

Archives and Museum Informatics

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CHANGES IN THE OFFICE

Archives & Museum Informatics has undergone several changes in the past few weeks.

- On October 1 we moved - please make a note of our new address at 5501 Walnut St., Suite 203, Pittsburgh PA 15232-23121, and of our new phone numbers: 412-683-9775 and (fax) 412-683-7366.
- Lynn Cox, who has served as Managing Editor of Archives and Museum Informatics for the past two years accepted the position of Executive Director of the Museum Computer Network and will leave Archives & Museum Informatics in November to run that organization. MCN will move to Pittsburgh and Lynn will edit its quarterly journal, SPECTRA, so I look forward to continuing our close professional relations.
- George Haynes, previously Director of Education Services at Harnarville Rehabilitation Center in Pittsburgh, and author of *Opening Minds: The Evolution of Videodisc and Interactive Learning* (Dubuque IO, Kendall/Hunt, 1989), has joined the staff as the Manager of the International Conference on Hypermedia and Interactivity in Museums which will be held in October 1991.

COMMUNICATION IN THE 90's

In the past several months it has become increasingly clear to me that we are less than five years away from a significant shift in the technologies of communication and that this will have a tremendous impact on archives and museums. The shift is not the consequence of a technological "revolution" - all the pieces have been in place for some time - but I believe it will nevertheless have revolutionary social consequences.

In the simplest terms, we are at the edge of realizing the wrist phone and data tablet. The wrist phone depends on the implementation of "personal phone numbers" for each phone subscriber that will belong to the individual rather than to a phone implement. This in turn requires the completion of a satellite based transmission system in (at least) the developed world. The data tablet involves the commercialization of a book sized flat panel display terminal with a built in CD or optical drive. This device will

store communications received by e-mail, fax or telephone (voice mail) and hold the contents of our office files and pleasure reading for several weeks. It will probably also capture and store TV transmissions and radio programs we want to time shift.

My point in mentioning these developments, the first commercial introductions of which in this country will take place in 1991, is to alert us to the dramatic opportunities they present for the individuation of information resources. Individuals will increasingly carry their knowledge and the means to access new information around with them - which for archivists is a prospect greeted with some foreboding. They will also expect increasingly to be able to access information in any format and from any place, which is an exciting vision for information workers in archives and museums. We will be challenged to make information under our control accessible to an extent never before imagined; at the same time we will be users of information, literally at our fingertips.

David Bearman, Editor

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Can Real Archivists Use MARC?

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The following essay takes its cue from Frank Burke's "Real Archivists don't use MARC," which appeared in the Spring, 1989, issue of *Archives and Museum Informatics*. We do not wish to dispute the central contention of his title, and in fact somewhat agree with it; what we would like to discuss is Dr. Burke's list of desirable features for a MARC AMC format system, be it run by archivists, or by catalogers who can abide archivists well enough to assist them in putting their data in this system.

As luck has it, something close to that system exists right now, and we have had extensive experience with it. It is the program of Western Library Network, or WLN. The designers of this program seem to have been thinking along the same lines as Dr. Burke when they put the program together back in the mid 1970s. However, the main features of the system are not widely known throughout the circles of catalogers in this country, much less archivists. In fact, other than the couple dozen libraries with archival programs and membership in WLN, very few archivists have much an idea of how the WLN system for MARC AMC works, in spite of the fact that the format was implemented under a grant-funded project that had all the publicity attendant to a major grant. This article is a report on the WLN implementation of MARC AMC, as well an effort to continue the discussion begun by Dr. Burke.

Let's take a look at some of the features of the MARC AMC implementation in WLN.

One of the first suggestions in Dr. Burke's essay is for a more natural system of identifying the parts of our data by the use of mnemonics or abbreviations in replacement of the numeric MARC tags. (Internally the computer would use the numeric tags, of course, in order to adhere to the international MARC standard). Since the WLN program does implement mnemonics, we can report on our experience with a mnemonic system for MARC AMC.

When a person first encounters a WLN installation, the first feature they will notice is the substitution of mnemonic codes in the displays where the MARC tag numbers typically appear. This approach does have some advantages. The mnemonic tags are indeed easier to use than numbers, or at least those of us who have worked with both approaches are left with that feeling. The reason for ease of use is simply that there is less pure memorization of the tagging system needed. Moreover, the mnemonics, in most cases, are meaningful abbreviations. Take for example the familiar TIL, the mnemonic for "title." (Never mind that this mnemonic is usually confused by the in-

dicator bytes to read TILN0.) Or try on NOA for "Note-Abstract." (It too usually has an indicator byte.) In fact, most of the Notes have mnemonics that begin with NO. However since the complete MARC format now includes over 50 types of Notes, the possibilities of the NO prefix were exhausted when the 27th type of Note emerged. Of course, that opened the way to some superior mnemonics as in the case of NBH -- Note, Biographical or Historical.

A second useful feature of the WLN system is Error Messages. These too are mnemonics! While the system has a couple dozen error messages built in, only a few seem to appear frequently. The most common one is #SF, which translates to "number of subfields," meaning that the input operator has tagged for, say, three subfields but has entered only two. The error messages appear along the left side of the screen, on the same line as the offending field. In addition, the field is displayed in bright red on a color terminal or in "highlight" on a monochrome terminal. Other error messages include IND, meaning something wrong in an indicator byte, and TAG, meaning non-valid or non-existent field (this is usually a typographic error in the tag, such as NHB instead of NBH, for Note-Biographical or Historical.) Use of two MEPS, or Main Entries, also produces another error message.

Perhaps the most powerful of the features of the program is linked authorities. Linked authorities are basically a closer integration of the Authority system into the overall program. Linked authority terms are not just kept off in a separate file that may be consulted for correct spellings and so forth, but have several other roles as well.

One use of the authority files is to serve as indexes; the user searches these for a personal or corporate name, a subject term, or a place name. Upon receiving a "hit count" message, the user takes a second step that displays a full bibliographic record, or an authority record. A second feature of linked authorities is that they grow in a semi-automatic manner. When any new authority-controlled data (main, subject and added entries) is entered into the system, it is copied out of the incoming record and entered in the authority files, thereby creating a new authority record. The most interesting feature of linked authorities is the updating capabilities. This feature probably will not be used directly by Manuscripts and Archives catalogers, but it is helpful to understand how it works. What happens is that any change made in an authority terms, such as correcting a spelling, a change in the LCSH terms, etc., is not just confined to the authority file, but ripples through the entire database, with the new term appearing in every record where the replacement is relevant.

Another use of the linked authority file is the "Insert" process. This command activates computer routines that pull a term from an authority file and insert it into a record that is under construction. The MARC tagging accompanies the inserted term. Since the cataloger may "flip" back and forth between searching the authority files and constructing the new record, the whole process is quite easy. For instance, if one suspects that a "main entry" is in

the authority files, the bother of typing it into the record is avoided by use of Insert.

The other convenient feature of Insert is with subject entries taken from the LCSH (Library of Congress Subject Headings). These are found in the authority files, not only in LCSH form but also with the various subdivisions. Often the formulation one wishes to employ may have subdivisions that differ from what is needed in the new record; for example, a place name subdivision will differ. In these cases, the term is inserted and then modified with normal screen editing processes, saving much time and agonizing over correct tagging.

The interplay of the authority file with the bibliographic record is further developed with the CHECK command. This useful command compares the contents of Main, Added, and Subject Entry fields with the various authority files. If there is a match, nothing happens. However, if the terms do not match, the system gives one of several different messages. These are quickly called to one's attention since the relevant parts of the record are displayed in red (or half-intensity, on a monochrome terminal). The lines in red are prefixed by messages that are similar to the error messages discussed above. A common message is NEW, which simply means that the term, usually the name of a person, is not to be found in the authority files. One then makes a special effort to see that the data has been formulated according to the AACR2 rules for that entry. Another message is UNA --- unauthorized. The meaning of this is clear enough; don't use this term. Often the system will respond to a UNA by automatically "inserting" the authorized form; the user then simply deletes the unauthorized version from the record. A rather common message is aAU -- authorized. This lies somewhere between NEW and UNA. Usually it means that the main part of the entry (the "a" subfield) is matched, but there is something new in the subdivisions. In most cases, this message means the data is within the rules, but a second look might be in order. The CHECK command can be used to eliminate a fair amount of searching in the authority files. But its real function is to assure that a clean record is created before it is put into the shared database, or "verified."

The last noteworthy feature of the system is the Holdings record.

Holdings have been a confusing issue for some in the archives world. "Holdings," of course, is simply data that tells the name, or code name, of the institution that owns, or "holds" the material described in the MARC record. If the holdings data were left out, most users would be left guessing who the owner was, and other practices -- such as the important process of downloading -- would not be possible at all. Entry of holdings data is simple. A field identified with the mnemonic HNW appears on the input screen, and the cataloger simply types in a call number, or its equivalent. The computer then places the data from HNW into a holding record along with the NUC code of the inputting institution. When the data is later called-up on the screen, one sees the NUC code and call number,

and if the command "WHO,[nuc code]" is issued the full name of the institution is displayed.

Can "real archivists" use MARC?

We conclude that because MARC is such a specialized tool -- something for making library catalogs -- those archivists who know little about catalogs need all the help they can get when using a MARC AMC system. As many archival institutions do not have the services of professional catalogers available on a regular basis, the needed help has to come from other sources. One such source can be the computer system being used, because it can be constructed to deliver some of the help that might otherwise come from an experienced cataloger.

Today the incorporation of a MARC format catalog within the descriptive system of an archival institution is a standard objective of many archival institutions. For some it is unavoidable. Nonetheless, there are many things besides cataloging to do in these institutions, and there are almost no catalogers at work in any of them. We conclude, like Dr. Burke, that easier-to-use systems are needed in these circumstances, and we point to our experience with WLN as an example of one possible direction. □

RISK MANAGEMENT VIA SIMULATION, PROTOTYPING AND PERFORMANCE ANALYSIS IN SYSTEM ACQUISITION

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The potential gains in productivity derived from installing an image database, a network, or a new computer system are appealing to everyone. Everyone can imagine fabulous shortcuts to everyday tasks, simplified by automation. Many of these shortcuts are within the reach of today's technology. The only questions which arise are how it will work, how to get there, how much will it cost, and how long it will take. Buyers typically make their decisions based on the views of friends, vendor offers, and/or advice purchased from independent consultants. Making informed decisions from the start is one of the cheapest of all system investments, though it is the most critical for creating successful systems. Nevertheless, initial system decisions are rarely considered in a rigorous fashion. In this article we provide a brief introduction to several techniques for limiting long-term risk in the system acquisition process, particularly in the acquisition of very large systems. In ten years of building integrated systems for end-users and manufacturers, we have found these techniques to be the most cost-effective and successful.

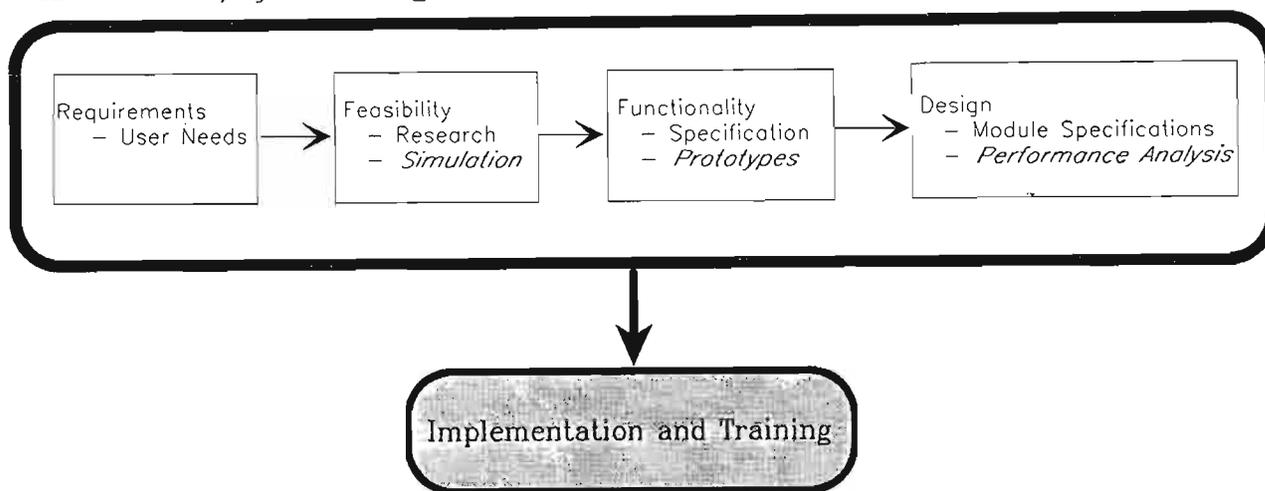


FIGURE 1

A user's needs for computer systems are similar to people's needs for housing. It is good to know whether a person wants a building, an apartment, a new kitchen or an extra bathroom. The first several steps in the process of implementing a computer system are aptly described as system architecture: just as in buildings, system architecture is the conceptualization of a reliable design to meet users' needs. However, users' needs for computer systems are far more fluid and dynamic than building requirements, and computers must adapt to those needs, whereas buildings remain largely the same. In addition, whereas building architects usually deal with components they are familiar with, and which exhibit well-defined tolerance and failure characteristics, computer architects often deal with components that are new technologies, about which little may be known in the circumstance that is important to the client. Consequently, system design is both more difficult and more critical to success. Unfortunately, because the computer industry is still immature and highly dynamic, many unqualified people pass themselves off as system architects. Legally binding standards for the architecture of computer systems do not exist as they do for buildings designed by licensed architects.

Acquiring a system involves each of the steps shown in Figure 1. The effort required for each, and the degree to which each contributes to the success of a project depends on the type of system being developed. The major capital expenditures, and consequent commitment to particular hardware and software occur in the Implementation Phase. Likewise, the major organizational time expenditure comes after implementation, during training and initial use. Many users dive directly into the Implementation Phase with only a rudimentary consideration of the system design phases, despite its being the least costly of all the phases. In general, each phase costs at least twice the ones which precede it. Thus, relatively small investments in the Architecture/System Design Phase of a project can greatly leverage a client's protection against the risk of failed investment in the more expensive Implementation Phase of a project. The testing techniques described below are one such investment.

The article is intended as a management briefing on the uses of Simulation, Prototyping and Performance Analysis in limiting the risks of system deployment failure. Almost by definition, users do not have the same level of competence as designers, and for this article, we address the novice user. The system designer fulfills a complicated role: he must first understand the needs of the users. Next, he must understand and explain to the users what is feasible -- and practically everything is, in time and at a price. Next, and this is his most creative role, he must conceptualize a functional system which meets the users' direct requirements and accommodates growth in use and function, future changes (e.g., in the technologies of imaging, high resolution monitors, multimedia and object-oriented filing) and cost constraints. Finally, he must design a system and a plan for realizing it which insures it will meet the users' requirements. System architecture is clearly a collaborative and iterative activity involving the users, their goals and needs, and the architect's expertise and creativity.

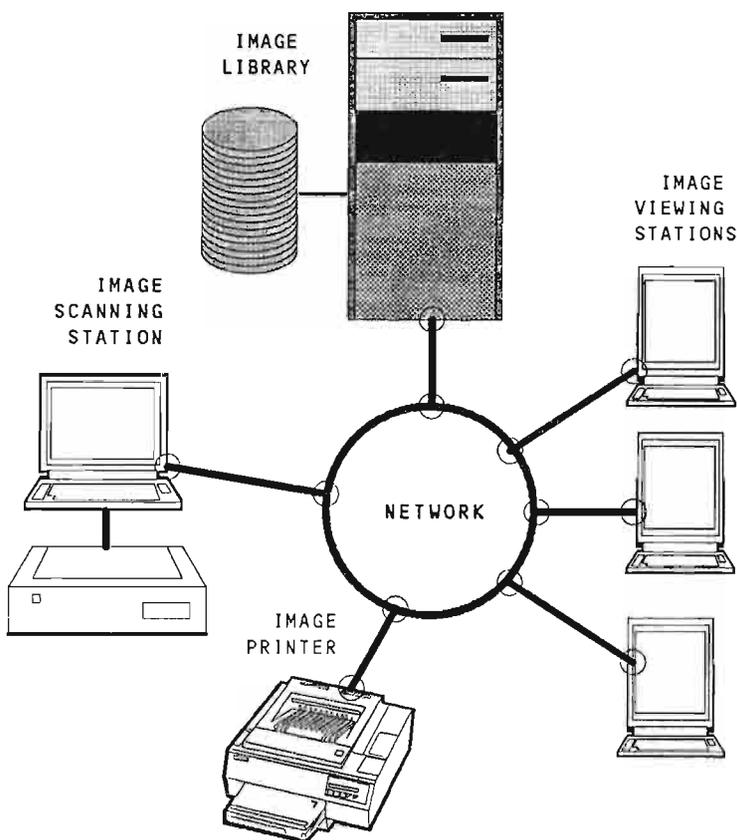
First, we will describe our illustrative application. Next, we will define and discuss each of the architecture steps in the process, navigating the chart with our illustrative application. Finally, we will comment on the costs and benefits of this process.

Our illustrative application will be drawn from a collection containing 4,000,000 items -- unique, paper-based maps of various sizes, from standard 8 1/2" x 11" page-size, to 36" x 48". The collection occupies 90,000 sq.ft. of floor space, and is increasing at the rate of 100,000 items per year. At present, the system is entirely manual: card indexing, storage and cataloging occupy 35 people. The curator strongly believes that a system capturing each map digitally, indexing it, and having the ability to retrieve and zoom in on each map on the monitor screens of several workstations would greatly enhance the collection: as a tool for research, to preserve the older maps, to save space for the future and to communicate with other map collections. The curator may have performed or commissioned time and motion studies of the functions that are to be automated. For example, the curator of the map collection may know that with the present manual system a scholar

must on average spend up to 20 minutes searching the catalog, putting in his request and obtaining the map for inspection. This number could be verified easily and at a low cost by a few simple tests of the kind industrial engineers make in factories with a watch and a clipboard.

Requirements. User needs such as those described above are always the starting point for an automation process. The users in our example are both the curator (also the client), his staff and the scholars.

The first act of an architect, in collaboration with the user, is to define precisely the user requirements. In our illustration, the architect is concerned with questions such as: 1) How many documents are there (4 million)?, 2) How are the documents used by the curator, scholars, and staff?, 3) How often are they used?, 4) How long are they used?, 5) How quickly are they needed?, 6) Where is access required, at the desktop or centrally?, 7) How will the system grow in the future? How much value the system provides in what time frame is another key issue. The architect must also prioritize the user's often competing goals. In our example, these goals include reducing access times to collection items by scholars and streamlining inventory and recordkeeping by the curator and his staff.



There are no real tests which can help the process at this stage. The architect presents answers to these questions in a report, as a detailed analysis of the users' requirements. This report also contains a preliminary graphical layout (Figure 2) of the first conceptual system, based on the architect's experience and preliminary understanding of the system. In our example, the system may comprise

the following generic components and their preliminary specifications: display stations, scanners, database servers, and file servers. This report also contains a timeline and budget for the next phases, Feasibility and Functionality, where testing expectations will begin to play a role.

At this stage, the client might have spent up to \$20,000 for the architecture in our example. He is not committed to any hardware, and the report can be used to solicit bids for hardware from competing vendors.

Feasibility. Having established a reasonable understanding of the user needs, the architect next assesses the feasibility of meeting the requirements at a reasonable cost. The architect's experience supplemented by research and system simulation may all play a role in this assessment, particularly when new technology is being applied to new problems.

In our example, a research report would explain the raster and vector scanning techniques used to digitize maps, the corresponding imaging systems, and the requirements to capture, store, index and retrieve maps from the collection. It may be drawn from general knowledge of the architect, or it may involve research into appropriate technology. It will usually involve some estimate of performance and system throughput, based on vendor-published specifications or other users' experiences. However, research alone may not determine feasibility, because every situation is unique, and public information rarely describes a user's situation exactly.

One way to insure the successful completion of a system and to control its final cost, is to simulate it at an early stage. Simulation quickly grounds the expectations of both the architect and client in the reality of a test. Simulation can take many forms: it can be a simplified software model, a minimalistic assemblage of real hardware elements mimicking the initial design concepts, or a combination of both. Simulation is easily understood by all users who fly in airplanes and take comfort in the knowledge that their pilots are trained on flight simulators. The main goal of simulation is to demonstrate the concept with as little damage as possible. In our example, the damage minimized is expenditures on inappropriate hardware and software.

The engineering of a simulation also depends on the users' priorities and the availability of special facilities where simulation can be implemented. For the map collection, the simulator might be a software-hardware model with dummy data sets which can be manipulated to study a system's performance under representative but down-scaled loads. In this manner, the likely times associated with scanning, indexing, storage in a database, retrieval and display on screen can be assessed for differing hardware and software technologies. Variables might include the density of information for typical maps, the handling times and the density of information output.

A simulation may cost as much as the requirements phase itself, but at this stage the client (curator) has still not expended a cent on, or made a commitment to, any specific hardware or software package, which will ultimately cost much more. A good simulation validates the projected capital cost of the final system.

Functionality. In the functional phase of a project, users see what the systems will look like. Final specifications and prototyping are important aspects of this phase.

A prototype is an assemblage of hardware and software components which have the look and feel of the final system but not its total capacity or functionality. Inputs to the prototype are real data in real time but in limited quantities. The main purpose of the prototype is to establish how the user wants to see the system work. Depending on the availability of a special testing lab, a prototype may cost up to ten times more than a simulation if components have to be acquired and installed. If the testing lab is well equipped, some components may be borrowed from vendors and assembled for testing: in our example these would include the scanner/s, optical disc unit/s and servers, the other components including the display station and network being already a part of the lab. At this stage, the users come in the lab to try out the system where tests in real time can be made under controlled conditions to analyze the performance as well as the functionality of the prototype.

At the completion of the functional specification and prototype, the client in our illustration may have expended \$20,000 to \$40,000 (not including architecture and simulation) but he is not locked in to any final system. He still has ample flexibility to consult other vendors or to start anew, and the Requirements and Feasibility Phases have produced valuable studies of what is required. It is easier to discover what a worthwhile system will cost now, rather than at the end.

Design. The final system must be designed and specified. Issues facing the designer and the client now involve final hardware selection, existing and purchased (off-the-shelf) software applications, customization and integration of all the parts of the system. For a truly large system (in excess of \$1,000,000), the designer may call for performance analysis of the components.

A schedule of performance tests should be agreed upon and costed out in advance. Performance tests are highly specialized and the client is well-advised to rely on an independent test facility where, depending on their complexity, tests may be verified by independent auditors. Depending on the application and its rigor (big bank systems for instance, have rigorous time performance requirements because "time is money"), specifications may be taken from industry associations such as SPEC (Standard Performance Evaluation Cooperative). While this adds layers of cost to the final hardware delivered, it also provides a significant reduction in the risks of accepting a final system. In effect, the lab performance analysis postpones an irre-

versible commitment to the final system and provides final opportunities for testing and for interaction.

For the illustration given, the total finally installed system would cost between \$500,000 and \$1,000,000, including architecture, simulation, prototyping, performance analysis and implementation. An alternate path going directly from preliminary architecture to final equipment acceptance might save between 10% to 20% of the total cost. However, much like houses and airplanes, computer systems can be expensive to substitute for one another. An unfinished expensive system is even more costly than a finished but expensive one. As we pointed out earlier, computer systems must change to meet new requirements in ways that buildings simply cannot. Consequently, systems that double or triple anticipated costs, while still not meeting their original requirements, are not uncommon. The only means for addressing these potential cost overruns is a rigorous architecture process. Is the cost of architecture worth the risk of lower performance and greater cost that the client may have to live with for the life of the system?



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Authorship by the editor, David Bearman, whose can be presumed for all items not otherwise attributed. Submissions of articles, letters to the editor or brief notes are welcomed. Copy is preferred double-spaced. Longer articles will be requested in machine-readable form if accepted for publication. Deadlines for submissions are the 15th of March, June, September and December.

Subscriptions to **Archives and Museum Informatics** are offered on a calendar year basis only. Subscription fees are \$80.00 per year for institutions; \$40 per year for individuals. Individuals must pay in advance, by personal check, and have copies delivered to their home addresses. An addition \$5. fee is charged for billed orders. Orders mailed to addresses outside the United States are charged a \$5. mailing fee. All payments must be in U.S. currency.

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- #6 Archives and Authority Control \$20
- #7 Appraisal of Online Information Systems \$20.
- #8 Functional Requirements for Exhibit Mgmt. \$20.
- #9 Archival Methods \$20
- #10 Data Models and Data Dictionaries \$35
- #11 Functional Requirements for Membership.. \$35
- #12 1990 Director of Software for Archives & Mus. \$45
- #13 Archival Mgmt. of Electronic Records \$25

CONFERENCE REPORTS

MUSEUM DATA STANDARDS MEETING

The ICOM-CIDOC Working Group on Reconciliation of Standards met in Nafplion Greece, October 4-5, 1990 and decided to adopt the methodology in use at the Smithsonian Institution as a framework for data modeling. Participants agreed to compare their own data to that in the Smithsonian model before their 1991 meeting in Copenhagen. It was also agreed that the framework developed as a product of the working group should:

- link object information with bibliographic information
- include data sets relevant to facilities management
- include data sets for natural history collections
- include management information
- link object information to relevant authority files
- link information about precise provenance of an object (eg. archaeological site records)

It was not clear whether this list of desiderata was considered complete or merely indicative. [further information from Richard Light, Chairman, CIDOC-RSWG, c/o Museum Documentation Association, 347 Cherry Hinton Rd., Bldg. O, Cambridge CB1 4DH, ENGLAND]

PUBLIC RECORDS CONFERENCE

The National Association of Government Archives and Record Administrators (NAGARA) met in Boston in July and heard a wide ranging program; I attended sessions focussed on state and national databases and on the management of electronic records. In a session on building databases within states, Lisa Weber (NHPRC) presented a history of state and national database construction efforts from the 1951 compilation of a central register by the NHPC (published by Phillip Hamer in 1961) through the government records projects currently underway within RLG. She noted that although the database which is emerging is impressive in size, it still lacks rigorous quality review and applicability of standards, and has not been evaluated. Research is required on how the system is being used and how we want to provide access to national archival resources. The next two papers in this session were presented by Charles Robb (KY) and Jesse Lankford (NC) on projects in states which are not active participants in the RLG efforts. Interestingly, although the professional consensus is clearly to use RLIN, Kentucky and North Carolina have taken significant strides against the tide. Kentucky is using a library network to deliver metadata about state records and information systems to citizens for use in FOIA, and North Carolina has inaugurated the first public access catalog for public records in the U.S. on an in-house mini-computer using locally developed software. In a session on RLIN and its problems and prospects, Marie Allen reported on the progress of the inter-governmental records project in RLIN (one thrust of the overall government records project). While this effort has only just completed phase

one, it has already helped NARA to identify some cross jurisdictional holdings and Allen felt that the effort would be seen as a success by the states as well. Sharon Nelson reported on the slow progress in using RLIN for appraisal which the group attributed to dissimilarities in appraisal processes between the states. A preliminary survey of the appraisal process has revealed considerable similarity in data being captured by states but little reason to share this information. Apparently the jury is out, although recent articles in the GRP newsletter suggest that some states are finding appraisal information sharing of concrete value. Terry Ellis reported on a study of reference use of RLIN which revealed very little use due to lack of staff training and appreciation for the tool, but at the same time concluded that if use was made of the database it would potentially be extremely valuable to researchers. On the second day, I participated with Ken Thibideau (NARA) and Margaret Hedstrom (NY) in a "debate" on the issue of archival custody of electronic records. The following session on appraisal of archival electronic records continued the discussion in papers by Allan Kowlowitz (NY) and Michael Miller (U.S. EPA). These papers and the commentaries on them will be published in Archives and Museum Informatics Technical Report #13 in January. [available from Archives & Museum Informatics, 5501 Walnut St., Suite 203, Pittsburgh, PA 15232-2311; \$25 pre-paid. \$30 billed]

IN BOX

REPORTS

Financial Accounting Standards Board, Accounting for Contributions Received and Contributions Made and Capitalization of Works of Art, Historical Treasures and Similar Assets: Proposed Statement of Financial Accounting Standards. Exposure Draft, No.096-B, October 31, 1990 (single copies free if requested in writing from: FASB, 401 Merritt 7, P.O.Box 5116, Norwalk, CT 06856-5116)

This long awaited draft accounting standard is being distributed for public comment in advance of hearings scheduled for July 18-19, 1991. The statement would establish requirements for accounting for contributions by any entity and for all assets received including services, with exceptions for contributed works of art, historical treasures and similar assets if the were not intended to be sold or are not "of a kind for which markets exist in which they are or could be sold or exchanged". FASB notes that these exceptions were introduced to reduce the costs of compliance rather than for conceptual reasons. The statement would also require that purchased works of art, historical treasures and similar assets be capitalized in the period acquired but would allow for previously acquired works to be capitalized based on acquisition price or fair value at time of acquisition, current cost or current cost or market value, whichever is most practical. All prior year statements

presented in the first conforming report would be recalculated to reflect the new standard.

The statement is proposed to take effect for financial statements issued after May 15, 1992 except that recalculation of prior assets would not be completely implemented until 1995. Among the provisions of the statement are that contributions received with donor-imposed restrictions would have to be reflected as limits on the use of these assets. The statement recognizes that contributions for which it is exceptionally difficult to establish a value may not be assets and uses as an example "an item . . . accepted solely to be saved for potential future use in scientific or educational research" and further explains that this includes contributions of flora and fauna and some photographs and objects identified with historic persons, places or events but without commercial value. Seen from an accounting standpoint, the fundamental issue is to establish a reciprocity between the accounting given by donors and donees, and to create a comparability of assets across many different kinds of non-profit in entities. The statement significantly revises the AICPA standard of 1978 which exempted "inexhaustible collections owned by museums, art galleries, botanical gardens, libraries and similar entities" from capitalization (SOP 78-10).

The alternative views section of the draft makes it clear that two Board members disagreed with all or some of the statement as it applies to museums and archives and details their objections. Since these objections have been argued before the board already, it seems unlikely that other members will change their minds if these arguments are only reaffirmed at the hearings.

The opposition of AAM to these standards is clearly established, but I believe that information professionals within museums have much to gain by their adoption. Consider the likely impact of these standards on museum documentation if they were adopted; overnight we would see a significant investment in information systems to track inventory, manage donations and administer volunteer programs. In addition, the requirements for comparability created by the need to value collections would put a premium on standardization of terminology and interchange of data. Yes, the improvement of financial accounting practices would place a burden on museums - they would have to improve their information management to achieve accountability. Is that really such a bad thing?

□

R&D - The British Library Research and Development Department Report 1989/90 and the Annual Review of OCLC Research (July 1989-June 1990) were both received recently and are interesting both for their specific contents and for the fact that both organizations are devoting most of their research to electronic libraries, image processing and interface design with a decreasing portion of funds and effort expended on library automation per se.

□

Museum Documentation Association, MDA Occasional Papers #11-15 (ISSN 0140-7198) (Cambridge UK, MDA, December 1989) These five reports in the MDA Occasional Papers Series, which are also labeled as "Computers in Museum Case Studies 1-5", contain 25 papers edited by D. Andrew Roberts and Nicki Ingram from a seminar held in Nottingham in 1988. They titled:

- 1: Management of the Use of Automated Systems
- 2: Computerisation of Museum Management Practices and Gallery Displays
- 3: The Use of Computers for Collections Documentation
- 4: Computer in Conservation and Environmental Control
- 5: Computer Support for Field Work and Site Recording.

Volume 1 includes a report on the British Museum Collections Computerization Project by Alison Allden and Lea Jones which makes broadly applicable points about project management, standards and internal communications over the course of a longterm effort such as the documentation of the collections of a major museum. Volume 2 contains two very useful assessments of the videodisc as a component of and companion to exhibitions. John Wilson's observations on planning are generally valid (although U.S. readers two years later should not be influenced by his resource estimates as costs are much lower here) and Steve Roberts' analyses of projects at the National Museum of Science and Industry (London) illustrates what works and why. An interesting story is lurking but not explored in the article by Jonathan Moffet in Volume 3 on the implications of moving from a collection information database model to a collections management database model at the Ashmolean Museum. Volume 4 contains an exceptionally good definition of functional requirements for conservation information by Gwyn Miles of the Victorian and Albert Museum, and a case study of the implementation of a working, low cost, microcomputer based environmental monitoring system at the Royal Pavilion in Brighton by Julian Rogers. Geoff Stansfield's "Introduction to the use of computers in field work and site recording" in Volume 5 is noteworthy for its attention to user needs, documentation forms, access points, output formats, standards and strategies for cooperation.

□

UNESCO General Information Programme, "Disaster planning, preparedness and recovery for libraries and archives: a RAMP study with guidelines", by Sally Buchanan with a bibliography by Toby Murray, (Paris, UNESCO, 1988) PGI-88/WS/6 187pp.

This manual is addressed to those responsible for disaster planning and disaster recovery including writing a disaster plan, contents of a disaster plan, prevention of disasters, protection of collections against disaster, response to disaster and recovery after disaster strikes. The emphasis on planning will be relevant to institutions of any size. The bibliography is extremely comprehensive but not annotated.

□

□ REFERENCE WORKS

Archives Accession Annual - 1988, edited by William Joyce (Westport CT, Meckler, 1990) 77pp plus indexes. ISBN 0-88736-420-9. \$75

This new reference work, edited by William Joyce, Associate University Librarian for Rare Books and Special Collections at Princeton University, is intended to provide early notice of the acquisitions of American archival repositories through an annual report. 1989 and 1990 issues are announced for publication in August 1991. The intended audience is both researchers and archivists. The first volume reports on acquisitions from 227 repositories miscellaneous institutions including six state archives, the music division of the Library of Congress and a few Presidential Libraries. Presumably more institutions would report in future years, if convinced that this is a useful tool. Unfortunately they will hardly be encouraged by the product we have before us which is exceptionally poorly executed.

The body of the volume reports on accessions by institution, but the order of the institutions, by the first letter in the name assigned to them by the editors, is very arbitrary. In looking up entries I was sent to P10233, an institution which is listed under "Z" for Z. Smith Reynolds Library, Wake Forest University and to T10235 which appears under "A" for "The Archives of the University of Notre Dame"! The institutional coding scheme employed by the editors is unique to this publication rather than building on the (considerably less flawed) NHPRC directory scheme. Within each entry, the accessions reported on are in no order whatsoever, so that it is often necessary to read through a page or more of five to eight line collection reports to find a specific item of interest.

The volume includes four indexes - Subject, Title, Geographical and Institution Code. The Geographical index lists institutions by state subdivided by city, but without their codes. The Title index is fairly useless since it alphabetizes most collections by the first name of individuals and other elements not easily imagined by researchers, as illustrated in the following sequence: "Pearl Harbor Pictures; Pedro Menendez De Aviles; The Persistence of the Primitive in American Hymnody by Ellen Jane Porter; Personal Papers of Muriel Anderson; Peter Miller; The Peter F. Brady Papers; Peter Tare, Inc.; Pharmacological Notebooks . . ." to say nothing of the sequence "H88-1; H88-10; H88-11; H88-12; H88-13; H88-14; H88-156". The index references are to institution codes which are exceptionally difficult to locate in the body of the work and which do not identify the accession being cited. The Subject index uses flaky terminology and, like the title index, points users to institution code of repository even though the repositories are not listed in numeric order in the body (G10103 which turns out to be the Georgetown University Library Special Collections Division which is listed following G10166 and before G10175), but some entries as in Notre Dame or Wake Forrest cited earlier, are even odder than that. I followed a reference for FILM to an entry of

more than a full page in length; film history was the subject of the 16th of nineteen entries listed in no particular order. Going the other direction, I looked in vain for a subject tracing for the Robert F. Kennedy Assassination Investigation Files at the California State Archives, searching under Kennedy, Los Angeles Police Department, and even "investigations". What are we to make of a subject term "Personal Papers" which points to some collections of personal papers, but not all, and isn't the subject of any of the collections to which it points?

This is not a useful reference work. I would strongly recommend that libraries and archives not purchase it or report to it. If an accession register is desired, archives should report accessions to OCLC and RLIN in MARC-AMC format and assign LC Subject terminology. □

Oral History Index: An International Directory of Oral History Interviews; edited by Ellen S. Wasserman (Westport CT, Meckler, 1990) ISBN 0-88736-3490; 406 p. plus indexes, \$145.00

This volume is an alphabetical index to over 30,000 oral history transcripts reported by nearly 400 institutions in the U.S. and Great Britain. In a strange editorial decision, it also includes reports from seven Canadian repositories and one Israeli institution. The bulk of the volume consists of very brief (1-4 line) descriptions provided in response to a questionnaire mailed to over 1300 institutions. The editors report that future editions are planned to account for additional collections and late submissions. Not all the entries reported are actually oral history interviews; some are recordings of speeches and other miscellaneous tapes. In the entries, no indication is given of the subject of the interviews, their duration, the name or affiliation of the interviewers, or the existence of transcripts or finding aids.

The sole index is by "Oral History Center" which is an alphabetical listing in order by the name the editors assigned to a repository, so that "Manuscripts Division, Library of Congress" is listed under "M". This volume is considerably less valuable than it might have been with substantially greater editorial judgment, better description and some content indexing. As it stands, this directory is neither complete nor comprehensive and lacks the depth of other available sources of information on oral histories. □

Guide to the Photographic Collections at the Smithsonian Institution: National Museum of American History volume 1, edited by Diane Vogt O'Connor (Washington DC, Smithsonian Institution Press, 1989)

This is the first volume of a five part set documenting the photographic holdings of the Smithsonian. This volume reports on 473 collections in the Museum of American History which together contain more than one

million images. Each entry describes one collection, identifies finding aids that have been created for it, the terms of access and any publications relating to the collection. The entries are carefully edited and well described. Indexes are provided to creators, forms and processes and subjects. We can only applaud the efforts to date and look forward to the rest of these volumes and to the complete documentation of this extraordinary cultural resource.

□

□ ARTICLES

Louis Bailey, Kenneth Steigman and Barbara Peterman, **Application of dBASE III PLUS to Database Needs of Small Museums**, *Curator* vol.33 #3 Sept. 1990 p.207-16

The authors report the use of dBASE III Plus at the Heard Natural Science Museum and Wildlife Sanctuary in McKinney Texas where they have very short records with very brief fields and haven't apparently heard of the International Species Inventory System. Yes, individual institutions can make off the shelf DBMS's work for them, but should they?

□

Edwin Brownrigg and Brett Butler, **An Electronic Library Communications Format: A Definition and Development Proposal for MARC III**, *Library Hi Tech*, Issue #31, 1990

The authors explain why the newly created MEMEX Research Institute has launched a project to renovate the MARC Communications formats so that they will be able to carry information associated with abstracting and indexing databases and raster image standards based on CCITT Group III/IV fax and how the effort is organized. While the aims of the MEMEX MARCIII effort are more limited than those of the Committee on Computer Interchange of Museum Information (CIMI), the MARCIII effort addresses some important issues that CIMI will also need to resolve and the two groups have agreed to work together on these.

□

Richard Lanham, "Electronic Texts and University Structures" in *Proceedings of the Conference on Scholars and Research Libraries in the 21st century* (ACLS Occasional paper #14) p.31-43

I am indebted to Frank Evans of the National Archives for bringing this article to my attention. Lanham argues, as I did at the recent meeting of the Mid-Atlantic Regional Archives Conference that the digital revolution is bringing about a radical shift in the nature of literacy. While Lanham uses different words, the shift he identifies from what I have come to call "letteracy" (the traditional, linear, text oriented sort of literacy), to "literactivity" which is my term for the variety of expression involving non-linear interactive multimedia, that overcomes the distinction between reading and writing, is identical.

Lanham, who believes that this shift will have profound significance, identifies a number of implications that had escaped my attention, of which the most significant is the possible impact on the structure of academia. Lanham points out that "training" outside of academia is already a bigger industry in terms of dollars and students than the university, and notes that the university may have to become more relevant to what people actually need to know if it is to survive. Part of being more relevant will be to teach in the new literacy, and this, Lanham predicts, will put a strain on the traditional distinction between sciences and humanities as illustrated by today's graphic artists and musicians who are in the forefront of the new digital means of expression.

Dean Zollman, **Interactive Programs for a Multilingual Environment**, *Journal of Educational Technology Systems*, vol.18(4) 1989-90, p.261-272

Zollman presents two generic methods of segregating text from program in the design of educational/interactive systems which can also serve to present the same materials to different audiences based on skill levels or teaching objectives.

□ NEWSLETTERS & JOURNALS

The Chronicle of Philanthropy P.O.Box 1989, Marion OH 43306-2089. ISSN 1040-676x. bi-weekly except last two weeks of August and December. \$57.50 p.a.

Exceptionally useful new tabloid with in depth articles on developments in the area of philanthropy, reports on giving by foundations and directories of service providers in the area of development.

□

F/TAAC Newsletter - Film and Television Archives Advisory Committee (ed.Sandy Sadusky, National Center for Film and Video Preservation, P.O.Box 27999, 2021 North Western Ave., Los Angeles, CA 90027; 213-856-7637)

Wide ranging source of information about events in the film and television archives world including meeting reports, descriptions of projects and even want ads. The fall 1990 issue (vol.3#2; issue 10) contains a report on the National Moving Image Database (NAMID) conversion of Eastman House records from MINARET (Cactus Software) to STAR (Cuadra Associates) and conversion from STAR-based records through MINARET to generate NAMID MARC cataloging output. In addition, it contains a report on long-range plans of the efforts of the NAMID standards committee.

□

IBM Systems Journal (ISSN 18-8670) vol.29#3, 1990 is devoted to image systems and image technology. Despite the forbidding name of the journal, this is a highly readable account of the issues and the state of affairs in image technology, as viewed from within IBM.

□

ICOM News, vol. 43(2) p.15-16 contains a summary by Robert Burke of the International Committee for Museum Security report on recent developments in protection methods against fire and theft, which stress developments in computerized monitoring systems.

Verbum - The Journal of Personal Aesthetics (Special Blendo Issue 4.2, 1990) Wild, colorful, television-like printed pages and enthusiastic articles on multimedia information systems characterize this wacky but interesting publication. Taste it to believe it.

The Videodisc Monitor, ISSN 0739-7089, (P.O.Box 26, Falls Church VA 22040; 703-241-1799) monthly

Since the July/August 1990 issue, The Videodisc Monitor has been carrying a series of articles by Nathan Benn, a professional photographer who has been the leader in organizing photographers to protect their rights in the digital reproduction of images for multimedia publications. In this series, he provides an introduction to digital multimedia, to the role that rights play in professional photography, and to a discussion of the theoretical, and ultimately the practical, steps must be taken to secure such rights. Benn's work is of critical importance to archives and museum administrators trying to cope with the issues of image rights in the electronic age.

EPHEMERA

Managing Electronic Records, National Archives & Records Administration Instructional Guide Series (Washington DC, Office of Records Administration, National Archives and Records Administration, 1990) free, 64pp.

Thomas Oglesby and William Leary of the Office of Records Administration at NARA have written a highly readable pamphlet on the electronic records policies of the U.S. Federal government which will doubtless help federal officials to comply with NARA policies otherwise discernible only in the turgid prose of the Code of Federal Regulations. Unfortunately NARA policy is so shortsighted that this pamphlet is not of much value to other archivists seeking guidance on electronic records management. What can we say to a document that reports, approvingly, that "most agencies have determined that word processing documents and other office automation documents must be printed on paper and placed in official files", views control over electronic records as a problem of inventorying systems and documenting the disposition authorization of records in each system as if they were paper series or considers instructions to transfer flat files on magnetic tape to the Archives an adequate answer to the question of how to preserve electronic information for future use?

Research Libraries Group, **Government Records in the RLIN Database: An Introduction and Guide** (Mountain View CA, RLG Inc., June 1990) \$2.00 17pp.

This pamphlet seeks to answer a number of regularly asked questions about government records in the RLIN database and to provide examples of such records and how they can be used. A table of contents to the questions would have been nice, but the pamphlet is usable without it.

Museum Archives: A Preliminary Bibliography Revised September 1990 2p. (SAA Museum Archives Section)

Although they formally became the focus of an SAA Section in 1990, Museum Archives have not been the subject of much literature. This bibliography illustrates how much need there is to publish more and better in this field.

Canadian Council of Archives, **Guidelines for Developing an Acquisition Policy** (CCA, Ottawa, March 1990) 16pp. bilingual (8pp.each language)

This brochure consists of a two page statement on what an acquisitions policy is and why it is useful, an outline of the elements to be included in an acquisitions policy, and a sample policy with text addressing each element. It should be of help to anyone writing such a policy.

Roy Mitchell, **Understanding Information in A Survey of Collection Documentation in United States Museums** (ICOM - CIDOC, Database Survey Working Group) August 1990 45pp.

This report presents the results of a somewhat flawed survey conducted by the ICOM-CIDOC working group in the United States, explores the problems involved in interpreting the data and contains some recommendations for the conduct of similar surveys elsewhere. [available from: Office of the Registrar, Smithsonian Institution, 900 Jefferson Dr., Room 1410, Washington DC 20560]

NEW PAMPHLETS FROM NEW YORK

New York State Archives and Records Administration **Managing Records in Automated Office Systems** (Albany, New York State Department of Education, 1990) 20p.

This brief pamphlet in the State Government Records Management Information Series from New York State could make a major contribution to any electronic records management program because it provides practical advice for line managers beginning with assuring that automated office systems support organizational needs, moving on to establishing procedures and filing practices in such sys-

tems, and ending with developing criteria for inactive records management and records disposition with concrete criteria for determining appropriate storage formats and media in a constantly changing technological environment.

New York State Archives and Records Administration-**Records Management and Internal Controls** (Albany, New York State Department of Education, 1990) 11p.

This pamphlet places records management squarely within the tradition of internal administrative controls and identifies seven reasons why program managers need to concern themselves with records: 1) records themselves are an organizational asset 2) records document organizational activities, 3) records document financial transactions, 4) it is costly to create, maintain, use and even dispose of records, 5) records are a critical means by which government maintains accountability to the public, 6) the disposition and selected preservation of State records is governed by law and 7) disaster prevention and recovery plans are needed to protect records that are vital to the continuity and continuing operation of State government in a time of crisis. The pamphlet then makes a good case for internal controls and gives explicit advice about what to do, to achieve adequate control.

New York State Archives and Records Administration-**Introduction to Optical Disk** (Albany, New York State Department of Education, 1990) 16pp.

This nuts and bolts introduction to optical disk technology acknowledges that it might be beneficial to some agencies, prescribes membership in an evaluation committee so that privacy and records retention concerns will be addressed, and defines State policy so that it is clear to program managers what they can and cannot do with records when optical disk systems are introduced. New York should be commended for taking the issue on, head on, and providing practical assistance.

New York State Archives and Records Administration,**Establishing an Agency Records Management Program**, (Albany, New York State Department of Education, 1990) 11pp.

This pamphlet begins by asking a number of questions that establish whether an agency has a records management problem, and then describes a records management program in terms of 16 "key elements" of a records management function which are as applicable outside of New York State as they are within its bureaucracy

New York State Archives and Records Administration,**Taking the Lead: The Program Manager's Role in Records Management** (Albany, New York State Department of Education, 1990). 4 fold handout.

This attractive brochure underlines that records are the responsibility of program managers, and that records managers exist to help program managers to meet this responsibility not to relieve the program manager of it.

NEWS:

NEW YORK STATE CENTER FOR ELECTRONIC RECORDS

The New York State Archives and Records Administration has established a Center for Electronic Records under the direction of Dr. Margaret Hedstrom with three professional staff exclusively devoted to automated information systems. For further information contact Margaret Hedstrom, Alan Kowlowitz, Thomas Ruller or Hugh Shinn at 518-474-6771.

DESCRIPTION OF ARCHIVAL MAPS

A cooperative project of the Alabama Department of Archives and History and the New York State Archives and New York State Library (funded by the NHPRC) has begun to draft standards for description of archival maps. Guidelines for data elements to be included have already been drawn up and a common monthly statistical report has been created. For further information write to Larry Hackman (N.Y. State Archives) or Ed Bridges (Alabama Dept., of Archives & History).

ENERGY CRISIS

The invasion of Kuwait and the attendant rise in energy prices has led to the reactivation of the Energy Information Clearinghouse, a news source for non-profits impacted by the rise in energy costs. A monthly news-sheet, *Arts/Energy Bulletin*, is free from the Clearinghouse. Funding is being sought to reprint the very successful 1982 publication *Energy Management for Museums and Historical Societies*. Contact Robert Matthai Associates, 24 Beverly Drive, Avon, CT 06001; 203-673-0554; fax 203-675-7362.

NEDCC PHOTO PRESERVATION LABORATORY

The Northeast Document Conservation Center (NEDCC) has received a grant from the NEH to enable it to equip a state-of-the-art photographic preservation laboratory at its new headquarters. The facility will provide NEDCC with equipment required to handle the special preservation needs of nitrate and early diacetate film negatives. [contact NEDCC, 100 Brickstone Sq., Andover, MA 01810-1428; 508-470-1010; fax 508-475-6021]

FRANKLIN INSTITUTE MUSEUM INFORMATION NETWORK

With assistance from the Unisys Corporation, The Franklin Institute Science Museum has implemented a networked, interactive, multimedia, information system for its future exhibits. The system is designed to enable future users of all ages, degrees of interest and prior computing experience to use applications developed in conjunction with museum exhibits. The visitors will access the system through more than 40PC workstations equipped with graphics and both light and touch sensitive screens. Barcode readers at each workstation will uniquely identify visitors and enable them to print a report of their visit on exiting in the manner of the recent Smithsonian Information Technology exhibit. When fully implemented, the system which will be inaugurated at the end of this year, will be able to support as many as 20 different exhibits.



SAA MUSEUM ARCHIVES SECTION

Museum archivists achieved an elevated status within the Society of American Archivists in 1990 as they were promoted from an informal "Roundtable" to a "Section in recognition of the more than 300 active members in this interest group and the level of their involvement in SAA in the past several years. Officers are: Chairman, Theresa Rini Percy (Old Sturbridge Village), Vice Chair, Kathleen Hartt (Museum of Fine Arts, Houston), Membership Secretary, Alan Bain (Smithsonian Institution), Recording Secretary, Cheryl Leibold (Pennsylvania Academy of the Fine Arts), and Editor, Deborah Wythe (The Brooklyn Museum). They continue to publish the excellent newsletter "Museum Archivist", now beginning volume 5.



COLLECTIONS CARE DATABASE

The National Institute for the Conservation of Cultural Property (NIC) has announced the establishment of a Collections Care Information Service funded in part by the Institute of Museum Services and the Bay Foundation which allows people with collections care responsibilities to acquire bibliographic citations to information they need by dialing 1-800-421-1381, Mon.-Fri. 10am-5pm EST and requesting an information packet on any of the following topics:

- General Information
- Basic Collections Care
- Collections Management: Law, Ethics and Policies
- Disaster Preparedness
- Environmental Control: Pest Management
- Environmental Control: Pollution Control
- Environmental Control: Temperature\Relative Humidity
- Exhibitions and Packing for Shipment
- Architectural Conservation
- Natural Science Collections
- Safety and Health

- Collections Storage
- Informatics: Documentation and Computerization



GRADUATE ARCHIVAL EDUCATION

The University of Maryland Department of History and College of Library and Information Services now offers a 54 credit hours (2.5 yrs) Dual Masters degree in Archives and Records Management/History. The Department of History at the University of Manitoba has just announced a two year masters degree in archival studies leading to an MA in History. The University of Pittsburgh is offering a one year program leading to a certificate in archives administration within its Master's in Library Science degree.



NAC IMPACT ANALYSIS REPORT

On July 11, the National Archives of Canada received a report from SHC Systemshouse Inc. (its contractor in the definition of the "Archival Holdings System") on the organizational and economic impacts of proceeding with three options for an archival holdings system. The study found that net financial benefits of circa Can\$0.5 would accrue from investments of Can\$7.6M and Can\$9.3M. thus involving fairly high risk for a low return, especially as the Rules for Archival Description were considered far from stable. The contractors recommended against developing any of the three options previously proposed and instead decided return to the analysis to determine how best to scale back the AHS. At the same time, the report recommended issuing a Request-for-Information to determine whether existing or planned products already satisfied some of the functional requirements of the AHS. This fall, the focus teams began to define how to scale down the AHS to a nucleus of functions and entities. They selected 22 of 66 processes as high priority and identified 152 entities associated with these process. The NAC staff is presently re-estimating costs and benefits based on the scaled back model.



RLG BOARD BACKS AMIS

The Research Libraries Group Board of Governors unanimously endorsed proceeding with the development of AMIS, the Archives and Museum Information System, at its meeting early in November 1990. AMIS, which has been discussed at a number of archives and museum conferences, is intended as a multi-functional system to support all aspects of information management within cultural institutions. Over the next several months, RLG Inc. will hire staff to manage the project and seek outside funding to support the system development. No timetable for implementation has yet been presented.



SOFTWARE

REVIEW:

MediaBase

by Howard Besser & Linda Zirnitis
University of Pittsburgh
School of Library & Information Science

Introduction

MediaBase is a package designed for preparing a set of information (both text and still images) to be published on a CD ROM. The package consists of two units: a database management system and a CD ROM formatter. Initially, the two units were sold separately, but now they are sold only as a single package. It is likely that many people who had no intention of creating a CD ROM purchased the relatively cheap and robust database before the vendor discovered that it was being used for a purpose other than the original intention.

We found that the software had interesting features, was relatively easy to begin to use, but had some distinct problems. Taken as a whole, we feel that it is a relatively nice package that one could use as retrieval software for a CD ROM being created. There are very few such packages on the market, and this one is certainly adequate, but with a little effort on the part of the vendor, this could be an excellent application.

After first describing the technical specifications and requirements of the package itself, we will examine the support for learning the software, the software structure, and data entry and retrieval. Most of this review will concentrate on the database portion of the product, and will be relevant whether one uses this as an in-house database or to create a CD ROM for distribution. But those intending to distribute CD ROM products should note that database construction problems will only be faced by their own staff, not by end-users.

Systems Requirements

MediaBase requires 512K RAM IBM XT or AT or 100% compatible with hard disk and MicroSoft DOS 3.0 (3.2 with CD ROM extension if using Runtime with CD ROM). Optional equipment includes Microsoft Mouse or 100% compatible, CGA, EGA, VGA graphics cards and Hercules monographic cards, Sony DP2000 Lasermax videodisk with RS-232, Pioneer LD-V600 series with RS-232, Truevision Targa 16 videographics capture board, the CVP-2800 videographics capture board from Discrete TimeSystems, Inc., 600 Mg Fujitsu hard disk, Fujitsu 9-track tape drive, 6250 bpi, 50 ips. It supports the following Microsoft PC Paintbrush graphics: CGA - 2 color (640 x 200), 4 color (320 x 200); Hercules - 2 color (720 x 348); EGA - 2 color (640 x 350), 16 color (640 x 400) and VGA 2 color (640 x 480), 16 color (640 x 480), 256 color (320 x 200).

MediaBase Version 1.03 is available from Crowninshield Software, Inc., 1105 Commonwealth Ave., Suite 205, Boston, MA 02215, (617) 787-8830. The cost of the package is \$7500 including the CD Formatter and editor.

Learning the software

The demo is very informative and quite well done. It makes use of the very handy "Trail" feature which allows one to record screen actions (including mouse movements) and play them back as part of the demo. The demo goes step-by-step through the creation of a structure, the input of data to it, and the retrieval of data from it. The major problem with the demo is that there seems to be no way to elegantly quit it; and if you reboot in order to leave it, a number of temporary files are left in your directory.

The documentation includes 3 tutorials covering various aspects of creating and manipulating the database files, and the tutorial demo is included with the software. The general information section of the documentation was somewhat disorganized. However, the reference sections seemed adequate, assuming that one was already familiar with the software.

The people in charge of telephone support are friendly and try to be helpful, but they were unaware of a number of problems that we pointed out to them. From this we would surmise that there are not too many heavy users of the software. Unfortunately, telephone support personnel only work 9-5 Eastern time, making it impossible for Californians to get support after 2 PM.

The user interface is relatively intuitive, with commands chosen from the top of the screen using sticky pulldown menus. We found that using the mouse was much easier than using the arrow keys, but, to quote one of the support technicians, "the mouse version is still a little buggy."

Database Construction

MediaBase has an interesting hierarchical structure. It is based upon a tree structure, with various "branches" of structure leading down to "leaves" of data. These fields can contain alphanumeric, graphic and video information. Each word is indexed, unless it appears on a stopword list (which is user-modifiable). Using an outliner format, the user can easily construct a database structure. As long as the user is careful not to mix types on any given branch, creating the database structure is very obvious and straightforward. But the system does not work if any single branch has both branches and leaves hanging from it at the same level. It assumes that each set of leaves under a particular subcategory comprises the record fields of an individual database. This is very useful if one wishes to connect several databases, but imposes certain structural constraints on the format of any single entity.

The outline customarily appears on the left of the screen and serves several functions. By creating or modify-

ing a portion of the outline, one can define and modify the corresponding structural definition of the database hierarchy. One navigates the database(s) by traveling up and down the outline's various branches. This is the case for both data entry and retrieval. The software allows modification of both the existing outline and the addition of new data records. The outline may be modified in a straightforward insert/cut/paste mode with cursor highlighting.

Data Entry and Retrieval

Text records can be inserted or modified within a simple template window by tabbing between fields. Images can be attached from existing files or frames may be grabbed directly from video input by using a simple menu panel. The available menu choices vary, depending upon which mode one is in at the time. The same choices do not appear in edit mode as do in query mode, for example. Initial data entry operations proved somewhat frustrating, as there was no clear indicator whether or not we were in the proper mode and there was little immediate feedback. To further complicate matters, the same operations often had multiple access points.

A user has the choice of several retrieval strategies. When in straight query mode, one sees the outline before him, on the left side, and two windows on the right side; criteria, and response below that. After highlighting the desired level, he can search by field(s) and value(s) from the criteria window and the matching record fields will display in the response window. One can specifically search for a word occurring anywhere in a field. (We were unable to test whether this kind of indexed full-text retrieval caused performance problems on large databases.) The available response varies, depending upon what level (category, subcategory, or record) the cursor has highlighted. Only items lower in the hierarchy will be searched. This provides a convenient way of limiting the scope of a query.

In addition to keyword searching, one can also browse full or truncated records. A nice feature is the global searching which allows several databases to be searched at once. Unless a value is explicitly made global, and the values in the fields of separate databases made equivalent, only one branch of the outline will be searched at this time. Once a value is made global, however, it is not clear how to undo this.

Creating CD ROMs

Another disk included with the product is a CD Formatter. This is a utility program to help one to prepare a file to be used to master a CD ROM. This software will take a set of Media-Base (or other MS DOS) files and put them into ISO 9660 format, the international standard for CD ROM. The user must first develop a working database, complete with all files, indexes, etc., then identify all the files necessary to run the application (usually by putting all relevant materials into a directory by themselves). Running the formatter will create all the directories, pathnames, and descriptor files needed by the CD ROM, and

put these together with copies of all the necessary MS DOS files -- all into one large MS DOS file that meets the specifications of an ISO 9660 volume. The software also includes useful options that it claims will optimize the CD ROM construction for either MediaBase retrieval or for disk storage. Though the documentation does not say so, the user will probably need a very large disk for this mastering process (double the storage planned for the CD ROM). The user would then copy this large ISO standard file onto a portable storage device (like a 9-track magnetic tape) and bring it to a service bureau that stamps out CD ROMs.

While we were unable to test whether the format produced was in complete compliance with ISO 9660, if it works as advertised the product could be quite useful for a wide variety of applications. MediaBase includes a facility for importing files from other databases. This feature seemed to work well when we tested it (though it was unable to give you a list of available databases and structures). Using this feature, one could initially develop their applications with some other database manager, and simply import these into MediaBase, and use the runtime version of MediaBase as the retrieval tool on the CD ROM.

Conclusion

Given the current (sorry) state of retrieval products for multimedia databases, we found this package to be quite useful. But the vendor still needs to put some effort in to making it a good product. Tools for learning the software and availability of vendor support need to be improved, and bugs in the mouse-based interface need to be eliminated. Some confusion in the structure needs to be clarified. It certainly appears to be a decent product to distribute as a retrieval tool for a CD ROM application, and may also work well for internal multimedia database applications.

MULTIMEDIA ENCYCLOPEDIA

This summer Britannica Software released Compton's MultiMedia Encyclopedia (\$895.00) and The Guinness Disc of Records 1990 (\$149.95), two interactive CD-ROM titles. The encyclopedia, which has been reviewed in CD-ROM End User and elsewhere, contains 60 minutes of audio, 45 animation sequences, spoken glossary terms, and on-line dictionary, atlas, and U.S. history timeline and several useful user interface features including placemarking, retracting of search steps, zooming, personal notecards with wordprocessor interfaces, and print capabilities. Access is provided by dates, keywords, titles, and from a "topic tree". This certainly isn't the last word in interactive multimedia encyclopedia's, but it is a taste of what can be done, and it could be a useful and inexpensive means for museums to explore the potential of CD's.

STANDARDS

MDA MUSEUM OBJECT DATA STANDARD

In the 1970's, the Museum Documentation Association of the UK developed the MDA Museum Object Data Standard which served a useful purpose in bringing practice within the UK into broad conformity but was expressed as an hierarchy. In September 1991, the MDA hopes to issue a revision of its data standard, intended both for manual and automated systems, and expressed as a logical data model consisting of a data content standard (fields and relationships between fields) and a data value standard (syntax rules and vocabulary). It is hoped that the new standard will support flat, hierarchical and relational models with equal facility. The standard is designed to play three roles: as a model for designers of documentation systems, as the basis for the MDA family of information systems (manual catalogue cards and control forms, and the MODES and TINmus software), and as the basis for cooperative databases and information interchange.

The MDA Data Standard consists of 130 fields in which the data may be entities, attributes or logical groupings of entities and attributes. The fields fall into three major classes: Entities (item, person etc.), group fields (relating together attributes of these entities (production, place etc.) and common fields (recurring concepts associated with more than one entity). The process of developing a new standard will be one of consultation, collaboration and cooperative research. The MDA invited interested parties to participate in the discussions. (Contact Andrew Roberts, MDA, 347 Cherry Hinton Rd., Cambridge CB1 4DH, England).



MAD2

Michael Cook and Margaret Proctor have published a revision edition of the Manual of Archival Description (the British equivalent of the Canadian RAD and the US APM) which the publishers assert is "the standard manual for controlling the production of finding aids and finding aid systems in archival repositories..worldwide" and that it "effectively replaces AACR2 as the reference source for archival repositories". I look forward to receiving my copy (Gower, 1990, \$59.95).



RULES FOR ARCHIVAL DESCRIPTION

The Planning Committee on Descriptive Standards of the Bureau of Canadian Archivists has published the first two chapters of its long awaited Rules for Archival Description which incorporate the "general rules necessary for the description of a fonds and its parts, as well as rules for the description of multimedia fonds". The looseleaf publication allows for additions and changes over time, reflecting the plans for RAD to include rules for descrip-

tion of textual records at the fonds, series, file and item levels, rules for form and choice of access points for personal, geographic, and corporate names, and rules for description of sound recordings, moving images, machine-readable records, architectural and cartographic materials by 1992. Work continues on these other rules, even as the Canadians plan how to implement the first two chapters in institutions throughout the country. On 30 October, the PDSC distributed drafts of its rules for multilevel description, which will eventually be incorporated into chapter 1 following the published rule 1.0H (and are number 1.0J). [contact: Bureau of Canadian Archivists Planning Committee on Descriptive Standards, c/o Canadian Council of Archives, 344 Wellington St., Room 5078, Ottawa K1A 0N3, CANADA; 613-995-2372 or 613-995-1555].



GOVERNMENT RECORDS GUIDELINES

The RLG Government Records Project has developed draft guidelines for description of government records that are agreed to by the project participants for main entry, title, statement of extent, organization, arrangement, notes and indexing. These guidelines should be of great value to other government archivists and archivists describing any records in RLIN. In addition, the long awaited protocols for functions are now available for use outside the project. (Contact Maureen Phayer at RLG, 1100 Villa St., Mountain View, CA 94041-1100, for copies of either or both).



COLOR STANDARDS

One of the thorny problems in multimedia publishing is that the colors of different output devices are non-standard. This effectively limits the possibility of distributing digital art, as well restricting some areas of science and medicine, and it is having a constraining effect on the commercialization of HDTV. In the past several months, Kodak Corporation has proposed a technical standard for depicting color that is winning considerable industry praise for its proposed "YCC" standard. If accepted broadly, this development would transform the distribution of digital images.



PATRON RECORDS FORMAT DRAFT

The National Information Standards Organization (P.O.Box 1056, Bethesda MD 20827; \$30) has announced the availability of a proposed national standard for patron records in automated bibliographic circulation systems. The standard defines a format for representation and communication of library patron information in machine-readable form. The proposal is being examined by the Committee on Computer Interchange of Museum Information (CIMI) for applicability to archives and museum client information. Museums and museum vendors interested in critiquing the proposal are urged to contact John Perkins, CIMI Project Manager, at 902-454-4077.

