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ABSTRACT

This guide is designed to assist school librarians in becoming part of the planned statewide school library network in Hawaii. Approaches to the guide for librarians at all stages of planning are suggested, and an overview of the benefits, goals, steps, and historical development are provided together with a model of the networking plan. The steps in automating circulation are described: (1) coordinating with state and district efforts; (2) deciding on automation; (3) selecting software; (4) generating support from others; (5) preparing the collection; (6) selecting and using microcomputer equipment; (7) building the materials database; (8) barcoding and linking the collection; (9) purchasing automation software; (10) building the patron database; (11) barcoding and linking the patron database; (12) publicizing the system; (13) implementing the system; and (14) maintaining and expanding the system. An overview of resource sharing and the interlibrary loan policy are then presented. A 43-item bibliography lists general works and works on automated circulation, resource sharing, online public access catalogs, database searching, and the future of library technology. The appendixes include a memo on the purchase of microcomputer equipment for library automation, evaluation criteria for circulation software, an application form for use of the state school library database, instructions for processing records for the automated circulation system, and a glossary of computer-related terms. (MES)

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Networking Hawaii's School Libraries

Office of Instructional Services/Multimedia Services Branch
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March 1989

MEMO TO USERS:

This guide may be placed in the binder with the Hawaii School Library Programs, or in a separate binder. It is a limited distribution:

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Foreword

We are entering an exciting era in Hawaii's schools. As new and complex challenges and opportunities are offered to students and educators, new and rich sources of information must be tapped in innovative ways that make use of evolving technology. Networking Hawaii's School Libraries provides the framework and components of a network that can link all the school libraries in the state and reach out to other information centers.

The ideal expressed in the school library networking mission statement, to provide all students and educators equal access to information to enhance the development of students as life-long learners, serves as a goal for schools well worth the necessary investment of time, effort, and financial resources. This publication provides a tool for schools to reach beyond the walls of the individual school library, to meet student needs with information from many other sources.

Charles T. Toguchi

CHARLES T. TOGUCHI
Superintendent

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Violet Cockett and Ruth Krukar	Radford High School
Lucretia Leong and Shirley Garcia	Waianae High School
Sherlyn Lee and Geraldine Dang	Castle High School

Introduction

Networking Hawaii's School Libraries is designed to assist school librarians in becoming a part of the planned state-wide school library network. The purpose of the network is to provide equal and timely access to information for all students and educators through resource sharing among school libraries and eventually with state and national, as well as other local, information centers. As the school library collection is converted to a standard electronic format for the state-wide combined catalog of school library holdings, the resulting database affords the opportunity to support student learning more effectively by providing better access to materials in the individual school library and in other libraries.

The guide offers both the broad, philosophical view of networking, and specific information for the individual school librarian to use in automating management functions, in participating in interlibrary loan activities, and becoming involved in other networking activities. The sections of the first part of the guide follow the logical steps in automating the circulation function of the school library, and planning for future use of evolving technology to enhance the school library program.

How to Use This Guide

The guide is designed to assist school librarians at all stages of the planning process, from those who have already become a part of the school library network to those who are dreaming of the future. Select the approach to the guide that matches the description of your situation best:

Thinking stage - You are interested in the possibility of participating in networking in the future, but lack the necessary resources or information to take action immediately. Read the introduction, pages 1-8, and the first two chapters, paying particular attention to the planning forms on pages 11-13. Skim the remaining chapters and sections for general information. Begin to read other literature suggested in the bibliography.

Planning stage - You have decided that your library needs to become a part of the school library network and are ready to make and carry out specific plans. Read the introduction, pages 1-8, and the first chapter, paying particular attention to the planning forms on pages 11-13. Read Chapters 2 and 3 carefully. Skim the remaining chapters and sections for general information. Begin to read other literature suggested in the bibliography.

Implementing stage - You have undertaken preliminary networking activities for your library. Read the introduction, pages 1-8, and

the first chapter for background information. Skim the chapters that describe steps that you have already completed. Read carefully the chapters that focus on steps that you have not undertaken. Skim the remaining sections and the biblio-graphy for information that may be helpful to you.

Evaluation stage - You have converted your collection for networking and circulation automation. Read the introduction, pages 1-8, and the first chapter for background information. Read Chapter 14 and the remaining sections to see if there are new goals that you want to set for your library in the area of networking.

Format

The first part of the guide devotes a chapter to each step of the planning process for converting the collection, and circulation automation. The introduction, overviews, and chapters all flag out key concepts of that component; some of the concepts are repeated for emphasis.

School Library Networking

Networking is a term used for a number of different functions and processes, many related to computer technology; as used in relation to libraries, however, networking refers to efforts of libraries to meet the needs of their users by drawing on the resources of other libraries, either within the library's own system or through cooperation with other types of libraries. The best definition of school library networking may best be expressed in the mission statement for Hawaii's school libraries:

> The mission of school library networking is to provide all students and educators equal and timely access to all types of resources at local, national, and international levels to support and satisfy their educational and personal information needs as learners.(1)

Envisioning a school library network in action helps to clarify how such a network might function:

> Scene 1:
>
> Ralph, a student at a senior high school, is in his school library during lunch recess gathering current events information for his French class. First, he uses the computer terminal to locate any recently published books or audiovisual materials that the library may have that are related to his French studies. Next he uses a periodical index on compact disk (CD-ROM) to run a search for magazine articles; he finds several citations that seem to be promising. Checking those against a list of periodicals that his school library holds, he finds that several are not available; he then selects another compact disk that lists the holdings for other school libraries, academic libraries, and the public library system. Ralph fills out an interlibrary request form for each article that may be available from another nearby library; his school librarian will request that the articles be sent by telefacsimile so that Ralph will have the material within a day or two.
>
> Two of the articles that Ralph wants to retrieve are not available from any of the local libraries. He logs into a network system provided by the state department of education. His request is then transmitted to a national database; the full text of the articles are downloaded to his terminal. Ralph logs off and prints out the full text.
>
> As a last step in his search for information, Ralph connects into a system that provides news articles from around the world. He prints out several articles from French newspapers, gathers up his materials, and turns in his interlibrary loan requests to the librarian.

Scene 2:

Laurie passes the school library on her way to her part-time job at a photo processing lab. Since she has completed all but three of her graduation credits, she takes those classes in the morning and leaves school at noon. This evening she will use her student password with her computer, modem, and phone at home to search the school's online public access catalog. As she searches for materials on a notable photographer, she discovers several titles devoted to the topic, and chapters in other materials. She prints out the list of titles as a working bibliography to discuss with her photography teacher; noting that one of particular interest is in circulation, she leaves a message on the electronic bulletin board asking that the librarian place a hold on the material when it is returned. She also leaves a message asking the librarians for suggestions of other references she might try.

Scene 3:

Jim is a third grader with an avid interest in dinosaurs. He is using a computer terminal in his school library to find information about dinosaurs. Unaware that the subject heading for his favorite topic is DINOSAURIA, Jim enters DINOSAUR; the computer screen then lists several words close to his choice. Jim chooses the correct subject and is presented with a list of titles of fiction and nonfiction books and audiovisual materials. He presses a key to get a print-out of his list and then heads for the shelves to select his materials.

These scenes may seem like a view of the distant future, but are, in fact, happening today around the nation. Pennsylvania, New York, and Wisconsin are only a few of the states that are beginning to network all kinds of school, public, and academic libraries, and to allow students direct access to national and international databases. The benefits for students are very evident:

- Circulation of materials increases when circulation automation is instituted. Local schools report that circulation more than doubles when students are able to borrow books using an automated system.

- Retrieval of information increases. A college that provided remote access to the online public access catalog for students, found an increase of access transactions amounting to more than four hundred per cent!(2)

- Automating the school catalog increases circulation. When the card catalog was converted to compact disk in Pennsylvania schools, circulation increased 300-500 percent.(3)

- Networking encourages students to use materials not found in their own school libraries. Interlibrary loan requests in Pennsylvania increased an average of 68 per cent when the networking project was implemented.(4)

National and State Networking Goals

The current national guidelines for school library media programs address networking in two of the five major challenges facing school library media specialists today:

"Challenge 4: To provide leadership and expertise in the use of information and instructional technologies."(5)

"Challenge 5: To participate in networks that enhance access to resources located outside the school."(6)

The guidelines place these challenges in the context of preparing students to retrieve and use resources effectively; and in the context of student and teacher needs for a vast range of resources, a range that few schools can satisfy without effective access to other information centers. A number of barriers to effective networking is addressed, including the costs, unequal distribution of communication equipment, and lack of planning time for library media specialists who want to participate in resource sharing.(7)

As state standards for school library media centers are currently being addressed, they affirm the five major challenges and place those challenges within the local context. References to the need for networking in Hawaii's public schools are infused throughout the document.

The Department of Education Computers in Instruction Plan identifies four major areas of for the Computers in Instruction Program(8); three of these, computer literacy, computer-assisted instruction, and computer-based information retrieval, are enhanced by networking factors. The emerging components of networking, automation circulation, resource sharing, online public access catalog, and use of databases for resources in other information centers, provide unparalleled opportunities for students to apply computer technology in a real-life situation, to learn computer-based retrieval strategies, and to benefit from access to a wide range of instructional materials.

The plan also provides guidelines for equipment acquisition to support the four major areas.(9) Two of these, CIR-RETRIEVAL and CIR-LIBRARY MANAGEMENT, form a basis for planning for equipment acquisition for school libraries.

Steps in School Library Networking

To make the networking vision become a reality, the following steps must be undertaken:

1. Converting the individual school library database to electronic records.
2. Combining the individual school library holdings into a state-wide database.
3. Installing software that uses information from the school library's database to automate circulation management functions.
4. Installing software that uses information from the school library's database to create an online public access catalog for easier access by students and educators.
5. Sharing resources with other school libraries through interlibrary loan.
6. Providing access for students and educators to national and international databases through current technology.

Historical Development of Networking Efforts in Hawaii's Schools

The need for computer-based information retrieval (CIR) in Hawaii's public schools was first addressed when an Office of Instructional Services (OIS) task force, organized in 1980, identified CIR as one of the four major categories of the use of computers in education. The task force further recommended that, within a year after the plan for Computers in Instruction was completed, a study should be made regarding the inclusion of computer use in school libraries for the purpose of information retrieval.

In response to the recommendation, the School Library Services Section began a major effort to develop a multi-year program plan. Related activities included:

On-going review of relevant literature was continued.

Meetings with staff members of the Hawaii State Public Library System to explore coordination of automation efforts.

1982	Establishment of an ad hoc planning group.
1983-84	Survey of school personnel and students conducted state-wide to determine the information retrieval needs of the schools.
1984	Development of an inservice training framework for staff development of school librarians.
	Establishment of the Computer Review Center and Clearinghouse to evaluate CIR-related software and to coordinate initial CIR efforts in school libraries.
1985-87	Two resource sharing/automation pilot studies.
1987-90	Establishment of the School Library Network project.

The two formal pilot studies were carried out to gather information relevant to further development of CIR activities. The first involved testing two circulation automation software programs, one at Aina Haina Elementary School and the other at Kalakaua Intermediate School. The data gathered from those two schools showed that 1) students and staff preferred an automated circulation system, and that 2) the two programs tested were of good quality. The pilot study also provided information about effective strategies in implementing an automated circulation system.

The second pilot study involved four schools, Kalakaua Intermediate School; Waialua Intermediate and High School; and Waianae and Mililani High Schools. The study tested the feasibility of student online searching and of sharing resources among schools. The resulting data showed that 1) students preferred searching a computerized catalog, 2) that the computerized catalog provided better information retrieval, and 3) that schools realized the benefits of being able to access materials from other collections.

Although limited in scope, both pilot studies proved the feasibility and desirability of undertaking automation and resource sharing programs on a

state-wide level. They also provided invaluable information about approaches to take in the various activities.

Concurrent with the activities described, the School Library Services Section participated in the development and periodic revision of the Department of Education Computers in Instruction Plan. This plan, which encompasses all instruction-related uses of computers in the Department of Education, includes computer-based information retrieval as related to school libraries.

An ECIA Chapter 2 project, School Library Network, was begun in the fall of 1987. Designed as a three-year effort, the project is in the process of building the first increment of a state-wide combined catalog of school library holdings to support both resource sharing among participating schools, and automation of management functions within individual school libraries. The project will also address staff development for all interested schools, establishing resource sharing procedures and document delivery, and exploring the use of national and other local databases to meet the information needs of students and staff.

The School Library Networking a hoc planning group was formed in 1988 to begin to address school library networking on a broader scope. The group will draft a mission statement and underlying assumptions for the mission statement; identify functional areas within networking; and make recommendations for expanding school library networking to include all public school libraries, a broad range of resources, and multitype library resource sharing.

As new technology emerges and new programs develop, plans for school library networking will continue to evolve. School librarians will be able to keep abreast of this exciting world of computers in school libraries through the array of sources of information locally, e.g., inservice training sessions, district librarians' meetings, memoranda, flyers, as well as national professional journals.

Networking Model

An understanding of the state model of networking is necessary for school librarians who are interested in being a part of the larger picture in their individual school libraries. The chart on the page 7 provides this in a visual format.

The key factor in the whole process is the development of a high quality, national standard cataloging record; in other words, any successful networking effort will depend on a sound foundation of MARC (MAchine Readable Cataloging) records. This quality database is noted as item 1 on the chart.

At the present time, the most cost/effective source of these records is through Library Corporation's Bibliofile compact disk program, noted as item 2 on the chart. These Bibliofile records are available to individual schools through the School Library Network's sharing of the state database, containing records of titles added to the Library of Congress database through publication or reprint since 1964. (The procedure for borrowing the database is discussed in Chapter 7.)

The second source of records for school libraries is through the Centralized Processing Center (CPC) inventory tapes, containing records of items ordered by school libraries since 1976; this source is represented by item 3 on the chart. Because these records do not contain full MARC cataloging yet, they are less desirable than the Bibliofile records, but serve as a good source of records for catalogued paperbacks and locally produced materials not found in the Library of Congress database. (The procedure for requesting the CPC records is discussed in Chapter 13.) Note that there are two lines on the chart from the CPC input to the database. At the present time, these records are used to upload directly into the individual school database. In the future, if the records are converted to full MARC cataloging, they will become a part of the state database as well.

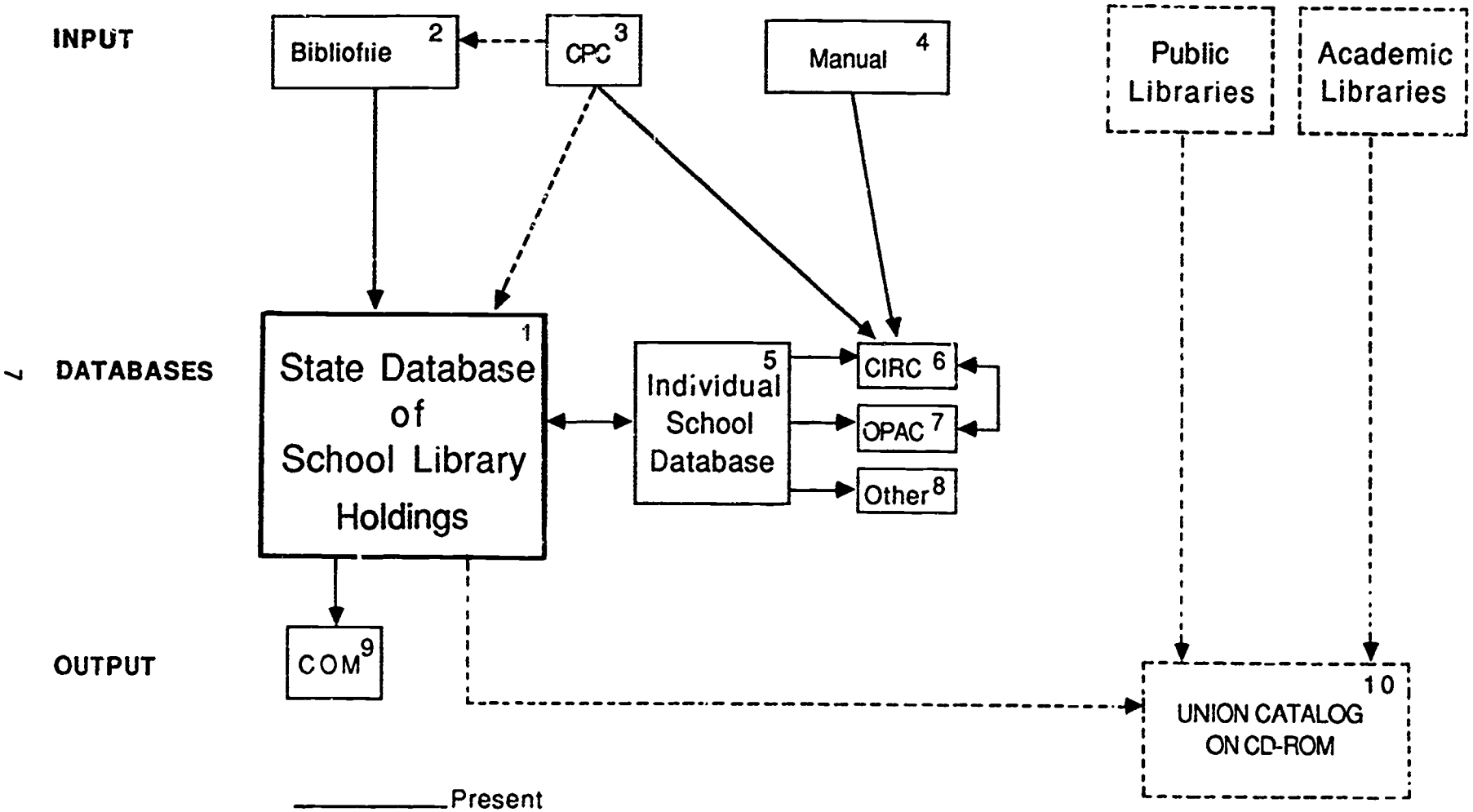
The third source of records is through manual entry, noted as item 4 on the chart. This is the least desirable means because it is tedious and time-consuming, and results in brief, rather than full MARC, records. Instructions for adding items by manual entry can be found in the user's guide of the automation software selected by the school.

After a school's individual collection has been created by matching records against the state database, as noted in item 5 on the chart, the resulting set of electronic records can be used as a source for the information needed by the circulation automation program, item 6; by an online public access catalog (OPAC), item 7; or for other applications that may emerge in the future, item 8. Again, if the original database is standard MARC format, it will serve multiple purposes and be compatible with other schools in the network. Because the circulation automation programs do not communicate directly with other networking schools, it is not necessary for the circulation software itself to be compatible with other networking schools; it is critical, though, for a standard database to be used and for the selected software to be a state-approved one that has proven compatibility with the standard database.

The state database, with additional schools being added on an ongoing basis, serves as the source of information to create a union catalog in a format that is easy to share with participating schools. The initial format will be a catalog on microform (COM), e.g., microfiche, in sets that can be sent periodically to schools in the network; this output format is represented on the chart as item 9. In the future, it is quite possible that the union catalog might be shared by means of compact disks (CD-ROM), item 10, since CD-ROM technology appears to be developing rapidly at the same time that CD-ROM equipment is dropping in cost. As telecommunications technology continues to evolve, it also offers the possibility for future networking of information among libraries.

Compact disk technology, with its capacity to store large amounts of data on small disks, offers the opportunity to look beyond a single system catalog. It is feasible to look forward to a time when all of the information resources in Hawaii--in school, public, academic, and special libraries--could be combined in a single set of disks. This dream for the future is also represented on the chart as item 10.

Automation Overview



Looking to the Future

The world of information technology is developing at a breathtaking speed. Hypertext, hypermedia, artificial intelligence, telefacsimile communication --these are only a few of the current developments that will affect tomorrow's networking of school libraries. As educators work to move into what is possible today, we must also keep a vision of what will be feasible in the years to come, and to make the most of opportunities to open the world of information to all students.

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4. Ibid.
5. American Association of School Librarians and Association for Educational Communications and Technology. Information Power: Guidelines for School Library Media Programs. Chicago: American Library Association, 1988, 10.
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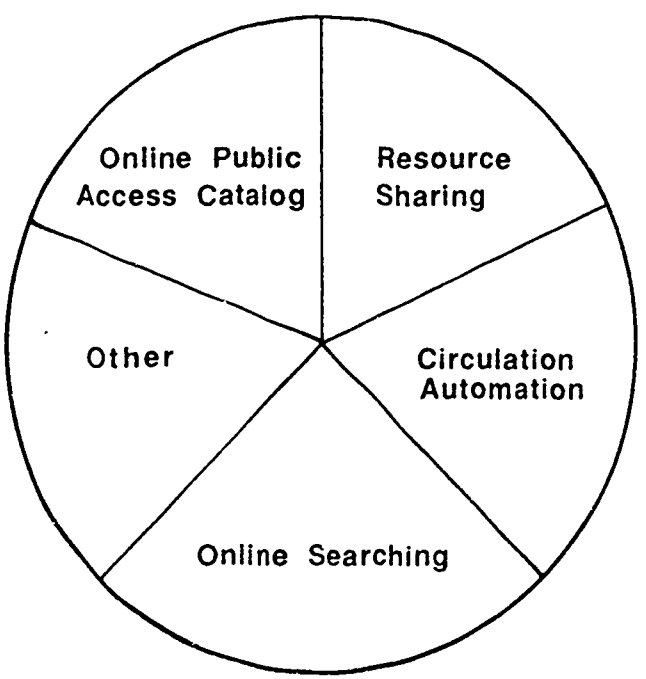
8. Department of Education Computers in Instruction Plan. Hawaii: Department of Education, 1987. iii.
9. Ibid., B-5.

CIRCULATION AUTOMATION

Overview

Once a school library database has been developed and the library's resources entered into the statewide database, the school benefits in two major ways, 1) increased access to resources beyond its library walls, and 2) an automated database that can be used to increase service to students and staff. Feedback from school librarians identified the circulation system as a time-consuming and highly labor-intensive area; they recognized that automation of circulation procedures would provide them with more time for direct professional services to library users.

Because the first three steps of networking requires the major investment of time, effort, and financial resources, a major portion of this guide will focus on the circulation automation process. It is important, however, to remember that circulation automation is only one part of a much larger context. The steps involved in this first aspect of the automation process will also form a sound basis for expansion into other areas of networking.



School Library Network

The experiences of pilot and project schools have given a great deal of trial-and-error testing of process and strategies involved automating circulation procedures in school libraries. The planning guide on the next page is a result of that pilot testing. School librarians and administrators are encouraged to use the guide and the shopping list on pages 11-13 from the earliest stages of planning in order to establish a realistic timeline for undertaking each step of the process. As the time frame is developed, planners should allow for the time required to order and receive equipment and materials, e.g., six weeks for barcode labels, two to three months for microcomputer equipment. Consultative assistance is available from School Library Services/School Library Network project to assist in the planning.

Schools with limited resources, or those who want to ensure that the automation process does not interrupt the school library media program, may choose to schedule the steps over several years. The process is divided into logical phases to facilitate multi-year planning.

KEY CONCEPTS:

1. It is important to place circulation automation within the larger framework of school library networking.
2. As current holdings are converted to an electronic format, the result should be a standard format of high quality that will serve multiple purposes.
3. Care should be taken to avoid becoming an "orphan" outside the network.
4. Manual entry of records should be undertaken only to add any titles not available from standard MARC databases.
5. Any investment of time and money should build toward the future.

Planning for Circulation Automation in the School Library

	Date	Resources	Cost
1. Coordinate with state and district efforts.			
2. Decide whether automation is desirable and feasible at the present time.			
3. Select the software most appropriate for school needs.		Evaluations Demo programs	
4. Get the support of administrators, faculty, community, and library staff.		List of benefits	
5. Prepare the collection			
6. Acquire and learn to use a microcomputer system.		Microcomputer Surge protector Software, e.g., word processing Printer and supplies (opt.) Diskettes (10)	
7. Build the materials database.		Diskettes (30-50) Backup software (opt.) Barcode labels	
8. Barcode/link the materials collection.		Work team	
9. Purchase automation software.		Software, bar wand	
10. Build the patron database.		Patron cards, student records from state database	
11. Barcode/link the patron database.			
12. Publicize the system to users.			
13. Implement the system.		Printer and supplies (req.) Power backup (opt.) Hand-held scanner (opt.) Extra bar wand Backup equipment (opt.) Records from CPC inventory	
14. Plan for maintenance and expansion.			

Maintain Flexibility and a Sense of Humor !

CIRCULATION AUTOMATION SHOPPING LIST

(All prices are approximate and should be checked with current bid lists or several vendors to determine the most economical source.)

1. Equipment

____	IBM or compatible @$1300 - 3500	_____
	OR	
	Use of Existing IBM PC	OR
____	Upgrade of external storage @ $600 and/or	
____	Additional RAM (640+ K) @ $100-200	_____
____	Printer, card, and cable @ $450	_____
____	Surge protector @ $60	_____
____	Back-up power supply @ $600 (opt.)	_____
____	Back-up equipment @ $800 (or software in 2 below)	_____
____	Bar wand @ $300-500 (if not purchased with software)	_____
	Other (security, accessories)	

2. Software

____	Circulation software @ $700-2500	_____
____	Backup software @ $140	_____

3. Supplies

____	Bar code labels for items and patrons @ $32/M	_____
____	Patron cards for students and staff @ $9-12/M	_____
____	Printer paper @ $25/10 reams	_____
____	Printer ribbon @ $6	
____	20 diskettes @ $5/10 (double density)	_____
	OR	
____	10 diskettes @ $13/10 (high density)	_____
	OR	
____	10 diskettes @ $11.90/10 (3½" high density)	_____
*____	Additional diskettes for borrowing state database	_____
	Subtotal	_____

*Call or write School Library Network before purchasing.

4. Annual costs after the first year

_____ Extended customer support @ $120-250 per year _____

_____ Maintenance for equipment _____

_____ Replenishment of supplies _____

Total _____

5. Personnel

Number of items in database/55 = number of hours for data entry/linking _____

Number of items/44 = number of hours for manual entry _____

Number of items/150 = number of hours for linking/barcoding _____

Total _____

Chapter 1

Coordinating with State and District Efforts

One of the key considerations in planning for school library automation is to avoid becoming a system orphan! Since Hawaii is a state-wide school system, it offers unique opportunities for sharing information and resources consistently among schools. State-approved hardware, software, cataloging format, and procedures ensure that no school library need find itself left out of networking activities. To tap into state-wide opportunities, consider the following:

1. With the approval of the school administration, contact School Library Services/School Library Network project to request that a staff member meet with you and a member of your administration to discuss your planning process. Neighbor island schools may call the district library liaison to arrange a visit in conjunction with a district librarians' meeting when a staff member will be available; librarians are also encouraged to meet with a staff member during an Oahu visit.

2. Check with the district library liaison and computer education specialist to learn about computer projects in the district that might have implications for school library automation. For example, plans for a district electronic bulletin board could facilitate interlibrary loan requests in the future.

3. Attend district librarians' meetings to learn about new developments in school library networking.

4. Attend workshops related to school library automation offered by School Library Services and the University of Hawaii School of Library and Information Studies.

5. Check Na Lono Kula and the Multimedia Messenger for articles about school library networking.

6. Call School Library Services when beginning the next phase of the planning process, if it has been some time since the first consultative visit.

7. Follow the planning steps in sequence. School libraries that have purchased the software before building the database have had to make a difficult decision about waiting for the state database to be available while the software free support period ran out, or resorting to manual entry that would result in a database incompatible with the state's.

8. Become familiar with the state bid list for microcomputer equipment. Make a copy for your files for budget planning purposes, but check for the most recent copy before ordering; often a new contract is awarded each year.

9. Start a folder for memoranda and other information related to school library automation. A copy of each memorandum is sent to each school librarian and principal; some of the attachments provide authorization for purchase and must accompany purchase orders.

10. Watch for documents and guides disseminated by School Library Services that can provide necessary information for networking. For example, an ad hoc committee began work in the fall of 1988 to draft policies and procedures to follow in interlibrary loans between school libraries.

In short, be informed of current developments in school library networking to be a fully participating member.

Chapter 2
Deciding on Automation

Networking may or may not be a viable option for every school library at a given time. School librarians and administrators considering automation of the school library and resource sharing will need to answer several key questions:

1. Will being a member of the school library network help us to meet, more effectively, the needs of our students and staff?

2. Will the automated circulation system be an improvement over the present manual one? What will be the benefits and to whom? Will the benefits outweigh the disadvantages?

3. Is our school library collection and our circulation too small to justify participating in networking?

4. Does our school have sufficient financial and personnel resources to undertake an automation project? Have we explored all possible sources of funding?

5. Are the administrators and librarian(s) supportive of the automation project? Since the administration plays a key role in support and the library staff carries out most of the tasks, either directly or in a supervisory capacity, it is important that everyone be sincerely committed.

6. Will our administrators and librarian(s) be at the school long enough to complete the project? If not, can the school library be ensured of on-going support and participation by new personnel?

7. Do our physical facilities allow for automation, or do we have space, electrical, telephone, or security limitations that need to be resolved first?

The following information is offered to assist the administrators and librarian(s) in answering each of the key questions identified above:

1. Will being a member of the school library network help us to meet, more effectively, the needs of our students and staff?

   Conduct a brief random sample survey of library users, asking a) what material(s) the student or staff member was hoping to find, b) whether the search was successful, and c) what other resources the respondent would like to have available in the library. A substantial percentage of respondents reporting that they were unsuccessful in their search gives an indication that the school library collection needs to be supplemented by resource sharing.

2. Will the automated circulation system be an improvement over the present manual one? What will be the benefits and to whom? Will the benefits outweigh the disadvantages?

   A. Use the evaluation form on pages 22-23 to assess the current manual system; page 21 suggests ways to use the form for this purpose.

   B. Visit a school library that has already installed an automation program. (Call School Library Services for suggested sites.) Watch the program in operation; talk to the librarian about the process of automating and the benefits and drawbacks.

   C. Consider the following advantages and disadvantages identified by a group of school librarians deciding whether to automate their circulation and share resources with other school libraries:

      Advantages

      Elimination of "snags"
      More time for professional services
      Faster generation of overdue notices
      Faster inventorying of collection
      More accurate assessment of student borrowing patterns
      Better control of library resources
      Faster location of a particular item needed by another patron
      More incentive to weed and keep the collection up-to-date
      Better circulation statistics
      Faster and more accurate management
      Easier training for students
      Opportunity to teach clerical skills using current technology
      Better training for students to use other libraries, e.g, public, academic
      Faster creation of bibliographies and other lists
      Opportunity to teach the use of computers in society
      Faster processing of transactions
      Quicker access to information
      Support for resource sharing among schools
      Evidence that the library is up-to-date in tapping current technology

      Disadvantages

      Expense
      Time required to build database and prepare collection
      Dependence on equipment that can go "down" unexpectedly
      Lack of portability, unless a hand-held device is purchased
      Risk of bottle-necks at circulation desk
      Risk of bottle-necks at computer terminals
      Possible unforeseen "glitches" in the system
      Disruption of established routines
      Need for more supplies
      Need for in-service training in use
      Need to have someone at the circulation desk to charge materials

Possible need for librarian to interrupt instruction to solve computer problem
Requirement for alternative plan in case of "down" time
Demand on limited budgets
Need for special furniture
Need for other special facility requirements

3. Is our school library collection and our circulation too small to justify participating in networking?

   Use the survey suggested for question 1 to discover how well the collection is meeting user needs. A small school may benefit from resource sharing even more than a larger one.

   Consider how the statistics generated by circulation automation software could make it possible to use the limited school library budget to its best advantage. Information about the percentage of the collection represented by a subject area, as compared to the circulation within that area, provides invaluable information for collection development.

4. Does our school have sufficient financial and personnel resources to undertake an automation project? Have we explored all possible sources of funding?

   Determine how much would have to be budgeted over a period of three to five years to implement an automation program, and the sources of funding that might be available from the regular school budget, school priority funds, parent-teacher groups, or fund-raising events. Decide whether the cost of automation is of great enough value to make sacrifices in other areas.

   Take into account on-going expenses that will need to be budgeted annually. Remember to plan for continued customer support, hardware maintenance, supplies, and any postal costs related to interlibrary loan.

   Explore other means of funding, e.g., private corporations, federal funding. Check with the district office to learn of any projects being planned that could involve the school.

5. Are the administrators and librarian(s) supportive of the automation project? Since the administration plays a key role in support and the library staff carries out most of the tasks, either directly or in a supervisory capacity, it is important that everyone be sincerely committed.

   Discuss candidly any reservations that may be lingering. Until consensus is reached, and solutions found for potential problems, the chances for successful involvement in networking may be limited.

6. Will our administrators and librarian(s) be at the school long enough to complete the project? If not, can the school library be ensured of on-going support and participation by new personnel?

   If retirement, transfer, or permanent exchange is contemplated by any of the planners during the project time-line, this needs to be taken into account. While computer literacy and a willingness to continue the

project can be made criteria for selecting the librarian's replacement, it may be more difficult to ensure that an incoming principal will be supportive of networking. The major investment of time and money should be within the time period the planners are willing to commit to the school.

7. Do our physical facilities allow for automation, or do we have space, electrical, telephone, or security limitations that need to be resolved first?

   Space needs for automation are not great; the typical circulation desk can be adapted to hold the microcomputer and, possibly, a printer. If the circulation desk is not a standard size, however, a table or computer station may need to be added.

   An electrical outlet will need to be located close to the circulation desk. Although a dedicated line is not needed, it may be wise to check the voltage flow if the line is shared by other heavy equipment, e.g., large photocopier.

   Free customer support by telephone will be of limited use if the library does not have a telephone, or if the library line cannot be used to make a free long-distance call, even with the assistance of the office. Ideally, the telephone should be accessible to the circulation desk, since the technical support may involve a number of steps to be carried out at the computer. One school library, with an updated telephone jack available, is considering purchasing a cordless phone to carry to the circulation desk when necessary.

   High-risk schools may need to plan for added security for t ` school library, e.g. grill-work over windows, an alarm system, or plan to move the computer daily into a more secure area. Several secondary schools have decided to install a book security system before automating, to ensure that the expense involved in marking and adding items to a database is not wasted.

Becoming involved in automating the school library and joining a state-wide network can be an exciting project. It is critical, however, to be aware of the costs involved to the planners and implementors so that the process is approached with confidence and enthusiasm.

Use the evaluation form on the following pages to assess the current manual system. The +/- column is designed for that purpose.

1. Add a +1 for each feature that the manual system does better; a -1 for each feature that the automated system could do better. (Not all features of an automated system have an equivalent in a manual system; these are marked NA.) An explanation of each criterion is provided on pages 24-26.

2. Weight the features by multiplying each number by the value in the first column; these are values assigned by ninety-one participating school librarians. Change the values for individual needs if necessary.

3. Total the numbers and subtract the total in the minus column from the total in the plus column; a high negative number indicates that an automated system would be a great improvement over the current manual system. Be sure to take into account, though, any positive features of the manual system not reflected in the evaluation form.

EVALUATION CRITERIA FOR CIRCULATION SOFTWARE

Weight: 1 = unnecessary; 2 = desirable; 3 = essential
Current: Manual system has capability; check in appropriate column
Specific program rating: 1 = low; 4 = high

	Value	Current +	Current -	Programs 1	WS	2	W	3	W
I. Management									
*A. Password protection	3								
B. Ease of changing dates	3								
C. Secure for student assistant use	3								
D. Capacity of transactions stored 10,000									
E. Capacity of user records stored 3,000									
F. Capacity of materials records stored 50,000									
G. Variation of loan periods by item	2								
H. Variation of loan periods by user	2								
I. Variation of material type	2								
*J. Ease of use	3								
K. Accuracy	3								
L. Multiple terminal capability	2								
II. Database Building									
*A. Integration with external MARC II databases, e.g., BiblioFile	3	NA							
*B. Bar wand capability	3	NA							
C. Input error handling	3	NA							
D. Rapid assignment of bar code number		NA							
E. Twenty second manual entry/index of records									
F. Batch indexing of records		NA							
G. Printing of bar codes	2	NA							
*H. Bar code capability for users	3	NA							
I. Automatic generation of user number	2	NA							
J. Manual entry of users	3								
*K. Book record to contain at least title, author, call number, LCCN/ISBN, book status, cost, subjects, barcode number	3								
*L. User record to contain at least name, address, homeroom, phone number, grade, barcode number	2								
M. Multiple copy input ease	3								
N. User record to contain notes, transfer information	2								
*O. Use of common bar code standard	3	NA							
Subtotal									

*Mandatory requirement
§Weighted rating

Adapted from: Report by Dr. Gerald Lundeen for School Library Services, 1986
Evaluating Microcomputer Software
So You Want to Automate Your Library, New South Wales Department of Education, 1986, p. 9
"Converting to Computer Circulation," The Book Report, March/April 1985, p. 24

	Value	Current +	Current -	Programs 1	Programs W	Programs 2	Programs W	Programs 3	Programs W
III. System Support									
A. User-friendly documentation	3								
B. Toll-free number for assistance	2	NA							
C. Local representatives	2	NA							
D. Availability of input to company	2	NA							
E. Economy of updates, continued support	3	NA							
F. Newsletter to update material	2								
*G. One year free support	3								
IV. Circulation									
*A. Five-second processing of transaction	3								
*B. Stop on circulation because of overdue(s)	3								
C. Efficient tagging of items for hold	2								
D. AV equipment management	3								
E. Allows renewals automatically	3								
V. Information Retrieval of Circulated Items									
*A. Retrieval by title	3								
B. Retrieval by author	3								
*C. Retrieval by user name	3								
D. Retrieval of item by due date	3								
E. Retrieval of item by call number	2								
F. Searching with truncation	3								
G. Browsing of indexes	2								
*H. Linkage to online public access catalog	3								
VI. Record Generation									
*A. Generation of overdue list by room	3								
*B. Generation of individual notices	3								
C. Generation of recall notice	2								
D. Word-processing capabilities	2	NA							
E. Keeping statistics on number of loans	3								
F. Keeping statistics on types of loans	2								
G. Range-setting on circulation information	2								
H. Identification of item's last circulation	2								
I. Record of item's circulation record	3								
J. Inventory process support	3								
K. Bibliography production	3								
VII. Other									
A. Price less than $1,000	2								
B. Modules priced separately	2								
Subtotal									
First page subtotal									
Total									

Explanation of evaluation criteria

I. Management

A. Is there password protection so only authorized persons can make changes in the due date, override holds on borrowing by patrons with overdue materials, etc.?
B. Is the due date changed automatically by the program? Can holidays be entered at the beginning of the year to make automatic adjustments? Is it easy to make changes in the due date for unanticipated school closure dates?
C. Is the program designed to prevent problems created by users with little knowledge of computers? For example, will the program prevent confusing patrons and materials during check-out?
D. Does the program have sufficient capacity for the busiest school library circulation?
E. Does the program have sufficient capacity for the largest school population?
F. Does the program have sufficient capacity for the largest school library collection?
G. Can some materials be circulated for a shorter or longer period than others?
H. Can some patrons be allowed a longer borrowing period, e.g., staff?
I. Can different formats of materials be circulated?
J. Is the program easy to run?
K. Does the program run without errors?
L. Can more than one terminal be used with the program?

II. Database building

A. Does the program accept standard MARC II format records as generated by Bibliofile?
B. Can a bar wand be used for materials?
C. If an error is made in assigning a barcode number to materials, does the program have a way to catch the error?
D. Can barcode numbers be assigned automatically and sequentially as materials are entered?
E. Does it take no more than twenty seconds to manually enter a record and have it loaded into the program fully indexed?
F. Can manual entry be done at one time, and the records loaded into and indexed by the program in a batch, so the data entry person does not have to wait as each single record is loaded?
G. Will the program print barcode labels to replace damaged or lost ones?
H. Does the program use a bar wand to enter patron information?
I. Can barcode numbers be assigned automatically and sequentially as patron information is entered?
J. Can new patrons be added manually without leaving the program?
K. Does each record of material contain at least the title, author, call number, unique control number, whether the material is in or out, and its barcode number?
L. Does each patron record contain at least the name, homeroom (or records room), grade, and barcode number?
M. Is it easy to enter multiple copies of the same book, or does each copy have to be entered separately?

N. Does the patron record allow for additional information to be added?
O. Is the barcode format required by the program a standard one?

III. System Support

A. Is the guide supplied with the program easy to understand?
B. Is there a free long distance number to call for technical support?
C. Is there a local representative to provi current catalogs and assistance with ordering problems?
D. Does the software producer welcome suggestions from users in order to improve their product?
E. Is the annual cost for support and updated software reasonable?
F. Does the producer provide a newsletter with articles and practical hints on using the software?
G. Does the producer provide a year of free support to assist users in getting started?

IV. Circulation

A. Does each circulation transaction take no longer than five seconds?
B. Does the program alert the staff if a patron with overdue books tries to borrow more materials?
C. Does the program tag an item that a patron has requested so that the staff is aware when the item is returned or someone tries to borrow it?
D. Can audiovisual equipment be circulated with the program?
E. Does the program automatically check in and check out an item that is being renewed in a one-step operation? Does it do the same when a patron wants to borrow an item that has just been returned?

V. Information Retrieval of Circulated Items

A. Can the program find a circulated item if the title is entered?
B. Can the program find circulated items by an author's name?
C. Can the program find what items a patron has checked out?
D. Can the program find all the items due by a certain date?
E. Can the program find circulated items by call number?
F. Can the program find items with a part of the author, title, etc.? If the author's name is Johnson or Johnston, can "John" plus a "wild card" be used to search?
G. Does the program allow the user to look at the indexes to see what words might be used for searching?
H. Does the circulation program interface with an online public access catalog program?

VI. Record Generation

A. Can overdue lists be produced by homeroom or records room?
B. Can individual overdue notices be produced?
C. Can the program produce a notice that an item needs to be returned for use by another patron?
D. Will the program allow the user to custom-design the overdue notices?
E. Does the program keep statistics on total circulation?
F. Does the program keep statistics on different types of materials?

G. Does the program allow a range to be set so that the user can see the circulation for a portion of the library, e.g., 300's?
H. Does the program keep a record of the last time each item circulated?
I. Does the program keep a record of the total circulation for an item?
J. Does the program allow for automatic inventory procedures?
K. Does the program allow for production of simple bibliographies?

VII. Other

A. Does the program cost less than $1,000?
B. Can separate modules of one program be purchased separately?

Chapter 3
Selecting Software

State Evaluation of Software

Because of the importance of the software decision, a lengthy and intensive process, coordinated by the School Library Network project and involving many school librarians, preceded the selection of software approved for purchase by Hawaii public schools. The initial selection process involved:

1. Identifying selection criteria with the assistance of a technical consultant.
2. Identifying and requesting automation programs for evaluation.
3. Weighting each selection criteria for relative importance, with the assistance of ninety-one Oahu school librarians.

*4. Determining mandatory requirements. Software not meeting these criteria are not considered for purchase, even if other criteria are met.

*5. Observing software programs in use, either at a pilot test site or by means of demonstration programs.

*6. Rating each program according to the criteria.

*7. Adjusting each criteria score according to the value assigned.

*8. Determining the total score for each program.

9. Disseminating information to all schools.
10. Planning to repeat the process as programs are revised or new programs are developed.

The results of the initial selection process are detailed in the memorandum in Appendix A of this guide.

School Selection of Software

Selecting one of the appropriate, state-approved software programs for a particular school library's needs is one of the most important decisions in the automation process. Many of the steps involved in preparing for automation are program-specific. For example, the choice of barcode labels will depend on the program; if a change of software is made at a later time, this may involve changing all the barcodes. To avoid duplication of effort and unnecessary expense, schools need to make a careful selection of the software required.

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*State selection committee of school librarians

Several steps can help school librarians and administrators make a wise decision on software:

1. Request a demonstration disk of the approved software program(s) being considered. Become familiar with the program by following the tutorial provided.

2. Visit other school libraries that have installed automation programs. Call School Library Services for suggestions on nearby schools to visit.

3. Search library professional literature for evaluations and articles about the programs being considered.

4. Study the evaluation form on pages 22-23 carefully. Some of the criteria may be weighted differently by an individual school because of special needs. Review the explanation of the evaluation criteria on pages 24-26. Read the rating sheet for approved programs in Appendix B, and adjust as needed.

Some of the factors that individual schools may need to consider include:

How much computer expertise is available to the school librarian? Does the program need to be very user-friendly, or is there a staff member who can help with installation and general questions?

Who will be using the program? Is it designed to provide different levels of security to allow students to run the program?

How does the annual cost, e.g., continued customer support of the software, repair and maintenance of the equipment, supplies, fit the library budget?

If the program is integrated, with circulation and online public access catalog (OPAC), can the budget allow for initial purchase of the total package, or can the components be purchased separately?

Remember, selection of appropriate software is made early in the planning process, but actual purchase is made later. Refer to Chapter 9 for details.

Chapter 4
Generating Support from Others

The success of the automation and resource sharing efforts will depend in great part on the support of those who will be affected, directly or indirectly, by the planning and implementation. Key factors in an effective public relations program include:

- **Developing a core of key supporters.** The administration, of course, should be involved in planning and decision-making from the beginning, and can help in setting a climate of acceptance in the school. Provide information early in the planning to leaders in the school, e.g., grade level chairpersons/ department heads, student council, library committee, parent-teacher group board, or other groups that can help in offering support.

- **Providing relevant information.** Take another look at the list of advantages on page 4, and select the ones that will have the greatest impact on the group:

  Teachers will be interested in the benefits that provide curriculum suppport for the classroom, and that reduce non-instructional tasks.

  Parents will want to see that automation/resource sharing will provide better direct services for students.

  Administrators will appreciate the better use of resources, as improved statistical data is generated for purchase decisions.

  Library workers will respond to the faster and more accurate management of resources.

- **Allowing others to assist.** If an effective climate has been established in the school library, others may welcome the opportunity to make a contribution to the library program by offering direct assistance, whether it involves financial suppport by a parent-teacher group or volunteering to take part in a barcoding party with parents, teachers, and students.

- **Recognizing barriers.** There may be apprehension among those who work in the library or who use the library; these anxieties need to be identified and addressed. Library workers and users may be resistant to change, even if the change will be an improvement; they need to be assured that any changes will involve minimum disruption of their regular routines, and will make library procedures easier.

  Computer phobia may be a factor as well. Library workers should be informed that 1) the procedures will be simple, 2) necessary training will be provided, and 3) their present skills will be sufficient for the new system as well. While youngsters are generally eager to try out new technology, adults may benefit from an actual, brief demonstration of the program.

- **Minimizing inconvenience for users.** Sufficient time should be built into the schedule to avoid the necessity to curtail services or close the library at any time because of automation efforts. While it is important to let others know that the library staff is working hard and making necessary adjustments in their schedule, disruption in services to library users may create dissatisfaction with the system itself or with the school library program in general.

- **Planning for on-going information sharing.** Brief announcements at faculty meetings and parent-teacher groups, notices in the school newspaper or daily bulletin, and signs in the library to publicize each stage as it is begun and completed, can maintain interest and support for the automation project, without creating an information overload. Since much of the initial work is intensive for the library, but not visible to those who will benefit from automating, it is important to create an awareness of the work involved and to maintain a sense of ownership for the project within the school community.

- **Providing necessary inservice training.** Simplified instructions for library staff, whether the staff consists of a library assistant, parent volunteers, or student monitors, will help to make a smooth, error-free transition. A brief orientation to new procedures for staff and students can minimize delays in the first days of operation. Simple instructional signs to remind users of the new process can enhance user satisfaction during the transition period.

- **Encouraging realistic expectations.** Since any new system may have problems or set-backs, it is important to let future users know in advance that the implementation time-line is subject to change, and that there may be times that the hardware or software is "down." Publicize the fact that provisions have been made for a manual back-up system, and that flexibility and a sense of humor will be needed by library staff and library users!

- **Expressing appreciation for support.** Those who help with the project should be recognized with public expressions of appreciation as the project is being worked on, and after it is fully implemented. A report to any organization that has provided financial or personnel resources, detailing the benefits of the operational system, is an appropriate means of follow-up.

- **Celebrating completion.** After the automation project is completed and working successfully, it offers an opportunity to publicize the total school library media program through an open house, invitations for visits by community persons who have assisted, articles in the school newspaper, and posters encouraging students and staff to take advantage of the innovation.

Chapter 5
Preparing the Collection

Preparing the school library collection for conversion to electronic records is one of the most important, and time-consuming, steps in the automation process. Working carefully in the collection preparation will greatly reduce the time and effort that will have to be devoted later to the retrospective conversion of the collection. Some school librarians have set aside an entire year to complete this portion of the automation effort.

Database Value vs. Collection Value

Planning for automation is the single most effective motivation for weeding the collection thoroughly. Since each item that is added to an electronic database will require an investment of time, effort, and money, every title in the library needs to be considered in terms of real usefulness to students and staff.

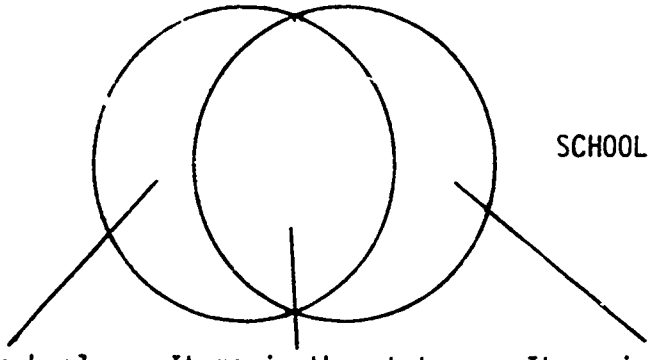
Because the state database, to which individual holdings information will be added, is intended as the foundation for resource sharing, any title that is added to the database should have potential value as an item to be loaned to other libraries. On the other hand, there may be materials in the individual collection that have value to that particular school; those can be retained as long as they are still useful. For example, a story collection may be old and worn, but contain a story that a teacher likes to share with her class each year. If a more recently published collection is not available with the same story, the librarian might choose to keep the older title, even though it would be unlikely that another library would request it through interlibrary loan.

The parameters of the state database are set by the source of national standard machine readable cataloging (MARC) records. At the present time, that source is from Library Corporation's Bibliofile database on compact (CD ROM) disks. Records available from this Library of Congress database generally date back to 1964; exceptions include cl ic titles or older titles that have been reprinted since 1964. The formats ava ble include books, periodicals, and some audiovisual materials.

A full MARC, high quality record is available through the state database; each record is easily accessed by using the Library of Congress control number (LCCN), the international standard book number (ISBN), the title, or a combination of author and title. The record retrieved has already been edited to conform with Centralized Processing Center cataloging, includes a price, provides a field for the school location code, and also provides a field to fill in an appropriate barcode number or range of numbers. Because the records are in the full national standard, the resulting individual school library database can be used not only for circulation automation, but for establishing an OPAC system as well.

A title not found in the state database, on the other hand, will need to be added manually. Generally, this involves entering the LCCN, call number,

author, title, and barcode number for each record, usually requires twice as much time as accessing records through the state database, and will result in a substandard record that will probably not be appropriate for other applications. For this reason, items which will probably not be found in the state database should be evaluated critically in the weeding process.



Items in another school library available through interlibrary loan; no local entry

Items in the state database and in the individual school school collection; automated entry

Items in the individual school collection but not in the state database; manual entry

Weeding the Collection

In recent years, many school librarians in the state, and across the nation, have been reluctant to discard materials because of reduced budgets to purchase new materials. The result has been that many school library collections are aging and require extensive weeding in order to bring them back to an up-to-date, curriculum-relevant collection. Most Hawaii school districts have offered collection development workshops that included a component on weeding. The assessment tools and strategies offered in those workshops form a sound basis for on-going weeding, and for preparation of the collection for retrospective conversion. A form to assess current collections through a random sample is included on page 37.

School libraries that have not conducted on-going weeding, or that have weeded less than the annual four to five per cent recommended by the American Library Association, will particularly need to address this area of collection preparation. Guidelines for weeding and discarding resources are included on pages X-51-52 in the document, Hawaii School Library Programs; a Guide for Management and Services, provided to all public school libraries.

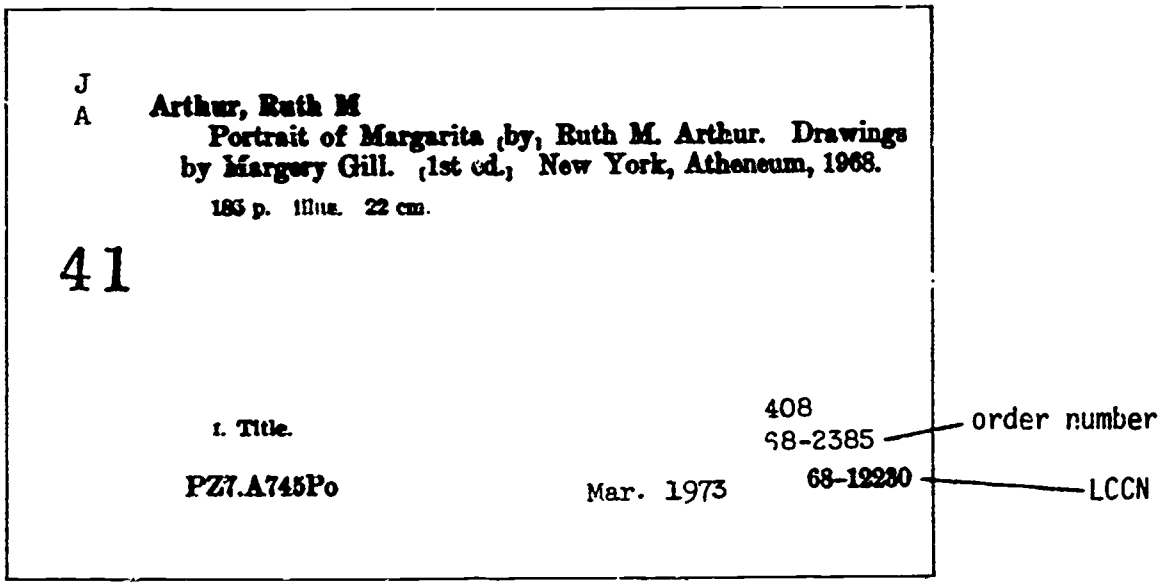
In addition to general weeding practices, school libraries undertaking an automation project need to consider weeding in accordance with the parameters set by the state database. Because there are exceptions to the 1964 limitation, the guidelines on pages 35-36 suggest ways that the collection may be more accurately assessed.

Inventory

If a complete inventory has not been taken for a while, or if a regular cycle has not been completed, this should be done. The shelflist should reflect

actual holdings; otherwise, time will be spent, and barcode numbers assigned to, materials that are missing from the collection. Some secondary school librarians have decided at this point, that losses are so great that the purchase of a book security system is justified! Since preparing each title requires an investment of time, personnel, and supplies, added to the considerable cost of replacing missing items, automation preparation may provide the extra impetus to explore more seriously the purchase of a book security system. With good timing, the application of the sensor tape can be done at the same time that the item is barcoded.

If possible, the LCCN should be added to each shelflist card as the item is inventoried, because it is the easiest, most accurate, and most widely used method of retrieving electronic records from various sources, including the state database. Most materials purchased through the Centralized Processing Center since the 1960's have the LCCN noted on the card. Care should be taken, though, to ensure that the number listed with a prefix starting with six, is an actual LCCN. During the 1960's, an order number was assigned to each title that looked very similar to the LCCN; the true LCCN can be recognized by the print format.



Example of a Shelflist Card

Preparing the Shelflist

After the inventory has been completed, the shelflist cards should be prepared to make data entry easier, especially if the school librarian(s) will be assisted by others:

1. Condense the shelflist by consolidating all copy numbers on a single card. If separate cards are kept for the same title, the person doing data entry may not notice; if the same control number is entered a second time, all the information, including the assigned barcode numbers, will replace the previous record. Information entered for the first card will be lost.

Even if the data entry person does notice the second card is for the same title, time will be lost in retrieving the first record and adding the additional barcode number(s). The time invested in consolidating cards will be less than the time lost during the data entry phase.

Different editions of the same title can be kept on a separate card without creating confusion to the data entry person. New control numbers are assigned for each edition that represents a substantive change in text.

2. Watch for cards that have cryptic information about the number of copies still in the collection. Some librarians have their own codes to note which materials have been withdrawn; the result will be that too many barcode numbers, or too few, will be assigned to titles with multiple copies. The errors will not appear until the barcoding step is reached, creating confusion, slowing the barcode workers, and requiring correcting the database manually. It may be easiest simply to highlight copy numbers for existing materials, rather than to try to interpret cryptic codes for data entry persons.

3. Remove all shelflist cards for withdrawn books. Many librarians make a practice of leaving the shelflist cards in the active file with a paper clip to designate a card with a missing item, in hopes that the material may return within a year. For the automation process, however, the clips will create another barrier to fast and accurate data entry. If a major weeding project is under way, the shelflist cards should be withdrawn as quickly as possible before the next step of automation is approached; the remaining discard steps, e.g., disposing of materials, withdrawing catalog cards, need not affect the database building.

Summary

It is evident, if all steps are followed, why the preparation of the collection becomes such a time-consuming task, and one that requires several steps that cannot be delegated to non-professional workers. The investment of effort, however, will result in a more effective collection and a more efficient shelflist. Fortunately, careful planning allows the school library to undertake this major step before any purchases of equipment, software, or supplies are made.

Since the process is so labor-intensive, though, school administrators will want to seriously consider allocation of personnel to assist in those steps of the process that can be delegated to others. Parent volunteers, student helpers, and others can assist in the inventory process, the physical preparation of materials for discard, and the withdrawal of cards from the card catalog.

Preparing the Shelflist for Retrospective Conversion*

INTRODUCTION

Careful preparation of the shelflist of a library's holdings is a critical step that precedes any automation effort. The School Library Network project, in its efforts to build a database that will facilitate sharing of resources among school libraries, recommends detailed steps to complete this important task. The process is based on the following assumptions:

1. Materials are chosen on the basis of their usefulness to the state-wide union catalog, for interlibrary loan among a number of schools.

2. Currency is a major criterion for evaluating materials, especially non-fiction items.

3. There are some exceptions to the general rule of using currency as a major criterion, such as valuable, out-of-print sources of information.

4. Designation of special collections or locations may be useful to individual schools but will not be cost-effective for state database purposes.

5. For circulation automation and inventory purposes, individual schools may choose to manually enter titles not found on the state database.

PROCEDURE

General:

A. Make sure the cards are in correct alphabetical or numerical order.
B. Remove paper clips that have been placed on cards to indicate items missing in the last inventory.
C. Make sure it is obvious how many copies are still in the collection.
D. Combine cards if possible.

Specific instructions:

1. Check each card of the fiction shelflist.
   a. If the copyright date is 1964 or later, take no action. The title can be searched automatically on the state database.
   b. If the copyright date is pre-1964 but the item has literary value, e.g, classic, place a colored clip on the card. The item can be searched on the state database. Example: Animal Farm.

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*Based on draft guidelines, Hawaii State Public Library System

2. Check each card of the 290 portion of the nonfiction shelflist.
   a. Follow step 1a.
   b. If the copyright date is pre-1964, but the material cost at least $5.00, and is a standard title in the area, place a colored clip on the card. The item will be searched on one or more databases. Example: Bulfinch's Mythology.
3. Check each card of the 390 portion of the nonfiction shelflist.
   a. Follow step 1a.
   b. Follow step 2b. Example: Blair's Tall Tale America.
4. Check each card of the 610 portion of the nonfiction shelflist.
   a. Follow step 1a.
   b. If the copyright date is pre-1964, but the material cost at least $5.00, and provides basic information on inventions or anatomy, place a colored clip on the card.
5. Check each card of the 700 fine arts portion of the nonfiction shelflist.
   a. Follow step 1a.
   b. If the copyright date is pre-1964, but the material cost at least $5.00, and represents a collection of music, engraving, or fine illustrations, place a colored clip on the card.
6. Check each card of the 900-909 portion of the nonfiction shelflist.
   a. Follow step 1a.
   b. If the copyright date is pre-1964, but the material cost at least $5.00, and is an outstanding broad history, place a colored clip on the card.
7. Check each card of the Hawaiiana portion of the shelflist.
   a. Follow step 1a.
   b. If the copyright date is pre-1964, but the material cost at least $5.00, and is listed in Basic Hawaiiana (disseminated to all schools in the fall of 1987,) place a colored clip on the card.
8. Check each card of the biography portion of the nonfiction shelflist.
   a. Follow step 1a.
   b. If the copyright date is pre-1964, but the material cost at least $5.00, and is of outstanding literary value, place a colored clip on the card.
9. Prepare a copy of a list of periodicals kept for at least three years by your library. Any format is sufficient, e.g., typed list, photocopied page from Reader's Guide with check marks. Add the ISSN (found in Reader's Guide list of periodicals) to each title.

COLLECTION AGE ASSESSMENT TOOL

Copyright	Volumes with this copyright year	Total #	Total %	Cum.
1981				
1976-80				
1971-75				
1964-70				
Prior to 1964				

Total counted _____

Instructions:

1. Tabulate about 100 titles each (approximately one inch of shelflist cards) from five drawers in the shelflist catalog. Choose drawers that will represent a good cross-section of your collection.
2. For each title, use the form for the following:
   a. Place a hash mark in "Volumes..." column to indicate copyright date.
   b. Tally hash marks for each range of years and enter totals in "Total #" column.
   c. Compute the percentage for each range of copyright years by dividing the column figure by the total number of books counted.
3. Enter the cumulative per cent in the "Cum %" column, adding each new percentage in the "Total %" to the one above it.

Chapter 6

Selecting and Using Microcomputer Equipment

This chapter is divided into two parts, the first part dealing with selecting and acquiring the appropriate microcomputer equipment; the second, learning how to use the equipment. A school librarian who needs assistance with basic computer literacy, including knowing how microcomputers work, may choose to concentrate on the second part of the chapter, pages 44-45, in order to better understand the first part of the chapter and to make wise decisions in this, the most costly part of the automation process.

The list of state-approved microcomputer systems and peripherals, disseminated to all schools, should be consulted prior to purchase. Schools are reminded that only approved microcomputer equipment may be purchased with state funds, unless an exception is granted; instructions on preparing a request for exception are included with the approved list.

Hardware Requirements

There are several factors to consider in the choice of a microcomputer, the internal memory, the external storage capacity, and the processing speed. To better understand the relationships among these three factors, consider a simple analogy for the sake of comparison:

Ms. Lee, a school librarian, wants to organize a collection of publishers' catalogs into a file so that the library workers and school staff can retrieve information easily. In order to get the catalogs organized, she knows that she will need a file cabinet and a work surface.

When she starts to work with the catalogs, she quickly discovers that the desk top that she had planned to use is too small for the project; when she tries to spread out the catalogs to sort them, she quickly runs out of space. She then clears off a larger table to do the sorting. She also realizes that when teachers pull out several catalogs, they will want to be able to spread several out at the same time as they work with them.

Next Ms. Lee decides on the choice of a file cabinet. She looks over an old file that has been offered for her use, but decides it won't meet her needs. First, the cabinet is too small and won't contain all the catalogs. Second, the drawers are somewhat rusty and dented. She decides she should purchase a new file cabinet that is large enough to take care of the current set of catalogs and allow for future growth. Also, she wants a file cabinet that opens smoothly and easily so users can retrieve information quickly.

Internal Memory Size

The internal, random access memory size is equivalent to work space; some programs even refer to the "desk top" for documents that are being worked on at a given time. Most automation programs require 640 kilobytes (K) of memory.

Additional memory can be purchased for existing computers with only 256K or 512K of memory. The memory add-ons come in the form of a printed circuit "card" with the additional memory chips attached; the card can then be plugged into a slot inside the computer.

Note: A kilobyte equals approximately one thousand characters (letters or numbers.) While it is good to be aware of the definition, it is not necessary to mentally compute kilobytes into characters whenever the term appears. Just keep in mind that programs generally require a certain number of kilobytes of memory in order to work, and that the current requirement for library automation programs is usually 640K.

Information Storage

The amount of space to store the data needed for library automation is equivalent to the file cabinet. This requirement, of course, is much larger than the work space because it involves storage of all the data, not just what is being used at a given time. The parts of a formula for computing the amount of space needed for an automation program are:

A **(Number of items, including duplicates X average length of each record)**

B **(Number of patrons X average length of each patron record)** + _____

C **Additional amount of space needed for future growth** + _____

Next, additional space needs to be added for one of the features of computers that make them superior to file cabinets--their ability to sort information. If the file cabinet had the ability to arrange all the publishers' catalogs alphabetically, or by subject area, or by book or nonbook format, or by any other category--without any drawers having to be opened--it could duplicate one of the advantages of a computer. At the same time, the file cabinet would also need a great deal of extra space to allow for that re-sorting. The computer also needs that additional space to allow for re-sorting by one of a large number of categories specified by the computer program, and to store the indexes it creates.

D **Additional amount of space needed for sorting and indexes** x 2

The formula then reads: A + B + C x D = Amount of storage space needed

The following simple guide can be used:

Collection size	Information storage needs*
1-10,000 items	20 Megabytes
10,000-15,000 items	30 Megabytes
15,000 or more items	42 Megabytes

Note: Refer to information on disk drives on the next page about how this information storage is included with the microcomputer.

*To show how these figures are derived, if a school library had 10,000 items (not titles) with an average length of 500 characters per record, and 500 patrons with an average length of 375 characters per record (5,187,500); allowed for a twenty-five per cent growth; and doubled the amount of space, the total would be 12,968,750.

Since computing storage needs results in cumbersome numbers to work with, they are translated into megabytes, or million bytes. In this case, the library's need for information would be between twelve and thirteen megabytes. This is further abbreviated into 12-13 Megs or 12-13 MB.

There are standard amounts of megabtyes of storage on the market; generally these fall into twenty, thirty, forty-two, and higher numbers of megabytes. The school used as an example would then specify twenty megabtyes (20 MB) as the next highest number past fourteen megabytes of information storage needed.

Processing Speed

Just as rusty file cabinet drawers would slow down retrieval of publishers' catalogs, the microprocessor and disk access speeds greatly affect how quickly the microcomputer can retrieve and process information. There are several microprocessors being used in many of the computers appropriate for school library automation. The most common are:

8086 - These are found in the first IBM Model 30's produced.

8088 - These are found in the IBM PC's with one or two floppy disk drives; in the IBM PC/XT which uses a fixed, or hard disk; and in IBM PC compatibles.

80286 - These are found in some of the IBM PS/2 series, in the Wang 240, and in other brands. The IBM Model 30 is changing to this processor.

80386 - These are found in the IBM PS/2 Model 80, in the Wang 280, in other brands, and in old IBM PC/AT's or compatibles.

The speed of the 8086 and 8088 processor is adequate for some circulation automation, but is too slow for OPAC applications. The 80286 processor offers sufficient speed for both automation and OPAC uses.

In addition, the disk access speed affects performance. The OPAC programs currently approved for purchase require twenty-eight milliseconds or less. The currently approved microcomputer hardware (see Appendix C) meets the disk access speed; only those microcomputers that meet the software requirements will be recommended for purchase by school libraries that are considering OPAC as well as circulation.

Disk Operating Systems

The disk operating system, as its name indicates, tells the computer how to operate, i.e., how to interpret instructions in the program being used. The state standard disk operating system is MS-DOS, the operating system used by the majority of automation software programs and by the state database. Microcomputers described as IBM-compatible use a version of MS-DOS.

Disk Drives

Microcomputers generally offer one or two floppy disk drives, designated as drive A and drive B in IBM or compatible microcomputers. Because of the size of the information storage requirement, floppy drives alone are not adequate, offering a maximum of a few megabytes of storage. Microcomputers considered for

library automation require at least one floppy drive and one fixed, or hard, disk drive. Fixed disks offer storage capacity of twenty to sixty-eight+ megabytes. The fixed disk is generally designated as drive C, even if there is no drive B in use.

Existing IBM PC microcomputers can be upgraded for use in library automation, by purchasing additional memory to meet the 640K requirement, and by adding a fixed disk to a single-floppy unit; or, if the unit has two floppy disk drives, by replacing one of the floppy drives with a fixed disk. IMPORTANT: Even after the IBM PC is upgraded, it will have the same 8088 microprocessor that may support circulation, but not an OPAC function.

The marketplace offers a variety of replacement units to fit into the two spaces usually found on the front of the microcomputer. Since floppy disk drives are offered in full- and half-height, it is possible to install two half-height disk drives or one full-height in each space. A visit to a computer vendor is the best way to evaluate the various options, bearing in mind that since the microcomputer already has at least one floppy disk drive, a change to one or two half-height units would require the removal of the existing drive.

Floppy disk drives are now available in variety of size and storage capacity. Both the 3.5 inch and 5.25 inch floppy disk drives are available as standard option, or special order at no extra cost. The 3.5 inch floppies offer the advantage of a sturdier disk, while the 5.25 inch disks may be interchangeable with previous microcomputer models.

Within each size, there is a range of storage capacity for the disk drives, ranging from 360K to 1.44 megabtyes. Refer to the discussion on the next page concerning floppy disks before making a final choice of floppy disk drive.

Peripheral Equipment

Printers offer a range of features, e.g., wide carriage, that can be evaluated according to the individual library needs. As long as the vendor can guarantee compatibility with the selected microcomputer equipment, and the printer is on the state-approved list, there should be no difficulty with the one selected.

It is critical that a surge protector be purchased at the same time as the microcomputer system, since even a momentary power surge could damage the equipment. There is also backup power equipment that switches to battery power for several minutes to allow the computer to be turned off by exiting the program correctly. Because of the expense of the backup power equipment, the individual school will need to determine whether the investment is justified.

Computer vendors also offer equipment that can be placed with the microcompute. that backs up data automatically after a set number of transactions. Because some automation programs offer this feature without the need for additional equipment, it is best to research this feature before making a purchase of additional data backup equipment. If the software program does not have an automatic backup feature, equipment that backs up data automatically is highly recommended.

Backup Software

Although the automation software may have an automatic backup feature, it is wise to purchase a backup software program that will back up the entire hard disk drive. In case of a disk crash, all of the files, including the disk operating system (DOS), can be restored quickly and accurately. DOS itself can be used to back up and restore files, but is slower. Some backup software programs also offer other desirable features to make computer use more convenient, such as an automatic backup of a critical internal file each time the computer is turned on. Computer vendors can recommend programs to meet the individual school's need. Price comparison should be done before purchase, because of the varying prices for the same software.

Whether a separate program is purchased, or the DOS supplied with the microcomputer is used, a complete backup of the entire hard disk should be done at regular, but not necessarily frequent, intervals. The frequency may be twice a year, unless new software programs are added to the hard disk more often.

Supplies

The choice of floppy disks will depend on the floppy disk drive available on the microcomputer. The IBM compatible machines generally require double-sided disks, unless it is an older piece of equipment; double-sided disks can be purchased in 360K, 720K, and 1.2 megabytes or higher. The vendor should be able to provide precise information on the disks' storage capacity.

As might be expected, the cost of the disks depends on the storage capacity. The higher density, more expensive disks offer the convenience of requiring less storage space and the convenience of having to change a data disk less frequently. On the other hand, not all software programs are designed to take advantage of the greater storage capacity, and store only 360K of data no matter how large a capacity is available on the disk. The software program selected earlier should be checked before a final decision is made on the choice of disks. The program used for the state database also has a 360K limitation. Schools may choose to purchase high density disks for backing up data, and double density disks for general use.

A double density disk can be used in a 1.2 megabyte disk drive, but a high density disk cannot be used in a 360K drive. The technical description of a microcomputer specifies the capacity of the disk drive. Although 360K disks can be formatted in a higher capacity disk drive, this may result in data storage problems with the disk.

The selection of the floppy disk drive and disks may also depend on the other MS-DOS computers in use in the school. Compatibility among the computers will enhance transferring data or using another computer as a back-up for word processing or other simple programs, if the library computer is being repaired.

Additional supplies for a microcomputer system may include:

1. Printer ribbons, which will be determined by the printer model.
2. Printer paper, available in standard sizes.
*3. Laminated barcode labels for materials and patrons.
4. Patron cards, if these are to be prepared in the library. Suitable

continuous card stock is available locally.
5. Special forms for printing overdue notices, which may be available from the software vendor.
6. Printer stand.
7. Computer and/or keyboard covers.
8. Rotary or "V" files to retain patron cards in the library.

LEARNING TO USE A MICROCOMPUTER SYSTEM

Acquiring microcomputer skills, like many other skills, is a combination of learning and hands-on application. Reading and attending classes are important to gather an over-all understanding of how a particular computer works, how to care for equipment and disks, how to use DOS basic commands, and how to use particular software programs, but developing competence and confidence is a result of applying learning in frequent sessions.

Resources for Microcomputer Training

The book stores have entire sections devoted to materials on different microcomputers and operating systems. If the material is related to MS-DOS, has a readable format, and deals with hard disks as well as floppy disk drives, it will be a good choice; a self-study type of book is listed in the bibliography on page . The advantages of gathering information from print are that the material will be at hand to review information when needed, the learner can proceed at an individual pace, and it is inexpensive.

Workshops and classes also offer a good source of information. School districts, School Library Services, adult education night classes, community colleges, and universities offer a wide variety of training activities from basic computer literacy to complex program utilization. The advantages of formal training are that there will be an opportunity to gain a broader understanding of computers through beginning classes and an instructor is present to answer questions or correct misunderstanding of the material. Often the formal training involves immediate application of skills in a laboratory setting.

Practicing with a Microcomputer

When the microcomputer is delivered to the school library, the librarian(s) should take advantage of the opportunity to see how the various components are connected, and how to install any internal cards. Even better is to set the equipment up under the supervision of the technician. While the initial view of the back of the computer with its various connections and slots may seem bewildering, the connecting cables are generally easy to attach and will usually fit only the appropriate connector; markers, e.g., labels, colored dots, can be put on the cable and its corresponding slot. Internal cards are rigid plastic and breakable, but are not difficult to install.

Before working with a larger automation program, school librarians can practice using software on the microcomputer by installing a circulation demonstration

program on the hard disk; purchasing less expensive management software, e.g., a program that produces catalog cards, a word processing program, or trying out public domain software.

The Department of Education's Computer Review Center has a collection of public domain materials that can be copied by visitors to the center onto a school's blank disks; documentation is often included on the program to be printed out by the user. Some of the programs are completely free of charge, while others are "shareware" programs. The latter includes a request on the introductory screen that a nominal fee be sent to the program author if the user plans to continue using the program. The collection includes educational games, word processing programs, and other types of software.

Chapter 7
Building the Materials Database

Borrowing the State Database

The state database is presently available for loan to schools to assist them in building their individual database of electronic records to support automation of circulation and other information retrieval functions. An application form, located in Appendix C of this guide, is required of each school prior to borrowing. Once the form and blank diskettes are received, the School Library Network project staff will send the following:

1. General instructions on using the database.
2. Instructions on downloading the database onto the school library's hard disk.
3. Diskettes containing a portion of the database.
4. Schedule indicating which part of the collection should be worked on.
5. Training manual for personnel.

To retrieve records from the database, a worker uses the school library's shelflist cards and enters an access point (LCCN, ISBN, title, or author/title) to see if there is a match with a record already in the database. If there is a hit, the worker adds the school's code to the location field, and adds a barcode number, or range of numbers, to the barcode field in the record. The same number(s) should be added to the shelflist card, either by applying a small human-readable label that matches the barcode, by stamping with a stamp machine, or by writing in the number manually. The record is then saved to an output floppy disk.

One set of the floppy disks is retained at the school to be downloaded into the automation program at a later date. A second set is returned to the School Library Network project to update the state database, adding the school's location code to the existing record. Since the most recent records replace records already in the database, accuracy at the borrowing school is important.

Personnel Involved

Although matching records against the state database is much easier and much faster than manual entry, it does involve a substantial investment of time. Depending on the keyboarding skill of the person working, and the quality of the shelflist cards, fifty to seventy records per hour can be matched. In addition, most workers find they need a half-hour break after two or three hours of work.

Ideally, several workers, or someone who works two or three hours a day, should create the task force to complete the database matching. Depending on the individual school's available resources, parent volunteers or student workers may provide the needed manpower, to avoid diverting the librarian's professional training to a clerical task; some schools have decided to contract students from the nearest high school, asking a computer education teacher for recommendations.

The training manual is designed for use by average, computer-literate high school students, with instruction and supervision of a professional librarian.

Backing Up Data

For this step, and for any other computer application, there should always be two copies of data, an original and a backup, with the two sets being kept in separate locations. As the state database is being worked on, the disks sent by the School Library Network project serve as the originals and the records copied onto the hard disk serve as a backup. (Any commercial software program should also be backed up immediately, and the original kept in a safe place, away from moisture, heat, or magnetic fields.)

When the output disks are produced, a backup copy should be made at the end of each work session. After the next work session, the same backup copy can be updated with the records added. When the copies are sent to the School Library Network, they can continue to serve as the backup copies. Later, when the records are batched into the automation program, two sets of the data disks should be retained in separate locations, since the automation program will only extract the fields needed for the purpose, not copy the entire record.

For example, when the MARC records on the output disks are batched into a circulation program, the program will extract the author, title, call number, price, barcode number, and possibly the LCCN. It will not copy some of the fields that will be needed in the future for an online public access catalog, e.g., abstracts, notes, chapter titles. For this reason, two sets of the school's MARC records should be kept for future use. Although it involves some storage space and investment in several boxes of disks, keeping two sets of the MARC records is much better than building the database a second time!

The only data that doesn't need to be backed up is data that someone is willing to enter again!

Chapter 8

Barcoding and Linking the Collection

The process of barcoding and linking the collection can be a confusing one at first, unless the process is understood as a computer version of the present system. Each school library can be thought of as having a coded and linked collection already; the shelflist cards provide a complete record of each title, with the copy number identifying each item. The collection is "coded" with the copy numbers; it is "linked" because the number appears on the shelflist card and on the matchng item.

The electronic record in the database serves the same function as the shelflist card; it has complete information on each title. Just as the present borrower's card lists only brief and pertinent information extracted from the shelflist card, the circulation automation program lists only brief and pertinent information extracted from the electronic records. (See page 48 for an explanation of this process.)

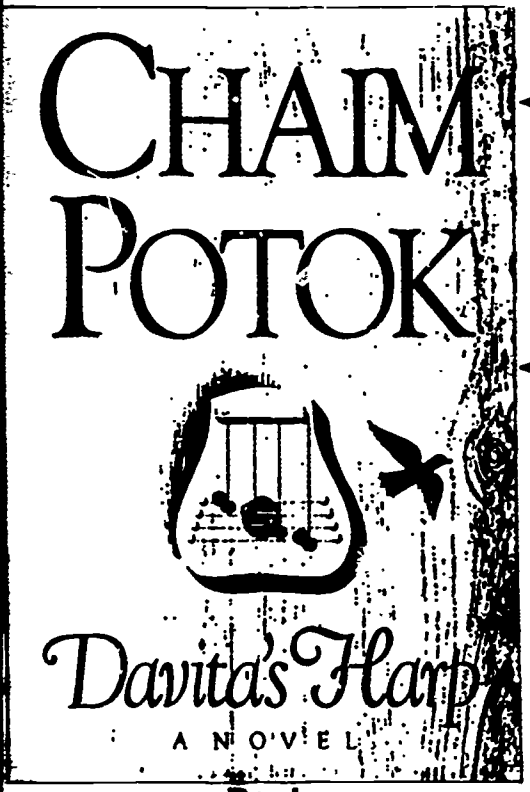
The barcode number serves the same purpose as the copy number. It appears on the electronic record as a number, and on the item itself as a barcode label. The unique number links the electronic record, with its complete information, to the item. (Refer to the next page for an illustration of the comparison.) The difference between the present system and the computerized system is that all the materials are already on the shelf. As a result a workable way to barcode the items, and link them to the electronic record at the same time, has to be selected.

METHODS FOR BARCODING/LINKING

There are a number of ways to barcode and link a library collection. Each method is described in detail on the following pages, with the description of the recommended method on page 54; this is a combination of methods that capitalizes on the advantages of each.

Only one method is omitted because of major disadvantages and limited advantages: barcoding the collection prior to building the database. It is not recommended that schools barcode items in advance because 1) it results in wasted time and expense in barcoding items that may not circulate in the future, 2) it requires a duplication of effort in going through the shelflist cards to mark the numbers, and again to search for electronic records, and 3) it is more difficult to separate the shelflist cards for the items in the database, and the ones that need to be added by other means.

Linking Records



Book

14

Copy Number

Shelflist Card

Davita's harp

P Potok, Chaim.
Davita's harp / Chaim Potok. -- 1st ed. --
New York : Knopf, 1985.
371 p. ; 22 cm.
16.95
ISBN 0-394-54290-8

14

PS3566.069D3 1985 813'.54
84-48526
MARC

13945

RADFORD HIGH SCHOOL LIBRARY

T 13945

Bar Code Label

Leader			pam a
Control #	001		84048526
Fixed Data	008		840914s1985 nyu 0C011 eng
Entrd: 840914	Dat tp: s	Dates: 1985,	Ctry: nyu Illus:
Int lvl:	Repr:	Cont:	Govt pub: Conf pub: 0 Festschr: 0
Indx: 0	M/E: 1	Fict: 1	Bio: Lang: eng Mod rec: Source:
ISBN	020		a0394542908
LC Call	050	0	aPS3566.069bD3 1985
Dewey Class	082	0	a813/.54219
Local LC #	090		aP
ME:Pers Name	100	10	aPotok, Chaim.
Title	245	10	aDavita's harp /cChaim Potok.
Edition	250		a1st ed.
Imprint	260	0	aNew York :bKnopf,c1985.
Phys Descrpt	300		a371 p. ;c22 cm.
Biblio Price	350		a16.95
Location	851		224
Bar Code #	901		a13945

Electronic Record

59

Database Link

Description: This is the method used when the state database is borrowed for matching records of the individual library.

Steps required:

1. As a hit is found in the state database, mark the shelflist card with a barcode number. Keep the sheets of barcode labels in order and mark with the corresponding shelflist drawer label.
2. Take the drawer and the set of labels to the shelves; apply the barcode labels to the items.

Advantages:

1. A multi-purpose database of high quality is created.
2. Delays at the circulation desk are reduced, since most items have been entered prior to implementation.

Disadvantages:

1. A team of workers is needed for barcoding to reduce the time span and tedium involved.
2. A completely automated inventory will not be possible immediately.

Clean Sweep

Description: This method, used by the public libraries, involves building the database for every item in the library and applying matching barcode labels.

Steps required:

1. Mark all shelflist cards with barcode numbers.
2. Add the numbers to the database records; or enter data manually, adding the barcode number. Divide the sheets of labels to correspond to the drawers.
3. Take the shelflist cards to the shelves to attach the barcode labels to all items.

Advantages:

1. Delays at the circulation desk are eliminated, since all items have been barcoded prior to implementation.
2. Inventory is automated from the first year.

Disadvantages:

1. Work must be completed when the library is not available to patrons.
2. The library must have been very thoroughly weeded to eliminate items that do not circulate or are of questionable value.
3. A team of workers is needed to complete the work in a short span of time.

On-the-Fly While Automating

Description: This method involves barcoding and linking as an item circulates.

Steps required:

1. Wand the patron card.
2. Staple the barcode label on its backing sheet to the check-out card as the item is borrowed; wand each item borrowed. (The circulation system will register only a barcode number at this point.)
3. File the check-out card as usual.
4. When an item with no barcode label is returned, retrieve the check-out card and place it in the item.
5. Find the correct shelflist card and record the barcode number.
6. Add the barcode number to the correct database record, or enter data manually; attach the barcode label to the item.

Advantages:

1. Non-circulating items are not barcoded and linked, eliminating an unnecessary investment of time and expense.
2. Implementation of automated circulation can begun immediately.

Disadvantages:

1. Only a portion of the state database may be available during the linking.
2. Barcoding and linking the entire collection will take several years.
3. A completely automated inventory cannot be done for several years.

VARIATION: On-the-Fly-Before-Automating - Items are barcoded as they circulate, but are checked out using a manual system. Steps 4-6 are the same. This method has the added advantage of being useful for an indefinite period of time before implementation; it has the same disadvantages.

RECOMMENDED METHOD

The following method combines most of the advantages, and eliminates or reduces many of the disadvantages of the individual methods.

Before implementing the system - Use the Database match method to convert most of the items in the collection.

While implementing the system - Use the On-the-fly while automating method to add the remaining circulating items.

One or two years after implementing the system, or as time and personnel permit - Use the Clean sweep method to add useful, but non-circulating items, e.g., reference, valuable materials.

A short video, "Barcoding", is available from the Educational Television Section through their duplication service; the video demonstrates the recommended method.

No matter which method(s) are selected, it may be desirable to separate the shelflist cards with barcode numbers and those without, for the following reasons:

1. Barcoding items on the shelf will be faster if only shelflist cards with numbers are in the drawer.
2. As a record is added manually, the matching shelflist card will be easier to locate for adding the number (but will then have to be interfiled.)
3. There will be a quick visual assessment of how many items remain to be barcoded.
4. The items that need to be inventoried manually will be in a separate file.
5. Items that have not circulated will be in a separate file for weeding consideration.

IMPORTANT: When the barcoding/linking task is proceeding well, plans should be made to request student records. Refer to page 57 for details.

PLACEMENT OF BARCODE LABELS

Barcode labels may be placed on the outside of print materials for easier inventory. For greater protection, they may be placed inside. (Refer to catalogs of suppliers for processed books, e.g., Follett, Baker and Taylor, for illustrations of suggested locations.) If the barcode number is placed inside print material, it is more efficient to apply it in the same general area of the pocket, if prestamped date due slips are to be inserted; or near the date due slip if the date is to be stamped. This enables the library worker to barwand and add the date due at one time.

BATCHING BIBLIOGRAPHIC INFORMATION INTO A CIRCULATION PROGRAM

Interface programs have been designed to convert existing bibliographic records to the format required by the state-approved circulation programs. The programs may be requested by calling or writing to School Library Network. Detailed instructions on using the programs are included in Appendix D.

Chapter 9
Purchasing Automation Software

The timing of the automation software purchase is important because of several factors:

1. The software should not be sitting unused while the time-consuming steps of automation are being completed, e.g., preparing the collection, building the database, barcoding/linking the collection. Most of this work can be done without having the actual program on hand. The vendor of one of the currently state-approved programs will provide a free batch disk to enable librarians to work on manual entry prior to purchase.

2. The one year's free support offered by most software producers begins on the date that the program is received by the school, not on the date that the program is actually put into use. If the program is ordered early in the automation process, months of free support may be lost as the collection is prepared.

3. Subsequent years of support should correspond as closely as possible to the Department of Education's fiscal year, because of constraints on purchasing support only during the current year.

   For example, if Ms. Lee purchases a circulation automation program and receives it in February, 1987, the one year's free support terminates in February, 1988. Ms. Lee cannot submit a purchase order for a year's continued suppport, because she would be using 1987-88 fiscal monies to purchase suppport that she would be receiving in the 1988-89 fiscal year, from July 1, 1988 to February, 1989.

   There are two ways to deal with the fiscal constraint, 1) to ask the vendor for permission to pay a pro-rated amount for the remaining months of the current fiscal year, and then to begin a new year's cycle in July, or 2) to pay the long distance charges for customer support during the remaining months of the current fiscal year. A simpler solution, of course, is to time the purchase as close to the beginning of a fiscal year as possible.

4. A period of time is needed to use the software program to prepare for implementation. The librarian(s) will need to read the documentation carefully, to install the software, to batch in title and patron disks, to print patron cards, and to try out the complete program to make sure that it is working properly.

5. Student records are updated and downloaded for school libraries in August.

An ideal time to specify delivery of the software might be a month before planned implementation. The purchase order can be submitted earlier, but the shipping date requested closer to the implementation date. Delivery of the software just prior to the return of the librarian(s) for the new school year, with implementation in October, would enable the library staff to use September as a time to prepare the system and the patrons for the change in circulation.

management. While September is usually a busy month for school libraries, the more time-consuming tasks of the final preparation, e.g., converting and batching in disks, do not require constant attention; the processes take a few minutes to begin, and then proceed automatically for five-fifteen minutes. The step that requires more attention, printing patron cards, is not difficult and can be delegated to student or adult volunteers.

Chapter 10
Building the Patron Database

Electronic student records are available from the Department of Education, and offer much more information, including home address and telephone number, than most school libraries are able to create manually. These records may be requested by contacting School Library Network the first year of circulation automation; in subsequent years, the records will be sent automatically.

Because of the time involved in requesting output of data from the state mainframe computer, requests from schools will need to be batched. The preferred date for downloading student records is in late August to reflect the schedule changes and demographic information corrections made during the summer. The downloading of records can only be done for each school once a year; students entering a school or changing their records/home room will need to be added manually.

The records are sent to the individual school on a floppy disk. These disks can then be uploaded onto the library's hard disk, and converted to the format needed by the state-approved programs. The conversion programs are available from School Library Network; detailed instructions on using the programs are included in Appendix D.

Chapter 11

Barcoding and Linking the Patron Database

After the student records have been batched into the circulation program, patron cards may be printed, and the appropriate barcode labels attached; the printing process will note on the card the number assigned to each student. The cards may then be issued or filed according to the school's choice. Different schools have suggested the following ways of managing the student cards:

1. An elementary school library keeps the cards separated by room number, with each stack bound by a rubber band. When students arrive as a total class, the cards are spread out on the desk for students to pick up. The cards are also available to students at recess; the students are responsible for returning their cards to the correct stack. Numbering the cards in sequence speeds up alphabetizing; new students are added in 2a, 4c, for interfiling.

2. A secondary school attaches the barcode label to the existing student identification card. Since the school emphasizes the need for students to keep the card with them at all times, the library is not instituting a new policy.

3. An intermediate school keeps the student cards on file in the library and retrieves the cards for the students. Adding the small picture from the class composite eliminates the need to ask for identification.

4. Another intermediate school plans to keep the student cards on file, but not to require cards for the staff. Instead, a list of staff members will be kept at the desk with the correct barcode labels attached beside the names. As teachers or other staff members borrow materials, the list is pulled out and wanded.

5. An elementary school plans to prepare individual student cards to be kept in the classroom and passed out as the class visits the library. A second set of labels will be kept on a class list at the library; those labels will be used to charge materials to students visiting the library during recess or after school.

Whatever method seems appropriate to the individual school's needs and the level of maturity of the students, can be selected as long as the method is convenient for the library staff, encourages borrowing by patrons, and does not result in delays at the circulation desk.

Chapter 12
Publicizing the System

An effective public information campaign can generate a great deal of interest in the innovation of circulation management in the school library. Refer again to the suggestions in Chapter Four, especially the last items. Even if information has been shared previously, starting actual implementation provides a new opportunity to use news articles, posters, fliers, public announcements, and an open house to encourage students and staff to make effective use of the school library, and to publicize the event to the community. Planning should begin at this point, but actual publicity may be more effective after the next step, successful implementation.

News articles - A news article shell is provided on the following page; schools may use the model for their own school newspapers. Regional newspapers are generally eager to include local school events; especially if the school is the first in the area to automate circulation, the newspaper may be willing to send a reporter to gather information, or to print an article provided by the school.

Posters - Posters are available from School Library Network for schools interested in publicizing their automation effort in this way.

Fliers - Small brochures or book marks publicizing the automation effort may be reproduced at the school for distribution to students.

Public announcements - The public address system, faculty meeting announcements, or information sharing at parent-teacher group meetings can provide information to interested school and community people.

Open house - This may be combined with the annual school open house with special focus on the school library, offered as a special faculty meeting event with refreshments, or opened to students and parents on a day when no classes are scheduled; bright signs and balloons can add a festive touch. It is best to schedule the open house after the system has proven to be working well with minimum problems.

SCHOOL LIBRARY AUTOMATES CIRCULATION

Your school library has joined the computer age! Borrowing procedures were recently automated, according to _____, the librarian.

What this means to library users is that you can

- check out materials as fast as at the supermarket
- find out what items you still have out in an instant
- have a print-out of materials checked out in a few seconds
- place a hold on an item so it can be recalled and reserved for you

The automation project is a result of months of preparation. Groups that assisted in barcoding the materials include _____
_____
_____.

For more information about the new system, check in at the library and check out!

Chapter 13
Implementing the System

Effective implementation will depend on how well the preceding steps in the automation process have been carried out. In addition, the following suggestions may help in a smooth transition to the newly automated procedures:

1. Arrange the equipment and try it out in advance. Experiment with different placement to see which is most convenient for library workers and patrons.
   a. Allow sufficient space for materials to be opened and wanded, if the bar-code label is placed on the inside of materials.
   b. Consider placing the hard disk drive on a separate, lower shelf to leave only the monitor and keyboard on the circulation desk.
   c. Make sure the keyboard is at a comfortable level for data entry.
   d. Consider purchasing a turntable for the monitor, or experiment with placing it so that the workers and patrons can see the screen. Patrons often like to see what information is appearing with their names.
   e. Place the disk drive at a distance from any demagnetizing equipment being used with a security system; otherwise, data on the hard disk could be damaged.
   f. If the back of the monitor points toward the security system gate, the alarm may be set off. A simple cardboard, or plywood, screen lined with aluminum foil can alleviate problems. An example is shown on page 65.
   g. Check to see if any large equipment shares the same circuit as the computer. If so, have the outlet checked with a voltage meter when all the equipment is turned on; generally the voltage fluctuation is minor.

2. Make as few changes as possible. If pre-stamped date due slips have been used, they should be continued, at least in the initial months. Patrons will be more accepting of the system if there are not too many new steps to learn, and library workers will function more efficiently.

3. Be very familiar with the automation program. Conduct trial runs for a few days to enable library workers to become confident in their barwanding motions and moving from one part of the program to another.

4. Have a manual backup system ready to use at any time. Make sure all library workers know how to use the manual system selected, and have a supply of manual backup forms ready. Samples are shown on pages 66-67.

5. Review the barcoding/linking method described on page 53 to prevent delays for library users borrowing materials.

6. Exercise caution in using a dual check-out system, e.g., having borrowers fill out the borrowers' cards and using the barcoded patron card; this will make the circulation procedures twice as slow and will have a negative effect on user satisfaction among patrons and staff. If a dual system is used until the staff is confident in the automated system, limit the trial period to a very short time.

7. Schedule the first day of automated circulation on a day with as light a schedule as possible, orienting a few classes at a time.

8. Avoid major fanfare on the first few days the system is in operation, to allow the library workers to gain confidence without a crush during recesses. Generate excitement about the system after it is working well.

9. Provide simple instructional signs to supplement class orientation.

10. Maintain flexibility and a sense of humor. Be ready to make mid-course corrections as needed to make the system work better.

JOINING THE SCHOOL LIBRARY NETWORK

When a school borrows the state database, it automatically becomes a member of the growing network of school libraries participating in resource sharing. Students and staff members are then able to draw first on their own school library holdings to meet their information needs, and then on the holdings of many school libraries.

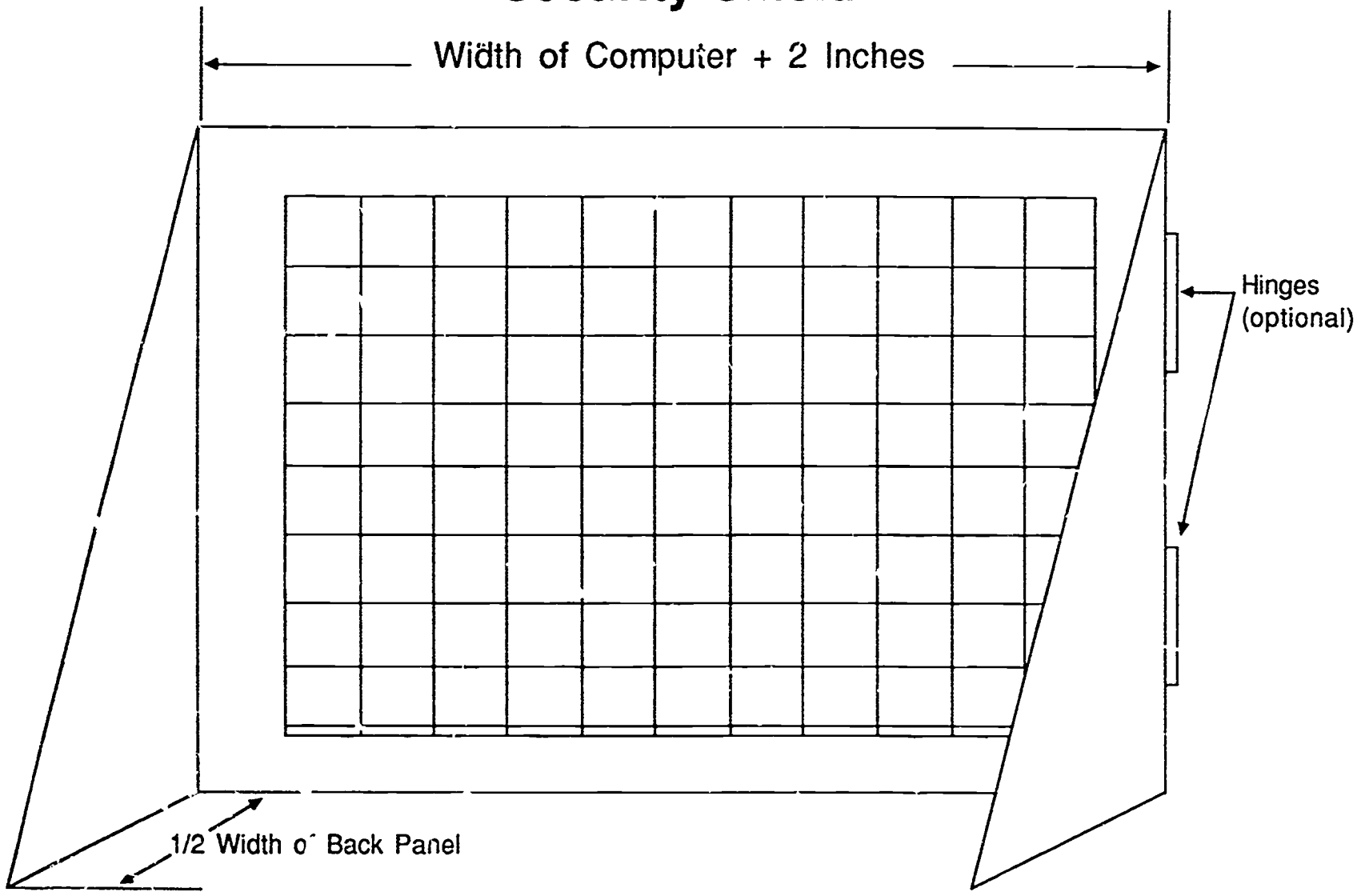
As the individual school library holdings were matched against the database, and copies of the diskettes sent to School Library Services, those records were added to the union catalog of school library holdings. The union catalog then serves as the basis for sharing information in a machine-readable format, first on microfiche and later on compact disks.

After school library users have explored their own library holdings, and still have unanswered needs, they can then turn to the bibliographic records of the school library network. Sources of information are identified and requested from the network library through interlibrary loan.

In the future, membership in the network will enable school librarians to begin to explore cooperative collection development. One library may choose to support a learning center by building a rich collection of science books, nonbook materials, and periodicals, while another concentrates on the humanities. Each librarian can be confident in devoting more resources to one area, knowing that the expanded collection in another network library is available for interlibrary loan.

To facilitate resource sharing among school libraries, a draft guide of interlibrary policies and procedures has been developed. The guide will be tested over a period of time, and then revised according to the recommendations of the librarians who have been involved in resource sharing. The draft guide can be found in the next section.

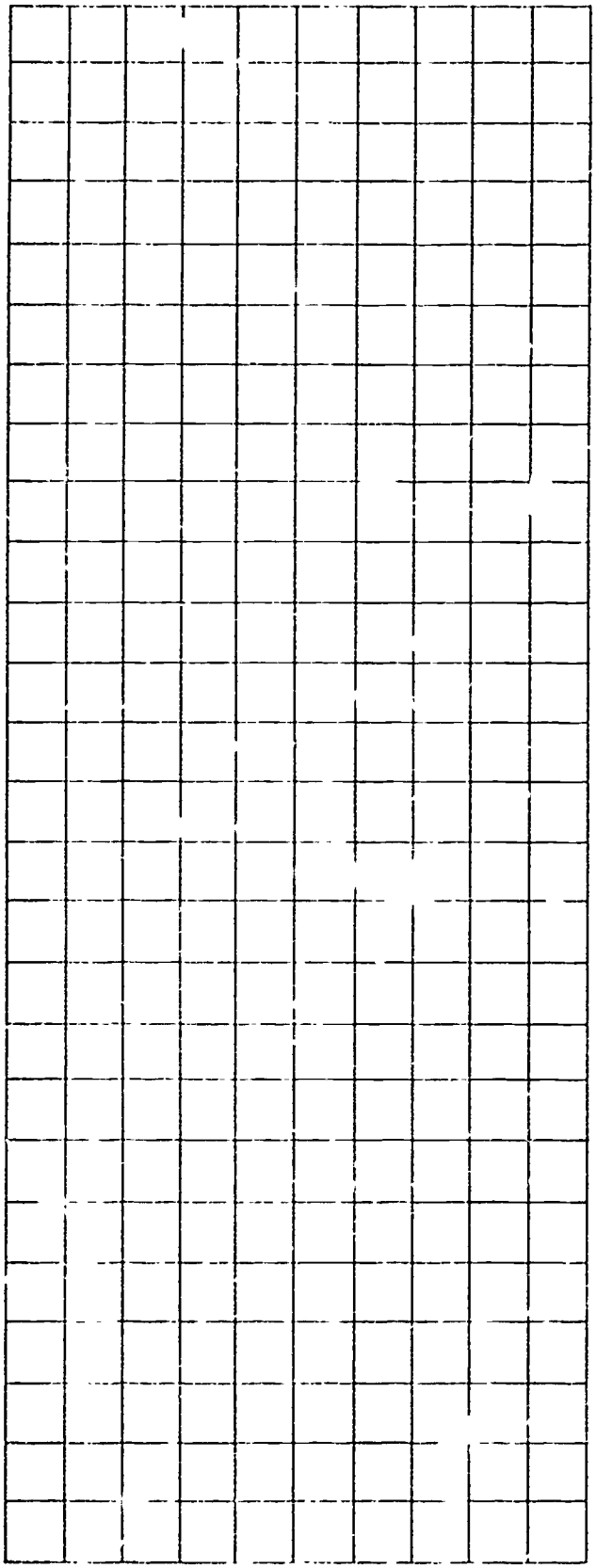
Security Shield



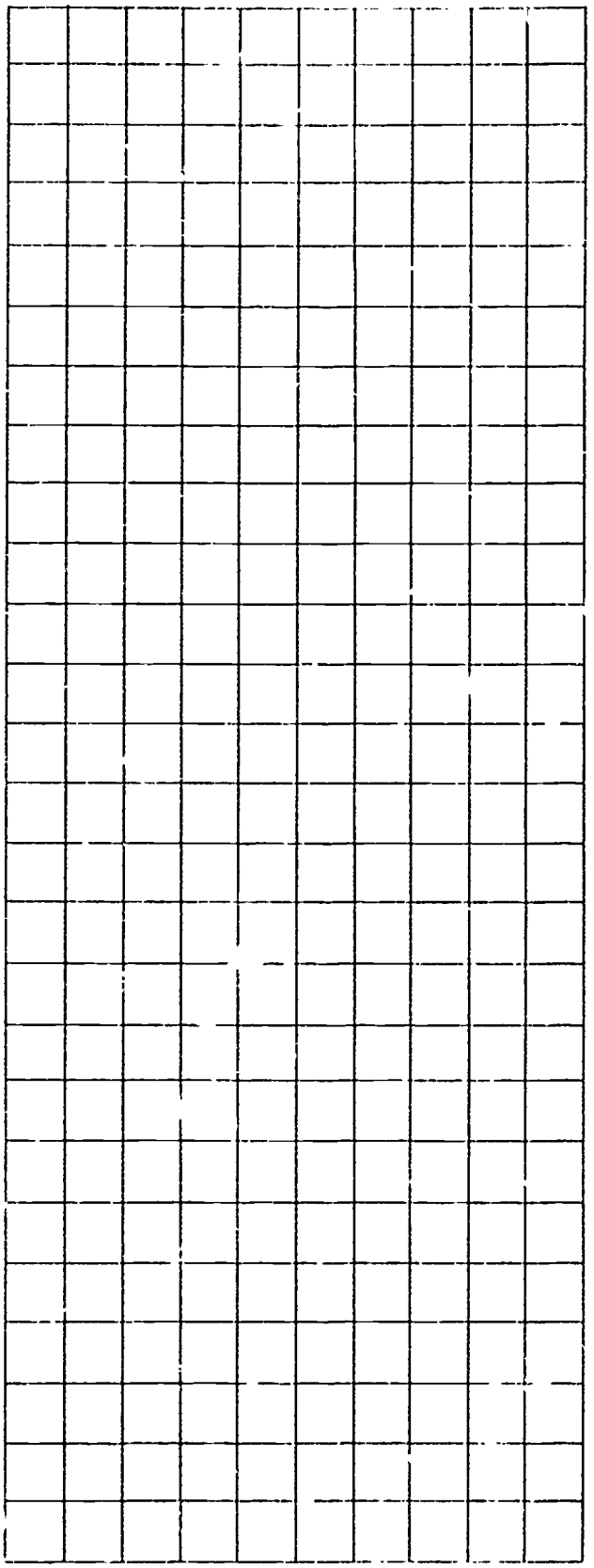
MATERIALS: 1/4" Plywood, Sheet Metal or Aluminum Foil

MANUAL CHECKOUT SHEET

Patron Number



Barcode Number



MANUAL CHECKOUT FORMS

Patron number _____

Item number _____

Patron number _____

Item number _____

Chapter 14

Maintaining and Expanding the System

School librarian(s) who have completed the process of automating the circulation management in their libraries, and who have begun to participate in resource sharing through the school library network, have certainly earned the right to enjoy the benefits of the system, knowing that book snags are a thing of the past, that more time can be spent in direct professional services to library users, that statistics are being generated to assist them in making well-informed purchase decisions, that materials control is much faster and more accurate. There will be a period when attention will be focused on completing the data entry for all the materials in the collection, and planning for on-going maintenance of software support, repair of equipment, and provision of needed supplies.

As time goes on, though, most librarians will begin to look for ways to expand the existing system or to move into automating another aspect of school library service. Some areas that merit consideration include:

- Finding more applications for the existing software. Consider adding anything that has to be circulated and/or inventoried on a regular basis, e.g., nonbook materials, audiovisual equipment, frequently borrowed publishers' catalogs, library furniture.

- Exploring other components that can integrate with the existing software. An online public access catalog can make information retrieval faster and more powerful, expanding from the traditional author-subject-title access to being able to search author, title, as many as eleven subjects, abstracts, notes, and tables of contents. These search features greatly increase access to students, especially those who have more difficulty using limited, and sometimes esoteric, subject headings.

  The benefit to library workers is eliminating the time spent in filing or withdrawing catalog cards. With a computerized catalog, the same task is accomplished with a few key strokes.

  The same records extracted for the circulation automation can be used to create an online catalog. With the addition of some less expensive remote terminals attached to the microcomputer that manages circulation, an OPAC software program, and a microcomputer network, library users can not only locate the materials held by the school library, but can know immediately whether the item is on the shelf or in circulation.

- Considering offering database searching services. Increasing demands for current information, and a need to prepare students for the information age, are leading to more and more school libraries across the nation offering database searching to students and staff. A database subscription, a modem, a telephone line, and--in some cases--a compact disk player are all that are needed to open the wider world of information retrieval to school library

users. Oceanic Cablevision's Xpress and the Department of Education's Hawaii Calls, now being pilot tested, are two projects that are leading the way in Hawaii to open these opportunities to students and educators.

School librarians who have completed automating their library circulation have already taken the first giant step toward realizing the dream offered in the school library networking mission statement. Those librarians are ready to start the next exciting part of the networking process.

RESOURCE SHARING

Overview

No single school library can expect to meet all of the varied interests and instructional needs of the students and staff it serves. Resource sharing, through interlibrary loan, offers the opportunity for school library users to draw on the materials of a large number of libraries. Although school librarians have had informal networks of sharing through the years, in an effort to meet those special user needs, they have been hampered by their limited knowledge of the holdings of other school libraries, and a workable document delivery system. Students and other staff members lacked even this limited knowledge of the resources available in other school libraries.

Participation in a school library network opens the doors to the resources in other school libraries by providing 1) a combined catalog of the holdings of all of the network libraries, 2) cooperatively designed policies and procedures to facilitate interlibrary loan, and 3) a document delivery system. These efforts, still in the pilot test stage in Hawaii, are following a national trend to look beyond the school library walls for a rich variety of library resources.

There are some major assumptions that networking librarians, and the students and staff served, will need to support if networking efforts are to be successful. School librarians may find that they need to establish a climate of sharing among their users, so that the benefits of being able to draw on other library collections are seen as outweighing any inconvenience of letting other schools borrow materials. The major assumptions are:

1. **There are benefits to all members of a network, regardless of the size of the individual collection.** As long as each library of the network is able to make effective use of resource sharing, the relative number of lending or borrowing transactions is not important.

2. **Resource sharing can enhance, but not substitute for, an adequate school library collection.** Most user needs should be met by a collection of materials that support general instructional and recreational needs; the network provides access to the specialized resource.

3. **Interlibrary loan accounts for a small percentage of the participating library's total circulation.** National studies show that interlibrary loan requests account for less than one per cent of the library's total circulation.

4. **Participating in a library network may require adjustments in planning for student use of resources.** Planning for research that involves resource sharing will need to take into account the time required for interlibrary loan. Assignments with short deadlines, or belated student research, will limit the user to the resources available locally, without the benefits of networking.

5. **There may be interlibrary loan costs for the participating school library.** Adequate planning is needed to provide for some additional staff time, as well as mailing charges; these costs should not be major in comparison to

the costs of trying to provide additional resources within the individual school library.

Cooperative purchasing

Some school librarians have found that they could begin to plan for cooperative purchasing of expensive reference materials even before they became participants in a school library network. The combined catalog, however, provides easy access to information for students and other staff members, and provides an incentive for more school librarians to plan for building specialized collections that can be shared with others.

KEY CONCEPTS:

1. Resource sharing is invaluable as a means for meeting specialized needs of students and staff.
2. A climate conducive to lending, as well as borrowing, library materials may need to be created.

NOTE: The following policies and procedures are designed to facilitate resource sharing. School librarians that have developed informal and effective means of interlibrary loan and document delivery are encouraged to continue those if they prefer.

Hawaii
School Library
Inte.library Loan Policy

Interlibrary Loan Policy

Interlibrary loan service is essential to school libraries as a means of greatly expanding the range of materials to users. These guidelines are intended to make interlibrary loan among participating school libraries as simple and timely as possible. Interlibrary loan should serve as an enhancement to, not a substitute for, ongoing collection development within the individual library.

Definitions

Interlibrary loan	An interlibrary loan refers to a materials sent from one library to another.
User	A user is the patron--student or staff member--who makes a request for materials not available in the local school library.
Borrowing library	The borrowing library is the school library that makes an interlibrary loan request to another school library on behalf of a user.
Lending library	The lending library is the school library that receives and acts upon an interlibrary loan request, whether or not material is actually transferred to the borrowing library.
Reserve	A reserve is a request that a specific library item be retrieved and held for a user.

Purpose

The purpose of interlibrary loan as detailed in these guidelines is to obtain for the user library material not available in the local school library.

Scope

Materials to be loaned

Any type of library material may be loaned, except rare and extremely valuable items. Photocopies may be made as a substitute for loan of the original materials, subject to copyright restrictions and American Library Association policy.

Old and rare materials may not be photocopied if the process will damage the items.

Who may borrow

Students and staff of a school library may request materials through the school librarian for materials to serve the instructional and informational needs of the students in that school.

When interlibrary loan policies will be in effect

School library interlibrary loan policies will be in effect during the regular school year.

Responsibilities of borrowing libraries*

A. Each school library will provide the resources to meet the daily educational, information, recreation, and research needs of its users. No library should depend upon another library to supply the normal needs of its patrons.

B. Borrowing libraries will make every effort to exhaust their own resources before requesting interlibrary loans.

C. The borrowing library will honor limitations on use imposed by the lending library.

D. The borrowing library is responsible for the safe and prompt returns of loans.

E. Except in the case of very valuable shipments, no acknowledgement of receipt is necessary. If there is undue delay in receipt of shipments, the borrowing library is responsible for making inquiries to the lending library so that a search may be initiated.

Responsibilities of Lending Libraries*

A. The decision to loan material is at the discretion of the lending library. Each library is encouraged, however, to interpret as generously as possible its own lending policy with due consideration to the interests of its users.

B. The lending library is responsible for notifying the borrowing library promptly whether or not the materials are being sent.

C. The lending library has the responsibility of informing borrowing libraries of any failure to observe the guidelines.

Expenses

A. Patrons will be charged for extensive photocopying, if permissible by copyright law, and for lost or damaged items.

*Adapted from Interlibrary Loan Procedures, Hawaii State Public Library System, 1980 1980.

B. Borrowing school libraries will assume costs for return shipment expenses and replacement of materials lost or damaged by a user, even if the borrowing library is unable to recover loss or damage costs from the user. Lending libraries will assume shipping costs for sending materials to borrowing libraries.

Duration of Loan* A. Unless otherwise specified by the lending library, the duration of the loan shall be calculated for two weeks from the time of receipt at the borrowing library, disregarding the time spent in transit.

B. Interlibrary loan material should be returned promptly.

C. The borrowing library should ask for renewals only in unusual circumstances. The renewal request should be mailed or called in time to reach the lending library no later than the date due. If the lending library does not respond, it will be assumed that renewal, for the same period as the original loan, is granted.

D. All material on loan is subject to immediate recall, and the borrowing library should comply promptly.

Violation of Code Continued disregard of any provision of this policy is sufficient reason for suspension of borrowing privileges.

Procedures

1. The user fills in the left side of the multicopy request form.
2. The borrowing library completes and/or verifies the information; a staff member signs the authorization line.
3. The borrowing library mails copies A, B, and C to the nearest lending library with a shipping label; or contacts the lending library. Copy D is kept on file.

****

4. The lending library checks on the availability of material. If the material is not available, the not sent portion of the form is completed and copies A and B returned to the borrowing library.
5. The lending library a) photocopies materials as appropriate, b) completes the reports portion of the request form, c) encloses copies A and B, and d) prepares material for shipping.
6. The lending library ships the material by the most cost-effective means:

*Adapted from Interlibrary Loan Procedures, Hawaii State Public Library System, 1980, and National Interlibrary Loan Code, American Library Association and Association of Research Libraries, 1980.

a) U. S. mail for brief articles, excerpts, and pamphlets; or for items requiring fast delivery to neighbor island schools.
b) Department of Education messenger service for items that can allow for a week's transit time and are less than one-fourth inch thick. (for schools served by messengers)
c) Audiovisual Services film bag for items that can allow for up to ten days' transit time, and are thicker than one-fourth inch. (Use of the film bag will be pilot-tested during the 1989-90 school year; the service will be extended only to library materials.)

7. The lending library retains copy C for statistical or retrieval purposes.

****

8. The borrowing library notifies the requesting user of the arrival of the material. The borrowing library collects any photocopying charge from the user.
9. The borrowing libraries retrieves the material by the date due, completes the borrowing library record portion of the form, and returns the material to the lending library by the most cost-effective means, with copy B of the form, and photocopying payment as appropriate. Copy A is attached to the corresponding copy D and kept on file for completion of the annual School Library Report before being discarded.

****

10. The lending library attaches copy B to copy C and keeps them in a separate file to complete the annual School Library Report before being discarded.

****

11. Borrowing and lending libraries use the file copies of the interlibrary loan request to complete a statistics summary. The summary is attached to the annual School Library Report.
12. Interlibrary loan request forms that have been tallied on the summary are discarded.

Name of school _____ Date _____

REPORT OF INTERLIBRARY LOAN TRANSACTIONS

School Year _____ - __ __

A. Number of interlibrary loan requests submitted and received (copies A and D) _____

B. Number of interlibrary loan requests submitted but not received (copies D only) _____

C. Number of interlibrary loan requests received and filled (copies B and C) _____

D. Number of interlibrary loan requests received but not filled (copies C only) _____

Problems encountered in interlibrary loan transactions:

Other comments:

Date of request: Not needed after:

Location Codes: FROM:

A REQUEST

Requester: Grade: Home Room:

Book author: OR: periodical title, vol., and date:

Book title, edition, copyright: OR: periodical article title, pages:

Photocopy special instructions: Cost should not exceed $_____

TO:

Authorized by: _____

REPORTS:

Sent by: ☐ Library rat ☐ Messenger ☐ Other: _____

Charges $

Date sent

RESTRICTIONS: ☐ In-house use

☐ Copying not permitted

☐ _____

NOT SENT BECAUSE:

☐ In use
☐ Not owned
☐ Non-circulating

Estimated photocopy cost $

BORROWING LIBRARY RECORD:

Date received Date due
Date returned
By ☐ Library rate ☐ Messenger ☐ Other: _____

RENEWALS: ☐ No renewals

Requested on
Renewal date due

B - REPORT

C - LENDING FILE COPY

D - BORROWING FILE COPY

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AUTOMATED CIRCULATION

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APPENDICE

JOHN WAIHEE
GOVERNOR

CHARLES T TOGUCHI
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF INSTRUCTIONAL SERVICES

June 6, 1988

TO: Principals and Librarians

FROM: Herman M. Aizawa, Assistant Superintendent
Office of Instructional Services

SUBJECT: Purchase of Microcomputer Equipment for Library Automation

Approval has been granted for acquisition of microcomputer equipment and software for automating school library management functions. The following information is provided to assist schools in their selection and purchasing procedures.

Selection of appropriate equipment

Collection size	Need for fast processing/plans for future expansion to automated card catalog	Equipment required
1-10,000 items	NO	IBM Model 30 with 20 MB fixed disk OR IBM PC upgraded to 640K internal memory and 20 MB fixed disk
1-10,000 items	YES	Wang 240 with 20 MB fixed disk
10,000-15,000 items	NO	IBM Model 30 with 30 MB fixed disk OR IBM PC upgraded to 640K internal memory and 30 MB fixed disk
10,000-15,000	YES	Wang 240 + 42 MB fixed disk
15,000+ items	YES/NO	Wang 240 + 42 MB fixed disk

Purchase of equipment/software

Hardware - Include a reference to the correct bid number on the purchase order and attach a copy of the approval forms. Attachments A and B provide copies of the approval forms.

Software - Attach a copy of the approval forms. Schools indicating their intent to order Follett products during the 1988-89 school year have been sent copies of the discount authorization.

Send orders for the IBM Model 30 to Photo and Sound as noted in the May 10, 1988 memorandum, Price List for Microcomputers for Administrative Use. Send orders for the Wang to Wang Laboratories.

Processing

Refer to page 2 of the May 10, 1988 memorandum, Price List for Microcomputers for Administrative Use.

If you have questions or need further information, please call Margaret Kamura at 732-1866.

HMA:MN:lo

Attachments

cc: Superintendent
Assistant Superintendents
Superintendent's Branch Directors
District Library Liaisons

Attachment A

(ISSB-31)

REQUEST FOR ACQUISITON OF COMPUTER HARDWARE/SOFTWARE FOR ADMINISTRATIVE USE

OFFICE/BRANCH: Office of Instructional Services

REQUESTOR: Margaret Nakamura

PHONE: 732-1366

DATE: November 25, 1987

1. Itemize the hardware/software to be acquired and the estimated cost. Call the Information System Services Branch for assistance if needed.

1987-88

1	AST Premium/286 or equivalent with 6, 8, or 10 MHz 80286 CPU, 5.25 inch 1.2 MB diskette drive, 30 MB fixed disk	$2,600	$2,600*
3	AST Premium/286 or equivalent with 6, 8, or 10 MHz 80286 CPU, 5.25 inch 1.2 MB diskette drive, 40 MB fixed disk	2,839	8,517*
4	AST Premium monochrome display or equivalent compatible with above models	109	436*
(3)	IBM Proprinter	372	1,116*
(3)	Printer cable to interface printer to above CPU models	20	60*
(3)	Printer adapter to interface printer to above CPU models	50	150*
(*)	30 MB fixed disk unit for IBM PC/XT	1,244	*
(1)	40 MB fixed disk unit for IBM PC/XT	895	*
5	Bar code readers, IBM compatible	400	2,000*
5	Circulation automation software program, IBM compatible	1,500	7,500*

*Non-project school libraries using local school funds will purchase one of the described systems, or upgrade existing IBM PC/XT's, depending on the size of the library collection. The figures listed represent only the federal funds to be expended for project schools.

Recommend Approval: M. Higuchi
Dep./Assis./Dist. Supt.

Date: 12/4/87

Approved: [signature]
Assistant Supt., Business Services

Disapproved: ____

Date: 2/3/88

ATTACHMENT B

SUPT. ____

DEP. ____ YUKIO TAKEMOTO DIRECTOR

ASST. ____ ROBERT P. TAKUSHI DEPUTY DIRECTOR

FEB 2 PM 1 30

Thomas I. Yamashiro
Deputy Director

JOHN WAIHEE
GOVERNOR

EMPLOYEES' RETIREMENT SYSTEM
HAWAII PUBLIC EMPLOYEES HEALTH FUND
OFFICE OF THE PUBLIC DEFENDER
PUBLIC UTILITIES COMMISSION

STATE OF HAWAII

DEPARTMENT OF BUDGET AND FINANCE

STATE CAPITOL
P.O. BOX 150
HONOLULU, HAWAII 96810-0150

DIVISIONS:
BUDGET, PLANNING AND MANAGEMENT
ELECTRONIC DATA PROCESSING
FINANCE
Telecommunications

Ref: 1471C

January 25, 1988

OBS.
App. Attn.
2/1

MEMORANDUM

TO: The Honorable Charles T. Toguchi, Superintendent
Department of Education

FROM: Director of Finance

SUBJECT: REQUEST FOR BLANKET APPROVAL TO PURCHASE MICROCOMPUTERS FOR ADMINISTRATIVE USE IN SCHOOL LIBRARIES

A review of the subject request dated December 23, 1987 has been conducted in accordance with the provisions of Administrative Directive 1977-2 and approval is granted for the Department of Education to purchase the following computer equipment:

Quantity	Description
5	AST Premium/286 microcomputer with 6/8/10 MHZ 80286 CPU, 5.25" 1.2 MB floppy disk drive, and 30 MB fixed disk drive
5	AST Premium/286 microcomputer with 6/8/10 MHZ 80286 CPU, 5.25" 1.2 MB floppy disk drive, and 40 MB fixed disk drive
5	AST Premium monochrome display compatible with AST/286
5	Bar code reader, IBM compatible
5	Circulation automation software with on-line public access catalog (OPAC) software

In addition, blanket approval for additional computer systems for the School Library Network project for the school years 1988-89 and 1989-90 is approved.

Departments are reminded that the acquisition of computer hardware, software, and related services shall follow State purchasing procedures.

In order to keep our inventory list of equipment current, please notify the EDP Division of the specific serial numbers of the equipment obtained.

YUKIO TAKEMOTO

EVALUATION CRITERIA FOR CIRCULATION SOFTWARE

Weight: 1 = unnecessary; 2 = desirable; 3 = essential
Current: Manual system has capability; check in appropriate column
Specific program rating: 1 = low; 4 = high

	Value	Current		Programs				
		+	-	1	W§	2	W	3	W
I. Management									
*A. Password protection	3			4	12	4	12		
B. Ease of changing dates	3			4	12	4	12		
C. Secure for student assistant use	3			4	12	4	12		
D. Capacity of transactions stored 10,000				4	12	4	12		
E. Capacity of user records stored 3,000				4	12	4	12		
F. Capacity of materials records stored 50,000				4	12	4	12		
G. Variation of loan periods by item	2			4	8	4	8		
H. Variation of loan periods by user	2			4	8	4	8		
I. Variation of material type	2			4	8	4	8		
*J. Ease of use	3			3	9	4	12		
K. Accuracy	3			4	12	4	12		
L. Multiple terminal capability	2			4	8	0	0		
II. Database Building									
*A. Integration with external MARC II databases, e.g., BiblioFile	3	NA		4	12	4	12		
*B. Bar wand capability	3	NA		4	12	4	12		
C. Input error handling	3	NA		3	9	4	12		
D. Rapid assignment of bar code number		NA		4	8	4	8		
E. Twenty second manual entry/index of records				4	8	4	8		
F. Batch indexing of records		NA		4	12	4	12		
G. Printing of bar codes	2	NA		4	8	4	8		
*H. Bar code capability for users	3	NA		4	12	4	12		
I. Automatic generation of user number	2	NA		0	0	4	12		
J. Manual entry of users	3			4	12	4	12		
*K. Book record to contain at least title, author, call number, LCCN/ISBN, book status, cost, subjects, barcode number	3			4	12	4	12		
*L. User record to contain at least name, address, homeroom, phone number, grade, barcode number	2			4	8	4	8		
M. Multiple copy input ease	3			4	12	0	0		
N. User record to contain notes, transfer information	2			4	8	0	0		
*O. Use of common bar code standard	3	NA		4	12	4	12		
					270		260		

*Mandatory requirement Subtotal
§Weighted rating

Adapted from: Report by Dr. Gerald Lundeen for School Library Services, 1986
Evaluating Microcomputer Software
So You Want to Automate Your Library, New South Wales Department of Education, 1986, p. 9
"Converting to Computer Circulation," The Book Report, March/April 1985, p. 24

Program 1 - Mandarin
Program 2 - Circulation Plus

	Value	Current +	Current -	Programs 1	Programs W	Programs 2	Programs W	Programs 3	Programs W
III. System Support									
A. User-friendly documentation	3			2	6	4	12		
B. Toll-free number for assistance	2	NA		0	0	4	8		
C. Local representatives	2	NA		0	0	4	8		
D. Availability of input to company	2	NA		4	8	4	8		
E. Economy of updates, continued support	3	NA		3	9	4	12		
F. Newsletter to update material	2			0	0	4	8		
*G. One year free support	3								
IV. Circulation									
*A. Five-second processing of transaction	3			4	12	4	12		
*B. Stop on circulation because of overdue(s)	3			4	12	4	12		
C. Efficient tagging of items for hold	2			4	8	4	8		
D. AV equipment management	3			4	12	4	12		
E. Allows renewals automatically	3			4	12	4	12		
V. Information Retrieval of Circulated Items									
*A. Retrieval by title	3			4	12	4	12		
B. Retrieval by author	3			4	12	4	12		
*C. Retrieval by user name	3			4	12	4	12		
D. Retrieval of item by due date	3			2	6	4	12		
E. Retrieval of item by call number	2			4	8	4	8		
F. Searching with truncation	3			4	12	4	12		
G. Browsing of indexes	2			3	6	0	0		
*H. Linkage to online public access catalog	3			4	12	4	12		
VI. Record Generation									
*A. Generation of overdue list by room	3			4	12	4	12		
*B. Generation of individual notices	3			4	12	4	12		
C. Generation of recall notice	2			4	8	0	0		
D. Word-processing capabilities	2	NA		4	8	4	8		
E. Keeping statistics on number of loans	3			4	12	4	12		
F. Keeping statistics on types of loans	2			4	8	4	8		
G. Range-setting on circulation information	2			4	8	4	8		
H. Identification of item's last circulation	2			4	8	4	8		
I. Record of item's circulation record	3			4	12	4	12		
J. Inventory process support	3			4	12	4	12		
K. Bibliography production	3			4	4	0	0		
VII. Other									
A. Price less than $1,000	2			0	0				
B. Modules priced separately	2			0	0	4	8		
Subtotal					283		304		
First page subtotal					270		260		
Total					553		564		

School _____ Telephone number _____

Application Form for Use of the State School Library Database

Our school library is undertaking an automation project and would like to request use of the state school library database under the following conditions.

1. We will support Hawaii's school library network through such activities as participating in interlibrary loan (ILL), assisting in the development of ILL policies and procedures. and consideration of cooperative purchasing.

2. We will supply the necessary blank disks needed to copy the state database.

3. We will adhere to the state-coordinated schedule as we build our database, to ensure that no more than one school is working on the same section simultaneously. (See attached schedule)

4. We will use the database with one of the state-approved automation programs.

We understand that the School Library Network will provide the current database on a continuing basis, consultative assistance as needed, coordination of networking activities, and return of all diskettes supplied by the school for the duration of the project (1987 - 90 if funding is continued.)

Signature of school librarian _____ Signature of school principal _____

We will be using (circle one)

1. Type of computer
   - IBM XT upgraded
   - IBM AT upgraded as needed
   - IBM Model 30
   - Wang 240
2. Database format needed
   - double density 360K
   - high density 720K
   - 3 1/2" 1.3 Meg.

Note: Approximately 70 double density disks, 30 high density disks, or 20 3 1/2" disks will be required for the database and search software.

Database Schedule

	Date begun	Date completed
Haw. Per.		
000 - 099(+TR)		
100 - 199(+TR)		
200 - 299(+TR)		
300 - 399(+TR)		
400 - 499(+TR)		
500 - 599(+TR)		
600 - 699(+TR)		
700 - 799(+TR)		
800 - 899		
900 - 999		
Biography		
Reference		
Fiction A - K		
Fiction J - R		
Fiction S - Z		
Easies A - N		
Easies O - Z		

BATCHING STUDENT RECORDS INTO CIRCULATION PLUS

After your school has notified School Library Network that you will need current student records by the end of September (or when you first implement the circulation automation program,) you will be supplied with disks containing current student records.

Converting student records to batch disks

Student records will be sorted by grade and then alphabetically by last name, and will be converted into the Circulation Plus format. In addition, a file will be created to allow the printing of patron cards.

1. Prepare formatted disks, preferably double density, at least one for each grade to serve as patron batch disks. Prepare enough to allow 450 records per disk if there are more than 450 students in any grade.
2. Create a subdirectory for the DOE programs by entering MD[backslash]DOE at the C prompt. Enter CD[backslash]DOE to change to the new subdirectory. (If you have a large, partitioned hard disk, you may want to use drive D for conversion operations; enter D: at the C prompt to get a D prompt, and follow the same steps for creating a subdirectory. Substitute D for C in all subsequent instructions.)
3. Insert the DOE Programs disk and at the C prompt, enter COPY A:*.* to copy the programs to hard disk.
4. Enter STUDENTS to start the program.
5. Remove the DOE Programs disk and insert the student records disk provided for your school.
6. When asked for the name of the input file, enter the drive designation and a colon followed by the file name. Example: a:EHM224.DAT (floppy drive A using Radford data on the floppy disk)
7. Enter the drive to be used for the patron batch disks. Example: A
8. Enter the last two digits of the current school year. Example: 89 (for school year 1988-89)
9. Enter the highest grade in your school. Example: 12
10. Enter a starting barcode number no lower than 6. In subsequent years, you will enter the lowest unused barcode number.
11. Note that the program jumps to the next even one hundred. That is to save a range of numbers for the grade; the unused numbers can be assigned to incoming students during the year. You may, however, change the starting number.
12. Insert a blank patron batch disk when instructed.
13. Remove each disk when instructed and label it as directed. Each disk will hold 450 records.
    Example: Students 6-455
    Students 500-949
14. Back up and store the back up copies of the patron batch disks.
15. Follow the Circulation Plus instructions to batch in the patron data as described on page 6.18 of the manual.
16. Add staff members through manual entry.

Assigning numbers to grades in subsequent years

1. Each year delete the highest grade following Circulation Plus instructions.
2. Assign a new range of numbers for the incoming grade. The unused barcode labels (leaving a jump to the next highest one hundred) will indicate the new starting number.
3. When ordering barcode labels, continue with higher ranges until you reach 8000 to ensure that numbers will not be reassigned before the previous patron has left the school. See the next page for a diagram.
4. Continue to batch in student records annually to update information such as home room (records room) or address.

PRINTING PATRON CARDS

Cards may be printed easily using continuous card stock and Circulation Plus instructions. If the card stock being used is a different size from the two specified in Circulation Plus, the following program can be used, after the conversion program for the patron batch disks has been completed.

Printing patron cards

1. Prepare the printer with card stock.
2. Enter CARDS to activate the printing program.
3. Enter the correct number of lines. Since there are six lines per inch, 2 1/6 inch Rolodex cards require 13 lines; 3 x 5 cards, 18 lines.
4. Enter the starting number and the ending number. Try printing one or two initially to make sure the printer margins are set correctly, increasing then to a larger range of starting and ending numbers.
5. Use the number on the card to match the corresponding barcode label; space is provided for the label.

CONVERTING AND BATCHING BIBLIOFILE DATA DISKS

Follett Software Company has provided a program that will allow output disks created by using Bibliofile, or the state database, to be converted to the format that Circulation Plus will accept. To convert the data disks, follow these instructions:

1. Copy the program disk (BIB2ULIF) and save the original as a backup. Prepare as many formatted double-sided, double-density disks as there are data disks.

2. Enter MD(backslash)BIB2 to create a subdirectory on your hard disk drive for the conversion process.

3. Enter CD(backslash)BIB2 to change to the subdirectory you have created.

4. Write-protect the data disks containing the Bibliofile records by placing a write-protect tab over the notch on the side of the disks. This ensures the protection of the data even if the disks are not inserted or switched properly.

5. Insert a copy of the program disk into drive A. Enter A: to change the operation to drive A.

6. At the A prompt, enter BIB2ULIF and press ENTER.

7. Enter the location code for your school (three digit number.)

8. Remove the program disk and insert a data disk containing Bibliofile records into drive A and press any key to continue.

9. When the computer has finished converting the records, it will print statistics at the bottom of the screen and prompt you to insert a blank, formatted disk into drive A. At this prompt, insert the blank disk. As you remove each Bibliofile data disk, note on the label that it has been converted.

10. When the computer has finished copying the records to floppy disks, it will return to the A prompt. Remove the disk and label it MicroLIF #1.

11. Repeat steps 6 through 9 for each data disk which needs to be converted to MicroLIF format, inserting each new data disk and blank formatted disk for each. Label each MicroLIF disk as you remove it.

12. When all the data disks have been converted, load them into Circulation Plus following the instructions in the manual to batch in title disks with the MicroLIF option. Be sure that you have followed all the basic installation instructions first, including preparing daily, weekly, and temporary backup disks.

13. Subsequent conversion and batching sessions can begin with step 3.

14. After you have followed Circulation Plus instructions to back up all your title disks, the MicroLIF disks can be recycled. Save the original Bibliofile data disks, however, for future use; if you install an online public access catalog in your library at a later time, the same data can be used again.

CONVERTING AND BATCHING CENTRALIZED PROCESSING CENTER RECORDS

Centralized Processing Center (CPC) records are used as an alternative means of adding records to an automation program. They are presently limited to post-1976 records in a non-standard format, but may offer access to locally produced materials or cataloged paperbacks not found in the Bibliofile-based state database. The records are prepared by converting them to a format recognized by Circulation Plus, and then batching output disks into the circulation program.

It will first be necessary for School Library Services to request that all the holdings for your school library be extracted from the CPC database. After converting and batching in the records, you can match records and barcode items as they circulate. The program provided will assign bogus numbers starting at 20,000. If your last barcode number used for the records found through the state database (Bibliofile) is higher than 20,000, you will need to contact School Library Network for an alternative method.

Converting CPC records

1. Be sure that you have previously copied the DOE Programs files onto your hard disk in a subdirectory named DOE.
2. Prepare formatted disks, preferably double density, to use as title batch disks at a later point.
3. Change to the DOE subdirectory and enter CPC2CPLS and [enter].
4. Enter the name of your first CPC disk. Example: DATA1.224 (Radford CPC disk)
5. Enter the letter of your hard disk. Example: C
   The program will begin uploading and continue for about five minutes. The light on the hard disk will probably flicker to indicate that the processing is taking place.
6. Answer Y or N to the question and insert another CPC disk as needed, changing the name each time when asked. As you remove each CPC disk, note on the label that it has been uploaded. The CPC records will be loaded onto your hard disk into a file called CPCDATA.TMP.
7. When the program has finished loading the records, it will prompt you to insert a blank, formatted disk. Insert a blank disk into the floppy disk drive. It may be necessary to press [enter] twice to start the processing.
8. When the computer has finished copying the records to a floppy disk, it will prompt you to insert another blank disk. Remove the first disk and label it title batch #1.

10. Repeat step 8 for each title batch disk. Label each title batch disk as you remove it.
11. When all the title batch disks are completed, enter DEL CPCDATA.TMP to delete the temporary file.
12. Load the title batch disks into Circulation Plus following the instructions in the manual to batch in title disks with the Circulation Plus Batch Disk option. Be sure that you have followed all the basic installation instructions first, including preparing daily, weekly, and temporary backup disks.
13. After you have followed Circulation Plus instructions to back up all your title disks, the title batch disks can be recycled. Save the original CPC data disks, however, for future use; if you install an online public access catalog in your library at a later time, the same data can be used again.

Rev.2/88

Searching for Records

1. As you circulate materials that have not been previously added to the database or barcoded, you will first search for the title using the update/remove titles option in Circulation Plus. If the title is found among the CPC records, change the barcode number from the bogus number to a real one. If the title is not found through the search, set it aside for the next step.
2. After completing searches on a set of materials, add the remaining ones through the manual entry using the add titles option.
3. After all the materials in the library have been barcoded, the remaining titles with bogus numbers should be deleted; these represent titles that had been previously withdrawn from the collection or titles that had been entered previously through the state database.

Glossary

access time	time interval between the instant of a request for data from memory and the instant the data is retrieved.
backup	duplicate disk of important data and records stored as insurance against the possible loss or destruction of an original disk copy.
batch	executing programs in groups, or batches.
bells-and-whistles	informal description of the special (and flashy) capabilities of microcomputers.
boot	use of a short program (bootstrap) to load a larger and more sophisticated program into the main memory of a system.
bug	error in the design or makeup of a computer program or a hardware component of the system.
byte	the fundamental block of data which can be processed by a computer, roughly equivalent to one character.
CD ROM	acronym for Compact Disk Read-Only Memory; 5-inch plastic disk, with capacity of 550 megabytes, capable of storing text, graphics, sound and video for fast retrieval.
compatibility (hardware)	the capability of interconnecting a computer with different peripherals.
computer-based information retrieval (CIR)	use of computer-based technology for accessing and retrieving information from databases and networks.
computer literacy	a "catch-all" phrase to describe one's ability to understand computer technology, its operation, applications, and the implications of its use.

Definitions selected from:

Department of Education Computers in Instruction Plan. Hawaii: Department of Education, 1987. pp. 63-69.

"Educator's Lexicon of Computer Use," Arithmetic Teacher. (February, 1983): 46-49.

database	a collection of data file which are logically organized for efficient access and use internally.
disk drive	a mechanical device which uses the rotating surface of a magnetic disk for the high-speed transfer and storage of data.
DOS	Disk Operating System, the set of programs which allows both the user and the computer to communicate with a disk drive.
documentation	the written description of a piece of software or hardware.
down-loading	process of transmitting a program or data from a central computer or storage device to the main memory of a remote computer within a network; transferring a program of data from the storage device of a computer to disk(s).
down time	the time interval during which a hardware device is not working properly.
dual, double, high density	certain disks and tapes on which data can be densely recorded
electronic bulletin board	a system that allows messages to be recorded and received by means of a computer and modem at the user's convenience.
file	an organized collection of related data stored in a computer or magnetic tape or disk.
floppy disk	storage medium which is a flexible platter of plastic coated with a magnetic material.
hard copy	the output produced on paper by a printer.
hard disk	storage medium which is a rigid platter of aluminum coated with a magnetic material, removable or permanently mounted in a sealed environment.
hardware	the physical components of a computer system.

interface	the electronics, or software, necessary for a computer to communicate with a peripheral, or for programs to exchange data.
K	the symbol that represents 1024.
load	the direct transfer of a program or data from a disk or tape into a computer's memory.
MARC records	MAchine Readable Cataloging, bibliographic records in an electronic format conforming to the national standard.
memory	internal component of a computer where data and programs can be stored temporarily.
menu	a list of options, such as a choice of programs on a disk.
microcomputer	a computer system designed around a microprocessor as its central processing unit.
microprocessor	integrated circuit that contains the full processing logic necessary for the operation of a computer.
modem	a device which translates digital information and audio tones thereby allowing a computer to communicate over a telephone line.
multi-type library sharing	the exchange of information, resources, and/or services among different types of libraries, e.g., school, academic, public, special.
peripheral	an external device which interacts with a computer, e.g., disk drives, printers, monitors.
port	location on a computer where it can be physically connected to a peripheral.
program	a sequential set of commands written in a programming language which a computer can execute.
RAM	random access memory, often used for the storage of a program and the data being processed.

ROM	read only memory, or memory which cannot be altered by the user or a loss of power, e.g., DOS and programming language.
save	the direct transfer of a program or data from a computer's memory to a disk or tape.
scroll	the vertical shift of lines on a video display to allow a new new to be shown at the bottom of the display.
software	the routines, programs, and documentation in a computer system.
telecommunications	the use of computer technology to transmit data between two or more remote locations.
terminal	a device which allows the user to communicate with a computer.
word processing	the processing of creating, modifying, deleting, and formatting textual material.