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TECHNOLOGICAL CHALLENGES FOR THE EIGHTIES

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TECHNOLOGY'S EFFECT ON THE ROLE OF THE ARCHIVIST

John A. Vernon

Not long ago the author's total credentials for presuming to comment on high-tech matters would have amounted to the demonstrated ability to load and use a stapler, successfully turn on and off an electric toothbrush, and replace batteries in most flashlights. There must be a goodly number of other archivists who possess a similarly deprived background. Of course, they are not announcing it to everyone as is being done here.

Given his condition, the author prefers to consider any previous lack of exposure as an asset. Perhaps he can better identify broad issues if his mind is not overloaded with information about narrow ones. Certainly he cannot distract or dazzle with technical terms or concepts that could obscure the actual intended message. Nor can anyone be intimidated. All who worry about the implications of the information revolution for archivists, but are vague about what they might be, can be represented. Possibly, those better steeped in computer lore and language might lose any reader largely unfamiliar with such things. In any case, what is offered instead is a brief discussion of the effects modern technology is having on the character and substance of archival records, an assessment of the documentation problems thus posed, and mention of one of the ways in which the National Archives and Records Service (NARS) is trying to insure that the best possible record of governmental activity survives despite those problems. Perhaps NARS' experience will prove helpful for archivists located elsewhere.

Before beginning, a not irrelevant observation
should be made: if many archivists are not conversant with the latest technological developments, it is hardly surprising. Given their usual frame of reference, they may have to be constantly reminded that this automated age everyone hears about really does exist; and that ultimately the way they go about their work will be affected. To be sure, archivists have heard how the modern workplace is to be transformed: computer terminals all around, no more paper, no more paper clips, no more paper cuts. Yet, much of this seems to be passing them by. Professionally, they may have seen little evidence of it thus far. Even though they may have received a few computer records into their custody, such things are likely to appear isolated curiosity pieces floating on a paper sea.

Because of its huge volume, textual materials will continue to preoccupy most archival institutions for a long time. As a result, it is easy for their employees to believe that, if a computer-attributable information explosion is really going on somewhere, it is a long way off and will scarcely touch them. They can fall into the trap of thinking of automated information systems as a passing fad. And even if they do not, archivists are likely to assume that traditional ways of thinking about records will see them through this aberrant condition until normalcy returns.

If that is the way many archivists are thinking, they may be suffering from a condition described by psychologists as "cognitive dissonance": their established systems of belief will not permit them to accept the reality that information is unquestionably being created and managed in ways radically different than before, and that further changes are on the horizon. A bomb shelter existence may insulate them from the immediate fallout, but leave them exposed to its aftereffects: what might literally be called a case of terminal "future shock." To keep up in an increasingly computerized age, the profession will have to act in innovative and uncharacteristically bold fashion.
Complications will attend efforts to enter the technological mainstream, but that is not to suggest that those efforts will not succeed. Automatic data processing is a new enough phenomenon that it is still in an evolutionary stage and archivists can evolve with it. As electronic methods of creating, storing, and using information are being put into place, archivists can educate themselves better to the probable implications of these methods. Archivists still have time to get in on the ground floor of a new technology and help mold the way it will be managed. They can anticipate potential problems, react to them, and address them before they become critical. And archivists can work with agencies or other comparable organizational entities to develop electronic informational systems responsibly.

Despite the complications, what lies ahead is actually an unparalleled opportunity to expand roles—to perform as records midwives as well as morticians. Of course, ever-increasing reliance on electronic recordkeeping suggests that if archivists intend to act aggressively, they had better start now.

If archivists do not act, within a relatively few years "archives" will necessarily take on a more restricted meaning, referring only to records predating the electronic age. And an "archivist" will be thought of as a specialized antiquarian largely unacquainted with the realities of how modern organizations go about creating, maintaining, and disposing of records, many of which may never appear on paper. Electronic mail systems, telecommunication networks, the widespread usage of personal computers as electronic scratch pads and other such exotica will sorely test their ability to adapt traditional approaches to new conditions. As has been suggested, the increasing popularity of database management and word processing applications may force the "New Archivist" to rethink and rework such revered archival principles as provenance, original order, and the series approach to description.
The desire to play an early and sustained role in effecting a better records product did not coincide with the advent of the computer. In his 1941 annual report, Archivist of the United States Solon Buck indicated that NARS "must inevitably be concerned with the creation, arrangement, and administration as well as with the appraisal, disposal, and preservation of Government records." Considerably later, as the "Brave New World of Automation" was clearly dawning, Wilfred Smith, now the dominion archivist for Canada, echoed that sentiment, if not the language, in suggesting that computers provided the occasion for archivists to become actively "involved at the programming stage in the development of EDP (Electronic Data Processing) systems."

To gain this opportunity, archivists will have to convince agencies that they have something to offer besides a reflexive concern for what the latter are likely to regard as outdated information. Archivists will have to spell out what they want in the way of character and quality of documentation, keeping in mind that agencies cannot be expected to create records which do not truly reflect the work environment in which they were produced.

Archivists are well aware that organizations employ innovation in information technology to facilitate their doing business. Their focus is on active utilization of data to improve productivity of effort, not on preserving it for some undefined future use. In the past, archivists have successfully taken this attitude into account in order to safeguard essential interests. Usually, they have emphasized that operating efficiency calls for effective flow of information whatever the physical means of conveying it. Although this efficiency pitch is an old one, it applies to the computer setting as well.

Systems designers and information managers may thus need reminding that the context in which a decision is made is often as important as its substance, and that records are the only systematic
tool available to reconstruct that context. If, through faulty documentation, the capability for doing that is lost, that inability constitutes every bit as much an efficiency issue as speed of processing does. Digitized information management systems must be able not only to retrieve data but to index, store, protect, and retain it if the organization is to function effectively. If, as everyone agrees, Information is power, a flawed system for developing it saps its potential.

They need to persuade agencies that high quality information generated for one purpose and thoughtfully retained for others helps both originating agencies and archives. If they are successful, archivists can serve all parties' interests, not merely their own. Even if they have to learn to employ new buzz words as technological conditions change in order to continue to make their points, those points nevertheless remain valid. Now, more than ever, it is important that their message be accepted.

Why now more than ever? Because modern ways of producing, maintaining, and retaining information pose some unique problems and make several old ones such as records volume worse. The federal accumulation now amounts to between thirty-five and forty million cubic feet. Ironically, the power of computers to generate and store data electronically has contributed to the present glut of paper records, since ultimately humans need to be able to read the data to interpret its significance. Such massive volume complicates the archivist's ability to determine which documents are essential and which are not. In addition, appraisers require technical knowledge in order to assess which machine-readable materials warrant retention and in what forms they should be preserved.

Another compelling reason for archivists to actively enter the electronic arena is that it remains largely uncharted, and they stand to lose a lot if they do not get involved. Here are several pressing concerns which have emerged up to this
1. The relative ease in updating drafts and other documents can result in the loss of significant information unless well-conceived and strictly enforced safeguards are put into place.

2. Information storage and retrieval methods are becoming more decentralized and more difficult to predict. (According to one estimate, by 1990 the Federal government may have provided as many as a million personal computers for agency managers and others, in addition to the thousands of existing computer systems.)

3. With database management systems that allow random record storage and functionally unrelated originators and users to access the same information, the danger exists that, without controls, the context in which the data was created can be obscured and that the data itself could be altered or erased.

4. Without proper attention to indexing and labeling, future users may find themselves unable to find electronically stored information.

5. Information created on one electronic system may be lost when an agency updates its systems, unless steps are taken to ensure that the old and new systems are compatible.

6. The shelf life of disks and diskettes is quite short and unless information is transferred, the information they contain may be endangered.

7. Permanently valuable electronic media must be made available in a format that permits future use of the information in an archival repository.

8. Policy documents and others of long-term value created on word processors can be destroyed without retention of any permanent records.

These main problem areas spawn a series of related questions:

1. How should archivists deal with electronically filed Freedom of Information Act (FOIA) requests for records? According to the act requestors
can ask to see the originals. If they are stored electronically, does that fact make them records accessible under FOIA?

2. Can archivists identify information categories which should be stored on particular media? For example, should some information, regardless of how it was created, be maintained in "human-readable" form?

3. Will courts allow electronic records to be entered as evidence? How can users validate signatures if the document is created electronically?

4. Will archivists have to develop sampling techniques to cope with the potential generation of a large volume of computer records?

5. Will creators maintain a record of important informational exchanges transmitted via electronic mail systems?

6. Who owns the data in a contractor-generated and operated electronic file?

7. With the complications and complexities attached to electronic records, will archivists have to tighten up the definition of "record" to assure no misunderstandings?

One approach that the National Archives and Records Service has taken in order to get a better handle on these and other documentation issues was the creation this past year of a special unit—the Documentation Standards Staff. Patricia Aronsson serves as director. According to the statute which justifies this staff's existence,

The head of each Federal agency shall make and preserve records containing adequate and proper documentation of the organization, functions, policies, decisions, procedures, and essential transactions of the agency and designed to furnish the information necessary to protect the legal and financial rights of the Government and of persons directly affected by the agency's activities.

The initial staff spent much time its first several months defining broad goals, the main ones
being (1) encouraging senior level agency officials to create a written record of their significant activities and (2) helping agencies to ensure that they preserve important records and are able to use them at a future time. As indicated above, this seems to be a particularly acute problem when dealing with electronic records.

In regard to the first goal—insuring that a written record be created—the Documentation Standards Staff is justifiably concerned. Its concern is largely due to an additional distressing aspect to the federal records growth phenomenon: while quantity is growing, quality is not. Indeed, if anything, there would seem to be an inverse correlation between the two. Theodore Schellenberg observed long ago that the more important a matter, the more likely that it would go undocumented, and that the bulk of most records document relatively routine and unimportant transactions. A 1978 congressional report estimated that "less than 15% of the information that is used in decision making is in documented formal form. The other 85% is informal communication, personal letters, meetings, and telephone conversations." This failure to document policy decisions, whether attributable to memory lapse, ignorance of the necessity to do so, or to conscious design, is a condition that begs attention.

The Documentation Standards Staff believes that an important part of its mission is to foster an appreciation on the part of federal officials that failure to create important policy documents threatens their agency's institutional memory. For how can agencies move ahead when they do not know how they have reached the point where they are now? And with frequent staff turnover, how can an agency achieve long-term goals with no written material documenting earlier decisions?

The Documentation Standards Staff attempts to personalize its approach to agency officials by posing four questions: (1) Were you able to reconstruct from the written record the
decision-making processes of your predecessors or did you have to rely on word-of-mouth? (2) In three years, will you be able to trace a decision made today? (3) Will your successor be able to determine the rationale for actions you have taken? (4) Will someone in the future be able to identify the role you played in accomplishing the goals of your agency?

Although this unit recognizes the need for quality documentation at top levels of the federal government, it also recognizes that it is limited in what it can realistically do. Staff members can notify agency personnel of existing federal documentation requirements, encourage them to document their activities, and suggest the form for recording particular categories of information, such as the minutes of meetings. But the staff can only serve as facilitators, not dictators. They can not tell agencies how to conduct their business nor do they, as archivists, possess a practical mechanism for monitoring the accuracy of created information. Rather, the Documentation Standards Staff is convinced that to be effective it must be non-adversarial and educate and create a climate that encourages people to do things on their own.

As to the second goal—the preservation of information once created—the staff can help set guidelines for doing so, particularly in the troublesome electronic record-keeping area. Its members can alert agencies to one of NARS' principal concerns: the retrievability of information until its authorized disposition. Additionally, if that disposition calls for transfer to the National Archives, then the information must be in a transportable format. The staff can observe whether agencies are doing what they have asked and what those agencies have said they would do. But it is essentially agency personnel, not archives personnel, who must enforce the guidelines.

The Documentation Standards Staff has planned and is initiating several specific projects. The first is a Presidential Appointees Handbook with component
sections addressing the Privacy Act, FOIA, "personal" versus official papers, the Federal Records Act and related legislation, as well as the implications of using word processors and electronic mail systems to create documents. The staff hopes to make this available to confidential assistants of these new appointees as well.

Another project planned is the development of a series of government documentation standards keyed to common functional areas shared by most agencies. These publications will provide baseline standards clarifying NARS documentation expectations and will attempt to capitalize on existing agency expertise in each functional area. A handbook for the use of Federal Advisory Committee members and their agency liaisons is also planned. It will be designed to facilitate the orderly transfer of committee records of continuing value to NARS.

Other staff projects include a documentation survey of the Department of the Interior rule-making files and clarification of the definition of federal records. This latter issue cuts across many areas, including obvious target categories such as oral histories, personal papers, contractor documents, oral communications, and working drafts. In the area of oral history alone more than ninety agencies are conducting programs, which differ widely in quality, quantity, perceived status, and proposed disposition of the end product.

In assessing what the Documentation Standards Staff is trying to do, it should be clear that they do not think that they have formulated all possible questions, much less their solutions. They must uncover not only the issues, but also ways to address them. Shared knowledge is the only reliable resource humankind possesses for moving forward in a rapidly changing world; it would be foolish not to "network" with others in the same ways computers are doing. That is why staff members are consulting with agencies, governmental groups like the Inter-Agency Electronic Recordkeeping Task Force, professional associations, and archival colleagues, as well as
with the General Service Administration's Office of Information Resources Management, to coordinate and disseminate their efforts.

If this unit succeeds, it will, in large part, be due to the efforts and vision of others. Its members can only hope that all of those who have helped them will feel justified by the results.

NOTES


6 44 United States Code, Chapter 31.

8 As quoted in Walch, Ibid., 30.

CONTINUING EDUCATION AND INFORMATION MANAGEMENT: OR, THE MONK'S DILEMMA

Frederick J. Stielow

The biases in the preparation of archivists in this work are much the same as Lawrence McCrank in his "Prospects for Integrating Historical and Information Studies." Like McCrank, this paper assumes the proper direction for archivy is a synthesis between library and historical training. But today that juncture is no longer sufficient, for the techniques of information management must also be added to the mixture. Only at such a nexus can a distinct profession and professional studies in the fullest definitions of those terms emerge. With the onset of the computer age, archivists can simply no longer ignore the methodologies of information management and adequately collect and preserve documentary heritage. The danger for archivists is that they will be bypassed by technology and relegated to antiquarian status—the medieval monks of a post-industrial society.

Archivy clearly needs to address the theoretical implications of data processing and also the proper direction for archival educational efforts in this rapidly developing area. Moreover, according to a 1983 survey, archival educators now acknowledge records management as an essential foundation course. Unfortunately, archivists still appear the worst educated of all information specialists in these regards. The reasons behind this tendency range from the general and the recency of the microchip revolution, a misunderstanding of computer applications, and a measure of traditional bureaucratic inertia and budget restraints, to the more specifically archival problems of the absence of
preappointment educational standards and an uncertain professional identity. In addition, archivists should also recognize the existence of what others perceive as defensively elitist and, what may be seen in regard to librarianship, as sexist attitudes. The roots of these prejudices can be traced at least to Samuel Flagg Bemis's famed 1939 report on archival training, for as Richard Berner has suggested:

If many archivists have not been infatuated with the elitism of the Bemis report—that archivists should consider themselves scholars primarily—they would have dealt more directly with archival problems and helped to bring the profession along faster in its development. The report carried with it an unwarranted contempt for librarians and librarianship, and it came unfortunately at a time when the opportunity for fruitful collaboration was most promising.

The same elitism, which has retarded the development of archives in the past, continues to raise its reactionary head in regard to information management. Furthermore, such attitudes have already provided a residue of ill will among our natural allies in the information field. As Jake Knoppers charges in an article in the ARMA Quarterly on integrating such disciplines:

Finally, archivists, always being a breed apart, are quietly plotting their moves of how to sight their two big guns, namely, their black box of "archival appraisal" and the cry of "corporate memory" on the whole squabbling crowd so that at the appropriate moment they can fire the blast that will ensure them a place and role in the "electronic age"...(Archivists) take a combative attitude towards "fellow information specialists" either by downgrading the other or by claiming new or expanded territory (read, in order to obtain status, staff, and funding).

While it is doubtful that archivists could ever plot together, Knoppers does raise some interesting points. He also brings up some of the relatively
successful efforts of professional associations other than the Society of American Archivists (SAA) to effect minimum standards and accredit their continuing education offerings: such as those by the Associate Information Managers, and a range of alphabetic associations including ALA, ARMA, AASLH, DEMA, and SLA. The latter, for instance, advertised twenty continuing education courses for information specialists, plus advanced work in "Materials and Machines," at their last convention. By implication, if the archival profession does not act, it will be eclipsed by its sisters.

Before proceeding to suggested remedies, a number of underlying issues and misconceptions must be broached. Although shocking to some of the more traditionally trained historian/archivists, the field should note that historical research has itself altered to incorporate computer-addressable information; hence, archivists should logically respond by collecting such data, if they are to pretend to meet research purposes.

In terms of information control, one must also begin to understand that the manual techniques of records management—the techniques of ordering information basically as a commodity—do offer significant benefits for the archives. Remember that archivists bear a primary responsibility for launching records management through their efforts to extend rational controls over the life cycle of federal records during the post-World War II era. But now the records managers may be leading, while the archivists sit dutifully at the end of a conveyor belt awaiting deposits. Although seemingly mundane, the yearly avalanche of more than seventy-two billion new documents might lead archivists to see the wisdom of retention schedules and the mélange of correspondence, directives, files, mail, reports, and vital records management, as well as such important skills as forms design and microfilm control. Such techniques are economical, better suited for large collections, and essential for machine-readable records. Moreover, archivists should start actively
to investigate the application of some of the more advanced methods from operations research (OR)—like queuing theory.

If they can accept some of the benefits for a manual approach in processing and analysis, archivists must acknowledge that these escalate for an automated system; moreover, they should seize on the secondary and tertiary benefits of the computer for in-house management and later for researchers. Even before adoption, however, archivists need to come to grips with some basic facts: for example, that an automated system must rest on a well-designed manual one. Understand too that a current need is to demystify the computer and "computerese"—in fact, to realize that automated processes are by definition reductionist and less complicated than human thought. Archivists must come to grips with the technology as a tool to augment their services, but also begin selectively to adapt and redefine that tool to their purposes. They must accept the onset of a new age, when many of the entering personnel already have and can be expected to continue to have a higher level of technical expertise in this area than long-term practitioners. Finally, and most importantly for continuing education, this will be a time in which the constant emergence of newer technologies demands recurrent re-education. As John Naisbitt indicates in the best-selling Megatrends:

In education we are moving from the short-term considerations of completing our training at the end of high school or college to lifelong education and retraining. The whole idea of what education is will be conceptualized during the next decade.

In the context of information management, what does the world of archivy need? Above all, it must have clear expectations as to the appointment education necessary to become an archivist, standards that must now extend to training in records management. Assuming a basic knowledge of manual systems, the problems for continuing education can then center on automation. At this juncture, one of
the pressing considerations is to assure administrative training to aid in the introduction and assimilation of automated systems into repositories. An answer here may lie in middle management institutes—either as a function of the proposed SAA archival institute or a by-product of one of the established educational programs.

But by ignoring general administrative applications and concentrating on specifically archival matters, the discussion perforce turns to a traditional concentration on processing and retrieval efforts. Such concerns can be divided into two somewhat overlapping areas: on one hand, efforts to create national standards of bibliographic description for the exchange of information through the online utilities; and, on the other, constructs to aid in-house processing.

The basic battleground for national standards has been between Selective Permutation Indexing (SPINDEX) and Machine-Readable Catalog (MARC) formats. If archivists accept the implicit findings of the National Information Standards Task Force (NISTF) and the general trends in the field, then MARC appears destined to triumph. But MARC implies library cataloging and not "reinventing the wheel," which should lead toward preappointment training out of the library schools. Such training can also introduce the benefits of more highly developed searching strategies in the emerging bibliographic data bases—like Dialog. Without such training, archivists will have to rely on the networks for initial indoctrination or go to the expense of establishing specific workshops.

Perhaps a more important focus for archival energies should be on the automation of in-house procedures. For the microchip revolution, with the increasing affordability of ever more powerful machines, now demands attention. In contrast to the hesitancy engendered by earlier and exceedingly expensive mainframes, even the smallest archives can and should investigate computing, but again with some preliminary understandings. Though important, too
much emphasis can be easily placed on the machinery itself, rather than on an understanding of the applications of the tool for archives. Archival attention should be focused more on software and the theoretical implications of data processing than on any hardware evaluation. In addition, while introductory sessions in both areas are still necessary, sufficient expertise also exists to elevate sights immediately toward that which is truly archival. Some efforts along these lines can be seen at SAA meetings, such as those on indexing and thesaurus control and the management of machine-readable records. Others should be offered on the evaluation of any specific forms of software developed particularly for the archives and also more generic word processing and data base management systems. In addition, the field should continue to prepare directed offerings for other newly emerging technologies, like the videotape, optical character recognition systems, automatic voice transcription, electronic mail, and the implications of the chimera of a paperless society. Most importantly, the field must remain sufficiently flexible to respond to new changes and directions, as well as to push toward integrated information systems.

What this cursory overview is suggesting is that a burgeoning number of specialized offerings be developed in response to technological exigencies, but with the specific design of fostering an archival profession. While archivists must now borrow from other disciplines in regard to information management, the charge is to adapt that methodology—like those of the historian and librarian—to their purposes. The time has come to put away an identity crisis and become archivists. Archivists do have the "black box of appraisal" and an ongoing understanding of the complexity of the data in their charge. Those elements go beyond the management of information as a commodity. Archivists do have almost untapped resources and approaches to add to the general management of machine-readable data; moreover, they have a duty in this regard to
 insure a proper documentary heritage.

In a related aside, the most exciting recent occurrence in advanced archival studies may be the success of the Mellon Fellowships in the study of modern archives (or Blouin's think tank) at the University of Michigan. To read in some of the broader implications of that venture, perhaps archivists can build a leg of truly archival theory through such institutes and educational efforts. Thus the very process of establishing ongoing continuing education in information management may indeed help produce as a by-product a specialized body of knowledge toward a distinct profession.

While such institutes and continuing education efforts in the automated aspects of information management are important, archivists should, at the same time, take a hard look at some of the problems inherent in too general a reliance on postappointment training. Above all, the field must plan to phase out introductory-level workshops or limit them to the training of technicians and demand adequate preappointment training as a prerequisite for future employment of professionals. The decision is to accept educational standards before continuing educational ones. Frank Burke, in one of the few specific mentions of continuing education in the literature, also raises some important questions on the quality of some of the postappointment institutes:

Much of what the student learns is vicarious, and there are no standards by which to establish an acceptable level of instruction, no examination of what the student has learned, and no corpus of literature built from research and tested in the classroom.

If continuing education courses must exist, then it behooves archivists to attend and promote only those offerings with clear standards; for example, those provided through reputable graduate programs. The other alternative is that holy quest for accreditation or individual certification, and the grail may well lie in the SAA's proposed archival
institute or the agency governing certification. Such a body can provide a mechanism for the issuance of continuing education units (CEUs) and provide a crucial level of regulation. The SAA, however, should also be aware of the dangers of its educational entrepreneurship and work to nurture—not compete with—inchoate archival graduate programs, which meet its guidelines.

The final problems are among the most difficult: time and money. Who and/or what institutions can afford the time and money to pay for such ongoing training? The probable answer is that, in time, parent institutions and the SAA in general will become aware of the need to fund constant re-education in the information technologies. Archivy, as the information field with the most to learn, should theoretically lead the pack in this recognition. But, until that miracle and with budgetary realities, individual archivists and a few farsighted institutions will likely bear the burden.

Whatever the general case for continuing education, archivists should now recognize the importance of adding the methodologies of information management to their portfolios. Furthermore, they should be aware that even newer skills, requiring a return for more training, will appear. Archivy cannot be blind to these exigencies. But such skills do not stand alone—they need to be synthesized with pre-existing humanistic and organizational training. The field is entering an information age with invaluable skills to add to this period. While some archivists can and should be allowed to remain in what are perfectly acceptable and justifiable monkish pursuits, others must meet the demands of modern society and create an archives for the age of Buck Rogers or Luke Skywalker.

NOTES

1 In this paper, archivy will be used as a collective noun to describe the sum total of institutions and individuals which comprise the
archival community.

2 Lawrence McCrank, "Prospects for Integrating Historical and Information Studies in Archival Education," American Archivist 42 (1979): 443-55. This paper was originally presented at a session on continuing education at the 1984 meeting of the Society of American Archivists. It also must acknowledge a "Burkean Effect" from listening to Frank Burke's Archival Automation Workshop at the HiLS program at the University of Maryland.

3 That survey was sent out to all the educational programs listed in the SAA's Education Directory. The response rate was 43 percent and the other courses indicated as essential were an introduction to archives and archival theory, the management of archives and manuscripts collections, and a formal internship or practicum. At the top of the second, or extremely useful, category were courses in archival automation and machine-readable records. Details are available on demand.


7 John Naisbitt, Megatrends (New York, 1982), 98.

8 Frank Burke, "Education," in Robert Clark,
If there was ever a time when archives and libraries were places of refuge from the flux of the surrounding world, that era has entirely disappeared with the advent of the information age. The jargon of the high-tech world (Machine-Readable Cataloging [MARC], standards, communication protocols, and bits and bytes) has flooded the professional literature as archivists consider automating their processing, reference, and administrative functions. New technologies are being made available which require the archivist to make increasingly complex decisions regarding a vast array of options.

It might have seemed that preservation would be exempt from the high-tech revolution, for it has been especially the arena of those motivated largely by their bibliophilic interest in the books, manuscripts, photographs, and other documents that record a collective heritage. But the effects of technology extend even to preservation. Emerging technologies—especially those associated with automation—present many new strategies for arresting deterioration, but some of these technologies also complicate the task of preservation. This paper will examine some obstacles and opportunities that technology will present to the archival profession, and will suggest ways to begin planning for these changes.

Computer Technology: New Issues in Preservation

Archival collections reflect cultural change. Repositories that initially held handwritten manuscripts eventually began to receive typewritten and printed documents. Photographic collections
reflect the changes from daguerreotypes through today's color processes. Materials in special collections reveal the development of sound recording technologies from cylinders and wire recordings through vinyl disks and plastic tapes. It is reasonable to assume that archival repositories will also be affected by the current proliferation of microcomputers.

In the home, microcomputers are being used to maintain financial and medical records, automobile maintenance history, copies of outgoing correspondence, family history, even recipes. In government, business, and academic offices, microcomputers are being used for all sorts of accounting, word processing, and planning purposes. It is likely that microcomputers will be increasingly used for maintaining "electronic notebooks," for submitting and publishing articles, and for sending, receiving, and storing professional correspondence and other documents.

Some of the government employees, scholars, private citizens, and business people who are now using microcomputers and electronic communications to good effect in the home and office will become the donors to archives and manuscript collections in the coming years. Future donations may consist not only of traditional media such as correspondence, manuscripts, photographs, clippings, books, and recordings, but also printouts on computer paper and even of the "floppy disks" that are used to store microcomputer programs and files. These will, of course, have their impact on archival processing; the arrangement and description of floppy disks, for example, may require new procedures. But how will the microcomputer affect preservation? Archivists and manuscript curators must address at least two elements of microcomputer technology—disks and paper—in their preservation planning, as both are impermanent media.

With the increased use of computer storage, many archives and libraries are beginning to receive an increasing volume of magnetic media, such as the
floppy disks and computer tapes on which electronic data are stored; they must, therefore, consider the preservation of these materials. Although the importance of computer data on magnetic tape and disk has spurred considerable research into the causes of deterioration and into strategies for preserving these media, scientific testing is still incomplete and inconclusive and definite standards have not yet been established. Computer tapes and floppy disks require special storage conditions and handling procedures and they should not be relied upon as permanent media; even when stored in optimum conditions, tape has an expected shelf life of only ten to twenty years. Floppy disks appear to be somewhat more durable than tape, perhaps because they are not subjected to the same mechanical action in use. There are some general guidelines for the storage and handling of these media: (1) store master copies at a temperature not above 70 degrees Fahrenheit and at a relative humidity of 30% (plus or minus 2%); (2) shelve upright on grounded metal shelves to avoid demagnetizing the tape or disk and turn tapes occasionally to avoid uneven gravitational pull; (3) store in meticulously clean canisters or sleeves and do not permit smoking where magnetic media are stored; (4) "read" tapes and disks at least annually to ensure that there has been no degradation of data; and (5) have repairs or transfer of data performed only by a trained technician. Only by exercising proper care of tapes and disks can archivists ensure that this information will be preserved for future users.

Preservation planning should anticipate that there will be changes in technology. While printed documents can be read without the devices that created them, others (such as sound recordings and computer tapes) are useless without accompanying hardware. One university accepted an important collection of wire recordings that was frequently used by researchers; but when the player wore out and could not be replaced, the information on the recordings was lost. Having learned from such
experiences, archivists should plan carefully to ensure continued access to computer data in the future.

Computer technology changes rapidly, rendering hardware obsolete within a decade, so archivists should anticipate the future obsolescence of some computer resources. It may now seem quite adequate to accept, process, and store safely a floppy disk created on, say, an IBM Personal Computer. But twenty years from now (or probably much sooner) IBM (assuming it still exists) may no longer make a PC nor the software to support it. How will the information on the well-preserved disks be accessed then? Just as the wire recordings could have been transferred to another medium before the player wore out, so can computer data be preserved in another media for security purposes. Of course, much computer data is of only short-term value, so its long-range preservation is not necessary. However, it might be worthwhile to establish one of two policies to ensure that machine-readable data remain usable in the long range. An archive might implement a policy requiring that machine-readable data which has archival value must, when transferred to the repository, be accompanied by a hard-copy version on permanent paper. Alternatively, schedules for the review and potential re-copying of machine-readable data should be established and consulted regularly.

With the increased use of computers and microcomputers, archivists should expect to begin receiving a great deal of computer printout paper, not only from accounting departments and university registrars, but from the growing number of individuals who use computer technology to compose and communicate for business and personal purposes. As it becomes more widely used, this paper will pose some problems to preservation because of its size and acidity. Although some computer paper is a near standard size, much of the larger eleven-by-fifteen-inch paper is used for large-volume printing. Archival standards dictate that paper documents be stored flat, but the oversized
eleven-by-fifteen-inch computer paper is slightly too large for regular archival storage boxes. Computer printout paper will also present a challenge because of its high acidic level. At Yale University, an informal sampling of tractor-feed computer paper showed that it had a pH level of around 5.4—over ten times more acidic than a neutral 7.0 level. Decisions must be made regarding the handling and storage of computer paper, as well as of other materials on highly acidic paper. For example, if stored with less acidic materials, acid from the computer paper will migrate and acidify other items. Highly acidic materials may be filed in a separate box, or at least a separate folder, from more stable papers. Alternatively, the archivist or curator may deacidify such documents or reproduce them on a more permanent medium (such as copies made by a dry-process photocopier on acid-neutral paper). Of course, either of these strategies will entail time and expense. There is cause to hope that the commercial sector will respond to the problems associated with the acidity and size of computer paper. One supplier, for example, has begun offering archival quality computer paper. At present, the curator must use his or her best judgment in assessing the permanent value of the information on acidic paper and then weigh the relative cost and benefit of the available alternatives for dealing with computer paper.

None of these comments is intended to imply that archives and manuscript repositories will suddenly be inundated by floppy disks, computer tape, and printout paper. However, as computer technology comes to play a more important role in education, government, research, and personal life, archivists should expect to notice the impact in the kinds of materials they receive. It is important, therefore, to begin now to plan the preservation response to these technologies.

Just as emerging technologies may pose new preservation challenges, so may they offer new solutions. Two technological solutions should
especially be noted in this context. The advent of optical disk technology and the development of mass deacidification processes may provide large-scale and affordable preservation treatment options for archives and libraries.

**Optical Disk Technology**

The emergence of optical disk technology for computerized mass storage, preservation, and retrieval of printed and graphic materials offers a revolutionary approach to library and archival preservation. The Optical Disk Pilot Program now underway at the Library of Congress (LC) will provide a new way of reformatting materials that do not have to be maintained in their original form and of providing service copies to reduce the handling of originals. In the digital optical disk program, designed for printed materials, pages of text are scanned by laser, converted to electronic signals that can be read by a computer, and stored on optical disks. An optical disk physically resembles a stereo phonograph record; the twelve-inch disk used at LC is designed to contain ten to fifteen thousand pages of text. About one hundred disks will be stored in an Optical Disk Storage Module, or "jukebox," linked to a computer that guides the retrieval of information from the disk and generates terminal screen displays or printed copies for patron use. Because the optical disk project uses laser beams to record printed material in digital form and to retrieve data from the disk without touching the disk surface, wear and tear on the disk is negligible. As part of the pilot program, LC's Preservation Office is testing the durability of an optical disk, for the life expectancy of the physical disk is undetermined.

The primary drawback for most institutions is the cost associated with optical disk applications. Although duplication of a disk is fairly economical, the cost of initially producing an optical disk seems to be very high and the capital expense of an optical disk player, computer, terminals, and printers will be significant. In addition, many questions
regarding copyright laws have arisen with the development of optical disk technology. Publishers are concerned about the impact of optical disk, since reproductions of an item on disk may be less expensive than purchase of the hard copy of the publication. Recognizing this potential problem, the Library of Congress is working with the Association of American Publishers, and publishers are represented on LC's Optical Disk Advisory Committee.

The optical disk program provides many benefits as a way of preserving the informational content of documentary resources. The process used to create an optical disk can enhance the original image, that is, a faded or discolored manuscript may be reproduced as a clearer image on the disk. The procedure also has effective quality control mechanisms to ensure that the information can be preserved indefinitely. The creation of an optical disk is virtually error free, and the quality is subsequently checked by computer to provide early detection of degradation. The optical disk is likely to have higher user acceptance than current technologies such as microform, since the terminal display is of higher quality (and the use of a terminal of more personal comfort) than is the case with a microfilm or fiche reader. In addition, the optical disk system generates printouts of excellent quality. Information on an optical disk is readily transferable either to another disk or to some new computer-related medium that may be developed. The optical disk also offers many benefits in retrieval. Because the patron and computer have random access to the disk, it is simple to locate and retrieve precisely the desired material (provided that sufficient indexing has been performed), and users could have access by telecommunications to a disk at a remote computer installation. Finally, materials on microfilm can be scanned and transferred to optical disk, so the institutions that have taken advantage of microfilming as a preservation strategy will be in a good position to take advantage of the benefits of optical disk.

If successful, the Optical Disk Pilot Program may
provide a technology than can enable archives and manuscript collections to preserve and provide ready access to endangered materials in a way that is economical on a large scale and adaptable to subsequent technologies. However, optical disks will not abolish the need to preserve the original documents. Retrospective conversion to disk will be at least as difficult as present efforts to process library and archival backlogs and to perform retrospective cataloging. As Robert Patterson has noted, "We must be realistic in accepting the fact that large amounts of existing documentary information in printed or archival formats simply will never be made available electronically. We must continue to manually preserve the intellectual content, as well as the document bearing that information, when it warrants such efforts." The technology of the optical disk project will not provide a panacea for deteriorating documentary collections.

**Mass Deacidification**

Acidity is the primary single cause of paper deterioration because it breaks down the polymer chains in cellulose and causes paper to become weak, brittle, and stained. It is primarily because of acid content (but also a function of environmental conditions and handling) that some 97% of book papers manufactured in the first forty years of this century will have a useful life of less than fifty years. Half of those are likely to last less than twenty-five years if they are used at all. But even if every future paper document and book were printed on acid-neutral paper, libraries and archives would have a mammoth task in dealing with the acidic materials created in the past 130 years. The only way to offset the problems introduced by acid is to deacidify paper materials. Deacidification processes are designed to neutralize the acids in paper and to deposit an alkaline buffer or reserve that will inhibit the return to an acidic state. This procedure will substantially lengthen the useful life.
of paper materials—by as much as two- to sixfold, or up to 300 years—but it does not reverse the effects of deterioration. The widely accepted Wei T'o products offer an effective way of deacidifying selected documents, but the process of washing individual leaves in the solution is quite time-consuming.

Given the dimensions of the acid-paper problem in most repositories and the labor and cost involved in currently available processes, it is clear that a less expensive deacidification procedure is needed. Many experiments in deacidification have sought to develop a process that is safe, affordable, and treats documents in large quantities. Two such procedures, in use at Princeton University and at the National Library/Public Archives of Canada, use the Wei T'o solution. The Library of Congress is testing a process using a diethyl zinc (DEZ) vapor. More recently, the Koppers Company announced a test project in mass deacidification, but the corporation subsequently suspended that project. Mass deacidification serves as another and different example of the ways in which emerging technologies provide new preservation strategies. A discussion of the Wei T'o and DEZ processes may help archivists assess their options.

At Princeton, individual papers or pages of books are sprayed with a solution of Wei T'o in a large-scale production operation. Because the spraying takes place in an open environment, there must be strict safety precautions such as the use of fume hoods and special apparel. This deacidification method is faster than the process of washing individual sheets, but it is still labor-intensive since it requires individual treatment of each leaf. Having deacidified two collections of about seventeen hundred volumes, Princeton conservator Robert Parliament has declared the procedure effective. He estimates that the process costs about twelve to fifteen dollars for treating each book—much less than the cost of deacidification methods that entail washing each leaf—and he hopes
to realize lower unit costs as the staff gains more experience.

A more high-tech approach, developed by Richard Smith (founder and president of Wei T'o Associates) for the Public Archives of Canada, has been in operation for three years; it treats materials in a pressure tank using a liquefied gas form of Wei T'o. Materials are loaded into baskets, placed in a pressure tank, and dried thoroughly so they will absorb as much solution as possible. Then gaseous Wei T'o is pumped into the tank and neutralizes the acids. As the liquid turns back into a gas, an alkaline reserve remains in the paper fibers. Materials are then held in a staging area until they return to proper moisture levels.

Candidates for this deacidification process must be chosen carefully; the wetting and drying processes can cause damage to documents with soluble inks, to leather and some imitation leather bindings, and to some plastic-covered and paperback books. These effects can be reduced by careful screening and selection, but such procedures can be quite time-consuming and therefore expensive. On the other hand, several factors make the Wei T'o mass deacidification procedure attractive. It uses nontoxic chemicals in a closed system and seems to have no harmful side effects for humans or materials. The system treats some one hundred fifty books per day, but Smith estimates that it is capable of treating 120 thousand bound volumes per year if operated on a larger scale. Capital and operational expenses are reasonable; the present cost per volume is between three and four dollars, but this figure may be reduced by applying more efficient techniques. The Wei T'o process in use at the Public Archives of Canada, then, seems to have the capability of meeting the criteria of large-scale application, reasonable cost, and safety.

The Library of Congress Preservation Research and Testing Office is working with a vapor process of deacidification. The process uses diethyl zinc (DEZ) in a vacuum chamber to neutralize acids, and it
leaves an alkaline reserve in the paper. After extensive testing, the DEZ test was deemed successful and, in September 1984, the Library of Congress was authorized to spend $11.5 million to construct a mass deacidification facility in Maryland. The facility, scheduled for completion in 1986, is expected to treat 500 thousand books per year at a cost of three to five dollars each when fully operational. The annual operating budget for the facility is estimated at about $3.5 million.

In the LC procedure, materials are loaded into a vacuum chamber and dried. Then the DEZ is pumped into the chamber and neutralizes the acid in the materials. When the DEZ is removed, moist carbon dioxide is introduced, producing a chemical reaction that leaves an alkaline reserve in the paper. The chamber is then cleared, and materials are taken to a staging area until they are adequately rehumidified.

Early problems with the DEZ process (such as inadequate penetration of bound materials and an iridescent residue on bindings) have been resolved, but there are still two major drawbacks to the process. First, DEZ demands special precautions because it is highly explosive upon contact with water and flammable in contact with air. Second, the procedure requires such a large capital investment that few organizations can ever hope to afford it. LC plans to use its facility first for routine treatment of incoming paper items, then for other collections in major need of deacidification. It is uncertain whether the facility will ever be available for general use, in view of the millions of volumes in the Library of Congress's own collections that require treatment.

Mass deacidification offers great potential for large-scale, affordable treatment of paper materials. As Carolyn Harris noted, "Deacidification is not, however, the panacea that the library profession was hoping it would be, for the process of deacidification is only a limited solution." While mass deacidification will neutralize acid and can prevent further acid-caused deterioration, it
cannot restore yellowed and brittle papers to their original condition. Mass deacidification must be integrated with other strategies to form an effective conservation/preservation program. Some individual institutions should eventually be able to afford systems such as those at Princeton and the Public Archives of Canada. However, it appears unlikely that a mass deacidification system for most institutions is imminent.

**Developing a Plan of Action**

This brief overview suggests the extent to which emerging technologies will affect archival preservation. Electronic communications and storage will call for some new procedures and reconsideration of some existing practices. On the other hand, developing technologies such as optical disk and mass deacidification may offer new and effective tactics for forestalling the deterioration of materials and preserving endangered information. Confronted with such complexities, some may be tempted either to give up in despair, because it is so hard to know where to begin, or to delay action until emerging technologies are available that will make the task simpler, quicker, and less expensive.

Archivists and librarians in the Southeast will have a new and valuable resource as they face the obstacles and opportunities associated with emerging technologies. SOLINET (Southeastern Library Network), a nonprofit membership organization that now provides advanced technology to over four hundred fifty libraries, has been awarded a grant by the National Endowment for the Humanities to establish a cooperative preservation program in the Southeast. This program provides a variety of services including education and training, field service, consultation, and disaster assistance. The SOLINET Preservation Program is helping repositories learn about and cope with the increasing number of challenges and options that arise with new technologies, and SOLINET will monitor new technologies that might be applicable to the needs of repositories in the Southeast.
Despite the uncertainty of the future, archivists can begin now to take steps to control and sometimes to reverse the deterioration of their collections. In an era of technological flux, present planning should be done in the context of emerging developments. As Pamela Darling has noted, "There are many complex technical and procedural problems involved in preservation work, for many of which there is not yet a consensus about the best solution. There are few absolutes, and what [appear now] to be well-founded may seem naive, even wrong, in the light of subsequent developments." It is, therefore, essential to exercise caution and judgment in the implementation of preservation efforts. Some specific tactics have been suggested above. General guidelines discussed below may be useful as archivists begin to develop a plan of action for preservation.

Every archivist and librarian should have an awareness of preservation issues, including the causes of deterioration and basic strategies for controlling it. The basic issues in preservation are well elucidated in many books and manuals that offer "introductory courses" and preservation-oriented journals can help archivists stay informed of current developments. The well-informed archivist can, in turn, begin to increase administrators' understanding of preservation needs. This effort can strengthen future requests for funding of preservation activities and personnel.

Archivists can begin "doing preservation" as information and resources are available. While it will probably be impossible to adhere immediately or fully to preservation guidelines for environmental control and internal procedures, even apparently minor steps (such as reductions of temperature and light levels or improvement of housekeeping and shelving practices) will help extend the life of materials. This kind of basic action, phased in as the archivist's training and the repository's resources permit, will provide a solid foundation upon which more sophisticated approaches can be
In dealing with emerging technologies, some decisions will have to be made on partially speculative considerations, but proven archival principles should be applied as far as possible. Thus, even though there are unanswered questions about the preservation of floppy disks, one should store them in acid-free enclosures, for the fact that acid erodes the plastic base of computer tapes and disks is well established. The archivist who speculates that some present technologies will someday be obsolete will apply strategies to ensure that information is not lost when the medium is. For example, given the unpredictability of future microcomputer developments, archivally valuable data from microcomputers can be preserved in printed copies. In this era of rapid technological change, archivists and librarians should make sure they are not "trapped" in an outmoded technology. Research, development, testing, and implementation of new technologies will take time and will change current practices. In the interim, it is best for preservation planners to act on those principles that are proven, while positioning themselves to cope with the potential impact of emerging technologies. As new technologies become available, they should be assessed on the basis of their consistency with established archival and preservation principles and the amount of testing and evaluation they have received.

Preservation programs, like those in automation, will benefit from a "networking" approach in which repositories pool their resources to realize financial savings and/or improved service. Preservation programs such as those of the Midwest Cooperative Conservation Program, the Northeast Document Conservation Center, SOLINET, and the Society of American Archivists already provide training and consultative services to augment local preservation efforts. These could eventually make new technologies widely available to archives and libraries if there is adequate commitment from their
constituencies. Most observers of the preservation field anticipate that cooperative programs and facilities will proliferate as archives and libraries seek efficient ways of applying or responding to new technologies.

Emerging technologies will offer new sets of problems and solutions. But archivists and librarians can prepare for these effects by educating themselves and other staff members, by establishing sound preservation practices, by anticipating long-range trends, and by fostering cooperative approaches to common needs. While the task of preserving the vast resources in repositories may seem overwhelmingly immense, careful planning can make preservation in the information age a challenging opportunity rather than an insurmountable problem.

NOTES


2 These guidelines, and additional references, are available in RLG Preservation Manual (Stanford, CA: Research Libraries Group, 1983), 120-121.

3 A 7.0 pH value is "neutral"; values lower than 7.0 are acidic, and those above 7.0 are alkaline. Because the pH values are calculated on a logarithmic scale, each decrease of 1.0 represents a tenfold change in acidity; thus, 6.0 is ten times more acidic than 7.0, and 5.0 is 100 times more acidic than the neutral 7.0. For a more detailed and technical account of the action of acids in paper, see William K. Hollinger, Jr., "The Chemical Structure and Acid Deterioration of Paper," Library

Results of a study by William J. Barrow; cited in Pamela W. Darling, Preservation Planning Program: Assisted Self-Study Manual (Washington, DC: Association of Research Libraries, Office of Management Studies, 1982), 2. Some efforts are being made to encourage publishers to use more permanent/durable papers, and an ANSI standard Z39.48-1984, "Permanence of Paper for Printed Library Materials," has recently been published. Guidelines for producing durable and long-lasting paper and bindings have been developed by a Committee on Production Guidelines for Book Longevity, supported by the Council on Library Resources and the Andrew W. Mellon Foundation. The report is contained in a pamphlet, Book Longevity (Washington, DC: Council on Library Resources, 1982), and has been widely distributed to publishers in an effort to raise the industry's awareness of preservation issues.


Ibid.


It would be useful to begin by reading Carolyn Clark Morrow's The Preservation Challenge
and Mary Lynn Ritzenthaler's Archives and Manuscripts: Conservation. Further readings are suggested in the bibliographies of these two works, as well as in George and Dorothy Cunha's Library and Archives Conservation: 1980s and Beyond (Metuchen, NJ: Scarecrow Press, 1983), and in Pamela W. Darling's Preservation Planning Program: Resource Notebook. The Abbey Newsletter and Conservation Administration News are excellent and inexpensive periodical sources for current awareness in preservation.
A recent exchange of letters in the American Archivist highlights the conflicts between the two schools promoting preservation education in the archival world today. Mary Lynn Ritzenthaler speaks for the commonsense school, which has also been represented most ably by George Cunha and Robert Patterson. They are dedicated to 'action now', because, to quote Patterson, "the library and archives professions cannot afford to wait for the professional conservator to appear before taking up the battle against decay: we must organize to take action ourselves." Ritzenthaler was responding to Christine Young's contention that a highly trained, highly skilled conservator is the key person in the physical preservation of historical documents.

In the archival world, that first, commonsense school has received more support, on the theory that something is better than nothing. The availability of opportunities to learn about simple preservation techniques is another matter. Ritzenthaler has observed that conservation principles and techniques have not been accorded much attention in either academic archival and library training programs, or in actual practice within repositories. While this omission is now generally acknowledged, difficulties persist because there are few qualified instructors in this field, and there is often little opportunity for working archivists to pursue continuing education.
Similarly, a casual survey of library and archival literature leaves the irrefutable impression that awareness and concern have not led to the development of adequate educational and informational support.

Ritzenthaler's assessment of the situation is clearly that, even after fifteen years of preservation awareness among archival and library professionals, there are still obstacles to acquiring training and education in the field of material preservation. The literature dealing with preservation is complicated and confusing, and there is a paucity of academic programs that train practicing archivists and students of archives in the science, art, and managerial principles of preservation. It is the purpose of this article to discuss some of the avenues for continuing education available to the preservation conscious archivist and to outline a few of the strategic concerns that the employed archivist must take into account in improving skills and knowledge in the field.

The Professional Literature

While the archival literature is relatively clear and straightforward regarding the archival functions of accessioning, arrangement, and description, the literature of archival preservation is varied in the technical sophistication that it demands of its readers. There are articles and monographs available that aim at succinct explanations of the causes of and simple remedies for document deterioration, but this literature is repetitive and frequently fulfills more of an advocacy role than an instructional one. Advocacy pieces were extremely useful in an earlier time; their continued appearance is less useful to the preservation conscious archivist than works such as Ritzenthaler's Archives and Manuscripts: Conservation.

Another problem with the preservation literature is its bias towards library and book materials and against the documentary materials that predominate in
archival and manuscript repositories. Such dominance ranges from the actual technical aspects of preservation (i.e., simple book repair and book boxing) to preservation management (i.e., the training of preservation librarians and the placement of conservation officers in library administration). While library and archival preservation share a number of similar concerns, such as deacidification and the quality and repair of paper, there are concerns that are dissimilar. The volume, which is the primary item of treatment in library preservation, is not equivalent to most items found in archival collections. The administration of an archival preservation program has much less in common with the administration of a library preservation program than is frequently assumed in the literature. These differences—in both techniques and management principles—must be fully understood by the archivist relying upon the literature for preservation information.

The literature is also extremely difficult to assess and apply without some type of formal introduction to the subject of archival preservation. The author's assumptions regarding the necessary level of preservation education for an informed archivist are often reflected in the articles' levels of difficulty. The commonsense literature frequently takes the form of articles that not only tell how to institute an in-house conservation and restoration program, but advocate defined systems for handling problems by cost-effective methods. This approach assumes that the archivist and curator are capable of doing much more toward the preservation and conservation of the documents in his charge, than selecting items for the attention of an overworked or nonexistent conservator.

The other school of thought, found prevalently in the literature, is characterized by a concern with the highly technical aspects involved in conserving the original, physical form of information. Many contributors to this variety of literature believe that the primary, if not sole, duty of the archivist
in preserving his documentary collection is one of appraising and isolating important materials for the services of a highly trained conservator. This school of thought has culminated in the establishment of extensive academic programs to train conservators of the highest caliber and technical expertise.

These two different approaches to the preservation of documentary resources are equally well intentioned and both have points in their favor. They simply place a different level of confidence in the ability of archivists and librarians to carry on the physical conservation of their collections and the ability of these professionals to manage the preservation challenge. Similarly, much of the conflicting information and recommendations found in the literature reflect the new and experimental nature of the conservation and preservation fields. Only the time necessary to conduct research and test scientific hypotheses in document preservation will resolve some of the disagreements and conflicts found within the literature of preservation. Testing and experimentation over time will tend to make treatments and preservation recommendations more standard. Thus, they simplify the conflicts within the literature that prove to be substantial blocks to the traditional means of continuing education in the archival field: self-directed study.

Academic Opportunities in Archival Preservation

Within the last fifteen years, thought regarding the training education of archivists has been in transition. In the United States, the traditional means of training archivists for their specialized professional duties has been by a process similar to craft apprenticeship. The traditional tasks of the archivist can best be learned through practice under the direction of a more experienced archival practitioner. However, the nature and texture of archival work has rapidly changed with the advance of technology. The technical expertise which the individual must command in order to perform some of the tasks required to appraise and preserve
historical documentation stored in machine-readable form is no longer a matter of commonsense and on-the-job training.

The same degree of technical expertise and prerequisite theoretical knowledge necessary for proper administration of machine-readable records is critical to the proper conservation and preservation of historical records, archives, and manuscripts. The new technology of records creation and the technology of records preservation combined with the movement within the archival profession that favors accreditation and formalization of archival education have had a profound influence on the training of archivists in general.

These trends have had an even more significant effect upon the education and training of archivists in the more technical and recently appreciated aspects of archival administration such as preservation and conservation. In 1973, only one institution offered specialized courses in conservation and preservation of archival materials. Wayne State University offered Introduction to Archival Conservation and Principles and Practice of Archival Conservation available through either the Department of Library Science or the Department of History. Nine other colleges and universities scheduled courses in 1973 which included preservation or conservation as part of the course descriptions, as printed in the Society of American Archivists (SAA) Education Directory of 1973. In the next Education Directory issued by the SAA in 1975, five more courses used preservation or conservation terminology in their class descriptions. In the 1983 Education Directory, ten courses had some aspect of archival or manuscript preservation in their course titles and were offered by nine academic institutions.

These ten courses were in addition to the courses on archival and library preservation presented by the School of Library Service at Columbia University as part of their recently established preservation-administrator and conservator
certification programs. 10 These courses were evenly divided between the administration of the library schools and history departments. These academic opportunities for practicing archivists and students of archives were geographically diversified; two institutions were located in New England, three in the mid-Atlantic states, two in the South, and two in the Midwest. Only the far western states lacked academic opportunities in archival preservation.

The fourfold increase in the number of academic courses in general archival practice offered by American colleges and universities during the ten-year period, 1973 to 1983, reflects the concern among many archivists and curators that archival education should be more than a craft taught through doing. The fivefold increase in the archival preservation and conservation courses offered by colleges and universities reflects several related beliefs.

One trend leading to this impressive increase in formal classes in archival conservation is the realization that archival preservation is a critical concern for responsible curators and that the recognition of the importance of this concern is late in its development. It also reflects the trend that archival preservation has finally found a natural place among the other archival tasks or skills that must be performed as a routine part of record and manuscript administration. The preservation and conservation of documents is currently and widely recognized as a concern of the archival administrator and not the sole responsibility of a conservator.

Most importantly, however, the quadrupling of academic offerings in general archival topics and the dramatic multiplication of archival preservation courses is indicative of the realization that for topics such as conservation and preservation, on-the-job training alone is not adequate. These topics require a thorough and technical understanding of material structure, destructive forces, and the complex techniques of repairing documents and
arresting degradation. However, structured academic training in archival preservation will be difficult to obtain, due to the complexity of the subject matter and the dearth of skilled preservation practitioners within the profession. One option open to the archivist is an internship which provides on-the-job training.

Internships

For institutions employing adequate personnel, internships are a viable alternative to expensive, and frequently geographically distant academic programs. However, due to the rather extended duration of most internships in a technically complex endeavor such as archival preservation, a staff internship is not practical for smaller and inadequately staffed organizations or institutions. Very few opportunities, however, offer the completeness and practical experience with archival preservation that an internship can provide. Internships are based upon the European craft tradition of apprenticeships and teach, generally, not only the technically and theoretically correct means of achieving archival preservation goals, but also the practical considerations which are the basis for informed administrative decisions.

Internships in preservation and conservation are offered by a variety of institutions for greatly differing time periods. In selecting the internship as a continuing education option, an institution or an individual must be cognizant of several factors. Many internships offer training at a level of complexity and sophistication exceeding what is needed or useful to practicing archivists and, thus, are not good investments of time and other institutional resources. Similarly, in selecting an internship an institution or individual should know up front the purpose of the internship: Is the internship aimed at producing professionals for the advancement of the field or is the primary purpose the acquisition of labor for the completion of an institutional project? In most good internships the

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rationale behind offering an internship is a mixture of motives related to both institutional needs and the needs of the profession for practical specialized education.

Most internships available are offered by institutions with the aid of grants from foundations or endowments. Internships, more than academic class work and workshops, tend to be oriented toward either the professional conservator or the administrative librarian; however, internship opportunities for archivists on leave from their positions are available. In 1979, Yale University received a grant from the National Endowment for the Humanities to accomplish a number of tasks. One purpose was to train interns to satisfy the great need for trained preservation officers; another intention was to conduct a conditional materials survey for the collections within the libraries of Yale University. This project trained six groups of four interns during a three-year period. During the five-month periods that interns spent working in the Yale University Library, they divided their time between working on the conditional survey for the Yale libraries and receiving instruction and practice in conservation techniques and training in preservation administration.

This type of internship arrangement is not exceptional. Related, but variant, internships were offered in programs by the Library of Congress's Preservation Office, the Johns Hopkins University Library, and the New York Public Library from 1982 through 1986, all with the aid of Andrew W. Mellon Foundation Grants. The search for similar national internships can most profitably be found by reading publications such as CAN: Conservation Administration News and The Abbey Newsletter.

Regional conservation centers and programs occasionally provide internships by contract that are tailored to the needs of the participant's employing institution. Regional centers are certainly excellent institutions to contact for information regarding preservation education opportunities.
Another possibility for individuals in search of an internship arrangement in archival preservation is the local conservation and preservation programs of state libraries and archives and universities repositories. Many conservators working for state governments or college or university preservation departments would welcome the labor of a willing intern and the opportunity of improving the level of collection preservation within their geographical area.

While internships offer some unique educational advantages in a technically complex field such as archival preservation, these opportunities must be thoroughly understood before being undertaken. The amount of work that will be useful to the participant must be balanced against the amount of work required of the participant in the satisfaction of the institution's needs. The cost of internships also must be taken into consideration, for without grant support and stipends, internships can be extremely expensive, especially when the site of the internship is far removed from the institution sponsoring the intern. In the selection and initiation of an internship, *caveat emptor* is not an empty legal concept.

**Workshops and Institutes**

Undoubtedly, the most common form of continuing education for professionals concerned with archival preservation is the workshop or seminar. The variety and number of such offerings is large. This is due to the economy and convenience of this type of opportunity, the efficiency in terms of time expenditure, and the willingness of local, state, regional, and national organizations and institutions to provide training and funding for these types of programs in archival preservation.

Depending upon the region in which the archivist resides, the variety and opportunity to partake of a preservation workshop varies from extremely rich to desolate. There is no single best way of maintaining currency with the workshop opportunities available
nationally or locally. Therefore, the archivist in search of workshop or institute opportunities must glean notices and announcements for such programs from the pages of several professional periodicals. The Abbey Newsletter, edited by Ellen McCrady, preservation librarian at Brigham Young University, contains announcements of educational programs available for the preservation conscious archivist in the column, "Coming Events." This column lists chronologically the available educational opportunities, usually workshops and institutes. While The Abbey Newsletter is frequently useful to professionals in archives and manuscripts, the publication focuses primarily upon hand bookbinding, book restoration, and paper conservation for the professional book and paper conservators.

Slightly more valuable to the archivist searching for introductory or intermediate level workshops or institutes is CAN: Conservation Administration News. This bimonthly publication from the University of Tulsa does an excellent job of reporting the available preservation education opportunities, both nationally and internationally. In addition to maintaining currency on regional library and archival cooperative programs in columns such as "Preservation News," CAN also contains a column of interest to workshop shoppers, "Calendar," a chronological listing and description of upcoming programs and workshops. Certainly, the SAA Newsletter cannot be overlooked as a rich source of information about impending educational opportunities. The SAA Newsletter frequently has notes on funding sources as well as information on upcoming programs. This publication, however, is more directed to the educational offerings of the Society of American Archivists than other equally valuable programs sponsored by other organizations.

The last and, possibly, the most valuable source of information on workshops for the archivist is the newsletter or journal issued by local or state archival or library organizations. An exemplary publication in this category is the journal of the
Society of Mississippi Archivists, The Primary Source. It not only contains a conservation information leaflet, but also educational offerings available in the region and the state of Mississippi.

The frequency and length of workshops and institutes depends largely upon the region, its wealth, and the number of professionals with archival preservation interest employed therein. A number of states in the West have developed self-sustaining conservation organizations that frequently sponsor workshops and educational programs for archival and library professionals. The state-based organizations are generally the product of the Western States Conservation Project. Oklahoma, Arizona, Nebraska, and Mississippi all have active chapters of the Western Conservation Congress.

These state-based organizations issue periodic newsletters and can be contacted for their publications and information about their sponsorship of educational programs through either the state library, archives, or historical society for the respective states. Oklahoma's chapter of the Western Conservation Congress, that publishes Conservation Oklahoma Now, has sponsored approximately a dozen workshops within the last several years, ranging from hands-on disaster recovery workshops and a seminar on textile conservation to programs allowing participants to make a variety of book, pamphlet, and document enclosures under the direction of experienced conservators. The workshops presented by these state conservation organizations are often sponsored with other organizations or institutions concerned with the preservation of documents and cultural artifacts, and their costs are usually nominal.

Other locally sponsored workshops are presented by agencies of state government with special interest in document preservation. The New York State Archives and the State Library of New York jointly sponsor a series of Conservation Administration Workshops for administrators, managers, and planners employed in libraries, archives, and historical
Such arrangements are not uncommon in many other states. Therefore, archival professionals should maintain close contact with their state archival, library, educational, and historical agencies for information on workshops and regional organizations offering preservation educational services.

Another type of locally sponsored workshop or institute is exemplified by the preservation and conservation workshops sponsored by the University of Texas. These workshops are frequently but irregularly offered and range in scope from leather bookbinding to simple document preservation and photographic restoration. Universities with well-respected archival and manuscript collections and repositories and universities with archival course offerings are frequent locations for workshop presentations.

Increasingly, continuing education for archival and manuscript professionals is falling to regional cooperative programs. Regional cooperative organizations started in the late 1960s when the administrators of the New England Library Compact resolved to establish a regional conservation facility for member institutions and the region in general. Since that time the New England Document Conservation Center (New England was later changed to Northeast to convey the wider service commitment) and the regional cooperative centers and programs that followed in the 1970s and 1980s have played an important role in continuing education for conservation conscious librarians and archivists. Other cooperative projects such as the Ohio Cooperative Conservation Information Office, the Illinois Cooperative Conservation Program, and the Midwest Cooperative Conservation Program are all engaged in the dissemination of information and the education of archives and library professionals.

The preservation of documentary heritage has even become a concern for several regional consortia, whose original purposes were quite different from
library and archival preservation. Library management organizations such as the Greater Cincinnati/Dayton-Miami Valley Library Consortium or the Appalachian Consortium, an association dedicated to the preservation of Appalachian culture, have both offered workshops and educational programs on conservation of documentary materials for professionals, paraprofessionals, and administrators. The number of regional conservation efforts and program descriptions that are omitted in this brief overview is greater in number than those mentioned.

Similarly, regional library networks are finally realizing the importance of preservation education for archivists and librarians. SOLINET (Southeastern Library Network) initiated a recent preservation program that will offer information and workshops to professionals seeking help with their deteriorating collections and records. METRONET (Metropolitan Library Network) of St. Paul is also studying the concept of a conservation program to benefit its regional members in a variety of forms. AMIGOS (AMIGOS Bibliographic Control, Inc.), the library network serving the states of the American Southwest, is also studying the impact it could have upon conservation education in its constituent region.

Certainly in discussing preservation workshops for archivists one cannot ignore those programs offered by national professional organizations. One of the most valuable preservation workshops for archivists has been repeatedly offered by the Society of American Archivists since 1979. In addition to archival preservation workshops, the SAA, with a $157,929 grant from the National Endowment for the Humanities (NEH), also provided preservation consultant services to institutions, on a cost sharing basis, and produced a manual on archival conservation as part of the SAA's Basic Manual Series. The SAA, in initiating a large scale preservation education effort for working archivists, was responding directly to the results of the NEH/SAA
conference on setting priorities for historical records conducted in 1977. Participants of the conference ranked conservation and preservation of historical records as the most deserving of funding efforts of seven funding topics discussed at the meeting.

The society's Basic Archival Conservation Project with its two and one-half day workshops, offered at a reasonable fee of fifty dollars per session, was so successful and popular with archivists that when the original twenty-seven-month grant expired, it was renewed by a Phase II grant from the NEH. The second phase of the Archival Conservation Project incorporated workshops and consultant services for the preservation of photographic collections and the use of microforms as preservation tools. The Administration of Photographic Collections and Archival Conservation Management grant expired on 1 January 1985. While the future of SAA workshops and continuing education programs in archival and photographic conservation is uncertain, both the archival conservation and photographic collection administration are the subject of recently published contributions to the Basic Manual Series. These worthy and practical contributions to the field will go far in simplifying the continuing education of archivists and students interested in archival preservation.

Continuing education in archival preservation made a quick start and has progressed unsteadily during the past fifteen years. There are a number of options which the archivist can pursue. These range from self-directed study through the literature to intensive and structured academic programs. Whether the archivist in pursuit of preservation information and training acquires this education through workshops or an internship, the professional cannot fail to notice that educational opportunities are primarily dependent upon geographical location. Archivists must seek not only more training in the complex but vital archival function, preservation,
but must also work toward the establishment of more and better ongoing educational and training opportunities for archivists and students of archives. Ideally, archival training in preservation will develop to include widely available and regularly scheduled academic and practical training.

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4 For the purpose of literary style, preservation will be used as a general term encompassing both the restorative functions of document conservation and the preventative practices of preservation. The term preservation will normally be used in place of conservation and preservation. The term conservation will only be used when there is a need to express specifically the restorative aspects of archival preservation.


6 Ritzenthaler, Conservation, 125.

7 An interesting discussion of the institutionalization and accreditation of archival education is found in Nancy E. Peace and Nancy Fisher Chudacoff, "Archivists and Librarians: A Common


For further information about the 1983 course offerings in the field of archival preservation see Ibid.

Ritzenthaler, Conservation, 7,9.


Ritzenthaler, Conservation, 140.

Ellen McCrady, "Training in Paper Conservation," The Abbey Newsletter 7 Supplement (May 1983): 1-2. McCrady observes that while workshops enjoy great popularity in many fields there is some controversy over their use as some commercial enterprises have made hefty profits by exploiting these concerns. However, she concedes that, in
technical fields such as paper and archival conservation where many of the finest teachers practice rather than teach, workshops may be the best and only way to acquire quality instruction.


19 In addition to the Humanities Research Center at the University of Texas, another academic institution, the Rochester Institute of Technology, frequently offers intensive workshops in various types of document and book preservation. Both institutions have extremely strong programs in photographic conservation as well as the conservation of textual materials.


21 Ritzenthaler, Conservation, 140.


23 Cunha, Library and Archives Conservation, 35.


25 "AMIGOS and Preservation," CAN 19


KENTUCKY'S MACHINE-READABLE CHALLENGE

Richard N. Belding and Larry G. Forston

For many reasons, the history of the management of records in machine-readable form in Kentucky state government has been short and sporadic. The Public Records Division of the state's Department for Libraries and Archives has long been aware of problems related to appraising and preserving machine-readable records (MRR), but lack of staffing and expertise has forced it to postpone confronting these issues. The widespread use of MRR by state agencies, however, has made it impossible for the division to assist them with appropriate records management and archival procedures without dealing in some way with these records.

Recently, the division got word that it had received support for an MRR project from the National Historical Publications and Records Commission (NHPRC). The project's goal is to develop an MRR program for Kentucky state government which will identify, describe, schedule the retention, and provide for the preservation of records in machine-readable form.

Many records which document state government activity are now being produced in machine-readable rather than in a paper or "hard-copy" form. There is no assurance that this historical documentation is being captured and preserved and, unfortunately, one of the primary descriptive adjectives associated with MRR is "fragile." This fragility is related to the inability of magnetic tapes or disks to meet standards for permanency. Tapes and disks have to be rewound or copied periodically to avoid loss of data and both are subject to damage from magnetic forces. In addition to being fragile, MRR are easily alterable, with little or no indication that
Until now, the lack of archival and records management input into the management of these MRR has led to the likelihood that historically significant documentation, easily captured prior to the advent of MRR, is now being lost, altered, or destroyed. Currently, no standard methods or procedures for the acquisition, appraisal, or distribution of these records exist in Kentucky state government. Because of the proliferation of computer-generated records created and/or maintained by state government agencies—a situation which is likely to increase with the spread of distributive processing capacity—the ability to manage these records effectively is almost nonexistent. The only kind of management available is of data as it is used in the daily business of a state agency. This management is provided by the state's Department of Information Services (DIS), the central computer agency of state government, with no consideration given to the preservation of a record because of its enduring value, for administrative purposes or historical research.

With the development of standards and procedures, current machine-readable record systems will be better managed and newly created systems will be developed in such a way as to provide for the proper management and preservation of information being created. Kentucky's new project is designed to go beyond the goals of previous state government MRR projects. It will build on the findings of the benchmark Wisconsin MRR project and, in part, will direct its efforts toward implementing the recommendations of that project. It will also make use of the Oklahoma Department of Libraries' preliminary report, "Planning and Implementing a Program for Managing the Machine-Readable Records of Oklahoma State Agencies," as an important resource document in the project's planning stages. While the Wisconsin program provided requirements for an MRR archival program, the Kentucky project will also develop data on legislative and budgetary needs.
The project's coordinator will be a person with electronic data processing (EDP) experience, probably from DIS, and existing Public Records Division staff will supply the archival direction of the project. This will serve to increase each agency's awareness of the others' functions, procedures, and requirements, and lay a foundation for continuing cooperation. In addition, this project will rely more heavily than that of Wisconsin on records management as a necessary means to preserving and making MRR accessible.

In the ensuing sections, this article will review the development of machine-readable records management in Kentucky state government, examine the role and interests of key groups, and discuss the planning, strategy, and goals of this project.

Managing Machine-Readable Records: Kentucky's Experience in the Last Decade

Kentucky's Public Records Division, in managing MRR, has progressed as much through evolution as through a fixed plan. Through the routine identification, description, and appraisal processes of gathering information for records retention schedules and through agencies' requests for technical assistance in dealing with automated records, the division became aware of the size of the MRR problem and the significance of this new method of collecting, manipulating, and preserving information.

In the late 1970s, division staff began to include computer-related records on the records retention schedules of some of the larger agencies of state government. Because of a lack of in-house expertise and experience with these records, the appraisal and ultimate retention of these records was based largely on recommendations from agency EDP personnel, with less-than-usual regard for the archival principles used in appraising records in hard-copy form. It soon became apparent that this method of records management was unacceptable.
As the problem grew, division staff began to seek ways to increase their skill in dealing with this subject. Current literature available on MRR was reviewed more thoroughly, and staff took advantage of workshops offered in the subject. They also began to view agency EDP personnel as one resource in the decision-making process, rather than as the one with the last word. Activity throughout the division began to reflect a heightened response to a growing problem in state government. To meet this new challenge, the division began:

Collecting information, through its normal scheduling procedures, on the use and retention of MRR. Records Description and Analysis forms, completed for each record series as it was scheduled, were developed in early 1983. These showed whether records being scheduled were in machine-readable form or were output from a record series maintained in machine-readable form.

Working with the state's Legislative Research Commission, the administrative arm of the state legislature, to use existing Description and Analysis forms to create a list of computer output records present in a small number of agencies. This list, in turn, can be used to determine where useful data bases are located and to promote additional description and appraisal activity.

Accessing, through its telecommunications capacity, major statewide data bases, including the Kentucky Economic Information System (KEIS) and the Automated Legal Text Entry and Revision data base (ALTER), used in researching Kentucky statutes.

Acquiring hands-on experience with the management of MRR through the development of automated systems to handle the Kentucky Guide Project data base and bibliographic control and indexing of
Kentucky state publications.

Attending seminars on the management of MRR, including those sponsored by the Society of American Archivists.

Carrying out extensive research into the admissibility of MRR into courts of law. This research extended not only to other states but to other countries as well. The work was initiated in response to an inquiry from the Department of Social Insurance of the state's mammoth Cabinet for Human Resources.

Sending and receiving data electronically, on a routing basis, to and from such agencies as the Finance and Administration Cabinet and DIS.

The division has worked hard to make state agency records officers and DIS agency contract personnel more aware of each other's presence and of how they can work together to better manage their agencies' MRR. The division's closer cooperation with the Legislative Research Commission has insured that the commission can identify and reach key personnel able to access information created by those agencies. In addition to these actions, important developments have occurred in other areas which will prove valuable to the new project.

The State Archives and Records Commission (SARC) and the Machine-Readable Records Task Force

In June 1983, Kentucky's State Archives and Records Commission (SARC) formed a Machine-Readable Records Task Force to study the problems associated with the identification, retention, preservation, and accessibility of MRR. The task force is comprised of SARC members, staff of the Public Records Division, DIS, and the Legislative Research Commission, and representatives of a number of state agencies which create or use MRR.

During its first six months, the task force
studied the nature of records in machine-readable form, the problems inherent in managing these records, and previous archival studies of MRR. The task force also worked with the Special Subcommittee on a Statewide Information System during the 1984 legislative session to insure that the authority of the SARC to set legal retention periods for public hearings, regardless of format, was not diminished or compromised. Through the interaction of these two groups, the ideas of seeking grant support to plan and begin implementation of a state government MRR program developed. The task force continues to meet in order to keep abreast of new developments in Kentucky and other states which are likely to have an effect on the management of MRR and records systems and to advise the SARC in this area.

The Special Subcommittee and Machine-Readable Records Legislation

In July 1977, the Kentucky General Assembly appointed a Special Subcommittee on a Statewide Information System to study the feasibility of creating, within state government, a computerized system to improve the transfer of financial information and public records between agencies. During its early meetings, the subcommittee focused on monitoring major statewide projects undertaken by DIS, reviewing the administration of computers and computer programming in state government, examining computerized information systems operating in other state legislatures, and assessing the potential for legislative access to statewide data bases.

The enormous problem of rationally managing MRR and records systems throughout state government came to the attention of the subcommittee in 1983. One of its major concerns was the difficulty legislators and the Legislative Research Commission often encountered in accessing information which state agencies had in machine-readable form. In their efforts to obtain such information, they became aware of serious shortcomings in the management of state government information resources in machine-readable form.
During the sixty-day 1984 legislative session, the subcommittee was successful in securing passage of three computer-related bills. One concerns the security of computer-generated records. Another addresses access via computer to state agencies' financial information by the Legislative Research Commission. The third bill created a Kentucky Information Systems Commission to develop and implement a program for the identification, maintenance, and transfer of computer-generated information in state government. This last piece of legislation addressed the interests of both the Public Records Division and the subcommittee. This common interest led to the cooperative relationship between the subcommittee and the division necessary to deal with MRR problems on a government wide basis.

The new Kentucky Information Systems Commission is advisory in nature and makes recommendations to the governor concerning the purchase of computer hardware and software, the development of statewide information systems, and other computer-related concerns. The statute authorizing the commission's activity clearly indicates the responsibility for determining retention requirements for MRR continues to rest with the State Archives and Records Commission, which is the principal advisory body to the Public Records Division.

The Department of Information Services (DIS) and the Data Dictionary Project

Until 1981, planning and development of MRR and of machine-readable record systems was in the hands of individual state government agencies and was haphazard at best. Because this responsibility was not centralized, diverse methods of systems development were used, with little concern for uniformity. Realization of this fact led to the creation of DIS.

Unfortunately, this centralization of computer expertise and authority did not have the funding, staffing, or time to correct the errors of the past or even to identify the problem areas. DIS is geared
towards the development of information systems and the flow of information as it is used in daily operations of the user agencies. It also advises, recommends, and approves all purchases of computer hardware and software by state agencies. Because of the mandated mission of DIS, however, little consideration has traditionally been given to the preservation of data bases or computer-generated records for the purposes of future historical research.

As already indicated, DIS was formed to be the central data processing service agency for the executive branch of state government. The agency receives a small appropriation, with remaining funding derived from receipts for services rendered to client agencies. Systems development, systems analysis, programming, and use of the state's central computer make up the majority of those services. Until now, DIS has had inadequate funding to develop a data dictionary and has been unable to find an agency able to underwrite its development. A data dictionary relates exclusively to MRR; to the hardware and software systems used to create and maintain them; and to the documentation which support their creation, maintenance, and use. It is a dictionary (or encyclopedia of sorts) which defines the records themselves, down to the field level.

To begin work on a data dictionary, DIS purchased IBM's "DB/DC Data Dictionary" software package and integrated the collection of the required information into their system development procedures. As this has occurred only recently, the dictionary, in its current form, contains only limited information on the most recently developed systems. Data has been collected under the supervision of the systems designers, so the dictionary currently contains only a portion of what the Public Records Division views as needed information and this is usually in a form so technical as to be useful only to the compilers. Because most DIS staff must be assigned to receipt-generating projects, few have been available to work on the data dictionary project. This has
occurred despite the fact that such dictionaries are widely viewed by government agencies and private corporations as being essential to optimizing the performance of information processing systems, which are often extraordinarily complex.

Purpose and Goals of the State Government MRR Project

Kentucky's new project plans to lay a solid base in standards, methods, and procedures for an MRR program that will be applied long after the project is complete. Central goals include the development of procedures for the identification of MRR, surveying and describing MRR, drafting principles upon which to base retention decisions, methods and responsibilities in retaining records in machine-readable form, and methods for assessing records in machine-readable form for future research purposes.

An interim report on the findings of the project will be produced to assist the Kentucky General Assembly's Special Subcommittee on a Statewide Information System in drafting legislation. Such legislation will be concerned with the management of, and an ongoing program which provides for access to, machine-readable information in state government. The accessibility and preservation of computer-generated information interest this subcommittee, both from the perspective of increasing efficiency within the state's executive branch and of accessing information for research purposes, whether by the legislature or its constituency, the general public.

The Legislative Research Commission plans to participate directly in the project in the same manner as executive branch agencies will. With data bases and MRR of their own, they look forward to being included in the data and to operating under the same guidelines developed for executive agency MRR programs. Their participation in the project is expected to promote the exchange of information between agencies of the executive branch and the
legislature. Among the data bases which the Legislative Research Commission currently maintains or is interested in maintaining are the Kentucky Revised Statutes, bill status information, and bill summaries.

Legislative interest in this project will provide an excellent and, perhaps, uncommon opportunity for the executive and legislative branches of Kentucky state government to cooperate in reaching a common goal. That both branches of government recognize the scope of MRR problems in state government only serves to underline the need for implementing an ongoing machine-readable records program after the grant project's completion.

The project's final report is expected to address methods, procedures, and forms necessary for the collection of information from agencies for describing, appraising, retaining, and accessing machine-readable records. The report will serve as a blueprint for the Public Records Division as they develop and implement a program for managing the state's MRR. Another goal of the project is to improve the education and training of division and state agency personnel in the methods developed above, permitting the program to have proper staff support once the project ends and an ongoing program is established.

Completion of a data dictionary is a key feature of this project and vital to its success. Information contained within the dictionary will identify systems and data bases currently being used by state agencies in the state's central computer system. Information included will be as general as the titles and descriptions of entire systems and as specific as the individual data elements that make up the data bases used in these systems. The data dictionary will be the basis for identifying MRR throughout state government. The dictionary will not determine the historical significance of any records, but will collect vital information essential to records appraisal and serve as a starting point for that activity. It will also contain information on
the retention periods of records. The Public Records Division staff will furnish this information to the dictionary once appraisal decisions are reached. Information necessary for the preservation of historically significant records and their transfer (or, at least, the transfer of control over those records) to the division will be another function of the dictionary. Once completed, the dictionary will greatly facilitate information sharing between different agencies and branches of government and substantial cost savings for agencies currently duplicating information collection efforts of other agencies can be projected.

Kentucky is coming to grips with the problems of managing and preserving state government MRR well after the game has begun. The earlier work of other state archival and records management programs, as well as that of corporate and other nongovernmental programs, will be a valuable guide in the project's work. The broad-based commitment of the Kentucky Department of Information Services, of the state's General Assembly and its Legislative Research Commission, of the Department for Libraries and Archives' Public Records Division, and of other executive branch agencies, already promises a certain consensus of the gravity of the problem and the urgency for its solution. All involved hope that publication of the project's final report will not be the final act of this program, but will serve as a "generic" document of wide use to other states developing programs to manage MRR.

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2 Samuel Sizer, Planning and Implementing a Program for Managing the Machine-Readable Records of Oklahoma State Agencies (Oklahoma City: Oklahoma
Resources Branch, Oklahoma Department of Libraries, February 1984).
ERRATA

The editors regret that during the typing and production of the fall, 1984, issue of PROVENANCE several errors occurred in the article "Tablets and Temples: Documents in Republican Rome" by Phyllis Culham. All umlauts and French accents were omitted from the printed copy; plebeian was misspelled as plebian throughout the article; "by" was substituted for "from" (p. 15, line 31); an "s" was added to presence (p. 19, line 45); and an "n" was added to Latium (p. 30, note 33). We apologize to Dr. Culham and to our readers for these errors.

In the course of editing the text, primarily for conformity to the Chicago Manual of Style, we also made several changes which Dr. Culham feels affected the meaning of her article. At her request, we include a list of these changes, noting the original text as written and the text as published:

p. 15: original: In the discussion which follows I will refer only to the ....
published: In the discussion which follows reference will be to ....

p. 19: original: contracts for public works, housed in the aerarium, and the
published: contracts for public works housed in the aerarium and the

p. 22: original: an Archivist of the United States
published: an archivist of the United States

p. 22: original: our Archive was
published: the archives was

70
This bibliographic introduction is a guide to the study of optical storage in the 1980s. It is designed to enable the reader to keep current on this fast changing technology by providing an annotated list of places to look for information, rather than listing all entries for the topic. Though optical technology is several decades old, the use of optical disks for storage has been feasible on a commercial level only in the last five years.

Because librarians and archivists in the 1980s are faced with providing quick access to such a large volume and variety of material, they are exploring technologies that permit long-lasting mass storage of digital information which can be accessed randomly by computers. While electromagnetic media can store various quality images of different types of records (paper of all sizes, sound, television, film, etc.), access to these materials on magnetic tape is only in slow sequential or "serial" fashion. Magnetic disk storage provides quick random access, but is a costly and bulky way to store information and can be damaged easily. Optical storage, on the other hand, has the potential of providing quick random access and more compact and permanent storage.

This technology, however, presently requires expensive equipment to copy records on to optical disks and is relatively economical only if the disks are sold in large quantities. The editing of material to be recorded optically could only be done on another medium and then transferred to optical storage. For records currently in electromagnetic form optical storage can serve as a permanent storage medium, because it lasts longer and takes less
storage space. Thus, optical storage has had a great potential for librarians and archivists, but is only now becoming a viable alternative.

Literature on optical storage, particularly in nontechnical forms, is very recent. Many of the indexing tools have not adequately adjusted to this new development. Most bibliographic tools use "videodiscs" or "videodisks" (terms often thought to be electromagnetic technology) interchangeably with optical storage which is laser based. Some manufacturers are currently applying "videodisk" to analog laser-based storage, the typical process for graphic forms, and "optical disk" to digital/interactive laser-based storage, used for text and computer retrieval systems. Some refer to the disks as "laser disks" or "compact disk" (size used in sound recordings). The bibliographic tools also force one to look under several classifications as well as under several terms. This introduction should enable a researcher to overcome these roadblocks more quickly. The library and archival literature has focused chiefly on optical disks as a more long-lasting storage medium for still and motion pictures. Little attention has been paid to its use as a preservation medium for information generated in electromagnetic form (called "archival storage" by data processors) or for large collections generated in a variety of formats.

GETTING STARTED WITH OPTICAL STORAGE


This is an excellent, though all too brief and, in
1984, outdated, explanation of the technology as it applies to library and information science.


This book contains a chapter on "The Potential Impact of Optical Disc Technology" that describes types of videodisc players, how optical discs work, the implications for on-line retrieval, and a comparison with microforms.

LIBRARY OF CONGRESS SUBJECT HEADINGS

The following Library of Congress subject headings can be used to search for material on optical storage. They can be used in most university library card catalogs, Books in Print, and the Monthly Catalog of United States Government Publications. The terms have been divided in primary and secondary terms to provide a priority for searching:

Primary terms
Computer storage devices
Optical storage devices
Videodiscs

Secondary terms
Computers- Optical equipment
- Memory systems
Computer input-output equipment
Electronic Data Processing
Electronic Digital Computers - Memory systems
- Input-output equipment
Information Science - Bibliographies
Laser recording
Optical data processing
Random access storage
Video games
PRINTED INDEXES

BOOKS IN PRINT. Though the subject index is somewhat unreliable, this index provides the most complete listing of what is currently in print. Especially useful to check when author or title is known. Paperbound Books in Print has a subject index with broad categories, i.e., Technology - Data Processing.

COMPUTER AND INFORMATION SYSTEMS ABSTRACTS. This index covers periodicals, books, symposiums and government reports; most of which are rather technical. Each entry is given a full bibliographical citation and abstract. The subject index uses "optical storage," and a section on mass storage or optical storage regularly appears in the chapter on storage.

CURRENT RESEARCH IN LIBRARY AND INFORMATION SCIENCE (formerly Radials Bulletin). This monthly index provides information on optical storage projects such as the one at Public Archives of Canada.

ERIC (Educational Resources Information Center). Though education based, this index covers a wide variety of information topics. It contains research project abstracts as well as indexes to periodicals.

GOVERNMENT REPORTS ANNOUNCEMENTS INDEX. This index to government publications is published biweekly and cumulated annually. It covers research in progress as well as completed reports. See also NTIS database below.

INFORMATION SCIENCE ABSTRACTS (formerly Documentation Abstracts). This monthly service is published by ASIS (American Society of Information Science). Optical information is indexed under "videodiscs." Abstracts cover education, library science, technology, etc.

LAMP (Literature Analysis of Microcomputer Publications). Containing subject entries for optical and
videodiscs particularly as they relate to computers, this index comes in microfilm and paper format.

LIBRARY LITERATURE. This monthly Wilson publication will also be available on-line sometime in 1985 through Wilsonline.

LISA (Library and Information Science Abstracts). This monthly index provides information from journals and books on both technical and nontechnical aspects of library and information science applications of optical storage.

THE MAGAZINE INDEX. Though oriented toward popular magazines rather than scholarly journals, this index is easy to use because it comes in an automated microform format.

NATIONAL NEWSPAPER INDEX. It provides access to New York Times and Washington Post articles on breakthroughs and unique applications of optical storage or "videodiscs."

DATA BASES

COMPUTER DATABASE. A relatively new DIALOG database, this provides wide-ranging information on computers, telecommunications, and electronics. It covers over 500 periodicals, books, courses, tabloids, newsletters, and research reports. It began in January 1983, is updated every two weeks, and allows browsing of journals' content pages.

ERIC. This is described in "Printed Indexes" section above.

INSPEC (Information Service for Physical Electrotechnology and Control). Covering computer control and Electrical and Electronics Abstracts as well as other science indexing, INSPEC scans 26,000 journals and abstracts 200.
THE MAGAZINE INDEX. This is described in "Printed Indexes" section above.

MARC DATABASE. It covers all books and some other sources that are catalogued by the Library of Congress.

MICROCOMPUTER INDEX. A guide to twenty-one microcomputer journals including those mentioned in this bibliographic introduction this index was interrupted for a period in 1984.

LISA. This is described in "Printed Indexes" section above.

NTIS (National Technical Information Service). This is mentioned in "Printed Indexes" section under Government Reports Announcement Index above.

PERIODICAL LITERATURE

Because optical storage, on a practical basis, is such a new topic, and because it is changing constantly, the periodical literature is much more useful than monographs for study of the topic. The selection below contains a balance of technical publications, library and information science journals, and archival publications. Selections have been limited to nontechnical publications that frequently publish articles on optical storage, but some useful technical publications could not be ignored and many library science and archival publications cited are only beginning to publish articles on the topic. Many library technology and automation journals such as Library Trends and Science and Technology Libraries give virtually no coverage of optical storage.


American Archivist. Quarterly journal. See volume
47 (Winter 1984), which contains the best article to date on archival applications and future implications.

American Libraries. This monthly journal discussed the topic more frequently several years ago when the subject was theoretical.

Archivaria. This semiannual archival journal advocated the investigation of optical storage in 1977 and covered the Public Archives of Canada project.

Bulletin of the American Society for Information Science. This monthly has for over five years championed the use of optical storage and reported its status. The Bulletin is much easier to read than the Journal of ASIS.


Byte. This monthly, technical journal has devoted an issue to optical technology once a year for the last three years (1982-1984).

Canadian Library Journal. This quarterly journal has discussed "videodiscs" as technology with potential for education, and entertainment, as well as for information storage.

Computer. An engineering publication, it provides industry spokesmen with a forum for promoting their latest creation. Optical storage was discussed in July 1982.

Database. This quarterly journal is devoted to database use. Recently (December 1984) vendors like BRS (Bibliographic Retrieval Services) are marketing videodiscs.
Drexel Library Quarterly. This journal has focused on videodisc's impact on storage of art and accompanying documentation.

Electronic Library: The International Journal for Minicomputers, Microcomputers, and Software Applications in Libraries. This quarterly journal has a hardware section with marketing of optical equipment noted.

Film Library Quarterly. This quarterly occasionally describes optical disks along with other technologies.

Government Computer News. A monthly newspaper, it has ads, conference announcements, and occasional articles on federal government videodisk projects.

Information Technologies and Libraries. This quarterly journal has articles on Video Pat Search (June 1982) and other systems. Recent developments are discussed in the December 1984 issue.

Information Today. A monthly newsletter distributed free as advertisement to information managers, it frequently contains articles on state of the art technology including library technology.

Inforworld. This weekly magazine focuses on the latest news in computer technology and evaluations of hardware and software. Recently (June and November 1984) there has been attention to optical storage.

Journal of Information and Image Management. A monthly technical publication, it promotes optical storage as next year's great breakthrough.

Journal of Micrographics. Published bimonthly, this journal continually draws comparisons between optical storage and microforms.

Journal of the American Society of Information
Science. Many of the articles in this bimonthly journal are so scholarly that they are unreadable by the average user, but this journal has pioneered the discussion of optical storage application. "Perspectives in ..." has readable forecasts on technology. The November 1983 issue contains 35 pages of relevant articles.

Library High Tech. This quarterly journal runs articles on computers, telecommunications, facsimile, optical storage, etc.

Library Journal. This monthly journal has a column entitled "Mason on Micros," which discussed optical storage in February 1985.

Library of Congress Information Bulletin. Because the Library of Congress has recently produced results from an optical storage project, the biweekly Bulletin has been the best place to find information on the topic.


Library Technology Reports. A bimonthly journal it reviews systems and discussed optical storage in 1981.

M300 and PC Report. This monthly newsletter deals with IBM PC's and M300's, OCLC's customized PC, and recently covered videodisk presentations at the American Library Association convention.

Midwest Cooperative Conservation Program Newsletter. Optical storage was discussed in the February 1985 issue.

Program: Automated Library and Information Systems. A quarterly journal, it devotes only new systems and book review attention to optical storage. In the
last two years, no full-length articles have appeared on the topic.

Provenance: The Journal of the Society of Georgia Archivists. This biannual journal begins coverage of optical storage with this issue.

Reprographics Quarterly. A quarterly journal on micrographics, it discussed optical storage in 1979.

Serials Librarian. This quarterly journal has published a 1982 article on the advantages and disadvantages of optical storage.

Small Computers in Libraries. This monthly newsletter contained articles in the December 1984 and February 1985 issues which describe systems currently on the market for microcomputers.

Special Libraries. This monthly journal has an occasional article (January 1983) that describes "videodiscs" as one of many applications for special libraries. The SLA also markets Picturescope which is a photo publication that focused attention on optical storage early, in the April 1976 issue.

Technicalities. A monthly journal, it mentioned this technology in April 1982.

Videodisc and Optical Disk Magazine. A new quarterly journal with an accompanying newsletter called Videodisc and Optical Disk Update, it provides broad and scholarly coverage to the industry, including book and equipment reviews as well as articles.

Videodisc/Videotex. This monthly newsletter regularly provides information on projects using optical storage as well as technical advances.

Wilson Library Bulletin. This monthly journal includes a special technology section and discussed
the subject in November 1980 and January 1983.

**BIBLIOGRAPHIES**


This 153-page, well-indexed work has a section of one chapter which is devoted to "videodisc and videotext." Though the author of the work is an archivist, his sources represent a wide range of information management literature, most of which is nontechnical. Sources include books and periodicals each of which is annotated. Latest entry is 1981.


This publication is available in microfiche at most regional depositories. The majority of articles cited are in highly technical journals.

**ENCYCLOPEDIA and DICTIONARY ENTRIES**


Conference Proceedings and State of the Art Reviews


This evaluation of videodisc technology describes its status as of 1981 and outlines portions of the technology that need further development.


This is a compilation of papers from the conference "Archival Management of Machine-Readable Records" held at Ann Arbor, Michigan. Richard A. Volz's paper, "Computer-Based Mass Storage Technology," is directly applicable to optical storage, but the whole work, which is not indexed, shows the implications of mass storage developments to information managers.


This report compares optical storage with paper and other media. It also discusses applications.


These technical proceedings contain the paper "Mass Storage in Large Research Libraries," which suggests infrequently circulated books should be stored in digital form.

The proceedings include technical articles on recent applications.


This conference compilation contains many technical articles, but one suggests that optical storage may provide a solution for the archives of computer centers.


Monographs


This handbook offers current trends, costs, and describes the technology.


The author defines optical disks and sees the media as a "preservation solution for machine-readable archives."


This early and brief study is nontechnical, has a good bibliography, and describes the early history of
the technology.


This is a step-by-step approach to designing and writing programs and contains flowcharts, diagrams, a glossary and an index.


Kesner predicts the use of optical storage in highly automated operations in the near future, even with microcomputers.


The authors describe an early experimental project designed as a preservation method.


This pamphlet describes the aims of the project which is chiefly in the experimental stage though disks have been produced for in-house use.


It provides an overview of optical videodisks as an emerging type of microform.

This education-oriented book discusses how videodiscs are made, their cost compared to videotape and film, their applications to education, and their interaction with computers. It contains excellent illustrations.


This indexed book covers optical technology from an educational and business standpoint. It suggests implications for the future which are now beginning to become reality.

Wood, Rulon K. An Overview of Videodisc Technology and Some Potential Applications in the Library, Information, and Instructional Sciences. (See entry in "Getting Started" above.)


This monograph provides a brief explanation of various types of "video-discs," but it makes even briefer reference to applications and the economics of optical storage.

Some Library and Archive Optical Projects

The George Eastman House: This is a new three-year project to store 600,000 historic photos on a handful of laserdiscs with an interactive computer-based catalog.

Library of Congress: This is a pilot project for storage of color film, photos, lithographic prints in analog form and monochrome text (manuscripts and printed) in digital form on twelve-inch discs available in-house only.
National Gallery of Art: This project provides storage of paintings on twelve-inch analog discs, which sell for $95 each, including a gallery tour. An interactive disk from this project may be marketed.

U.S. Patent Office: Video PATSEARCH is marketed by Pergamon International Corporation, 1340 Old Chain Bridge Rd., McLean, VA 22101. Eight disks with 750,000 items are sold as a package with necessary hardware including a microcomputer for interactive searching.

Public Archives of Canada: The project began in 1978 and produces disks with movie and slides used for public relations.

Securities and Exchange Commission: This LaserDisclosure project makes available SEC filings.

Smithsonian Institute, Air and Space Museum: Color and black and white aviation photos in analog format will be sold by SI for $35/disk beginning in 1983. For a projects directory see Videodisc/Videotex.

Some Manufacturers of Optical Disks
Advanced Library Concepts, 9343 Tec Center Dr., Suite 175, Sacramento, CA 95826: Markets ADLIB, a combined computer and video-disk system that claims to be appropriate for "special collections of historical manuscripts."

Carrollton Press, Inc. 1611 N. Kent Street, Arlington, Va 22209: Markets DisCon, DisCat and MARVLS, "laserdiscs standalone work stations for reference and conversion of MARC records."

CL Systems Inc., 1220 Wasington St., West Newton, MA 02165: Markets a MARC format workstation system called Lasercat developed in England.

Information Access Company, 11 Davis Drive, Belmont,
CA 94002: Markets Infotrac, an automated periodical literature reference collection available on videodisc via a multistation set-up of four micros, one laser disc player, and one interface.

LaserData Inc., P.O. Box 2175, G.M.F. Woburn, MA 01888: Allows database holder direct marketing of twelve-inch "optical videodisks" which can be formatted for use with a microcomputer.

The Library Corporation, P.O. Box 40035, Washington, D.C. 20016: Markets BiblioFile, system for using MARC records on small or "compact disks."

Minnesota Mining and Manufacturing, 3M Center, 223-5N St. Paul, MN 55144: Will produce optical discs on demand. 3M is currently experimenting with read/write capabilities.

Reference Technology, Inc. 1832 55th, Boulder, CO 80301: Markets Dataplate, a mass storage system for microcomputers using "optical video discs." Also provides pre-mastering service.

Finally, archivists are beginning to develop a long-overdue body of theory. Archival Choices, edited by Nancy Peace of Simmons College, tackles one of the archival world's most complex and ever-present problems--appraisal. This book begins to fill the void in archival appraisal theory.

Archival Choices seeks to "(1) describe archival practice in selected institutions, (2) examine current archival theory in light of the particular problems presented by contemporary records, and (3) stimulate new research and writing, whether along lines suggested by the contributors or in opposition to them."

A workshop on processing contemporary archival collections held at the Kennedy Library, Boston, in 1980 was the impetus for the book. Containing articles by editor Peace and six others, Archival Choices is a volume of current theory. The editor chose to exclude the appraisal of government records and focuses on college and university records, business records, congressional collections, and literary manuscripts. Appraisal in each of these areas is extremely diverse, but still similar. The articles bring these similarities and differences to light and give useful guidelines.

Peace begins the book with an overview of appraisal practice and theory, quoting from Schellenberg, Brooks, Kahn, and Bauer. She draws from Michael Lutzker's oft-quoted "Max Weber and the
Analysis of Modern Bureaucratic Organizations: Notes Toward a Theory of Appraisal" and states that Frank Burke was correct when he stated that archivists lack a theoretical perspective. Peace's introduction to Swedish archivist Nils Nilsson's textbook Arkivkunskap is enlightening. The reviewer concurs with her that a full translation of Nilsson's book is needed. After lauding the work of the National Archives in appraisal, Peace concludes, and rightly so, that more sophisticated reading and theory is needed for nongovernment archivists. Archival Choices begins at this point.

A brief look at the articles will serve as a gauge of the book's value. John Dojka and Sheila Conneen contend that records management can be one appraisal tool for college and university archives, and their article serves as a step-by-step guide to setting up a records management program. Francis Blouin addresses the problem of appraisal for business records. As he so aptly states, appraisal cannot be considered without looking at the environment in which business archivists and researchers dwell. Neither simple nor complex guidelines now exist for appraisal of business records, but remain to be formulated. Blouin presents some solutions to the problems. Patricia Aronsson offers a concise, accurate guide to follow in dealing with the complexities of congressional papers. Until now there have been few relevant guides to approaching the huge quantity of paper created by senators and representatives. Philip Cronenwett addresses literary manuscripts, which, because of their market value, create unique appraisal problems as well as ethical ones. His appraisal approaches assist archivists in becoming braver when working with literary manuscripts. All the articles are well written, thorough, and well edited.

Clearly one archival choice that must be confronted is that of deaccessioning. Unfortunately, deaccessioning has become an emotional buzzword recently, but Lawrence Dowler expertly deals with the
questions. In concert with deaccessioning must be cooperation, an issue which Gerald Ham has brought to attention. These two articles serve well as a conclusion to Archival Choices, and the book serves well as a theoretical framework for appraisal.

Peace has compiled an excellent book that is useful to beginning archivists. But more importantly, the volume is useful to those who have long since passed the beginning archivist stage and have been seeking some theoretical answers to appraisal questions.

Faye Phillips  
National Archives and Records Administration  
Washington, D.C.


Archives and Manuscripts: Conservation is perhaps the best of SAA's Basic Manual Series on archival management. A concise and thoroughly organized handbook, the manual provides an excellent introduction to the nature of common conservation problems and clear insight into their alleviation through proper management and treatment.

The manual is divided into two sections, the first being a textual treatment of the subject and the second a most useful group of related appendices. The textual section of the work begins by defining conservation as a science "encompassing the three explicit functions of examination, preservation, and restoration." From there it proceeds to outline the
nature of most archival materials, the proper methods to implement a conservation program, and various conservation treatments suitable for use by the novice technician. The text is most methodical in its approach and succeeds in relating enough of the very complex aspects of conservation science without sinking into the potentially frightening morass of chemical terms and equations. Particularly useful are the chapters outlining the nature of most archival materials and the causes of their deterioration. (Photographs receive only brief mention because they are covered in a separate manual.) Of no lesser import are two later sections dealing with the integration and implementation of a conservation program in an archival repository. Both sections contain excellent suggestions for implementing a program and all major points are supported by examples of various procedural forms, which may be used to document preventive and restorative measures.

Instructions for the accomplishment of basic conservation techniques are provided in the final chapter of the manual and are further elaborated in one of the many appendices. Other appendices include instructions on how to evaluate current conservation literature, an extended bibliography, a list of basic conservation supplies and their respective suppliers, and a listing of all regional conservation centers and organizations.

Perhaps the work's only weakness lies in the poor quality of the illustrations used in the basic conservation instruction appendices. The sketches are, unfortunately, very crude and, while probably adequate to deliver their point, may be insufficiently illustrative to the beginner. From an overall standpoint, however, this must be considered an excellent and timely handbook suitable for the reference shelf of nearly every repository.

Joseph W. Constance, Jr.
Georgia State University
Anyone who approaches the subject of maintaining the collections which may be found in a library becomes aware of the various types of material, each with its own conservation problems, and the amount of technical expertise necessary for properly caring for any one type of material. Most authors have focused upon in-depth presentations of a few related media or a generalized overview of the entire topic of conservation. This book attempts to surmount this problem through the use of specialists who discuss conservation problems and solutions for ten different types of library material.

This approach benefits from each author's ability to focus upon only a part of the task of conserving library collections. Reliance upon experts in each field, moreover, permits the work to be fairly free of inaccuracies and thus a source of sound advice. The chapters on photographs and sound recordings are particularly helpful.

One must, however, recognize the limitations of any work which attempts to cover the entire field of library conservation in a little more than two hundred pages. Preservation techniques often are presented in a generalized discussion without a great deal of detail. This is to be expected when each type of material is covered in approximately twenty pages, which also include a history of the medium and a short bibliography.

Coordinating the opinions and suggestions of a number of experts is a task which the editor occasionally has found difficult to accomplish. The author for book conservation suggests that it is best to file each sheet of a manuscript collection in a
separate folder or later suggests that archival material should be housed in baked enamel file cabinets. The use of file cabinets is contradicted by the author of the section on manuscript conservation, who advocates the standard approach of storing folders in acid-free boxes. Filing each document in a separate folder is impractical in most archival collections, which sometimes measure in the hundreds of cubic feet rather than the tens of items.

The editor's choice of which types of material were to be included is somewhat puzzling in that both maps and architectural drawings are given very little attention. Videotape and videodiscs each receive separate chapters. These are rather unfortunate choices given the rapid advancement of technology in these areas. Indeed, the authors of the chapter on videodiscs admit that "videodiscs and videodisc equipment are still too new at this time to make unequivocal recommendations for their care and handling." Museum objects are another part of library collections which are not discussed.

In summary, one can say that this book serves as a useful reference work, although it does not replace other more substantive discussions on the conservation of library material. It contains a good discussion of disaster preparedness which may have deserved a separate chapter. The work also has two good appendices on suppliers and sources of help, which are likely worth the entire price of the book. One may question some of the topics chosen, but the work is aimed at the library field as a whole and not just at archival repositories. As such, it does not replace the Society of American Archivists' Basic Manual Series, which now includes several works of more substance on particular media. Other more substantial works on photography and sound recordings are also available, so the primary value of this book is as a second opinion on conservation practices.

Michael F. Kohl
Clemson University

A product of the National Historical Publications and Records Commission's California Assessment Project, Archival and Manuscript Repositories in California was compiled by the staff of the California State Archives. Publication and distribution were done by the Society of California Archivists. This directory updates and expands the 1975 Directory of Archival and Manuscript Repositories in California completed by the Society of California Archivists.

The arrangement of the directory is alphabetical by city, beginning with Alta Loma and ending with Yorba Linda, and alphabetical by repository within each city. The main body of the directory includes 401 entries, while an additional 9 make up an addendum. Information was gathered from federal and state agencies; academic collections; historical societies; town, city, and county archives; public libraries; and religious and corporate archives, which responded to the 900 questionnaires sent out.

Entries include the official name of the repository, its address and telephone number, and the hours it is open for research. Major subjects, brief description of holdings, size (usually in linear or cubic feet), restrictions, photocopying information, and user fees complete the information on each repository. An index by name of repository completes the volume.

A look through the directory uncovers many interesting collections, including material dealing with Robert Louis Stevenson, John Steinbeck, Jack London, and numerous other authors. Collections concerning Indians, Chinese in California, and Spanish are represented. Wine, petroleum, and
transportation collections have numerous entries. Collections on communications, film making, and performing arts are listed, as is one dealing with balloons used in sporting and scientific work. California repositories hold a wealth of material, both usual and unusual, both expected and unexpected. Unfortunately, the directory provides no subject access to them, and they can only be found by careful scanning of the entries.

The design of the entries provides for ease of reference, and the information is useful and helpful to a potential researcher. This is a directory well worth having in major repositories and in academic, research, and large public libraries.

Anthony R. Dees
Georgia Department of Archives and History


This new guide is a very important addition to research literature and completely replaces the Guide to Genealogical Records in the National Archives (1964).

The book is important for historians, both 'regular' and local ones, and anyone doing biographical sketches, in addition to genealogists. Just because genealogy is the title, this volume should not be relegated to the back shelf by anyone in reference or research.

The volume is attractively published and includes charts as well as documents and photographs illustrating the various records discussed. The layout of the book pulls in the reader and makes one
want to read it. It would be a good teaching tool if one were lecturing on research sources or genealogy.

The guide is divided into four main sections. It begins with a brief orientation to the National Archives and where one starts. The book mentions so many things to send for—such as guides that give more details about the subject and an infinite number of bibliographies—that one could spend a lifetime just checking all the references and leads and never get to the records described therein!

The first records discussed are those most used for genealogical purposes—censuses, passenger lists, and naturalization records. Each portion shows examples of the actual record, gives the microfilm or record group number one would need to find the record, and provides a bibliography of supplemental reading material. The "Passenger Arrival Chart" is a very important guide to those passenger records that actually exist.

Section B covers all forms of military records including service, pension, bounty land grants, and miscellaneous. It is most important in this book to look through the miscellaneous sections because they often yield things not known to exist.

Section C covers Indians, blacks, merchant seamen, and civilian government employment records. The latter include those in the civil service of the Confederacy.

Section D is the catchall titled "Other Useful Records." Here one finds land records, which could easily be the subject of a separate book. Other valuable subsections cover claims, including the newly emerging "Southern Claims Commission"; court records, which are so often overlooked and many of which are located in regional Federal Archives and Records Centers; records of Washington, D.C.; and another miscellaneous category which includes passports back to the 1830s, federal direct tax records back to the 1790s, and mention of the Works Progress Administration. The last portion of this section deals with the National Archives cartographic collection.
If the book has any fault, it would be that some of the bibliographies do not include the latest volume on a certain subject. Some type of periodic update should be considered—perhaps an errata page or notices in Prologue. It is doubtful if any new records will be discovered, but certainly new uses might arise for some records not included in this volume.

The book brings to the reader's attention the often overlooked records of "other wars" between the Revolution and the Civil War—those of 1812, the various Indian wars, and the Mexican War. It informs the reader that many records are not actually located in the National Archives in Washington but at a regional branch. It helps the user to identify immediately which are available on microfilm.

One must remember that this is not the entire holdings of the National Archives, just their so-called genealogically important holdings. There is another guide to the entire collection. As a follow-up to this guide, NARS in 1984 initiated a series of small guides to the microfilm of important records of genealogical interest, the first being "Immigrant and Passenger Arrivals."

Because this work is so packed with information and is offered at such a bargain price, every serious user should own a copy. It is one of the five "must" books that research historians, genealogists, and archivists interested in local or state history or personalities should have at their fingertips.
Kenneth H. Thomas, Jr.
Georgia Department of Natural Resources

This illustrative guide provides essential information for researchers specifically interested in the history of the Harmony Society and its influence on the development of western Pennsylvania and southern Indiana or more generally interested in German-American studies. The guide describes the microfilmed reproductions of Manuscript Group 185 in the Pennsylvania State Archives. This collection includes 311 rolls of microfilm of the nearly 300 cubic feet of administrative, legal, business, and publications files of the three settlements of the Harmony Society. The contents of the guide include an introduction, a descriptive inventory, and an index.

The introduction gives a precise history of the Harmony Society with photographs of major personalities; a map showing Harmony, Pennsylvania, New Harmony, Indiana, and Economy, Pennsylvania--the three settlements of the Harmony Society; a history of the Harmony Society records; scope of the records; preliminaries and procedures for access to the holdings; a listing of the Harmony Society trusteeships, 1805-1905; and a historical chronology, 1757-1919, with a selection of described photographs.

The descriptive inventory format follows the arrangement of the collection. The collection is arranged at the subgroup, series, and item level. There are six major subgroups under which the series titles and items appear. They are numerically listed by microfilm roll number. The index is arranged alphabetically by special interest subjects; microfilm roll numbers rather than page numbers are used.

This guide is a very useful research tool for the archivist, especially if there is a need to explore the holdings without direct access to them.

Minnie H. Clayton
Atlanta University Center
When corporations decide to begin an archival program, a first consideration is the placement of the records. Most opt for an internal operation often tied to a records management program, because this arrangement offers tight control. When a corporation decides to establish an archives at a local university, historical society, or public library, implicit in the decision is that recent archival material will not be included. Such is true in the case of Massachusetts Mutual, which in 1981 placed its "historical records" in the Springfield City Library's Genealogy and Local History Department.

The Guide to the records in this collection reveals that most of the collection is not truly archival, if archives are defined as records which reflect policy decisions and are created in the daily activity of the company. The whats, whys, hows, wheres, and whos of administrative decision making are not included here.

Carefully noted in the Guide are the types of records, such as letterbook, minutes, speeches, ledgers, but little description is given of the contents included and subjects revealed in these documents. And the subject matter might be exciting, because Mass Mutual was founded and developed during a time when life insurance was not a generally accepted expense. In fact, two companies from that period, the Insurance Company of North America and the Pennsylvania Company for Insurance of Lives discontinued issuing policies for lack of success. Other subjects relative to the history of insurance
such as the founding of mutuals, the recognition of widows as beneficiaries despite creditors' claims, the beginning of mortality tables, the acceptance of cash surrender values, the growth of group plans for employees, the providing of insurance for men and women in military service during wartime, and most importantly, the regulation of the business by state governments, are not mentioned. By omitting these topics from the Guide, the collection is not placed in historical perspective in relation to the history of business and government or the changes in household economics.

Archivists will find the Guide lacking, because it ignores standard archival principles such as provenance and original order. There is no arrangement according to the structure of the company and records emanating from the same unit are not kept together. In addition, there is no explanation of appraisal criteria or listing of records not included in the collection. Was this material possibly gathered for the writing of the company's official history?

The papers have been distributed into ten series irrelevant to administrative hierarchy and both archival and printed materials are combined within series as well as within folders. Periodicals published by the company and miscellaneous material make up Series 2 and 3. This type of series is generally placed near the end of the collection. No apparent logical order within most series has been established. When alphabetical order would make sense, such as for periodicals, titles are otherwise arranged. When chronological order would reflect the historical context, such as in the presidents' files, alphabetical order is used. Company scrapbooks are filed under 'S' and company bulletins are under 'B'. The series are described in the scope and content note by subseries, but the container list does not indicate subseries, thus causing confusion. The 118 boxes are numbered beginning with 1 within each series rather than in continual sequential numbering, which would facilitate retrieval.
Among the best parts of the collection are the photographs found in Series 8. Images, however, are inadequately described as to format, and the series includes visuals that are not photographs. Through the Guide, photographs have been nicely reproduced, but the location where each can be found is lacking. The Guide is tastefully presented in spiral pamphlet form with ample margins.

Many errors might have been eliminated by careful editing, such as the incorrect heading on page 50, the lack of a 1961 issue of The Congratulator, the inconsistent description of the location of the presidents' letterbooks, the lack of bibliographical data for the company's official history, and no address indicating where to obtain the Guide.

By no means does the collection "fully document this Company's 133-year history" as claimed in the scope note. It is a business collection covering a number of years with a strong emphasis on printed materials. No mention is made about future additions to the collection and the library's policy for collecting business records is not stated.

A final note of concern is that NHPRC money was spent preparing the Guide, which in the reviewer's opinion is a questionable use of public funds. Surely an ongoing business should be expected to finance its archival program. Furthermore, this collection is "on loan" and not permanently donated to the library.

Lynn A. Bonfield
Bonfield Archival Consultants and
San Francisco State University

SPEC Kit #104: Microcomputers in ARL Libraries.
Based on an ARL survey of eighty-five libraries currently using microcomputers in public service and technical processing departments, this newest SPEC kit provides policy and planning documents and the survey results. Because many of the libraries felt staff training was the key to productivity and effective use of the tools, the kit also contains training and personnel material.

**Chattahoochee Trails.** By Hoyt M. Warren. Henry County Historical Society, P.O. Box 222, Abbeville, Ala. 36310. 1981. $10.00, softbound.

The social and economic history of pioneer days in the Chattahoochee Valley is recounted in this compilation of Warren's articles, which were originally published in the *Eufaula Tribune*. Oglethorpe's Indian Treaty of 1739, the steamboat era, outlaw John Murrell, famous duels, Benjamin Hawkins, and the outstanding political figures of the area all appear in the sketches. One of the sections deals with the formation of Alabama and Georgia counties in the Chattahoochee Valley, detailing changes over the decades.

**In the Land of the Living; Wartime Letters by Confederates from the Chattahoochee Valley.** Edited by G. Ray Mathis. Henry County Historical Society, P.O. Box 222, Abbeville, Ala. 36310. $23.00.

Letters in this publication were written by Confederate soldiers to their families living in southwest Georgia and southeast Alabama. Both unlettered private soldiers and educated commissioned officers are represented, weaving a tapestry of homesickness and family concerns with their views of
skirmishes and battles. Most of the letters are published here for the first time and will appeal to both scholars and the general reader.

The Care of Antiques and Historical Collections.

Macleish has completely redesigned and expanded Guldbeck's The Care of Historical Collections (1972). Major changes in conservation technology, a chapter of photographic preservation, an index, and sixty-six photos and drawings have been included. Aimed at smaller institutions, which must care for an assortment of historically significant materials, the volume outlines programs for storage, display, identification, and environmental control. The new edition also includes preventive maintenance for antiques in homes and private collections. Chapters 9-17 deal with the care of objects classified by composition, such as paper, wood, skin and leather, metal, textiles, ceramics, glass, bone, and ivory, with appendices on adhesives and hanging historical garments.
User Statistics and Records Appraisal

Several years ago at a meeting of the Society of Georgia Archivists, Margaret Child of the National Endowment for the Humanities exclaimed, "There's just too much stuff." The "stuff" she was referring to is primarily the records of modern times which are making their way into archives and local repositories. Child believes that her cry and that of the modern records archivist "will soon become desperate." One reason for the voluminous records is no doubt the information explosion of our times, but also, contends Child, the failure by repositories to establish a formal collecting policy. Child's answer to this state of affairs in modern archives is for those repositories to formalize a "highly selective collecting policy coupled with a periodic review."

The second aspect of her proposed solution or recommendation involves reappraisal or, as Child puts it, weeding the collection. How does she suggest that archivists weed their collections? "Certain contemporary, particularly local collections," says Child, "should be allowed to self-destruct. If they are not used by historians within the life-span of the paper, I'm not persuaded that great effort has to be made to microfilm or preserve them." In short, Child suggests that use made of the records can be a test of their research value.

Child's call for measuring the research value of
records by their use has been made by others in our field including Leonard Rapport and Maynard Brichford. Brichford goes one step further by asserting that the validity of appraisal decisions can be tested through the use made of the records. In Brichford's view, user demand for records is in direct proportion to their value. He believes that "the proof of the archival pudding is not only in the eating, but in how often it is eaten and the nourishment and pleasure it affords." One may or may not completely agree with Brichford. But, he does have a point. User demand of records can be a measuring stick for the reappraisal of accessioned records and for reaching those initial appraisal decisions. Through analyzing the uses of records we may ascertain research trends, patterns, and needs of users, which are all helpful, albeit not a panacea, in records appraisal.

How is user demand of records determined? One obvious approach is through the maintenance and analysis of user statistics. Perhaps less obvious to many is the fact that few published user statistics of archives exist. In fact, a search of the literature over the past several years reveals one article entirely devoted to analyzing users of archival records.

Knowing the information needs of researchers is essential to the task of the appraisal archivist. For that reason, user statistics can be vital to the archivist charged with making what Meyer Fishbein has termed "reasoned decisions" about the permanent value of records, records which, it is hoped, will meet the wants and needs of researchers and, therefore, be used.

What type of user statistics, then, are needed by the archivist? What does the archivist need to know about the researcher? Is it sufficient to record users in terms of mere numbers? User statistics consisting only of numbers and percentages have little meaning to the archivist making those often tough appraisal decisions. User statistics need be recorded and analyzed, for example, by profession,
avocation, or student status of the researcher; by subject of inquiry or research topic; by span of time under study; by expected result of the research (a term paper, book, article); by records actually consulted; by records or topic and subject of records desired but not available; by the researcher's perception of the usefulness of the records to his study; and by any apparent "gaps" in those records.

The list of needed data on users and user profiles no doubt could be longer, but the point is self-evident. Archivists, especially those responsible for making appraisal decisions, need more than to hear or read that "fifty researchers were in the search room last month" or "four of those people were doing historical research." What does the term "historical research" without clarification convey to the appraisal archivist? The archivist needs more details. What records are actually being used? How beneficial are they to the researcher? What records have been requested but are not available for research. The answer to these and more questions are sorely needed by archivists and particularly appraisal archivists. User statistics must be compiled, but in a manner that will foster the analysis of research use, demands, and wants. As Margaret Child, Leonard Rapport, and especially Maynard Brichford have more than hinted at, user statistics can be a vital and valid measuring stick for the appraisal and reappraisal of records.

Kathy Roe Coker

NOTES


Memphis State University recently received some sixty hours of radio news tapes, dating from 1937 to the 1960s, from Plough Broadcasting. The tapes include speeches by Hitler, Mussolini, Churchill, and other world leaders around the time of World War II. A series of tapes from the Berlin Wall during the 1960s record the daily impressions of an on-the-spot correspondent. The tapes will supplement the extensive audio collection at Memphis State, which includes nearly three thousand hours of local and national programing. The collection is used by broadcast and history researchers throughout the country.

The American Historical Association received a grant from the National Historical Publications and Records Commission (NHPRC) to publish a selective edition of the papers of John Franklin Jameson (1859-1937), a founder of the AHA, managing editor of the American Historical Review, and a principal figure behind the creation of the National Archives, the National Historical Publications Commission, the American Council of Learned Societies, and the Dictionary of American Biography. Jameson provided guidance, assistance, and inspiration to hundreds of scholars as a teacher at Johns Hopkins, Brown University, and the University of Chicago. He also served as the director of the Department of Historical Research in the Carnegie Institution of Washington and as the chief of the Division of Manuscripts in the Library of Congress. The project is cosponsored by the AHA, the Library of Congress, and the National Archives.
The editors, Jacqueline Goggin and Morey Rothberg, have titled the project "John Franklin Jameson and the Development of Humanistic Scholarship in America." Contact the John Franklin Jameson Project, Manuscript Division, Library of Congress, Washington, D.C. 20540.

★ ★ ★

A survey of state government machine-readable records has been commissioned by the Louisiana Archives and Records Service as part of the NHPRC sponsored Louisiana Historical Records Assessment Project. Paul Paskoff of Louisiana State University conducted the survey. His report is on file at the state archives.

★ ★ ★

The National Historical Publications and Records Commission is offering three fellowships in archival administration for the 1985-1986 academic year beginning in September. The fellowships provide nine to ten months of advanced training in archival administration. Candidates with three years' archival work experience and two semesters of graduate work in a program containing an archival education component are eligible. For further information about the fellowships or host institutions, call NHPRC at (202) 523-5384, or write the NHPRC, Washington, D.C. 20408.

★ ★ ★

The American Association for State and Local History (AASLH), Nashville, Tennessee opened the National Information Center for Local Government Records (NICLOG) at the beginning of 1985. The center will help local officials, historians, and others find
answers to problems relating to making, storing, and retaining or disposing of public records. It will distribute an audiovisual program entitled, "Managing Your Records to Serve the Public." Featured are four local jurisdictions, ranging from rural Georgia to upstate New York, that overcame management problems, thereby saving tax dollars as well as historical documents. The program is available for a week's loan on slide or videotape formats for $10 handling charge. Write NICLOG, AASLH, P.O. Box 40983, Nashville, TN 37204.

* * *

The Ole Miss Blues Archive has opened at the University of Mississippi. After a year of preparation by the staff, the archive was dedicated with a large gathering of people arriving from as far away as France. The archive, which is housed in Farley Hall, has received large collections from B.B. King and Living Blues editors Jim and Amy O'Neal. Holdings currently number 10,000 volumes, 30,000 phonograph records, and 100 linear feet of files, unbound periodicals, photographs, and other materials. Curator Suzanne Steel has initiated work on a microcomputer based, automated index that will provide scholars, students, and visitors with access to any song by any artist in a matter of seconds. The automation project receives support from the L.J. Skaggs and Mary C. Skaggs Foundation. The archive is open from 8:15 A.M. to 4:45 P.M. Monday through Friday; (601) 232-7753.

* * *

A prototype photocopy machine designed to make copies of volumes with tight bindings or narrow inner margins was exhibited at library conventions in 1984. The prototype was designed and built by Morgan Data Conversion, Inc. of Mountain View, California for the
American Library Association's Library Technology Reports Unit. The project was funded by a grant from the National Endowment for the Humanities. The device can be attached to a standard photocopy machine and will cost approximately $6,000. For information about future development and availability, contact Howard S. White, Editor, Library Technology Reports, 50 East Huron Street, Chicago, IL 60611; telephone (312) 944-6780.

* * *

The Library of Congress recently issued a report that "technology is not a threat to the book." The 49-page report, entitled "Books in our Future," was prepared by Librarian of Congress Daniel J. Boorstin and presented to Congress 7 December 1984. Citing statistics that point to the strength of the United States publishing industry, Boorstin concludes, "The enemy of the book is not technology but the illusion that we could or would abolish the Culture of the Book." He recommends the abolition of literacy and an "equitable balance" among different parties concerning the enforcement of copyright laws. A copy of the report can be obtained for $2.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; stock number, s/n 052-070-05978-8.

* * *

Paul Richard's Autographs recently sold a thank you note that shows former President Richard Nixon met with the Viet Cong in 1964 to negotiate the release of five American prisoners. The note was addressed to Hollis Kimmons, who told the autograph dealer that he was part of Nixon's army escort on the mission. Nixon was a private citizen in 1964. Kimmons had signed an agreement not to reveal the mission for twenty years. The undated note, which was scrawled
on three-by-five-inch white paper, sold for $2,500. The note: "To Hollis Kimmons, with appreciation for his protection on my helicopter ride in Vietnam, from Richard Nixon."

President Ronald Reagan in February 1985 asked Congress to appropriate $126 million for the National Endowment for the Humanities (NEH) for fiscal year 1986. This represents about a one-half million dollar increase over the FY 1985 proposal which was actually funded by Congress at $139.5 million. The FY 1986 budget request includes $5 million to fund an Office of Preservation as an independent budget line. Recognizing the deterioration of materials in libraries and archives, NEH plans to provide support for training, technological development, and preservation of specific collections. Harold C. Cannon, the new head of the Office of Preservation, states that his office will continue the preservation activities housed in the Division Research Programs. However, NEH projects in museums, historical organizations, and libraries will suffer a $5 million loss from FY 1985 appropriations in the proposed budget, and state programs will receive $4.6 million less.

According to Coalition to Save our Documentary Heritage, the Reagan administration proposed no money for the National Historical Publications and Records Commission grants program for fiscal 1986, despite a $5 million authorization. The coalition feels the fight in Congress for the funding will be a difficult one, because Congress is preoccupied with a budget deficit. An all out lobbying effort is recommended by the coalition.
INFORMATION FOR CONTRIBUTORS

EDITORIAL POLICY

Members of the Society of Georgia Archivists, and others with professional interest in the aims of the society, are invited to submit manuscripts for consideration and to suggest areas of concern or subjects which they feel should be included in forthcoming issues of PROVENANCE.

Manuscripts received from contributors are submitted to an editorial board. Editors are asked to appraise manuscripts in terms of appropriateness, scholarly worth, and clarity of writing.

Accepted manuscripts will be edited in the above terms and to conform to the University of Chicago Manual of Style.

Only manuscripts which have not been previously published will be accepted, and authors must agree not to publish elsewhere, without explicit written permission, a paper submitted to and accepted by PROVENANCE.

Two copies of PROVENANCE will be provided to the author without charge.

Letters to the editor which include pertinent and constructive comments or criticisms of articles or reviews recently published by PROVENANCE are welcome. Ordinarily, such letters should not exceed 300 words.

Brief contributions for Short Subjects may be addressed to Glen McAninch, Special Collections and Archives, King Library North, University of Kentucky Libraries, Lexington, KY 40506.

Books for review should be sent to Martin Elzy, 1408 Quail Hunt Drive, Riverdale, GA 30296.

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Manuscript Requirements

- Manuscripts should be submitted in double-spaced typescripts throughout—including footnotes at the end of the text—on white bond paper 8 1/2 x 11 inches in size. Margins should be about 1 1/2 inches all around. All pages should be numbered, including the title page. The author's name and address should appear only on the title page, which should be separate from the main text of the manuscript.

- Each manuscript should be submitted in two copies, the original typescript and one carbon or durable photocopy.

- The title of the paper should be accurate and distinctive rather than merely descriptive.

- References and footnotes should conform to accepted scholarly standards. Ordinarily PROVENANCE uses footnote format illustrated in the University of Chicago Manual of Style, 13th edition.


- Use of terms which have special meanings for archivists, manuscript curators, and records managers should conform to the definitions in "A Basic Glossary for Archivists, Manuscript Curators, and Records Managers," American Archivist 37, 3 (July 1974). Copies of this glossary are available for $2 each from the Executive Director, SAA, 600 S. Federal St., Suite 504, Chicago, IL 60605.
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