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# Western Association of Map Libraries

**Information Bulletin**

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WESTERN ASSOCIATION OF MAP LIBRARIES
1990 FALL MEETING
September 12-15, 1990
Federal Center, Denver, Colorado

PRELIMINARY PROGRAM

| September 12 | WAML Executive Board meeting in afternoon |
| September 13-14 | Jim Castagneri, U.S. Bureau of the Census |
| | The TIGER database, discussion and demonstration |
| | Paul Mahoney, Art Source |
| | Early Colorado Maps |
| | Linda Zellmer, University of Wyoming |
| | Hayden Survey Maps |
| | Charles Seavey, University of Arizona |
| | The ARL Map Collections: Evaluation and Rankings |
| | Jack Reed, U.S. Geological Survey |
| | Geologic Map of North America |
| | Tours of the: |
| | USGS Map and Open-File Distribution Section |
| | USGS Earth Science Information Center |
| | U.S. Bureau of Mines Mine Map Repository |
| | USGS GIS Lab |

September 15 Field Trip
Visit Rocky Mountain National Park during its 75th anniversary year, shop in Estes Park, drive Trail Ridge Road, see the aspen in color. Includes a presentation by Curt Buchholtz on the history of the park.

ADDED ATTRACTIONS: Vendor exhibits, library visits.
Dinner overlooking the lights of Denver

NEED A ROOMMATE?
Send us your name and we will include a list of all persons wanting roommates in the mailing that will be sent early July. Double up and save money. Rates at the (Compi) hotel will be (includes breakfast and cocktails):
Wednesday Sept. 12 $60 single, $70 double
Thur.-Sat., Sept. 13-15 $50 single or double
Other hotel facilities also available.

HOSTS: U.S. Geological Survey
Colorado School of Mines

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ADVANCING BY DEGREES: THE ROAD NOT TAKEN

by

Carlos B. Hagen-Lautrup
University of California, Los Angeles

Part I

The origin of this article was a telephone call I made to Mary Larsgaard congratulating her for her article, "Advancing by Degrees" (WAML Information Bulletin, November 1989, pp. 30-31). It was a poignant, sad account of her experiences embarking on a Ph.D., only to find something that, unfortunately, is not at all uncommon in the academic environment. Namely, trying to do graduate work on a subject which was not of her particular interest, facing the insensitivity of the faculty, and finding that her advisor suddenly left the university, leaving her stranded in mid-air after the considerable expense incurred in the venture. In turn, disillusioned and disappointed, she put those plans aside, and eventually moved to the West Coast. This experience made me reflect on my case, my own unfortunate experiences, and the advice received which side-tracked me in the wrong direction, the end result being that a promising academic career was left wrecked and unfulfilled. Talking to Mary, and to a number of other friends in the academic environment, made me realize that cases such as ours contain important lessons and experiences for other colleagues. If something positive can be derived from experiences such as ours, it is to disseminate our views in the hope that they may serve as a lesson, as well as providing some orientation to other persons who may find themselves at similar junctures in the road of life. It is in this spirit that, instead of offering our audience another technical article on cartographic matters, I have decided, prompted by that honest and sincere article of Ms. Larsgaard's, to offer this very personal account.

Like many other children, I developed an interest in geography and maps early on. Growing up on a small farm also gave me valuable contact with plants and animals. Our property was located in an area near Santiago, Chile, that eventually became upscale and subject to subdivision and land speculation. I saw many neighbors pushed out of their properties - farms with rich and productive soil - by the pressures of unscrupulous speculators. This gave me very early on - many years before it became fashionable - a deep sense of ecology and ethics pertaining to the protection of farmlands and the natural environment.

By the time I reached junior and high school, my interest had shifted to biology and chemistry. I excelled in these subjects and, with the enthusiastic support of my teachers, my dearest aim was to go into a dual career in medicine and psychology. I took all available pre-med courses, and my role models were figures such as Piaget, Freud and Jung - that is, psychologists with a rigorous scientific training coupled with a deep humanistic approach and interest in the human psyche. One day my family confronted me with the sad fact that, due to our economic situation, it would be impossible to help me through the long career (seven to eight years) of medical school. It was a terrible blow to me to abandon that chosen career after so much preparation and such support from my teachers. My family sadly suggested a shorter, more pragmatic course in engineering, which I took. Finding that discipline rather impersonal, I managed to combine it with my early interest in geography, following a dual course of studies between engineering and the Institute of Geography (which had just been created) at the University of Chile, using my interest in surveying and cartography as a bridge. My real interest was in human, political and cultural geography, plus plant geography - the latter kept me in contact with my interests in biology and botany. My course of studies along this road went very well. Within a year I found myself appointed as a TA teaching various courses at the Institute of Geography and also working at the Institute of Seismology. At the same time, I became an assistant to the Dean at the School of Pharmacy, at that time one of the most distinguished Latin American ethnobotanists. Also, I found myself as a sort of junior working partner with the Director of the Mili-
tary Geographical Institute, with whom I began to prepare a technical book - a manual of map projections. I also wrote a textbook on mathematics applied to geography - a textbook that was still in use until a few years ago - and I did two field trips to the deserts of northern Chile to gather botanical and mineral specimens and to conduct geographical surveys. My first article, written at age 20, examined the philosophical basis of geography, and its relation with history. After a couple of years, all of my professors told me that my future was in high-level academic research and teaching, and that I should go abroad to pursue more advanced studies and research, as Chile had limited resources at that time. I had options to go to Great Britain, France, or the United States, specifically in the latter case to Syracuse and Washington State. Finally, we decided in favor of the University of Washington that, at that time, had the reputation of being the center of the most advanced studies in geography and especially cartography in the United States.

It was in the late 1950s, and at that time the Department of Geography at the University of Washington was in the midst of the “quantitative revolution.” From the beginning, I found myself at odds with this trend, as my real interest was in a more humanistic approach to geography. It was a very difficult situation, as views of geography such as I held were certainly not very welcome. But given my background in cartography and engineering, and the fact that I was already enrolled in a graduate program, as a compromise with the quantifiers I wrote a three-hundred-page masters thesis - in one year - on the mathematical development and applications of the azimuthal equidistant projection. This work was very well received, and again I was told that my future certainly was in academic research and teaching; I was prompted to begin a Ph.D. course of studies at once. But the quantitative approach to geography - so evident at that place and time - continued to bother me, and for the time being I accepted the offer of an interesting job for the State of Washington.

A few years earlier, engineers and surveyors had managed to pass enabling legislation that created a Bureau to supervise and coordinate all of the mapping and surveying activities in the State. I liked the challenge and the fact that this agency was to be started from scratch. Apparently I developed good administrative abilities, because in a year we began to receive a number of requests from other state governments asking for some sort of advice towards the creation of similar agencies in other places.

Interesting and challenging as the job was, I still felt the urge to return to research and teaching in an academic environment, rather than dedicating my efforts to technical and administrative duties with the government. I found myself in a very confused state as to which direction I should go in my academic pursuits. I took a leave and decided to come to California to explore my academic opportunities and to sort out my thoughts. On the one hand, I did not like the increasing quantitative trend in geography and cartography. On the other hand, my first love of medicine was out of the question, given the expenses, the course of studies I had already taken, and the very small admission quotas in medical schools. At that time, I had three solid offers for embarking on a Ph.D. program, from three institutions that had shown great interest in me. One was at the University of Washington. But as I have said, I had many reservations due to the quantitative approach to geography so much in evidence in that department. Another offer was from the University of Hamburg, which I liked very much, but accepting it would have meant resettlement in another country. The last offer was from Stanford University. This was for a program on Latin American Studies, which I found extremely appealing, although my reservations were mainly the fact that at that university the Department of Geography had just been abolished, and since I have always considered myself to be primarily a geographer, I did not find it too attractive to go to a university with no such department! It was in such a confusing period that I came to Los Angeles.

At that time, in the early 1960s, UCLA had a new Chancellor - Franklin Murphy - who had decided that his mission was to bring UCLA from its secondary position to the forefront of the best American universities. For many years, the University Librarian had been Lawrence Clark Powell, who had established the concept of the scholar-librarian. That is, Unit Heads, especially those of specialized branch libraries, should be proven scholars in their respective fields. The Map Library had been created on paper only a few years previously, merging the cartographic resources of the Library and of the Geography Department, and it had been very difficult to find a person who would fit Powell's concept. Later I learned that, when I came upon the scene, a number of administrators - realizing my strong background in cartography and engineering, the many academic contributions and publications I had already done, and my administrative accomplishments in state government - felt that such a young man was the ideal person for their position, and efforts began to
convince me that taking such a job would be the best course of action for me.

"This will be the best of all worlds for you," I was repeatedly assured. "As a scholar-librarian, your research activities will not only be fully respected, but encouraged as well." "Besides," I was often told, "given your outstanding academic activities and teaching experience, it will be just a matter of a short time for you to get a faculty appointment in the Department of Geography - or maybe even at the School of Library Science - so teaching for you will be another distinct possibility in this position." I still felt the need to inquire about the possibility of a doctoral course of studies in some of my main areas of interest. "Well," I was told almost casually, "you could always follow that course of studies in later years, but for now, we would like for you to embark on a graduate course of studies at the Graduate Library School." "Do not worry," I was assured. "With your background, this will be extremely easy." "Moreover, we will give you time off, all the facilities you need, and you may take this course of study at your own pace, in two or three years." "Besides," I was told again quite emphatically, "such a course of study will be invaluable for your own research activities that, as you know, we will not only expect from you, but encourage, every step of the way." I have to confess that I had many misgivings. To go to library school was the very last thing that I could have ever imagined I would do. Also, the few contacts with librarians I had had earlier as a state administrator had been rather hostile and on the unpleasant side, which added even more to my apprehension about such a course of study. But the enthusiasm of the UCLA administrators, the possibility of a faculty appointment, and the concept of the scholar-librarian that they so vividly and enthusiastically described finally won me over. I took this position, and turned down the three offers for a Ph.D. program I had at that time, thus metaphorically burning my bridges. It was a fateful decision that many, many times later I have sadly and deeply regretted.

Library School

Attending library school was quite an awful experience... to put it mildly. In recent years library schools, as I understand it, have emphasized more scholarly and conceptual aspects. In these early years - and one must be frank about this - there were many aspects uncomfortably close to a vocational or trade school. I still remember - as in a nightmare - the endless hours spent typing exercises on 3" x 5" cards with stern instructors hammering in to you the intricacies of proper indentations, abbreviations, or punctuation marks. Or the exacting ways, line by line, to compile "proper" bibliographies, indexes, or bibliographic entries. Or the concept that "conducting research" is largely limited in library circles to the task of compiling bibliographies and indexes, or the processing of surveys, tabulations and statistics. A concept of research - I deeply regret to say - that has not changed much to this day. For a person who had been a field geographer and who, from his freshman years, had been dealing mainly with mathematical theories or conceptual and philosophical issues of geography and other social sciences, these endless hours of typing exercises were very nearly unbearable. Probably from this period dates the most intense and profound aversion I feel toward anything that has to do with, in library circles, is considered to be "technical processing."

I have to confess, too, that never - and despite many efforts - have I learned to type, and most likely I shall die without ever having learned to type! Presently I can scarcely "type" with one finger at a speed of about three to five words per minute, with a high rate of errors... !!!! As my colleagues know, I have written a number of articles on cataloging and information retrieval. I was one of the first authors to propose a comprehensive system of information retrieval for two specialized types of materials - maps (UNESCO Bulletin for Libraries, January-February 1966) and sound recordings (Special Libraries, April 1965). But all of my writing has been on a conceptual level, never dealing with the minutiae of the choice of certain kinds or models of equipment, or particular brands of hardware or software.

But the sharpest clashes I had were regarding the sacrosanct nature of the book, a sort of "sacred principle" that seemed to permeate the entire library school and the library system. To try to apply the "book approach" to maps, recordings, films, slides, etc., is something I have always found to be idiotic or insane. I had many heated and unpleasant arguments and at times I would walk out of a lecture in disgust, clearly and loudly expressing my feelings, and as a result, several times I was called in for "counseling and guidance." All of this had no effect whatsoever, only serving to increase our mutual acrimony. After nearly three years of such a, and very often painful, course of studies, I was grudgingly given a degree. Many times I have had the uneasy feeling that perhaps the degree was awarded mainly because of pressure from above, and espe-
cially out of a desire finally to get rid of such a troublesome student, rather than because of the conviction that the school had produced, after such a process, a "good Librarian."

For these reasons, it was a very sad and troubling experience indeed. I have to say that many were the times when I was at the very brink of ending it all, offering my resignation, and continuing with my life in a totally different manner. Many are the times that I have deeply and sadly regretted not having done so. I also have to say that perhaps the reason I continued was two persons who were remarkable indeed. One was Andrew Horn, at that time Dean of the school, and the other was Johanna Tallman, an instructor, and Head of the Engineering Library. Both were the true "scholar librarian," both personified the very best that the library profession has to offer and stands for, and I struck up a deep lifelong friendship with both of them.

Ensuing Years

The ensuing years and the formidable obstacles along the way speak of my naiveté—or rather ignorance—of the inner workings of the academic environment as well as my faith and belief in what I had been told when I was hired. I was enthusiastic about the role of a "scholar-librarian," and especially with the mission to build a large, first-class cartographic collection commensurate with UCLA and the Los Angeles community. From the very beginning, I had stated that my belief was that we should not have a "map room," which I felt was an outmoded concept, but that we should build a true cartographic information center, and all the administrators who hired me fully agreed with my concept.

As the mid and late 1960s came, most of the administrators who had hired me had retired, gone, or moved to greener pastures. There was affluence in those years in the library system, and I saw money generously directed to a number of ambitious plans. Yet, despite the careful documentation I regularly submitted, year after year my budget for acquisitions and staff was maintained at the same tiny amount with no increase. I experienced a very common phenomenon of social psychology: persons who are discriminated against or put off without apparent, valid reasons often place the blame on themselves, and begin to overcompensate for what they perceive to be personal failures. This is exactly what happened to me. I found myself working seventy to eighty hours a week, having virtually no private or social time left over for me. Believing the stories of inadequate funds, I began to work tirelessly to engage in some "creative ways" to maintain the flow of acquisitions and to build up the collection at a level matching the original plans and the new prominence of UCLA in American academia. This is where my professional activities, writings, and contacts paid off well. Building on such a personal basis of professional recognition, I began to obtain some free depository systems, exchange agreements, and other materials that were sent because of my cartographic reputation or in exchange for writing articles, giving papers, or providing technical information. In such a way I maintained a level of acquisitions that was anywhere from five to ten times my tiny budget.

Additionally, year after year, I would politely contact the Department of Geography asking about the possibility of the faculty position that had been mentioned when I was hired. Time and again, my request would be denied. It was a curious situation indeed. Year after year, I would see junior faculty coming to teach cartography courses with less experience, preparation, or publishing record than mine. A year or two later, they would be released, and the cycle would begin again. I just could not understand it.

After some years, the many disappointments and the excessive work began to undermine my health. I recall that even in one yearly evaluation it was written down that I looked very tired and haggard. I developed constant headaches and a chronic case of hypertension. After years of undergoing every test known to medicine, it was finally decided that there was virtually nothing wrong with my physical health, and that the cause of my condition was mental stress.

One year—I had been at UCLA for nearly a decade—I began to hear some "facts of life" through some friends. At the Department of Geography, apparently I found myself the victim of one of those situations so common in academic environments—namely association with the wrong person at the wrong time. A powerful figure had apparently decided that "this man was associated with so-and-so, and therefore as long as I am here, he [myself] will never set foot in this Department." And of course, my not having a Ph.D. provided the perfect excuse for turning me down time after time.

Then, some friends in the library system told me that being neglected and having my projects postponed was really because new administrators did not want to have a large map library, and my efforts to the
contrary were viewed with absolutely no sympathy at all. "But nobody has ever told me so," I said. "If someone had told me or even hinted at it in the beginning, I would never have taken this position!" "You should have been able to learn it through the grapevine," they said. "What in the hell is the grapevine?" I retorted angrily, believing at that moment it was some kind of internal publication of which I was unaware. This exchange well illustrates my naiveté in these matters. Coming from the world of engineering, geography, and state government, where persons speak out directly as to what they want or do no want, I was totally unprepared for this Byzantine way in which messages may on occasion be given out in an academic library. I thought that it was somewhat like the world of the old Kremlin, where one had to be very attentive to determine new trends by observing who is at the side of whom, or whether the message is actually very carefully being given between the lines. I recalled the report that, in 1967, was written by an industrial consultant who came to investigate the low morale existing in the library system and about which he wrote:

Interpersonal relationships between employees are described by low-trust, guarded communication, and "terribly terribly correct, proper behavior." An academic snobbery is perceived in which one salutes the degree and not the person.

But I shall never forget one conversation I had with the late Dean Andrew Horn, not long before his untimely death. By that time we had become good friends. After closing time one day, in an otherwise empty office, we talked for a long time. Very sadly, he said to me. "You have worked so hard, and done so much for this place ... I would hate the thought of seeing you leave!!! But I feel you made a terrible mistake coming here ... you would have been so much happier continuing your academic career ... I hope you forgive us for what we put you through at library school ... At the beginning, they wanted you so badly, now new administrators don't like you ... I have seen so many good persons put up with so much in this institution, and then be dropped off when they are no longer of use, or a new administration disliked them ... please, don't ever let that happen to you ..." On leaving he said: "If we were only able to have people here like Johanna Tallman ... but, it is now too late, she is so much better off at Cal Tech." A remarkable woman, administrator, and "scholar-librarian," she had also been very badly treated, and left UCLA to assume the position of Director of Libraries at Cal Tech. Some years later, she wrote a book, Check Out A Librarian (1985), where, in an open yet restrained fashion, she describes what happened to her and why she left UCLA.

I found myself in a terrible predicament. All my efforts to build a first-class map library at UCLA, and the immense sacrifices I had made while working toward this goal, were not only unappreciated, but had been regarded with disfavor and annoyance. A former University Librarian who was very friendly and supportive stated openly one time that I had built this collection to its level of excellence, "not because of, but in spite of, the library administration." My academic career had been sidetracked and wrecked. The role of "scholar-librarian" I had been promised in such glowing terms when I was hired was no longer in favor. Now the message that I received was that librarians are not supposed to spend time doing research or keeping up with their professional interests unless these interests are narrowly and directly related to their jobs. They are supposed to spend virtually all of their time performing the daily routine tasks and a goodly amount of technical processing besides.

One possibility was to resign. Oh, yes, for new administrators, it would have been such a welcome relief, it would have been considered to be the "proper and gentlemanly" thing to do. Yes, after my career had been wrecked, my health damaged, and after over a decade of sacrifices and work excesses. Remembering the parting words of Andrew Horn, and also as a sort of homage to his friendship and honesty, I decided to stay and fight for what I had been promised and for what I deeply believed was a large and worthy cartographic collection for UCLA and the Los Angeles community. It was also a matter of a deep ethical conviction. I strongly felt that it would be immoral to forsake the professional interests of a lifetime, to deprive the scholarly community of my research skills especially after all the promises made - in order meekly to bow my head, and to spend the rest of my days at UCLA half of the time behind a desk giving information, and the other half sitting in front of a terminal punching in invoices, payroll amounts, and cataloging data.

The years to come would be filled with even more disappointments, seemingly endless, even more bitter struggle and constant "between the lines" disapproval and criticism from library administrators. Library administrators - and this, from what I have heard through the years from so many colleagues,
applies virtually everywhere - often have a way to tell you of their disapproval in some petty ways, things that will put a wry smile of bitterness and contempt on your face. I will just mention three such small incidents. The Vietnam War was raging, and through some personal contacts I managed to obtain permission from the French Government to buy a complete set of maps they had made for Indochina. This would make us the only map library in the West to have a complete set of such maps for that now vital area, since these sheets were now severely restricted. I managed to get some funds from the Department of Geography, but I needed one hundred dollars for postage. In answer to my petition, I received a curt memo from the library administration saying that they could not make this small amount available due to "lack of funds." Finally, I had to pay this postage on my own, so finally we received that unique set of maps. In 1985, the comprehensive ALA survey on map libraries was published. It showed that UCLA had the largest collection of maps of any academic map library in the nation, being surpassed in this category only by three major centers in the Washington, D.C., area: the Library of Congress; the Department of Defense; and the National Archives. I began to receive letters and telephone calls of congratulations from throughout the country, and even from abroad. From the library administration, the reaction could be described only as "thundering silence." A short time later, I was invited to Washington, D.C., to deliver a lecture at the Library of Congress, as recognition of my professional achievements and activities. For a long time, I had been conducting negotiations with a number of federal agencies, and I used this occasion in order to wrap up a number of agreements that eventually resulted in UCLA receiving free tens of thousands of dollars worth of unique maps to make our collection even more useful to the campus and the local community. In order to get these agreements in Washington finalized, I requested three or even two days of per diem, an amount less than $100.00. My request was turned down, again due to "lack of funds," and as a result I had to spend several days using my own pocket money for traveling all over Washington in order to finish up these agreements.

Fortunately, things have been made a bit easier by a number of positive events resulting from my association with UCLA. One has been the support, encouragement and warm friendship of so many faculty members - both from the Department of Geography as well as elsewhere - friends who have always considered me as an equal and with many of whom I have cooperated in research activities of common interest. Another has been the close friendship with outstanding members of the library system, many of whom, as Unit Heads, have often experienced situations not too different from mine. Another positive development took place in 1985. As a result of the many research and cultural activities I have carried on through the years in cross-cultural areas involving Latin America and the United States (a book, many articles and conference papers, and over one hundred educational radio documentaries), the Director of the UCLA Latin American Center - the distinguished anthropologist, Johannes Wilbert - appointed me Research Associate of this Center.

[To be continued]

|cARTE-DECO continued from page 189|

|Mercifully, Rosanna Miller (ASU) has agreed to take on the art-in-cartography side of this column - leaving me to forge onward with the cartomania portion (although Muriel Strickland - SDSU - has agreed to do a guest editorship sometime in the near future). I shall close with a few parting shots, the first from Nature's Jewelry (27 Industrial Avenue, Chelmsford 01824 3692) - planet earrings - one for Saturn, one for Jupiter, one for Neptune (you get the picture), and of course at least one of them (Saturn) glows in the dark...|

From Phil Hoehn comes a clipping from the Oakland CA Tribune for 4/23/90, showing a person sheltering himself from the rain with a half of a globe; Phil is probably right in saying, "This could set an ugly precedent." And now, from Carlos Hagen - how about notepads in the shape of states? One could start with Wyoming and Colorado, and then move on to more difficult shapes, such as California.
Catalog departments of many libraries experience problems keeping up with new acquisitions; more is ordered than the cataloging staff can handle. The University of Arizona Map Collection has experienced a map backlog for years. Currently out of about 238,934 sheet maps there are approximately 25,904 sheet maps, or 10.8%, in the backlog. More important for cataloging, out of approximately 46,145 total map titles there are about 8,385 titles, or about 18.2%, in the backlog. (See Figure 1.)

The main problem with the backlog was that there was no control and access was difficult and time-consuming. This high percentage of sheet maps in the backlog created a major problem for reference service. About six years ago, we redesigned the work flow of the technical services section to help alleviate this problem. As soon as maps are received, an "In-Process" (IP) card is filled out. This card includes: an IP call number (this is a Library of Congress (LC) call number, but no G is used to differentiate between in process map and a cataloged map); author; title; scale; notes; and number of items. The map also has the IP call no. written on it. The cards are filed by IP number in a card file and the maps are filed in map cases kept in the Technical Processing section of the Map Collection. Only staff members have access to the backlog. Besides providing access for reference service, it is easy to concentrate on cataloging maps of a certain country or on a certain subject and one only needs to pull IP cards to search for records on OCLC. The problems are that this provides only limited local access, a library patron must ask a staff member for help, and a staff member when asked a reference question must remember to look in the IP file when needed. This change improved access but did little to improve map cataloging statistics.

Several years ago the Map Collection made a commitment to provide full level LC cataloging through the OCLC database. We felt that it was more important to provide full level cataloging on OCLC than to switch to a local system in order to substantially reduce the backlog.

Recently, as a result of hiring a new map cataloger, the work flow of the department's map cataloging section was analyzed, evaluated and redesigned. Library Systems Analysis Guidelines — by Edward Chapman and others, [Edward A. Chapman, Paul L. St. Pierre, and John Lubans Jr., Library Systems Analysis Guidelines- (New York: Wiley-Interscience, 1970)] — was used as a guide. First, the steps I went through in analyzing and evaluating the work flow will be discussed, then I shall describe some of the design changes that have been implemented.

The word "systems" in systems analysis usually refers to the entire system; for this study "system" refers to the map cataloging subsystem.

Systems analysis consists of three basic steps:

1. Analysis defines the requirements of the system, the current procedures used to meet the requirements, the output which satisfies the system's requirements, and inputs used to generate the outputs.

2. Evaluation asks if the current procedures ade-
Figure 2

SYSTEMS ANALYSIS

I. Analysis
   A. Problem Definition
   B. Library's Goals
   C. Survey of Requirements
   D. Current Operating Conditions

   Personnel Survey
   Job Analysis Questionnaire
   Equipment Survey
   Systems Component Survey

   Flow Chart
      E. Inputs survey
      F. Outputs survey
      G. Time and Motion Study

II. Evaluation
   A. Relationship between subsystems.
   B. Is information of inputs and outputs received when needed?
   C. Eliminate information that serves little or no purpose.
   D. Can methods and procedures handle processing workloads?
   E. Are staff capable of fulfilling requirements?
   F. Is equipment allowing for efficient methods?

III. Design
   A. Modification of procedures.
   B. Elimination of unneeded procedures.
   C. Redesign of the system or part of the system.

quately meet the goals of the system. 3. Design either validates the current system, modifies the system, or replaces the current system with a newly designed system. Figure 2 summarizes the steps I went through in the analysis, evaluation, and design.

Analysis consists of several steps. First the problem needs to be defined in general, then the specific problems involved must be identified and described. I defined the problem for this study as: how to improve copy cataloging statistics by studying the work flow of a map from receipt to cataloging to processing. Next the library's overall goals must be defined in relation to the problems to be studied, e.g., to improve bibliographic access to the Map Collection. These goals determine the major requirements of the system resulting from demands that are placed on the system. All requirements that modify and enforce the system's demands must be identified. Two of the requirements that were identified include: 1) to provide bibliographic access to the collection; and 2) to provide statistics for management on cataloging, card filing, and acquisitions on a monthly basis. In order to analyze the requirements, each requirement is described in detail.

Current operating conditions, input surveys and output surveys should be analyzed concurrently. At the same time, flow charts should be constructed which will help graphically understand the flow of work through the system. This helps in arriving at an understanding of the system's operations.

Analyzing current operating conditions consists of several steps: 1) the Personnel Survey; 2) the Job Analysis Questionnaire; 3) the Equipment Survey; 4) the Systems Component Survey; and 5) the Flow Chart. The Personnel Survey looks at each position in the system in general and the Job Analysis Questionnaire looks at each position in detail. The Equipment Survey looks at the equipment available, special features, condition, and amount of use. The Systems Component Survey describes in detail the work flow through the system, and the flow chart is constructed from the Systems Component Survey.

The inputs and outputs of the system must be identified. Some of the inputs identified include: in-process cards/sheet maps; new books/serials; and catalog card correction slips. Some of the outputs include: catalog cards; processed sheet maps; books; serials; "mono set" cards; and cross-references. Next surveys of each input and output must be done which look at the following: a) is the input or output needed to meet one of the system's requirements; and b) is the input or output information adequate to permit efficient satisfaction of the requirement? In order thoroughly to analyze the system, a time and motion study was also done. Each function in the system, such as processing cards or copy cataloging, was broken down into component steps with estimated time and distance for each. This part of the systems analysis provided additional information on possible steps to combine or steps to eliminate.

The second step in systems analysis is evaluation of the system. For this phase I used surveys of requirements, outputs and inputs, an understanding of the current operating conditions, copies of all
forms used in the system, and the time and motion study. I evaluated how effectively, efficiently, timely and accurately the present system was meeting its requirements. It is important to be aware of the options open and not open to management. What is management’s primary goal? In the Map Collection, the primary goal is high productivity coupled with high quality. Look at the interrelationship of requirements among subsystems, e.g., between cataloging and acquisitions - can certain procedures or forms be combined? Can information be used from the IP card for cataloging or can maps be cataloged immediately without the filling out an IP card? Is information for inputs and outputs received when needed? Can map cataloging statistics be supplied in a more timely and efficient manner? Can supply of information that serves little or no purpose be eliminated? Do we need to type “mono set” cards for the Catalog Department’s series authority file? Look at current methods and procedures; are they adequate for processing work loads with respect to the stated goals of the system? Is staff available capable of fulfilling requirements, or do additional staff need to be added in order to keep up with the work load? Is the equipment allowing for application of efficient methods?

After I came to a conclusion regarding the present system, the following questions were answered:

1) What is the productivity of the system? (c.g., by using map cataloging statistics)
2) Is the system providing information promptly?
3) How accurate is the information?
4) Is it possible to provide only information to management when needed for decision making or taking justified action?
5) Does each input or output meet requirements placed on it?

While analyzing and evaluating the system, I identified several design changes. These design changes can be divided into three components: 1) modification of procedures; 2) elimination of unneeded procedures; and 3) redesign of the system. All of the following ideas have been implemented.

1) Modification of procedures

It is important to have as much centralization of technical services as possible. Where possible, the map cataloging subsystem has been brought into the work flow of the Catalog Department. In this way, some clerical assistance can be obtained, the Map Collection can take advantage of any authority work that has previously been done, and other departments can take advantage of authority work done in the Map Collection. Modification of procedures involving the Catalog Department includes the following: a. Catalog Department (CD) processes all name and series authority work. This includes providing cross-reference cards for the Map Collection’s card catalog. b. CD inputs all original map cataloging from work forms. c. CD provides clerical support for copy cataloging. Other modifications include: streamlined map cataloging statistics; and consolidated book bindery slips. We receive clerical support from both the Acquisitions and Catalog Departments. However, due to these departments’ own departmental priorities, at times the amount of support to the Map Collection may fluctuate.

2) Elimination of procedures

Several procedures after analysis and evaluation were found to serve no useful purpose; these include: a. making cross-reference cards for the Map Collection’s authority file; b. counting new OCLC catalog cards; c. typing “mono set” cards for the CD’s series authority file.

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**Figure 3**

**COPY CATALOGING PROCEDURES COMPARISONS**

<table>
<thead>
<tr>
<th>Old Processing Procedure</th>
<th>New Processing Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maps received.</td>
<td>1. Maps received.</td>
</tr>
<tr>
<td>2. IP cards with order number attached to map.</td>
<td>2. IP cards completely filled out.</td>
</tr>
<tr>
<td>3. Maps placed in folder.</td>
<td>3. IP cards and maps filed.</td>
</tr>
<tr>
<td>4. IP cards pulled.</td>
<td>4. Maps searched on OCLC.</td>
</tr>
<tr>
<td>5. IP cards searched on OCLC.</td>
<td>5. Records printed out.</td>
</tr>
<tr>
<td>6. Records printed out.</td>
<td>6. Map records are edited.</td>
</tr>
<tr>
<td>7. Maps pulled for matches.</td>
<td></td>
</tr>
<tr>
<td>8. Map records are edited.</td>
<td></td>
</tr>
</tbody>
</table>
Redesign of the system.
The general consensus among the Map Collection staff is that usually maps that need immediate cataloging are those recently published. These are newly received maps. Many times these "new" maps get "lost" in the In-Process (IP) file. Therefore, this redesign set up a procedure to catalog these "new" maps immediately. Previously, when maps were received, the order was cleared, IP cards were made, and the IP cards and maps were filed. Then, at some later date, IP cards were pulled, searched on OCLC, records printed, maps pulled for those maps with records, print-outs were edited, then the record was edited on-line. Now when maps are received the order is cleared, and 1985-present publication date maps are separated from the rest. The pre-1985 maps follow the previous procedures. An IP card with order number is attached to each 1985-present map and placed in a folder. Then when the cataloging student assistant comes in, these maps are searched on OCLC. If a record is found, a print-out is made, attached to the map and left on the Map Cataloger's desk for immediate copy cataloging. If no record is found, the map is set aside so that the Map Cataloger or other departmental staff member can decide if the map should be designated "priority original cataloging" or if it should be added to the IP file. Figure 3 compares the steps in the previous procedure and the current procedure.

We initiated this redesign the end of January 1990 and for the first three-four weeks it was working great. Since then, due to an end of fiscal year slowdown, fewer maps have been received. Therefore, currently our copy cataloging consists of a combination of the new and old procedures. Pre-design cataloging statistics indicate that about 40 titles are cataloged per month and initial post-design cataloging statistics indicate that about 50 titles are cataloged per month.

CONCLUSION

Two major phases of redesign of the technical services work flow at the University of Arizona Map Collection have been described. The first phase organized the backlog and provided a means of limited local access. The second phase produced several changes resulting from a systems analysis of the map cataloging subsystem. These changes included modification of procedures, elimination of unneeded procedures, and redesign of part of the subsystem. Implementing these has streamlined the subsystem and will increase the map cataloging statistics. However, our current backlog is 8385 titles or 25,904 items. We currently receive about 1383 titles or 4389 items per year. Using an optimistic cataloging rate of 600 titles per year, without additional help we cannot keep up with what is currently being received. Figure 4 shows the projected increase of the sheet map backlog over the next three years. If 1) we are going to continue our current rate of sheet map acquisitions, and 2) it is decided that cataloging will keep up with this rate, then a full-time library assistant or technician is a necessity. In the future the Map Collection may want to consider additional options in order to reduce the backlog: a) temporarily increase map cataloging staff, possibly through a Health and Education Agency Title II-C grant; b) decrease the sheet map acquisitions rate; or c) weed the backlog.

Figure 4

PROJECTED INCREASE OF SHEET MAP BACKLOG

This assumes an acquisitions rate of 1383 titles and 4,189 items per year, and a cataloging rate of 600 titles and 1,800 items per year.

<table>
<thead>
<tr>
<th></th>
<th># of Titles in Backlog</th>
<th>% Titles in Backlog</th>
<th>Total Items in Backlog</th>
<th>% Total Items in Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1990</td>
<td>8,385</td>
<td>18.2</td>
<td>25,904</td>
<td>10.8</td>
</tr>
<tr>
<td>March 1991</td>
<td>9,168</td>
<td>19.3</td>
<td>28,293</td>
<td>11.6</td>
</tr>
<tr>
<td>March 1992</td>
<td>9,581</td>
<td>20.6</td>
<td>30,682</td>
<td>12.4</td>
</tr>
<tr>
<td>March 1993</td>
<td>10,734</td>
<td>22.0</td>
<td>33,071</td>
<td>13.1</td>
</tr>
</tbody>
</table>
Bits and Pieces, Mainly from Larry Cruse

1. A town currently named Lake Los Angeles has no lake, and Los Angeles is 100 miles away (maybe they should just wait a few years, at which point they'll probably be a suburb), so residents are voting to give a new name - Twin Cities being one possibility (Times-Advocate, Escondido CA, 3/1/90, p.A11).

2. See Geothermal Hot-line, 12/89 (nos. 1&2), “Geothermal Public Information Issue, for a list of geothermal maps - excellent to use a checklist for one’s collection!

3. You may have been one of the superb persons who wrote a letter to Jim Bates (House Committee on Administration, Subcommittee on Procurement and Printing), who was responsible for sponsoring H.R. 3849, which, according to Charlotte Derksen’s e-mail letter of 3/5/90: effectively eliminates “nofoo” access by the public to electronic government information by authorizing GPO to assess database users - including depository libraries - fees for such access; excludes electronic government information from the definition of government publication for the purpose of defining the scope of the depository program; and excludes electronic government information from the publishing activities which GPO is permitted to do. In response to what we hope was a landslide of letters, Congressperson Bates is considering making some amendments to the legislation, having set up a Library Task Force in his district (in CA) which will allow him to meet with librarians. It at least temporarily restores one’s faith in letterwriting.

4. Here we have the map-library version of Current Contents®:


GIS Newsletter, #123, 4/90: on p. 4, news that Bob Bier (Chief of the Denver USGS Library) will soon be moving to Reston to become Chief, Cartographic Information Section, at USGS’s HQ library - our very hearty congrats to Bob!

- on p. 5, Rich Spohn on “University of Cincinnati Geology Library moves”

- on p. 6-7, Susan Klimley on “GSA, AGU and stalking the elusive color computer graphic”

The Namedropper (Friends of the Geographical Names of Alberta Society), 2(3), 2/90, p. 1: apparently there is a map exhibit, “From Terra Incognita to the Prairie West,” which has not yet been remounted, although that is being considered; the catalog has been favorably reviewed (friend’s address: Old St. Stephen’s College, 8820-112 Street, Edmonton T6G 2P8)

Cartographic Perspectives (North American Cartographic Information Society), #4, winter 1989-90: “Color chart use in map design,” by Cynthia Brewer; “Cartographic techniques: software review, Systat;” “Fugitive cartographic literature;” features

SLA Geography and Map Division Bulletin, #159, 3/90: after much hard work and tearing out hair by Joanne Perry, the venerable Bulletin has a new - and superb! - look, while retaining its standard content.

“Compiling the bibliography of Milwaukee city maps, 1836-1935,” by Carl Baehr & Mary Turk

“Through a woman’s eyes: writings of women travelers,” by Susan Fifer Canby & Barbara Studholme

“Computerized information retrieval and bibliographic control of the polar and/or cold regions literature: a review,” by Martha Andrews; those of use who remember an SLA G&M meeting of about 10 years ago when the librarian of the Canadian polar institute presented her library’s problems in a powerfully stated fashion.

“ACML salary survey,” by Kate Donkin; not only useful, but very funny reading (as one would expect from Kate); a sample sentence from p. 18 is, “Cheryl Woods asked me to undertake this survey and promised that if I would make up the questions and send them to her, she would see that the survey would be typed up with none of my spelling mistakes and be mailed out accompanied by a plain brown wrapper for you to send the replies directly to Waterloo, where I bask in mindless retirement.”

“Cartographic Cataloguer’s Newsletter” by Velma Parker

(Note: The Bulletin will have a new editor, Don Lamon, New Brunswick Museum, 277 Douglas Avenue, Saint John, New Brunswick E2K 1E5, with the next issue)

ISCEM Newsletter (International Society for Curators of Early Maps), #3, 3/90: edited by Barbara McCorkle and Ed Dahl; this excellent newsletter is not only useful but (intentionally) amusing.

Ed would like to launch a new project - discovering and making available ms. maps in each of our collections of countries other than one's own; with next mailing to society members, he will ask respondents to report what ms maps one has relating to foreign lands, and to provide info about copying. He would appreciate thoughts on the project.

On p. 4 of the newsletter, Ed notes: I had suggested in Leiden that on the question of a membership fee, we simply waive it as long as everyone sends news. This has worked wonders. One member wrote: “Terrified by the alternative, 'news or US $10,' I was forced to change news.”

More projects (talk about job security):
1. Register of copy plates (Francis Herbert)
2. Exhibition catalogues register (Ed Dahl)
3. Mapmakers' and map sellers' catalogues (Tony Campbell & Francis Herbert; contact Tony at British Library); lists of 19th and early 20th century items
4. British Admiralty chart catalogues: get a complete collection together, and ask a commercial publisher to prepare microform edition (Larry Cruse has been informed of this)
5. Mapmakers' memoirs accompanying maps: suggestions and action welcome
6. Globe inventories: Tony Campbell has a working list; Deborah Waner (SI) is working on a list of American globes, some of which has appeared in Rittenhouse, vol. 2; Helen Wallis is working on a list of British globes, Gunter Schilder on Dutch globes - anyone else?

7. Cartochronology: Tony Campbell has a British Academy grant to work on a computer program for controlling pertinent data relating to info to aid in dating of undated maps.

ADDRESS: Barbara McCorkle, Map Curator, Yale University Library, New Haven CT 06520; Ed Dahl, Early Cartography Specialist, National Archives of Canada, Ottawa K1A 0N3, CANADA

5. To update your vendor files for the Philippines - NAMRIA (National Mapping and Resource Information Authority), founded 6/10/07, address is: Chief, Information Services Division, NAMRIA, Fort Andres Bonifacio, Makati, Metro Manila PHILIPPINES

6. News from UMI: apparently they are working with Larry Cruse on selling color microfiche of the Cumberland map collection (about 700 fiche; $10,600 - can your editor's notes be right? this seems excessive); UMI bought up inventory.

7. Send to MicroImages, Inc., 201 North 38th Street, Suite 15, Lincoln Neb. 68508-1347 for a copy of their 90 p. Guide to MIPS, its features and applications; this excellent publication has as its raison d'être presenting the firm's Map and Image Processing system - but in the process of doing that, it does a very good job of explaining digital image processing; for example, it has a pithy (300-term) glossary of geographic analysis and image processing.

8. The San Diego Union [3/10/90, p. Auto-1], had an article entitled, “The rapid rise and lamentable fall of the free road map.” Summarized: This service was at its height in 1972, 250-million maps were printed, most of which were given away free by gasoline stations. Two situations made the free road map extinct - according to Connroy Erickson, spokesman for Rand McNally - the fuel shortages of 1973-74 and 1979, which made gas supplies scarce and therefore prices much higher. Road maps began in 1906, with a map of the El Camino Real, now Pacific Coast Highway, Route 1, in California; in the east, the first road map was western Pennsylvania's Allegheny County (handed out by Gulf and Shell). The first maps identifying roads by number was a Rand McNally product of 1917; from then until 1930 (when few maps began to be a phenomenon of the U.S. road), maps were obtained by purchase. But by 1930, there was sufficient competition amongst the oil companies that the latter began to give the maps away.
9. Buy your WAML microfiche NOW - prices will be going up about 25%.


11. "Questions and answers about map copyrights" is a small half-page brochure; it was given out at the WAML Tucson meeting by Wide World of Maps, 2626 W. Indian School Road, Phoenix AZ 85017.

12. Voyager 1 will be taking pictures of the planets; NASA may assemble the 64 8x10" photos into a mosaic stretching 100 to 150 feet along a wall at JPL (*Santa Barbara News-Press, 7/11/90*, p. B4).

13. Interested in place names? You might want to take a look at a bibliography of onomastics (study of names) put together by the Lurline H. Coltharp Collection of Onomastics. The collection's emphasis is on Latin American Names. The bibliography was compiled by Roberta Arrey, UTET, 8/89.

14. There is an elegant new brochure for the fifth edition of the National Atlas of Canada - glossy paper, color pictures, en anglais et francais. Canada Map Office, 615 Booth Street, Ottawa K1A 0E9, CANADA.

15. EXCELLENT pamphlet on the use of satellites to derive locations on Earth - satellite geodesy - called GPS, a guide to the next utility. The booklet explains a complex subject in a very understandable way. Free from Trimble Navigation, 645 North Mary Avenue/POB 3642, Sunnyvale CA 94088-3642.

16. If you'd like to wear maps around your neck, go for Rick McEwan's bandana maps. Apparently his firm, Visual Dialogues, is located in Grass Valley CA (*Times-Advocate, Escondido, 2/25/90*, p. H4). Mr. McEwan tries for precision, so that the maps are not only as beautiful as the real thing, but also just as useful out in the bush.

17. Most of the world's biogeography maps are misleading, since they ignore diversity in oceans, says G. Carleton Ray, research professor of environmental sciences at U. VA. Oceans frequently appear on such maps in a uniform blue, but distinct biotic provinces do exist, especially along coasts (*The Scientist*, March 9, 1990, p. 9).

18. The Director General of INEGI (Instituto Nacional de Estadística, Geografía e Información) is offering to some purchasers the possibility of purchasing a full collection of maps by INEGI, at $2.00 per map (thus totaling about $13,918). (Information from letter sent by Arturo Gomez-Pompa, Director of INEGI, to UCMEXUS; photocopy sent by Julia Gelfand to Editor). Larry Cruse notes that there is a tendency every time there is a federal election in Mexico for the entire map sales arm to change, and for previously negotiated deals to be abrogated. Buying from Steve Mullin tends to be a far more dependable option.

19. Your Editor wasn't quite sure where to put this, so here it is: *Atlante Tematico d'Italia*, in 4 volumes, DM550 per volume (until June 30, 1990), from GeoCenter, Postfach 80 08 30, D-7000 Stuttgart.

20. Here's an announcement for The Hebrides Surveyed, from the National Library of Scotland, George IV Bridge, Edinburgh EH1 1EW; it's an exhibition, 1 August to 31 October 1990; admission free (but the transportation from where we are to the Library may be a bit pricey).

21. From April 1990 *Geotimes*: A.M. Ziegler on "Paleogeographic atlas project, mapping of the Mesozoic and Cenozoic at the University of Chicago" (pp. 22-24); neglects to say when or where it will be published.

**NEWS Government Agencies**

**Australia**

In mid 1987, responsibility for the Australian Government's surveying, mapping, geodetic and land information functions were transferred to the new Department of Administrative Services. The Australian Survey Office (from the former Department of Local Government and Administrative Services) and the Division of National Mapping (from the former Department of Resources and Energy) were brought together within the new Department. Soon afterwards, the two were amalgamated to form the Australian Surveying and Land Information Group (AUSLIG). AUSLIG is headed by a General Manager (Grahame Lindsay currently) who is also the Commonwealth Surveyor General. It has a staff of over 650 persons. For further information on programs and activities, please write to the General Manager, AUSLIG, PO Box 2, Belconnen ACT 2616 AUSTRA.
Canada

Your Editor regrets that this is rather old in terms of time, but of considerable interest. From MACDIF Matters (number 1, March 1988): MACDIF stands for Map And Chart Data Interchange Format; the long-term goal is to get MACDIF accepted as an international standard for the encoding of map and chart data for telecommunication. The short-term aim is to develop and test a format for encoding map and chart data for telecommunication. Timothy V. Evangelatos, Chief, Cartographic Development, Marine Cartography, Canadian Hydrographic Services, was in charge at the time of the issuance of the newsletter; he works with the contractor - IDON Corporation of Ottawa. MACDIF has been supported by NOS in the U.S. For further information, send to Timothy V. Evangelatos, Scientific Authority, MACDIF Project, Room 237, Canadian Hydrographic Service, 615 Booth Street, Ottawa K1A 0E6 CANADA.

New Zealand

Maps from the Department of Survey and Land Information were used to good effect by Nick Tansley for his TVNZ series, Treasure Hunt. (Information from Infoneu, special edition sesquicentenary, no. 8, April 1990; DOSLI, CPO Box 170, Wellington)

U.S. Government

Census Bureau

The Bureau has developed the User-Defined Areas Program (UDAP) to replace and expand the activities carried out in the Neighborhood Statistics Program following the 1980 census. For a fee, the Bureau will provide tables showing selected economic, social, and housing characteristics (1990 census) for geographic areas defined by data users; these areas must be defined in terms of whole census blocks on Bureau maps, can't have overlapping boundaries, and must be of minimum population size. Maps for delineating areas are expected to be available June '91 at the earliest. Contact Adrienne Quasney at (301)763-4282 for more information about the program.

In the AFDU Newsletter (March 1990; 14(3):3-4) is a brief note that Peter Herndon and Charles McClure are seeking input from depository libraries on what the AD 2000 Census should be like. They needed into by 5/15/90 (study due in to Census 6/30/90), so this is included in WAML as a notice. Charles McClure, School of Information Studies, Syracuse University, Syracuse NY 13244; 315/443-2911.

Defense Mapping Agency

Need to know about ocean claims? See the summary of ocean claims that comes out about once a year in Notice to mariners; according to Paul Leverenz (Scripps), they are a good supplement to the Limits in the seas series. For each country, mile claims for territorial sea, fisheries or economic zone, contiguous zone, and continental shelf are given. See DMAP news 3(4):5, winter 1989/1990, for a one-page discussion on ESRI producing a digital chart of the world.

Larry Cruse has been checking into the problem of DMA gazetteers being listed for sale but not coming on depository; apparently the volumes indeed are supposed to be depository items, and are "owed" to depository libraries.

Federal Communications Commission

The FCC has on file all maps ever made by persons trying to establish broadcast areas in order to obtain licenses. The problem is gaining access to them; Larry Cruse is working on this.

General Accounting Office

The winter/spring 1990 (no. 8) issue of the GAO Journal has a globe on the front, which relates to an article by Ken Hunter (p. 12-20), "Navigating the Nineties," which focuses on the need for global policy approaches. A clever illustration on p. 13 has a balloon with the Earth as the balloon and a ship (of state, doubtless) as the gondola - very Dore. Your Editor found this to be of particular interest in that in mid-May she was talking to Dr. Mike Goodchild (co-chair of the National Center for Geographic Information and Analysis: located at UCSB), and he said his ultimate goal was a geographic information system (GIS) of the globe as a whole.

Geological Survey

New catalog from USGS - US GeoData : catalog of digital data. All 1:100,000-scale DLG's, 1-degree DEM's and 1:2M scale DLCS (available as of 10/89) are listed.

USGS also has a new brochure on maps and mapping - it's a bibliography with listings for atlases, cartography, automated cartography and geographic information systems, historical cartography and mapmakers, dictionaries (also glossaries & gazetteers), map reading, maps for young persons, journals, remote sensing, and specialty (misspelled) books in cartography.


USGS have announced the JEDI Project for Earth Science - a set of educational materials which will
incorporate databases used by earth scientists in their
day-to-day activities. The primary goal is to invigorate
the teaching of earth-science studies in primary and
secondary schools. For more information, contact
Jerry McFaul, Computer Scientist, USGS, Office
of Scientific Publications, 804 National Center, Reston
VA 22092 (703/648-7126).

USGS has recently dropped some of its non-US depositories, as for example the University of Alberta
Map Collection.

Some news from USGS distribution; the following letter is dated 2/28/90, from Richard Davison (USGS
Box 25286, Denver Federal Center, Denver 80225) and ran in the IMDA newsletter:... In-house turn-
around time has averaged two weeks for published map products. Overtime was expended to accom-
plish turn-around time. In-house turn-around time has averaged seven weeks for open-file reports, book
publications and general-interest publications. Again overtime was required just to maintain the seven
weeks. Personnel: Overall the Branch is 10 employees below what is authorized, 72 employees, because
of the past hiring freeze. In reality the Branch is approximately 30 employees below what is required
provide satisfactory customer service. Move: The office personnel moved from Building 41 to Building
810 within the Denver Federal Center. Computer: Existing computer is still giving us problems and is
inadequate. Funding and specifications for a new computer have been accomplished. Hopefully an
award to a vendor will be made late 1990 calendar year with installation sometime in 1991. Hiring re-
strictions: Branch of Distribution, the only entity in the National Mapping Division, to have been granted
an exemption to the hiring freeze to hire up to our authorized ceiling of 72 full-time permanent employees.
Customer referrals to our partners, US Geological Survey Authorized Map Dealers. [End of letter]
USGS is now enclosing with each order a “Customer Service Notice,” which notes that there are over 3,000
USGS map dealers nationwide.

Your Editor thinks she already mentioned this, but just in case: Spatial data needs: the future of the National
Resources, National Research Council, 2101 Constitution Avenue, DC 20418.

Notice from USGS dated 4/16/90: Since October
1984, the U.S. Geological Survey (USGS) has distrib-
uted its published thematic (geologic; hydrologic)
maps and topographic maps free of charge to map
libraries under both the Government Printing Office
(GPO) Federal Depository Library Program and the
USGS Map Reference Library Program. Funding
constraints make it no longer possible for the USGS to
continue the distribution of maps under both pro-
grams. Since Title 44 of the United States Code states
that all Federal agencies must participate in the GPO
Depository Library Program, the USGS Map Reference
Library Program will be phased out as of Septem-
ber 30, 1990. Map librarians whose efforts to obtain GPO depository status are unsuccessful are to
get in touch with Charley Bennett no later than 5/18/90 (703/648-5778). (Charles W. Bennett, Federal Map
Depository Library Program Manager, Product Dis-
tribution Policy Office, National Mapping Division,
MS 508, USGS, Reston VA 22092)

From letter from Lowell Starr, 10/26/87: notes that
Venette and Tetlin Indian Reservations were dis-
solved in 1971; maps are to be changed accordingly.

Bureau of Land Management
BLM’s Land Information System (LIS) concept is
designed in layers with a Geographic Coordinate
Data Base (GCDB) as its framework. The GCDB will
contain latitude and longitude coordinate values and
other descriptive information for corner positions
and monuments recorded in the Public Lands Survey
System. These coordinates can be easily converted to
Universal Transverse Mercator (UTM) or state plane
coordinate values.

A computer can use coordinate values and descrip-
tive information, called attributes, to depict a specific
parcel of land on a screen or automated plotter. The
GCDB is much more than a data base to support
computer-aided mapping on a national scale. It is
designed to be a framework which anchors data to
the legal description of the land and its position on
the Earth’s surface. The anchor points for the GCDB
framework will be the coordinate values of parcel
corners.

With the Public Land Survey data displayed from the
first framework layer, BLM is designing the second
layer of its LIS to display automatically data from
the national land and mineral records. This Automated
Land and mineral Record System (ALMRS) includes
information on land ownership status and use au-
thorizations such as oil and gas lease, mining claims,
rights-of-way, and more. The system will automate
information presently found in BLM Public Rooms,
including Master Title Plats and Historical Indexes.
The top layers will eventually hold a variety of re-
source data. For large land management agencies
such as BLM, this includes natural and cultural re-
source data depicting soils, wetlands, archaeological
sites, forest and grazing lands, mineral deposits,
other resources. (This came out of a 1989 BLM publication of some kind - not identified in any cover information!)

Library of Congress
"The Emerald Isle in Maps," an exhibition of about 70 maps and atlases of Ireland which opened on 2/7, has been extended to 9/9/90. It is on view on "B" level of the James Madison Memorial Building, 8:30-5:30 every day. The maps range in date from 1482 to 1988, and were selected from the more than 12,000 maps of Ireland in LCG&M.

NASA
Environmental data from more than 20 satellites are being compiled for a "global change encyclopedia" that will run on PCs. Wesley T. Huntress, Jr., special assistant to the director of NASA's earth sciences division, says it will be the first animated atlas to show global changes in ecology, population, climate and oceans. The interactive software is a $5-M project for the International Space Year (1992), and is being led by the new Canadian Space Agency. Space agencies of 25 nations are involved in the Space Year.

NOAA
In early 1989, NOS switched from nautical chart paper that contained 50% cotton or linen to a new, thinner paper which proved to have increased strength when wet. Because of the large number of negative comments about this thinner paper, NOS is reintroducing the old, heavier paper. As soon as the stock of thin paper is exhausted (about 4/90), NOS charts will again be printed on the heavier paper. The Aeronautical Chart Division produced its first Aeronautical Data Sampler on CD in 12/88. The disk contained a sample of digital aeronautical chart information. Plans are underway to produce a follow-on operational prototype CD in 1990, to include up-to-date info. Address inquiries to Cdr. Richard K. Muller at (301)443-8711. (Your Editor talked to Commander Muller about receiving a copy of the new disk, and he was very helpful)

NEWS Remote Sensing
Effective March 1, 1990, a new price schedule went into effect for Landsat digital and photo products. Fast Format will be standard for TM (Thematic Mapper) digital products delivered after March 1. LTWG Format will be available only as special orders.

Get a vendor catalog of satellite imagery from Satellite Snaps Inc., POB 547, Ridgely MD 21660 (800/828-SNAP). And another from Terra-Mar, 1937 Landings Drive, Mountain View CA 94043; see News-California for more on Terra-Mar.

Multispectral user's guide is a practical introduction to multispectral imagery analysis, done by Autometric Inc. of Alexandria VA, and available through EOSAT for $975.00. (EOSAT, 4300 Forbes Boulevard, Lanham MD 20706)

VITec Inc., Plano TX has released the VITec-50 Image Computer, an image processing and display system that may be integrated into UNIX workstations. This system takes scenes obtained from maps or imagery and generates images of terrain by merging two data sets: an image data set, such as a high-altitude photo; and elevation data. The elevation data is then internally calculated and matched with the photograph to produce a 3-D image. The system also computes shadows and light sources, so that within a few seconds the system can display a panoramic perspective of the scene (Defense Electronics, April 1990, p.68)

A mosaic image of Southern California was made from 33 images; it covers an area of about 400 x 500 km from the Mexican border to the Sierra Nevada; the work was done by NASA's Jet Propulsion Lab (JPL)

SPOT Image's latest newsletter issue is v.4, #1, April 1990 (Spotlight). Worth getting on the mailing list for; SPOT Image Corporation, 1897 Preston White Drive, Reston VA 22091-4368. Digital terrain models (DTM) derived from SPOT panchromatic stereopairs are now available; worldwide catalog is now available on 6250 bpi magnetic tape (321,711 scenes acquired 2/86-11/30/89) - $120.

NEWS States and Provinces

Arizona

Pimeria 21(3), February 1990, has a feature article "Arizona on pre-territorial maps." Jack Mount, Map Collection, University Library, University of Arizona, Tucson AZ 85721.

California

California State University, San Bernardino, celebrated the addition of its 500,000th item on 3/15/90; it is the Official map of south-west portion of San Bernardino County, drawn by Thomas Dykes Beasley and published in 1891. The map has been framed and
placed on a wall on the first floor of Pfau Library.
From Carlos Hagen, UCLA Bruman Map Library: Carlos is now well into his project of having library accessions lists and various ephemera from his library’s vertical file being cataloged at minimal level and sent to SRLF; your Editor seized the opportunity to send a list of her collection’s accessions lists to Carlos, provide him with any titles he didn’t have, and joyfully trash most of the rest - which are absolutely invaluable when first they arrive, but after they’ve been checked, are of use to scholars rather than map librarians working on current acquisitions. From Phil Hoehn: Diamond Bar city officials are working on having aerial maps on hand for use by planning and building departments of the cities; about 60 of the 36” x 42” sheets will be used to oversee development, and there will be a wall-size photomap in City Hall. Check out the book publications of Landmark Enterprises, 10324 Newton Way, Rancho Cordova CA 95670 - on the historical aspects of mapping and surveying. Interested in aerial photos? California Real Estate & Zoning Aerial Survey, Sacramento Division, 1028 Haman Way, Roseville CA 95678 (916/784-8489) has a new atlas - 51 pages, covers metropolitan Sacramento and vicinity; 20” x 20”, zoning map on opposite side. The firm will be publishing similar atlases for Fairfield-Vacaville, north San Francisco Bay, South San Francisco Bay, and San Jose. Contact person: Jessie Tanner Smith, Vice President. And another CA publisher - Lorson’s Books & Prints, 116 West Wilshire Avenue, Fullerton CA 92632 (714/526-2523); has a few remaining copies of A leaf from the 1619 Mercator-Hondius atlas, each with a handcoloured map, for $335 (published at $475); offer expires June 1, 1990.

If you have access to MELVYL, try out Current Contents; your Editor was prepared to be thoroughly unimpressed, and instead had a wonderful time finding articles in non-map journals that were on maps and mapping. Try title-word searches on “remote sensing,” “maps,” and “cartography” (“mapping” pulls up a good many false drops).

Christian Brun, head of Special Collections at UCSB, retired on 2/12/90. Chris has a special interest in maps; he worked at the Clements Library and collaborated with James C. Wheat on the monumental Maps and charts published in America before 1800: a bibliography (Yale University Press, 1959). He has also been responsible for several substantial map gifts to the Special Collections department. During his retirement, he is going to continue to work on a map bibliography.

New newsletter: San Bernardino County Land Information Report, vol. 1, issue 1 is winter 1989/1990; lead article is “1990 GIS Project Underway.” Also mentioned in Digital News. Terra-Mar Resource Information Services, Inc. (1937 Landings Drive, Mountain View CA 94043; 415/964-6900) has introduced a city poster series of Landsat TM color satellite images. Posters are 24” x 36”, $20 per poster including postage, handling & shipping (tube: images mainly date from 1987 and 1988 - Atlanta to Washington, D.C.

Oregon

Now available: Oregon maps and aerial photography, information guide, 9/88. Your Editor got her copy from Sue Trevitt-Clark, Map Library, Condon Hall, University of Oregon, Eugene OR 97403.

Utah

Initial topographic mapping has been completed; 12/6/89 marked the ceremony - 1,524 sheets at 1:24,000. (Your Editor thinks she’s already mentioned this in a previous issue, but just in case …)

Washington (State)

From Connie Manson, Washington State Department of Natural Resources: The Washington State survey is now heavily involved in the new geologic map of Washington. The first of the four quadrants (SW) came out in 1987, and the survey is now well into the second (NE); about half of the b&w 1:100,000 open-files are out now, the rest should be out by June (?), and then the survey should be into the production of the compiled, full-cover, 1:250,000-scale sheets.

Wyoming

Welcome to our new State Editor, Linda Zellmer! Wyoming’s 7.5 topographic coverage is now complete; official celebration soon. Statewide mapping of landslide areas has also been completed; the GS of Wyoming is considering options for distribution of these sheets. Jim Case, the Geological Survey of Wyoming’s hazard geologist, has cornered the market on “Get ready for Earthquake” buttons. Perhaps he’ll give Linda come to distribute at the Denver meeting.
### NEWS Digital Data

In the April 1990 issue of *Geotimes*: Rex Buchanan and Don Steeles on “On-demand map publication,” pp. 19-21 - describes map publishing at the Kansas Geological Survey using digital databases and producing individual copies on demand.

GTV, A Geographic Perspective on American History, is a joint National Geographic-Lucasfilm project aimed at kids in grades 5 through 12: the package consists of 2 laser disks, HyperCard stacks, a teacher's guide, and a cable, and was to be available beginning in April of 1990. The HyperCard database contains images, captions, and annotations, as well as about 200 maps; for example, in one segment the voyage of Lewis and Clark is portrayed on the TV monitor while a map on the Mac traces their travels. For more information: Turner Houston at the NGS offices (202/857-7245) [Macworld, 2/90, p. 101].

The Wisconsin Mapping Bulletin for 1/90 (p. 4 a) has an excellent article called, “Micro Mapping Software,” which for the categories of “Atlas and information programs,” “Map creation/presentation graphics,” “Customized map creation,” “Computer aided design (CAD) systems,” and “Geographic information systems” gives addresses and brief descriptions of the commercial products in each category. Succinct and understandable.

STOP PRESS!!! MIS week for 2/26/90 (p.12) notes that, “Calling a truce to a tug-of-war that has hampered the development of X.500 messaging directories, 10 electronic-mail providers have joined to develop a user directory of public E-mail users, designed to make internetwork communications easier.” It’s about time! It does seem that e-mail is now at the stage where it generates junk mail - alias lists are sometimes too large to cover one specific area of interest.

Microelectronics and Computer Technology Corporation has developed a large-screen “interactive work surface,” to make complex applications simpler to use; traditional computer screens are too small to offer all the images a user may need to view at one time (MIS week, 2/19/90, p. 34).

In the Winter 1990 edition of *ARC News*, Section II, p. 29, is an illustration of a map that is part of a map supplement of the Soviet Union distributed with the March 1990 issue of the *National Geographic Magazine*; ARC/INFO software was used to support the development of the final map product.

In the last issue of the IB, there was a list of the sheet-level map listings available from Chris Baruth in GeodeX format. Your Editor’s magic fingers gave out before the list was completed; here is the rest of it, sans file names and file lengths - Chris will be happy to provide you with those as you require them:

- Sudan 1:100,000
- Egypt 1:50,000 (German war maps; Asia 1:250,000 (various AMS); [Asia] 1:253,440 (GSGS, Survey of India); India 1:126,720 (Survey of India); Israel 1:100,000; Japan 1:50,000 (Geology); Australia 1:100,000; Australia 1:250,000 (various series); Central & Eastern Europe (15 x 30 minute quads); France 1:50,000 (Orange series); France 1:250,000 (geology); Poland 1:25,000 (1928-1938); Great Britain 1:63,360 (7th series); Norway 1:50,000 (Series 711); German Empire 1:25,000 (N of S2 degrees); German Empire 1:25,000 (S of S2 degrees); Greece (various scales); West Germany 1:200,000 (1964-); Europe 1:250,000 (various AMS); Spain 1:800,000 [ED. NOTE:??]; Italy 1:50,000; Ireland 1:63,360; Belgium 1:50,000; Switzerland 1:50,000; Luxembourg 1:20,000; Balkans 1:50,000 (AMS); Ireland - town plans, 1:500; Russia 1:100,000 (German war maps); Spain 1:50,000; Lithuania 1:100,000 & Latvia 1:75,000; Central Europe 1:200,000; Central Europe 1:300,000; Germany 1:50,000; Russia 1:50,000 (German war maps); Denmark 1:40,000; British Geological Survey 1:250,000; Romania 1:100,000; United States Land Cover 1:250,000 (L series); United States 1:250,000; United States 1:100,000 (1980-); Wisconsin - various; U.S. - Counties, eastern; U.S. - National forests 1:24,000; U.S. - counties, western; U.S. - Geology (GQ series); Desert access guides, California 1:100,000; Tennessee 1:24,000 (geology); Maryland 1:24,000 (geology); U.S. 1:50,000 (DMA).

Need more information? Chris Baruth. AGS Collection, University Library, University of Wisconsin-Milwaukee, POB 399, Milwaukee WI 53211.

Half of the March 1990 CD-ROM *EndUser* was devoted to maps - “CD Maps in the 1990s,” “And Then There Was Supermap,” “Fishing with Sea-Ds,” “Here Be Dragons,” “The World at your Fingertips,” “The Digital Chart of the World,” TIGER Files Take Off on CD-ROM,” “A Listing of Mapping CD-ROM Applications” - get yourself a copy! It’s free - see next paragraph below for address. On p. 26 of the March *EndUser* is an extremely useful diagram of how the ankle bone is attached to the shin bone in CD technology - here’s how it goes: Raw data on CD; CD application disc & file format on the CD; CD drive & commands; interface card hardware; device driver; extensions to operating system; operating system; application program. P. 85 lists mapping on discs (not complete, but not bad): Australian Census:1980; Electromap World Atlas; Electronic Map Cabinet; FEDSTAT/TIGER on CD; GEODISC (Florida; Georgia; U.S. atlas); Geophysics of North America; In-
fomarkIV: Information for Marketing; MundoCart; Sea-D Series; Supermap.

More on CD's - CD-ROM shoppers guide, vol. 1, #2, landed on my desk sometime in March - get your copy from DDR1, Inc., 510 North Washington Street, Suite 401, Falls Church VA 22046-3537 (800-688-DDRI). It's predicted to be quarterly.

Stanford's Branner Earth Sciences Library and UCSB Map & Imagery Lab have set up a strictly informal arrangement whereby Branner will keep loaded the lexicon of geologic names and MIL, the APSRS search on our respective pcs, and we will do searches for the other library upon request. This way, neither one of us has to keep loaded software that we very seldom use, but that when we DO need it, there is no good replacement.

SIGCAT (Special Interest Group on CD-ROM Applications & Technology) is a group to watch. Barbara Haner (UCRiverside) reports that she and a few other WAMLites attended a recent meeting and found it to be very worth while. It looks as if the person to get in touch with is Jerry McFaul, Computer Scientist, USGS, National Center, Reston VA 22092-9998. SIGCAT Information Hotline is 703/648-4452.

Electronic Atlas Newsletter is intended to serve as a periodical guide to the uses of GIS technology for present and future users, monthly, it is written by a local government infrastructure manager. $25/year. For more information: Electronic Atlas Enterprises, 1170 Brite Star Lane, Poughkeepsie NY 12601. Or Brian J. Matuschak, 602/269-4890 or 206/697-1221.

More on GISs: see the Harlow Report, 13(4), April 1990, on GIS; 11956 Bernardo Plaza Drive, Suite 522, San Diego CA 92128. Thomas Bros. has a GIS system (17731 Cowan, Irvine CA 92714).

The San Bernardino County Land Information Report debuted with vol. 1, issue 1 (winter 1989/1990); Geographic Information Management System. 385 N. Arrowhead Avenue, San Bernardino CA 92415.

Free subscription to Workstation News; Workstation News, 8310 Capital of Texas Hwy., Suite 385, Austin TX 78731.

At WAML in Tucson, Charlene Baldwin (U AZ Map Collection) introduced an exciting idea - e-mail conferencing. Below is the set of instructions for doing this. Questions? Get in touch with your campus computer mavens and/or with Charlene.

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**Introduction to CoSy**

CoSy is a communication software package which provides two modes of communications: group and private. A conference, called WAML, has been set up to support ongoing discussions for the group. You may use CoSy Mail to exchange information with any other individual or several individuals.

For non-U of Arizona participants, restricted CoSy accounts have been established that give you access only to the few conferences you will need to gain familiarity with the system and to continue communications with the WAML group these are described below. You have all been joined to a conference called WAML to facilitate group discussions, and you all have access to each other through Mail. The remainder of this document tells you what you need to know to get started with CoSy. If you run into problems:
- Send CoSy mail to hoffman@ccit.arizona.edu;
- Send Internet mail to "hoffman@ccit.arizona.edu";
- Call the CCIT Consulting Desk (602/621-HELP).

Following are the conferences that you are joined to:
- `-greetings`: short messages to introduce you to CoSy;
- `-practice`: for experimenting with conference commands;
- `-tutorial`: basic tutorial;
- `-tutorial2`: advanced tutorial;
- `-WAML`: contains multiple topics, to help keep discussions organized.

Log On to CoSy: Procedures vary depending upon the configuration of your organization's computer equipment. Refer to the CoSy Reference Card for details on Dial-up Access and access through the IDX. If you have access to Internet you may be able to log on using the TELNET command and host name:

`uavax0.ccit.arizona.edu`

CoSy prompts: There are three prompts that you will become familiar with:
- The `-the-` tells you that you are in the CoSy program. From the `-the-`: you may choose to join a conference or to call up your mail.
- The `-read-` prompt tells you that you have joined a conference and you may read or add messages.
- The `-mail-` prompt tells you that you have entered the CoSy mail utility and you may read mail...
messages or send mail to other CoSy users.

Help or ?: There is always help available on CoSy. For information about what to do next, type HELP or use the ? key.

password: Use this command to change your password. Passwords must be six or more characters (no blanks) and you will be asked to type your password twice, but it will not appear on the screen.

Conferencing Commands

join .greetings
(.welcome) The join command will take you into the conference of your choice.
ENTER Use the ENTER or RETURN key to read "new" messages.
join .practice
(.practice) You may join a different conference by entering the join command again. If a conference has multiple topics, you will see the Topic? prompt and a list of topic names. Enter the topic name of your choice.

say Use this command to begin the process of adding a conference message. You will be prompted to enter a "title" which is a one-line summary of what your message will contain.

add Use this command at the Add/action: prompt to post your message. To investigate other responses to Add/action:, type HELP.

comment Use this command to respond to another message. You will not be asked to enter a title and the information displayed at the top of your message will indicate that it is a comment to another. CoSy will prompt you with Add/action: just as it does for the SAY command.

quit Use this command to exit a conference and return to the ; prompt.

CoSy Mail Commands

mail: Use this command from any other CoSy prompt to enter the mail utility.
help: Explore the command options available from the Mail: prompt.
to cosy id: Use the TO command to begin a message to a particular CoSy user. To practice, send yourself a message. You will be asked to enter a "subject" which is similar to a conference message "title." At the Send/action: prompt, explore the available options by typing HELP.

acknowledge: Use this command to receive a notice that your message has been received.
send: Use this command to send the message to the specified CoSy user.
status: This command will display information about mail messages contained in all of your mail "baskets."

ENTER: Press the ENTER key to read new mail.
help: At the Read/action: prompt, explore the available options.
reply: Use this command to send an automatic reply to the message you just read. Notice that you are not asked to enter a user id or a subject. After completing the text of your message and exiting the editor, you will be asked if you wish to "attach" a copy of the original. NO is the default. If you want to include the original, type YES at the prompt; then type SEND at the Send/Action: prompt.

message #: Enter a message number to re-read a previously read message. The sequence number precedes the user id on each message information line.
delete: To discard a message you do not wish to keep, type DELETE at the Read/action: prompt.
holdbasket: Verify the contents of the holdbasket.
delete message #: Use this command to discard a message from your hold basket. You may also use this command to delete messages from your out basket. Messages deleted from your out basket will simultaneously be deleted from the recipient's new mail basket.
help nickname: Use this command to learn how to create a distribution list to facilitate sending mail to multiple CoSy users.

Editing Tips

The default editor for CoSy users is VERBOSE [Ed. Note: a cynical name if ever there was one], a simple line editor which may suffice if you are a novice computer user or do not have access to a VT100 terminal. You may choose an alternative editor, EDT, which provides full-screen editing capabilities. Refer to the handout, Basic Commands for Editing with EDT, for more information.

Transferring Files Between a PC and CoSy

You may choose to create messages using a personal computer word processing system and upload the text of the message into CoSy. If you do, be sure to save your pc file as a text file. Refer to your word
processor’s documentation for details on saving files as text.

**KERMIT** is the protocol used to handle file transfers. The following instructions briefly outline the steps you will use to transfer information to and from CoSy.

**upload:** Use this command to transfer information from your PC to your scratchpad. You may then use the **SAY** or **COMMENT** command to post the message to a conference, or the **TO** command to mail the information to another CoSy user.

**file message #:** From the **Read:** or **Mail:** prompt, enter this command to place a message into your scratchpad.

**download:** Use this command to transfer the contents of your scratchpad to your PC. After downloading, the information remains in your scratchpad. You must use the **VERBOSE** command **C**lear or the EDT command, **CLEAR MAIN** (which is entered at the * prompt), to erase the scratchpad.

**Basic [Ed. Note: Not to be confused with BASIC]**

**Commands for Editing with EDT**

EDT is a powerful editor similar to PC word-processing programs. The following hints apply to all editing that you will do with EDT.

As soon as you log on to the CoSy system, enter the command: **EDIT SET EDT**

Several CoSy commands including **SAY, COMMENT,** and **TO** will invoke EDT. Once you issue one of these commands, you will see an asterisk. The following four steps are all you need to remember to use EDT for creating conference and mail messages:

- At the * prompt, type **change** to enter full screen mode.
- Type your message. Use arrow keys and the DEL key to make simple corrections.
- When you finish typing the text, type **Ctrl-Z** (while holding down the Ctrl key, lightly press Z).
- At the * prompt, type **exit** to end the edit session.

If you entered EDT from the **Read:** prompt, you will find yourself at the **ADD/Action:** prompt. Type **ADD** to add your message to the conference.

If you entered EDT from the **Mail:** prompt, you will find yourself at the **Send/Action:** prompt. Type **SEND** to mail your message.

Closing thought: computers are a prime example of the old saw that what goes up must go down ...

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**SOFTWARE FOR TIGER**

The following is a list (dated June 6, 1989) of graphic information system vendors that have informed the U.S. Bureau of the Census of their capability to process TIGER/line files. Apparently Census will update the list.

(List courtesy Jenny Marie Johnson, who got it at a Census workshop).

**Address Information Mapping services, 8403 Rockwood Lane, Austin TX 78758**

**Caliper Corporation, 4019 Cumberland Avenue, Chevy Chase MD 20815**

**Educational Data Systems, Inc., 901 Campisi Way, Suite 160, Campbell CA 95008**

**Election Data Services, 1522 K Street, NW, Suite 626, Washington, D.C. 20005**

**ESRI, 380 New York Street, Redlands CA 92373**

**Etak, Inc., 1455 Adams Drive, Menlo Park CA 94025**

**Geobased Systems, 12526 High Bluff Drive, San Diego CA 92130**

**Geographic Data Technology, Inc., 13 Dartmouth College Highway, Lyme NH 03768-9713**

**GeoVision Corporation, 1600 Carling Avenue, Suite 350, Ottawa, Ontario K1Z 8R7, Canada**

**GeoVision, Inc., 270 Scientific Drive, Suite One, Norcross GA 30092**

**Intergraph Corporation, One Madison Industrial Park, Huntsville AL 35807-4201**

**MapInfo Corporation, 200 Broadway, Troy NY 12180**

**Industry Marketing Manager, McDonnell Douglas, 7000 West Center Road, Suite 402, Omaha NE 68106**

**Cameo Project Manager, NOAA/OMA34, 7600 Sand Point Way, NE, Seattle WA 98115**
Plan Graphics, Inc., 202 West Main Street, Suite 200, Frankfort KY 40601
Director of Research and Development, Public Systems Associates, Inc., 303 E. 17th Avenue, Suite 440, Denver CO 80203
Sammanish Data Systems, Inc. P.O.Box 70387, Bellevue WA 98007
Street Map Software, 1014 Boston Circle, Schaumburg IL 60193
Synercom Technology, Inc., 2500 City West Blvd., Suite 1100, Houston TX 77042
U.S. Statistics, Inc., 1101 King Street, Suite 601, Alexandria VA 22314
Wild System 9, 373 Inverness Drive South, Suite 207, Englewood CO 80112

Spatial-Data CD's

Following is a list of the CD-ROM products held by the Map and Imagery Lab, UC Santa Barbara. Be warned that several of these (NA 3,4,5; Polar Regions 1) require the use of IMDISP, an image-processing software (developed by the Jet Propulsion Lab) whose use is definitely not intuitive, nor is the software always provided with the CD. Jim O’Donnell (Geology & Planetary Sciences Library, California Institute of Technology) and Charlotte Derksen (Branner Earth Sciences Library, Stanford University) presented an excellent article, “CD-ROM and floppy disk databases for the earth sciences,” at the last GIS meeting; it includes evaluations of some of the below, plus several text CDs of interest to the earth sciences. Jenny Marie Johnson also reviews CD's in the IB from time to time. If you know of additional ones (beyond Supermap, MundoCart, OCLC), or if you need additional information on these, please get in touch with Mary Larsgaard (see masthead for address)

EARTH
North America
1. Geophysics of North America
   a. Subjects: topography; DNA magnetics; MAGSAT magnetics; DNA gravity; isostatic gravity (U.S. only); satellite imagery, summer; satellite imagery, fall
   b. North America
c. Time: various
   d. Address & price: about $600 from National Geophysical Data Center, 325 Broadway, Boulder CO 80303

2. FEDSTAT/TIGER
   a. Subjects: demographic and economic data (e.g., County city data book) from U.S. Census (FEDSTAT);
      1:100,000-scale planimetric data (TIGER)
   b. Area: U.S. for FEDSTAT; northern and southern California for TIGER
   c. Times: 1980s
   d. Address & price: about $700 for software. about the same for each CD (e.g., northern California is one CD); U.S. Statistics, 1101 King Street, Suite 601, Alexandria VA 22314.

3. SLAR, Side-Looking Airborne Radar, Joint Earth Sciences (JES-2) demonstration disc
   a. Subjects: SLAR imagery
   b. Area: scattered areas of the U.S., mainly northeast and southwest
   d. Address & price: was distributed as a GPO depositary item on a limited basis; try: Dave Traudt, Geologist, U.S. BLM, Eastern States Office, MS-972, 350 S. Pickett Street, Alexandria VA 22304 (703/461-1347)

4. West Coast Time Series Coastal Zone Color Scanner Imagery, vol. 1, version 2
   a. Subjects: scanner imagery
   b. Area: Pacific coastal area of U.S. south to Baja
   d. Address & price: seems to be free if you can establish research need; Mike Martin, Planetary Systems Project Engineer, NASA, Jet Propulsion Laboratory, 4800 Oak Grove Drive, M/S 233-208, Pasadena CA 91109

5. Northern Great Plains, AVHRR data set
   a. Subjects: Advanced Very High Resolution Radiometer imagery
   b. Area: Great Plains of U.S.
   c. Times: selected months in 1987 and 1988
   d. Address & price: I believe we received this free through Larry Carver’s contacts at USGS

6. APSRS
   a. Subjects: text index to the Aerial Photograpy Summary Record System of the U.S. Geological Survey
   b. Area: U.S.
   c. Times: flights date from early 1900s to about within a year of current date; updated from time to time
d. Address & price: distributed free to E.S.I.C.s; try: Dan Cavanaugh, USGS, 509 National Center, Reston VA 22092-9998

7. NOAA Aeronautical Data Sampler
a. Subjects: airports, air route traffic control centers, airspace fixes, Navaids, obstacles, runways
b. Area: U.S.
c. Time: current
d. Address & price: seems to be free if you can establish research need; David Dudish, Research Cartographer, NOAA, 6010 Executive Blvd., Room 1022 - R/C N/CG 3X 22; Rockville MD 20852

Oceans
1. Marine Geological and Geophysical Data from the Deep Sea Drilling Project
a. Subjects: v.1 is “Sediment/hardrock and reference files,” v.2 is “Downhole logging and underway geophysics”
b. Area: selected sites of world oceans
c. Time: 1968-1987
d. Address & price: seems to be free if you can establish research need; National Geophysical Data Center, E/GC3, 325 Broadway, Boulder CO

2. GLORIA data - NOT YET OPERATIONAL; WAITING FOR SOFTWARE (Scripps Library and University of Nevada Reno both have this working)
a. Subject: physical sciences
b. Area: Gulf of Mexico
c. Time: 1980s
d. Address & price: seems to be free if you can establish research need; Millington Lockwood, JOMAR Office, USGS, 915 National Center, Reston VA 22092-9998

3. NODC-1 (Experimental Compact Disc), Pacific Ocean Temperature-Salinity Profiles
a. Subjects: temperature and salinity
b. Area: Pacific Ocean
c. Time: 1900-1988
d. Address & price: seems to be free if you can establish research need; Philip Hadsell, Oceanographer, National Oceanographic Data Center, NOAA, 1825 Connecticut Avenue N.W., Room 422, Washington, D.C. 20235

Polar Regions
1. DMSP SSM/I Brightness Temperature Grids for the Polar Regions
a. Subjects: brightness temperatures
b. Area: Polar regions
c. Time: July 1987-July 1988
d. Address & price: seems to be free if you can establish research need; World Data Center A for Glaciology, National Snow and Ice Data Center, CIRES, Campus Box 419, University of Colorado, Boulder CO 80309

Miscellaneous
1. Selected Geomagnetic and Other Solar-Terrestrial Physics Data of NOAA and NASA
a. Subjects: magnetics; solar flares
b. Area: sun, viewed from various observatories
c. Time: various
d. Address & price: seems to be free if you can establish research need; National Geophysical Data Center, 325 Broadway (D-65), Boulder CO 80303

OTHER PLANETS
Voyagers to the Outer Planets
a. Subjects: imagery of planets taken from Voyager satellites
b. Area: Uranus, Saturn, Jupiter
c. Time: Voyager flights

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TRADING POST


Request from: M. Larggaard, Map & Imagery Lab, University of California, Santa Barbara CA 93106.
Cygnus Graphic is a partnership made up of my brother Kyle and me; we are the owners, principals, and the only "employees." We specialize in the preparation and publication of stereoscopic prints; topographic maps, of course, are very advantageously presented in this format. We have a long-standing interest in stereoscopy and its application to printed products. I owned Phoenix Mapping Corporation for many years, but our forte there was street maps of Arizona communities as well as custom mapping projects for a wide variety of clients, so I had no time to explore my ideas on 3-D topographic maps. I sold the company several years ago, and this allowed me to continue my experimentation into the production of this type of map as well as other stereoscopic products. As ours is a relatively new firm, the OPTI-RELIEF Map of the Grand Canyon is our first publication. We are, though, working on a number of other projects which we hope to finish sometime in the near future, as there are only the two of us, I'm sure you can understand that our progress is fairly slow. Some of our future projects include "negative" anaglyphs, in which the background is black and the stereo image appears as a white image, stereo posters using photo separations, and another style of map, the illuminated contour map, which is a non-3D map but nevertheless uses lighting and shadow to create a feeling of depth.

To the best of our knowledge, 3D topo maps have seldom been produced; the only instance in which they saw fairly widespread use was during World War II, and it was primarily the Axis powers that used them, although they saw some limited use in operations by the Allies. As far as we know, ours is the only firm in the world that is producing them as a standard product on a commercial basis.

The format we use for 3D presentation is the "stereo anaglyph," which requires the separation of the two images into red and blue components which, when viewed through similarly colored lenses, are "remerged" in the mind to create depth as an optical illusion. There are a number of ways to achieve this effect, e.g., side-by-side stereo pairs, over-and-under, lenticular screens, etc. All of these other methods, though, have serious drawbacks: often, print size is quite limited, special apparatus is required to see the stereo image, production costs are very high, and so on. The anaglyph system, on the other hand, is practically unlimited in terms of print size, only a simple and inexpensive viewing apparatus is required, and economically it is very feasible. Now, if you're wondering why any other system would be considered, in view of all these advantages, I'll point out the system's greatest disadvantage: since mutually exclusive colors (red and blue) are used to separate and then recombine the two images, the use of other colors is prohibited and all imagery is, therefore, monochromatic. (Actually, this may not be entirely true—there is a technique that permits the use of full color in this system, and we're experimenting with it now to see how it will work out and to see if it will be economically feasible.) In any event, we feel that this system's advantages far outweigh its disadvantages, so it's the one we've selected for our format. (By the way, the anaglyph is the only method whose geometry permits a peculiar, but very interesting, phenomenon—if you move farther away from the print, the depth appears to increase, and if you move closer, it appears to decrease. This is caused by the changes in the eyes' convergence as one moves to or away from the print. I also note here, to allay everyone's fears, that looking at this sort of print through the viewer will not harm one's eyes or vision in any way.)

The production of the maps is, as I'm sure you can imagine, a long, tedious process. The separations of the images must be calculated (and plotted) down to thousandths of an inch to achieve the correct image. One of the things that held up our first production was the necessity of doing a substantial amount of
experimentation to arrive at the correct technique for each phase of the entire process—thank goodness that's behind us now, at least for this specific type of print. We're going through much the same throes in developing the negative anaglyphs, since there are substantial procedural differences and a lot of the rules change. It's sort of like a chain reaction—you no sooner whip one problem than two more arise, and when you've beaten them back, four more arise to take their place. All in all, though, neither of us would trade it for something else; it's interesting, enjoyable, and, in fact, fascinating work.

One item I'd like to mention at this point. We provide to public libraries, e.g., universities, high schools, county, municipal, etc., as well as to departments of geology and geography in universities and colleges, a courtesy discount of 20% on products they order from us. Many of WAML's members may be interested in this as they seek new acquisitions for their departments. If so, they need only write us on their letterhead to obtain our sample package, which contains a special order form for this type of organization.

University of Minnesota Libraries. Assistant Map Librarian. Responsibilities: perform original and copy cataloging of cartographic materials; participate in all other activities of the John R. Borchert Map Library, including reference services, circulation, and materials processing; and administer the Borchert Map Library in map librarian's absences. Required Qualifications: This is an entry-level position requiring a masters degree in Library Science from an American Library Association accredited institution, or its foreign equivalent, and good oral and written communications skills. Preferred Qualifications: Knowledge of trends and issues in map librarianship; academic background in geography or a related field; and a knowledge of AACR2 Revised and USMARC. Appointment will be made at the Assistant Librarian rank. The assistant map librarian will report to the Head of the Borchert Map Library. Librarians at the University of Minnesota have Professional Academic status and have six years to achieve continuous appointment, which is based on demonstration of significant growth and contributions in the following areas: 1. job performance; 2. contributions to the Department and the University; and 3. contributions to the profession. Minimum salary $22,000. Liberal benefits.

Send letter of application, resume, and names and addresses of three references to Barbara Doyle, Personnel Officer, University of Minnesota-Twin Cities, 453 Wilson Library, 309 19th Avenue South, Minneapolis MN 55455. Applications must be postmarked no later than July 16, 1990. Please cite job listing UL194 on application. The University of Minnesota is an equal opportunity educator and employer, and specifically invites and encourages applications from women and minorities. NOTE: The Immigration Reform and Control Act of 1986 requires all new employees to submit verification of identity and authorization to work in the United States at time of hire.
Digital Data

by

Jenny Marie Johnson
Map Collection, University of Washington

Shareware and public domain programs are an inexpensive way of adding to a collection of cartographically and geographically related computer software. Public domain software can be freely distributed with no obligations to the program author, while shareware requires a registration fee in order to use ethnically the software and to obtain the complete software and documentation package. Often software can be purchased for the price of a floppy disk, downloaded from bulletin boards, or copied from programs included in magazine articles. In many cases, the programs are in an unpolished, developmental state and programmers include requests for assistance with specific problems, suggestions, and corrections within the documentation.

The Association of American Geographers has a Microcomputer Speciality Group which maintains a "library" of public domain software. Programs are available for IBMs and their compatibles, Apple IIIs, and Macintosh. Much of the software was developed for classroom and instructional purposes. The list of available programs for geography is wide-ranging; it includes weather prediction and climate classification, conversion of minutes and seconds to their decimal equivalents, a street-mapping program that includes the United States Interstate system, base maps of the United States, and a program to manipulate Landsat data.

Each program has accompanying documentation which usually is found on the floppy, not on paper. The documentation will vary in completeness and usefulness, but for the most part it will tell the user exactly what is needed in order to make the program perform. Since the documentation does not arrive in a printed form, the user needs to be system-competent just to find and read or print it. Most of the documentation seems to have obvious file names ("manual" seems to be the most common) so identification is usually easy; "readme" files should be considered required reading, not optional information! Some programs even include "help" screens.

Many of the programs available from the AAG Microcomputer Speciality Group do not need to be installed onto a hard disk but will function directly from the floppy. All that is often needed is to enter the name of the appropriate executable file and the program starts.

The weather prediction and climate classification disk contains four basic programs: a climate calculator which automates the sequence of steps necessary to generate a Koppen climate classification; a Koppen-Geiger classification based on Goode's World Atlas that accepts monthly mean temperatures and precipitation amounts and generates the Koppen graph; a forecasting program based on barometric pressure and wind conditions and wind chill, temperature-humidity and heat index calculations; and a hurricane tracking system. Equations are displayed for some of the calculations. All of these programs work smoothly and quickly, have easily understood documentation, and would work well to fill quick reference needs. Another disk that might answer reference questions is titled "Cartographic Utilities." The programs, including the Nearest Neighbor and Thiessen Analyses, all manipulate point location information and can also be used to convert files of point data between latitude-longitude and decimal and from latitude-longitude to UTM. The Thiessen Analysis results are displayed graphically.

While most of the programs distributed by the AAG Microcomputer Speciality Group are in the public domain, some are protected by shareware agreements and copyright restrictions. One such program is "The U.S. Maps Set" by James Taylor. According to the promotional brochure, two other map sets are also available for Europe and the World. These programs produce base maps of nations, regions, states, and counties using a menu driven set of options with emphasis on the use of "zoom" to delineate areas of interest. The program requires a plotter or graphics printer to produce hard copy; dot matrix and laser printers need additional software
(the author recommends PIZZAZZ or the capability to use a screen grabber type program for manipulation by a paint program. I was able to generate maps of states with and without their counties, individual counties and portions of states, and regions. The documentation appears to be clear and concise, but I did have some difficulties in understanding the sequence of steps needed to produce maps and the relationships between commands; perhaps the documentation is too concise, in that links between steps and parts of the menus are not readily apparent from either the documentation or the screens. There are no available help screens.

Another sophisticated shareware program available from the AAG Microcomputer Speciality Group is "Geoclock." Three maps are included: the United States, the World on the Mollisc projection, and an azimuthal equidistant projection centered on the North Pole. The sun's position is marked by a crossed circle and areas in daylight are highlighted. The display updates itself to simulate the passage of time. Sunrise, sunset, and the sun's azimuth and elevation are displayed. The documentation explains everything a user of theshareware version would want to know plus describes features found in the full, authorized version to whet the appetite of the user. "Geoclock" might be an ideal program to boot up as an eye-catcher; once its parameters are set, which is easily done, the program continues to run by itself.

Public domain software and shareware are not for the computer novice because of inconsistent quality control and often insufficent documentation. Some of these problems are related to the developmental nature of these kinds of software and are to be expected. At times, accessing programs and forcing them to function can be very frustrating, if the copy of the software is incomplete, completely impossible. Users should always remember: Caveat emptor!!

But at the same time, these programs are inexpensive, can provide basic tools for library reference service, and will certainly expand the abilities of an inexperienced computer user. "Home grown" computer products are probably available locally; if not, write to the AAG Microcomputer Specialty Group for a list of programs in their "geography series."

Software Specifics

For more information about shareware and the AAG Microcomputer Specialty Group:

IBM - Robert Sechrist, Dept. of Geography, Indiana University of Pennsylvania, Indiana, PA 15705

Apple II - Jim Hughes, Dept. of Geography, Slippery Rock University, Slippery Rock, PA 16057-9989

Macintosh - John M. Morgan III, Dept. of Geography and Environmental Planning, Towson State University, Baltimore, MD 21204

U.S. Map Set, European Map Set, and World Map Set by James Taylor. Available from Robert Sechrist, Geography Dept., IUP, Indiana, PA 15705. $29.95 each or all three for $49.95.

Hardware needs: enhanced graphics adapter and monitor; 512k memory; Dos 2.0 or higher; hard disk; HP745a plotter or graphics printer (optional). dot matrix and laser printers require separate EGA screen dump software.

Geoclock. Joseph R. Ahlgren, 2218 N. Tuckahoe St., Arlington, VA 222050-1946. $25.00 for registered copy. $2.00 for shareware version (titled "Daylight Mapper" in AAG MSG listing)

Hardware needs. 256k EGA or VGA with compatible color monitor or CGA, Hercules, MCGA, AT&T 640x400 or PC3270 with highest resolution monochrome mode available: mouse (for registered version)

NEWS Preservation

See the ALCTS Newsletter, 1(2):14-15, 1990, for a glossary of preservation terms.
Publisher Profile:
Environmental Research Institute of Michigan (ERIM)

by

Larry E. Reed
Head, Image Operation and Processing Department
Environmental Research Institute of Michigan

ERIM began in 1946 as the Michigan Aeronautical Research Center (later renamed Willow Run Laboratories), and during the next 25 years became a national leader in reconnaissance and surveillance technology. In 1972 the Michigan State Legislature established ERIM, with a mandate to continue applying advanced technology to society's problems. Since then the Institute has maintained its position at the forefront of all aspects of modern sensor technology - system design, data processing, and applications. ERIM is a private, non-profit research institute that develops and helps deploy new technology. With strong ties to government as well as to industry and the educational community, it occupies a unique position between the public and private sectors. As an independent not-for-profit institution ERIM can offer unique opportunities for customers interested in a wide range of remote sensing research and development activities.

- ERIM is non-commercial, free to adapt to sponsor interests and needs and to protect all proprietary interests.
- ERIM has within one organization all applicable technologies - phenomenology, sensor design, algorithm development, system design, and training.
- ERIM represents a continuously evolving flow of state-of-the-art hardware and software technology development based on government and independent research programs.
- ERIM is totally committed to the introduction and dissemination of remote sensing technology, both domestically and in the international community. Internationally, ERIM has helped establish several remote sensing centers in developing countries (e.g., Argentina, Brazil, Egypt, India, Nepal, Panama) and has trained several hundred scientists both in-house and on-site.

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<th>[IOPD continued from page 166]</th>
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SELECTED PROJECT HIGHLIGHTS

1. AVHRR (Advanced Very High Resolution Radiometer) mosaic of the North American continent.

2. Multi-sensor perspective views produced from ERIM Global Database.

3. 1:2,000,000, 1:500,000, 1:250,000 mapping of the entire Saudi Arabian Shield (150 maps).

4. Geologic enhancements for major oil companies.

5. Bathymetric analysis for the Red Sea and Persian Gulf from Landsat data.

6. Geographic information systems and training for Peru and Panama image processing systems and training for France, Egypt, Bangladesh and the U.S. Government.

7. Extremely accurate map products at 1:24,000, using DTED (Digital Terrain Elevation Data from DoD), S/I/O1-PAN (S/I/O1 Panchromatic) and TM (Thematic Mapper).

8. Digitized color and aerial photographs.

9. Digitized resampled and compressed (4 byte) ONC chart databases.

10. Filmed copy of computer-generated art.

11. Preparation of image and feature databases to support mission planning and simulation systems.

12. Change detection to extract new activity in remote areas and urban growth patterns.
ERIM's Image Operation & Processing Department (IOPD) operating the dedicated Image Processing Facility (IPF), in Ann Arbor, Michigan, is producing maps and datgraphics from aircraft and satellite systems to support requirements of both domestic and international sponsors. Since before the launch of the first Landsat satellite in 1972, the IOPD has developed operational applications of Landsat data and operates the largest non-governmental processing facility (IPF) in the world. The IOPD generates more than 2000 images yearly from digital tapes, and is known for its high quality, user-oriented maps and images. User satisfaction with the quality and cost of the products has established the department as an international standard by which other organizations are measured. The IOPD is organized to respond to user requirements for a range of remote sensing data products, quickly and cost effectively.

Projects have included large-area land-cover inventories of the southwest U.S. and Bangladesh, and Landsat planimetric mapping of Mali, Tunisia, and Saudi Arabia. The digital analysis and processing techniques used in those inventories have shown that the interpreted Landsat data can be combined with data from other sources to provide cartographically accurate digital files exceeding National map accuracy standards of large geographic areas. In addition, IOPD's access to the entire range of ERIM sensor technology has provided numerous opportunities to develop processes and techniques for data fusion projects.

Combinations of fused sensor data, multi-temporal data files and multi-layered data are being used to solve real world problems including: automatic route selection in unmanned vehicles; mission planning and support; mapping and charting applications; natural resource planning and management; geologic exploration; bathymetry elevation extraction; estimating agriculture (crop) yields; change analysis for extracting changes and automatically updating the original databases or map. The digital files are also being used as the basic structure of a geographically oriented databases containing information useful to the planning and support of numerous other applications.

The combination of IOPD's support for all currently available sensors, professional research and support staff, image processing software and state-of-the-art facilities allows IOPD to be the true one-stop location for all image processing and remote sensing applications needs. From its beginnings in the late 1960s, the IOPD has evolved into a complete land use and resource mapping organization capable of accepting inputs from a number of data sources and outputting high quality image and map products. These images and map products are derived from such diverse sources as the Landsat and SPOT satellites, airborne scanners and radar, aerial photography, digitized maps, and digital terrain data.

The IOPD software library, consisting of more than 200 main programs and 100 subroutines, is one of the largest collections of software within a single organization for the display, analysis, and processing of remotely sensed and geographically referenced data. Major developed IOPD software includes the advanced image display software for the Gould, rigid-model geometric correction software for Landsat TM/MSS, SPOT, AVHRR and CZCS, and resampling procedures using a deconvolution algorithm. In addition the ERIM-developed raster-based GIS package supplements the vector-based ARC/INFO GIS package. The software host is a Digital Equipment Corporation VAX CLUSTER operating under VAX/VMS. The VAX CPU has 40 Mbytes of main memory and a floating point accelerator. The system peripherals include two 256 Mbyte disk drives, fourteen 456 Mbyte disk drives, two 842 Mbyte disk drives, four 800/1600/6250 bpi magnetic tape trans-
ports, forty-eight terminal input ports, modems, two DECNET ports, an alphanumeric line printer, and 40" plotter.

In addition to the standard computer peripherals, a number of specialized devices are connected to the system. These include two each high-resolution Gould IP8400/IP8500 Image Analysis Stations, two additional interactive color CRT display systems, a digitizing table with free-floating cursor and black-and-white graphics-display CRT, a high-density (10,000 bpi) 14-track tape transport and interface, a 70 mm continuous strip film recorder, a 20 cm by 25 cm high-resolution drum film recorder, a large-format 100 cm by 100 cm drum recording and scanning system, and a MDA Fire-240 film recorder. ERIM-developed high-speed, hard-wired processors and a general purpose array processor are used for geometric corrections and resampling, maximum-likelihood classification, and spatial pattern recognition. A 1.2 Gigabyte optical disk is utilized for large-area database storage. Combinations of purchased and internally developed hardware and software makes the IPF the most powerful non-government image processing facility in the world.

The photographic laboratory, which is part of the IOPD, supports the image processing facility and contains specialized equipment for generating precision graphic products from the film exposed by the drum film recorders. The laboratory includes two continuous (automatic) black and white film processors for handling paper and film up to 30 inches, a continuous color paper processor for handling up to 40 inch paper, two enlargers for handling up to 40 x 50 inch enlargements, a color film processing line, a color separation negative registration and exposure facility, and the instrumentation necessary for color and black-and-white quality control. The photographic laboratory is co-located with and directly connected to the Image Processing equipment to support real-time modifications to the image processing chain.

SERVICES

The IOPD offers all remote sensing (aircraft, MSS, TM, SPOT etc.), cartographic, and resource services including the following:

1. False Color/Enhanced Landsat Images - Images tailored to enhance geologic features of interest. Products (e.g., contrast stretched, edge enhanced, and ratioed images) are available with precision geometric processing. This also includes an archive of approximately 10,000 image negatives of Landsat data. When available, these images may be purchased for as little as $300 for a 1:250,000 color image.

2. Precision Landsat Maps, Charts and Datographics - Digital land cover files, color maps, overlays, and tabular or statistical data. Files and maps are produced in most map projections. Maps and charts produced from single or mosaicked sensor data (AVHRR, SPOT, TM, etc.) using the most advanced resampling and correction techniques available including incorporation of elevation data to further refine geometric fidelity.

3. Multisource Datographics - Digital files, maps, overlays, and statistics derived from merging data interpreted from multi-spectral aerial photography, and map sources. More detailed and accurate than Landsat alone and less expensive than aerial photography.

4. Digitizing - Digital files, color maps, and overlays from users, maps (e.g., soils, topographic, etc.). Adjustments for different scales and projections. Data may be captured using ARC/INFO or the ERIM system and output in Integraph, ARC/INFO, or other user-specified formats.

5. Topographic Products - Digital terrain elevation models (DTM) may be automatically extracted from multiple-look data, or either ERIM derived data of DMA DTMs may be produced into topographic tape files which record slope, slope direction (aspect), and elevation. Files are used to generate color maps, overlays, and statistics showing slope and other topographic parameters as well as being used for precision geometric correction.

6. Datographics from User Specified Models - Multidata sources combined by user specified models and evaluation coefficients to provide suitability/capability maps, and optimum land allocation/use maps.

7. Special Purpose Data Bases - Digitally processed image data registered with other data sources (maps, topo, DTED, soils etc.) in user specified formats.

8. Highest Quality Image Products from Customer Processed Data Tape

[Continued on page 164]
CATALOGING COLUMN

by

William Studwell
Cataloging Editor

Much Ado About Maps by William E. Shakespeare [aka Studwell]

One of many ways authors get into trouble is to devise a catchy or humorous title which causes persons actually to read all that has been written. This author has again inserted a punny title under his byline, thus proving his failure to learn the lesson of an article written in the summer of 1989!

The earlier article, published in RTSD Newsletter 14, no. 6(1989), was entitled “Something to Make us Ill: LC’s New Policy on ‘ill.’” The main point of the essay was to challenge an LC policy which had been issued in Cataloging Service Bulletin 44 (Spring 1989). The policy dealt with the revision/reinterpretation of rules 2.5C1 and 2.5C2 relating to the notation of illustration in field 300. The new interpretation would permit books which consist predominantly of text to have only “ill.,” “ill. (some col.),” and “col. ill.” as statements of illustration, no matter what type of illustration might be present; the object of this was the laudable one of cataloging simplification. Under the new ruling, previously allowed statements such as “col. maps,” “ports.,” “music,” and “facsim.” would no longer be permitted. Books covered by rule 2.5C6, that is, those entirely or predominantly consisting of one specific type of illustration, would still be represented by specialized illustration notation. For example, atlases would be cataloged with 300 field statements such as, “chiefly col. maps,” “all maps,” and “all col. maps.”

Concerned about the frequent occasions when books which are predominantly text contain a significant number of maps, and to a lesser extent about books with a lot of portraits and music examples, this author raised a point about this concern in the article. Maps are a unique and important type of illustration, often a vital part of the data being sought, and often hard to locate. Portraits and music, it was felt, also deserved specific notation. Therefore, it was suggested that when there were enough maps, portraits, or music examples in a book to be readily and easily ascertained, those specific kinds of illustration should be indicated. In other words, there was some ado made about maps.

The next issue of the same publication carried a new name, ALCTS Newsletter, on its masthead, possibly in reaction to a certain piece in the previous issue. In the later issue, a reply to the “ill.” article was printed. The second article, by a New York City cataloger, agreed in part with this author, but felt that the suggestion which had been put forth for maps, portraits, and music should be extended to facsimiles, genealogical tables, and other types of illustration. Thus more ado was made about maps and other illustrations.

Soon after, this author received a letter from Ben Tucker, Chief of the Office for Descriptive Cataloging Policy at LC. The February 2, 1990, letter stated, among other things, that because of pressure it had been decided that the use of “map,” “maps,” and their variations indicating color would again be allowed. (Other types of specific illustration notation would still be taboo.)

With this letter even more ado about maps was made, with the end result being no change at all, a return to equilibrium and the status quo. For those interested in maps, the ending was a happy one, but it took a four-act drama, full of sound and flurry, to come back to where we all started from.

News

See Cataloging and classification quarterly 10(4), 1990 (?) for an article by Nancy Vick and friend on rare-map cataloging.

[Continued on page 168]
Summertime Traveling with Geologic Maps

by

Barbara Haner
University of California, Riverside

June always brings people into a map collection, as they seek maps for the area they are planning to visit and the route they will be using. Geologic maps are no longer just a colored map with a list of rock formations and a bibliography, but today also include photographs, interpretive material, and often a new slant, using oblique projections which graphically describe events.

Long-distance traveling can always be enlivened using the American Association of Petroleum Geologists Geological Highway Map Series. These twelve map sheets cover the United States and include information on mileage, national monuments, correlation charts, and even location maps for fossils and minerals, along with a short description of what type of fossil can be found at each numbered location. There is even a section of plain facts which may be used to tantalize friends when returning from the trip. Each map also provides selected sources for additional general reading information.

National parks and monuments are popular destinations and the U.S. Geological Survey (USGS) mapping projects have included many Western parks in the Miscellaneous geologic investigations (I), Miscellaneous field studies maps (MF), and Geological quadrangles (GQ). Mount Rainier National Park is covered by a single sheet (I-432), which provides not only a clear geologic map of the park and a cross section of the volcano, but on the reverse a comprehensive geologic history of the park, the growth of the volcano, and the relationship of Mount Rainier to the Cascade Mountains.

Despite the fires of 1988, Yellowstone National Park is still a popular destination, and is a striking record of the alternation of Pleistocene glaciations and volcanic and geothermal activity. There are two comprehensive maps for the park published in 1972, I-710 and I-711, which cover the surficial geology and bedrock geology of the park at a scale of 1:125,000. The surficial map is a compilation of eighteen surficial geologic maps, I-635 through I-652, which were published between 1971 and 1975. These maps, at a scale of 1:62,500, provide an introduction to the area, describing the interaction of three glacial stages of waxing and waning, the creation of many temporary lakes into which lava flowed to create obsidian, and numerous glacial geomorphic features as the glaciers retreated. Hot springs, geysers, and mudholes today provide spectacular examples of geologic phenomena which make people appreciate that we live on a restless planet.

But a picture is worth a thousand words, and the Glacier National Park, Montana, set (I-1508 A-D; published between 1983 and 1990) combines surficial...
mapping - showing recent glacial and post glacial deposits - a shaded relief map, and a map showing the distribution of moraines and the extent of glaciers from the mid-nineteenth century to 1979. This is achieved by using both diagrams and annotated pictures, giving a different perspective of the geologists’ work when vegetation changes are used to map recent events. One of the spectacular areas of Glacier National Park is the Upper Swiftcurrent Valley. An introduction to this area is provided by Geologic map 27, produced by the Montana Bureau of Mines and Geology, which shows a photograph of Mt. Wilbur with all the glacial features described in a glossary and clearly marked on the map. This map also identifies the Pre-Cambrian rocks and contacts exposed so that the relationship between scenery and geology can be appreciated.

The grandeur of scenic granitic domes and glaciated valleys draws millions to Yosemite; fortunately, in 1989 USGS issued I-1894, The geologic map of Yosemite National Park, by Huber, Bateman, and Wahrafftig. The map includes a description of all map units and a very useful bibliography. This is an overall park map, but detailed maps for popular areas include Tuolumne Meadows (GQ-1570), Hetch Hetchy (GQ-112), Devil's Postpile (GQ-437), and the Mono Craters (GQ-462). We all come away from Yosemite with many photographs, and except for naming Half Dome, can you identify Mt. Dana, Mt. Ansel Adams, Clouds Rest or Vogelsang Peak? MF-1888 allows you to do this, as it is a plate of sketches of Yosemite National Park, from Glacier Point, Sentinel Dome, and Mt. Hoffman, by Tau Rho Alpha. This spectacular scenery was created by glacial erosion of repeated alpine ice fields; the extent of the last major glaciation is illustrated in an oblique map, I-1885, published in 1987.

If you’re driving to WAML in Denver in September, two areas with interesting maps could be on your route. Dinosaur National Monument, on a northern route, is illustrated by I-1407 and the Utah Geological and Mineralogical Survey’s Map 22. This latter map illustrates the complex geology of the area through a series of cross sections, while the USGS map provides a selected bibliography, including guidebooks to the region. On a southern route, the two maps of the Chaco Culture National Historical Park, I-1571 and I-1777, illustrate a new trend to provide interpretive geology on maps. Eighty million years ago, the San Juan Basin was a coastal margin with swamps and lagoons which were repeatedly invaded by the sea and thus overlain by marine shelf deposits. Block diagrams, color photographs, and cross sections beneath composite scenic photographs illustrate how this process works; it is well exposed in the cliffs and buttes of the Chaco area. The Anasazi are also not forgotten here, for I-1571 discusses this civilization, its different phases, final abandonment of the area, and Navajo occupation of their former grounds.

Like many things, a geologic map is just a beginning. These maps each have cited references, which are doors opening into more information.

(Editor’s note: Now that Barbara has gone to the work of pulling together map cites for these national parks, we can use them to put together exhibits, all with minimal effort on our parts! Thanks, Barbara.)
MicroCartography

by

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The British Library's cartographic catalog on microfiche joins a similar one available from the Library of Congress since 1983, which the latter built on the "Shelflist of the Library of Congress." LC's original shelflist remains indispensable for pre-1983 records, while its successor, the National Union Catalog: Cartographic Materials, must compete with on-line, cooperative cataloging services.

The original LC shelflist differs from both of the "new" union catalogs in two important respects: it has one access point - call number - while the union catalogs have geographic name/main entry name; and title indexes. Both of the "new" union lists are byproducts of machine-readable record systems, while the "old" shelflist is a photo inventory of the actual catalog cards. Ironically, it is the older shelflist I use more, since the union list records are generally available on-line. [Editor's note: Same here, largely because the shelflist is so quick to get into and because it includes uncataloged materials, both maps and atlases.]

The British Library union list also differs from the LC equivalent in one major way, by having complete records on each of its access files. Looking up any and all of the maps in this catalog is a one-step process, and the full cataloging record is in hand. In that sense, it is "state of the art" for microfiche union catalogs, and is conspicuously easier for some applications than the LC equivalent. That is because the LC catalog has only partial information in each of its access point subfiles, reserving the complete cataloging record for an accessions file - the only portion of LC's microfiche which is not replaced quarterly but simply added to. Consequently, it cannot be accessed directly like LC's old shelflist, nor are the multiple index files completely free-standing. Finding a complete record in the LC catalog requires two steps, where the BL catalog does it in one.

The British Library's classification system is completely alien to me, and this catalog will not demystify it since no "shelflist" sequence is provided. But that's o.k. It is such a facile tool, even if you consider it doubly handicapped by being hardcopy AND microfiche. These handicaps are somewhat salved by the space and cost savings over its paper equivalent. Since it comes in a binder, it can be placed on a reference shelf easily enough, but I plan to place it in a fiche box with the two LC products, as well as a half-dozen other fiche indexes of recent vintage by other libraries. What one doesn’t tell me, one of the other ones probably will!

GAZETTEER SERIES

The WAML Microforms Consortium has been working for a year to develop a gazetteer series on microfiche. The gestation was longer than anticipated because we didn't know what we were doing; had no clue what to microfilm, how to film it, what it would cost, or whether it would be worth it. While we still don't know what we're doing, exactly, we chose a 19th Century British gazetteer of the world from Ron Whistance-Smith's collection at the University of Alberta, transferred it to Rich Soares' care at Brigham Young University. Rich went to the campus microfilm lab and negotiated the microfiching, did quality control, passed samples to other members of the Consortium, and then had all the mistakes corrected. And, it was worth it. Now, we can produce gazetteers fairly easily, and have criteria for their selection. Perhaps the most important of these will be our [continued on page 176]
Richard Edes Harrison's Maps in *Fortune*
1933-1938

compiled by

Joanne Perry
Map Collection, Library
Oregon State University

1933

[Gold underground]. 7(6), June
[Beer bottles (100,000/day)]. 8(1), July
[Boulder Dam diagrammed]. 8(3), September
[Spinning: 20th century version]. 8(4), October

1934

The radium trail 1034, Edmonton to Echo Bay. 9(2), February
[On Cleveland they left their mark]. 9(3), March
[A guide to U.S. public work no. 1]. 9(5), May
[Map of a moth-eaten empire]. 10(1), July
[The gangster's best friend]. 10(2), August
[Technicolor's camera]. 9(4), October

1935

[If you should find a diamond mine]. 11(5), May
[This is South Africa]. 11(5), May
The Hearst Empire. 12(4), October
A vulture's view. 12(5), November
[Lake Tana and the Nile]. 12(5), November

1936

[Map, for the moment, of Keeshin: next month the lines may be longer]. 13(2), February
[Anatomy of autorotation]. 13(3), March
Pan American Airways is the biggest of seven giants struggling for transoceanic supremacy. 13(4), April
[The geography of the survey sample]. 13(4), April
[There is no typical stretch of Pennsylvania track]. 13(5), May
The Pennsylvania Railroad and consolidation in the east. 13(6), June
[The Queen Mary probably will not sink]. 13(6), June
[Voter survey on Roosevelt's popularity]. 14(1), July

1937

[Asian hemispher]. 14(3), September
The expanding empire of Japan. 14(3), September
Five Japanes. 14(3), September
Japanese trade balances. 14(3), September
Minicam mechanics. 14(4), October
[A portfolio of New Deal reconstruction]. 14(5), November
The United States of Anaconda. 14(6), December
How a gas mask works. 14(6), December
Rockefeller Center looking north. 14(6)

1938

Lightship number 112. 15(1), January
[The world's greatest seaport and its 771-mile water front]. 15(2), February
AP's wirephoto. 15(2), February
[World's busiest airport]. 15(4), April
The radio range beacon, most vital of radio aids to flight. 15(4), April
[Wall Street, New York City]. 15(6), June
[Second Battle of Gettysburg]. 16(1), July
U.S. shipping outlines the world. 16(3), September
The Lykes Hindeland contains... 16(3), September
U.S. shipping simplified. 16(3), September
Gulf oil. 16(4), October

1938

Poru. 17(1), January
U.S.N. ships-bases-men as of January, 1938. 17(3), March
Chile. 17(5), May
The land of Moses. 17(6), June
Argentina. 18(1), July
Ceskoslovensko. 18(2), August
Canada, a sketch of a colossus that extends from Lake Erie to the top of the world. 18(3), September
The world in terms of General Motors. 18(6), December
Government Cartographic Materials for Earth Sciences/Energy Resources Research

by

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Map & Imagery Lab, Library
University of California, Santa Barbara

The purpose of this paper is to discuss government publications of interest to those doing research in earth sciences and energy resources research. This brief paper is intended to contribute assistance to those librarians attempting to build earth sciences or energy resources collections.

Few of us who have succumbed to the siren's song of map librarianship are unaware that at least three-fourths of all maps issued are government publications, and the total may be as high as 90% (here we are dealing with titles, not sheets - the sheet total would be higher). Ever since USGS maps went on the GPO depository (October of 1984), map librarians who were formerly safely insulated from the GPO classification system have been dealing with it regularly - more about that later. Also, efforts have been concentrated by map librarians on teaching book-form government documents librarians comfortable with working with maps; apparently the feeling was that many map librarians work part-time in documents and therefore already knew all about GPO.

The term, "earth resources research," is here taken to include geology and its links with such other sciences as physics and botany: climatology, water resources research, and of course pedology are also included. Energy research links up very closely with earth resources research. Energy research deals with products that generate power for machinery (e.g., mineral resources such as oil, gas, coal and uranium; geothermal energy; wind; sun; and water) and environmental concerns and governmental law and regulations resulting from the disturbance of the Earth's surface. Energy research is of supreme importance in today's world, with a growing awareness that at base, almost every problem is an energy problem.

While I was at the Colorado School of Mines Library, I had considerable opportunity - about ten years - to work with maps and U.S. documents collections that were specifically tailored to suit the needs of a very focussed audience; indeed, the U.S. documents collection was in many ways a study collection in earth sciences and energy resources research, put together over more than twenty years by Margaret Smart, the documents librarian at Mines for many years.

Let's take a look at the type of information involved. There is a great variety of techniques for energy resource mapping, everything from topographic quadrangles to remote-sensing imagery. The types of information needed are awesome in number: relief and land forms; geology; climate; hydrology; soils; vegetation; fauna; existing land use; land ownership. The principal scientific basis for the mapping of mineral and fuel resources "comes from a detailed understanding of the nature and spatial distribution of varied rocks that make up the accessible part of the Earth's crust" (Our magnificent earth; a Rand McNally atlas of earth resources, 1979, New York: Rand McNally). To find out about such rocks, there are of course geological maps, but just as important are the indirect methods of applied geophysics, which provide data on the third dimension beyond what a standard cross section on a geologic map can do; excitingly enough, there are now computer programs (very expensive and data hungry) which will do three-dimensional earth-modeling. Gravity surveys use delicate balance springs to measure small variations in gravity, after correcting for latitude, altitude, and topography (using for the latter - what else? - a topographic map); the results indicate variations in density of the underlying rocks. And I can almost hear you thinking, "What does that have to do with
anything?" Sedimentary beds - in whose pores petroleum lodges - are less dense than granitic/volcanic or metamorphosed rocks - in which petroleum does not appear. The gravity survey is particularly useful for identifying deep sedimentary basins while hunting for oil - in fact, this is how the North Sea petroleum region was found. An even more useful, but also more expensive, type of geophysical survey is the seismic survey, which uses artificially generated shock waves, reflected through or off layers in the crust, to generate time lines that are easily translated into accurate geological-formation lines. This is at its best in offshore exploration use.

The last of the Big Three geophysical methods is the magnetic survey (generally incorporated into aerial surveys), which maps localized variations in the Earth's magnetic field to show anomalies which reveal the presence of magnetized rock structures. Thus, a skilled interpreter looking for oil deposits will select an area without strong local magnetic gradations (since it is the igneous and metamorphosed, non-petroleum holding rocks that are more magnetic than are the sedimentary formations). For magnetic surveys to be most useful, they must be large-scale and cover large areas, as the Canadians have done (A.R. Barringer, 1973, "Remote sensing techniques for mineral discovery," p. 47-65 in Holz, Robert K., ed., *The surveillant science; remote sensing of the environment*, Boston: Houghton Mifflin). Here in the States, aeromagnetic maps are issued in USGS's GP-series, and also by NOS in some of its offshore sheets; many states and foreign countries issue aeromagnetic maps of an entire political area. There are four different types of aeromagnetic maps, whose names will be emblazoned across the top of the map: 1. standard total field aeromagnetic survey; 2. high-resolution total field aeromagnetic survey; 3. vertical field; and 4. vertical gradient.

Remote-sensing imagery is of considerable importance to energy research, with aerial photography (the most common still), SLAR (side-looking airborne radar), and satellite imagery (Landsat and SPOT) all being used where appropriate and available. Increasingly, firms doing energy research are using digital data as much as they possibly can - which fits in with the feeling in the map library world that the map library of the future will be a collection of cartographic databases (plus printer), into which the patron's request as to area, subject, scale, and size of map will be funnelled; the use of such databases for mineral exploration is just the beginning.

In terms of imagery use, aerial and satellite black and white and color imagery, SLAR, and aeromagnetic mapping are used for the identification of major geologic structures; aerial and satellite color photography and aeromagnetic mapping are helpful for the classification of rock types and the identification of hydrothermal alteration; and aerial and satellite photography are of value for the identification of geobotanical criteria associated with specific rock types, hydrothermal alteration and geochemical anomalies, and for direct detection of ore or weathered mantle over ore (Barringer, p. 49).

Research firms and mineral resource exploration companies are involved in integrative studies, in pursuit of which the researchers need topographic, gravity, magnetic, seismic, tectonic, geologic, land use and land ownership maps and remote-sensing imagery. These firms use imagery and foreign, state, and U.S. geological survey information heavily. Much of this cartographic material is used by other patrons for other purposes, and a fair amount of the map data is issued on depository.

Now for some practicalities of finding out about what has been published. Cartographic materials dealt with here will be mainly maps, with a soupcon of remote sensing imagery (that is, satellite and low-flying vehicle photograph) thrown in.

You could put together a decent earth sciences/energy research collection from U.S. documents alone. A small part of the following discussion of U.S. government documents will sound like gibberish if you do not understand the Superintendent of Documents classification system (and, some unkind critics of my writing would say, even after that ...); the system is very clearly explained in the Checklist of *United States public documents* 1789-1909 (ed. 1911. CP 3:2:C 41/2), pp. xiii-xv, from which the following summary is taken.

The first letter of the first distinctive word in the name of each of the government's nine Executive departments is used to designate that department (e.g., A for the Department of Agriculture; S for the State Department, etc.); two letters are used for independent offices (e.g., GP for Government Printing Office, SI for the Smithsonian Institution). The figure "1" following a letter always represents publications issued by the office of the Secretary or chief administrator of that agency (e.g., S 1. for publications from the office of the Secretary of State). Beginning with 2, the numbers are applied in numerical order to the...
There are all kinds of maps issued by U.S. government agencies; most of us are familiar with the important series maps issued by USGS, DMA, and NOS that we now (mainly) receive on GPO depository, there is a listing of appropriate SuDocs class numbers in the depository manual, and besides, I crawl over, round and through them in the acquisitions chapter of Map librarianship, so I shan’t go on about them here.

On the text side, there are several very handy little reference publications in the GPO publications, of which the excellent Subject bibliographies (SB-), GP 3.22/2, come to mind first (SB-102, Maps and atlases (U.S. and foreign); SB-183, Surveying and mapping) Publications lists and telephone directories are also good resources. Don’t forget that many agencies of the U.S. Government have regional offices, and that these regional offices frequently issue some of their own publications; the Forest Service and the Bureau of Land Management and the Soil Conservation Service are three classic examples - see the Government manual for specifics. It’s important always to keep regional offices in mind, since many issue their own publications, which apparently seldom make their way through the depository system - even if they are supposed to. It’s a long, convoluted, tortuous, dangerous trip for a little map to take.

Perhaps the handiest of all the text publications - next to the manual for depository libraries is Instructions to depository libraries (GP 3.26/D 44/year); as was mentioned in the last IB, map librarians need to be aware that items distributed by GPO as part of the depository systems are under different and generally more demanding regulations than USGS imposed.

State geologic surveys also issue a good many maps, although the number and type of publication varies widely from one to another. For example, the Indiana Geological Survey has a mammoth map publication program that goes all the way from classic geologic-type maps to PEM’s (Petroleum exploration maps); Mississippi has a relatively modest map publication program. Some surveys carry in the main USGS’s folded geologic map series and topographic sheets; some prefer to do it themselves, or rather to do work in addition to what USGS does. Some work very closely with USGS; the state of Kentucky has been completely mapped geologically at 1:24,000, due to an extensive and ambitious cooperative program with USGS that took more than ten years. Just to make matters more interesting, state geological surveys are not always, or even often, called geological surveys. Divisions or bureaus of earth resources, or of mineral technology, or the like, are just as likely to be the agency issuing the geologic maps for the states. You may get addresses for these state surveys from several possible places:

1. Send to the Association of American State Geologists and request an address list for state geologists, look in the most current Encyclopedia of Associations to get the address;

2. If you read Geotimes regularly, one issue per year will present to you an address list of geological surveys and societies;

3. Try Map librarianship, an introduction; either of the two additions should give you an address list; geological surveys tend to be relatively stable organizations, who change address slowly.

For foreign topographic and geologic surveys - address sources have changed recently. For many years I clung tightly to USGS’s Circular 771 (later 934), Worldwide directory of national earth science agencies, which lists for each nation and some possessions those government agencies that issue topographic, geologic, hydrologic, and minerals and petroleum regulation publications. Lately I’ve been using Bob Parry’s World mapping today (London: Butterworth, 1987). For international documents, I find myself mainly working with the Commission for Geological Mapping of the World and Unesco, with some brief forays into the International Civil Aviation Association and the World Meteorological Association. The various UN Regional Cartographic Conferences are all most useful for giving state of topographic mapping for the nations involved. Another helpful source - this one for addresses of map vendors of whatever ilk - is Janet Allin’s Map source directory (Toronto: Office of Library Coordination, 1978; Council of Ontario Universities, 130 St. George Street, Suite 8039, Toronto M5S 2T4).
DUTIES AND RESPONSIBILITIES OF OFFICERS, PAST PRESIDENT, BUSINESS MANAGER, AND LIAISONS, WESTERN ASSOCIATION OF MAP LIBRARIES

President
1. Presides over the Executive Committee meetings.
2. Chairs business meeting and general meetings.
3. Sends formal letters of thanks to program speakers and others deemed necessary by the site host. Site host is to provide names and addresses of meeting participants.
4. Notifies successful candidates after the spring election of their election to WAML offices.
5. Serves as an over-arching liaison with other cartographic organizations and related groups in the field.
6. Appoints liaisons/representatives and members of standing committees.
7. Compiles a list of officers, members of Standing Committees, representatives, and liaisons for the March issue each year of the Information Bulletin.

Vice-President/President Elect
1. Participates in Executive Committee meetings.
2. Assists host in program planning for the year (July 1 to June 30) in which the incumbent will be President. Responsible for providing future meeting hosts with the current WAML Conference Manual.
3. Recommends liaison/representatives and standing committee appointments to the President.

Treasurer
A. Membership duties:
1. Participates in Executive Committee meetings.
2. Keeps a current and accurate record of paid membership.
3. Sends dues invoices and reminders to unpaid members at the beginning of each fiscal year.
4. Sends members’ address labels to the Information Bulletin Production Editor for each IB mailing.
5. Provides members’ address labels when requested by meeting hosts.
6. Provides the chair of the Membership/Hospitality Committee with the names and addresses of new members.
7. Presents a membership report at Executive Committee meetings.

B. Finances:
1. Deposits monies received in a federally insured bank account.
2. Pays the usual and customary WAML expenses, including state sales taxes, and others as directed by the WAML Executive Board.
3. Keeps systematic and detailed records of all monies received and dispersed.
4. Presents summary financial reports at regular WAML meetings and otherwise as required (these need not include detailed reports on IB production, IB subscriptions, Occasional Papers, or microforms).
5. Presents budgetary needs and budget projections at Executive Board meetings or as required.
6. At spring and fall WAML meetings, works closely with the host in depositing and disbursing conference monies and in the preparation of a financial statement for the meeting.
7. Maintains close communication with the WAML Business Manager to ensure coordination of subscriptions and membership accounts and to provide adequate financial information for summary inclusion in the Treasurer’s report.

Secretary
1. Participates in Executive Committee meetings.
2. Records minutes of the Executive Committee meetings and reads these minutes to the membership during the Business Meeting.
3. Records the minutes of the Business Meetings.
4. Edits both these sets of minutes and sends to each Officer for further editing before submitting the minutes to the Editor of the Information Bulletin for publication. The minutes should include: Executive Committee and Business Meeting minutes; a directory of meeting registrants; a finalized meeting agenda; a directory of meeting exhibitors.

Past-President
1. Participates in Executive committee meetings.
2. Serves as a member of the Nominating Committee.
Business Manager
1. Presents summary reports to the Executive Committee and during Business Meetings on current activities.
2. Maintains the Association’s inventory of Information Bulletins and Occasional Papers.
3. Promotes the sale of the Association’s publications.
4. Receives orders and claims for, as well as inquiries about, the Information Bulletin, Occasional Papers, subscriptions, microforms, and other publications.
5. Generates invoices and mailing labels in connection with all orders.
6. Sends subscribers’ mailing labels to the Information Bulletin Production Editor for each IB mailing.
7. Packages and ships publications in response to orders, claims, standing orders, and late memberships.
8. Receives and banks all monies from sales. Transfers these monies from time to time to the Treasurer.
9. Works closely with Microforms/Technology Editor and Publications Advisory Committee on sale and promotion of new publications.
10. Files quarterly statements with state tax authorities.

Representatives/Liaisons
1. Attends the meetings of the organization to which assigned.
2. Announces at the meeting (or submits in writing) the latest activities of WAML to include, but not limited to, information about the next two WAML meetings and latest publications. Distributes sales and membership brochures. WAML meetings should be publicized in the other organization’s newsletter.
3. Prepares a brief statement describing the activities of the organization to be delivered to the WAML membership during the Business Meeting. Activities to be described include, but are not limited to, meeting dates and new publications. The statement should then be submitted to the WAML Secretary for inclusion into the minutes of the Business Meeting.

three people two boxes of the same fiche. If I did, let me know so I can ransom one box from you with one of the three I have here.

THE RUSSIAN SET

The next project will be to duplicate LC’s Russian (1:126,000) 2,614-fiche map set, covering the period from 1865-1940. I’ll be working on this project over the summer and hope to have sets available in November for ca. $500.

EASTERN EUROPE AMS PROJECT?

We’re also looking into the cost of producing a modern German map set, based on the AMS 1:25,000 series. That, as well as the Eastern European topographic map series produced by AMS in the 60’s would prove very useful to many of us. If you have relatively complete sets of any of these series, and are willing to trust us with them for a month, drop me a note and we’ll discuss it further.
SITE SELECTION
Traditionally, the Western Association of Map Libraries meets each Fall and Spring. A request to host sites usually is initiated by the President at a conference meeting. Any member willing to host a WAML conference meeting (within the Principal Region) may offer at any time by contacting the President. It is assumed that the volunteer has the approval of the host’s institution as accommodations and certain expenses will be borne in-house. The President confirms the conference in writing with the host upon acceptance and again at least one year in advance. The President should be sure that the future host receives a copy of the Conference Manual. Should a host withdraw, the President with assistance of the Vice-President will need to locate another site as soon as possible.

Fall and Spring conference sites should be selected two years in advance. They should be announced at all WAML conferences and in the JB as soon as established, but not later than the preceding conference. The host selects dates most appropriate for the local situation, activities, weather, etc. However, consideration should be given to meetings held by other cartographic organizations which might pose a conflict. Effort should be made to consider joint meetings with organizations such as SLA, CML, AAPG, and map societies.

Conferences should alternate between central California and other locations in the Principal Region, with rotation between north and south.

PUBLICITY
The conference dates, the theme, if one is established, and call for papers should be announced at least by the prior conference and in the JB. An announcement of the theme, or details of the conference, should also be given to the WAML Liaisons to announce at their respective meetings and, if possible, have included in the appropriate newsletters/bulletins. Announcements should be sent to other cartographic organizations about 6 months prior to the conference.

REGISTRATION MAILINGS
The Treasurer will provide mailing labels of all Principal, Associate, and Institutional members. The host prepares the content of the conference announcement/registration materials. The conference information and registration materials should be mailed first class approximately eight weeks prior to the date. The Registration Fee may include this expense, if it can not be borne by the host institution. Only essential material should be included. Additional items may be distributed to attenders upon arrival.

The mailing should include:

- the program, which should be in at least a semi-final state;
- a registration blank; checks should be made out to WAML, requesting advance payment, if possible; be sure to note PROMINENTLY any cut-off dates for optional tours, meals, housing, etc.;
- housing information; the host should secure a block of rooms in a convenient hotel or dormitory or provide a list of accommodations; having members in a limited number of locations will ease transportation problems; people seeking roommates should be able to indicate this on the form; the host may pass along this information; blocked-out housing usually must be secured 6-12 months in advance;
local transportation; an explanation of the cost and time of public transportation from the airport, bus station, train station, and taxi fees to the campus or conference site should be given; include a local and/or campus map to assist; many items may be obtained from the local tourist office or chamber of commerce at no expense; if possible, arrange local transportation through the school vehicle pool; describe on-site parking arrangements, costs, and restrictions; emergency on-site phone number to contact people attending the conference (this may be the host’s library’s number).

PROGRAM
Although the Vice-President has formal responsibility for planning the program, the host, having the local resource information, contacts possible speakers and makes local arrangements. The President is also in contact with the host in preparation for officiating at the meeting.

The conference usually lasts two days with the Executive Committee meeting before the standard one-and-a-half day program. Conferences are normally scheduled for Thursday and Friday with the Executive Board meeting Thursday morning or Wednesday afternoon. Field trips may be scheduled for Saturday.

A conference may have a theme, or not, as determined by the host and the V-P. The host may ‘call for papers’ at least 9 months prior to a meeting by requesting them at earlier meetings and in the JB or seek speakers from local institutions, government agencies, and appropriate commercial contacts.

Honoraria are not normally given to speakers. However, the Executive Committee may, in unusual circumstances (such as a person giving an entire workshop) authorize expenses or honorarium.

Normally, one hour is allotted for papers, including time for questions (45 minutes for a presentation, and 15 minutes for questions). Unavoidable delays must be expected and speakers should be cautioned to speak no longer. If papers are scheduled on a one-half hour basis—as has been the pattern of late—remind speakers to speak no longer than 20 minutes in formal presentation to allow time for questions. Speakers often need time to set up or hand out materials.

When recruiting speakers, the host should identify the audience to encourage talks neither too general nor too technical. Obviously, point out that we are cartographically oriented and even non-map speakers should relate to or use maps in their presentation. These details of our organization and of the conference should be reiterated in a letter which confirms the exact date, time, and place, and asks if the speaker will need any special a-v equipment for the presentation (slide projector, etc.) weeks before the meeting. Because the paper may be submitted to the JB, ask the speaker to provide a prepared text at the time of presentation. Commitment for copy in advance is much more effective than subsequent solicitation.

Introduction of speakers at the conference may be done by the President or the host. In either case, a brief synopsis of the talk and biography of the speaker is needed. The host should introduce the speaker to the President, time and situation allowing.

The host should pass a sign-up sheet each day to record attendance. The sheet lists name, institution, office phone, and E-mail number. The President may also ask that committee preferences be noted on the sheet.

The host should ask the President if time should be allotted for Committee meetings (without conflicting with the conference program.)

PHYSICAL PLANNING
The meeting room should hold about 75 people and be equipped for audio-visual presentation. If possible, the room should contain a portable bulletin board or other display device for speakers’ maps. Naturally, a podium is needed. It is best if this room can be locked over lunch and at night. If allowed, smoking should be in designated rows of the room. If an adjoining room is available, it has been found advantageous to have it used for breaks and display of vendors materials (and give-away items brought by members) as on-going
discussions with vendors can be disturbing. Have at least four long tables and several bulletin boards available for displays, plus a table for coffee break set-up.
A registration table is needed which will seat two or three people. As registration may continue during the conference, place the table just outside the actual meeting room.
Supplies needed include: name tags; receipt book for cash payments; felt tip pens; pads to pass for attendance and other lists such as dinner sign-ups; push-pins; water pitcher and cups for speakers; electrical cords.
Transportation for group activities (including dinners, field trips, etc.) may be arranged by renting vans for the conference. This is most inexpensively done through the host motor pool, but may be rented from commercial sources. This expense must be prorated in the conference cost.

VENDORS
The host should be prepared to accommodate vendors, preferably in a space adjoining the meeting room which can be closed off from the meeting area. How much space is available will dictate the number and individual space given to vendors. Tables and bulletin boards are the normal requests, but electric connections may be required. Any special equipment needs should be brought by the vendor.
A letter addressed specifically to vendors from past conferences, members, and potential vendors in the conference area should be mailed out with registration materials. Space and equipment circumstances should be explained in the registration packet with encouragement to contact the host for further details. Indicate if products may be sold at the conference site. Vendors may choose to display for a certain time period (e.g., 1-5pm on one day). Some vendors may choose to send materials to be passed out at the meeting. Vendors who are not members, who use table space, are charged $50 in lieu of the basic registration fee (and this should be mentioned in the letter to vendors). Vendors who are members of WAML need not pay the $50 but do pay registration fees; they often contribute voluntarily to the program expenses. If they wish, vendors may be formally recognized as having contributed specifically to a special function, such as the field trip, cocktail party, etc. and should be mentioned on the final program as 'Contributors.'
Vendors should be introduced at the beginning of the conference and given a brief opportunity to describe their materials. The Secretary should be given a list of vendors attending, their contribution, and if they contributed toward any special function. This should be appended to the minutes of the meeting. Vendors should be listed with addresses in the final program distributed to attendees.
Appendix B contains a sample vendor application form.

REGISTRATION
The registration table is usually staffed by members of the Hospitality Committee and/or people from the host's office and should be maintained each day for three hours beginning about an hour prior to the conference. The host should coordinate scheduling of the table with the chair of the Hospitality Committee. Prepared packets (envelopes or inexpensive folders) for preregistered attendees and unassigned packets should be available for those not preregistering. Receipts may be placed inside the preregistered packets and a receipt book should be available for others.
Packets should include final program information and duplication of materials mailed because some people attending may not have received mailers. Additional maps, promotional items (pens, etc.) may be included. Name tags should be available and may be prepared in advance for those who have preregistered. The name tags can be added to the packets. Blank name tags should be available for the second day's use.

EXECUTIVE MEETING
This meeting is attended by the President, Vice-President, Secretary, Treasurer, Past-President, and others, such as the host and committee chairs, as invited by the President. The meeting is held in a room other than the meeting room which will begin to be occupied prior the conclusion of the Executive Meeting. The President calls the time and agenda of the meeting, usually 9am-noon on Thursday, but it may begin earlier, or be held Wednesday afternoon. The Secretary takes minutes and must be prepared to present a synopsis later at the Business Meeting.

BUSINESS MEETING
The business meeting is conducted by the President and is scheduled for one and a half hours, or longer if
requested. If not done prior, the President asks each person attending to introduce himself. The meeting will include general announcements. The Secretary will give a synopsis of the Executive Meeting and will also ask for any changes to the minutes of the previous business meeting (which was published in the IB). The Treasurer and Business Manager will also give reports. The President checks in advance with standing and ad hoc committee chairs and liaisons for possible reports. During the Spring Conference, the President calls for candidates for association offices and may ask at either meeting for volunteers for standing committees and liaisons. The President might also wish to pass around a sheet to allow people to indicate committee/liaison interests; sign-up opportunities seem to get better response than generally asking for anyone interested to see the President.’

SOUNDING BOARD
Sounding Board is an informal session chaired by the President which allows attenders to make general announcements and ask relevant questions. Time might also be given for vendors to introduce themselves and briefly discuss their products if they have not done so earlier. Forty-five minutes should be sufficient. It is often scheduled immediately after the Business Meeting and may begin as soon as the Business Meeting concludes.

LUNCHES, DINNERS, AND COFFEE BREAKS
A coffee break of thirty minutes splits each half-day session and allows time for interaction with the speakers and members.

If the host schedules independent lunch time, sufficient time must be allowed to locate suggested sites. Consideration must be given to the time it will take for approximately 50 people to locate and be served in a restaurant during lunch time. Scheduled lunches may be arranged and are especially appreciated if convenient sites are not available for independent meals. Lunches usually are not part of the program and are listed as an optional expense on the registration form and should be as inexpensive as possible.

A dinner normally is scheduled for either Thursday or Friday night. It may or may not be listed as a ‘banquet,’ and may have a speaker, who should be ‘light’ and brief. The occasion may be used for appropriate announcements, awards, etc., or simply be a dinner gathering. The host should locate a site which provides for separation of the group from outside noise and activity, normally a private room. To ease bookkeeping, the host will probably arrange a set menu for a specified fee with a no-host bar. The dinner price must include tax and gratuity. The dinner will be listed as an optional expense on the registration form. Because advance notice usually is required by restaurants, be sure to promise a realistic number. Most restaurants allow for 5+ or - headcount when preparing. Last-minute signups may be taken at the first day of registration, if the restaurant will accept late adjustments to the count. Transportation to/from the restaurant should be arranged by the host by asking for volunteers with vehicles, providing vehicles, or suggested public transportation. The Treasurer should be prepared to write a check to the restaurant at the end of the evening if so required.
Other dinner sites may be suggested or loosely arranged for other nights by the host according to local possibilities.

FIELD TRIPS
If the host has a map collection, this should be available for touring either ad hoc or formally at a specified time on the program. More elaborate field trips are optional. Usually they are scheduled for Saturday with additional fees as required. Emphasis is placed on natural and historical sites or appropriate museums/institutions in the area. If a minimum number is required for the trip to function at a reasonable cost, this should be specified on the registration form and the host provide for reimbursement if necessary. The host should determine the cost by calculating a reasonable, minimum number attending. Also specify a maximum number, if necessary. Describe the field trip carefully and note if any special clothing or ability (e.g., hiking) is required.

FINANCES
WAML policy dictates that each conference should be financially self-supporting. Registration fees have
been pre-approved by the Executive Board at $15 per person (for either one or both days) to cover basic expenses such as coffee breaks, mailings (if necessary), and supplies. A lesser amount may be specified for student registration. All meals and field trips are optional. Any exceptionally heavy expenses should be cleared with the President and Treasurer before encumbrance.

Typical conference expense items are:

mailing of meeting announcement and registration materials;
cost of registration materials (printing/duplication);
coffee break refreshments;
meeting rooms; it is hoped that cost for these may be avoided by meeting at the host’s institution; they may also be absorbed by a hotel location if rooms are booked for the group;
supplies such as name tags and inexpensive folders;
audio-visual equipment rental (these may also be absorbed at no cost by the host institution);
speakers’ fees; this is to be avoided; most local people or our own members should not expect honoraria;
field trips; an optional expense;
dinners and lunches are optional; price must cover all costs;
group transportation costs such as renting of vans for conference and field trip use;

Registration and other fees collected should be documented and turned over to the Treasurer promptly with receipts/bills/invoices for payment or reimbursement.

POST-CONFERENCE DUTIES
The President writes ‘thank you’ letters to all speakers, host, and anyone assisting the host with the conference or with facilities. The host provides the President with a list, including addresses.

The Secretary sends a copy of the Minutes to each member of the Executive Board. After approval, the Minutes are forwarded to the Editor for publication in the IB.

The host should distribute a conference questionnaire for attendees to rate the program, activities, speakers, etc. and make recommendations for future programs. These might be placed in the packet and be gathered at the end of the program (e.g., Friday afternoon) or could be mailed out after the conference. The host will give the President and Vice-President a summary of the questionnaires with any suggestions regarding future conferences. Appendix A contains a sample evaluation form.

APPENDIX A

SAMPLE EVALUATION FORM

WESTERN ASSOCIATION OF MAP LIBRARIES

FALL CONFERENCE, 19—

Please assist us in planning meetings to meet your needs and interests:

1. What part of the conference must meet your needs?

2. What was the least useful part of the conference?
3. Please rate our speakers:

<table>
<thead>
<tr>
<th>1 great interest</th>
<th>2 some interest</th>
<th>3 little interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Doe</td>
<td>Mary Smith</td>
<td>Bob Jones</td>
</tr>
<tr>
<td>Jim Brown</td>
<td>workshop</td>
<td></td>
</tr>
</tbody>
</table>

Comments on any of the speakers: ____________________________________________________________

4. Topics for future conferences: _______________________________________________________

5. Do you have a paper to present? Topic: _________________________________________________

6. Please rate the following items:

<table>
<thead>
<tr>
<th>1 excellent</th>
<th>2 good</th>
<th>3 fair</th>
<th>4 poor</th>
<th>5 no opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>business meeting</td>
<td>conference lodging</td>
<td>conference packet</td>
<td>evening dinners</td>
<td>field trip</td>
</tr>
<tr>
<td>meeting room facilities</td>
<td>preconference registration packets</td>
<td>reception</td>
<td>refreshments at breaks</td>
<td>sounding board</td>
</tr>
<tr>
<td>vendors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What items do you feel needed more time? _______________________________________________

8. Comments on prices for meals/registration/field trip: _________________________________

9. Suggestions for future field trips: _________________________________________________

10. What are your feelings regarding a longer conference schedule (i.e., Wed-Sat)? ___________

11. General comments regarding the conference: ____________________________________________

Please return this to...
APPENDIX B

SAMPLE

VENDOR APPLICATION FORM

WESTERN ASSOCIATION OF MAP LIBRARIES

FALL 19—CONFERENCE

Vendor Business Name:

Address:

Telephone Number:

Fax Number:

Representative’s Name:

Product/Service:

Will Exhibit on: Thursday, Sept. — Friday, Sept. —

Equipment Needs:

Table: yes ☐ no ☐

Electrical Outlet: yes ☐ no ☐

Telephone line: yes ☐ no ☐

Other:

Non-member vendor registration is $50 in lieu of the basic registration fee. Please make checks payable to WAML.

Please return this form by _________ to:

[If products may be sold at the conference site, indicate this to vendors.]

April 1990
Minutes
WAML Executive Board Meeting
WAML General Membership Business Meeting

by

Julie Hoff
WAML Secretary

Minutes, Executive Board Meeting, 21 March 1990
Recorded by Julie Hoff, Secretary

President Stark called the meeting to order at 2:00 pm.
In attendance were:

Peter Stark - President
Linda Newman - Past President
Janet Collins - Vice President/President Elect
Julie Hoff - Secretary
Herb Fox - Treasurer
Stan Stevens - IB Production Manager
Richard Soares - Business Manager
Rosanna Miller - Membership/Hospitality Com.
Larry Cruse - Microforms Subcommittee
Jack Mount - Meeting Host

Rosanna Miller reported on the Membership/Hospitality Committee's activities. The first phase of the membership drive has been completed. Remaining brochures will be sent to other potential members prior to revisions and reprinting.

Herb Fox, Treasurer, submitted the financial statement for the Irvine meeting. He suggested that a 'fill in' financial statement form be given to each WAML meeting host, so that the host can more easily keep track of costs. The completed statement would then be submitted to the Treasurer. WAML income and expenditures for the past year were presented. The Treasurer suggested that the Executive Board take a more active part in directing the use of funds, rather than allowing past spending patterns to dictate future expenditures.

Stan Stevens discussed the need for a software upgrade to produce the IB and OP's more easily and quickly. The Board authorized the expenditure of $200 for the upgrade package.

The Board also authorized the purchase of a modem for the Treasurer's use, to facilitate communications with other Board members.

Richard Soares gave the Business Manager's report, which contained figures on subscriptions, back-issue sales, OP sales and information on new items. Soares suggested that the price for back issues of the IB be increased. He will work with the Publications Committee to establish a price for the Gazetteer of the World microfiche.

The Board discussed the Duties of Officers. All officers have submitted their list of duties to the President for review. The finalized duty list will appear in the June IB with the WAML lists.

The status of the Business Manager was discussed. Currently, the Business Manager has no constitutional status within the Executive Board. In order to afford full voting membership to this position, it will be necessary to amend the Constitution and Bylaws. The President and Vice-President will draft the proposed amendments, which will then by voted on by the WAML membership. Honoraria for the Business Manager was also discussed.

President Stark reported that Mary Larsgaard, current IB Editor, has requested a 50% reimbursement for an IBM computer she purchased for WAML business. The Board authorized a reimbursement of up to $1,250 for the IB Editor for the remainder of her five-year term.

[continued]
The schedule for future WAML meetings is:

<table>
<thead>
<tr>
<th>Year</th>
<th>Season</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Fall</td>
<td>Denver Co, Sept. 13-15</td>
</tr>
<tr>
<td>1991</td>
<td>Spring</td>
<td>Santa Barbara, CA, March 20-23</td>
</tr>
<tr>
<td>1991</td>
<td>Fall</td>
<td>Chico, CA</td>
</tr>
<tr>
<td>1992</td>
<td>Spring</td>
<td>San Francisco State, CA</td>
</tr>
<tr>
<td>1992</td>
<td>Fall</td>
<td>Laie, Hawaii</td>
</tr>
</tbody>
</table>

Possible future venues include:

- 1993: Albuquerque, NM
- 1993: Bellingham, WA
- 1993: Jackson Hole, WY (hosted by U. Wyo. and U. Idaho)
- 1994: Riverside, CA

The 1992 venues have not been finalized. The Board is open to further suggestions for meeting venues.

President Stark announced an opening for a WAML representative to the Congress of Cartographic Information specialists Association (CCISA). The CCISA planning committee will conduct an informal poll for a preferred date and place for its next general meeting. Proposed dates and venues are:

- June 1991: Ottawa, ONT, in conjunction with ACMLA 25th Anniversary
- October 1991: Washington, D.C., in conjunction with LC Geography and Map Division in celebration of Washington, D.C., Bicentennial
- 1992: Milwaukee, WI, in conjunction with AGS, in celebration of 500th Anniversary of Columbus' Discovery

The Board authorized the expenditure of up to $20 for a cost share conference call for the WAML representative to decide on a meeting site with CCISA. WAML will provide 1/2 airfare for the representative to attend the meeting.

Finally, the Board discussed Larry Cruse's request for funds to design and build an improved cartographic microfiche viewer. The Board authorized the expenditure of up to $300 for Cruse's use, with the stipulations that an article about the project, with photos, appear in the November 1990 IB, and that the viewer be brought to the 1991 spring meeting for a demonstration.

The meeting adjourned at 5:15pm.

Minutes, Business Meeting, Spring 1990, 23 March 1990

Reported by Julie Hoffer, Secretary

President Stark called the meeting to order at 8:00am. He announced the CCISA representative opening to the membership. Stark noted that, as far as WAML is concerned, the general meeting date for CCISA in 1991 would be preferable since it doesn't coincide with the 1992 WAML meeting in Hawaii. Next, Julie Hoffer read the minutes of the Executive Board meeting. Herb Fox, Treasurer, reported on the membership and finances. President Stark then called for discussion on the Executive Board's approval of 1/2 reimbursement for the IBM computer used to produce the IB. Charlene Baldwin asked how long Mary Larssgard would serve as Editor. Larssgard replied that the term is five years, at which time the present computer would have depreciated and would possibly be obsolete. The computer would be passed along to the next IB Editor and upgraded if necessary. Larry Cruse added that WAML provided him with the necessary computer equipment when he was the IB editor.

Richard Soares gave the Business Manager's report. He will make a display of the report a regular feature of WAML meetings. Soares announced that the microfiche Gazetteer of the World would be available at $30 a set. He is also working on producing a three-volume microfiche set of Germany at 1:25,000.

Michael Noga reported on the Publications Committee and the Subcommittee for Geoscience Publications. The Publications Committee recently finished production of O.P. 12. Riley Moffat will be on the committee starting July 1. Jim O'Donnell will be the new committee chair as of July 1. The Geoscience Subcommittee is working on producing the California Geological Quadrangles Index in paper and electronic format.

The liaison reports were given next. Dates and locations for upcoming meetings are: ALA - June 22-28 in Chicago; SLA - June 10-14 in Pittsburgh; ACMLA - June 12-15 in Montreal. Tim Ross, University of British Columbia, is the new WAML liaison to the Association of Canadian Map Libraries and Archives (ACMLA), replacing Ron Whistance-Smith.

Riley Moffat reported on the Cartographic Users Advisory Committee (CUAC). Linda Newman is the new CUAC chair. Several WAML members expressed ideas and concerns to Moffat, who will take them up with CUAC. The meeting then adjourned to Sounding Board.
1. AN UPDATE: A library or two has taken Larry Cruse up on this one; he’s looking forward to having more participants.

Does your library have, or has it had in the past, superseded USGS topos that you wanted to get rid of? And you did so, knowing full well that one map curator’s trash is another’s treasure and also that you did not have the time to send out a duplicates list? Larry Cruse suggests the establishment of a national network of libraries willing to accept superseded quads; he thinks the best way to run this would be to have a coordinating library in each state able to act as liaison. Each coordinating library would find libraries in its own state willing to accept such quads, perhaps exchanging some it doesn’t need (e.g., a library in Wisconsin that desperately needs duplicates of Wisconsin but has no use for superseded quads of Florida) for some that it does. Larry is working on getting this set up with Karl Proehl at Penn State for PA topos. Comments?

To start this off: Larry has 20 years of superseded sheets of all other states (7.5s only thus far). Larry will accept superseded sheets or California and relay to California libraries (initially UC and CSU, but anyone who wants to can get into the act). He’ll add other scales if there is an interest. He’ll take superseded sheets from UC and CSU libraries, of non-CA states, and find those a home.

This is an excellent project, and one that has needed doing for many years.

2. Flying Camera products: obtain from IFG-Verlag, Odenwaldring 38, D-6050 Offenbach, WEST GERMANY (I hope - I haven’t checked my gazetteer on this one!)

3. The city government of Tucson AZ is attempting to locate Spanish survey maps, dated 1775 to 1820, of the Tucson Presidio. Unsuccessful searches have been conducted at the National Archives, Seville (Spain) Archives, Mexico City, and Hermosillo.

Earliest original document of Tucson’s history, an 1862 Ferguson map drawn by surveyor John B. Mills, is displayed at the Arizona Historical Society in Tucson. Any information on earlier materials is of interest. Please contact J. Richard Kyle, City Archivist, 4300 S. Park Avenue, Tucson AZ 85745 (602/791-2553).

4. Jenny Marie Johnson (University of Washington Map Collection) was in the process of doing some weeding, when she came upon some old ONCs; she’d like to know who keeps old copies of this, and also old aeronautical charts. Donna Koepp (University of Kansas) keeps every tenth edition of some charts. Other practice?

5. Thanks to Sandy Jones, Carleton University Map Library, for providing correct address for Queensland Dept. of Mines - 61 Mary Street, Brisbane 4000 (apparently the Australian postal system is quite unforgiving - I had 4001 down, and got a returned letter).

6. Your Editor just read recently something about the Australian facsimile-map project - apparently it’s run into some problems. Shall try to pluck it out of the mass of paper in my office.

7. Rosanna Miller (Map Collection, Library, Arizona State University, Tempe) is doing some research on pre-1900 mapping of southwest Missouri and would be happy to hear from anyone who has maps of this area for this time period.

8. If you’ll send me (Mary Larsgaard) a photocopy of your prospectus, or alternatively a listing of those countries (other than the U.S.) for which you collect maps at a collection level of 4 or 5 (for the purposes of this request, at 1:50,000 scale or larger), I’ll enter them into a listing by LC class number order of holdings of map libraries; if you
send me a formatted (for IBM PC) 3.5" or 5.25" inch diskette, I’ll send you a copy of the file (in Word 5.0).

9. A request from Larry Cruse - does anyone have the 1:250,000 scale RADM coverage of Brazil? UCSB has some sheets of Mosaico semicentralizado de radar, but apparently not a complete set; apparently MapLink is unable to obtain sheets presently.

10. Anyone else having troubles with heavily used National Geographic Society atlases, such as Atlas of the world and the handsome Atlas of North America falling apart (because of “perfect binding” - what a contradiction in terms) and then being impossible to rebind because maps are bled to the gutter? UCSB is boxing the atlases and keeping them in controlled stacks rather than attempting rebinding. What are you doing about this preservation problem?

11. The USGS is interested in hearing from the end users what material they would like to see in a CD-ROM format. This could include material already published or material which you feel lends itself to this format. Any ideas should be sent to: Dr. John Aaron, OFC Chief, Office of Scientific Information, USGS, 940 National Center, 12201 Sunrise Valley Drive, Reston VA 22092.

12. Check your holdings - During a recent map inventory at UC Riverside, Barbara Haner discovered that all of the maps from the Goldfields area of Nevada had gone AWOL; fortunately, they were still available from USGS. As mining in the West has increased again, perhaps you might also like to look at your maps for well-known mining areas.

13. I would like to thank Rosalia Rooney (Colorado School of Mines) for her thoughtfulness in following through on a question I raised at the Sounding Board at the Tucson meeting last March. I had asked if anyone present knew whether the USGS thematic map series (GQ, HA, etc.) had been cataloged as sets, and whether anyone had at their fingertips the OCLC records for same. She kindly responded that she did, and in this issue of the Information Bulletin (see News at end of William Studwell’s “Cataloging Column”) appears the OCLC numbers - a service to myself and all interested members/readers. This kind of response is what makes WAML and its Sounding Board, at meetings as well as the IB, real special. (I echo our founding father, Ed Thatcher, who always expressed this sentiment.) — Stan Stevens

Conference Attenders
Western Association of Map Libraries
Spring 1990 Conference, March 21-24
University of Arizona, Tucson

Steve Abrahamson; Wide World of Maps, Inc., 2626 West Indian School Road, Phoenix AZ 85017

Greg Armento; California State University, Long Beach; 343 N. Colorado Place, Apt. B, Long Beach CA 90814

Steve Bahre; Merrimac College, North Andover MA 08145

Charlene Baldwin; Map Collection, Main Library, University of Arizona, Tucson AZ 85721

Sylvia Bender-Lamb; California Dept. of Conservation, Division of Mines & Geology, 660 Bercut Drive, Sacramento CA 95814

James Byrkit; Box 15016, Northern Arizona University, Flagstaff AZ 86011

Lee Chaba; Maps & Stte Documents, Arizona Dept. of Libraries, Archives & Public Records, 1700 W. Washington St., Phoenix AZ 85007

Janet Collina; Antonio Hall 101, Western Washington Univ., Bellingham WA 98225

Larry Cruse; Map Section, Central University Library, C-075P, Univ. of California, La Jolla CA 92030-0175

Larry Dietz; Dietz & Associates, 4706 N. 31st Street, Phoenix AZ 85017

Malcolm Duffek; Color Microimaging, 5078 List Dr., Colorado Springs CO 80919-3316

Terry Fahy; Acquisitions Dept., Main Library, Univ. of Arizona, Tucson AZ 85721

Larry Fellows; Arizona Geological Survey, 845 N. Park Ave., #100, Tucson AZ 85719

Herb Fox; Map Library, California State Univ., Fresno CA 93740
<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
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</thead>
<tbody>
<tr>
<td>Joe Gardner</td>
<td>Carto Systems, 3509 E. Shea Blvd., $117, Phoenix AZ 85028</td>
</tr>
<tr>
<td>Judy Geitgey</td>
<td>Technical Library, Sandia National Lab., 6328 Mendius NE, Albuquerque NM 87109</td>
</tr>
<tr>
<td>Julia M. Gelfand</td>
<td>Main Library, Univ. of California, Irvine CA 92713</td>
</tr>
<tr>
<td>Richard S. Green</td>
<td>Univ. of Iowa Libraries, Iowa City IA 52242</td>
</tr>
<tr>
<td>Barbara Haner</td>
<td>Physical Sciences Library, Univ. of California, PO Box 5900, Riverside CA 92517</td>
</tr>
<tr>
<td>Joseph K. Horro</td>
<td>Branner Library, Mitchell Building, Stanford Univ., Stanford CA 94305</td>
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<tr>
<td>Julie Hoff</td>
<td>Map Collection, Noble Science Library, Arizona State Univ., Tempe AZ 85278</td>
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<tr>
<td>Kevin Horstman</td>
<td>Geosciences Dept., Univ. of Arizona, Tucson AZ 85721</td>
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<tr>
<td>Bill Hunt</td>
<td>Map Link, Inc., 25 E. Mason Street, Santa Barbara CA 93101</td>
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<tr>
<td>Charles Hutchinson</td>
<td>Arid Lands Studies, Univ. of Arizona, 845 N. Park Ave., Tucson AZ 85719</td>
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<tr>
<td>Susanne Jerome</td>
<td>Sergent, Hauskins &amp; Beckwith, 3232 W. Virginia Ave., Phoenix AZ 85009</td>
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<tr>
<td>John Kawula</td>
<td>University Library, Univ. of Idaho, Moscow ID 83843</td>
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<tr>
<td>Chris Kollem</td>
<td>Map Collection, Main Library, Univ. of Arizona, Tucson AZ 85721</td>
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<tr>
<td>Mary Larsgaard</td>
<td>Map &amp; Imagery Lab, Library, Univ. of California, Santa Barbara CA 93106</td>
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<tr>
<td>J. Eric Livengood</td>
<td>Ulrich Planfiling Equipment Corporation, 2120 Fourth Ave., PO Box 135, Lakewood NY 14750</td>
</tr>
<tr>
<td>Carolyn Martin</td>
<td>Catalog Dept., Knight Library, Univ. of Oregon, Eugene OR 97403</td>
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<tr>
<td>Rosanna Miller</td>
<td>Map Collection, Noble Library, Arizona State Univ., Tempe AZ 85287-1506</td>
</tr>
<tr>
<td>Riley Moffat</td>
<td>Joseph F. Smith Library, Box 1966, Brigham Young Univ.-Hawaii Campus, Laie HI 96762</td>
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<tr>
<td>Jack Mount</td>
<td>Map Collection, Main Library, Univ. of Arizona, Tucson AZ 85721</td>
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<tr>
<td>Stephen Mullin</td>
<td>5378 Rosalind Ave., El Cerrito Ca 94530</td>
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<tr>
<td>Diane Murray</td>
<td>U. of A. Graduate Library School &amp; AHSC Library, 951 E. 105h St. Tucson AZ 85719</td>
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<tr>
<td>Linda P. Newman</td>
<td>Mines Library, Univ. of Nevada, Reno NV 89557</td>
</tr>
<tr>
<td>Michael Nuga</td>
<td>Geology/Geophysics Library, 4697 Geology Bldg., Univ. of California, 405 Hilgard Ave., Los Angeles Ca 90024-1567</td>
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<tr>
<td>Jim O’Donnell</td>
<td>Geology Library 17-0-25, California Institute of Technology, Pasadena CA 91125</td>
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<tr>
<td>Joanne Perry</td>
<td>Kerr Library 121, Oregon State Univ., Corvallis OR 97331-4501</td>
</tr>
<tr>
<td>Katherine L. Rankin</td>
<td>Univ. of Nevada, 3311 Brussels St. #1, Las Vegas NV 89109</td>
</tr>
<tr>
<td>Rosalia Rooney</td>
<td>Maps &amp; Documents, Arthur Lake Library, Colorado School of Mines, Golden CO 80401</td>
</tr>
<tr>
<td>Tim Ross</td>
<td>Map Library, Main Library 1956 Main Mall, Univ. of Brit. Col., Vancouver, B.C. V6T 1Y3</td>
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<tr>
<td>Charles Seavey</td>
<td>Graduate Library School, Univ. of Arizona, Tucson AZ 85721</td>
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<tr>
<td>Charles Smith</td>
<td>Tucson Map &amp; Flag, 2590 N. First Ave., Tucson AZ 85719</td>
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<tr>
<td>Richard E. Soares</td>
<td>Brigham Young Univ., 1352 HBLL, Provo UT 84602</td>
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<tr>
<td>Alice Stapels</td>
<td>Central Reference Dept., Univ. of Arizona, Tucson AZ 85721</td>
</tr>
<tr>
<td>Peter L. Stark</td>
<td>Map Library, Univ. of Oregon, 165 Condon Hall, Eugene OR 97403</td>
</tr>
<tr>
<td>Stan Stevens</td>
<td>Map Room, McHenry Library, Univ. of California, Santa Cruz Ca 95064</td>
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<tr>
<td>Muriel Strickland; Map Collection, Univ. Library, San Diego State Univ., San Diego CA 92182-0511</td>
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<tr>
<td>Cheryl Sund; U.S. Geological Survey, Mail Stop 914, Box 25046, Denver CO 80225</td>
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<tr>
<td>Suzanne N. Taylor; Documents, 218E Morgan Library, Colorado State Univ., Fort Collins CO 80523</td>
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<tr>
<td>Sonya R. Thelin; OCLC Inc., 6565 Frantz Road, Dublin OH 43017</td>
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<tr>
<td>Michael Weber; Arizona Historical Society, 949 E. Second St., Tucson AZ 85719</td>
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<tr>
<td>Ron Whistance-Smith; William C. Wonders Map Collection, c/o Dept. of Geography, H.M. Tory Bldg., Univ. of Alberta, Edmonton, Alberta T6G2H4</td>
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<tr>
<td>James Willinger; Wide World of Maps, Inc., 2626 West Indian School Road, Phoenix AZ 85017</td>
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<tr>
<td>Yvonne Wilson; Government Publications and Microforms Dept., Univ. of California, PO Box 19557, Irvine CA 92713</td>
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<tr>
<td>Elizabeth Winroth; Oregon Historical Society, 1230 S.W. Park Avenue, Portland OR 97205</td>
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<tr>
<td>Linda Zellmer; Geology and Map Library, University of Wyoming, Box 3006, University Station, Laramie Wy 82070-3006</td>
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<tr>
<td>Christine Ziegler; Map Collection, Main Library, Univ. of Arizona, Tucson AZ 85721</td>
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From Nancy Vick (University of Illinois Map & Geography Library), an oversize postcard of a SPOTimage of Marseilles - copyright CNES 1987 and Alpha Zoulou Productions 1989, with distribution by SPOT Image.

From Tapestry (Hanover PA 17333-0046) - a plastic aquarium, that is a globe (dual purpose); B706242, $49.95 plus shipping and tax.

In a feature called, "Gentlemen's Choice," in a recent Town and Country: "Night and Day" cufflinks, originally designed for Cole Porter, from Verdura. $4,250 the pair. One is the Earth, the other a black sphere with diamonds for stars.

If you send to the Arcata Chamber of Commerce (1062 G Street, Arcata CA 95521), their answer to you will be in an envelope with a map of the Arcata area on the front of it. And from the Catalina Island Chamber of Commerce & Visitor's Bureau, PO Box 217, Avalon CA 90704: a map of the area that is in the form of a large matchbook (about 3" x 3") - not only clever, but just the right size for one's pocket when sightseeing.

After a hard day with the maps cases, go home to play a game called, "Champagne Adventure:" it includes a map-of-the-world game board, traveler's checks, plastic champagne glasses and more. About $15.00 (800/832-2331).

From a "Mary Worth" comic strip of May 9, 1990 (side note: MW is set in Santa Barbara): One character is saying to another, "These look like bad examples of abstract art, Essex!" To which Essex responds, "They're computerized images of 'TM data' from the Landsat satellite! And, these are from 'SIR-B'! An imaging radar scan by a Space Shuttle crew!"

Received from Harold Otness' Quiet Desperation Press: One generation passes, and another takes its place: the meetings continue and the minutes are recorded, and filed away, and the sun also rises, albeit somewhat reluctantly.

[Continued on page 142]
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.

March 21-24, 1990 WAML Spring Meeting, Tucson: final agenda and list of exhibitors follows; minutes and attendance included elsewhere in this IB.

3/21 1-4pm WAML IB Board meeting
2-4pm WAML IB Editors Meeting
5:30pm Early-Bird reception: optional light dinner and cash bar at Eric’s, 1702 E. Speedway Blvd.
3/22 9:30-10:00am Conference registration
10-10:30am Opening and introductions: David Laird (University Librarian); Peter Stark (President, WAML); Jack Mount (Conference Chair)
10:30-11:15am Vendor introductions
11:15-noon James Byrkit, Northern Arizona University: “Legend of the Sierra Azul: Central Arizona’s Lost Apache Gold Mine” - special multimedia presentation; talk funded by grant from Arizona Humanities Council
noon-1:30 Optional lunch, Union Club, Student Union
1:30-3:30 First Session: Invited papers; moderator, Charlene Baldwin (U.AZ)
Larry Fellows, Director, Arizona Geological Survey: “Geologic Mapping in Arizona”
Charles Hutchinson, Arid Lands Studies, University of Arizona: “Mapping Famine in Africa” (article published as “Uses of satellite data for famine early warning in sub-Saharan Africa” in forthcoming issue of *International journal of remote sensing*)
Michael Weber, Director, Arizona Historical Society: “Spanish Mapping in the American Southwest”
4-6pm Reception honoring 35th Anniversary of the University Library’s Map Collection; speakers were David Laird, Lawrence Clark Powell, Steve Bahre, Lutie Higley, and Charlene Baldwin
6:30pm- Optional dinner at El Adobe Mexican Restaurant, 40 West Broadway Blvd.; Sonoran-style food

3/23 8-10am Business meeting and Sounding Board; moderator, Peter Stark (President, WAML)
10-10:30am Break
10:30-noon Second session: Contributed papers; moderator, Jack Mount (U.AZ)
Christine Kolten, Map Collection, University of Arizona Library: “Workflow of Map Copy Cataloging at the University of Arizona Library” (NOTE: article published in this issue of the IB)
Rosanna Miller, Map Collection, Arizona State University: “The Peralta Land Grant” (NOTE: article to be published in - both Rosanna and your Editor hope - the November 1990 issue of the IB)
Joanne Perry, Oregon State University: “Richard E. Harrison: The Early Years” (NOTE: bibliography from this talk published in this issue of the IB; your Editor’s memory tells her that Joanne has another article on this fascinating cartographer in an issue of SLAG&MD *Bulletin*)
noon-1:30pm Lunch downtown
1:30-2:30pm Barbara Hoffman: “Workshop on Electronic Conferencing System for WAML” (NOTE: see this IB for directions on how to log on to this conferencing system)
2:30-3:30pm Cataloging Issues Forum; moderator, Christine Kolten
3:30-4pm Break
4:00-4:30pm Ron Whistance-Smith, University of Alberta: “Evolution in the Colton Map of North America from 1855 to ca. 1900” - special slide presentation
4:30-5:30pm Cooperative Collection Development Forum; moderator, Mary L. Larsgaard
5:30-5:45pm Conference wrap-up
Vendors: Carto Systems (3509 Shea Blvd., Phoenix AZ 85028; 602/494-9601); Color Microimaging Corp. (5078 List Drive, Colorado Springs CO 80919-3316;
Now available from the International Map Dealers Association annual Conference, September 1989, audio cassette tapes for the following talks: Starting or Expanding Your Map Business (Jim Willinger); The Competition, the Free State Road Maps (Panel); World Atlases, Changes and Comparisons (Russ Voisin, RMcN); Personnel Issues, the 90's and Beyond (Johm Deprato, RMcN); Geography Awareness Week (Panel); How to Make More Money from Government Maps, a Basic Course (Panel); Geographic Information Systems, Application Systems & Trends (Lawrence Ratten, ISSGIS); Geographic Names - How Can We Keep Up? (Richard Randall, USBGN). $7 + $1.50 per tape (6.425% sales tax in MO), check payable to: Hoover's Audio Visual, Inc., 2540 W. Pennway, Kansas City MO 64108.


6/11 - "Mapping Congress," Kenneth Martin
"Modern map making through computerized technologies: are the days of the printed map numbered?" Michael Dobson (Rand McNally)
"Design and implementation of MAPPERS: semi automatic cataloging advisor," Zorana Ercegovac
"History of the Penn State University Map Collection," by Carl Broil
"Mine Map Repository," by Joseph Monaco, U.S. Bureau of Surface Mining
"Color microcartography," by Malcolm Duffek, Color Microimaging Corporation

6/12 "Pittsburgh: from smoky city to renaissance city," by Joel Tarr
"Pittsburg and water quality—success and faiures," by Thomas Froeh
"Geologic and environmental problems with I-279 construction," by William Adams

6/13 "Post-war U.S. road maps—45 years of change," by Paul Stout
"Road maps and atlases in the Rand McNally collection at the Newberry Library," by James Akerman
"Strip maps," by Alan MacEachern
"Modern road maps: a dealer's view," William Hunt

6/14 Tour of Univeristy of Pittsburgh Map Library; host, Bill Roselle (Director)
"Urban rivers: de-industrialization, redevelopment and the three rivers in Pittsburgh," by Dr. Edward Muller
Bus tour of Homestead PA and South Side Area Tour of Old Economy Village (Ambridge PA) Historical Museum

For additional information: David McQuillan, Map Librarian, Thomas Cooper Library, University of South Carolina SC 29208 (803)777-2802 or -4723. BITNET: L100003@UNIVSCVM.BITNET. FAX: 8037779503.

June 11-15, 1990 Association of Canadian Map Libraries and Archives, Montreal;

June 12 is pre-conference seminar on microcomputers in map collections ($45.00)

6/13 The municipality in Quebec: concept, cartography, urban planning and regional planning (Christian Desmarais, Moderator)
Montreal, its history and architecture (Lorraine Dubreuil, Moderator)
6/14 Applied cartography, a tool for managers (Louise Emond, Moderator)
Micro-computer applications in Map Libraries
Visit to David M. Stewart Museum
6/15 Field trip: Canadian Centre for Geomatics; excursion in the Richelieu Valley
Conference registration of $115.00 includes banquet, museum visit, and transportation to the banquet. Further information: Pierre Lepine, Section des car-
tes, Bibliotheque nationale du Quebec, 125 rue Sherbrooke Ouest, Montreal, Quebec H2X 1X4, CAN.


June 22, 1990: Remote-Sensing Imagery Preconference, Newberry Library: ALA's Map and Geography Round Table (MAGERT) and the ALCTS/CCS Committee on Cataloging. Description and Access will cosponsor a preconference, "Remote-Sensing Imagery: Identification, Control and Utilization." This preconference will address the numerous problems of remote-sensing images, including satellite images and aerial photography: recognizing and identifying various types of images; approaches in acquiring the images; discussions and practice on creating bibliographic control within the guidelines of AACR2 revised and USMARC; storing and organizing the images for easiest accessibility; and determining ways best to utilize the images for reference and research. The preconference requires familiarity with the basics of USMARC. Speakers will be: Dr. Helen Jane Armstrong (University of Florida); Mary L. Larsgaard (University of California, Santa Barbara), Elizabeth Mangan (Library of Congress); Nancy Vick (University of Illinois at Urbana-Champaign). ADVANCE REGISTRATION, postmarked by MAY 26, 1990, will be required. The cost is $50 for ALA personal members and $65 for nonmembers. For complete registration information, contact Nancy Vick, MAGERT Preconference, Map and Geography Library, University Library, University of Illinois, 1408 W. Gregory, Urbana IL 61801.

Map and Geography Round Table meetings will occur June 23 through about June 27, and will include a session on electronic reference. For program information: Brent Allison, Map Library, Wilson Library, University of Minnesota, Minneapolis MN 55455. Conference hotel is the Talbott; make reservations through Brent Allison, Map Library, Wilson Library, University of Minnesota, Minneapolis MN 55455.

June 24-29, 1990 International Conference on Geoscience Information. Ottawa: five key themes are placing a value on information, information handling with digital and analog systems, database construction and management, managing collections and archives (conservation and preservation), and strategies for improving the flow of information. For further information - David Reade, Secretary-Treasurer, GeoInfo IV, Geological Survey of Canada, 601 Booth Street, Ottawa, Canada K1A 0E8

August 12-16, 1990 28th Annual URISA (Urban & Regional Information Systems Association) Conference, Edmonton, Alberta: forum for public officials, private sector professionals, and academicians who are active developers and users of Geographic Information Systems; also interested in innovations in such non-GIS areas as artificial intelligence, expert systems, and government-database marketing. URISA, 900 Second Street N.E. #304, Washington, D.C. 20002 (202/289-1685)

August 29-30, 1990 Presentation Slides in Transition - Optical to Digital. RIT/T&E Seminar Registration, 50 West Main Street, Rochester NY 14614.

PLEASE NOTE: The following two meetings of interest to map librarians are scheduled for about the same time. This is not a matter of choice on my part, but rather is due to the fact that Robert Marx - father of TIGER - could give a presentation at UCSB on September 14 but not on September 7, and there was no point in having two Census-data meetings at UCSB within a two-week time period; they have to be back to back. Please also note that United Airlines has excellent, non-stop flights from Santa Barbara to Denver.

September 13-14, 1990 1990 Census Data - Statistics and TIGER. The Census Bureau (Van Nuys office) will be represented by Larry Hugg, who will be speaking from 9:30am-12:30pm on 9/13, and will also be giving a demo in the afternoon. The afternoon will include Nancy Austin talking about the State Census Data Center and its services (1:30-2:30pm) and exhibits the rest of the afternoon by commercial vendors who have software to manipulate the TIGER files. On September 14, Dr. Waldo Tobler is planner for a Census meeting - Robert Marx (father of TIGER) will be a keynote speaker in the morning for the meeting, which is on revisions to TIGER. Planning for 9/13 is being done by UCSB Library staff; persons involved are Stella Bentley (AUL-Collection), Larry Carver (Map and Imagery Lab), and Mary L. Larsgaard (Map and Imagery Lab). For further information: M. Larsgaard, MIT, Library, 14F, Santa Barbara 93106 (805/961-4049).
<table>
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<th>Date</th>
<th>Event</th>
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<tr>
<td>October 23-24, 1990</td>
<td>Second Annual Conference, “Earth Observations and Global Change Decision Making: A National Partnership;” National Press Club, Washington D.C. Contact Dr. Robert H. Rogers, ERIM, Box 8618, Ann Arbor MI 48107-8618 (313/994-1200). This is co-sponsored by NASA, NOAA, and the Environmental Research Institute of Michigan (ERIM). The purpose of the conference is to build a national partnership to address earth observations and global change, communicate the Federal global change research strategy to a national and international audience, discuss issues not addressed by the Federal initiatives (including Mission to Planet Earth), and discuss how the U.S. national program fits into an evolving international environmental program. Most importantly, the conference is intended to facilitate dialogue between the various communities that will be involved in national decisions on global change.</td>
</tr>
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<td>November 7-10, 1990</td>
<td>CIS/LIS ’90 Annual Conference and Exposition, Anaheim CA. The exhibits should be worth seeing; for more information, GIS/LIS ’90, 5410 Grosvenor Lane, Bethesda MD 20814-2122; (301)493-0200.</td>
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<tr>
<td>March 20-23, 1991</td>
<td>WAML Spring meeting, University of California at Santa Barbara. Larry Carver, Mary Larsgaard, and Bill Hunt are presently planning a meeting dealing mainly with spatial data in digital form, with a possibility of a one-day pre-conference workshop on the topic. Let us hear from you about your special interests and needs in dealing with digital data. Map and Imagery Lab, Library, University of California, Santa Barbara CA 93106; (805)961-4049.</td>
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<tr>
<td>June 13, 1991</td>
<td>International Society of Curators of Early Maps, Uppsala. Topics: improving reference services; cataloging and other documentation of early maps; disaster preparedness; security and thefts; fakes, forgeries and authentication; cartobibliography. Ed Dahl, Cartographic &amp; Architectural Archives, National Archives of Canada, 395 Wellington, Ottawa, Ontario; or Barbara McCorkle, Map Collection, University Library, Yale University.</td>
</tr>
<tr>
<td>Fall, 1991</td>
<td>WAML, California State University, Chico; contact person, Joe Crotts.</td>
</tr>
<tr>
<td>September 23-October 1, 1991</td>
<td>15th International Cartographic Conference, Bournemouth; theme is “mapping the Nations,” in honor of the 200th anniversary of the British Ordnance Survey, with subthemes of modern cartographic technology, design and marketing, and the history of cartography. For further information - I.D. Kember, Organising Secretary for ICA, 16 Highlands, Taunton, Somerset, TA1 4HP England.</td>
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<tr>
<td>Spring, 1992</td>
<td>WAML, San Francisco State.</td>
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<td>Fall 1992</td>
<td>WAML Fall meeting, Hawaii. Riley Moffat says: Start saving your pocket change for WAML’s 25th anniversary meeting in Hawaii in the fall of 1992. Let me know your time preferences between labor Day and Thanksgiving. Right now I’m looking at our traditional day and a half of meeting split between BYU in Laie and Bishop Museum in Honolulu. I’d like to plan a full-day field trip to the Big Island to check out the volcanoes; right now I think we could do that for about $80 per person. Besides hearing about local mapping projects I’d like to see some reminiscences in honor of our silver anniversary, or reviews of the profession. Expect plenty of food, fun, and sun. (Division of Learning Resources, Brigham Young University, Box 1966, Laie HI 96762; 808/293-3850). Combine two biggies:</td>
</tr>
<tr>
<td>2. August 9-14, 1992</td>
<td>27th International Geographical Congress, Washington, D.C.: the biggest, the best - the prospectus alone is nearly 1/2&quot; 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.</td>
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</tbody>
</table>
New Mapping of Western North America

by

Joe Crotts
California State University, Chico

Contributors:

EJ Ed Jesses
LC Larry Cruse
ML Mary Larsgaard
LZ Linda Zellmer
Others The Author

ALBERTA

Shetsen, Irina. Quaternary Geology of Central Alberta and Quaternary Geology of Southern Alberta. 1989 and 1988, respectively. 1:500,000. Publications, Alberta Research Council, Box 8330, Station F, Edmonton, Alberta T6H 5X2. $10.00 ea. folded; $12.00 ea. unfolded. (LZ)

ARIZONA


BRITISH COLUMBIA


CALIFORNIA

California Division of Mines and Geology, 1416 9th St., Km. 1341, Sacramento, CA 95814. (EJ)

Regional Geophysical Map Series, 1:250,000 (Aeromagnetic):
  Sacramento Quad., Santa Rosa Quad., San Bernardino Quad., Weed Quad.

Regional Geophysical Map Series, 1:250,000 (Gravity-Bouguer):
  San Bernardino Quad., Sacramento Quad.


Raven Maps & Images. Yosemite and the Central Sierra. 1990. 1:62,500. 27 x 40 in. 34 N Central Av., Medford, OR 97501. 800/237/0796. $15.00 plain; $40.00 laminated.

|---|---|

**COLORADO**

Bureau of Land Management (U.S.). *Colorado BLM River Adventures.* 1989. ca. 1:2,500,000. 22 x 46 cm. Sudoc I53.2:C71/4. GPO.

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**Recreation Management Areas, Bureau of Land Management, Colorado.** 1990. 1:1,000,000.


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**Boulder City Mountain Bicycle Map.** 1989. 27 x 38 in. Front side highlights features for mountain biking; back side is detailed 3-D computer view of region. $8.50.

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**Colorado Front Range.** 1989. 31 x 15 in. 3-D. Central Rockies as seen from 90,000 ft. above Maxwell, NM, looking north. $15.95.

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**Rocky Mountain National Park.** 1989. 22 x 38 in. 3-D. Panoramic view of region looking from NE to SW as seen from 50,000 ft. above Fort Collins. $9.95.

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**View to the West.** 1989. 7 x 36 in. 3-D. Horizon view of Rockies as seen from above Limon, CO. $11.95. (LZ)

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**GREATPLAINS**


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**IDAHO**


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**MONTANA**


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Map of Dissolved Solids in the Kootenai Formation and Equivalent Rocks.  
1989. 1:1,000,000. MBMG 221. $5.00. (LZ U.S. Forest Service.

U.S. Forest Service. Deerlodge National Forest (Forest Visitor/Travel Map).  

Lolo National Forest (Forest Visitors Map).  

OREGON


Raven Maps & Images. Crater Lake and Mount Mazama.  
1989. 1:62,500. 79 x 55 cm. $15.00 plain; $40.00 laminated.


WASHINGTON


WESTERN STATES

Schmidt, Leonard. Map Showing the Distribution of Oil Shales with Associated Mineral Resources and Metal Anomalies in the Western United States and Alaska.  
1989. 1:2,500,000. 2 sheets. b&w. MF 2091. USGS. Box 25286, Federal Center, Denver, CO 80225. $3.00. (EJ)

U.S. Forest Service. San Juan National Forest.  

WYOMING


Please see Notes to Contributors to New Mapping of Western North America

Page 199
The Earth Revealed: Aspects of Geologic Mapping, Catalog of the Exhibition.

This catalog was prepared to accompany an exhibition mounted in the Geography and Map Division Gallery in the James Madison Memorial Building. The exhibition, the second by the Division devoted to the subject of geologic maps, coincided with the 28th International Geological Congress in Washington, D.C., July 9-19, 1989. The first exhibition on geologic mapping opened on July 28, 1933 in conjunction with the 16th International Geological Congress which was also held in Washington, D.C.

The catalog is arranged like the exhibition it describes. The first section, "Theories of the Earth and Whole-Earth Theories," describes various cosmogonies from the Renaissance to the present: scriptural geology to plate tectonics. "Emergence of the Modern Geologic Map," section two, illustrates the emergence of a visual language for geology during the 18th and 19th centuries. Finally, section three explains the development of geologic mapping in the United States from the William McClure's 1809 geologic map of the eastern United States to modern-day geologic explorations of the sea floor in the Exclusive Economic Zone.

Maps mounted in the exhibition and described in the catalog came not only from the collections of the Library of Congress, but were borrowed from the U.S. Geological Survey, National Archives, and the Academy of Natural Sciences of Philadelphia Library as well.

The catalog carries only one illustration (on the cover) but the descriptive text is superb. Geosciences libraries and map libraries with geologic maps should acquire a copy of this catalog. Inquire: Geography and Map Division, The Library of Congress, Washington, D.C. 20540.

***


This map booklet illustrates the voting patterns and results of every U.S. Presidential election from 1796 to 1988 (George Washington ran unopposed in 1788 and 1792). Maps are arranged from the most recent election back to 1796. The elections of 1972-1988 are shown in detail by county while earlier election results are depicted on smaller maps at the state level.

The booklet format should appeal to educators for it is well suited for classroom use. Map librarians will be familiar with the maps contained in this booklet as a map sheet from the National Atlas titled, "Presidential Elections — 1789-1954" and the supplemental map for the 1956 election, "Presidential Election of 1988," both $3.10, have previously been released. This booklet puts all these maps together. The design is pleasing and the text appropriate to the task. Available from USGS Map Sales, Box 25286, Denver, CO 80225.

***

Volume 20 of the GIS Proceedings series contains articles from the symposium, technical session, poster session, and a special workshop from the organization’s twenty-fourth annual meeting held in St. Louis, Missouri, on November 8th through the 11th, 1989. The papers reflect the emphasis of the conference which was “Frontiers in Geoscience Information.” The symposium addressed state-of-the-art technology for information delivery and anticipated developments in information management, retrieval, and dissemination over the coming decade. The poster session investigated space and facility planning for geoscience libraries. Five workshop papers discuss the issue of field trips and field guidebooks.

This is an excellent collection of papers with relevance to all map libraries. Available from the Publications Manager, Geoscience Information Society, c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302.

***

Professional Papers, Correspondence, etc., of Raleigh Ashlin (Peter) Skelton (1906-1970).
Arranged and described by Alberta Auringer Wood. St. John's, Newfoundland: Memorial University of Newfoundland, 1989. 139 pages. Paperbound. 28 x 22 cm. ISBN 0-88901-190-7 $10.00 US or Cdn.

It would probably be best to use Alberta Wood’s own words to describe this archival catalog. “The papers of Raleigh Ashlin (Peter) Skelton are located in the Archives of the Centre for Newfoundland Studies at the Memorial University Library. They were an unexpected addition to the purchased book collection and were kept unprocessed, in a storage room until 1981, when they were organized and filed in archival storage boxes and the calendar was begun. In 1984, a more complete and more detailed listing was prepared, based on the one completed in June 1982, and a preliminary index was constructed. In 1986-87, during my sabbatical, further work was done on the index and both items were edited. The collection of papers concentrates on the history of cartography and the history of discoveries, which were two of Mr. Skelton’s major interests. It includes drafts of articles, reports and papers, as well as final versions in some cases. There is a considerable amount of correspondence with noted cartographers, historians, archivists, and librarians. It is my hope that his list and index will assist others to make use of the materials in Mr. Skelton’s papers that are at Memorial.” — From the Introduction.

Those libraries that collect materials on the history of cartography and the history of discoveries should acquire this catalog describing the Skelton papers. It is available from the Map Library, Queen Elizabeth II Library, Memorial University of Newfoundland, St. John’s, Newfoundland, CANADA A1B 3Y1. Checks should be made payable to Memorial University of Newfoundland.

Western Association of Map Libraries
Information Bulletin Book Reviews: Guidelines for Reviewers
by Peter Stark, Atlas & Book Review Editor

These guidelines have been created to aid on questions of format and general policies for reviews.

FORMAT

The review should be presented in three sections: the bibliographic citation; the review; and identification of the reviewer. An 8 1/2" x 11" bond original and one copy is required.

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


The review should be double spaced and follow the usual principles of paragraphing. For comparison purposes with other works, please include author’s name, title, publisher and date of publication within the review itself rather than utilizing footnotes.

The review should be followed by the reviewer’s name (as the reviewer wishes it to be cited), and place of employment, including city and state.
GENERAL POLICIES

The opinions and judgments appearing in WAML reviews are those of the author and do not reflect official sanction of WAML.

The Review Editor retains the right to make alterations in reviews submitted. If minor alterations do not change the reviewer's intent, they will be made without further communication to the reviewer. If the Review Editor believes that extensive revision is needed, or if changes would be opposed to the intent of the reviewer, those changes will be made only with knowledge and agreement of the reviewer.

Although to a certain extent the contents of the work will be described, avoid making the review more than a list of the contents. Instead, emphasize analysis, evaluation and comparative criticism. Answers to questions such as, what is the purpose of the work? and has this purpose been realized? are important to readers, and should be included in the review. The length of the review should be determined by the importance of the work.

Thank you for your attention to these guidelines. Any suggestions as to other reviewers who in your opinion would be interested and qualified to review for WAML would be most welcome.

NEW MAPPING OF WESTERN NORTH AMERICA: NOTE TO CONTRIBUTORS
by Joe Crofts, New Mapping Editor

As a potential contributor to this column, what kinds of map references should be submitted: any kind, from any source. There is one exception, the U.S. Geological Survey. They do an excellent job of listing their products in "New Publications..." It's free; all of you receive it (or can). Most libraries, including CSU-Chico, do not catalog most of the USGS "lettered series" maps, so there is little in the way of bibliographic enhancement this column could offer for those publications. Non-serial USGS maps and a very selected few lettered series maps are noted.

Submit your contributions on any form whatsoever that suits your fancy and time constraints. Of course, the more complete the better, but the main objective should be to send what you come across. Mark relevant entries in published lists to bring them to my attention. If you harbor doubt about a reference, send it anyway. Let me be the judge, jury, and occasional executioner. The bare minimum requirement for including references is a title and publisher, including at least a city location for nongovernmental publications. To me there's nothing worse than to find a tantalizing reference in a bibliography with a publisher that's listed no where and without a place of publication, at least a city. That's a wild goose chase I've given up and I won't stick you with either. If such brief references do represent products of proven value, then eventually, and usually in short time, the references will turn up in more complete form elsewhere or the product itself will surface somewhere and an alert contributor will note it for this column.

Contributors will be identified. No more than one contributor will be recognized for each reference. Whoever's name accompanies the copy in hand used to enter the reference into the database will be indicated by initials at the end of the reference. Usually this represents the contributor who initially submitted that reference, or occasionally, when I've been procrastinating, whomever's name accompanies the copy that rises to the surface of an overstuffed drawer. So, if you don't see your initials following a reference you know you submitted; despair not. Rest assuredly that your thoughts and efforts have been recognized and are greatly appreciated. And, bear in mind, that it quite obviously was an excellent reference you had submitted because your esteemed colleagues thought likewise and submitted it also.

From the Executive Editor

Mary L. Larsgaard

on following page
My special thanks to those of you who sent me diskettes of information; before I go further, let me hasten to say that if your library’s budget doesn’t extend to a pc, please continue to send me information in hardcopy - I fully understand the problem! If your library does have a pc, PLEASE send me a diskette - IBM, either WORD, WordPerfect, or ASCII file is wonderful.

This issue and next issue, we’ll be welcoming Linda Zellmer as Wyoming Editor, Ron Whistance-Smith as Alberta Editor, and Rosanna Miller as cARTography Editor. I hope to have in spring of 1991 a report from Larry Cruse on a map fiche reader. Please cast your eyes over the masthead, and if any of the vacant spots look like areas of interest to you, do let me know. While I’m in a blandering mood - may I talk you into a few more papers? these came up during a telephone conversation between Carlos Hagen and myself: - a statistical (now, don’t fall asleep) study of map publication - what IS the actual percentage of government maps of the total of maps published?

- bibliography of articles on commercial map publishers, arranged by publisher; all this would take is going through the commercial-publisher section of Bibliographica Cartographica (in both of its names), then arranging the articles in alphabetical order by publisher and checking that list of publishers against LCG&M’s Bibliography of Cartography; I don’t even care (much - stiff upper lip here) if it’s published elsewhere than in the IB - this would be very useful;

- an index by area to the Smithsonian Institution’s Atoll research bulletin; this very useful publication has no index that Carlos knows of, and there are now too many issues to browse through quickly; this would seem to me to be an excellent publication for the SLAG&MDB, or perhaps most logically by SI;

- an article on cartographic-materials collection development would be most welcome; standard articles tend to ignore anything that isn’t in book format, leaving us to forge ahead as best we can; this would be an excellent article to appear in Meridian;

- Spreadsheets - on map storage equipment, map library annual reports, etc.;

- practicalities of displays, big and little;

- recommended maps and imagery for small & medium-sized libraries;

- commercial vendors - which are best to work with.

If dealing with commercial publishers interests you - how about being IB Editor for a series of self-profiles on commercial publishers (preferably of the western U.S., but we in map libraries have a healthy interest in commercial publishers from all over)? See profiles on Cygnus Graphics and ERIM in this issue, and let me know if you’re interested in this editorship. Your IB could also very much use an Advertising Editor - I don’t have the time to take care of it, and the WAML coffers can use the money - it’s also an excellent way to keep us all informed of new items of interest published.

If you’re a fan of planning ahead, and if you enjoy editing - neither Peter Stark nor I intend to continue on in our current IB positions forever; my fifth year will end with the June 1994 issue (I’m hoping I can persuade Peter to continue his superb work at least until then). So please keep that in mind when you think about what you’d like to be doing in a few years. Also for planning ahead - on 8/4/90, the UC Santa Barbara telephone number prefix will change from 961 to 893; if you think it even remotely likely that you will be calling Larry Carver or me after that date, you might want to note this at the appropriate place in your calendar.

Somewhere along the line, Larry Cruse will (I hope) be giving us a report on a Borderlands Project - that is, mapping of the U.S.-Mexican border.

Had a WONDERFUL time at the spring WAML conference, and have a few comments that don’t appear in the minutes:

- OCLC’s EPIC allows searches on PROJECTION! (255 $b); no longer will map librarians blanche at the thought of the tedium involved in finding a map with a specific projection for the ardent user

- in the entire WAML Exec. Bd., there was only one tie (brown); Peter wore it on Thursday, Herb on Friday; this is good news as far as I’m concerned, and on two fronts - one likes to see a spirit of sharing, and I’ve always thought that ties probably cut off the flow of blood to the brain and we need to have an Exec Bd that can think clearly

Ending thoughts: - from American libraries 21:153 (article by David Drake called, “When your boss isn’t a librarian” - and face it, for almost NONE of us is the top person in the organization a librarian): “If you don’t promote, you’re doomed to defend.”

- from the 1964 brochure, Britain makes maps:

“Cartography is a language - the precise and versatile language of geography. It is concerned with converting all kinds of facts into map or chart form.”

- from Beryl Markham’s West with the Night (quoted in the latest vendor catalog of Old Maps of the West, BOR 1451, Bernalillo NM 87004): “How is your map. It is only paper and ink, but if you think a little, if you pause a moment, you will see that these two things have seldom joined to make a document so modest and yet so full with histories of hope or sagas of conquest.”
Western Association of Map Libraries

Occasional Papers

1973 Catalogue of Sanborn atlases at California State University, Northridge / by Gary W. Rees and Mary Hoeber. O P No. 1. LC # 73-5773 ISBN -01-9 $4.00


1977 Union list of Sanborn fire insurance maps held by institutions in the United States and Canada, vol. 2, Montana to Wyoming; Canada and Mexico / by William S. Peterson-Hunt and Evelyn L. Woodruft; with a supplement and corrigenda to volume 1, by R. Philip Hoehn. O P # 3 LC # 76-2129 Rev.; ISBN 03-5 $6.00

Occasional Papers 2 and 3 when ordered together: ISBN 04-3 $10.00

1978 Index to early twentieth-century city plans appearing in guidebooks: Baedeker, Muihead-Blue Guides, Murray, I.G.R., etc., plus selected other works to provide worldwide coverage of over 2,000 plans to over 3,200 communities, found in 74 guidebooks / by Harold M. Ottenes. OP # 4 LC # 78-15094 ISBN 05-1 $6.00

1978 The maps of Fiji: a selective and annotated cartobibliography / by Mason S. Green. OP # 5 LC # 78-24066 ISBN 06-X $4.00

1981 Microcartography: applications for archives and libraries / edited by Larry Cruse, with the assistance of Sylvia B. Warren. O P # 6 LC # 81-19718 ISBN 07-8 $20.00

1981 Printed maps of Utah to 1900; an annotated cartobibliography / by Riley Moore Mottat. O P # 8 LC # 81-659 ISBN 09-4


1986 Map index to topographic quadrangles of the United States, 1887-1940 / by Riley Moore Mottat. O P # 10 LC # 84-21984 ISBN 12-4 $32.50

1990 Cartobibliography of Separately Published U.S. Geological Survey Special Maps and River Surveys, by Peter L. Stark. OP # 12 LC # 89-14684 0-939112-15-9 (hard cover) $40.00

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