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SPEAKEASY: An Interactive Language

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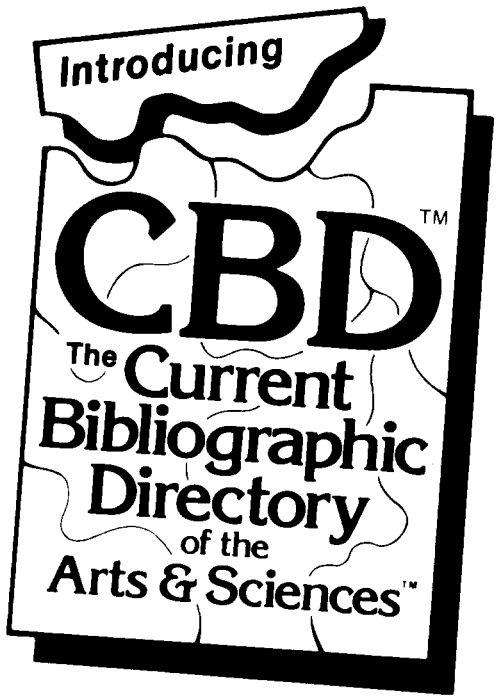

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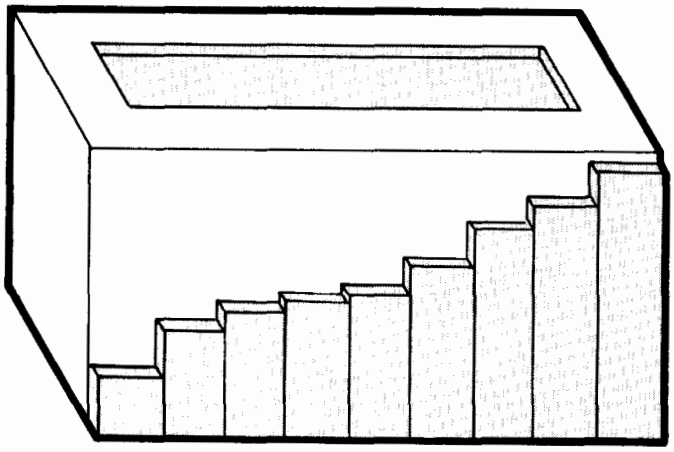

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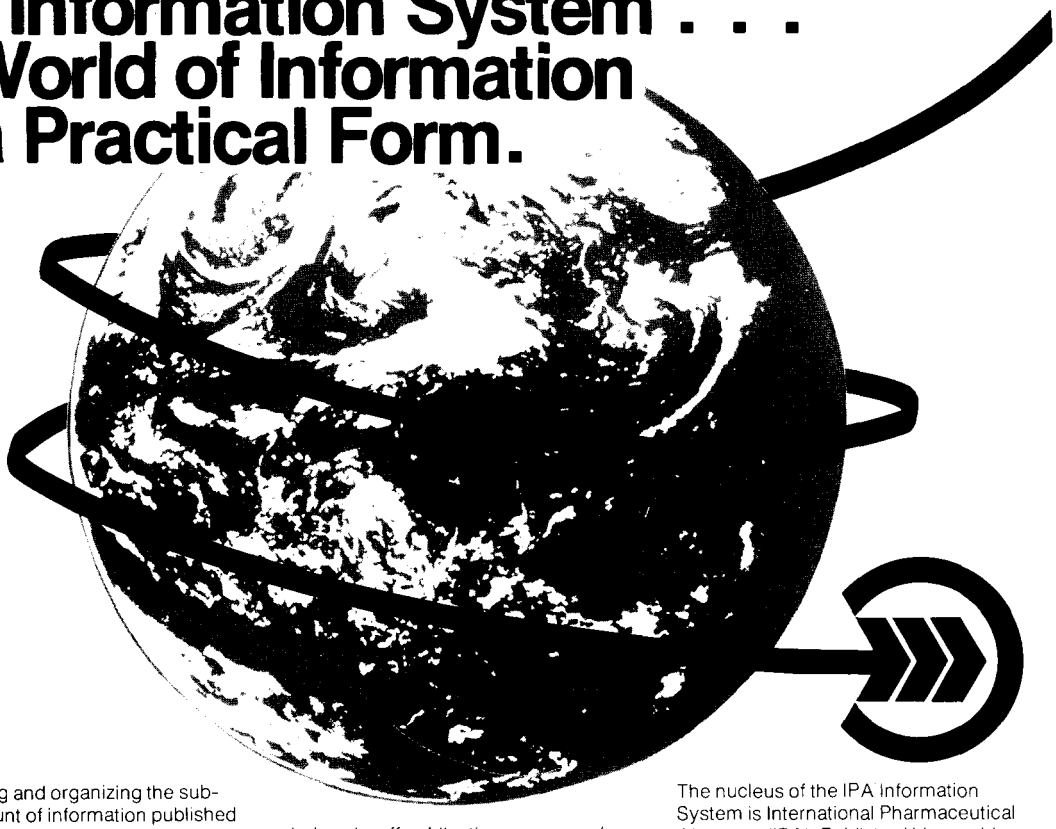

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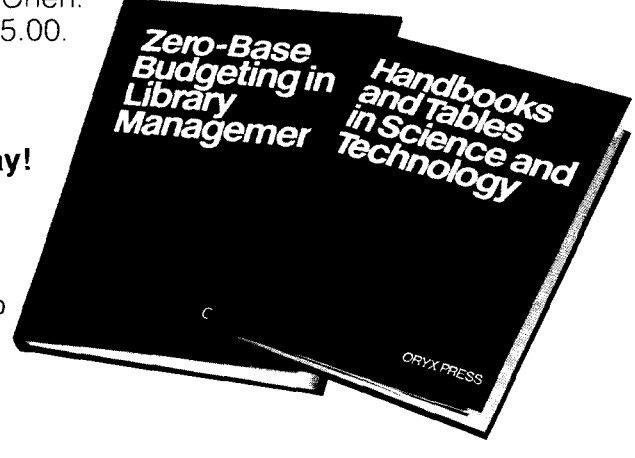

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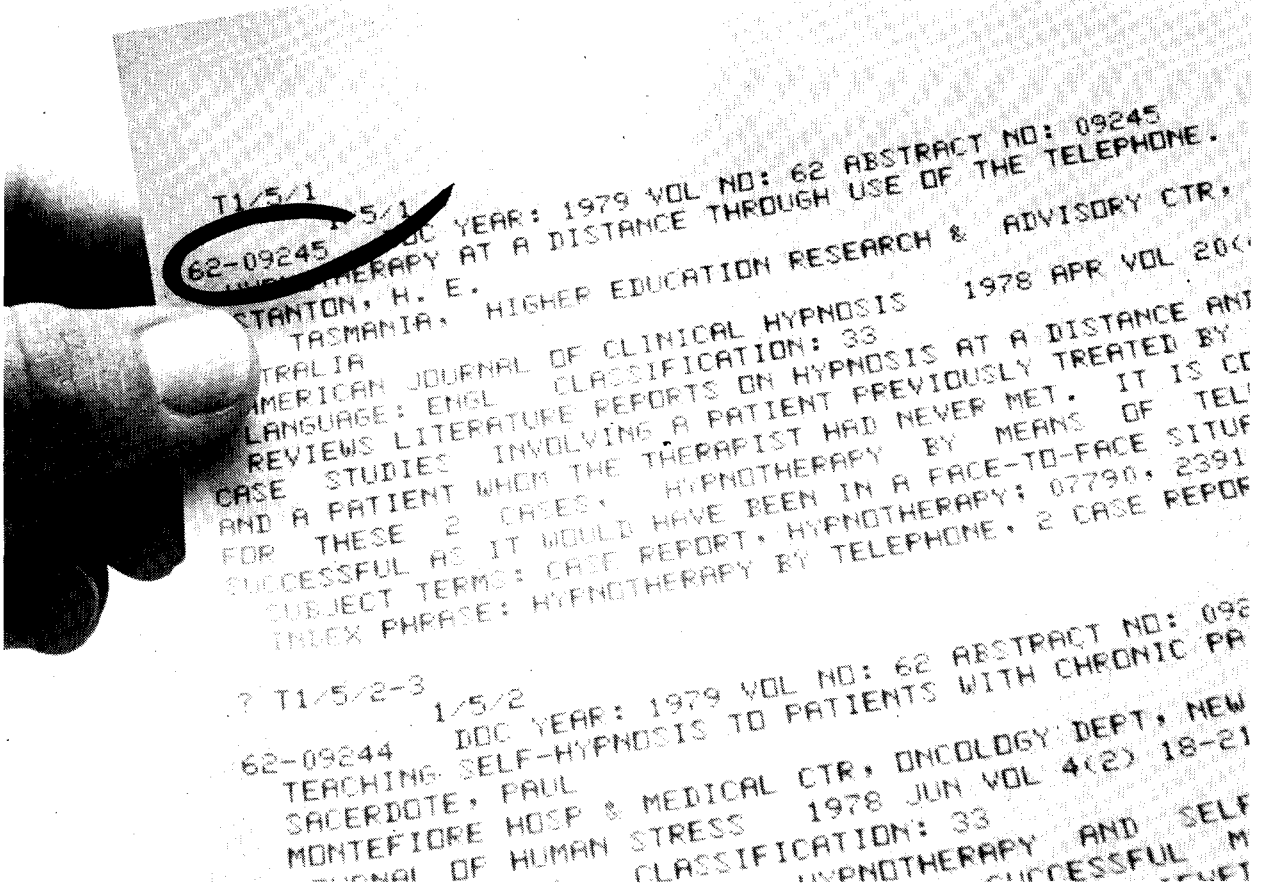

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The Use of SPEAKEASY Interactive Language for Information Science Education

Steven Seokho Chweh

School of Library Science, University of Southern California, Los Angeles, Calif. 90007

■ **The SPEAKEASY programming language has been found useful to help students of library and information science to grasp the basic concept of an interactive computer language and to familiarize them with general computer terminal functions relevant to computer tasks for library operations. Its powerful, built-in features as well as tutorial programs make this computer language especially well suited for beginning students and for those whose major is not computer science.**

TWO COMPUTER LANGUAGES are taught in information science courses at the University of Southern California School of Library Science: PL/1 and SPEAKEASY. They are taught as tools to understanding some functions and capabilities of computer languages but not for the sake of programming itself. While PL/1 is generally known and used in many library schools, SPEAKEASY is less well known. There may be only a few schools using it, if any. Since USC's experience shows that SPEAKEASY serves well as a general purpose language, particularly for library science students, this paper describes the characteristics of the language, as well as how it can be incorporated into and utilized in information science courses in library schools.

SPEAKEASY Descriptions

SPEAKEASY was developed by Argonne National Laboratory in Argonne, Illinois. It is a user-oriented language that is "intended to provide its users with the means of quickly formulating problems for computer processing and for obtaining answers to those problems in a minimum of time" (*1*).

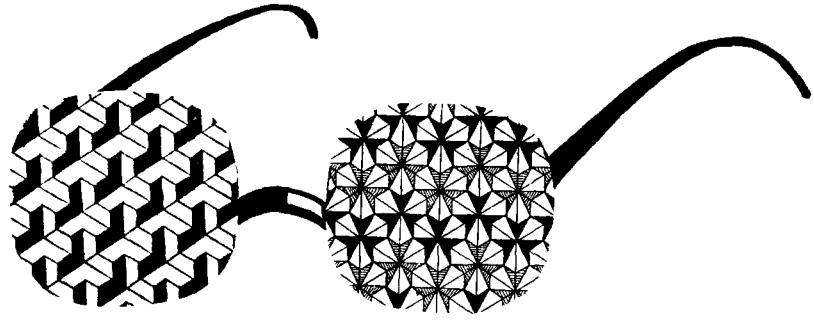
SPEAKEASY is more widely used on the IBM 360 or 370 computers, although it is available under several different operating systems. It can be used both interactively under TSO, CMS, or MTS, and in batch runs. Since SPEAKEASY uses a natural language, the user needs to know little about digital computers. While this language "may appear to be oriented toward novice computer users, the structure of the system itself brings together advanced concepts in computer usage and therefore makes it a valuable tool for most computer users" (*1*, p.5). It has many built-in functions in addition to nearly 500 HELP documents and a TUTORIAL processor. All of these features are special characteristics of the language and make possible a humanized interface between the user and the computer.

The USC Experience

Among several courses in information science at the USC School of Library Science, two deal with specific computer languages: LS 563, Information Systems for Library Services, which uses SPEAKEASY, and LS 570, Automation of Library Processes and Procedures, with PL/1. SPEAKEASY is taught on an interactive basis and PL/1 on a batch mode. These computer languages occupy only small segments of both courses; however, this is enough for students to get a "feel" for them and to grasp the fundamentals of the languages. In both courses, students have the opportunity for direct, hands-on experience with computer terminals housed in the Library School and with writing programs for simple library problems. Since LS 563 is a required course and also a prerequisite for other advanced information science courses, every student has the opportunity to gain experience with computer terminals utilizing the interactive general purpose language, SPEAKEASY, before he or she leaves the school. It is important for students to use data communications terminals before they are placed in a job that requires working at a terminal, whether it be an OCLC or RLIN terminal for cataloging, SDC or Lockheed for reference, or anything else. Generally, students have some kind of anxiety or initial psychological fear of machines. Only when they understand how computer terminals operate, after some direct interface, do they develop a sense of "friendship" and have "fun" with the machines. Thus, the orientation should begin with easy and simple, yet meaningful problems.

Comparisons with Other Languages

It is not an easy task to select a computer language from among the many ones available to teach beginning library school students. The language should be easy to learn and able to handle not only numerical data but also text materials to suit the needs of a library environment. To give online experience to students, the capability of operating on time-sharing mode is very important. Various built-in features and tutorial programs by which one can learn the language interactively at the terminal are highly desirable for beginning students. The SPEAKEASY language seems to be one of the better languages because it possesses all of these characteristics. Other languages such as COBOL, SNOBOL, LISP, PASCAL, and FORTRAN are more batch-oriented and only partially reflect these features. They may be better for other purposes and needs. For example, COBOL, which is generally run on batch mode, is heavily oriented for business purposes that do not demand complicated computations, whereas FORTRAN is good for both simple and complex mathematical problems. PASCAL is also good for mathematics, either on batch or on TSO, but it is primarily used in smaller scale computers. It is somewhat similar to WATFIV and ALGOL. LISP is basically a symbolic calculation language, which comes in two different versions, Waterloo and Stanford. It is used also for game playing. SNOBOL is a string



manipulation language that runs on batch mode. It is used for text preparation. It would be difficult to learn one of these batch-oriented languages at the level of functional usage and in as limited a time as is necessary for learning SPEAKEASY. The SPEAKEASY language has been found to serve well under the time-sharing mode to meet the purposes of the basic information science course taught at USC.

Cost Factors

No direct expenditures are made by the School of Library Science for the use of the SPEAKEASY compiler at the university's computer center. The center simply allocates a fixed amount of "soft" money to university departments each year, and each department is expected to operate under that allocation. Since a statement is issued each month by the computer center to report the expenditure record, it is simple to know the expenses on time-sharing for SPEAKEASY. The record of the spring semester of 1979 shows that $417.61 was spent for the time-sharing by library science students. Since there were 34 students enrolled in the class in which SPEAKEASY is taught, the per student cost was $12.28.

The following introduction to the use of SPEAKEASY is not, by any means, meant to be a manual of the language. It is merely a demonstration of how the language can be used to meet the needs of library schools to teach students the fundamentals of an interactive computer language by simulating library-oriented work. For this reason, only functions that are relevant for use of the language in classroom activities have been described; still more advanced features, capabilities, and possibilities are available.

The Functional Usage of SPEAKEASY

Using SPEAKEASY, students can experience various modes of a computer language that are easily adaptable to real library tasks or more sophisticated software designs. SPEAKEASY is versatile enough to provide functions that can simulate such library activities as cost accounting, text creation, searching records, editing, as well as the use of the terminal as a super desk calculator. Utilizing these capabilities, students are gradually introduced to SPEAKEASY and its library applications from simple to more complicated levels on a module basis: manual mode, text creation, editing, and programming.

Manual Mode

This is the simplest step for the students to encounter. After the required log-on procedure for SPEAKEASY, the system responds with a prompt for manual mode (:—) which tells a user that the system is ready for user input.* The user, at this stage, can make any calculation line-by-line just

*In the computer print-out examples throughout the article, the user input is always recognized by various computer prompts such as (:_, :%, :@). The others are computer responses.

like at a desk calculator with memory. A typical example is:

```
:-65.4-32.5+45/23*14**2
65.4-32.5+45/23*14**2 = 416.38
:-mean (45, 65, 55, 76, 87, 57, 97)
MEAN (45, 65, 55, 76, 87, 57, 97) = 68.857
:-sqrt 55
SQRT 55 = 7.4162
:-x=34, 54, 33, 55, 46, 75
:-median x
MEDIAN X = 50
:-standdev x
STANDDEV X = 15.656
:-
```

Here, students will learn the standard higher-level language mathematical operation symbols, (*) for multiplication, (/) for division, and (**) for exponent. The mathematical priorities of these operators are also introduced. SPEAKEASY can be demonstrated to have many built-in functions for various statistical calculations such as mean, median, standard deviation, square root, ranking, and so forth. Students normally get fascinated by the "computer's magic."

By this time, students will have developed an interest and rapport with the computer and are ready to go on to more challenging problems. It is important to make sure that every student has tried each given problem in the manual mode and knows what he or she is doing before taking on the next step. Otherwise, a student is likely to get lost and develop frustration later on.

Text Creation

This is a module students can enjoy most. By inputting any message, text, or record, it can be stored in original form, to be recalled any time during that particular online session. To go into the text mode, a user should key in the following upon receiving the manual prompt (:-).

```
:-Name=text
```

"Text" is a key word and "name" can be supplied by the user in less than eight characters (alpha-numeric) with no special characters and embedded blanks, and starting with an alpha character. The key word "text" will cause the prompt to change automatically from manual to the text mode (:@). This symbol indicates that the system is ready for input to create a text. Any input after the prompt (:@) will be taken and stored as given line by line. At each RETURN (CR for Carriage Return) key, the text input mode prompt will be repeated. When input is finished, the user can send this message by hitting the CR right after (:@)—this is called a null-line. Upon receiving the null-line, the prompt will be changed back to that of manual mode (:-). At this point, the user can verify whether the text has been successfully created and stored in the computer by recalling it by its name assigned at the beginning of text creation. To recall it, key in the name of the text at a manual mode prompt, or issue the keyword command, PRINT (name). (See Figure 1.)

The text does not necessarily have to be dull. As long as students understand that the content of the text would not make any difference in simulating library problems similar to the above example, the working example for beginners can be "softer." A poet's love song might attract students' interest better, especially when they do editing following the creation:

```
:-song=text
:@Oh, when I was in love with you,
:@      Then I was clean and brave,
:@And miles around the wonder grew
:@      How well did I behave.
:@
:@And now the fancy passes by,
:@      And nothing will remain,
:@And miles around they'll say that I
:@      Am quite myself again.
```

Recall text by:

```
:-song
Oh, when I was in love with you,
    Then I was clean and brave,
And miles around the wonder grew
    How well did I behave.

And now the fancy passes by,
    And nothing will remain,
And miles around they'll say that I
    Am quite myself again.
```

Figure 1. Sample of Text Creation Using a Catalog Entry.

```
:_card=text
:@          BV              Peale, Norman Vincent, 1898-
:@          4908.5              The Amazing results of positive thinking /
:@          P4              Norman Vincent Peale. -- Englewood Cliffs, N.J.
:@                          : Prentice-Hall, 1959.
:@                              280 p.; 21 cm.
:@
:_print card
            BV              Peale, Norman Vincent, 1898-
            4908.5              The Amazing results of positive thinking /
            P4              Norman Vincent Peale. -- Englewood Cliffs, N.J.
                            : Prentice-Hall, 1959.
                                280 p.; 21 cm.
:_
```

• •

The song can also be broken down into two parts by stanza, as song1 and song2. This allows a demonstration of how two different texts can be combined as one object in a print-out.

```
:-song1=text
:@Oh, when I was in love with you,
:@      Then I was clean and brave,
:@And miles around the wonder grew
:@      How well did I behave.
:@
:@
:-song2=text
:@And now the fancy passes by,
:@      And nothing will remain,
:@And miles around they'll say that I
:@      Am quite myself again.

:-song1, song2
Oh, when I was in love with you,
    Then I was clean and brave,
And miles around the wonder grew
    How well did I behave.

And now the fancy passes by,
    And nothing will remain,
And miles around they'll say that I
    Am quite myself again.
```

Editing

So far, no modification to the original text has been performed. In many instances, there will be a need for change in the created text, such as a typographical error or the text itself. To perform such editing activity, the system should be in the editing mode. Again, using the manual mode (:-) issue a command calling for the change of mode into editing.

:-Edit *name*

Name is the name of the text for which editing will be performed. Here, "edit" is the key word. By this command, the system will be placed in the edit mode by the prompt (:%). In the edit mode, there are two different sub-modes: edit command mode and edit mode. The system will tell the user exactly in what mode it is in. By the initial command word "edit," EDIT COMMAND MODE will be placed first, with its prompt (:%). Several command words can be issued in this COMMAND MODE, such as "change," "insert," and others. The other sub-mode is EDIT INPUT MODE, which gives a continuing line number following the last line number that has been assigned to the previous input. It allows the user to continue adding further input to the previous one. To enter the EDIT INPUT MODE, hit the carriage return while in COMMAND mode.

It is essential for students to thoroughly understand this edit mode because it plays a key role in all editing activities for text objects or programs. The more important command words that are allowed in the EDIT COMMAND MODE are:

List	Find	Copy
Change	Insert	Renumber
Delete	Move	Whoops

The usage of each of these command words is as follows:

List (or L for short)—After having entered the EDIT COMMAND MODE, it is useful to issue this command for the subsequent editing activity because "list" causes the named text to be printed with line numbers. These line numbers allow the user to identify each line of the text and work with it individually. For example,

```
:-edit song1
EDIT COMMAND MODE
:%list
EDITING SONG1
 1 Oh, when I was in love with you,
 2      Then I was clean and brave,
 3 And miles around the wonder grew
 4      How well did I behave.
*5
```

Change (or C for short)—This is probably the most often used and most convenient command for editing. It literally changes old (undesired) items into new (desired) items in a line or in the entire text. The basic pattern is:

```
:%Change line number /old/new/
```

This will change only the first old item in that line to the new. For example,

```
:%Change 1 /you/her/
*1 oh, when I was in love with her,
```

If all the same items in the same line need to be changed, "all" should follow the last slash(/).

```
:-a=text
:@And miles around I'll say that I
:@
:-edit a
EDIT COMMAND MODE
:%c 1 /I/she/all
*1 And miles around she'll say that she
```

A particular item (or word) in several lines throughout the text can be changed to a different item by only one "change" command. Notice in the following that no line number is specified, but the key word "all" stays in:

```
:-edit song1
EDIT COMMAND MODE
:%c /I/he/all
*1 Oh, when he was in love with you,
*2      Then he was clean and brave,
*4      How well did he behave.
```

Delete (or D for short)—It deletes a line but not a specific item in a line. When a line is dropped the pointer will move to the previous line and indicate it by an asterisk:

```
:%d 3
*2      Then he was clean and brave,
```

Find (or F for short)—This will find a specific item in any line, or in the entire text, and print the lines containing the item being searched. A simple "find" command for an item will locate the first line which contains the item, and the keyword "all" after the last slash (/item/all) will locate all lines containing the item in the text:

```
:%f was
*1 Oh, when he was in love with you,
:%f /was/all
*1 Oh, when he was in love with you,
*2      Then he was clean and brave,
```

Insert (or I for short)—"Insert" allows a new line to be inserted between existing lines. Not only a missing integer line number but also a decimal between two existing integers can be inserted:

```
:%insert 3
EDIT INPUT MODE
3 And miles around the wonder grew
NOTE EXISTING LINE
 4      How well did he behave.

:%insert 3.5
EDIT INPUT MODE
3.5     As I think the day,
NOTE EXISTING LINE:
 4      How well did he behave.
```

Notice that "insert" puts the system temporarily into the input mode. This will continue until a null-line is given. The null-line will put the system back in the command mode.

Move—Used to move a statement (a line) or a series of statements (several lines) to another place in the program or data file. In the following example,

notice the keywords and their functions, e.g., "to," "by."

```
 1 Oh, when I was in love with you,
 2     Then I was clean and brave,
 3 And miles around the wonder grew
*4     How well did I behave.
:%move 4 to 1.5
*1.5          How well did I behave.
:%move   1, 2 to bottom by 2
*5 Oh, when I was in love with you,
*7     How well did I behave.
*9     Then I was clean and brave,
:%L
EDITING SONG1
 3 And miles around the wonder grew
 5 Oh, when I was in love with you,
 7     How well did I behave.
*9     Then I was clean and brave,
```

Copy—The function is similar to MOVE except it leaves one copy of the statement in the original position. The keyword "at" follows "copy."

```
:%L
EDITING SONG1
 3 And miles around the wonder grew
 5 Oh, when I was in love with you,
 7          How well did I behave.
*9          Then I was clean and brave,
:%copy 5 at 1
*1 Oh, when I was in love with you,
```

Renumber—When no more room is left to insert between two lines (e.g., 2.51 and 2.52), the entire program or text can be renumbered by this command starting with 1 and spaced by 1. RENUMBER BY N will start the number at N and increment by N.

```
  1.0 Oh, when I was in love with you,
  2.0      Then I was clean and brave,
*2.5 Oh, when I was in love with you,
  3.0 And miles around the wonder grew
  4.0      How well did I behave.
:%renumber
 1 Oh, when I was in love with you,
 5      How well did I behave.
```

Whoops (or Whoa or W for short)—When a command does not produce the desired result, such as in "change," it is possible to reverse the effects of the command by typing WHOOPS:

```
:%c /I/he/all
*1 Oh, when he was in love with you,
*2      Then he was clean and brave,
*       How well did he behave.
:%whoops
TEXT RESTORED TO CONDITION PRIOR
TO "c /I/he/all" COMMAND
*4      How well did I behave.
```

There are also other commands that are convenient to use: "UP" moves the pointer to the line immediately above; "DOWN" moves the pointer one step down; "TOP" brings it to the top; "BOTTOM" to the bottom; and "MARGINS N,M" sets the printing margins—from Nth space to the left to Mth space to the right.

By using these commands, it is possible to perform most editing work. Figure 2 simulates a library catalog entry in various stages such as creation, editing, and the final output (edited version).

Programming

The purpose of teaching computer programming in library schools is not to produce programmers per se but to help students develop a logical thinking pattern and an understanding of some of the characteristics of programming languages so that they can intelligently communicate with computer programmers when they need to. The interactive programming is particularly suitable for beginning programmers since they can see immediate results. SPEAKEASY works out nicely for this function too. Students will need only a few commands to be able to program in SPEAKEASY. The commands for editing may come in handy when such work becomes necessary while programming.

In SPEAKEASY, to enter the program mode, simply key in "PROGRAM NAME" while in manual mode. Name should be provided within the regulations specified previously. The system responds with a program input prompt, a numeral 2. Here on, any number of lines will be accepted, with new line numbers automatically provided by the

Figure 2. Various Stages in the Creation of a Library Catalog Entry.

```
:_card=text
:@      Z665                    Little, Mary E
:@      .5                          ABC for the library : story and pictures  /
:@      L58                     By Mary E. Little. -- 1st ed. -- New York  :
:@                              Atheneum, 1975.
:@                                  32 p.  :  col. ill.; 15 x 19 cm.
:@
:@                                  SUMMARY:  An alphabetical introduciton to
:@                              the library using such realities as desk
:@                              globe and such abstract concepts as joy and
:@                              knowledge.
:@                                  ISBN 0-689-30467-6
:@
:@
:@                                  1.  Libraries--Juvenile literature.
:@                              I.  Title.
:@
:_edit card
EDIT COMMAND MODE
:%list
EDITING CARD
   1    Z665                    Little, Mary E
   2    .5                          ABC for the library : story and pictures  /
   3    L58                     By Mary E. Little. -- 1st ed. -- New York  :
   4                            Atheneum, 1975.
   5                                32 p.  :  col. ill. ; 15 x 19 cm.
   6
   7                                SUMMARY:  An alphabetical introduction to
   8                            the library using such realities as desk
   9                            globe and such abstract concepts as joy and
  10                            knowledge.
  11                                ISBN 0-689-30467-6
  12
  13
  14                                1.  Libraries--Juvenile literature.
*15                             I.  Title.
:%change 4 / 1975 / 1976 /
*4              Atheneum, 1976.
:%delete 11
*10               knowledge.
:%move 14, 15 to 13 by 1
*13                   1.  Libraries--Juvenile literature.
MOVE STOPPED BEFORE LINE    14 WAS REPLACED OR PASSED BY
:%whoops
TEXT RESTORED TO CONDITION PRIOR TO "move 14, 15 to 13 by 1" COMMAND
*10               knowledge.
:%end
DEFINED AS UN-NUMBERED OBJECT CARD
MANUAL MODE
:_card
   Z665         Little, Mary E
   .5               ABC for the library : story and pictures  /
   L58          By Mary E. Little. -- 1st ed. -- New York :
                Atheneum, 1976.
                    32 p. : col. ill. ; 15 x 19 cm.

                    SUMMARY: An alphabetical introduction to
                the library using such realities as desk
                globe and such abstrct concepts as joy and
                knowledge.

                    1.  Libraries--Juvenile literature.
                I.  Title.
```

Figure 3. Help Commands.

```
:_help
HELP explains how to use the HELP processor.

QUIT                is the command to leave Speakeasy.
OBJECTS             lists words dealing with structured objects.
MATH                lists mathematical functions.
IOWORDS             words about data input, storage, output, and graphing.
DATAWORDS           lists words relating to data organization or type.
PROGRAMS            lists words used in writing and running programs.
MISCELLANEOUS       lists words not falling under any other classification.
DOCUMENT            explains how to use the Speakeasy documents.
EXAMPLE             explains how to use the Speakeasy Examples.
TUTORIAL            tells how to use the Speakeasy tutorial.
VOCABULARY          lists all the words in Speakeasy.
UCC                 gives names of Speakeasy programs added by UCC.
HELP XXX            gives an explanation of the word XXX.
                      XXX is any vocabulary word.
:_help math
MATH lists catagories of mathematical functions.

DIFFEQUATIONS       are words used to solve differential equations.
ELEMENTAL           are elemental mathematical structures and functions.
FITTING             are words which are used to fit or interpolate fcns.
INTEGRATION         are words dealing with numerical integration.
LP                  are words dealing with linear programming.
PHYSICS             are functions of interest primarily to physicists.
SINGLEVAR           are functions of one variable.
SPECIAL             are special mathematical functions.
STATISTICS          are words related to statistical analysis.

To obtain the words in a given subclass SC, enter HELP SC.
```

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computer. When the last input is made, key in "END" after a numerical prompt. This will put the system back into the manual mode. One command that is useful in a SPEAKEASY program is "TABULATE." "TABULATE" gives the output in a tabular form. The following is an example of a sample problem and the appropriate program:

The Problem. Write a program which will provide quick answers to the circulation attendant of your library by simply inputting two variables, the number of books and the number of days delinquent. Assuming the fine rate is 5 cents per book per day, write the program first; then run the program to compute the fine for the delinquent cases below:

A.	5 books	7 days
B.	29 books	13 days
C.	19 books	8 days

The Program:

```
:_PROGRAM LIBRARY
EDIT INPUT MODE
1 PROGRAM
2 FINE=BOOKS*DAYS*5/100
3 TABULATE BOOKS, DAYS, FINE
4 END
PROGRAM LIBRARY IS NOW DEFINED
```

Obvious illogical errors, if any, will be caught by the system at this point, and a message for the specific problem will be given. If so, the errors should be corrected before executing the program by using edit commands. In this manual mode, the data are input for the program. Upon inputting the data, the execution of the program can be started by issuing the command, "EXECUTE NAME" (program name), or simply by the program name. For example:

```
MANUAL MODE
:_books=5, 29, 19
:_days=7, 13, 8
:_execute library
EXECUTION STARTED
```

BOOKS	DAYS	FINE
*****	****	******
5	7	1.75
29	13	18.85
19	8	7.60

Figure 4. A Sample Tutorial.

```
:_tutorial
INDEX PAGE 0
CONTENTS
  Index to the Speakeasy tutorial sessions      December 1975
    SESSION        SUBJECT
    Start          An introduction to Speakeasy
    Arrays         Array definitions and operations
    Matrix         Matrix definitions and operations
    Vector         Vector definitions and operations including
                     vector-matrix operations
    Logic          Use of logical and relational operators
    Edit           Use of the editor
    Stat           How to use the statistical operators
    Keep           Saving information between runs
    Tektron        Using the Tektronix graphics Package
    Tek            Tektronix graphing (older package)
    Misc           Miscellaneous information

  Type TUTORIAL XXX to begin the tutorial session called XXX.
  Type TUTORIAL XXX N to display page N of the session, XXX.
  (TUTORIAL XXX will give you a table of contents for that session.)
  Type MORE to continue a session.
:_

:_tutorial start
START PAGE 0
START
  Table of Contents
    1   How to use the Tutorials
    2   Introduction
    3   Arithmetic Operators
    4   Answer
    5   Representation of Real Numbers
    6   Representation of Complex Numbers
    7   Significance
    8   Defining a Variable
    9   Built-in Functions
    10  Conclusion
:_


:_more
START PAGE 1
HOW TO USE THE TUTORIALS
      This tutorial is a series of short paragraphs written to help
  you learn about Speakeasy. It is written for use with the
  TSO-Speakeasy processor. To use this tutorial, read the information
  printed, and try to carry out some examples of the topic being
  discussed. When you feel that you understand the subject, enter
  the command MORE. This will request the next part of the tutorial
  to be displayed. If you wish to restart the tutorial at some later
  time, at a particular place, type in the statement TUTORIAL XXX N
  where XXX is the heading of the section, and N is the page number.
      Remember that typing SPEAKEZ will allow you to use the
  TSO-Speakeasy processor and typing QUIT will return you to TSO.
      Now, enter the command MORE.
```

• •

Special Features

SPEAKEASY is particularly good for educational purposes because of its tutorial features. To learn SPEAKEASY interactively from the computer itself, students use commands HELP and TUTORIAL. HELP documents the commands and explains their use (see Figure 3). TUTORIAL is a series of lessons on the different facilities available (see Figure 4). The tree-structure of SPEAKEASY documentation allows the user to identify the specific item for which a help or a tutorial session is needed by keying in the commands.

Conclusions

SPEAKEASY is one of the most versatile interactive computer languages. As demonstrated, library science students can easily learn the language and simulate many library-oriented problems. Through hands-on experience and simulation, students will be able to effectively interface with and adjust to automated systems in a real life situation upon completing their educational programs.

Literature Cited

1. Cohen, Stanley and Steven C. Pieper. *The SPEAKEASY-3 Reference Manual, Level Lambdap, IBM OS/VS Version.* Argonne, Ill., Argonne National Laboratory, Physics Division, 1976. p. 6.

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Picture Postcards

Organizing a Collection

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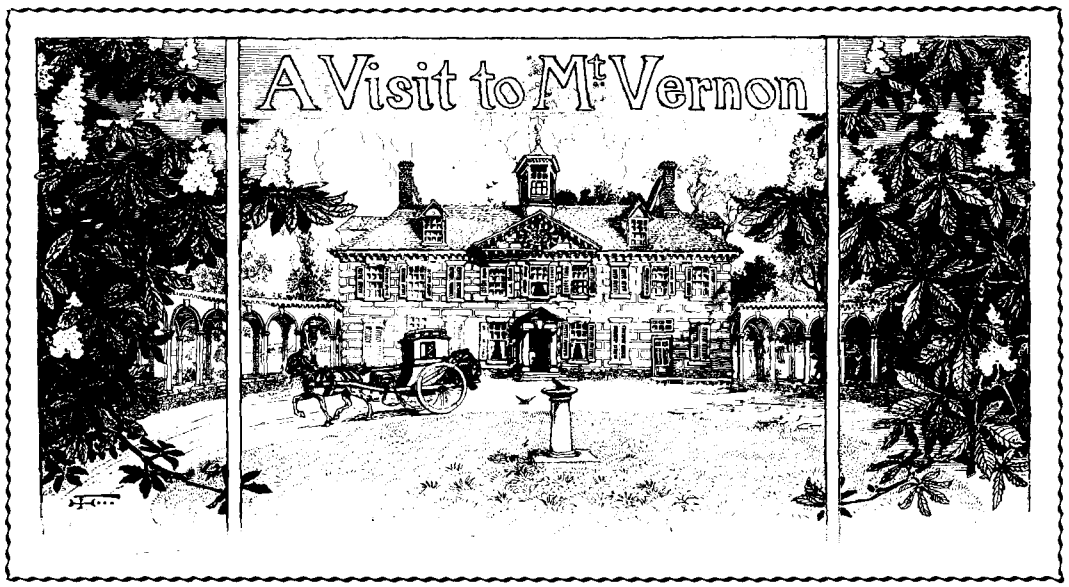
■ **The kinds of contributions picture postcards can make to library or museum materials, particularly to historical files as documentation of certain aspects of former times are outlined. Various matters pertinent to putting donations of cards in order are described, from general policies concerning use of cards and disposal of duplicates, to sorting, indexing, and housing problems peculiar to a miscellaneous assortment of cards. Suggestions for handling problems are made, with advantages and disadvantages of alternatives noted. As with other materials, the usefulness of postcards depends on ease of access. The principal drawback to putting cards in order may be cost. For large assortments, the advantages of grouping cards by category or subject are enumerated.**

WHEN COLLECTING picture postcards first became a fad in the United States shortly after 1900, people saved the cards as souvenirs, kept certain ones for their particular appeal, or simply tried to see how many different cards they could acquire. Appreciated for their convenience and cheaper postal rate, postcards during the first two decades of the twentieth century were widely used not merely to convey messages and greetings for special occasions but also for advertising purposes, serving as souvenirs of expositions, boosting specific products, and above all, promoting tourism by publicizing local attractions. Relatively inexpensive and, on the whole, easy to produce, cards were turned out in quantity, especially view cards. In the United States even the smallest towns came to be represented on postcards, with scenes which pictured their principal streets and most impressive or important buildings.

Now that more than sixty years have passed since the epoch of the postcard craze in the United States (at its height between 1905 and 1915), not only have many of the cards of the period been destroyed but many of the subjects portrayed have either changed or disappeared entirely from the American



scene. Older picture postcards, consequently, are now valued for new reasons. Rather than sentimental reminders of friendships and experiences, these cards are coming to be preserved as records of the past. View cards, particularly, hold the literal portrait of their era. Some of these cards commemorate events or emphasize subjects of general interest to students of history. Other cards, bearing illustrations of late nineteenth and early twentieth century buildings, furnish a panorama of American architecture and may supply both students of architecture and of local history with hard-to-find views of structures no longer standing.

In addition, U.S. picture postcards of the period before 1918 are illustrations of former printing and color reproduction techniques and methods (Photocrom and Phostint, for example, along with lithography). These techniques make certain cards items of study for their superior craftsmanship by those interested in photography and the history of graphic arts.

Now that interest is growing in local history, many small towns across the nation are seeking to acquire and preserve in their libraries and museums historical materials pertinent to their communities. Picture postcards, especially view cards, may make valuable additions to a town's historical archives.

Like other library and museum materials, picture postcards are of little use unless access to them is available. Postcards, however, can pose unique problems of organization, use, and storage. Designed to serve a particular purpose, these cards possess certain characteristics of production which keep them, at times, from combining well with other properties such as photographs, pictures, and drawings. It is, therefore, preferable to give postcards held in quantity their own organization as a special collection.

With postcards, as with other kinds of library and museum materials, it is necessary to establish policies concerning collection use, future acquisition, and disposition of items not useful to the collection.

Purposes and Policies

Since ready access depends upon organization, and organization is determined in large part by use, postcard organizers need to know how a given collection will be used and who its most frequent users are likely to be. These, of course, are points to be determined by

each institution in accordance with its particular circumstances. In general, a postcard collection will most often be used to provide documentation and illustrative material for those researching the past, and to furnish additions to library or museum exhibits. While a postcard collection's users may be interested in political history, advertising, literature, graphic arts, or anything associated with former times, the most frequent users will probably be those concerned with local history (such as city historians and members of historical societies) and library or museum staff.

Those establishing policies concerning acquisition, use, and elimination of cards will need to give thought to various questions. In connection with acquisition, should the library or museum accept a contribution of cards which the donor insists be kept together? Should it insist on a "no strings attached" policy in accepting donations, so that cards can be regrouped and duplicates sold or disposed of through an exchange of cards with other institutions? Would this discourage contributions? Does the library or museum wish to encourage the donation of cards? How large a collection does it want? How much use is anticipated? What kinds of cards are particularly wanted for the collection—view cards showing local scenes, or other cards as well?

In the matter of use, if a local history buff working on research he hopes to publish should ask to see old cards showing views of the town seventy years ago or more, should he be given access? Who, besides staff, should have access to a collection of valuable postcards? Should access be available to all cards, even the most valuable? Should the cards be handled by the public? Should users conduct their own searches and refile the cards themselves? Should the cards be lent and if so, under what circumstances?

In regard to discarding postcards that the library or museum does not wish to keep, it will be necessary to decide which kinds of cards do not fit into the collection, as well as to provide safeguards in culling, so that only true duplicates are designated as duplicates and desirable cards are not unwittingly eliminated from the collection.

Organizing the Collection

With preliminary decisions made, sorting the postcards can proceed more easily; but there are yet more matters to be decided.

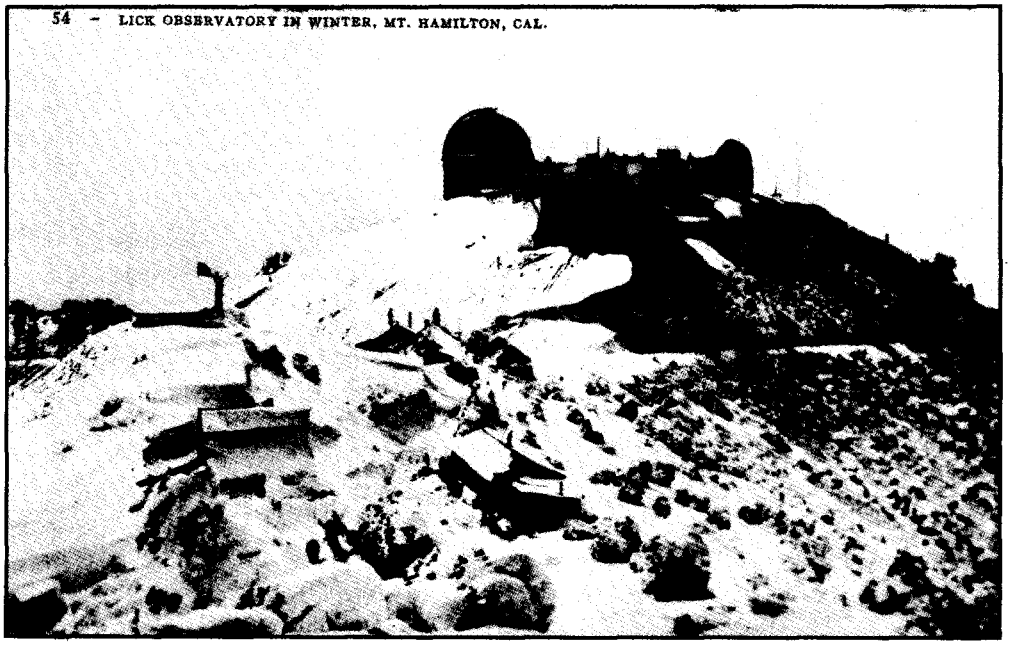
Albums

An institution's holdings from donations will most likely consist of both loose cards and cards in albums. Should the cards be removed from the albums, or should entire albums be kept intact? It may be argued that removing cards from albums destroys the authenticity of the collection; yet, if cards are not removed, how can miscellaneous assortments of cards be fitted together to form a single collection and organized for easy access? Albums may be arranged by donor, but users are not likely to look for individual cards this way, nor are they likely to find cards on given topics easily with such a system of organization. If an index should be made for each album, there is likely to be much duplication between albums, making cumbersome, at best, coordination of the institution's entire holdings. If cards are removed from albums, should a record be kept of the donor of each single card? Is such a record necessary or desirable?

If cards are removed from albums and combined with loose cards to form a single collection, then how should the cards be organized—by postcard period, distinguishing older and more valuable cards from newer ones, by printer or publisher, by topic?

How should special items, like large postcards and folders consisting of postcard-sized views (mailable, but not strictly postcards) be fitted into the collection? These decisions will need to be made in accordance with the circumstances of the particular collection.

Figure 1. Example of Scenic View Category: Lick Observatory, Mt. Hamilton, Calif.



If a library or museum has only a few albums of postcards and anticipates little use other than display of album pages in exhibits from time to time, it may decide simply to file albums together and keep a record of them according to donor. If, on the other hand, there are only a few loose postcards, the unmounted cards may most easily be integrated into the general picture collection. But if the library or museum has a large, mixed accumulation of both loose and mounted postcards and foresees considerable use of the cards, either by its own personnel or by other individuals, it would seem hardly possible to order the cards or make a workable inventory without removing them from albums and recombining all donations to form one single collection under one consistent system of order or arrangement.

Establishing Categories

It might seem that a museum, at least, if not a library, should be the depository for older material only; yet cards of relatively recent issue may have potential value and interest and may be currently usable in an exhibit—one which traces the history of a town's development from its beginnings to the present, for example.

Grouping cards by period, however, may be difficult. Authorities differ somewhat in the periods they establish, and the exact date of a card may be hard to determine. Copyright dates, according to specialists are not to be trusted—particularly with older cards. If there are many "mint" or unused cards in the collection, there will be no postmarks to help. Neither do all cards carry indication of printer or publisher. As a consequence, there can be many pitfalls in attempting to organize cards by either period or publisher.

If the most frequent users should be staff or individuals interested in local history, they will probably want cards on a given topic. The most workable system of organization would be by general category or type of card, and within this grouping, by subject matter or topic. In sorting U. S. cards, one might establish the following categories:

- scenic view cards
- exposition cards
- advertising cards
- special occasion cards
- novelty cards

(Some examples are shown in Figures 1–3.) These roughly parallel the ones chosen by the Millers in their work, *Picture Postcards of the United States, 1893–1918* (*1*)—the study of U. S. postcards at present considered the most complete.

Subdivisions

Within these categories, subdivisions could be made. Scenic view cards could be grouped by state, and within each state, by city or area; exposition cards could be grouped by exposition; advertising cards by company or by product advertised; special occasion cards by the occasion (Christmas, Easter, and so forth); and novelty cards by material (wood or leather), or by other distinctive features.

This system is also useful for appraising the collection. The Millers' book contains an extensive price guide by category: cards thus organized can be reviewed quickly for some idea of value.

Some particular problems of organization remain: what to do with cards on special subjects, such as those featuring prominent people or literary figures, art cards, and cards on prescribed topics, such as Indians or missions. Should these cards be grouped apart by particular topic, placed in an additional category, or included in one of the other established categories? The library or museum will need to decide which grouping would be most useful to its users.

There are yet other problems. Should cards of a packet be separated (such as Harvey cards, a series showing scenes from several states of the Southwest), or should these cards perhaps be kept together and grouped within an additional category such as "packets" or "series"? Foreign cards are most easily located when grouped by country and subcategorized by area or subject. Cards of any category may carry messages of historical interest, but if a card is kept primarily for its message, the correspondence file might be a better place for it.

After sorting the postcards and forming some idea of their value, library or museum staff should set aside groups of cards not wanted, to be sold, traded, or otherwise disposed of.

Indexing

Once the postcards have been sorted and grouped, there is the matter of making an index for the collection. Should there be one continuous index for the entire collection, or should each group of cards have its own index? There are also decisions to be made in regard to form. Should the index be in the form of a list or in the form of index cards? How detailed should the index be and what information should be included, i.e., type of card and subject concerned, printer/publisher information, size, series numbers, approximate date, and number of duplicates held. If

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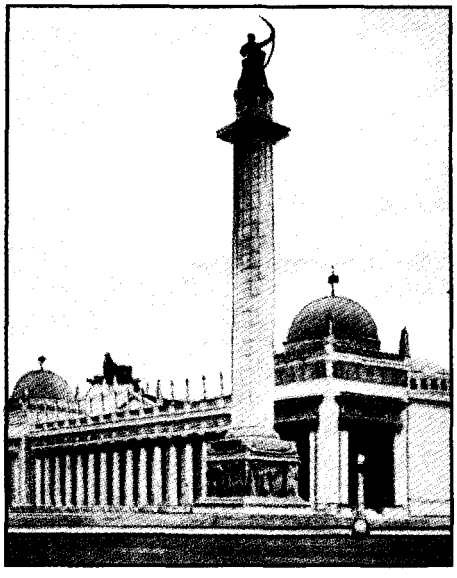
Figure 2. Example of Exposition Category: Column of Progress, Panama-Pacific International Exposition, San Francisco, Feb 20-Dec 4, 1915.



a card file is used and a card catalog established, main entries need to be decided along with appropriate cross references. If, for example, a postcard promoting the Fairmont Hotel in San Francisco and showing a view of the building is filed under "advertising cards," the scenic view card file should perhaps contain some reference to the advertising card file, so that the picture of the Fairmount can be found by those searching the view card file?

Some useful guidelines for selecting subject headings and sub-headings for scenic view cards are offered by Gilbert in *Picture Indexing for Local History Materials* (2). Headings for other categories may be governed by projected use or by cards on hand.

In the case of a large collection of postcards, a relatively detailed index, in addition to helping the user find a particular card quickly, enables the library or museum staff to determine at a glance the number of duplicate cards. Knowing the exact content of the collection is also useful for inventory purposes. Such an index is an aid in both the acquisition and the weeding process, should the library or museum wish to narrow its collection, add to certain portions, or sell or exchange duplicate cards.

The principal drawback to making a detailed index is the time and cost involved. The library or museum should decide whether or not the expenditure would be justified by usage. If a museum has trained volunteer help—an advantage museums sometimes enjoy—benefits could accrue.

Classification

The first question to ask is whether or not classification is really necessary. If kept in index order, postcards can easily be located by staff. Although a library or museum may wish to support research and enable those interested in postcards to benefit from its collection, there are serious disadvantages to lending cards or allowing the general public to have personal access to the cards. Valuable cards may be lost or become dog-eared, dirty, and considerably the worse for wear. It is better if staff members, under prescribed circumstances, get the cards for the users. The cards can be examined in the library or museum and then refiled by staff again.

If it should be deemed desirable to preserve a record of the donor, a kind of Cutter number might be assigned to postcard lots in a way similar to that described for photographs by the Mid-America College Art Association in its *Guide for Photograph Collections* (3).

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Figure 3. Example of Special Occasion Category.

According to this format, postcards donated by a family named Marcus would receive the designation of M, with individual cards of the lot numbered in sequence following the M; cards donated by the Fosters would receive the designation of F, with individual cards numbered consecutively after the F.

In order to avoid putting marks on the postcards themselves, see-through acetate sleeves (of the sort used by philatelists to protect philatelic covers) are useful. Once a card has been slipped into a sleeve, a label with the identifying designation can be affixed to the sleeve and the cards in the sleeves either mounted or filed in order. In the case of much used cards, the sleeves also afford protection. The disadvantages of this method are the time necessary to prepare the cards and the expense for materials.

Housing the Collection

How should a collection of loose postcards be housed? Should the cards be filed in cardboard boxes of the shoe box variety, in wooden boxes, or in drawers of metal filing cabinets? Shaw and others (4) have observed that photographs are best housed in metal. The problems are somewhat different with postcards, and there will be no negatives to store, unless the library or museum comes into possession of some of the original plates from which certain views were printed—an unlikely circumstance which would give rise to housing needs of another sort.

If filing cabinets are used, the drawers can be labeled by category for easy reference. Boxes may be similarly labeled and stacked in index order on shelves, as Shaffer suggests for storing pictures (5).

As one works with picture postcards, one comes to appreciate the unique contribution they make to the properties of a library or museum, particularly in documenting details of a period. For an institution other than a special postcard museum, the preponderant question is whether organizing an accumulation of postcards is practical? The answer depends on the particular circumstances, but there can be little doubt that a well organized postcard collection will serve its users better.

Literature Cited

1. Miller, George and Dorothy Miller/*Picture Postcards in the United States, 1893–1918.* New York, Clarkson N. Potter, 1976. 280p.
2. Gilbert, Karen Diane/*Picture Indexing for Local History Materials.* Monroe, New York, Library Research Associates, 1973. 36p.
3. Mid-America College Art Association/*Guide for Photograph Collections.* Nancy S. Schuller and Susan Tamulonis, eds. Albuquerque, New Mexico, University of New Mexico Press, 1978.
4. Shaw, Renata V./Picture Professionalism, Part I. *Special Libraries* 65 (nos. 10/11): 421–429 (Oct/Nov 1974).
   ——. Picture Professionalism, Part II. *Special Libraries* 65 (no. 12): 505–511 (Dec 1974).
5. Shaffer, Dale E./*The Library Picture File.* Salem, Ohio, c1970. 11 leaves.

Bibliography

Burdick, Jefferson R./*The American Card Catalog.* Reprint ed. New York, Nostalgia Press, 1967.

——. Pioneer Post Cards. New York, Nostalgia Press, (n.d.), 144p.

Kaduck, John M./*Mail Memories.* Revised, 3rd. printing. Des Moines, Iowa, Wallace-Homestead Book Company, 1975. 68p.

——. *Rare and Expensive Postcards.* Des Moines, Iowa, Wallace Homestead Book Company, 1974. 88p.

Staff, Frank/*The Picture Postcard and Its Origins.* New York, Frederick A. Praeger, 1966. 95p.

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Database Users: Their Opinions and Needs

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■ **As searchers of online bibliographic databases become more proficient and knowledgeable of the files and vendor systems, they are in a position to make recommendations and comments which should affect the future development of online services. The SLA Information Technology Division surveyed searchers to determine their opinions of current system capabilities and their requirements for future developments. Factors affecting use, text searching, standardized formats, and replacing print subscriptions with online services are discussed.**

ARE LIBRARIES cancelling subscriptions to indexing and abstracting services due to the availability of online databases? Which system do users prefer for text searching? Is that preference affected by the sequence of training on the different systems?

In an effort to determine the opinions of online database searchers on a number of current issues such as these, the Information Technology Division of the Special Libraries Association distributed a questionnaire at the 1978 Annual Conference. All persons attending the session "Social Science Data Bases: Producers, Brokers, Users" were asked to complete the survey if they were searchers or if they felt competent to represent their library's attitudes and opinions. Of the 81 responses received, several contained answers to only a few random questions. As a result, the survey produced a varying number of responses for each question.

Many of the searchers indicated access to more than one vendor system. In addition to the systems offered by Bibliographic Retrieval Services (BRS), Lockheed Information Systems (LIS), and System Development Corporation (SDC), several noted Medline, CAN/OLE, Information Bank, LEXIS, and RECON as other systems they used. The Appendix presents the questionnaire and a tally of the responses. While the

actual amount of searching seemed to vary greatly, the attitudes of the frequent searchers did not differ significantly from those of the occasional searchers. For the purpose of comparison, users averaging more than 15 searches per month were considered frequent searchers.

Choosing a Vendor

Searchers with access to various systems frequently find that the file they need to access is available through more than one vendor. These searchers were asked to identify the aspects which most affect the choice of system. Ease of use was the most frequent response, followed by greater familiarity with one vendor system. (Table 1 shows the ranking of the variables.

Since the degree of familiarity and the perceived ease of use are closely related to the training and amount of use, and since cost is also a major factor in use of the systems, there is an implied emphasis on inexpensive, thorough training. The third highest response was cost; surprisingly, this did not seem to be primarily a response of academic libraries which are more likely to charge users. Of the 14 libraries ranking cost as the primary factor, 6 are academic, and 5 are federal or state government libraries. Cost, therefore, seems to be of greater concern to the non-profit sector. Yet since the majority of libraries represented were of these two types, this may be an invalid conclusion. It is also possible to show that the majority of academic and government libraries chose a factor other than cost as the major deciding point.

Choosing a File

Since searchers are sometimes confronted with a number of files that can provide relevant information, they must make a choice based on various factors. The compared responses of all searchers and of only the frequent searchers are similar in their distribution of responses; the level of indexing and cost are of considerably greater impact than the availability of the material indexed or of manuals and thesauri. There is no consensus when the responses are grouped by type of library. It should be noted that the questionnaire only allowed for these four choices.

Text Searching

The search capability for retrieving words or phrases from the context of titles or sentences is frequently used by many searchers. The total group showed 82% use this capability. Among those searchers who averaged more than 15 searches per month, 91% of the responses were positive and 9% were negative. As might be expected, the more experienced searchers rely on this capability somewhat more than the infrequent searchers.

When asked which vendor system they preferred for this capability, the total group showed an extremely high preference for the Lockheed Information Systems. Twenty-two favored LIS, three indicated BRS, and two indicated SDC. These figures do not include responses by searchers who only have access to one system since they would not really be making a comparison. While they could possibly be familiar with the other systems, it seems unlikely since they did not list other vendors when asked their sequence of training for the different systems. When the responses of those who average more than 15 searches per month are separated, there is still an overwhelming preference for LIS. However, this preference may be somewhat slanted; LIS supports more social science files than SDC or BRS, and the SLA Conference session was oriented toward the social sciences. Although comments made during various meetings gave a hint that searchers may prefer the system they learn first, this survey shows a strong preference for LIS for text searching, regardless of the

Table 1. Ranking of System Variables.

	Cost	Familiarity	Ease of Use	Manuals	Other
First	14	15	20	2	6
Second	9	10	17	4	—
Third	9	9	3	15	—
Fourth	9	9	2	12	—
Fifth	1	—	—	3	—

• •

sequence of training. Table 2 shows the correlation between sequence of training on the vendor systems and the searchers' preferred systems for retrieving words and phrases from the text of titles and abstracts. It also shows that there does not seem to be a major difference of opinion between frequent and infrequent users.

SDI

Most searchers who utilize the SDI capability are frequent users, usually from academic libraries. However, 63% of the responses indicate that the SDI service is not used, although available; 14% were not familiar with the capability. There was not a strong interest in having it available for additional files.

Although only 10 searchers indicated a current use of SDI, 22 desired the ability to alter the profile online. Either these responses are based on theory or on an unwillingness to turn down a possible enhancement, regardless of actual advantage. It is also possible that the inability to alter profiles online has been a major factor in the decision not to use the SDI capability.

On-line Ordering

The capability of ordering documents online seems to appeal to all types of libraries, with a slightly greater interest shown by government and corporation libraries. At the time of the survey, only SDC offered this capability; Lockheed's announced intention to make this capa-

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Table 2. Preferred Systems for Text Searching.

Sequence of Training	Number of Searchers	Preferred System for Text Searching	
		Over 15 Searches Per Month	15 or Fewer Searches Per Month
LIS—SDC	9	LIS (2), SDC (1)	LIS (6)
SDC—LIS	5		LIS (5)
*—LIS—SDC	4	LIS (3)	LIS (1)
*—SDC—LIS	4	LIS (2)	SDC (1)
SDC—LIS—BRS	2	LIS (1), BRS (1)	
BRS—LIS	2	BRS (1)	
*—SDC—LIS—BRS	1		LIS (1)
BRS—LIS—SDC	1	BRS (1)	
LIS—SDC—BRS	1		
LIS—BRS	1	LIS (1)	

Note: The asterisk (*) indicates a bibliographic system other than BRS, LIS, or SDC. The second column shows the number of searchers who received that sequence of training. The latter two columns tally the preferred systems for text searching. Not all searchers indicated a preference, and some indicated two systems preferred over the third. This table does not include those searchers who have access to only one vendor system. It also ignores systems learned after BRS, LIS, and SDC.

bility available may increase its popularity. The need for deposit accounts for online ordering may be a major problem to some academic libraries.

Standardized Commands

Vendors were urged to standardize search strategy commands; 69% of the respondents indicated that such standardization would increase the probability of their using additional vendor systems. This attitude does not seem to vary between frequent and occasional users. The different search commands and formats of the vendor systems mean that significant training time and costs are required for each additional system used. Unless heavy use of each system can be anticipated, the library may be faced with problems of keeping current with each system.

Cancelled Subscriptions

According to the searchers questioned, there seem to be few libraries cancelling subscriptions to printed indexes because of online availability of the databases. Only two libraries had cancelled due to the online files; a librarian at one new library cited the databases as the reason for not placing subscriptions. These are three libraries out of 52. There is also no major difference between the frequent and seldom used files.

Summary

Due to the small number of responses to some questions, particularly when divided to show differences between frequent and occasional users, it is not always possible to derive definite conclusions or trends. However, some of the questions elicited strongly unified opinions among the searchers: the systems must be straightforward and easy to use; cost must be reasonable; the files must be well-indexed; standardized commands across vendor systems are desired. Clearly, online database searchers have firm opinions and demands that could affect the future development of online services.

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Appendix: Questionnaire Distributed by the Information Technology Division of SLA.

1. Are you a searcher of on-line bibliographic databases?

57 (25) yes **24 (2)** no

If not, but your library utilizes the online information services, answer any questions where knowledgeable to represent your library's attitude.

2. Which database vendors do you use?

16 (9) BRS **52 (16)** Lockheed
42 (14) SDC **36 (17)** Other (identify)

3. How frequently do you utilize the on-line databases? Assume a use to be for a question, not the number of files used to answer that question. Indicate the average number of searches per month.

13 – 1 to 5 **14** – 6 to 10 **12** – 11 to 15
5 – 16 to 20 **20** – over 20

Note: The figures in parentheses are a subset of the tallied replies and indicate the responses of the frequent searchers (those averaging sixteen or more uses per month).

4. What type of library do you represent?

22 (11)	Academic
5 (2)	Non-profit-making company
17 (4)	Profit-making Company
26 (6)	Federal or state government
2 (1)	Public
7 (2)	Other

5. If you use the services of various vendor systems, rank the following aspects which affect the system you select to access files that are available on more than one system. (The tally shows number of responses indicating that variable as the major aspect.)

14 (7)	Cost
15 (4)	Greater familiarity with one vendor system
20 (8)	Ease of use of the system
2 (1)	Manuals and thesauri
6 (1)	Other (identify)

6. Do you experience significant problems of overlap of information between various files?

12 (4) yes **22 (6)** no **11 (4)** undecided
17 (8) not a problem for files accessed

7. Would the capability of eliminating duplicate information between files increase the number of files accessed for a single question?

30 (9) yes **15 (7)** no **14 (4)** undecided

8. Naturally, selection of a file depends primarily on its probability of providing relevant information. Aside from this initial parameter, which of the following most affects the decision of which file to search if several files could be used?

28 (10)	Level of indexing
10 (2)	Availability of a thesaurus
25 (9)	Cost
10 (3)	In-house availability of the material in the file

9. Do you frequently use the search capability of retrieving words or phrases from the context of a field of information?

47 (21) yes **13 (2)** no

Which of the vendor systems do you prefer for this capability? Please cross out vendors not used.

3 BRS **22** Lockheed **2** SDC

10. Is the capability of limiting by the date of publication of the citation valuable?

50 (21) yes **4** no **4 (1)** undecided

11. Do you use the SDI capability? Indicate all conditions which apply.

10 (8)	Yes
35 (12)	No, but it is available for files I use
3	No, because it is not available for files I use
0	No, because it is not available for the system I use
8	No, I am unfamiliar with the SDI capability
0	Other (identify)

Would you use it if available for additional files?

8 (5) yes **15 (6)** no **14 (7)** undecided

If yes, for which files? *[SSCI, Psychological Abstract, Compendex, CAB.]*

12. If you use the SDI capability of any vendor, would you like the ability to alter your profile on-line?

22 (12) yes **0** no **5 (2)** undecided

13. Do you use the on-line ordering of retrieved documents?

16 (6) yes **36 (12)** no
2 (2) unavailable for files searched

Would you like to see this capability expanded to additional vendor systems and/or additional files?

23 (7) yes **7 (3)** no **12 (5)** undecided

If yes which files? *[Management, ABI/Inform, Accountants, Psychological Abstracts, MRIS, Compendex, Lockheed, BRS.]*

14. Would you like to see standardization of search strategy commands between the various vendor systems?

51 (20) yes **5 (1)** no **2** undecided

Would such standardization increase the probability of your using additional vendor systems?

38 (14) yes **12 (5)** no **5 (1)** undecided

15. Do you currently receive print copies of the corresponding files which you *frequently* use?

41 (17) yes **11 (1)** no

If not, did you discontinue your subscription due to availability of the on-line databases?

1 yes **9 (1)** no

16. Do you currently receive print copies of corresponding files which you *seldom* use?

26 (12) yes **26 (6)** no

If not, did you discontinue your subscription due to availability of the on-line databases?

2 (1) yes **19 (5)** no

17. Indicate the sequence in which you learned to use the various systems.

18. List specific indexes or abstracting services which you would like to have on-line. [*Wilson Indexes, MEDOC, GeoAbstracts, ISIS, STAR, HRIS, RRIS, ATRIS, Applied Science & Technology, Business Literature and the Information Bank.*]

19. Which databases do you use most frequently?

* *

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The Use of an On-Line Bibliographic Search Service in Chemistry

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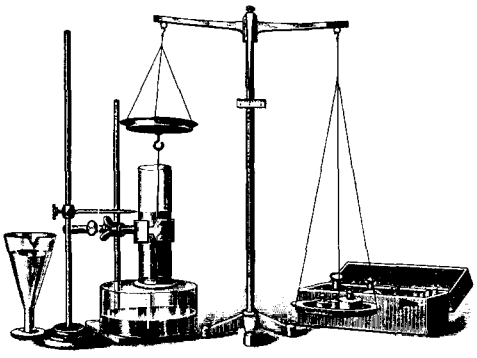
■ **The introduction of interactive computer-based literature searching to the Florida State University chemistry department is discussed. The impact of this free service is characterized for the group of 119 end users. Informal observations by the information specialists are presented on beginning service, initial searches, frequency of use, reasons for searches, and results of searches.**

WHILE LITERATURE searching has always been an integral aspect of the services offered by special libraries, in recent years the trend has been to replace manual searches with the use of on-line bibliographic search services. Since little was known about the end users' satisfaction with commercially available on-line bibliographic search services or how such services affect their information style, research was undertaken at Florida State University to address this problem, beginning in January 1976. Under the direction of coinvestigators Gerald Jahoda and Alan Bayer, a three-phase study was designed to assess the impact of on-line searches on the information style of academic chemists at Florida State University (FSU), and of industrial scientists and technologists at Monsanto Textiles Company in Pensacola, Florida and other locations.

The phases of this project were similar to the methodology used with public libraries by Summit and Firschein (*1*) in that free search services were offered first followed by services for a fee. Free services were offered during phase 1—the initial eleven months of the project. Half connect time and off-line fees were charged during phase 2 to collect evidence on the effect fees have on the frequency of use. During phase 3, free self-service searches were introduced at FSU; Monsanto had some self-searchers early in phase 1. By the project's conclusion in mid-1978, on-line search services had become a routine resource at Monsanto,

and the chemistry department at FSU was investigating the purchase of its own terminal.

A comparison between the academic and the industrial chemists and technologists during phase 1 has been summarized elsewhere (2). The purpose of this article is to describe the introduction of the free services to the academic chemists. These impressions and observations, based in part on a daily log maintained by the two information specialists, are offered to assist those considering the introduction of similar on-line search services.



Beginning Service

The System Development Corporation (SDC) was chosen as the vendor primarily because the intention was to eventually offer self-service. It was felt that SDC's ORBIT system, which uses simple Boolean logic and close to natural language, would be relatively easy to learn for both information specialists and end users. Lockheed's DIALOG system also had been considered, but it appeared to be more difficult to use, particularly for beginners.

Before service was offered, the SDC manuals were acquired and carefully studied by the information specialists. Emphasis was placed on CHEMCON and CHEM 7071, the computerized versions of CA Condensates. A two-day intensive training seminar, led by an SDC representative and during which actual searches were formulated and performed, further aided in an understanding of the system and the development of search strategies.

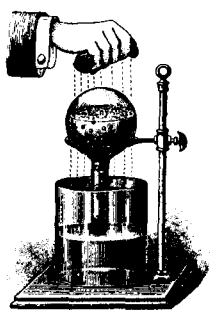
Various vocabulary aids to be used in developing strategies were ordered, including several indexes published by the American Chemical Society and SDC in microfiche form. The CHEMCON index, which alphabetically lists the subject-related index terms in that particular database, arrived early in the project and was used heavily. As it was frequently necessary to include all appropriate synonyms in a search statement to ensure that every pertinent citation was retrieved, this index was used to locate variant spellings and misspellings of search terms. (For the same reason, abbreviations of search terms should be used to broaden searches. The list of CA abbreviations, an appendix of the CHEMCON manual, was useful in this respect.)

The two information specialists each brought to the project a different area of "expertise." One had a background in biology and chemistry; the other in library science. For the library scientist, lack of subject background was felt to be a distinct disadvantage only in those cases where a desired free text search was too narrow and the user, usually a beginning doctoral student in chemistry, lacked sufficient knowledge of the subject to suggest additional synonyms. Though the other information specialist had at least a superfical knowledge of most topics to be searched, this occurred in some searches she encounterd as well. In such instances, an off-line print-out was usually sent for so that the information specialist and the user (not necessarily together) could review the search output for possible search improvement. For the nonlibrarian, the training session as well as association with the others on the project helped to fill the gap in her background. On the whole, both information specialists performed searches equally well, despite the differences in their backgrounds.

The project was fortunate to be permitted the use of a two-room suite on the main floor of the chemistry

research building, which was more easily accessible to all potential users than the on-line service offered by the University Library.

Actual project service began May 28, 1976, with two information specialists acting as intermediaries, as well as informal observers. Approximately 25 hours of service were offered each week on a walk-in or appointment basis to sample and non-sample users. The sample group consisted of faculty mem-



bers, research associates, postdoctoral fellows, and advanced graduate students who had responded to a questionnaire that was designed to assess their information style before services were offered. The non-sample users included questionnaire non-respondents and others associated in some way with the chemistry department. The latter group included post-doctoral fellows/research associates and faculty members who arrived after the study began, less advanced graduate students, undergraduates, technologists, visitors from other universities, and the department's business manager.

Initial Searches

The first search received by the project was an exhaustive, complex inquiry which required the linking of several concepts, each with possible synonyms (e.g., abbreviations, acronyms, different ways of naming the same chemical compound) that had to be thought of and searched in the microfiche for spelling variations. The user, a fourth-year doctoral student in physical chemistry, stayed during the entire search; in fact, midway during the negotiation process, he called his chemist wife down from her laboratory to witness the search procedure and results. Both of them were interested in how the system worked and how to formulate a good strategy, asking numerous questions during the course of negotiation.

The second search received by the search service, performed by the second information specialist, was from a doctoral student looking for a possible dissertation topic. In this case the broad, retrospective search was actually designed to find something that was not there. Kiddingly, the information specialist was told, "If you find anything on . . .and . . ., burn the terminal!" While key concepts and some synonyms were supplied, others had to be elicited after a trial search on CHEMCON. Eventually, the search was run over seven databases and about 500 citations were received. The user commented that "the excessive number of citations were necessary" since "the nature of the search required a certain vagueness in order to insure that all potential developments in the area . . .were retrieved."

One faculty member requested several searches during the first few weeks. Each time, he came prepared with appropriate keywords and logical operators written down so that little negotiation time was necessary. The information specialist needed only to add variant spellings and abbreviations to expand the strategy. Later it was learned that this faculty member, an expert on the subject of computer programs for chemistry, was testing the system; it passed with flying colors!

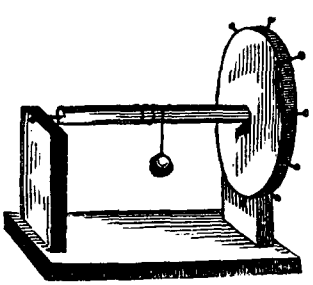


Table 1. Number of Searches by Type of User.

Type of User	Number of Unique Users	Number of Searches
Faculty members (N = 25)	18	108
Research associates		
Postdoctoral fellows (N = 17)	12	77
Doctoral students (N = 28)	21	168
Total sample users*	(51)*	(353)*
Non-sample users	68	198
Total all users	119	551

*Total of previous three categories.

Frequency of Use

As of April 25, 1977, the On-Line Search Project was in operation at FSU for 229 working days or approximately eleven full months. During this period, 51 of the 70 sample members (72.9%) used the free service directly, requesting 353 searches. The total number of searches by type of user is presented in Table 1. Though the number of searches averaged 6.9 per user, the majority of users (29 or 56.9%) requested 5 or fewer searches. As a group, doctoral students requested more searches than either post-doctoral fellows/research associates or faculty.

Several patrons were high frequency users, including an inorganic chemistry student working on her dissertation, for whom 41 searches were performed. She revised her selective dissemination of information (SDI) profile three times, and the biweekly updates on her dissertation topic accounted for many of her searches. However, she also used the service for course-related seminar papers and to assist her in job hunting. For the latter, she requested searches in her potential areas of interest in order to learn the locations of cited authors.

The second most frequent user, with 36 searches, was an organic chemistry doctoral student who often used the service to find articles on specific compounds he had just isolated upstairs in the laboratory. During the final months of operation of phase 1 of the study, he also used the service to select an appropriate topic for his oral examinations (several topics were searched in order to find one with sufficient information).

The third most frequent user was an associate professor of inorganic chemistry, for whom 23 searches were performed. He used the service for a variety of reasons, e.g., current awareness, preparation of grant proposals, and to retrieve the most recent articles by certain authors. He commented on the time-saving feature and convenience of on-line searching and recommended the service to several of his students.

While searches were also performed by people outside the sample group, such searches were given lower priority. Sixty-eight persons in the non-sample group, who were associated in some way with the chemistry department, requested 198 searches (as shown in Table 1). The majority of these users (49 or 72.0%) were less advanced graduate students or undergraduates who were referred by another user or by their major professor. One visitor, the chairman of a research institute in the U.S.S.R., was impressed with the service and remarked that he was unaware of anything similar in his own country. His only criticism was that some of the Russian journals were not covered in the database.

As indicated in Table 1, 551 searches were performed for all users, both sample and non-sample, during the eleven months of free service, or an

average of between two and three searches per working day. Libraries and information services serving a similar group of potential users on a no-fee basis would probably have similar searching demands during the first year.

Reasons for Searches

Most of the on-line searches were performed for research applications (though a few searches were requested for teaching purposes). These ranged from a few references on a specific compound to exhaustive, retrospective literature reviews for dissertation research. On-line searches were also frequently used to prepare for oral comprehensive exams, to learn about seminar topics, to review recent writings of faculty members and conference speakers, to search for vaguely remembered articles, and to assist in the preparation of grant proposals. One postdoctoral fellow had an on-line search performed to verify the title of his own recent publication so that it could be properly cited in a grant proposal being prepared by his research professor.

The reasons for the use of the on-line search service were more difficult to identify in the case of proxy users. While some users readily admitted that they were gathering data for their major professor, others were reluctant to say that the search was not for themselves. On one occasion, a search was negotiated and further narrowed on-line for a doctoral student; however, when the off-line print-out was requested, it was revealed that the search was actually for another student who was "too busy" in the laboratory to come in-person.

Search referrals were often as difficult to unravel as proxy searches. On the first day of service, a faculty member stopped by to inquire about the service. While this particular faculty member did not personally have a search conducted until six months later, his research group as a whole was the service's best customer. Almost every month new users appeared with search requests, usually on the recommendation of others. In the final month of the free service, the average number of searches per working day jumped to 3.5, even though users were not informed of the suspension of this phase of the project until it actually occurred. Obviously, satisfied users were the best publicity for the service.

Results of Searches

A search evaluation form was given to each user along with the research results. In the opinion of the majority of the sample users, the number of citations retrieved were "just about right," the currency of the citations were either "very satisfactory" or "satisfactory," and the search results were "very useful" for their intended purpose.

Many chemists returned the evaluation forms in-person rather than via intracampus mail because they had another topic to be searched. Sometimes the forms were personally returned so that the users could express how pleased they were with the search results or apologize because they were not pleased.

Some users were surprised with their search results. During one subject search, a postdoctoral fellow was startled to retrieve his own dissertation. In an author search on a faculty member's own name, citations to documents by another author with the same name were retrieved. That faculty member was pleased to learn why he had been getting such strange reprint requests! Many of the biochemists who previously rarely used *Chemical Abstracts* in their manual searches discovered that there was much potential interest to them in CHEMCON.

The number of citations retrieved depended upon the particular topic and the type of search intended. Some users expected just a few references (or didn't know how many to expect) and were satisfied with these since they were enough to get them started. One user was pleased to retrieve no citations on a particular chemical he was synthesiz-

ing. Exhaustive searches often turned up 59 to 100 or more citations. To keep the cost down, the service established a policy of printing only 20 citations on-line and requesting the remainder off-line, unless there was an urgency to receive all at once.

As mentioned previously, several users made informal comments on the time saved by using the on-line search service. In part, this is due to the ease with which the computer can coordinate several concepts, a rather difficult task to perform manually. One faculty member remarked that a particular search had saved him about a week's work. Another search enabled him to prepare an article for publication by using computer-retrieved citations to supplement his use of *Current Contents,* browsing in the library, and searching his collection of reprints.

Some users came to depend upon the on-line searches more completely. One doctoral student remarked that "if the computer can't find it, then I certainly can't."

Conclusion

The informal observations of the two information specialists involved in the On-Line Search Project supplemented empirical data collected in a larger study to show that users at the chemistry department of FSU readily accepted the free on-line bibliographic search services (3).

Information specialists, librarians, end users, and others who have an understanding of the limitations of computers and the idiosyncrasies of the literature should have no difficulty adapting to on-line bibliographic searching, a natural and valuable extention of traditional reference services. Special librarians considering the introduction of on-line services to academic chemists can probably expect less than three search requests per working day of a type similiar to those experienced at FSU.

Acknowledgements

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Literature Cited

1. Summit, Roger K. and Oscar Firschein/Public Library Use of Online Bibliographic Retrieval Services: Experience in Four Public Libraries in Northern California. *Online* 1 (no.4): 58 (Oct 1977).
2. Jahoda, Gerald, Alan Bayer, and William Needham/A Comparison of On-Line Bibliographic Searches in One Academic and One Industrial Organization. *RQ* 18 (no.1): 42-49 (Fall 1978).
3. ——. The Effect of On-Line Search Services on Chemists' Information Style. Final Report of NSF Grant No. DSI 75-09604 A02. Florida State University (Mar 1979).

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MYERS

Managing a Report Collection for Zero Growth

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The policy governing the technical report collection of the Johns Hopkins University, Applied Physics Laboratory Library has radically changed over the past twenty years and is now directed toward managing information during the coming decade. Such a challenge will become more difficult with increasing demands for information and current inflationary trends. The changes in policy are examined and some basic principles for managing technical reports are described. Collecting and using data on automatic distribution, current awareness, usage, and weeding are also discussed. The information gathered is used to set a new policy that optimizes efficiency and improves cost effectiveness while enhancing user access to information.

The R. E. Gibson Library of Johns Hopkins University's Applied Physics Laboratory serves a staff of 2,500 people, half of whom are scientists and engineers. The library's collection includes material in the physical and engineering sciences, particularly physics, mathematics, and geophysics; the computing and environmental sciences; and aeronautical, mechanical, electrical, and biomedical engineering. The library subscribes to some 800 journals and processes an equal number for indefinite loan or office subscriptions. About 4,000 books are added to the circulating collection annually and of those, about half are loaned to staff for an indefinite period of time. In addition, 8,000 reports are received annually, of which 1,000 arrive as "automatic distribution" items. Since the library has no room for growth, the story of how it manages to receive, process, and maintain so much material without bursting at the seams will perhaps be helpful for anyone who is interested in techniques for achieving a zero-growth library.

The library is continually receiving new books and journals, as well as reports. The staff attempts to weed out of the book collection as many books as are received. As for journals, the Library Collection Committee monitors journal use closely, makes repeated surveys, and displays and evaluates

sample issues before entering a subscription, to make sure that the library subscribes to only the most needed journals.*

Coping But Not Planning

Identifying users and uses of books and journals seems like child's play compared with attempting to cope with the 8,000 government reports the library receives annually. For many years the staff struggled valiantly with this influx of reports. They used microfiche, selected, evaluated, and discarded documents, looked for more space to store reports, more efficient shelving, and studied report requests. Still, report costs increased.

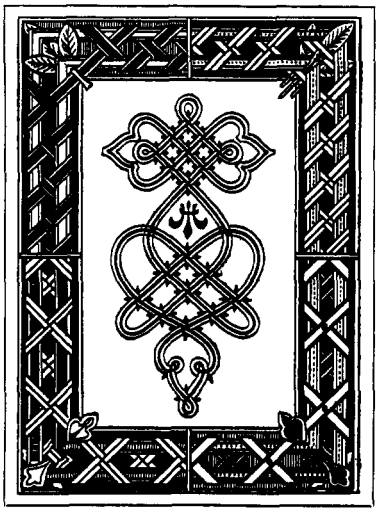
New input forms were designed as more computer terminals were procured to produce announcements of incoming reports for the *Bulletin.* At about the same time, studies by General Dynamics showed that storage costs were $7.25 for secret documents and $2.33 for confidential ones. More studies were done, this time of reports received on automatic distribution.

Certainly, it doesn't sound as if anyone was considering zero growth. Instead, they were busy trying to keep their heads above water and still provide library services to a sophisticated group of users.

What is it that causes such madness? And what possesses presumably intelligent human beings to wade, sometimes knowingly, through the quagmire of government documents?

Perhaps it is the challenge. There certainly is one. The challenge of developing an organized, systematic, and cost-effective system of handling the report literature, and at the same time meeting user requirements.

*The methodology and results of studies conducted on the journal collection are discussed more fully in an article co-authored with Michlean Amir, "Unlimited Demands-Limited Funds." In *Library Journal, Special Report # 11: Collection Management.* New York, Bowker, 1979. Also published in *Collection Management,* (Spring 1979).



Data Collection

The first step in trying to bring a degree of maturity to a report collections involves finding out certain basic facts about those collections:

- How many reports are received each year?
- How many are the result of an order?
- What source organizations do the reports come from, ie., DDC, NTIS, ERIC, ERDA, corporate source (that is, some business, industry or government agency), other?
- What costs are incurred annually for each source?
- How many reports are received on automatic distribution?
- How many are the result of a request from within the organization?
- How many are sent spontaneously by the originator; of these, how many are of interest to someone in the organization?

This information can be collected in a systematic manner without overburdening the staff. The initial "set-up" phase for such a collection system does require time, but that time is well spent; it is time that will be repaid over and over again.

Table 1. Usage of Status A Reports; 1970-1976

Year of acquisition	Number of Reports by Frequency Requested											Total requests filled
	0*	1**	2	3	4	5	6	7	8	9	10+	
1970	3328	1184	783	358	105	41	23	14	8	10	19	5029
1971	3209	877	827	326	130	73	46	23	18	10	18	5245
1972	1571	838	680	259	97	62	20	15	9	3	10	4097
1973	947	864	676	224	96	32	22	13	7	3	5	3788
1974	148	484	494	146	49	24	9	6	4	0	1	2364
1975	71	403	497	120	51	26	12	5	3	1	2	2251
1976	8	149	400	101	38	15	7	4	2	1	3	1604
Total	9282	4799	4357	1534	566	273	139	80	51	28	58	

Grand total requests filled- 24 378

*Never requested a third time.
**Requested a third time.

Some seven years ago the Gibson Library pulled *all* its acquisitioning activities together into one central locatin under a single acquisitions supervisor. A byproduct of that centralization was the creation of a monthly report on acquisitioning activity and material costs. (Quarterly reports and annual reports are also produced.) The information for these reports is collected daily by the staff using a standardized ledger sheet. The reports not only answer all the questions regarding the collection but are used as a basis for justifying new staff, for budgeting, and for changing procedures, such as contracting services outside the facility. (If you already collect such statistics, you should ask yourselves if you are using them to full advantage.)

Usage Determination

Knowing how many, from where, and how much is a good beginning, but it is not enough. One must also determine the extent to which these reports are used.

An article entitled "Report Literature: Selecting Versus Collecting," published in *Special Libraries*, Nov 1978, describes the Gibson Library's efforts to determine usage.* Two tables from that article are reprinted here. Table 1 shows microfiche usage over a seven-year-period. As can be seen, by the seventh request, the number of requests tail off at a very low level. Table 2 shows circulation frequency for paper copies of reports covering a period of five years. Again, by the seventh circulation, the number of reports requested is near zero.

Since that paper was written, the library has adopted a new system called ROARS (Report Ordering and Receipt System) that should provide even better usage data. At present, ROARS handles all orders and documents the receipt of all material from DDC, NTIS, ERIC, ERDA, AIAA, and XUM. It produces two order lists for each facility: one for microfiche and one for paper copies. This system contains historical data on the microfiche collection going back ten years. It includes ordering and receiving information on microfiche and paper copy since January 1978. By means of the history file, the system keeps track of the number of requests for each report, the date of each request, the date the material is received, and the price. It also keeps track of the identity of all requesters and their budget numbers. Thus, ROARS is able to produce budget reports for charge-back purposes and accounting reports for reimbursing the deposit account maintained for DDC and NTIS. It can also produce lists by technical groups, by budget numbers, and by staff names. Through ROARS, the staff keeps track of the number of times an individual report is requested—information that will be invaluable for determining

*Newman, Wilda B. and Michlean J. Amit/Report Literature: Selecting Versus Collecting. *SL* 69 (no. 11): 415-424 (Nov 1978).

Table 2 Circulation Frequency Statistics; 1972-1976

Times loaned	Frequency	Totals
1	12 310	12 310
2	1595	3190
3	291	873
4	108	432
5	37	185
6	21	126
7	8	56
8	2	16
9	4	36
10	5	50
11	2	22
12	3	36
13	1	13
14	2	28
15-24	1	24
25-50	1	47
		17 444
	3488 average per year	

• •

report usage and detecting changes in usage patterns.

ROARS has been the only system in use for reports since January 1979. Eventually, the system will include information on reports ordered from corporate sources, and perhaps will even have entries for reports received on automatic distribution.

Eliminating Unused Material

In 1978, the library received about 2,000 reports from corporate sources and on automatic distribution. To determine usage of reports received on automatic distribution, it was first necessary to know where they were coming from. Two hundred and forty-three sources of those reports were identified. By evaluating the content of that material and by contacting subject specialists in the Laboratory, it was possible to discontinue receipt of reports from some of those corporate sources. (At the moment, the federal government is working with the staff on this matter: more and more frequently, the library is receiving notices from organizations saying that they are required to determine whether their reports are still needed.) Those the library wants are entered into the files as if they were subscriptions. The entries are listed by corporate source.

About 1,000 reports were received from the 243 sources that were identified; of those reports, about half were discarded. For 284 reports, it was possible to identify specific Laboratory staff members who had, at some time, requested automatic distribution from the issuing organization. Usually, such requests were long since obsolete, and the incoming material was unnecessary, unwanted, and unused.

The area of automatic distribution is one that will continue to be reviewed in order to eliminate what is unnecessary. If, as sometimes happens, the reports continue to arrive even after repeated cancellation requests, an entry is made in the subscription files noting that material from that organization should be discarded on receipt. That procedure effectively eliminates the need for evaluation of the reports and prevents them from getting into the collection by default.

Announcement Tools

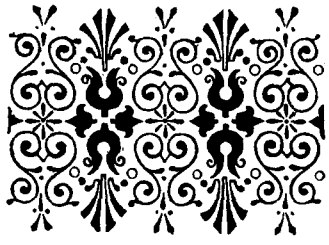
Having determined how many reports there are, from where they come, and how much they cost, and having begun to get a handle on usage, the next step is to determine how new reports are announced to the library's users. The following questions should be asked:

- What announcement tools are used to alert users to the report literature, eg., NASA/SCAN, NTIS/*Weekly Abstracts Newsletters;* SDI (Selective Dissemination of Information); in-house; commercial; library bulletin or other library-produced notice of accessions.
- How many requests are received from each announcement tool?
- How much overlap is there among the announcement tools?

The Gibson Library uses all of the methods mentioned and collects statistics on each. The goal is to communicate with the users to determine their needs

and to determine which services best meet those needs. It may be that the prepared tools are too general in scope; perhaps individual users should have a SDI based on their interest profile.

A major area of concern to the library is the potential overlap among the announcement tools that are used. There is known to be some overlap between the NTIS/WAN and the NASA/SCAN, but an analysis of that overlap has not been done and, at present, there are no plans for such a study. Earlier this year, however, the library reviewed requests from the Applied Physics Laboratory's *Library Bulletin* and did a thorough analysis of requests received from two issues. There were



about 35 report requesters from each issue and they were essentially the same people. One issue announced 350 reports, which included microfiche, reports requested for specific users, for indefinite loan, and those received on automatic distribution. The analysis showed that:

1) Out of some 200 indefinite loan and automatic distribution reports announced, 46 requests were received for 35 reports.
2) Almost all the requesters receive one or more categories of the NTIS/WAN or NASA/SCAN.
3) Almost all reports could be associated with an AD, PB, or N number, which means that the reports would be available from NTIS or DDC and that they had been previously announced.
4) Most requests were for reports that had been acquired in microfiche and that were originally announced in NTIS/WAN or NASA/SCAN.
5) Only eight of the requested reports were automatic distribution items.
6) Four of the requests for automatic distribution items were for Agardographs that are received on

Analysis of the second issue of the *Library Bulletin* showed similar results. With such an overlap in coverage it was decided that the library would no longer announce reports received in the Library Bulletin. Requesters would be contacted and the reasons for this decision would be discussed with them. Also, if their current awareness needs were not being met, an attempt would be made at that time to better determine their needs.

Weeding Program

Even with these procedures, the report collection was still growing. The library, therefore, had to address the question of whether it should continue to retain reports already acquired and stored. A weeding or "de-acquisition" policy for that collection was essential. It was decided that the size of the collection had to first be reduced and that accessions should be balanced with weeding to maintain zero-growth. The following are some of the weeding criteria that were agreed on.

Since the life of most of the substantive technical reports is seven years, or a circulation of seven times, it was decided to destroy all reports (with the exception of certain archival materials), after seven years or seven uses, whichever comes first. Staple holes provide information on the number of times the reports had circulated (for paper copy reports not in the library's circulation system). Microfiche are discarded even more systematically on the basis of the statistics gathered by the older automated system. Certain types of older reports, such as progress reports, quarterly reports, proposals, state-of-the-art coverage or future projections that have been superseded, and bibliographic reports are discarded re-

gardless of usage or age. Reports that can be easily obtained again if necessary, such as those from NTIS and DDC, are discarded, as are reports from local issuing agencies.

The library does feel, however, that it has a responsibility to maintain a minimal archival collection of reports and, therefore, automatically retains reports of the following types:

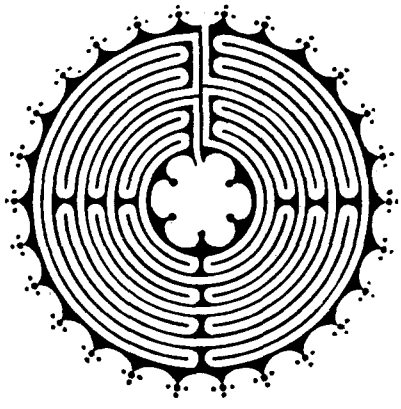
1) Reports with long-term interest to the Laboratory on topics such as radar, missiles, and aerospace satellites;
2) NACA documents;
3) Reports documenting work the Laboratory sponsored or participated in;
4) Reports that the library is specifically requested to retain by members of the Laboratory staff.
5) Reports originated by JHU Laboratories, now closed, that are not available elsewhere.

Thus, except for the archival material, essentially the same criteria are used for weeding as are used for evaluating new material for possible inclusion in the report collection. By applying these criteria rigorously, the staff has been able to achieve essentially a zero-growth condition in the R. E. Gibson Library's report collection.

Maximizing Efficiency

But even achieving zero-growth does not usher in the millenium. The library is still thinking and working creatively to increase staff efficiency and operational cost-effectiveness. Just this month the decision was made that reports will no longer be indexed. Reports received will be sent to the requester for retention, and those received on automatic distribution, if of value, will be given simplified cataloging and put in the book collection.

From 1960 to 1965, the number of reports ordered increased by about 50%. From 1965 to 1978 that number increased by 38%. That 50% jump is what prompted the library to introduce the Library Information Retrieval System, one of the first and most sophisticated computerized report indexing and retrieval systems. At that time distribution centers were not well-organized, and no commercial on-line data bases or current awareness sevices were available. In that environment, having its own computerized index was essential to serve the library's users. Now, so much is available from outside sources that in-house indexing is simply an unnecessary duplication of effort.



The decision to stop indexing reports was based on the following reasons:

1) Improvement of accessibility of technical reports from major distribution centers, such as DDC and NTIS.
2) Costs, per report, have been kept low enough to reorder a report, rather than storing it indefinitely, particularly those supplied by DDC.
3) Factual support for the contention that reports requested by the Laboratory staff have a useful life of seven years, or a circulation of seven times. (And, that applies only to a small percentage of the reports—most reports are requested only once or twice.)
4) Sufficient announcement tools, available externally, to keep the Laboratory staff informed without using large amounts of in-house resources.
5) Better external indexes and commercial data bases for reference to report literature.

Conclusion

The library's users find what reports they need from external data bases, externally generated current awareness services, and externally published indexes. The reports they want from external distribution centers are ordered by the staff. Thus, users are served. As for the library staff, it has all the information it needs on the reports ordered for staff members, or added to the collections, in the ROARS data base. And, by using more external services as they have become available, the library has been able to reduce its staff from 32 in 1964 to 24 in 1979. Thus, it has been able to increase staff efficiency and operational cost-effectiveness.

In the R.E. Gibson Library, reports are being used, users have their reports, and reports have their readers. By studying the collection and its usage and by then formulating new policies based on the realities of today, the library is becoming a maturing organism. Reports constitute one element of this complex structure but they should not be allowed to consume more resources than their share, relative to their usage.

Received for review Nov 15, 1979. Manuscript accepted for publication Feb 29, 1980

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Proposed Dues and Fees

The following is an explanation of the fee structure for *extra* Chapter and Division affiliations. This topic will be discussed at the 1980 Annual Business Meeting.

* * *

Article XIII, Section 2: Dues and Fees

Dues for Association membership and fees for additional Chapter and Division affiliations shall be determined by the Board subject to approval by two-thirds of the voting members present and voting at an Annual Business Meeting, provided that written notice shall have been given to all voting members at least 60 days in advance of the meeting.

Proposed Dues Increase

The Board of Directors has approved the following motion concerning a dues increase to be effective on January 1, 1981, and submits it for action by the membership at the Annual Business Meeting on June 11, 1980:

That the dues increase be $15.00 for Members and Associate Members (proposed $55.00), $4.00 for Student Members (proposed $12.00), and $50.00 for Sustaining Members (proposed $250.00), and that the dues for Retired Members, Sponsors, and Patrons remain at their present levels of $10.00, $500.00, and $1,000.00, respectively.

Fees for Extra Chapter and Division Affiliations

Membership in SLA includes the privilege of affiliation with *one* SLA Chapter and *one* SLA Division at no extra charge. However, some members wish to affiliate with more than one Chapter or Division. It has been an Association policy to charge a fee for each *extra* Chapter and Division affiliation beyond one.

In 1963 the membership took an action at the Annual Business Meeting to allow members "to affiliate with more than one Chapter and/or Division upon payment for each such additional affiliation of a sum equal to 20 percent of the dues paid by an Active member." ("Active member" is now called "Member.")

In 1971 the Board of Directors approved the following motion:

> 1) That the fees for up to two extra Divisions be 20% of the annual dues for a Member for each extra affiliation; 2) that the fee for each extra Division affiliation above two be at 30% of the annual dues for a Member.

(Note that this action affected only extra Division affiliations, not extra Chapter affiliations. It was approved by two-thirds of the members present and voting at the 1971 Annual Business Meeting.)

The additional charges for extra Divisions were put into effect in January 1972, i.e., $6.00 each for first and second extra Divisions; $9.00 each for third and more extra Divisions. (Note: in 1972 Member dues were $30.00.)

How the Dues Increase Will Affect the Fee Schedule

The 20%/30% policy on fees was adhered to until the last dues increase (1976), but due to an oversight it was not enforced after that date. With dues for a Member currently at $40.00, the fee for extra Chapters and two extra Divisions should be $8.00 each ($40 × 20%) and $12.00 for each extra Division affiliation beyond two ($40 × 30%). However, since 1976 these fees have remained at their pre-1976 levels of $6.00 and $9.00, respectively.

The policy on fees for extra affiliations, as set in 1971, remains the valid policy, i.e., 20% of Member dues for each of the first two extra Chapter and Division affiliations, and 30% of Member dues for each extra Division affiliation beyond two. If the proposed dues increase is approved at $55.00 for Members, the cost of the first two extra affiliations will be $11.00 each ($55 × 20%), and $16.50 each for three or more extra Division affiliations ($55 × 30%).

Both the proposed dues increase and the fee for extra Chapter and Division affiliations will be discussed and acted on by the Membership June 11, at the 1980 Annual Business Meeting. You are urged to study this report and to attend the meeting. You have the authority to set dues and fees.

J. M. Dagnese
President

SLA Award Winners / 1980

The Awards Committee has announced the 1980 winners. Rosemary Demarest, Charles Stevens, and Elizabeth Usher were elected to the SLA Hall of Fame, an award granted for "extended and sustained distinguished service to the Association. . . ."

Irving M. Klempner was chosen to receive the SLA Professional Award in recognition of his outstanding efforts for SLA prior to the White House Conference on Library and Information Services.

Detailed information on the citations will appear in a future issue of *Special Libraries.*

NETWORKING NOTES

Networking Committee Newsletter Published

The first issue of *NETLET*, a newsletter designed especially for SLA members directly involved in networking, is off the press. Its major purpose is to facilitate the rapid exchange of information among the Networking Committee, Chapter and Division liaisons, and other concerned individuals inside and outside SLA.

Among the items in the first issue are three reports on regional networking received from SLA members, references to two very recent articles on networking, and a request for program assistance from Missouri.

If networking is a major concern of yours, we'd be happy to add you to the mailing list. The editor is Susan Kroll, Science & Engineering Library, State University of New York at Buffalo, Buffalo, New York 14260.

Meeting on Special Libraries in Networks

By the time you read this, a very important conference will have taken place in Warren, Michigan: the General Motors Research Laboratories Conference on "The Special Library Role in Networks," May 5–6, 1980. Its stated purpose is to emphasize the current status of special library participation and impact on networking.

Conference chairman, Bob Gibson (a past SLA president), assembled a veritable who's who in special libraries and networking to present papers or moderate sessions at the two-day meeting. Among the notable names on the agenda are: Edward Strable, Mark Baer, Mike Majcher, Beth Hamilton, Barbara Markuson, Aphrodite Mamoulides, George Ginader, Sharon Vipond, Al Trezza, and Shirley Echelman.

We'll try to have a report on this conference ready for the next column.

New OCLC Contract with SOLINET

The distinction between the bibliographic utilities and the regional resource sharing networks has been further blurred by the recent announcement that the Southeastern Library Network (SOLINET) has signed a contract with OCLC that offers a framework within which SOLINET can hope to "maintain a constructive arrangement with OCLC Inc. and, at the same time, become an active provider of services ourselves."

SOLINET thus becomes the first to obtain an OCLC contract that allows the network to move beyond the passive brokering stage. The intent is to provide shared cataloging services to members of smaller networks who find direct connection to OCLC too expensive to maintain.

New Journals

Probably most of you have by now received advertisements from Haworth Press, announcing their publication of an assortment of specialized library periodicals. Two of them in particular will be of interest to SLA members and networking people:

Science & Technology Libraries, is edited by long-time SLA member Ellis Mount of Columbia University. Volume 1, no. 1, will be dated Fall 1980. The editor has informed this reporter that the second issue will be devoted to networking.

Resource Sharing and Library Networks is edited by Ward Shaw, director, Colorado Alliance of Research Libraries, and presently chairman of the ASIS Networking Committee. The first issue is also to be dated Fall 1980. It is designed to provide an international forum for the exchange of information about network development and library cooperation. The journal will consider the broad spectrum of issues related to library cooperation, and include as well the important contributions of non-library sector endeavors.

NLM and INTELPOST

According to the *FLC Newsletter*, Sep/Oct 1979, on July 13, 1979, the National Library of Medicine received a document at U.S. Postal Service (USPS) headquarters in Washington, D.C., which had been sent by the British Lending Library in response to an NLM interlibrary loan request. The document—requested and received in less then 24 hours—had been transmitted in a matter of minutes from London using a new service called INTELPOST.

INTELPOST (International Electronic Post) is a digital facsimile network that uses the INTELSAT IV-A satellite for transmitting black and white material. The system is made available in the United States by USPS

in cooperation with Argentina, Belgium, France, the Federal Repulic of Germany, Iran, the Netherlands, and the United Kingdom. In the United States there are two INTELPOST facilities, in New York and Washington, D.C. Delivery of INTELPOST mail will be made by postal personnel according to the regular postal services available in each country, with the particular choice of service selected by the originating INTELPOST customer.

INTELPOST is currently in a demonstration phase with the United Kingdom, and other countries will be phased in over the coming months. Invited participants have been using the service experimentally on a limited basis without charge. However, USPS has stated that the cost of the system could be as much as $5 per page, plus the cost of any special delivery services.

NLM officials emphasized that while the initial demonstration was impressive, it would be premature to draw any firm conclusions regarding quality and cost effectiveness of this service. As to cost, since this was a service that will be provided only on demand, it could be used selectively in situations where urgency could well justify the seemingly high cost per page. Furthermore, if information technology and service forecasts were correct, costs could be expected to drop in the future.

James K. Webster
Chairman
SLA Networking Committee

Help Wanted

For a considerable time a number of Divisions have pooled their bulletin resources into one publication, *Sci-Tech News*, which has been published under the auspices of the Science-Technology Division. During this time it has been possible to find volunteers to perform the editorial and managerial tasks. Now this valuable publication is facing a crisis. It needs to find a new team of volunteers for editor, business manager, and circulation manager as soon as possible. It is desirable but not mandatory that all the team should work within reasonable proximity of each other so as to facilitate communication.

We are particularly concerned to see that the post of editor is filled as soon as possible. Any members interested in helping with this very worthwhile effort should communicate with the Chairman of the Science-Technology Division: Stephen J. Kees, Niagara College Resource Centre, Box 1005, Woodlawn Road, Welland, Ontario, Canada L3B 5S2.

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COMING EVENTS

May 8-10. Association for Recorded Sound Collections, 14th Annual Convention . . . National Library and Public Archives of Canada, Ottawa. Members and nonmembers alike are invited to attend. Contact: Les Waffen, executive secretary, ARSC. P.O. Box 1643, Manassas, Va. 22110 (202/523-3267).

May 14-15. Ninth Annual Workshop on Instruction in Library Use . . . McGill University, Montreal, Que. Sponsored by the Ontario-Quebec Workshop Steering Committee. Cost: approx. $80.00. Contact: Irena Murray, Instructional Services Librarian, McLennan Library, McGill University, 3459 McTavish St., Montreal, Que. H3A 1Y1.

May 15-16. Council on Library/Media Technical Assistants, Annual East Coast Conference . . . University of the District of Columbia, Washington, D.C. Theme: The Library/Media Support Staff in Transition. Contact: Raymond Roney, Learning Resources, University of the District of Columbia, 4200 Connecticut Ave., N.W., Washington, D.C. 20008.

May 15-17. American Society for Information Science, 9th Mid-Year Meeting . . . Robert Morris College, Pittsburgh, Pa. Theme: "Power of Information." For further information, contact: K. Leon Montgomery, conference chairman, Information Science, 721 LIS Bldg., University of Pittsburgh, Pittsburgh, Pa. 15260; or, ASIS Headquarters, 1010 Sixteenth St., N.W., Wash., D.C. 20036.

May 22. Special Libraries Association, Cleveland Chapter. Program on Special Library Management . . . Cleveland, Ohio. Theme: "Facing the Future Aggressively." For information, contact: Jeanne Bohlen, 739 National City Bank Bldg., Cleveland, Ohio 44114 (216/861-1933).

May 27-30. Fourth National Information Conference and Exposition (NICE IV) . . . Sheraton Washington Hotel, Washington, D.C. Chairman: Roberta Gardner, information manager, Public Relations and Advertising, Dun & Broadstreet, Inc. Registration fees range from $100 to $125. Contact: NICE Headquarters, 316 Pennsylvania Ave., S.E., Suite 502, Wash., D.C. 20003, or call Helena Strauch (202/544-1969).

Jun 2-4, Jul 9-11. Word Processing Management Workshop . . . Los Angeles and San Francisco, respectively. Sponsored by the National Institute for Management Research. Regular fee: $495.00; team fee: $395.00. Write to: Dept. N-WPMANAGEM, NIM Seminars, P.O. Box 3727, Santa Monica, Calif. 90403, or call 213/450-0500.

Jun 17-12. Special Libraries Association 71st Annual Conference: Realities of the 80s—Challenging the Individual . . . Washington Hilton Hotel, Washington, D.C.

Jun 16-20, 23-24. Workshops in Cataloging Audiovisual Materials Using AACR2 and OCLC . . . Mankato State University, Mankato, Minn. The AACR2 workshop will be held Jun 16-20 for 2 credits; the OCLC workshop, Jun 23-24 for 1 credit. Contact: Instructional Media and Technology, Box 20, Mankato State University, Mankato, Minn. 56001 (507/389-1965).

Jun 20-22. Second World Symposium on International Documentation . . . Brussels. Cosponsored by the U.N. Institute for Training and Research and by the Association of International Libraries. Address all correspondence to: Second World Symposium on International Documentation, WNITAR, Palais des Nations, CH 1211 Geneva, Switzerland (Telephone: 98-58-50).

Jun 26-28. Workshop in Space Planning and Practical Design for Librarians . . . New York City. Fee: $225. Contact: Aaron Cohen & Associates, Teatown Road, Croton-on-Hudson, N.Y. 10520 (914/271-8170 or 212/689-9138).

Jun 27-28. American Library Association, Preconference on United Nations Documentation . . . New York City. The program will be conducted by U.N. staff, with the cooperation of the International Documents Task force of ALA's Government Documents Round Table (GODORT). Fee: $25, GODORT members; $35, ALA members who are not members of GODORT; $45, non-ALA members. Contact: Robert W. Schaaf, Serials and Government Publication Division, Library of Congress, Washington, D.C. 20540 (202/287-5846 or 287-5647).

Jun 30-Aug 23. International Graduate Summer School in Librarianship and Information Science . . . College of Librarianship, Wales, Aberystwyth, Wales. Cosponsored by the University of Pittsburgh Graduate School of Library and Information Sciences. For additional information contact: Richard Downing (Telephone Aberystwyth: STD 0970, ext. 226).

REVIEWS

Microform Librarianship, by S. J. Teague. London/Boston, Butterworths, 1979. 125p.

This second edition of a non-technical guide for the acquisition and use of microforms in all libraries has been slightly revised over the earlier edition. The author draws upon his experience as the librarian of the City University, London and also from surveys made in other countries. He writes for the British librarian but the basic information will be useful to all librarians. He discusses problems related to microforms and microform equipment that must be considered before designing a system including them.

Some of the topics covered include microforms and their use in libraries, related abstracting and indexing, COM catalogs, micropublishing, copying from microfilm (including costs), copyright, and matters of policy. The author describes how information, such as texts, tables or illustrations, is reduced a number of times in relation to the original as microimages on photographic film that is processed in reel or sheet form or inserted into a card or a container, thus becoming a microform. Systems for supplying information differ, and this accounts for the number of microforms and the equipment designed for reading, enlarging or duplicating them. The applications indicated by the author are fairly standard in most academic libraries. He has not noted the use of microforms in the storage and retrieval of research reports, laboratory notebooks or other materials found in the special library.

The author has reinforced many statements already voiced by knowledgeable librarians here and abroad on the need for improvement in products available from the industry for use in a reading environment. User resistance to microforms because of reading inconvenience compared with hard copy, eye strain and other discomforts are discussed. Faults in equipment design, poor filming, and poor bibliographic access are also cited as inconveniences to the user. A booklet in the inexpensive Consumer Series of the National Micrographics Association, *How to Select a Reader/Printer,* covers these and other factors and notes approved standards.

The book also discusses the advantages of data services and computer-based library catalogs, including comments on future developments of COM (computer output microfilm) systems. (Another booklet in the NMA Consumer Series that would be helpful in this area is *Microform Indexing and Retrieval Systems.)* In his discussion of economic advantages to the librarian the author states that some publishers assist the librarian to save on costs. However, he significantly points out that equipment manufacturers have been seeking to serve their prime market in business systems equipment, a market that does not require sustained reading but instead a "look-up" or identification and matching of characteristics of items. He also cautions that the

micrographics consultant may not be the best expert for the library environment where the ideal is precision-built, user-oriented equipment.

Among his conclusions and in a final discussion of acquisition strategy, the author-librarian wisely recommends that library staff should never apologize to readers of microforms by saying "I am sorry the only copy that we have of this item is a microform." This reviewer sees the book as a charge to the librarian, and also to the manufacturer, to make available the best products for use in the most suitable environment as a convenience to the user of the information. The book contains eight illustrations which I do not consider useful. Line drawings illustrating reading equipment would have been preferable to the two full-page plates showing an ultrafiche reader and a desk top reader. All but one of the illustrations appeared in the earlier edition. It would have been useful if the different microforms were shown giving the related number of microimages and carriers. Listing more up-to-date references, particularly standards, would have been helpful; for example, the British Standard 4191 Microform Readers with a standard test fiche for BS4191C, the test fiche only.

The book will be useful to the novice and should be on all library school shelves. The author's comment that "the microform will never vie with the aesthetic reward of reading fine type printed on beautiful paper" brought to mind the many annual awards given for publishers' books and periodicals. Perhaps the output of the micropublishers should be subjected to a similar scrutiny and judged in accordance with approved standards by a panel that includes librarians.

Loretta J. Kiersky
Airco Information Center
Murray Hill, New Jersey

Toward Paperless Information Systems, by F. W. Lancaster. New York, N.Y., Academic Press, 1978. (Library and Information Science Series.) 179 pgs. $13.50. ISBN 0-12-436050-5.*

The author's purpose in writing this book was to provoke individuals and institutions to study the technological, intellectual and social feasibility of the transition from a world of print on paper to a world of information transfer in electronic form. Although the book has some shortcomings, I believe Mr. Lancaster met his objectives and that the book is worth reading.

The title of the book is descriptive of the content. Chapter two provides a broad overview of developments that have taken place in computer retrieval and related activities since 1963. Although the author says it may be omitted by those with extensive experience in the information processing field, it does serve as a good review for the experienced person and sets the stage for the newcomer. Chapter three, which covers paperless systems in the intelligence community, is much too narrow an application and is out-of-date. Many of the charts and tables throughout the book are from the early and mid-1970s and are obviously dated.

A scenario is provided of an electronic information system in which an article is prepared, submitted, reviewed and accepted for publication in perhaps the year 2000. I believe these types of systems will be in limited use before 1985 and in widespread use by 1990. The scenario is outstanding.

Complete chapters are devoted to each of the following: feasibility and benefits of the electronic system; problems of implementation; and the role of the library in a paperless society. These subjects are all worth reading. The book has ten chapters and includes an index and a good list of references.

All in all, I would recommend that all librarians and information scientists, particularly those under 45 years of age, read this book and everything else they can get their hands on concerning paperless information systems.

Don M. Avedon
Micronet, Inc.
The Paperless Office
Washington, DC

*F. W. Lancaster's book was also reviewed by Paula S. Strain in the February issue of *SL* [70 (no. 2): 138].

PUBS

(80-030) **OCLC: An Introduction to Searching and Input.** Manheimer, Martha L. New York, Neal-Schuman, 1979. 64p. $8.50 single copy; $4.95 each when 5 or more copies are purchased for classroom use. LC 79-23985, ISBN 0-918212-38-3.

A workbook designed to teach bibliographic searching, card modification, and input on the OCLC system, Includes 11 practical exercises. Available from: Neal-Schuman Publishers, Inc., 64 University Place, New York, N.Y. 10003.

(80-031) **Aslib Proceedings** 32 (nos. 1/2) (Jan-Feb 1980).

Papers from Aslib's conference on the economics of information, held in September 1979. The January issue includes papers on cost-benefit criteria, value of information to industrial management, developing an information network, pricing of information, and on-line cost effectiveness. February issue not seen. Published by Aslib, Subscription Department, 3 Belgrave Square, London SW1X 8PL (Telephone 01-235-5050).

(80-032) **Automation, Machine-Readable Records, and Archival Administration: An Annotated Bibliography.** Kesner, Richard M., comp. and ed. Chicago, Society of American Archivists, 1980. 65p. $4.00 SAA members; $6.00 nonmembers. LC 79-92994, ISBN 0-931828-22-8.

293 selected citations on archival automation and use of computers in research. Indexes by author, journal, and subject. Available from: Society of American Archivists, 330 S. Wells St., Suite 810, Chicago, Ill. 60606.

(80-033) **Library Research Guide to Education: Illustrated Search Strategy and Sources.** Kennedy, James R., Jr. Ann Arbor, Mich., Pierian Press, 1979. 77p. $8.50 cloth, $4.50 paper. LC 79-88940, ISBN 0-87650-115-3 (cloth), 0-87650-116-1 (paper).

A "how-to" introduction to doing research in the library, intended for students. Explains how to use the card catalog, indexing tools, and government documents, as well as how to evaluate materials. Appendix gives a list of basic reference sources in education. This book is no. 3 in a series of Library Research Guides. Available from: Pierian Press, 5000 Washtenaw, Ann Arbor, Mich. 48104.

(80-034) **The Microform Revolution in Libraries.** Gabriel, Michael R. and Dorothy P. Ladd. Greenwich, Conn., JAI Press, 1980. 176p. $24.50. LC 76-5646, ISBN 0-89232-008-7.

An introduction to micrographics for librarians, covering types of microform (including COM), micropublications, acquisition of microforms and equipment; concluding with a long section on setting up a microform facility. Available from: JAI Press, P.O. Box 1678, 165 W. Putnam Ave., Greenwich, Conn. 06830.

(80-035) **Problems in Bibliographic Access to Non-Print Materials.** Project Media Base. Washington, D.C., National Commission on Libraries and Information Science, 1979. 86p. Free from NCLIS (limited supply); $3.50 from GPO (stock number 052-003-00714-2). LC 79-16600.

Study finds that the elements of a national system of bibliographic control for AV materials do exist; but that the major barriers to development of a nationwide network are disagreements on common conventions, and resulting disparities in data base structures. Available from: NCLIS, 1717 K Street N.W., Washington, D.C. 20036.

(80-036) **Allerton Invitational Conference on Education for Health Sciences Librarianship: Proceedings of a Conference Held at Monticello, Illinois April 1979.** Berk, Robert A., ed. Chicago, Medical Library Association, 1979. 165p. $5.00 prepaid.

Six position papers: on master's degree programs, specialization, internship, post-master's programs, certification, and continuing education. Each position paper is accompanied by a discussion. Available from: Medical Library Association, 919 North Michigan Ave., Suite 3208, Chicago, Ill. 60611.

(80-037) **Unesco List of Documents and Publications 1972-1976.** Paris, Unesco, 1979. 2v. $67.50. ISBN 92-3-101607-5.

A partial continuation of the *Bibliography of Publications Issued by Unesco or Under Its Auspices . . . 1946 to 1971,* but not including Unesco-sponsored publications, V. 1 contains an annotated list of documents and publications, a personal name index, and a conference index; V. 2 is a subject index. Available from: Unipub, 345 Park Ave. South, New York, N.Y. 10010.

(80-038) **Thesaurus of Consumer Terms, Part I: Classified Display.** Askew, Colin, comp. London, Consumers' Association and The Hague, International Organization of Consumers Unions, 1979. 314p. Nfl 125, £30, $65.00. ISBN 90-70241-01-3 (Dutch), 0-85202-153-4 (UK).

A thesaurus covering the diverse aspects of consumerism: such fields as materials, quality controls and testing, competition, marketing and shopping, home appliances, clothing and furnishings, sports, vehicles, nutrition, health, safety, politics, and law. Classified arrangement with alphabetical index. Available from: International Organization of Consumers Unions, 9 Emmastraat, 2595 EG The Hague, Netherlands (Telephone 83-49-04).

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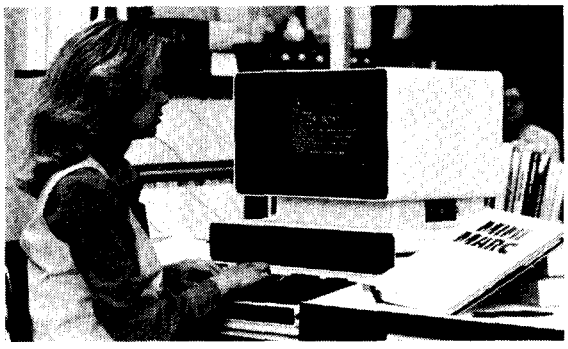

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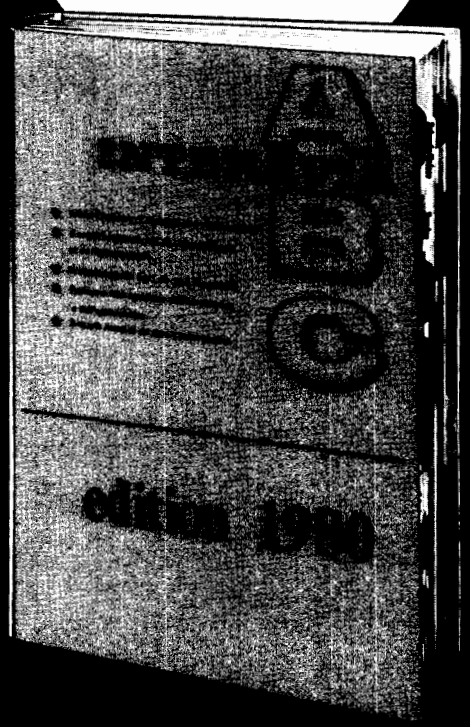

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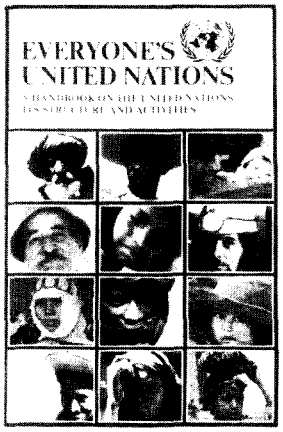

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