Saturday,	7-8am	Breakfast, KMC or Volcano House
November 7:	8am-4pm	Bus tour, Lava Tree State Park, Kapoho, Kalapana, etc.
	5-7pm	Dinner, Hilo (Kay's Drive Inn, 684 Kilauea & Hualalai); bus to airport
	7-8pm	Fly back to Oahu
	8-9pm	Bus to Laie

***Riley has arranged the times for golf at the Kahuku municipal course; golfers will be led by Boy Manipon, former state amateur champ. If there is any interest in the expensive Turtle Bay course, or the course at the volcano, let Riley know.**

Inter-island airfare coupons are flexible, that is, you can write your own ticket as to when and how you return from the Big Island after we're finished Saturday afternoon.

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Western Association of Map Libraries

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1991/1992 WAML Lists

by

Michael Noga
President, WAML

[NOTE FROM EDITOR: Michael got this to me in plenty of time for the March 1992 issue, but somehow I thought it had been published in November 1991! It had been cut for space considerations. So here it finally is.]

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