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## Special Libraries, April 1975

Special Libraries Association

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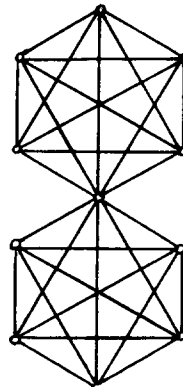
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# *special libraries*

*April 1975, vol. 66, no. 4*

- Influencing Change
- Environmental Collection Building
- Literature Searching
- Data Management
- Cataloging Historical Collections
- Research in Australia



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## **Not One, But Two, Scholarship Events!**

Donald Bierman, *Chicago Daily News*



**Muddy Waters**

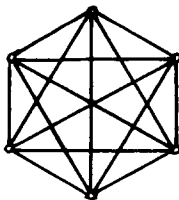
This year SLA conferees will be offered a choice of two very different sorts of entertainment for our annual benefit for the Scholarship Fund.

For those interested in theater, there will be a special performance of Feydeau's *Chemin de Fer* at Chicago's famous Goodman Theater. This French farce will be directed by one of Chicago's leading young avant-garde directors, Stuart Gordon of the Organic Theater, and it may contain a few surprises for lovers of classic French romps.

The alternative choice will be an evening of urban blues with the internationally famous Chicago bluesman, Muddy Waters, and his band. *Time* magazine said in a recent article: "Muddy Waters is the king of dirty blues, down home blues, funky blues or country blues. Of them all, Muddy Waters remains the purest, the most loyal to where he has been and what it has cost him." Muddy Waters will perform in the beautiful new theater of the First National Bank Plaza, which, like the Goodman Theater, is a short walk from your Conference hotel.

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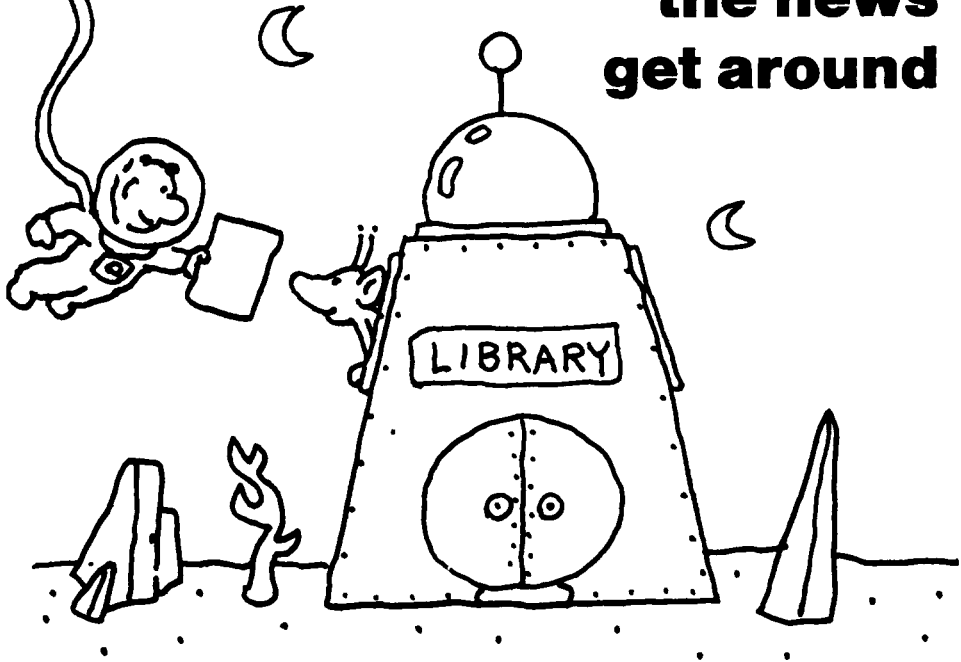
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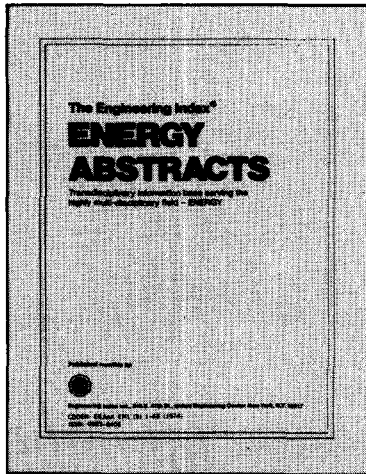
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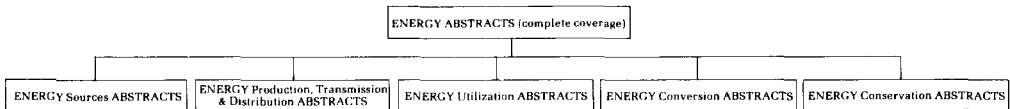
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## LETTERS

### *An Important Tie*

To admit that I am now re-reading back issues of *Special Libraries* is to confess to cursory reading habits. But it is true that with limited time we tend to justify spot reading for special interests and thus miss a great deal. Now that I am about to assume leadership of our Chapter, I feel a need for forearm myself with answers to probable questions. From the letters, as well as the contributed papers and editorials, I am becoming more aware of policies, activities and problems, and am stimulated to agree or argue with the writers. I shall heartily recommend to our Chapter members that they scan each issue for ideas and information and participate actively in the association by expressing their viewpoints in letters or at association meetings.

May I now exercise this privilege by a critical comment on Barbara Rice's interesting paper ["Teaching Bibliographic References in a Reports Collection," pp.203-206] in the Apr 1973 issue and Edwina Pancake's letter [p.7A] in Sep 1973? In regard to nonprofessional retrieval of documents, the paper offers an excellent approach to the instruction of assistants; and, if the nonprofessionals were professionally minded and experienced enough to perform the functions involved, the reference librarians would be spared the expenditure of time and energy. But it is not that simple; tracking down a requested document cannot be mapped out like a trip from a given point to a specific goal. Assistants can carry out certain operations under guidance, but the responsibility is that of the librarian. Let me mention only a few considerations.

1. The original request is usually vague and incomplete and should be screened at the outset for identification and urgency. Oftentimes the requester has "just been told about a paper" and could be encouraged to make his own contact to get the report which may never have been issued formally. Most of the time the reference is inaccurate and needs verification to reduce searching time.

2. Old reports, if valid, have probably been published; and, if not valid, been superseded. Both possibilities require special handling. Moreover, foreign reports, especially Russian, are likely to have been published in a foreign journal with a translation immediately available. Only a knowledgeable librarian can offer this solution from hidden clues.

3. Finding the bibliographic information is not the end of the search. The next step is to determine the source of availability, if the library does not have the report nor book or journal in which the paper was published.

There are other factors; but, above all, the researcher who is seeking the report is the library's patron. A successful search or interchange of techniques, with the researcher as the subject specialist and the librarian as the bibliographic expert, may result in the kind of public relations we wish to encourage with our users. To relegate public contacts to our least trained personnel is to reduce public service to a clerical function. Conducting a search, even for a document, as a shared experience between researcher and librarian is a golden opportunity to establish professional rapport and also to guide the user in the application of search strategy for his future needs.

**Raphaella Kingsbury**  
**Lawrence Berkeley Laboratory**  
**Berkeley, California**  
**President, San Francisco Bay Region Chapter**

### *One for the Tailgaters*

Since XIII is an unlucky number, may I suggest that anyone planning to take Annette Corth's "Commandments" [in the Oct/Nov issue of *Special Libraries* 65(nos.10/11): 473] to heart should eliminate number VI concerning "Tailgating, over-the-shoulder-peering, earth-pawing customers. . . ." I too am a science librarian at a university, and I am delighted when any customer, faculty or student, shows an interest in the *process* of finding answers.

I am continually scheming to find new ways of luring customers in to ask questions in person and ways of capturing their ears to teach them how to find their own answers. I am overjoyed when a customer is willing to follow me from pillar to post because, even if I'm not intentionally lecturing the poor soul on finding information, he or she may absorb something useful for future problems. Also, even if I draw a blank and have to start over, that simply makes me more of a real person to the customer, and chews another chip out of the librarians' antique image.

For heaven's sake, why else are libraries and librarians associated with educational institutions if not because they are vitally necessary extensions of the teaching/learning

process? The better job we university special librarians do in educating our customers, the better prepared they are for their chosen fields, and the easier the job of our fellow special librarians in business, industry, research centers, etc. Hooray for tailgaters!

**Edwina Pancake**  
Science/Technology  
Information Center  
University of Virginia Library  
Charlottesville, Va. 22901

### *A Comment from the Academic World*

I feel compelled to comment on Ms. Shirley Echelman's "Libraries Are Businesses, Too!" in the October/November 1974 issue [of *Special Libraries* 65(nos.10/11):409-414]. Her article attests to the fact that women do indeed constitute an important resource in libraries and shows that management is an acceptable vehicle for women who wish to demonstrate breadth of vision and innovative thinking.

I would take issue only with two points. Ms. Echelman states that "While the size and quality of the collection in relation to the number of users determines the excellence of an academic library, the mark of a first-rate special library is always an intelligent, well-trained, reference-oriented staff." I know she's partly right, but a number of factors, such as cost of materials and the development of networks surrounding academic libraries, make her less correct than she would have been in the past. The whole field of "bibliometrics," for example, is based on an awareness that a library is, in a broad sense, the physical manifestation of user needs, both potential and actual, and can be made more scientific and reasonable.

The second point I question is imbedded in the statement, "The special library client does not expect to be instructed. . . ." In academic libraries the client, even if he or she is a student, does not expect to be instructed either except when that instruction is either part of a formal request for such help or when instruction is the best alternative for the librarian to get the client to the information he or she requests. The whole issue of "spoon feeding" of students and the question of "self learning" complicates this, but I believe the former is impossible and the latter does not make sense.

As I said, these are minor disagreements. I hope Ms. Echelman has contact with lots

of library school students, because her real-world, no nonsense approach to management would be welcomed by students. I'll use her article in my own course in the spring, partly because I agree with her, but more because she's done a beautiful job of making sense of a complex subject.

**Robert G. Cheshier**  
Cleveland Health Sciences Library  
Case Western Reserve University  
Cleveland, Ohio 44106

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*Special Libraries* welcomes communications from its readers, but can rarely accommodate letters in excess of 300 words. Light editing, for style and economy, is the rule rather than the exception, and we assume that any letter, unless otherwise stipulated, is free for publication in our monthly letters column.

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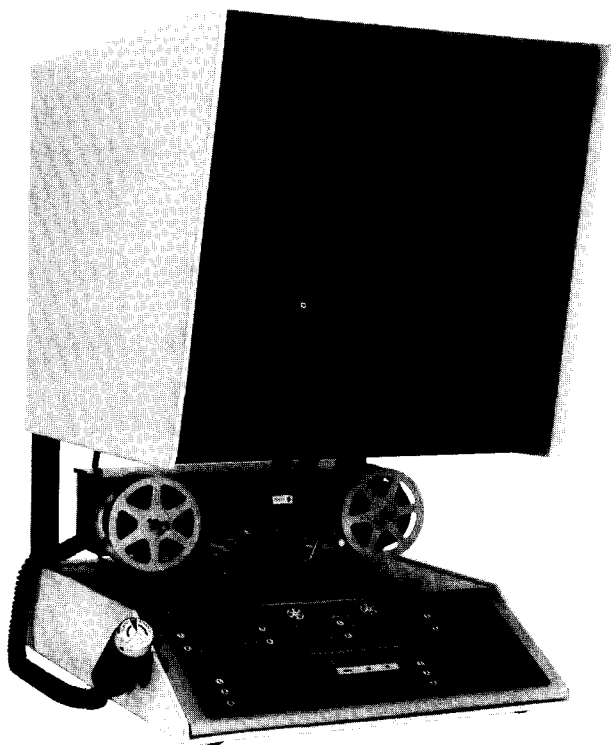
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## Association Costs and Association Income

**This statement by SLA Executive Director F. E. McKenna is presented in relation to the dues increase to be voted on by the members at the Annual Business Meeting. SLA President Edythe Moore's statement appeared in the March 1975 issue of Special Libraries. A statement by SLA President-Elect Miriam H. Tees will appear in the May/June 1975 issue.**

Q. Are member dues the only source of support for the general operations of SLA?

A. No. Dues are the largest single source of income for the General Fund, but there is also income from subscriptions, advertising, conferences and exhibits, and bank interest. Income from book (NSP) sales is for the NSP Fund, not the General Fund.

Q. But are there not also contributions to the Association?

A. Yes, there are gifts from individuals and from organizations, but these are most often defined as contributions to one of the dedicated funds for a defined use, such as the Scholarship Fund or the Research Grants-in-Aid Fund. Such contributions cannot be used for general operating expenses.

Q. When was the last increase in SLA dues?

A. In 1969 the dues for Members and Associate Members were increased to \$30. The dues for Sustaining Members, Retired Members and Student Members were not increased at that time. The \$100 dues for Sustaining Members have not been increased since 1959. There is *no* proposal to increase the dues for Retired Members (\$10 since 1972) or Student Members (\$8 since 1974).

Q. Have dues increases in the past caused a loss in the number of members?

A. There has *not* been a net loss in personal memberships when dues were increased from \$15 to \$20 in 1964, or to \$30 in 1969. In general, there was no net loss of members but rather a leveling-off in the curve of membership growth in the first year after a dues increase. The growth curve then increased again in the following years.

Q. Has there not been a rather large increase in the number of members in SLA in recent past years? Does not this gain in members offset increasing costs?

A. The membership increased from 6,851 to 8,826 between Dec 31, 1971 and Dec 31, 1974. This represents a 28.8% increase which is indicative of a broad base interest in SLA and its activities—or, in other words, persons who had not been reached previously. SLA's improved records management is such that additional members do not add appreciably to the costs of record handling. But unfortunately, other costs have been increasing at a greater rate than our membership growth. Thus inflationary pressures have begun to negate the savings introduced by our record keeping innovations.

Q. How do the proposed percentage increases in dues compare with the Consumer Price Index (CPI)?

A.	Dues (Members & Associate Members)	CPI [1967 = 100]
Jan 1959		
Jan 1969	\$30	109.8
July 1974		148.3
Effective Date— Jan 1976	\$40	(?)
Increase	33%	35% (at 7/74)

	Dues (Sustaining Members)	CPI [1957/59 = 100]
Jan 1959	\$100	100
Jan 1969		
July 1974		172.5
Effective Date— Jan 1976	\$200	
Increase	100%	72.5%

Q. Is not the proposed increase for Sustaining Members too great in relation to the increase in CPI?

A. Sustaining Members can receive without charge one copy of each book published during the membership year. The costs of book production are also increasing. In addition, each Sustaining Member can request either *Scientific Meetings* or *Technical Book Review Index* at no charge in addition to *Special Libraries*. In some recent past years, some Sustaining Members have received \$60-\$65 of publications. Therefore the realizable net from the Sustaining Member dues of \$100 is only \$35 or about the same as that from an individual member. Thus the concept of support by a Sustaining Member is *not* realized.

Q. The auditor's reports are published each year in *Special Libraries*. If the year end figures are compared, will the comparative income and expense items be apparent from the date of the last dues increase up to the present?

A. No, not readily. For many years before 1970, SLA's fiscal year was from Oct 1 to Sep 30. The fiscal year was changed by the Board of Directors to coincide with the calendar year (Jan-Dec) at Dec 31, 1970. At the same time the Association's accounting basis was changed from a "cash" basis to an "accrual" basis. With accrual accounting, both income and expenses are recorded for the year to which they apply, rather than at the time of the transaction. The transition for both changes required a fiscal period of 15 months from Oct 1, 1969 to Dec 31, 1970. This resulted in 15 months of costs but only 12 months of income for the transition period. This then required a loan from the Reserve Fund to the General Fund; only about one-third of the loan has been repaid to the Reserve Fund.

Beginning in 1968, "program budgets" have been developed for the most important Association functions, for example, each periodical, Conference, education, promotion, etc. Such program budgets, together with accrual accounting, result in better cost control, in more realistic budgeting, and in determining which programs produce a net income and which programs should be considered for discontinuance because of net losses, or which should be continued, even if any of them result in an excess of expenses over income. (In for-profit corporations, the terminology may be "profit centers.")

In Table 1, there are presented comparative figures for the principal sources of

income from FY69 through FY74 plus the FY75 budget figures. In the change from a cash basis to an accrual basis, there was some uncertainty in the assignment of some income to FY69 or to FY70.

In Table 2, there are comparative figures for the principal expense items from FY69 through FY74 plus the FY75 budget figures.

Q. In a few words, what are the conclusions from Tables 1 and 2?

A. From FY69 to the budget predictions for FY75, there are:

1. A 36% increase in costs, and
2. A 31% increase in income, but
3. Only a 24% increase in dues income (only 21% after the allotments to Chapters and Divisions are deducted from the payments received of dues and fees).

Q. Are there other sources for increased income?

A. Subscription rates for two of SLA's three periodicals have been increased for 1975. Advertising rates have been increased for 1975. The 1975 budget also includes increases in Conference registration fees and in exhibit booth rentals. These increases are not out of line with the even larger increases in charges being instituted by other membership organizations.

Q. Can any economies in operations be introduced?

A. Since 1970-71, the staff has been reduced from 22 to 18. In some instances, better qualified persons were hired to replace some of the remaining 18. In 1967 the first graded Pay Plan was introduced: the Pay Plan is updated biennially by the Board to reflect salaries for comparable job descriptions as reported by the U.S. Department of Labor for the New York Metropolitan Area. The adjusted salary ranges plus the Association's employee benefits package result in a competitive position for SLA in the hiring of qualified and motivated staff. Through this combination of circumstances, salaries have not increased disproportionately.

Postage is saved as much as possible by use of the Association's "Non-Profit Bulk Rate" or "Non-Profit Second Class" mailing permits. No New York, Massachusetts or District of Columbia sales taxes are paid as a result of SLA's classification as an IRC Section 501(c)(3) organization. Similar exemptions for other states are under negotiation with the assistance of legal counsel.

**Table 1. Comparison of Selected Income Items for the General Fund**

	FY69	FY70	FY71	FY72	FY73	FY74*	FY75 Budget
Dues & Fees Received	\$215,100	\$214,000	\$211,800	\$225,000	\$245,700	\$263,400	\$267,000
Less: Allotments to Chapters & Divisions	(39,300)	(37,100)	(37,100)	(37,100)	(38,500)	(45,000)	(53,200)
Dues & Fees for General Operations	\$175,800	\$176,900	\$174,700	\$187,900	\$207,200	\$218,400	\$213,800
Subscriptions	91,000	58,800	96,000	100,200	103,400	105,500	108,900
Advertising	37,100	50,400	36,400	32,200	31,900	33,000	39,800
Conference (Net)	25,800	34,500	27,100	49,400	43,800	47,800	83,200
Education Program (Net)	(500)	(500)	400	1,400	3,700	7,000	5,100
Interest	6,600	5,700	6,300	7,400	10,900	17,000	9,000
Label Mailing Lists	—	—	—	—	—	—	3,000
Transfer as excess from NSP Fund	3,000	—	15,000	—	—	—	1,500

\* FY74 figures are extrapolated from Third Quarter (9/30/74).

**Table 2. Comparison of Selected Expense Items for General Operations  
(after deductions for charges to program budgets & other funds)**

	FY69	FY70	FY71	FY72	FY73	FY74*	FY75 Budget
Salaries	\$118,800	\$146,200	\$148,700	\$134,800	\$154,600	\$148,000	\$152,600
Employee Benefits & Payroll							
Taxes	7,200	17,300	13,200	10,100	15,500	24,000	28,700
Office Services	37,000	38,200	50,700	44,100	53,000	57,100	65,300
Occupancy Costs	28,100	30,000	29,200	31,100	35,500	36,700	37,900
Professional Fees	7,300	16,500	28,800	21,300	16,800	19,900	21,000
Travel	13,300	13,800	8,800	8,900	13,900	13,900	14,300
Member Services (Ballots, Employment, Committees, etc.)	5,500	6,400	5,100	4,200	7,900	12,000	11,000
System Programming	11,400	5,100	6,600	—	—	800	3,200
Salary Survey	—	12,200	—	—	6,100	—	—
Depreciation	—	—	—	2,000	1,900	1,400	1,000
3 Periodicals Programs	135,300	140,000	125,400	145,200	173,100	176,000	174,400
Promotion Program	17,500	9,900	5,000	11,100	6,600	5,600	9,900

\* FY74 figures are extrapolated from Third Quarter (9/30/74).

Quality and price of purchases are monitored through inventory control and specifications for printed materials which are the Association's primary products and which are the principal mode of communication with the Association's members. Interest income for general operating funds has been maximized by purchases of short-term (30-180 day) bank Certifi-

cates of Deposit. Such investment decisions are now possible because the Association's "cash flow" has been identified (the monthly variation of incoming receipts vs. expenses being paid). Particularly attractive interest rates existed in 1974 (8-12%); it is not expected that such high rates will be available in 1975.

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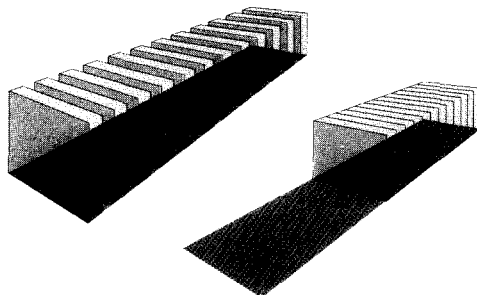
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# Influencing Change

## The Role of the Professional

**Martha J. Bailey, Michael K. Buckland, and Joseph M. Dagnese**

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■ It is usually difficult for a professional in an organization to effect organizational changes unless the professional also happens to be an administrator. To a degree which is probably unprecedented, the Management Review and Analysis Program technique (an internal self-study approach) gives the individual an opportunity to promote

change within the organization of which he is a part. Purdue University Libraries' experience will be reviewed with special reference to the role of the individual in an organizational self-study and also the characteristic problems and advantages of this approach to the management of change.

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CHANGE, by its very nature, may be traumatic, for it is usually accompanied by the dissolution of comfortable patterns of habit and the introduction of new and unknown elements. Uncontrolled change may lead to anarchy whereby the agent of change could use his role to further selfish ends. On the other hand, a program of planned change should allow for input from all levels of staff thereby minimizing the possibility of one person manipulating the change.

Administrators of large libraries are faced with a major challenge of effecting improvements in their operations in order to make them truly responsive to the needs of their organizations and clientele. Several issues must be faced to achieve the effective management of change. First, the administrator must truly be committed to the need for change. Second, the administrator must

find a framework for guiding the change process which will assure orderly progression and consistency. Third, and perhaps most important to the success of the program, the administrator must find a way to involve all the staff in the process.

For the individual professional employee it may not be easy to see the lines of authority and channels of communication within the library. Often the roles of departments or staff are vague and poorly defined. People may "create" their own jobs or emphasize areas in which they are interested rather than working within the framework of the entire organization. It is sometimes difficult to find out who does what and where. Even asking a question or suggesting a new procedure may be viewed as encroaching upon someone's territory.

The goal of the administrator should be to create an open problem-solving en-

vironment, in which a wide range of management problems may be systematically examined in depth and with thoroughness, drawing on the experience of the staff.

### **The Management Review and Analysis Program**

The Management Review and Analysis Program (MRAP) was developed by the Office of University Library Management Studies of the Association of Research Libraries. In form it is a sizeable manual for conducting a management self-study (1); and in approach it adopts a self-study mode (2). It benefitted from the experience of the organizational and staffing study of the Columbia University Libraries performed by Booz, Allen and Hamilton under the sponsorship of the Association of Research Libraries (3).

The "do-it-yourself" approach to the management of change has several distinctive features. It needs to be contrasted with the use of an outside consultant whose work may or may not be relevant to the real problems and often has little impact. Another common approach, especially in a university context, is to use management science faculty and students. This has several advantages for them since it provides additional fieldwork, a new set of problems and, sometimes, the basis for grant income. Unless there is a substantial partnership with the professional librarians, however, such an arrangement may have limited impact on the library, because the problems addressed are often not fundamental management issues and the level of analysis and involvement may be too superficial to induce change.

The internal self-study approach, while running the risk of being myopic on broader issues, has two significant advantages: 1) The participants, being staff members, are likely to be well informed about at least some areas of the organization and its problems. 2) The instigation of such a study by the administrator and the willing participation by staff implies a commitment to explore

the concept of change and to pursue it insofar as it appears beneficial.

The Management Review and Analysis Program starts with a study team charged to review and analyze the present situation and to make recommendations, a "do-it-yourself" manual, and a strict time-table. Much will depend on the caliber of the staff members selected for the team. Among other characteristics, the following are particularly important: 1) ability to make judgments and to pronounce wisely; 2) vulnerability to learning: to evolve and adapt as circumstance and available information change; 3) detachment in point of view: to see controversial local issues in terms of broader institutional, professional, and social trends.

In addition, of course, it is desirable that the study be broadly representative of the organization under study and have, or establish, a realistic rapport with the administrator.

The study team spends the first phases reviewing the context in which the library operates. The changes affecting libraries are determined not only by their own managers but also by the total environment in which the organization is located. For example, decisions involving the public librarian are influenced by the library board of trustees or the taxpayers. The special library may be affected by several layers of management at the local installation and corporate headquarters. Changes involving the academic library are influenced by groups such as faculty, university officials, the board of trustees, or the State Legislature.

The study team then divides into numerous task forces. Each task force addresses itself to one of a series of specific management functions: budgeting, use of policies, management information, organizational structure, personnel, staff development, leadership and supervision, and communication. The precise range and scope will vary with local needs. In each case the task force surveys the local situation and makes recommendations.

It is primarily in the task force process that the professional may exert his in-

fluence on change, because he serves as a member on one or more of the task forces. Additionally, the professional may indirectly exert his influence through data collection. For example, one section of the study included a Likert profile of the staff's attitude toward management. Likert theorized that the development of a participative management style can strengthen the organization by improving employee motivation and attitudes, the quality of decision and control, and communications processes, and by unifying organizational and employee goals. Likert's "Profile of Organizational Characteristics" is a questionnaire on which individuals rate the organization in such areas as advancement possibilities, supervision, leadership, and staff development. The "ratings" range from "authoritarian" to "participative."

This process of review and recommendations proceeds through all the areas listed above. At every step the staff is closely involved in data collection, opinion gathering, and discussion. The study team then has the responsibility of evaluating and synthesizing the products of the task forces into a report to the administrator, complete with recommendations.

### **Purdue's Experience**

In 1973, the director volunteered Purdue University Libraries and Audio-Visual Center as one of the three libraries in the nation to try the Management Review and Analysis Program. The other two pilot programs were placed at Iowa State University, Ames, and University of Tennessee, Knoxville. The purpose was to test the instrument, the MRAP manual, and at the same time employ the instrument for a review of the Purdue system.

At Purdue the reports of the task forces were seen as draft chapters of the eventual report. As soon as each "chapter" was written, copies were given to all staff members and open discussion meetings were held. The staff members were in a unique position to contribute their

views while the survey was in progress. Ambiguous ideas were clarified and controversial subjects were argued out before the study team formulated its recommendations.

In addition to criticizing the report in progress, the majority of the professional staff served on one or more of the task forces which studied specific problems in depth. Many staff members contributed ideas, suggestions, criticisms, and comments to individual study team or task force members and in the open meetings.

The Purdue staff members suggested several areas which were inadequately covered in the MRAP manual. These are the unique problems of the professional librarians with faculty status, the role of research and development in library management, and the problem of communication in management. Actually communication is reviewed generally in the MRAP manual as part of the task force on management.

The study was completed more than a year ago, and a number of major and minor recommendations have been instituted. These include the upgrading of clerical salaries, the reorganization of the processing division, revisions in support staff performance ratings, and the formulation of goals in the various units. Many are still under consideration, and others must await funding and evolution.

### **Speculations**

It is paradoxical that management studies flourish in an atmosphere of good management. An ineffectual administration usually will not permit any type of study which will reveal its weaknesses. Even if reviews are thrust upon organizations by top management, the results may be negligible due to the negative atmosphere in which they are conducted. On the other hand, truly concerned and responsive management will embrace the management study as an instrument for better utilizing their resources.

MRAP has a definite value as a vehicle for introducing change into a

large organization. It is a two-way process whereby the staff learns about management and its problems and management learns about the needs and perceptions of the staff. In addition, a number of results may be anticipated from this self-study. It promotes an exchange of ideas among the staff; it improves communications at all levels; it allows better staff awareness and participation in management; and, finally, it creates an environment for change.

One great waste of talent in large organizations seems to be that of new professionals. The young professional entering an organization especially is handicapped by the system. The administrator must challenge a new person's enthusiasm yet channel the ideas into practical categories or viable administrative problems. The young professional often does not know how to, or is afraid to, proceed if the immediate supervisor rejects an idea. The administrator must establish an environment to encourage this flow of ideas in an open problem-solving environment. MRAP is likely to facilitate the creation of that environment, allowing the young professional every opportunity to express ideas more freely.

Finally, a number of implications flow from the initiation of this self-study. The decision-making process of the organization will be changed, moving the style to a more participative form. It will lead to a more candid and constructive organization, one in which the staff will expect to know what is happening and into which they have significant input. These in turn will lead to a more informed staff which can only be a significant asset to the organization.

There are several negative factors to consider. The program is time consuming. A conservative estimate is that the study requires 35% of the study team chairman's time, 20% of the study team members' time, and 10% of the task force members' time. In addition, the director and all staff members are involved at various stages (4). Another possible problem is that the staff cannot initiate the program without the per-

mission of the director. This may cause conflict if the administrator is unwilling to undertake the program. The university administration may not endorse the study; in areas such as planning, budgeting, or personnel the study team members must utilize a considerable number of university sources in order to gather the data which they require.

Although the program is designed for large research libraries, it could be used to advantage in smaller libraries. It is one of the few tools which presents information on library management in terms that librarians can understand. It has been written by librarians, and it has been tested by librarians. Although a special library with a small staff probably should not undertake the program as presently designed, the MRAP does pinpoint areas about which all library managers, regardless of staff size, should be concerned.

In conclusion, The Management Review and Analysis Program, developed by the Association of Research Libraries, is one of the few procedural manuals that have been developed for library management. MRAP offers the administrator a program for the staff to train themselves in management techniques while they are systematically examining each facet of the organization and preparing recommendations. Such a program draws on the talents of each staff member and allows him a chance to influence change.

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1. The manual is, thus far, available to participants only. However a leaflet is available from the Office of University Library Management Studies, Association of Research Libraries, 1527 New Hampshire Ave., N.W., Washington, D.C. Also check "Effecting Change in the Management of Libraries: The Management Review and Analysis Program." In *Association of Research Libraries*. Minutes of the 82d meeting, New Orleans, La. Washington, D.C., Association of Research Libraries, 1973. p. 41-80. (Includes a paper by the Directors and MRAP Chairpersons of the first three libraries to undertake the MRAP.)

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# Collection Building in the Environmental Sciences

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■ Collection building in the environmental sciences entails a number of special problems: the necessity to cross interdisciplinary lines, to acquire from a broad spectrum of subject areas, to locate technical papers and other documents typically given limited circulation by their issuing bodies, and to select, without the benefit of reviews, new and

forthcoming materials in rapidly developing fields. An approach to meeting these problems is presented. Selection tools used in building an environmental sciences collection are cited. Special emphasis is given to detailing sources used to acquire technical documents and free or inexpensive "fugitive" materials.

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**I**NCREASING DEMANDS for greater resources in the environmental sciences have recently become familiar phenomena in most kinds of libraries. Current awareness of the dimensions of the "energy crisis" has intensified public interest in environmental matters as well as concern on the part of politicians and other public officials on every level of government. Students and faculty at all levels are becoming more aware of the need to focus on such topics as energy resource development, land use planning, watershed and wildlife management, alternative lifestyle communities, recycling of wastes, economic and environmental trade-offs, population growth, and aesthetic use of the landscape, to name just a few. Universities and colleges are each year developing scores of new courses and programs in environmental sciences areas; a recent directory

lists 443 undergraduate and graduate schools in the United States now offering programs in these fields (1). Business and industry, in the process of coming to grips with the vast array of federal, state, and even local laws, regulations, and standards, find that they must keep pace not only with new legal constraints and requirements, but also with such things as rapidly developing technology and new studies of the environmental impacts of various courses of action.

Not all librarians, of course, must face this entire spectrum. Yet collection building in the broad range of fields known collectively as the environmental sciences can appear to be a task of formidable proportions. How in the midst of a whole gamut of demands and needs does the librarian cope with providing the most relevant and useful kinds of information and research resources?

## The Problem

The problem is at once a challenging and bewildering one. As an emerging academic pursuit, "environmental sciences" melds the disciplinary fences that have traditionally separated the humanities, the social sciences, and the physical sciences. This cross-disciplinary element is not, however, a characteristic unique to this field, and is not the essence of the problem. Librarians have crossed disciplinary fences before in building collections, for instance, in area studies and various kinds of minority studies. Nor is the problem that this is a contemporary field of study without a strong bibliographic tradition. Librarians confronted similar obstacles in building collections to support burgeoning American black studies programs. Rather, the problems inherent in building environmental sciences collections appear to stem from demands unique to the subject area itself: first, the need for strong, in-depth coverage in so many diverse areas, from aesthetics through zoology; and second, the requirement that these divergent topics be in some measure related one to another.

As an illustration of the first point, consider the person interested in sewage treatment and disposal. He may need access to a selected number of quite specialized works in the fields of biology, chemistry, economics, engineering, and law. Broad, sweeping, superficial coverage of these areas will not supply the resources needed to study, for example, the chemical and biological components of sewage sludge, treatment and disposal methods and their effects, cost-benefit analyses of various disposal technologies, and the myriad of laws and regulations governing water treatment. It takes a collection of considerable depth as well as breadth to provide adequate resources for these kinds of inquiries.

As support for the validity of the second point—that the various individual subject categories must be in some measure related one to another—one need only recognize the following: an environmental sciences library is not simply

a collection of works in art and architecture, added onto a collection of works in biology and ecology, added onto a collection of works in land use and regional planning, and so on through the disciplines. Such individual subject collections undoubtedly are important. Nevertheless, the heart of an environmental sciences library revolves around a central core of works each of which places primary focus on the examination of interactions and interrelations of various environmental sciences areas.

Thus, collection building becomes a somewhat humbling experience. The realities are budget constraints, restrictions inherent in the kind of constituency, program, or interests being served, and, quite often, insufficient professional time to devote to selection in any one particular area. The ideal, however, is a collection strong in the core concentration of works which interrelate and integrate, but strong as well in the many particular subject areas from which those works stem.

Confronted by such imposing conditions, and in the absence of a well established tradition of bibliographic selection tools to fall back upon, how does the librarian cope?

## One Approach

The approach to solving this dilemma would no doubt reflect individual training and philosophy of selection as well as particular requirements of programs or audiences being served.

Our library is a small- to medium-sized special collection devoted exclusively to environmental sciences topics. The limited budget precludes purchase of expensive research tools, though we do have access to many of these materials through affiliation with a nearby state university college library. Since we are unable to collect comprehensively across a broad range of topics, the approach has been to seek depth in two categories alone: 1) interdisciplinary treatments; and 2) specific, topical, issue-oriented (as opposed to discipline-oriented) areas which, from our experience, are "high



demand" subjects. Other areas are covered by broad, more general works, backed up by bibliographies which give access to more specialized works usually obtainable on an interlibrary loan basis.

### "Traditional" Sources

Traditional kinds of selection tools—national, trade, and specialized bibliographies of all kinds; government documents catalogs; and the book reviewing media—form the basic and familiar structure of collection building (2). Many of these selection tools now regularly include sections which group together materials in environmental sciences areas. For example, *American Reference Books Annual* (Littleton, Colo., Libraries Unlimited, 1970–) devotes a separate section to reference works which fall within the environmental sciences; the monthly bulletin *Selected U.S. Government Publications* (Washington, D.C., U.S. Govt. Print. Off.) now features a section listing materials in environmental sciences and related areas such as energy; the fifteenth edition of Ulrich's *International Periodicals Directory* (New York, Bowker, 1973) and the second edition of William A. Katz' *Magazines for Libraries* (New York, Oxbridge, 1973) both have special sections listing periodicals in environmental sciences areas.

Specialized bibliographies and bibliographic surveys in a wide spectrum of areas relevant to the environmental sciences are being published in ever increasing numbers. Many librarians are familiar with the Council of Planning Librarians' series of *Exchange Bibliographies* (Monticello, Ill., The Council of Planning Librarians) which often review literature on topics of current interest on environmental subjects. Though of somewhat uneven quality, many of the bibliographies in this series can be profitably used to detect gaps and fill in weak areas. Several recently published reference books include extensive listings of current environmental sciences titles. Examples may be found in the annual *Environment Index* volumes

(New York, Environment Information Center); the Onyx Group's *Environment U.S.A.: A Guide to Agencies, People, and Resources* (New York, Bowker, 1974); the *Annual Directory of Environmental Information Sources* (Boston, National Foundation for Environmental Control); and *Energy Index: A Select Guide to Energy Information Since 1970* (New York, Environment Information Center, 1974). The usefulness of such subject bibliographies depends in large measure on the kind of collection being built, matched against the authoritative-ness and reliability of the bibliography itself (3).

*New Publications.* Special problems are usually encountered when one turns to selection of new or recently issued publications. One needs sources which forecast or briefly list current books and other materials. It is likely that in putting together a vital and current environmental sciences collection it will at times be impractical to wait for the reviewing media to catch up with publication output. The users may be involved in studying such rapidly developing areas as aerial remote sensing for environmental resource analysis; computer models and simulations of world population growth trends and resource use; or environmental impact assessment techniques. In such cases it is necessary to develop methods for monitoring new publications before they are reviewed.

One starting point for this process can be a survey of those who publish materials in environmental sciences areas: trade publishers; organizations and private resource groups; and governmental agencies on local, state, and federal levels. In selecting those to contact use the latest editions of *Literary Market Place* (New York, Bowker); *Annual Directory of Environmental Information Sources* (Boston, National Foundation for Environmental Control); *Conservation Directory* (Washington, National Wildlife Federation); the Onyx Group's *Environment U.S.A.* (New York, Bowker, 1974), and our own state government handbook (New York Dept. of State, *Manual for the Use of the Legislature of the*

*State of New York, Albany*). The letter described the scope and direction of the environmental sciences collection and our continuing interest in new publications in these areas.\* The letters drew some personal responses, piles of catalogs, and inclusion on scores of mailing lists.

Publications offered by environmental groups and organizations, as well as many produced by government agencies, are often free, or available at low cost. Many are of a general, introductory nature and geared for wide appeal; others, particularly those from highly research-oriented agencies, are likely to be specialized and technical. Selection criteria will be primarily determined by the subject orientations and emphases of the collection being built.

*Selection Procedures for Trade Books.* Whether using brochures and publishers' catalogs, the *Weekly Record* from *Publishers' Weekly*, or *Forthcoming Books* we begin with a rough sorting by categories. Most introductory works, the normal run of textbooks, and readings books are excluded from consideration at this juncture. Those introductory works, textbooks, and readings books which, it turns out, are really outstanding can be caught later through reviews; the more immediate problem is the danger of collecting too many on this level.

Readings books—collections of reprinted articles—are a mixed blessing. The articles may be quite important, often landmark studies in the field; yet these are hidden resources. If author, title, and subject analytics were made for their contents, then readings books would become fully retrievable. However, most libraries with sizeable periodical collections and/or interlibrary loan networks already have access to these same articles. In addition, the experience has been that users do not, in the

course of general browsing, discover those readings books which directly relate to their particular interests. First, readings books often carry innocuous, general titles, and therefore are not spotted on the shelves as potentially useful sources. Second, when cataloged, readings books are given broad subject headings and assigned general classifications to reflect their broader approaches to subjects.

The next sorting is to set aside for serious consideration new works, or new editions of works, by familiar authors. High priority is also given those books which purport to integrate and interrelate issues of environmental concern in new, creative, or cross-disciplinary ways.

With a careful reading of tables of contents or outlines of subjects to be covered, when these are given, we put in another selection group new works in specific areas in which we are seeking to build depth. Also given special consideration at this stage are new works in rapidly developing areas as well as in those areas in which the collection is especially weak.

A final priority selection category is published symposia and conference proceedings relevant to the collection; the reports of primary research they contain often constitute the cutting edge of rapidly developing new fields.

The information contained in the publishers' brochures, announcements, or book listings is carefully read and considered. Many small details can take on special significance. An author's institutional affiliation is one such cue: though his name may be unfamiliar, his institution, or his research group, or his academic department may be well known. The publisher's name itself may carry a special meaning if, for instance, past experience has been that publications from this house have been of consistent high quality and relevancy. Similarly, part of one's assessment of a book in an established series will depend on one's evaluation and knowledge of others in that series. An introduction to, or an endorsement of, a book by someone well known in the field also adds a

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\* Added onto the letters to organizations and government agencies was an inquiry about newsletters or other serial publications we might receive on a regular basis. Responses alerted us to a number of publications found to be interesting and useful.

measure of reliability and distinction. Notations that the book includes an index and/or a bibliography may contribute to a positive assessment.

Occasional errors, of course, result from this process of purchasing books "blind," i.e., with neither reviews nor bibliographic surveys as guidance. Publishers' blurbs, book titles and subtitles, even lists of contents can all at times be highly misleading. Selection made on the basis of reviews or authoritative recommendation is, to be sure, a much more reliable method for which there is no substitute. However, selection of unreviewed new books following the methods outlined above appears to be a reasonable way of meeting the pressing demands to provide current resource materials in such a fast developing field as the environmental sciences.

#### "Non-Traditional" Sources

Much of the current, relevant, highly useful, and important material needed to fulfill research demands is not, of course, available through the trade book market. Technical reports, conference proceedings, research documents, government commissioned and industry studies are all examples of these kinds of materials. Government documents aside, most of this material is not well controlled bibliographically, and one must go to a number of sources for selection and ordering.

*Technical and Microfiched Documents.* One particularly useful source is the Environment Information Center's *Environment Abstracts* (formerly, *Environment Information ACCESS*), which is a monthly abstracting journal covering a great number of United States federal government department and agency documents; Congressional hearings and committee reports; conference proceedings, papers, and other equally "fugitive" materials; and contracted research studies and analyses. Also covered in *Environment Abstracts* are pertinent articles selected from over 3,500 scientific, scholarly, industrial, and technical periodicals. A majority of these documents

are available for purchase in microfiche or hard copy form (4). *Environment Index* is the annual cumulative index to the monthly issues.

Another important source of documents is the Educational Resources Information Center (ERIC) which includes coverage of topics in environmental education. Abstracts of research reports, program descriptions, curricula, and other educational documents appear in each monthly issue of *Research in Education*. Papers on such topics as environmental influences on behavior and learning, and some governmental agency publications on environmental subjects are included as well.

Documents indexed and abstracted in *Research in Education* are, for the most part, available for purchase in either microfiche or hard copy form (5).

A third source is the National Aeronautics and Space Administration's (NASA) *Scientific and Technical Aerospace Reports* (commonly known as *STAR*), which is a semimonthly journal of abstracts of technical materials. Documents abstracted include conference and symposia papers, reports of research, and technical studies. The documents themselves issue from numerous organizations and individuals and are variously available from the National Technical Information Service (NTIS), NASA, the Atomic Energy Commission, and the U.S. Government Printing Office, among other sources. Many are available in microfiche form, again at small cost. For technical documents and papers on such topics as nuclear power, solar energy, and remote sensing techniques we have found *STAR* to be an important selection tool.

Finally, the National Technical Information Service itself publishes a series of abstracting periodicals each of which focuses on particular sets of topics. Several in the series have special relevance. *Weekly Government Abstracts: Environmental Pollution and Control* contains abstracts of technical documents concerned with all categories of pollution and pollution control. *Weekly Government Abstracts: Energy*

covers energy sources, fuel conversion processes, energy use, and supply and demand. *Weekly Government Abstracts: Urban Technology* covers urban planning, transportation, and pollution control among other topics. *Weekly Government Abstracts: Building Technology* includes reports on architectural and environmental design. Here again, the documents listed are available for purchase (6).

*Congressional Documents.* Published transcripts of United States Congressional hearings not only carry unique primary material in the form of testimony, but also often include important supplementary documentation in the form of statistical analyses, charts, maps, graphs, and plans that have been submitted as exhibits for the particular committee's consideration. Committee staff reports and other published congressional papers frequently feature analyses of topical issues and statistical data.

The majority of this wealth of highly useful material is available essentially for the asking. *Congressional Record*, the National Wildlife Federation's *Conservation Report*, and the Bureau of National Affairs' weekly *Current Developments* section of its *Environment Reporter*, among other sources, all carry lists of current or forthcoming Congressional hearings. Hearings which have already been held can be selected using the Bernan Associates' *Checklist of Congressional Hearings*, which includes short descriptions of the hearings listed. The *Congressional Information Service Index* lists and abstracts hearings, committee reports, and other congressional papers. And, of course, the *Monthly Catalog of United States Government Publications* provides a monthly listing of all congressional documents published by the Government Printing Office.

Using all these sources, congressional documents of particular interest can be selected and requested. While committee supplies last, requests for single copies can be directed to the appropriate committees. (As a courtesy, a self-addressed mailing label is included with each of

our requests.) Once the committee itself has exhausted its supplies, the documents can often be purchased through the U.S. Government Printing Office.

*"Fugitive" Materials: Free or Inexpensive.* There is a rich, vast world of more or less "fugitive" materials which, when discovered, have generally proven to be of enormous interest and importance. Typically these are papers and reports that circulate primarily among groups of persons within a special area of interest. A number of publications regularly include listings or mention of these kinds of materials. The following periodicals are useful sources for breaking into these communication chains; doubtless there are lots of others.

*Alternative Sources of Energy* (Route 2, Box 90A, Milaca, MN 56353). Privately published books and pamphlets, along with a small number of commercially available publications, are described in the "Reviews" section of each issue. Materials listed deal with all types of alternative energy sources: wind generators, bio-gas plants, and solar heated homes are typical examples. Ordering information, including addresses and prices, if any, is given for all items.

*Catalyst for Environmental Quality* (274 Madison Avenue, New York, N.Y. 10016). Each issue includes an "Environmental Education Aid" section which features brief descriptions of booklets, educational packets, and other pamphlet-type materials available either free or at low cost. Materials listed are from both government and private sources and cover a variety of topics.

*Chemecology* (Manufacturing Chemists Association, 1825 Connecticut Avenue, N.W., Washington, DC 20009). This trade association newsletter includes a short section which lists various kinds of publications available on request, some at low cost, others free. Listings are briefly annotated; ordering information is included.

*EPA Citizens' Bulletin* (Environmental Protection Agency, Office of Public Affairs, A-107, Washington, DC 20460). Selected new EPA publications, most often of a general interest nature, are

listed and briefly described. Single copies are usually available free on request from EPA.

*Energy Review* (Energy Research Corporation, 6 E. Valerio St., Santa Barbara, CA 93101). This is an abstracting journal for short publications such as technical reports, university and industry sponsored projects, and experiments on the subjects of energy and power resources in general. Some U.S. federal government publications (e.g., U.S. Bureau of Mines, studies) are also included. Addresses are given for requesting copies; most are available free.

*Energy User's Report. Current Reports* section (Bureau of National Affairs, 1231 25th St., N.W., Washington, DC 20037). These weekly issues focus exclusively on policies, technologies, and problems related to energy supply and use. Full information for ordering is given for the reports, analyses, and new regulations which are mentioned and available for distribution.

*Environment Reporter. Current Developments* section (Bureau of National Affairs, 1231 25th St., N.W., Washington, DC 20037). New and forthcoming government regulations and studies across the full spectrum of environmental pollution and control topics are described and discussed each week. Full information for requesting copies is given for cited reports and analyses which are available from government or private sources.

*The Mother Earth News* (P.O. Box 70, Hendersonville, NC 28738). A selected number of privately printed pamphlets, small books, and newsletters on topics as diverse as homesteading, organic foods, and alternate energy sources are described in the "Access" section of each issue. Most are available for small cost.

*Parks and Recreation* (National Recreation and Park Association, 1601 N. Kent St., Arlington, VA 22209). The "Resources" section in each issue describes selected numbers of new publications of interest to those in park planning and recreation research. Booklets and catalogs listed are available from various sources: private industry, re-

search institutes, the U.S. Government Printing Office.

*Planning* (American Society of Planning Officials, 1313 E. Sixtieth St., Chicago, IL 60637). The final section of each issue is entitled "Reports Received" and lists pamphlets and other kinds of materials on such subjects as energy, new towns, parks and recreation, transportation, and water resource development. All are available free or at small cost; ordering information is included.

*Public Affairs Information Service. Bulletin* (11 W. Fortieth St., New York, NY 10018). Economic, social, and policy aspects of environmental issues are frequently indexed items in this familiar index. Full bibliographic information is given for the pamphlets, government publications (state as well as federal), conference reports, and industry publications which are included. An asterisk precedes the listing of those available free; many others are available at low cost.

*Vertical File Index* (H. W. Wilson, 950 University Ave., Bronx, NY 10452). The monthly issues of this subject index to selected pamphlets, booklets, and leaflets include some items in environmental sciences areas. All are available free or at nominal cost, and full ordering information is given. Sources for the publications include government agencies, private organizations, and academic institutions.

Materials acquired through the use of sources such as those cited above can add resource strength to a collection in specific subject areas. With most of these publications free on request, or available at low cost, it thus becomes possible to put together quite specialized groups of materials without budgetary strain.

## Conclusion

Since they serve a broad range of information and resource needs, environmental sciences collections naturally reflect the diversity inherent in the subject areas on which they are founded. Integration and interrelation of this diversity in application to environmen-

tal issues is thus their crucial focus. Building such collections requires the acquisition of materials across traditionally distinct disciplinary lines. When this requirement is coupled with the need to build considerable research depth within specific subject areas, as determined by the needs of a particular constituency, the selection process becomes a challenging one. It is hoped that the approach outlined here will facilitate that process for individual librarians.

### Literature Cited

1. International Institute for Environmental Affairs / *World Directory of Environmental Education Programs*. ed. by Philip W. Quigg. New York, Bowker, 1973.
2. Wynar, Bohdan S. / *Library Acquisitions: A Classified Bibliographic Guide to the Literature and Reference Tools*. 2d ed. Littleton, Colo., Libraries Unlimited, 1971. This is a handy guide to the literature of acquisitions techniques and problems.
 

Acquisitions procedures for U.S. Government publications are ably discussed in Hungerford, Anthos Farah / *U.S. Government Publications Acquisition Procedures for the Small Special Library*. *Special Libraries* 65 (no. 1): 22-25 (Jan 1974).
3. Bibliographic surveys we have found helpful:
 

Dinsmore, John H. / *The Energy Crunch: A Selective Review of Recent U.S. Government Publications Which Offer Fuel for Thought on the Energy Crisis*. *Library Journal* 99: 1270-1273 (1974).

Gabriel, M. / *Water Pollution, Supply, and Purification; A Bibliography*. *RQ* 9: 303-305 (1970).

Kirk, T. G. / *Environmental Science for Undergraduates*. *Choice* 7: 1482-1486 (1971).

Lillard, Richard G. / *Books in the Field: Nature and Conservation*. *Wilson Library Bulletin* 44: 159-177 (Oct 1969).

Niering, William A. / *Geotechnics*. *Choice* 7: 1529-1536 (1970).

Siehl, George H. / *Environment Update*. *Library Journal* 99: 1357-1363 (1974); 98: 1437-1445 (1973); 97: 3546-3551 (1972); 96: 2266-2270 (1971). Our World—and Welcome to it! An Introduction to the Literature of the Environmental Crisis and Related Problems. *Library Journal* 95: 1443-1447 (1970).

Smith, Robert L. / *Ecology Books in the 70's: A Critical Review*. *Choice* 9: 937-946 (1972).

Wexler, Marx<sup>1</sup> / *Earth Day and Beyond*. *American Libraries* 5: 139-141 (Mar 1974).

*Whole Earth Epilog: Access to Tools*. San Francisco, Calif., Point; dist. by Penguin, 1974. (Though not a bibliography in the strict sense of the word, this updating and continuation of the *Whole Earth Catalog* includes annotations of books and periodicals on such topics as alternative lifestyles, organic farming, and matters of general environmental concern.)

In addition, the following recently published specialized bibliographies have been found to be particularly useful, either in whole or in part.

Bausum, Howard T. / *Science for Society: A Bibliography*. 3d ed. Washington, D.C., AAAS Commission on Science Education, 1972.

Bell, Gwen, et al. / *Urban Environments and Human Behavior: An Annotated Bibliography*. Stroudsburg, Pa., Dowden, Hutchinson & Ross, 1973.

Bennett, Gary F. and Judith C. Bennett / *Environmental Literature: A Bibliography*. Park Ridge, N.J., Noyes Data Corp., 1973.

Branch, Melville C. / *Comprehensive Urban Planning: A Selective Annotated Bibliography with Related Materials*. Beverly Hills, Calif., Sage Publications, 1970.

Durrenberger, Robert W. / *Environment and Man: A Bibliography*. Palo Alto, Calif., National Press Books, 1970.

Ehler, Charles N. / *Environmental Impacts of New Technology*. Ann Arbor, Mich., Univ. of Mich. Press, 1969.

Lewthwaite, Gordon Rowland / *A Geographical Bibliography for American College Libraries*. Washington, D.C., Association of American Geographers, 1970.

Meshenberg, Michael J. / *Environmental Planning: A Selected Annotated Bibliography*. Chicago, American Society of Planning Officials, 1970.

U.S. Dept. of Housing and Urban Development, Library / *Environment and the Community: An Annotated Bibliography*. Washington, D.C., U.S. Govt. Print. Off., 1971.

Ward, Dederick C. and Marjorie W. Wheeler / *Geologic Reference Sources*. Metuchen, N.J., Scarecrow, 1972.

Useful as well have been the bibliographies produced by the Environmental Resource Packet Project, University of Maryland: *Energy and the Environment*; *No Deposit—No Return: The Management of Municipal Solid Wastes*; *Noise Pollution*; and *Urban Mass Transportation*. Overall helpful guidance, including bibliographies, has been provided by two recent books on environmental sciences resources: *Information Resources in the Environmental Sciences: Papers Presented at the 18th Allerton Park Institute*. Edited by George S. Bonn. Champaign, Ill., Univ. of Ill. Graduate School of Library Science, 1973; and *Environmental Science Technology Information Resources*. Edited by Sidney B. Tuwiner. Park Ridge, N.J., Noyes Data Corp., 1973.

4. Purchase of the microfiche can be made by subscribing to any number of the 21

subject categories covered or, of course, to the entire collection. Subscriptions to categories vary in cost from \$50 to \$650 per year. Individual microfiche titles can be purchased for the uniform price of \$1.25; hard copy prices begin at \$5.

5. A standing order for microfiche copies of all ERIC Reports announced in each issue of *Research in Education* presently averages \$165 per month. Microfiche purchased individually costs \$.75 (or less, depending on quantity); reports in hard copy form are also available at relatively low cost.
6. Microfiche copies are priced uniformly at \$2.25 per title; hard copy form costs considerably more.

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# Computerized Literature Search Services in an Engineering Library

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■ Engineers exhibit some reluctance in using the total-text, large-scale, multi-data base search services. To overcome this, they are encouraged to sample data bases in an on-line, real-time mode. They can determine relevancy at the terminal and help create, debug and update their profiles. They obtain informa-

tion quickly on-site with microfiche and major journals. Personal contact, newsletters, seminars, and response cards help humanize the system. False economies are avoided, such as restricting historical searches and combining profiles by department.

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**M**ANY ENGINEERS are reluctant to use library resources. They would rather ask librarians where books on specific subjects are located on the shelves than use the book catalogs. Since engineers would rather remain in their offices and laboratories, we must make the library easier to use and take information resources to the engineers.

Some computerized retrieval services permit access only by broad subject headings or categories. Vocabulary is "fixed," often outmoded, and indexing schemes can be cumbersome. Users must try to out-guess frequently inconsistent indexing techniques.

The IBM Technical Information Retrieval Center (ITIRC) is a computer-based retrieval and dissemination system located at company headquarters in Armonk, NY. The company-wide system

was established in 1964 to assist its engineers, scientists, technicians, and managers with their information requirements. ITIRC uses "normal text" searching to eliminate the need for building synonym lists or tracing cross references to standardized terms in a thesaurus. For example, if an engineer wants information on lasers, he will not need to look under "optical diode."

Normal text permits searching of each word in the document stored in the data base. This includes titles of articles, titles of journals, authors, institutions, abstracts, and subject headings. Engineers can easily describe their information requirements using the specialized words, acronyms, and phrases which characterize the conversational language of their colleagues and jargon of the literature. The logic connectors permit



**Figure 1. Search Operators**

data ADJ bank	exact word_sequence
retrieval WITH techniques	terms within same sentence regardless of sequence
library SAME automation	terms within same paragraph
auto-indexing AND Luhn	terms within same document
cataloging OR indexing	either word occurs in a document
library NOT tape	negates match if second term occurs
AEC. corporate author.	term must appear in paragraph specified
retrieval..citation.	term must appear in paragraph other than one specified
STAIRS.U/C.	term must appear completely in upper case
stairs.L/C.	term must appear completely in lower case
Smith.F/C.	term must appear with only first letter capitalized
McCall.M/C.	term must contain both upper and lower case letters
retriev\$3	mask allows search of word root plus specified/unlimited characters beyond root
retriev\$	root performs a dictionary scan to peruse word occurrences without searching
ROOT retrieval	

• •

great flexibility. Thus engineers are not inhibited by restraints of logic capabilities. ITIRC's search services can be accessed directly at company headquarters or through local IBM libraries. Information requirements can be fulfilled in a relatively short turnaround period. The engineers can receive personal attention, with the librarian as the intermediary with the system.

As a result of the computerized literature search services, many engineers place heavy demands upon the library for fulfilling information requirements, still they rarely visit the library.

### Search Services

There are three major search services offered by ITIRC: on-line searching, retrospective searching, and current information selection (CIS).

*On-line Searching.* A magnetic card communicating Selectric typewriter is used to access an IBM 370 Model 155 computer at company headquarters, containing the on-line search service,

STAIRS (STorage And Information Retrieval System).

Many engineers don't want to be concerned about the mechanics of searching. Rather they want to review the output as it is printed on the terminal. The librarians prepare the logic and let the engineers print out titles or entire documents. The librarians must meet engineers' requirements quickly with the least inconvenience, real or imagined, to the engineer.

There is a wide variety of options in the STAIRS system. The two most important are "search" and "browse." The search operators, listed in Figure 1 in the search mode, permit high precision in locating documents. In the browse mode, the user can look at abstracts of documents selected as a result of the search or review documents at random through the entire on-line data base.

One of the capabilities of the search mode is "masking" as shown in Figure 2. Masking allows the librarian to enter the stem of one or more words in a search statement and obtain all the endings associated in the OR situation. Conversely, examining the detail on troublesome queries can help the librarian eliminate words with certain suffixes.

Proper use of the search operators is paramount in using the system. Figure 3 shows how the search operators can reduce the number of documents to a relevance level acceptable to the engineer making the request. Some engineers place narrow requests to retrieve only a few relevant abstracts; others phrase their requests more loosely so they will not miss peripheral items. Relevancy is more important to the user than recall because he can't judge the efficiency of recall.

Many engineers request simply a title list of IBM documents, as given in Figure 4. The sequence number (seqno) carries the microfiche number. If a document is not microprocessed, this fact is stated. If the titles are especially interesting, the abstracts can be printed easily (Figure 5). Engineers can take the lists to the microfiche files to retrieve the entire text of the document.

Figure 2. Masking and Listing of "Detail"

```
R0201 ENTER AQUARIUS COMMAND.,.search
AQUARIUS - SEARCH MODE - BEGIN YOUR QUERY AFTER THE STATEMENT NUMBER
00001information with retriev$3 with system$1
```

INFORMATION	12675 OCCURRENCES	8030 DOCUMENTS
RETRIEV\$03	1403 OCCURRENCES	
RETRIEVAL	1098 OCCURRENCES	637 DOCUMENTS
RETRIEVALS	2 OCCURRENCES	2 DOCUMENTS
RETRIEVE	140 OCCURRENCES	127 DOCUMENTS
RETRIEVED	78 OCCURRENCES	74 DOCUMENTS
RETRIEVER	1 OCCURRENCE	1 DOCUMENT
RETRIEVES	14 OCCURRENCES	13 DOCUMENTS
RETRIEVING	70 OCCURRENCES	69 DOCUMENTS
SYSTEM\$01	62534 OCCURRENCES	
SYSTEM	48891 OCCURRENCES	19612 DOCUMENTS
SYSTEME	1 OCCURRENCE	1 DOCUMENT
SYSTEMS	13642 OCCURRENCES	8378 DOCUMENTS
RESULT	244 OCCURRENCES	179 DOCUMENTS

Figure 3. Search Mode

This example shows how high relevancy can be achieved. Normally, a search is begun using "with" and is narrowed or broadened according to the specification of the engineer.

```
R0201 ENTER AQUARIUS COMMAND.,.search
AQUARIUS - SEARCH MODE - BEGIN YOUR QUERY AFTER THE STATEMENT NUMBER
00001.,.set detail=off
00001differential and equation$1
RESULT
00002differential same equation$1
RESULT
00003differential with equation$1
RESULT
00004differential adj equation$1
RESULT
00005differential.title. adj equation$1
RESULT
```

00001differential and equation\$1	341 OCCURRENCES	341 DOCUMENTS
00002differential same equation\$1	427 OCCURRENCES	336 DOCUMENTS
00003differential with equation\$1	459 OCCURRENCES	322 DOCUMENTS
00004differential adj equation\$1	441 OCCURRENCES	304 DOCUMENTS
00005differential.title. adj equation\$1	49 OCCURRENCES	49 DOCUMENTS

In non-IBM files, the same technique can be used by printing the entire bibliographic citation. STAIRS permits the greatest possible latitude in searching and printing configurations.

Company documents from 1965 to present are accessible on-line. The total file dating back to 1950 is available through retrospective searching off-line by batch processing. Other data bases on-line contain the most recent 23-26 months of literature. These files are updated monthly. Total lists of the search results obtained on-line may be spooled to a high speed printer. The printed

results are then mailed. This is initiated through the "mail" command.

*Retrospective Searching.* The second search service is the retrospective (or historical) search. The librarian is knowledgeable about the contents of the data bases and recommends those data bases which are most likely to fulfill the engineer's needs. The output of these historical searches is a list containing author, title, other bibliographic data, and the abstract for each document.

Some users are specific about their requirements. Most, however, need help in formulating the ideas they want to

Figure 4. Title List of IBM Documents

Sorts can be performed so that the most recent documents added to the file may be viewed first, as illustrated by ".sort 5 docno,d". Engineers can skip about in printing titles and entire documents. Sequential printing is not mandatory.

```
00006_.,sort 5 docno,d
SORT COMPLETED, SHIFT/ENTER TO GO TO BROWSE OR ENTER A COMMAND._
AQUARIUS - BROWSE MODE - PLEASE CHOOSE PARAGRAPHS:
* ENTER A-ALL, B-EXPLAIN, OR A PARAGRAPH LIST
b
  1 TITLE          2 SECURITY      3 SEQNO          4 LOCATION
  5 AUTHOR         6 SOURCE       7 ABSTRACT      8 SUBJECT
  9 FORMATTED FIELDS
ENTER PARAGRAPH NAMES OR NUMBERS1,3
R0521 ENTER A DOCUMENT REQUEST
doc=7

AAA73A001137 DOC= 7 OF 49 ACT= 46501 LINES = 5
TITLE RC-4194. Linearization of Cauchy's Problem for Quadratic Semilinear
Partial Differential Equations. January 1973.
SEQNO 73A 01137

END OF DOCUMENT

AAA73A000914 DOC= 8 OF 49 ACT= 46278 LINES = 5
TITLE RC-4149. Exponential Fitting of Matricial Multistep Methods for
Ordinary Differential Equations. December 1972.
SEQNO 73A 00914

END OF DOCUMENT

doc=10

AAA72A002628 DOC= 10 OF 49 ACT= 43681 LINES = 5
TITLE IBMJ 07-72 p335-348. A- Stable, Accurate Averaging of Multistep
Methods for Stiff Differential Equations. July 1972.
SEQNO 72A 02628

END OF DOCUMENT

. .
```

search. STAIRS is useful for narrowing the search request and sampling documents. Engineers quickly understand that searches which have not been well thought out or which contain nebulous terms or phrases will result in considerable and/or irrelevant output.

*Current Information Selection.* The third search service available through ITIRC is the current information selection (CIS). About 4,000 IBM personnel world-wide subscribe to this service. To become a subscriber, an employee completes a form requiring a manager's signature which certifies his need to know. He describes his job and work-related interests using the language of his specialty or scientific discipline. He can request information on authors, companies, equipment nomenclature, and acronyms, as well as subjects in his profile of interest. Conversely, he can restrict output through the "negate" feature to eliminate words, phrases, journal titles, selected groups of publications, or even entire data bases. These information needs are then compiled either at ITIRC or in the library into a "normal text" search query (profile) to

be searched weekly against current input to the system.

The Rochester library always uses retrospective searches for debugging prior to establishing a CIS profile. This procedure saves time and money and reduces irrelevancy and the probability of subsequent revisions in the CIS profile.

More important, the engineers have immediate satisfaction with their profiles. All pilot profiles are debugged against the largest or most comprehensive data base in order to locate weaknesses in logic—usually COMPENDEX, the machine readable version of *Engineering Index*.

We do not restrict the number of searches on a subject. If the engineer wants to "fish" for information or he demands high precision, his request is met. We do not rely on models to predict relevancy. The engineer is the final judge on the quality of the output for his particular requirements.

STAIRS is again useful as a tool for debugging. The detail listing in the on-line service can be used to locate words which should be eliminated. When the

Figure 5. Printout of Complete Citation and Abstract of an IBM Document

If desired, the abstract alone could be printed.

```

explain
 1 TITLE                2 SECURITY                3 SEQNO                4 LOCATION
 5 AUTHOR                6 SOURCE                7 ABSTRACT             8 SUBJECT
 9 FORMATTED FIELDS
ENTER PARAGRAPH NAMES OR NUMBERSall
R0521 ENTER A DOCUMENT REQUEST
doc=8

AAA73A000914   DOC=      8 OF      49   ACT=  46278                LINES =  29
TITLE          RC-4149. Exponential Fitting of Matricial Multistep Methods for
               Ordinary Differential Equations. December 1972.
SEQNO          73A 00914
LOCATION        RES- Yorktown
AUTHOR        Sarkany, EF      Liniger, W
SOURCE        RC-4149
ABSTRACT      42p. We study a class of multistep integration formulae for
               solving N times N systems of ordinary differential equations,
               proposed earlier by one of the authors. The coefficients of these
               formulae are diagonal matrices of order N, depending on a diagonal
               matrix of parameters D of the same order. The formulae are designed
               to be exact with respect to N times N systems of the form y' equals
               -Dy plus phi(x,y) in which phi is any polynomial in X of appropriate
               degree. We derive explicit expressions of the coefficients for
               arbitrary values of Q equals hD where H is the integration step, and
               for arbitrary step number K. The present formulae are
               generalizations of the well known Adams methods (D equals 0) and of
               the backward differentiation formulae (D equals plus infinity) and,
               for arbitrary D, are exponentially fitted in a matricial sense at Q.
               The implicit formulae are unconditionally fixed H stable. We give
               two different algorithmic implementations of the methods considered
               in this paper. The first is based on the implicit formulae and
               utilizes the Newton Raphson method. It is particularly well suited
               for stiff problems. The second implementation is a predictor
               corrector approach. An error analysis for arbitrarily large, fixed Q
               is carried out. Finally, the algorithms derived in this paper are
               applied to various numerical test problems.

               END OF DOCUMENT
    
```

profile has been established and installed, it is matched against new data added to each data base each month (Figure 6). When a match occurs, a notification card is printed (Figure 7).

CIS profiles can be revised upon request. They can be completely changed, broadened, or restricted, to regulate the number of notifications the requestor receives. All revisions are debugged before the CIS profile is changed.

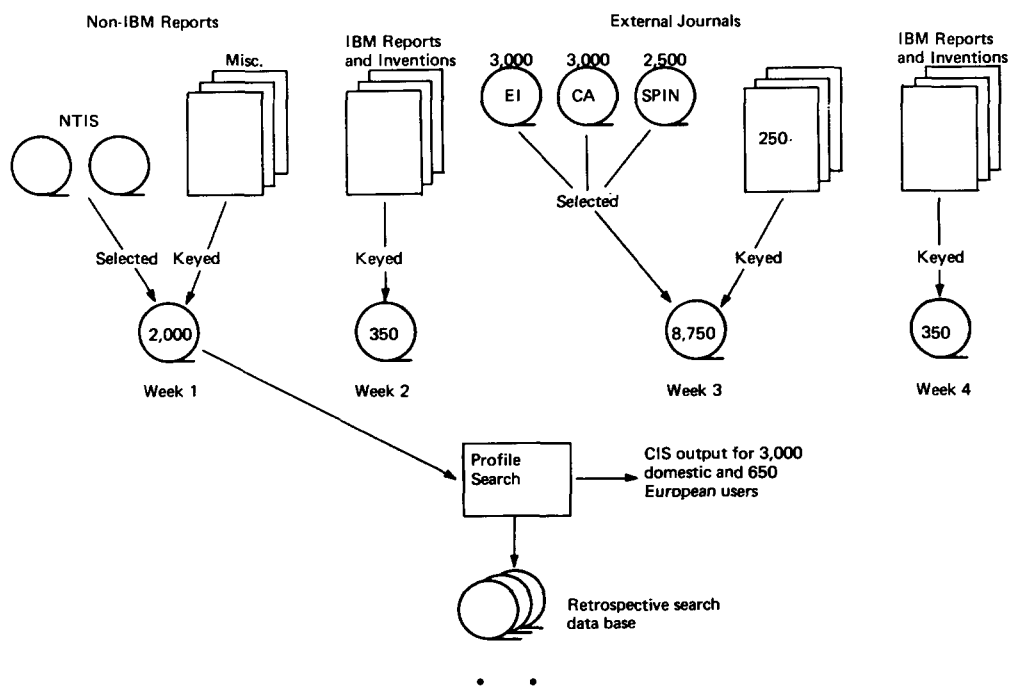
CIS subscribers are encouraged to use on-line and retrospective searches to supplement their information requirements.

We discourage department profiles because engineers have better results when there are small, individual profiles in a department rather than one consolidated profile. Most engineers will not read volume output to locate documents of interest to them. We monitor profiles and avoid duplicate ideas in profiles within a department or function.

### Statistics

Most CIS subscribers return their evaluation forms to the Rochester library which, in turn, forwards them to

Figure 6. Monthly Input to ITIRC's Data Bases



ITIRC for statistical services. Whenever a CIS subscriber marks the line "comments, questions or profile changes," we contact him immediately for remedial work.

There are two types of statistics prepared by ITIRC which help evaluate effectiveness of individual profiles and "flag" those needing corrective measures. The first describes usage statistics. There are norms for costs and numbers of abstracts for CIS users. When usage departs too far in any direction, we provide follow-up assistance.

The second type states relevancy statistics. It is generated from the user response forms and tells the number of mailings and abstracts sent and the number of mailings considered good, fair, or unsatisfactory. Statistics must be used carefully; some engineers rate searches as unsatisfactory if they do not order documents. Periodically we send a copy of the profile and/or relevancy statistics to the users to determine if remedial work is necessary. Every CIS user is contacted by either the library or ITIRC at least once a year.

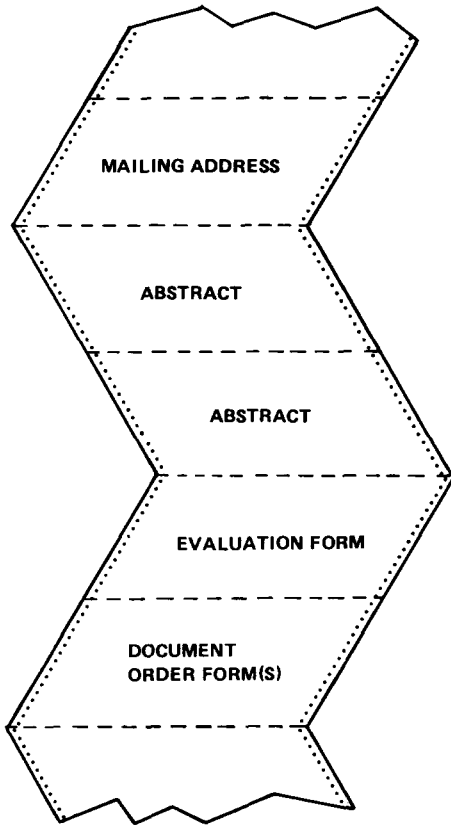
## Data Bases

Input to the ITIRC system comes from a variety of internal and external sources. The letter series are part of the accession number assigned to each document by ITIRC, as listed below:

- △ IBM Documents (Series A) the bulk of IBM's technical literature.
- △ Non-IBM Documents (Series B) thesis, industrial and academic reports.
- △ Invention Disclosures (Series C) description and illustrations of IBM inventions.
- △ Non-IBM Journals (Series D) 30 journals in addition to COMPENDEX.
- △ Data Processing Division Commercial Analysis (Series E) competitive equipment information.
- △ Patent Applications or Dockets (Series F) IBM patents filed in the U.S. patent office.
- △ IBM-U.S. Patents (Series G) patents assigned to IBM.
- △ Chemical Abstracts—Basic Journal Abstracts and Polymer Science and Technology.

**Figure 7. CIS Output Format**

The output is printed on continuous fan-folded paper forms, 3½ by 8½ in. Each form can be detached easily.



- △ COMPENDEX—machine readable version of Engineering Index.
- △ Government Reports Announcements (Series H).
- △ SPIN—Searchable Physics Information Notices from AIP.

As of the end of 1973, there were about 750,000 documents in the files.

### Ordering

The ITIRC search services coordinate many of the information sources in the library. The Rochester library subscribes to journals which are requested most frequently. Requests for information directly influence purchasing of symposia and conference proceedings.

Engineers are asked to order only the most necessary documents. Reviewing abstracts permits engineers to make better judgments when ordering hard copy.

The complete text of many documents added to the data bases is microfilmed to assure speedy and inexpensive dissemination of information. Exceptions are those restricted by copyright (such as journals) or other limitations. A master set of NTIS microfiche is maintained at ITIRC. User requests for personal copies of microfiche are handled by ITIRC through the local libraries.

The use of microfiche is encouraged whenever possible so users can have their own library in a drawer. Microfiche can usually be supplied more quickly than hard copy.

### Public Relations

The Rochester library has an ongoing program to advertise and create demand for its information resources. Advertising includes articles in the plant newspaper, library newsletters, and most important, the daily bulletin board. Because of continual job mobility, engineers may need more information in one job and less in another, depending upon the level of the job assignment. One comprehensive user guide which contains information on computerized literature searching has been widely distributed. The library is constantly striving to keep a machine system "people oriented."

### Conclusions

STAIRS is the only tool which helps coordinate many information resources in the library. It has high user acceptance because of ease and precision in accessing information. The IBM microfiche files have increased value because engineers can go directly from the terminal to the files and read the entire text of the documents. Articles in major journals are readily available on-site. STAIRS has stimulated requests for off-

line services. In addition, a better job now can be done of debugging retrospective and CIS searches.

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## Data Management Systems. Part II.

### Journal Routing—An Example of Library Applications

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■ The Chevron Research Company Library has been handling the routing of its journals via a computerized file named JRØUT, for two years. The file, a relatively simple one, was set up through a data management system software package. JRØUT, as described in this paper, illustrates many of the advantages such system packages can pro-

vide for the service-oriented special library. The most important benefit is that small libraries can set up their own automated files with a minimum of outside professional assistance (i.e., systems analysts, programmers, etc.). General aspects of the topic have already been covered in Part I of this paper.

JRØUT is the first and only fully operational automated file at Chevron Research Company devoted to a library housekeeping function. The file's primary function is to produce routing slips for all serials circulated as part of the library's routing program.

JRØUT is a computerized file set up in the RAMIS data management system, a product of Mathematica, Inc., Princeton, N.J. All file maintenance and report generation activities are handled in the RAMIS environment with one exception: the physical formatting of the printed routing slips (Figure 1). This is controlled by a FORTRAN program developed by Chevron Research Company's Computer and Systems Division.

The JRØUT file consists of approximately 1,150 journal titles (including multiple copies of the same title) out of about 1,300 copies the library makes

Figure 1. Routing Slip Produced from the JRØUT File

CHEVRON RESEARCH COMPANY RICHMOND LABS	
8/7/74	
JOURNAL OF CATALYSIS	
NAME:	ROOM:
KATSUMOTO K	7214
SULLIVAN R F	3118
TOLBERG R S	3122
HUGHES T R	2802
KOMOTO R G	7410
MEYER J A	3120

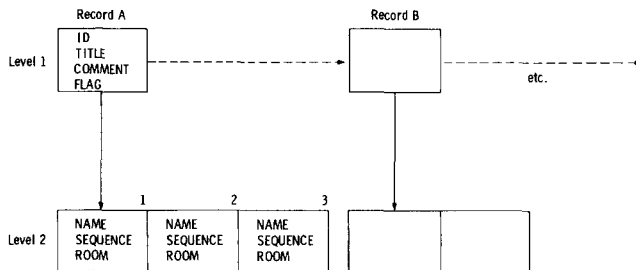
01710-7932(JAM):LAST NAME KEEP  
J01605

COMMENT ID

UPDATING DATE



**Figure 2. Simple Example of a RAMIS "Tree Structure" File**  
 The JRØUT file described in Part II is used as an illustration.  
 The fields in Level 2 are of the "repeating" type.



**Figure 3. List of Journals Seen by Each Person in the JRØUT Program**  
 One of the regular reports produced after each file update

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NAME	ROOM	TITLE	SEQUENCE	CODE	FLAG
DUBOIS M B	211J	OPTICS AND SPECTROSCOPY	30	001501	A
		REVIEW OF SCIENTIFIC INSTRUMENTS	45	R01302	A
		SPECTROCHIMICA ACTA, PART B: ATOMIC SPECTROSCOPY	25	S04501	A
		TALANTA	50	T00101	A
EGAN C J	1112A	CHEMICAL TECHNOLOGY	35	C04001	A
		I. AND E.C. FUNDAMENTALS	30	I00101	B
		I. AND E.C. PROCESS DESIGN AND DEVELOPMENT	25	I00202	B
		I. AND E.C. PRODUCT RESEARCH AND DEVELOPMENT	30	I00301	A
		JOURNAL OF CATALYSIS	30	J01604	A
		JOURNAL OF CHEMICAL THERMODYNAMICS	25	J02401	A
		OIL AND GAS JOURNAL	35	O00907	A
		SCIENCE	35	S01003	A

available for routing. Almost 600 employees participate in the system, receiving, on average, eight titles each. The range, however, is from one to over 100 titles per employee. File activity tends to be moderate to high—updating is necessary at least once a month, and occasionally more frequently. Between 100–150 routing slips are revised during each updating (i.e., approximately 10% file turnover).

JRØUT was defined and developed completely by library personnel. Although assistance was sought in elucidating aspects of RAMIS, and interfacing directly with the computer hardware, the basic structure of the file and its maintenance, report generation, and general operating procedures were all developed in-house. This level of control over automated systems is possible in a small library if a data management system is used, as noted in Part I (1).

### File Description

As discussed in Part I of this paper, the RAMIS data management system is

a "tree structure" hierarchical file. Figure 2 illustrates how JRØUT appears in the structure. All fields in the same box are at the same "file level." Notice that in Level 2 the fields are "repeated." This means that for any one value at Level 1 (e.g., the ID number or title of a journal), there can be one or more values at Level 2. This is essential in the case of JRØUT because there is usually more than one name on the routing list of each journal.

The tree structure saves space. All names on the routing list of a particular journal are stored in the file. With a system of "pointers" to provide "branching," the title, ID number, and other Level 1 information need be stored only once. The combination of Level 1 data with each name, etc., in Level 2 forms a unique record. Most data management systems employ some kind of hierarchical file structure to conserve storage space.

JRØUT consists of seven fields (i.e., types of data) on two file levels and is actually a simple file. The fields are described below. See Figures 1 and 3 for examples of them.

### *File Level 1*

□ **ID**—This is the unique key to every record in the file, equivalent to social security number in a personnel file. Even multiple copies of the same title have different ID's. It is a six-character field. The first four characters are a letter (same as the first letter of the title) and three digits which uniquely identify the particular journal title. The last two characters (two digits) indicate the copy number in order to keep multiple copies of the same journal separate. For example, C09204 identifies copy No. 4 of *Current Contents: Physical and Chemical Sciences*.

□ **Title**—This is a seventy-character field. Because of the limitations of fixed length fields, as mentioned in Part I, it is not always possible to supply the full journal title, according to LC rules of entry. When necessary, abbreviations are used. A seventy-character field represents a reasonable compromise between having unabbreviated titles for every record on the one hand and inconvenient abbreviations of significant words on the other.

□ **Comment**—This thirty-character field contains miscellaneous information. If the journal is not to be returned to the library, the comment indicates that the last person on the list keeps the journal. In addition, if another department pays for the subscription, the charge number and initials of the person authorizing payment are included in this statement (Figure 1). A different type of statement is used if the library pays for a subscription but allows an employee to keep the issues after routing. The usefulness of this field for generating reports will be illustrated later.

□ **Flag**—This is a one-letter field that characterizes the particular file update. Each year there is an annual routing survey (to be discussed later). This is known as the "A" update, and the Flag for each record is set to A. For each subsequent update, the corresponding Flag is advanced to B, C, etc., until the next annual survey when it is reset to A. As each record is modified during a regular

update, its Flag is set to the current value for that update. At the same time, the program that produces the routing slips is edited so that only records with the latest Flag value are reprinted. The Flag field insures that only those routing slips that have been altered are printed after an updating of the file.

### *File Level 2*

□ **Name**—Twenty characters have been found sufficient for the last name and initials of individuals on the routing list. The apparent heading, Name:, in Figure 1 is actually entered as a personal name. It functions as a form of protection in the guise of a heading. If this was not entered in the file, a record would get "lost" if all personal names were removed from a journal's routing list as a result of updating. Even though the Flag is set at the current value, a routing slip is not printed when Level 2 is empty. With Name: (and Room:) present, a new label is printed with only these "headings." This is the signal to delete the entire record from the file.

□ **Sequence**—This is an extremely useful field. A two-digit number is assigned to each person's name on each routing list. In most cases, there is no connection between the Sequence a person is assigned on two different journals. The Sequence is used to order the listing of names when routing slips are printed. Usually, a person's position on the list is based on the "first-come, first-served" rule. However, certain numbers are set aside for special categories. Thus, 01 is always assigned to the "heading" Name: so that it comes at the head of the list; 02-05 for persons who must be first on the list for special reasons; 99 for an individual who pays for a journal and keeps it, etc. The sequencing principle used is up to the individual library, but the technique in general is quite useful. In Figure 3 the Sequence is displayed in the listing of journals each person sees. Any journals a person keeps (Sequence of 98 or 99) are immediately apparent.



Figure 5. RAMIS Report

Routing journals listed by department charge number (in numerical order)

DEPARTMENTAL SUBSCRIPTIONS LISTED BY CHARGE NUMBER	TITLE	CODE
CHARGE NUMBER & INITIALS		
00600-7120 (RBL):LAST NAME KEEP	ENERGY TODAY	E04201
00600-7503 (JMP)	PERSONAL REPORT FOR THE PROFESSIONAL SECRETARY	P02201
00600-7507 (AB ):LAST NAME KEEP	AMERICAN CINEMATOPHGRAPHER	A09101
	BOLEX REPORTER	B01201
	HASSELBLAD	H00201
	MODERN PHOTOGRAPHY	M03501
	PHOTO-LAB-INDEX. SUPPLEMENT	P03301
00600-7520 (RLS):LAST NAME KEEP	ELECTRICAL CONSTRUCTION AND MAINTENANCE	E00401
00600-7521 (RDS):LAST NAME KEEP	BUILDING STANDARDS	B01501
	CALIFORNIA. ADMINISTRATIVE CODE. TITLE 8. CHPT.4: AMENDMENT SERVICE	C11502
	MATERIALS ENGINEERING	M00902

of file maintenance to RAMIS/OS, which is the batch or off-line mode. Costs are usually substantially lower. Turnaround time is generally under two hours and rarely greater than four hours, which would be entirely satisfactory for JRØUT. However, careful testing of JRØUT file maintenance and report production in batch mode revealed it was actually more expensive to run than RAMIS/TS. JRØUT is simply too small a file to reap the economic benefits of batch mode processing. In library automation, the file size should be considered as well as the function.

When file updating is completed, new routing slips are produced for journal copies that have actually been revised (Figure 1). Three complete reports are also printed: 1) a listing of journals seen by each individual indicating room, sequence, ID, and flag (Figure 3); 2) a listing of ID and flag arranged by journal title; 3) a reverse list of titles arranged by ID.

The library has found it essential to regenerate all reports after each updating. Otherwise, inaccuracy quickly degrades the quality of the data base, causing duplication of effort and confusion.

### Annual Routing Survey

A significant benefit of the JRØUT file is the library's annual routing questionnaire. Every June, all persons in the file receive a listing of the journals they are currently receiving. It is computer-produced from the JRØUT data base. Instructions for annotating the list are provided in the heading. A positive response is required: all journals a person wishes to continue to see must be

checked off. Unchecked or crossed-out titles are removed from the person's list. Room numbers are corrected; additional titles, if desired, are added. When revision is completed, the flag on all records is set to A and new slips are printed for the entire file. The annual review is coordinated with subscription renewals so that cancellations may be considered, and the case for more or fewer copies of some titles determined. The questionnaire has also replaced the time-consuming annual practice of obtaining renewal authorization from individuals who pay for their subscriptions. In short, the annual review helps bring the library's serial resources into alignment with the patrons' needs.

In Part I it was emphasized that data management systems derive great usefulness from the ability to generate reports easily that would require extensive and complex programming with conventional computer languages.

Even with a relatively simple file such as JRØUT, the reporting function is extremely valuable. The three standard reports produced after each updating, as well as the annual questionnaire, required a minimum of initial effort (between 5 and 30 minutes) to formulate. Because these reports are used regularly, their formulations have been "cataloged" and stored in the computer.

Other reports are produced as required. For example, at one time the library needed a listing of all journal routing copies paid for on non-library charge numbers. Figure 5 shows a portion of the report—journals are listed in charge number numerical order. On another occasion, it was necessary to determine the distribution of individuals out-

## Figure 6. RAMIS Report

Persons and the routing journals they see listed by location; only locations off the premises of Chevron Research Company have been selected for this report

ROOM	TITLE	CODE	NAME
----	-----	----	----
ADMRF	AIR/WATER POLLUTION REPORT	✓A01801	COLEMAN L E
	HYDROCARBON PROCESSING	✓H01204	GUE J E
	MECHANICAL ENGINEERING	✓M01701	GUE J E
	POWER	✓P06301	GUE J E
CHLRF	ENVIRONMENTAL SCIENCE AND TECHNOLOGY	✓E02504	DOAN P M
	WATER RESEARCH	✓W01101	MCCOY J W
CVAEM	AMERICAN OIL CHEMISTS SOCIETY. JOURNAL	✓A044C2	VANDERZANDEN E J
	JOURNAL OF COLLOID AND INTERFACE SCIENCE	✓J02801	LAB SUPERVISOR
	OIL AND GAS JOURNAL	✓O00914	VANDERZANDEN E J
CVASF	BITUMEN - TEERE - ASPHALTE - PECHE	✓B01101	RIPPLE R M
	HIGHWAYS AND ROAD CONSTRUCTION	✓H01701	RIPPLE R M
	REVUE GENERALE DES ROUTES	✓R01501	RIPPLE R M

side the company who were receiving routed journals. Figure 6 illustrates part of the report generated. Report formulation was straightforward in each instance.

### Conclusion

The JRØUT file provides a good example of the special advantages obtained by using data management systems in the library. To summarize, these are:

1) Ease of constructing the file—JRØUT's file structure and description were determined and set up by librarians. By controlling the creation and functioning of the file, the library was sure its requirements would be met.

2) Ease of operation—the various execs for maintaining the file carry out all updating operations automatically, once the data is coded and read into the computer. Clerical personnel, after training, carry out JRØUT's file maintenance under a librarian's supervision.

3) Ease of report generation—formulating, editing, and requesting both cataloged and occasional JRØUT reports are all extremely easy. Little time and mini-

mal debugging are required. The reports produced save much time and, in some cases, would not be produced if only noncomputerized files were available.

4) Reasonable cost—when the vastly improved service and accuracy of the JRØUT file is taken into account, in addition to the clerical time saved, the operating costs are considered reasonable (see Appendix 2). To put the entire service in perspective, it helps to realize that with only a manual system, the routing program would have to be severely restricted at best. Otherwise, to handle the current level of activity manually would require either extra clerical assistance or a shift in work loads and consequent neglect of other assignments.

### Acknowledgments

The authors wish to acknowledge the advice and assistance of the Chevron Research Company Computer and Systems Division, particularly Linda L. Howe and William S. Allen, and Roberta J. Ferry of the Standard Oil Company of California Computer Services Department.

## Appendix I: Systems Description

JRØUT employs RAMIS/TS, the on-line or time-share version of RAMIS. RAMIS/TS is fully compatible with and operates via a monitor system on the host computer, which is an IBM System 370/Mod 168. The monitoring system itself is the VP/CSS time-sharing system owned by National CSS, Inc. The

VP/CSS provides conversational access between the user's terminal and the computer. RAMIS/TS capabilities are powerfully expanded when it is used in conjunction with VP/CSS.

File definitions and data bases are stored on random access devices. For JRØUT, IBM 3330 disks are used. Disks

are usually reserved for situations in which the data base is frequently accessed. Magnetic tape is the more common storage mode for a file such as JRØUT, which is accessed only once a month. However, JRØUT is a sufficiently small file that disk storage is competitive and much more convenient as well.

Transactions to alter or input data to the data base can be read in from any sequential data set stored on cards, magnetic tape, or disk.

### Appendix 2: JRØUT Operating Costs

It is hard to provide meaningful or comparative cost data for automated library systems. An excellent paper by Jacob (2) discusses the problem. Computer costs are particularly difficult to estimate because few, if any, installations use exactly the same computer billing algorithm. Even within Chevron Research Company computer charges vary in a complex and not always predictable manner.

In Table 1 computer costs are broken down by type of activity for operation of JRØUT in the RAMIS/Ts mode.

As Table 1 indicates, monthly updating costs are expected to be \$105 for computer-related work. If an additional 5 hours of clerical time is required to prepare for computer updating, total monthly cost is estimated at \$145. This works out to \$1,750/year. The annual survey is approximately \$250 additional for combined labor and computer costs. Thus, for \$2,000/year, Chevron Research Company has an active journal routing system that provides a level of

Table 1. Estimated JRØUT Computer Costs

Activity	UNIT COST	TOTAL COST (per update) <sup>1</sup>
Storage	\$4.00/mo./ disk cylinder <sup>2</sup>	\$ 25.00
Computer Processing	a. 8.75/connect hr	} 25.00 (file maintenance) 25.00 (report formulation)
	b. 0.30/1000 IOs <sup>3</sup>	
	c. 0.25/CPU <sup>4</sup> sec.	
Printing	2.00/1000 lines	15.00
Computer Center Overhead	~10% of computer processing costs	5.00
Clerical Labor	8.00/hr	10.00
Total		105.00

<sup>1</sup> Assuming one update per month. Therefore, for this table cost per update and monthly cost are interchangeable.

<sup>2</sup> Prior to June 1974 cost was \$15/mo./disk cylinder.

<sup>3</sup> IO = input/output occurrences to the computer.

<sup>4</sup> CPU = computer processing unit.

service it simply could not offer using a nonautomated system.

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# New Mexico Provides Free Tape Searches

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■ The University of New Mexico General Library provides free searches of tape data bases for its faculty members. A cooperative service project developed by the library in close cooperation with the University Technology Applications Center is described. Twenty-nine tape data bases are searched, using search

strategies developed by reference department librarians. The cost of these searches is paid from the book budget and two copies of each set of results are sent to the library to be checked into the serials checklist as a continuation. One copy is sent to the researcher.

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IN RECENT YEARS a variety of computer tape data base services has become available for library use. These services are published on tapes by the same commercial and governmental agencies and associations which publish the original hardcopy periodical indexing services, e.g., Chemical Abstracts Service, Institute for Scientific Information, Psychological Abstracts, and NASA. Most of the tapes contain the citations and index entries but not always the abstracts from the periodical indexing services. While the purchase cost is often higher for the tapes than for the hardcopies, depending on the type of lease agreement, the librarian can search an index volume series much faster and more thoroughly on tape than on paper. In addition, a tape-based current awareness service can be provided easily.

Several libraries have started to use these data bases, in a variety of ways, and sometimes with assistance from outside subsidy. Some literature has been produced concerning these computer tapes and their use in library service, and a sample listing of it is appended (1-10). This paper describes the pioneering and experimental computer reference service being provided at the University of New Mexico.

## The Agreement

The University of New Mexico General Library provides free searches of computer tape data bases for its faculty members. A cooperative agreement between the General Library and the University of New Mexico Technology Applications Center (TAC) makes all of the information resources of both organizations fully available for literature searches to support university teaching and research. During the past eight years, in addition to preparing tape literature searches for its customers, TAC

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has continually drawn upon the non-computerized information resources of the General Library. In turn, the new program described here enables the General Library contractually to gain access to TAC's vast file of computerized information.

Each one of these two organizations is able to provide a more complete reference service than could be provided separately. In fact, for the university library, tape literature searches provide a level of personal service exceeding that previously offered. They enable the library to make a significantly greater impact on campus research and teaching than was previously possible.

The Technology Applications Center is part of a nation-wide network of Regional Dissemination Centers established in 1965 by the National Aeronautics and Space Administration (NASA) to provide industry and education with comprehensive access to technical information. Through cooperative and shared purchasing and leasing with the five other NASA dissemination centers, TAC gains access to much useful information in computer tape form. The tape data bases purchased are housed and serviced by a single center for the benefit of the other centers and their customers. The Regional Dissemination Center's data base collection originated with government technical and research development activities, but it has been expanded to include foreign research, economic, sociological, political, and historical studies, as will be listed later in this paper. In addition to the data bases which TAC searches in a batch mode in the NASA centers, it searches other bases in an interactive mode through the University of New Mexico Medical Sciences Library. Contracts with the National Library of Medicine, Systems Development Corporation and the Lockheed Corporation facilitate the interactive searches.

Twenty-nine tape data bases are being searched for the General Library through the NASA centers and the Medical Sciences Library, about half of them through the former and half through

the latter. The North Carolina Science and Technology Research Center at Research Triangle Park and the Knowledge Availability Systems Center at the University of Pittsburgh are the primary NASA centers being used. The arrangements guiding these searches are covered in other parts of this paper.

On campus, in a somewhat differently organized sub-project, the General Library searches the Education Resources Information Center (ERIC) data base. It is maintained without cost to the General Library by the University Computing Center. This is the only tape data base leased by the University of New Mexico and searched directly on the campus, all others are searched through teletype contact with distant centers. The Reference Department provides regular orientation sessions for persons interested in learning to use the ERIC material. An average of 250 topics is searched per month on the ERIC tapes. This part of the reference search program is successful in providing reference service and tape search experience to undergraduate and graduate students as well as to faculty members.

### The Procedure

To an even greater extent than is found in other reference encounters, successful manual or computer literature searches depend upon personal and direct interaction with the user, careful search strategy development, based on detailed discussion, and a good theoretical and practical understanding of the subject to be searched. The General Library Reference Department is the contact point for the tape search service.

The search procedure is as follows:

- The faculty member fills out a special request form and returns it to the General Library Reference Department. The searcher's signature on the form guarantees that he will not reproduce or distribute copies of the information.
- The Science and Engineering Reference Librarian and other reference specialists review the search request,



read background articles, and sample indexes manually on the topic. A determination is made about the search mode, depending upon the complexity of the question, availability of resources, time period covered, etc.

- A conference at TAC to discuss the search includes the faculty member, reference librarian, TAC Assistant Director, and the graduate assistant assigned to this search.

- During the conference, a search strategy is developed, decision is made about the data bases to use, the time period to search, and the subject terms to use in the strategy.

- TAC inputs the search strategy directly to the appropriate information center. That center carries out the search and returns a list of the resulting citations to TAC by teletype or by mail. Search results are printed off-line at the information center.

- With the tape search citations in hand, the TAC graduate assistant locates the hardcopy abstracts of these papers in the General Library. The abstracts are photocopied for study and possible reproduction in the final report, depending on their relevance.

- The TAC graduate assistant evaluates the search results. Often the faculty member who requested the search elects to help him evaluate and organize the material. A more efficient and cheaper search is produced thereby, since irrelevant material can be omitted from the final report.

- TAC prepares the final search report which is a selection of the abstracts found earlier. Arrangement is by the subject categories agreed upon with the faculty member and varies for each report. A table of contents is added. Most retrospective searches are completed within two to four weeks.

- Two copies of each set of retrospective search results are sent to the General Library. The first copy is recorded in the serials checklist and made available for circulation. The second copy is sent to the professor who requested it.

- Recognizing that citations and abstracts are not sufficient for complete

user satisfaction, TAC and the General Library share a dedication to retrieving complete copies of the reports which the faculty member wishes to see. Arrangements are made to charge copy costs to the faculty member or his department, since the library does not provide them free of charge.

Regrettably, financial limitations have required the following service restrictions:

- 1) A maximum of two non-governmental data bases (e.g., *Biological Abstracts* or *New York Times*) or three government data bases may be searched per project.

- 2) A search may cover no more than five years of the subject literature.

- 3) A maximum of fifteen subject terms—usually sufficient—may be used to describe the computer search strategy.

- 4) Each faculty member is permitted to order one retrospective search or a one-year current awareness service.

- 5) Exceptions to these generalizations are permitted only in unusual situations.

## The Record

To start this tape literature search service, on July 1, 1973, the Dean of Library Services sent an announcement letter and brochure to each University of New Mexico faculty member. The mailing included a form to be returned for more information. A press release announced the service to library periodicals and local news media, also. At the time, the General Library set aside \$20,000 of its materials budget to cover the costs of the tape literature searches. The average cost per search has been \$180, covering computer time, direct labor in TAC and the computer centers, the costs of duplicating and binding the report.

The first joint retrospective search report related to the current energy crisis. The search was used in preparing for a systems design study on using hydrogen as an energy source at the Johnson Space Center, Houston. The report, "Hydrogen as a New Fuel and Energy

Source" stimulated wide interest and led to the Technology Applications Center publication of *Hydrogen Energy 1953-73*, which will be updated by a quarterly current awareness service.

After ten months of operation, eighty-three retrospective searches and two current awareness service projects have been carried out. A few faculty members have themselves paid for a second search. The searches and current awareness services cover a variety of subject fields, 53% of them falling in the social sciences and humanities and 47% in the sciences and engineering. Thirty academic departments—about 40% of the university's departments—have been served. Those departments with the largest numbers of searches are Education, Biology, Chemistry, Speech Communication, Geology, and Business Administration.

Four examples of the tape searches that have been carried out are: biology of arid land invertebrates, solar cells of thermo-electric generators, studies dealing with high altitude lakes in the Western United States, futurism.

In November 1973, a tape search user assessment meeting was held. Fourteen faculty members who had ordered literature searches attended this meeting. It revealed that the majority of the searches had been carried out to support research project proposals and course work preparation. Other searches had been carried out in connection with book or journal paper preparation. Overall user comments were quite favorable to the service, and the experiment was judged to be well worth continuing.

Specific recommendations to improve service quality included the following:

- 1) Develop a more readable report format and better quality reproduction.
- 2) At the initial reference discussion, determine any requirement for going beyond the computer data base.
- 3) Provide a list of all data bases available and of the foreign and U. S. journals indexed therein.
- 4) Assist TAC in developing more social science data sources.
- 5) Provide an opportunity for the faculty member to work closely with the

graduate assistant carrying out the search and to evaluate the abstracts found.

University of New Mexico faculty members have received this retrospective search program with great enthusiasm. After receiving his literature search, the Acting Vice President for Research wrote, "This appears to be a superb compilation, well beyond my wildest hopes when I submitted the request. I shall use the compilation during my sabbatical study and expect to be the envy of any molecular physicist who sees it." The current Vice President for Research spoke of the new service: "It would take many months for one person to gather the large and varied assortment of current information which this new service offers." A complete list of the searches is available from the Technology Applications Center. Arrangements have been made to distribute search report copies to other libraries and individuals at the reproduction cost.

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# This Works For Us

## Procedural Guide to Cataloging and Indexing Historical Collections

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■ Pamphlets as primary sources in historical research must be accessed by catalog or index for maximum usage. The step-by-step guide to cataloging *and* indexing pamphlets using the Alan W.

Farley Pamphlet Collection on Western Americana as a model is an easy-to-use research tool for archival personnel and librarians.

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AS HISTORIANS acquire more material to research, the retrieval of historical pamphlet information becomes increasingly pertinent and difficult.

The need for an easy-to-use procedural guide for establishing a catalog/index format for pamphlet collections is imperative. The following discussion is based on such a research tool developed as a laboratory model for the Alan W. Farley Western Americana Collection, Library Division, Department of Western History Collections at the University of Oklahoma. This collection includes books, journals, manuscripts, and pamphlets of Western Americana, primarily of the Great Plains, the Rocky Mountain West and the explorations west of the Mississippi. The catalog/index deals only with the pamphlet materials, the majority of which are rare and

of limited editions, providing library research sources for various areas of study such as philosophy, anthropology, history, archaeology, and other disciplines.

This multi-purpose research tool is useful as a guide for setting up an indexing format for similar collections by providing 1) an index, 2) an itemized listing of contents of the collection by accession number, and 3) a brief bibliography.

Collections on Western Americana are generally closed collections for security reasons and the lack of means to find specific material on demand. The researcher definitely does not have free access to the closed Farley Collection. For this reason, basic catalog information and descriptive information from the title page or cover as well as broad subject headings and added entries were included in the catalog.

The researcher will first consult the index to locate the accessioned main entry. After studying the main entry and deciding whether it describes a pam-

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## Figure 1. Accessioned Catalog

- 141 p. illus.  
1. Kansas—Rice county. I. Jones, Horace.
- 531 Malin, James C.  
The Nebraska question, 1852–1854. Lawrence, Kan., 1953. ix, 455 p.  
1. Nebraska question, 1852–1854. I. Malin, James C.
- 532 Stanley, F.  
cop. No tears for Black Jack Ketchum. Denver, World Press, 1958. 148 p.  
1–2 Author's autograph.  
500 copies printed; cop. 1 is 75, cop. 2 is 394.  
Includes bibliography.  
1. Ketchum, Thomas, 1866–1901. I. Stanley, F.
- 533 Maxwell, William Audley  
Crossing the plains days of '57, a narrative of early emigrant travel to California by the ox-team method. San Francisco, Sunset, 1915. 179 p. illus.  
1. The West—Personal narrative. I. Maxwell, William Audley.
- 534 Toll, Roger W.  
Mountaineering in the Rocky Mountain National Park. Washington, U.S. Dept. of Interior, 1919. 106 p. illus.  
1. Colorado—Rocky Mountain National Park—Mountaineering. I. Toll, Roger W. II. U.S. Dept. of Interior. Rocky Mountain National Park.
- 535 Haley, James Evetts, 1901–  
A Texan looks at Lyndon, a study in illegitimate power. Canyon, Tex., Palo Duro Press, 1964. 256 p.  
1. Johnson, Lyndon Baines, pres., U.S., 1908–1973. I. Haley, James Evetts, 1901–

### Box 30

- 536 Whitman, E. B.  
Map Map of Eastern Kansas by E. B. Whitman and A. D. Searl. Boston, J. P. Jewett, 1856.  
1. Kansas, Eastern. I. Whitman, E. B. II. Searl, A. D.
- 537 Map  
Indexed county map of Texas with a new and original compilation and index designating all post office towns and railroad stations, and giving full postal directions . . . also, an alphabetically arranged list of all railroads in the state, (with the name of the Express Company doing business over each), also, of the counties, lakes, rivers, etc., etc. Chicago, Rand, McNally, 1881.  
1. Texas. I. Rand, McNally & Co.

phlet pertinent to his research, he can then request it by accession number.

This request procedure should prove to be advantageous for the librarian or archival personnel, because 1) it reduces the number of pamphlet requests to a minimum thus saving personnel time, 2) it preserves the collection by minimizing wear and tear on the pamphlets (which though valuable are usually printed on cheap paper), and 3) it provides security control. The researcher will save time in locating information via the index rather than by looking through each pamphlet in the collection. In its original condition, the Farley Collection was inaccessible except by pamphlet-by-pamphlet search.

### Accessioning

The identification process included labeling each document box with the Farley stamp, box number, and contents by accession number. It was necessary to accession each pamphlet as it was ex-

amined. Each pamphlet was accessioned beginning with the number one. This number was penned in with black pen on the upper left corner of the gift plate. Those pamphlets which were too small or valuable and, therefore, had no gift plate were marked with the Farley Collection stamp and the number penned in immediately under the stamp. If a pamphlet was a map with a cover, the word, *Map*, was placed under the accession number. A list of box numbers and contents by accession number preceded the completed catalog/index.

### Catalog

A catalog entry was made for each pamphlet by typing each entry directly in accession number order and form on 8½ in. x 11 in. paper. These sheets then served as the rough draft of the accessioned catalog section (Figure 1).

Since the primary purpose of this guide was not to provide a detailed catalog, only essential cataloging informa-

tion was included. Each catalog entry contained: accession number, author (if there was one), title and alternate titles, author statement, edition statement, imprint, collation (pagination and illustration statement), notes, and tracings. Classification numbers and size were excluded because classification is time consuming and costly and is not justified in this case. In addition, the general public will not use this collection.

Cataloging policies included:

- The main entry was entered by author if one could be ascertained. Initials were not left with open spaces to be filled in with complete first and middle names. Where full names were verified during the compilation of the catalog, initials were changed to show the complete name.

- Birth and death dates were included, if easily accessible as in cases of obviously well-known personalities such as presidents of the United States. Verification was made using *Mansell pre-1956* and *NUC' 1956-* and the public card catalog of the Bizzell Memorial Library, University of Oklahoma. Some birth dates were taken from the textual material of the pamphlets themselves such as personal narratives.

- A title entry was used when no author was found. In many cases, when the descriptive title was informative, it was typed *en toto*, thus providing additional information to the researcher.

If there was more than one author, this information was made a part of the author statement following the title. If the author's name on the title page was with initials and the full name was later verified, this was not made a part of the author statement.

- The edition statement was included when the edition number could be ascertained from the pamphlet. This statement followed the author statement. If there was no author statement, the edition statement followed the title.

- The imprint included place of publication, publisher, and date of publication. "N.p." indicated no place of publication. "N.d." indicated that no date

of publication was included in the pamphlet. Because many of these pamphlets dated back to the early and mid-19th century, it was difficult to determine whether the printer was the publisher or whether the printer was commissioned to print the pamphlet under job order by the author. Private printings were common during that period, adding to the difficulty of identifying the publisher. Therefore, any printing or publishing information that could be found was used in the imprint thus providing the researcher with some means to identify the pamphlet should he wish to obtain further information on printing, or publication.

- If a place of publication was included followed by a date, this meant the author was the publisher.

- Pagination was included to give a general idea of the length of material. Unpaged material was counted and stated, e.g., 16 unp.

- The illustration statement following the pagination indicates there were one or more illustrations. Types of illustrations were not indicated.

- Reprint information was included as a note following the illustration statement, e.g., reprinted from the *Atlantic Monthly*, May 1906.

- "Author's autograph" was used whether the author had only signed the copy or had inscribed the copy to a particular person.

- "Includes bibliography" covered the inclusion of a bibliography whether at the end of the pamphlet, or found elsewhere in the pamphlet.

- If an edition was limited without copy number designation, the following form sufficed: "Limited edition of 500." If the edition was limited and a copy number designated, however, the following form was used: "500 copies printed; this is copy 95."

- The number of copies and number of volumes of an item were placed under the accession number in the left margin.

- Tracings included subjects, author(s), and any name or association of index importance. The use of arabic

numbers in the tracings indicated subjects as with Library of Congress. The use of Roman numerals was for all added entries. If an author was used as a subject, he was not cited as an added entry.

- Added entries for poems and fiction were included. In order to distinguish individual titles of poetry and fiction from subject headings, the title was followed in parentheses by the word, *poem*, for individual titles, *poetry* for a collective title, and *fiction* and *drama*. No other titles were indexed because 1) the titles were too often not related to the subject and 2) many of the titles were lengthy, running more than fifteen words.

- Names of Civil War battles were verified with Carnahan's *4000 Civil War Battles from Official Records*.

### Subject Headings

Studies of various pamphlet arrangements indicate that pamphlet collections are generally arranged by subject. The *Public Affairs Information Service Bulletin* and the *Business Periodicals Index* are arranged exclusively by subject as is the *Vertical File Index*. Since many historical researchers are involved in a study centered on a geographical area, absolute or primary use of the subject headings used by Library of Congress and Sears is not ideal for this type of collection. Therefore, a geographical breakdown as the major basis of indexing followed by subjects used by Library of Congress was used. These subjects are primarily one-word nouns: state—city; state—Indians—specific tribe; state—organization; state—subject—standard subdivision; state—city—subject; state—subject—subdivision of subject.

It is understood that the total collection represents geographic locations within the United States, therefore, the broader area, United States, was used only when pertaining to the federal government.

There are two schools of thought regarding the depth of subject analysis. One school promotes the idea that a

Figure 2. An Illustration of Western Americana

**BURLESQUE STATESMANSHIP;**

OR,

**The Gubernatorial-Senatorial-Editorial  
Conclavorial-Fizzleatorial Coup  
D' Etat.**

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**A Melo-Dramatic, Comico-Tragic-Burlesque**

IN FIVE ACTS.

**BY H. CLAY WRIGHT.**

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"O, but man—proud man!  
Drest in a little brief authority,  
Cuts such fantastic tricks, before high heaven  
As make the angels weep."—*Shakespeare.*  
"Rust, sword! cool blus-hes and Delgrado live,  
Safest in shame!"—*Ibid.*

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LEAVENWORTH, KANSAS:  
PRINTED AT THE CONSERVATIVE JOB OFFICE  
1864.

*Western History Collections, University of Oklahoma*

subject catalog has as its function, identification of all the possible approaches in the subject heading catalog which are pertinent to each topic. Opponents of this school take a more pragmatic approach and advocate that specific subject headings should be indexed only in as much detail as necessary. For this guide, the pragmatic approach was used so that the researcher will not be restricted in his search if broad subject headings are used.

The subject heading, Indians of North America, was not used because all pamphlets on Indians are about North American tribes specifically located in the United States, and there is no need to differentiate among North American Indians, Indians from India, or Indians from South America. Indians are, therefore, geographically separated by large areas such as states. However, when covering material on a specific Indian tribe beyond a limited geographical area, the individual tribal name was used as a subject, e.g., Kansas—Indians—Shawnee and Indians—Shawnee.

When the broad area was the first word of the name of the organization, the area was not repeated; e.g., Kansas Pacific Railroad *not* Kansas—Kansas Pacific Railroad. A subject heading which named an organization which could not be limited to a broad place area was listed directly under the name of the organization, e.g., Union Pacific Railroad.

Inverted subject headings were used to avoid duplication of common words such as *the*, *a*, and *Battle of . . .*, *Economic effects on*, and others, e.g., Arkansas—Pea Ridge, Battle of, 1862 *not* Arkansas—Battle of Pea Ridge, 1862.

Subdivisions used with subject headings were limited to dates, specific aspects of subject headings, and standard subdivisions, e.g., Kansas—Grasshoppers—1874 or Idaho—Mining—Silver. Standard subdivisions used were limited to: addresses, essays, lectures; bibliography; biography; correspondence; description; guide; handbooks, manuals, etc.; legends; personal narrative; pictorial; social life and customs; statistics; views. The standard subdivision "personal narrative" included diaries, journals, notes, personal narratives; reminiscences, sketches. "Addresses, essays, lectures" included essays, and speeches which could follow the author or subject on which the address, essay or lecture was based. The standard subdivision description was limited to a county, town, and other geographical areas, discussion of resources, climate, soil, weather, etc.

History as a subdivision was not used because it was assumed that basically

all of the pamphlets were historically oriented and the subdivision would, therefore, be redundant.

## Index

Each item in the tracings at the end of each catalog entry was penned individually on a 3 in. x 5 in. card with the accession number below it. These cards were then arranged alphabetically to form an index. If an item in the tracing was listed more than once, the additional accession numbers were placed on the same index cards.

"See also" references were eliminated in order that the researcher would not be restricted to the limited headings listed, but would look further for more specific headings.

## Alternative Uses

This form of index and catalog arrangement does not need to be confined to closed collections nor to self-contained collections. The model has several possibilities.

For example, if a large Western Americana collection had several separate pamphlet collections, each could have its own index or all could be placed in a single cumulative index with code arrangements such as F212 for accession 212 in the Farley Collection, D212 for accession 212 in the Drake Collection, etc.

Special historical collections in archives, museums, and academic research libraries could use this format with modifications. Also, public libraries which have special pamphlet collections could make use of this format easily.

Expanding collections could utilize supplementary indexes based upon growth. Each new pamphlet would be indexed upon receipt. If growth is rapid and large in number, a yearly supplement might be added. If growth is at a slower pace, a supplement once every two to three years would be sufficient. Volume One of the Farley Collection index/catalog is the model itself. Subsequent volumes will use the same proce-



dures and format, continuing the numbering and have separate indexes. A cumulative index when all the volumes have been published is anticipated.

The model is being used by the library division of the Department of Western History Collections at the University of Oklahoma and the procedural guide has been used to index other of their collections which are similar to the Farley Collection.

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## The Commonwealth Scientific and Industrial Research Organization in Australia

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■ In Australia the largest government body conducting scientific research is served by a network of sixty-five libraries, widely spaced geographically, and holding unique collections, but linked through a central library. The central library performs many translation, "house-keeping," and information retrieval functions for the cluster. The

research body itself publishes extensively in fields related to agriculture and associated research, while the central library publishes extensively with respect to indexing, abstracting, and documentation of research. The services provided for government research are currently being evaluated with respect to the total information needs of the country.

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**T**HE Commonwealth Scientific and Industrial Research Organization (CSIRO) is Australia's largest scientific body. It is not considered a government department, but a semi-government instrumentality responsible to the Minister for Science. It is financed in part by the Commonwealth Treasury and in part by contributions from primary and secondary industry. CSIRO's inventions may be licensed; and some funds, in the form of royalties, are received from this source. About four-fifths of the budget for 1971-1972, which was seventy-one million dollars, came from the Commonwealth, and about one-fifth from industry, industrial companies, private foundations, and trust funds. The largest trust fund contributing to the CSIRO is the Wool Research Trust Fund. The wheat, dairy, meat, and tobacco interests also contribute funds which come from levies on produce.

### Reorganization

The Advisory Council for Science and Industry was created in 1916 with the prime purpose of collecting information on research being carried on in other countries in pure and applied sciences, with special attention to application to Australia's problems. In 1926, the agency was reconstituted by Parliament as the Council for Scientific and Industrial Research (CSIR). This Council with a staff of forty-one was located in East Melbourne, where a collection of 5,000 volumes had soon been gathered to support the scientific work.

At that time six research centers were established: Division of Animal Health, Division of Plant Nutrition, Division of Plant Industry, Division of Economic Entomology, and the Sections of Forest Products and Food Preservation. Only two of these were located in Melbourne,

the others are located in widely spaced parts of Australia where climate or other factors best suited their operations. Special collections were built up to meet the needs of the laboratory workers in specialized areas, and sometimes materials were transferred from the central collection to meet these needs.

During World War II the work of the CSIR was greatly increased. In 1949 the agency was reconstituted to its present form under the Science and Industry Act and its present name of Commonwealth Scientific and Industrial Research Organization adopted. The principal function is to carry out scientific research for the primary and manufacturing industries of Australia and its Territories. Other powers and functions defined in the Science and Industry Act of 1949 include the training of scientific research workers and the awarding of scientific research fellowships, the making of grants for pure scientific research, the establishment of associations of persons engaged in any industry for the purpose of industrial scientific research, extending grants to these groups. In addition, it performs the testing and standardization of scientific apparatus and instruments and investigations associated with standardization, and, not least, the collection and dissemination of information on scientific and technical matters, and the publication of scientific and technical reports, periodicals, and papers.

The nine members of the governing body are appointed by the Governor General, and at least five of the nine must have scientific qualifications. There are five full-time members and four part-time members, and one of the full-time members acts as chairman. The CSIRO maintains a close liaison with universities and state authorities keeping them informed of active research.

In 1972 there were thirty-four research divisions and four research sections and some group laboratories (1). Within the past three years several reorganizations, regroupings, and consolidations have taken place. The Head Office, formerly located in Melbourne, was transferred to the National Capital,

Figure 1.

This cabin with radio and television communications is used as a fire lookout station. It is constructed in the top of a 200-foot high karri tree, which stands in "The Valley of the Giants" in southwestern Australia.



Canberra, in 1970. There are Regional Administrative Offices in Brisbane, Canberra, Sydney, and Melbourne. CSIRO also maintains the Office of the Counselor (Scientific) in Washington, D.C. Australia is second only to the USSR in its reliance upon the government to perform research and development. The CSIRO presently employs about 2,400 professional scientists and engineers of a total staff of about 7,000. Almost half of its resources are used in carrying out Australia's agricultural research; it does not conduct defense research, medical research, or atomic energy research.

### Publications

In fulfilling the function of the Science and Industry Act of 1949 setting out "the publication of scientific and technical reports," the CSIRO, in conjunction with the Australian Academy of Science, publishes nine research journals (2, 3). The *Australian Journal of Agricultural Research* began its first vol-

ume in 1950. It is published bi-monthly, and the subscription price recently was \$6.00 Australian per year, or \$2.00 Australian per issue. The *Australian Journal of Biological Sciences* issued originally as the *Australian Journal of Scientific Research, Series B: Biological Sciences*, but with volume six, 1953, it attained its present title. The subscription price is \$6.00 Australian per year or \$2.00 Australian per issue, and it is published bi-monthly. The *Australian Journal of Botany* began in 1953, and is published irregularly, some volumes including two, three, or four numbers. Its subscription price is the same as the two journals named above. In 1971 the first *Supplement* was issued. Volumes one to five of the *Australian Journal of Physics* and the *Australian Journal of Chemistry* originally were issued together as the *Australian Journal of Scientific Research, Series A: Physical Sciences*; in 1953 with volume six, they were published separately.

The *Australian Journal of Physics* had four numbers per year through volumes six to seventeen, then six numbers per year, volumes eighteen to twenty-four. In 1966 an *Astrophysical Supplement* to it began. It has the same subscription price as those above. Volumes six to fifteen of the *Australian Journal of Chemistry* included four numbers per volume, volume sixteen included six numbers, and volumes seventeen to twenty-four have included twelve numbers per volume. Its subscription price is \$8.00 Australian per year or \$2.00 Australian per issue. The *Australian Journal of Marine and Freshwater Research*, which began in 1950, issues irregularly. Its subscription price is \$3.00 Australian per year or \$2.00 Australian per issue. The *Australian Journal of Zoology* began in 1953 and is published at irregular intervals. *Australian Wildlife Research* began publication in 1974, and will also be issued irregularly.

In addition to the journals published jointly with the academy, CSIRO publishes *Soil Publications*, issued at irregular intervals, which began in 1953 and covers the geology, geomorphology, soil

Figure 2.

A grass tree near Perth. The trees grow at an extremely slow rate, so that one ten feet tall is unusually old. They withstand the spontaneous bush fires which sometimes occur in the hot summer temperatures.



surfaces, characteristics, and developmental history of various regions of Australia. As an example, number twenty-seven, 1972, sixty-two pages long, discussed soils with saline and sodic properties, and included a colored folded map, as well as many tables.

The *Land Research Series* including general reports of various sections began in 1952. For example, number thirty, 1972, covered the lands of the Aitape-Ambunti Area, Papua, New Guinea.

All requests for publications from overseas should be directed to the Chief Librarian, CSIRO Central Library and Information Services, East Melbourne, Australia. Publications, most of which are unpriced, are usually offered on an exchange basis to other libraries and institutions.

The *Circular* series, on such subjects as water hyacinths to tanning materials, issued from 1918 to 1927, ceasing with number ten. The *Pamphlets* series extended from 1918 to 1942, ending with number 115. These studies included such varying subjects as blowflies, oysters, wool, food composition, timbers, poisonous plants, and potatoes. The *Bulletin* series which began in 1917 has reached

number 287, but recent numbers have appeared very irregularly. This series embraces studies on forestry, food preservation, pastures, agriculture, and entomology.

The first issue of the *Contributions from Herbarium Australiense* made its appearance in 1972.

Two periodicals described as "industrial information periodicals," entitled *Industrial Research News* and *Rural Research*, are published quarterly as liaison publications with various departments contributing. Other liaison publications are film catalogs, guide to authors, annual reports, and subject-oriented reports of the extensive CSIRO activities.

### The Library and Information Center

In 1926, when the CSIR was established, it was recognized that an efficient library and information system was a basic requirement for the research program. The system built around the Central Library and Information Services (CLIS) in East Melbourne today consists of sixty-five library centers working with various divisions and field centers throughout Australia (3). Fifty percent of the total library staff of 170 are professional. The system is decentralized but coordinated.

Many of the special collections built up to serve specific laboratories have now grown to national importance. Two of these are the Canberra Laboratories Library, which serves three major divisions in the agricultural and biological sciences, and the library of the National Standards Laboratory in Sydney, which contains a unique collection pertaining to material measurement, maintenance of standards, and the physical sciences in general.

The resources of CLIS reinforce and supplement the library services of the divisions. CLIS acquires publications which are not held or purchased by other CSIRO libraries due to infrequency of use, high cost, or rarity. Generally, publications which are readily available in the divisional libraries are

not held. Duplications may exist where demand is great. It is policy to acquire scientific and technical material of merit, both current and retrospective, which is not available in the country. CLIS has a deposit store of four and one-half miles of less-used material which is readily available to users.

Exclusive of pamphlets and microform material, the CSIRO library network holds over 1,000,000 volumes. There are 120,000 monographs and 20,000 serial titles. About 6,000 serial titles are represented in some 11,000 subscriptions and the rest are received on an exchange basis. Publications are received from every country in the world. Over 400 titles include abstracting and indexing services, in which *Chemical Abstracts*, *Nuclear Science Abstracts*, and *Water Pollution Abstracts* are included. All libraries in the network follow bibliographical procedures that are standard.

A fully automated ordering system has been in operation for seven years. One operation produces all copies including temporary catalog cards in the central and divisional library catalogs. The annual subscription renewal lists are produced by computer, providing a master list of all titles received by subscription or exchange, including country of origin, supplier, publisher, frequency, price, number of subscriptions ordered, total cost, addresses of suppliers, and which libraries receive the renewals. In the system separate chargings must be provided for over sixty receiving libraries, which adds to the complexity of the operation.

After eighteen months of experimentation a licensing agreement was reached with Chemical Abstracts Service permitting computer searches to be carried on for outside users as well as CSIRO staff. Fifty persons from industry and the academic community were selected by the Royal Australian Chemical Institute to participate. Wherever there is a participant, someone is required to act as a consultant for the construction and maintenance of search profiles—a research scientist, an information scientist,

or librarian. Over 150 subscribers now receive a current awareness service based on *CA Condensates*.

Pilot trials have now been completed using INSPEC tapes and have been offered to users. Trials are proceeding with *BA Previews*, as well as other tape services.

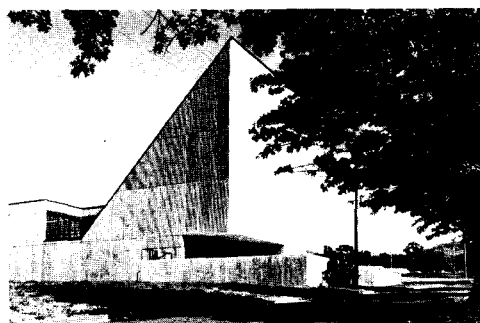
J. A. Conochie (4), as librarian, and Dr. J. A. Allen (5), as user, discussed the performance of CSIRO in meeting the needs of scientists and technologists at the annual meeting of the Library Association of Australia, held in Sydney in 1971.

### Services

CLIS itself publishes several major catalogs and indexes, including *Scientific Serials in Australian Libraries*, which is a printed loose-leaf catalog, edited by Jean A. Conochie, updated quarterly, covering the periodicals and serials held in 432 Australian libraries. *Australian Science Index*, begun in 1957, is a classified monthly index to the Australian scientific and technical literature. About one-fourth of the one thousand-plus copies distributed each month are sent overseas. *CSIRO Abstracts*, begun in 1953, covers monthly abstracts of papers written by CSIRO officers and workers. About 1,623 papers were abstracted in 1972; translations are also listed. Each month about 800 copies are distributed within Australia and about 400 copies are sent overseas. A directory, *Scientific and Technical Research Centers in Australia*, lists all the organizations within Australia which are engaged in scientific research. A new greatly enlarged edition was to be published in 1974 and will supersede the one published in 1969 which was in great demand. A companion volume, *Australian Scientific Societies and Professional Associations*, will be published in 1974 or early 1975.

CSIRO has published *Serial Publications, Monographs, and Pamphlets Issued by CSIRO* (6), and *Technical Journals for Industry*, which has had a wide overseas distribution. As a support group, CSIRO also employs eight trans-

Figure 3. Black Mountain Library. CSIRO



lators who can handle eighteen languages. Free-lance translators are used for languages which the CSIRO staff cannot handle.

Many of the divisions also publish extensively. The Animal Research Laboratories, the Divisions of Applied Chemistry, Applied Geomechanics, Atmospheric Physics, Building Research, Computing Research, and the Forest Products Laboratory publish annual reports and many technical reports. The Divisions of Fisheries and Oceanography, Food Research, Horticultural Research, Irrigation Research, Land Research, and the Marine Biochemistry Unit also publish annual reports, technical reports, and diverse series. Publications of the Division of Mathematical Statistics, Mineral Chemistry, Nutritional Biochemistry, Plant Industry, Protein Chemistry, Soils, Tribophysics, Tropical Pastures, Wildlife Research, as well as the Wool Research Laboratories and the Wheat Research Unit, include annual reports, technical papers, and serials covering the special subjects of the individual divisions. Title changes, cessations, and incorporations occur frequently making it difficult for foreign observers to be aware of the changes on a continuing basis.

In 1972 the National Standards Laboratory published a separate monograph, *The Australian Standards for the Measurement of Physical Quantities*, which replaced all five previous test pamphlets. At that time Australia was beginning to "go metric."

Locations of the various division offices and laboratories have been purposely omitted so that any interested overseas requestors will contact the Chief Librarian, CLIS, and not request material from the issuing offices.

The labor government which has been in power recently in Australia for the first time in twenty-three years has been considering changing policy and machinery for the future direction of science in Australia (7). The *Wall Street Journal* recently noted that no matter who won the impending election, the Australia that was uncertain of its place in the world was gone, and the "thirteen million Australians were becoming aware that they were a nation with some clout" (8). Additionally, the first volume of the report to the Council of the National Library of Australia by the Scientific and Technological Information Services Enquiry Committee, called the *STISEC* report (9), has just been issued. It is reasonable to assume that recognizing the importance of science and of information, the Australians may institute further constructive expansions and added responsibilities for the CSIRO.

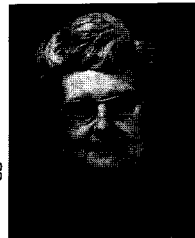
### Acknowledgment

The advice, assistance, and comments of P. H. Dawe, Chief Librarian, CSIRO, are gratefully acknowledged.

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9. Australia, Scientific and Technological Information Services Enquiry Committee / *The STISEC Report: Report to the Council of the National Library of Australia by the Scientific and Technological Information Services Enquiry Committee*, May, 1973. Vol. 1: *Scientific and Technological Information Services in Australia*. Canberra, National Library of Australia, 1973. 40 p.

Received for review Jul 19, 1974. Manuscript accepted for publication Oct 10, 1974.



Doris B. Marshall is an information scientist with Ralston Purina Co., St. Louis, Mo.

## Actions of the Board and Cabinets Jan 16-17, 1975

The SLA Board of Directors and Chapter and Division Cabinets held their Winter Meetings Jan 16-17, 1975, at the St. Petersburg Hilton, St. Petersburg, Florida. This was the first Winter Meeting of the Chapter and Division Cabinets which were established in the revised Bylaws adopted Aug 1974. The Cabinets replace the Advisory Council.

**Membership**—SLA's membership at Dec 31, 1974, reached another all-time high of 8,826 members.

**Committee on Committees**—The Board approved a new definition of the Awards Committee to reflect the 1974 change in SLA Bylaws.

A definition of the new Committee on Networking was approved. The members are Diana Carey, Joyce Bocknek, Vivian Arterbury, Robert Lane, and Edward Strable, chairman.

A definition of the Student Relations Officer was also approved.

**Policy on Speaker Fees and Honoraria**—A revised policy on speaker fees and honoraria was adopted which is to define more clearly the situations for which the Association and its units may pay speaker fees and honoraria to its members for participation in Association programs.

**Conference Advisory Committee**—The Board approved several recommendations from the Conference Advisory Committee which clarify the assignment of a number of responsibilities to the staff member who is Conference & Exhibit Coordinator. In this way members of the local Chapter in the Conference city are relieved of numerous laborious duties.

**White House Conference**—The Joint Cabinets recommended that the SLA Board submit three names to President Ford to serve on the Advisory Commission for the White House Conference on Libraries and Information Service to be held in 1977. In late Dec 1974 President Ford had signed the bill to authorize the White House Conference. SLA had written to Committees in the Senate and House of Representatives to urge

the passage of this bill. The Board later accepted the Cabinet recommendation. It was pointed out that the various states would be holding "mini-conferences" before 1977; Chapters can get in touch with NCLIS to find out how they can get involved in these activities.

**Dues Increase for 1976**—The Joint Chapter and Division Cabinets discussed in detail the dues increase proposed by the Board in Oct 1974; the proposal is to be voted on by members at the Annual Business Meeting in June 1975. The Joint Cabinets recommended that the increases as proposed by the Board be presented for membership approval: dues for Members and Associate Members be increased from \$30 to \$40 and dues for Sustaining Members be increased from \$100 to \$200. The proposed dues increase was first announced in the February 1975 issue of *Special Libraries* (p.99). Articles relating to the dues increase appear in the March, April, and May/June 1975 issues of *Special Libraries*.

**Chapter Activity**—The Board authorized full Chapter status to the Oregon Provisional Chapter which now has 63 members; this growth has occurred since the provisional status was first authorized in 1973.

The Board also authorized full Chapter status for the Kentucky Provisional Chapter which now has 36 members. Its provisional status was authorized in 1972.

Formation of a Memphis Provisional Chapter was authorized as a result of a petition submitted by SLA members in the Memphis area. Ronald R. Sommer (University of Tennessee Center for Health Sciences, Memphis) is president. The region encompassed by this new Provisional Chapter is central and western Tennessee, northern Mississippi and eastern Arkansas.

**Future Meetings**—Because hotel space will not be available as expected, the Winter 1976 Meeting has been transferred from Connecticut to Cincinnati, Ohio. The dates remain unchanged for Jan 29-31, 1976.

The Winter 1978 Meeting will be in Indianapolis on Feb 2-4, 1978.



**Student Groups**—The establishment of an SLA Student Group at Columbia University School of Library Service has been approved.

**ASIS**—The SLA Representative to ASIS presented a proposal to clarify the purpose, format and content of ASIS and SLA sponsored sessions at each other's Conferences. The Board approved the proposal to be effective immediately. The ASIS Representative to SLA will present the same proposal to the ASIS Council for approval at its next meeting.

**Continuing Education**—The chairman of the Education Committee attended an implementation meeting in Oct 1974 on the

NCLIS Continuing Education Project. The CLENE (Continuing Library Education Network and Exchange) program was discussed as a practical program. The SLA Board accepted the recommendation of the Education Committee chairman to endorse the CLENE plan. The Board directed the Education Committee to continue as the SLA Representative in implementing the CLENE plan.

**Research Committee**—The Board authorized funds for preparation of a state-of-the-art review on "The Special Librarian as a Supervisor or Middle Manager." The author is to be selected by the Research Committee.

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## Report from Florida

The Florida Chapter held an all-day Workshop on Federal Documents Jan 15 in St. Petersburg to coincide with SLA's Winter Meeting.

Wellington Lewis (Superintendent of Documents) and William Knox (director, NTIS) discussed publication, distribution and bibliographic control of federal documents through GPO and NTIS. George Pughe (Congressional Information Service) spoke on micropublication of federal documents: government and commercial.

After lunch, distribution and bibliographic control of agency publications, including tape services, were discussed by Sara Thomas (director of library and information

systems, EPA) and Elsa Freeman (director of library and information systems, HUD). Also speaking to the subject were Melvin Day (deputy director, National Library of Medicine) and Chuck Hoover (National Institute of Education).

The workshop closed with three concurrent circles of information on management of documents in academic, public and special libraries. Jo Kennedy (Florida State University, Strozier Library), Linda Wyman (Tampa Public Library) and Mary Lou Stursa (Florida Division of Natural Resources) served as group leaders. The various speakers also served as resource persons for the circles of information.

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## SLA Member on Depository Library Council

Ruth S. Smith (chairman, SLA Government Information Services Committee) has accepted an invitation from T. F. McCormick, Public Printer, for membership on the Depository Library Council to the Public Printer. Mrs. Smith was nominated by Special Libraries Association.

The Council was established to obtain input and information on ways to improve the support afforded libraries, particularly the depository library program.

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## Errata

**Phoebe Hayes**, director, Bibliographical Center for Research, Denver . . . now Supervisor, Library Development Services, Colorado State Library, Denver.

## Washington Letter February 14, 1975

### Copyright

The copyright revision bill did not pass in the last Congress because there was not time for the House to act after Senate approval. The bill was reintroduced on January 15 as S.22 by Sen. John McClellan (D. Ark.), chairman of the Senate Judiciary Committee's Subcommittee on Patents, Trademarks, and Copyrights. Passage by the Senate is anticipated before the summer recess. A companion bill, H.R.2233, was introduced in the House on January 28 by Rep. Robert Kastenmeier (D. Wis.), chairman of the House Subcommittee on Courts, Civil Liberties, and the Administration of Justice. House hearings are planned for later in the year.

In the meantime, under the auspices of the Copyright Office and the National Commission on Libraries and Information Science, efforts are being made to find a solution to the photocopying problem which will be satisfactory to both librarians and copyright owners. Discussions between the two groups were initiated at a meeting held at the Library of Congress on Nov 16, 1974. Co-chairmen are Barbara Ringer (Register of Copyrights) and Frederick Burkhardt (chairman of NCLIS). As a result of this meeting, a Working Group of twelve with four alternates was selected to formulate proposals for the consideration of the whole group. The six persons selected to represent the library community are William North and Edmond Low (ALA), Phillip Brown and Stephen McCarthy (ARL), Frank McKenna (SLA), Julius Marke (American Association of Law Libraries), Robert Wedgeworth (ALA) and John McDonald (ARL) are the alternates for the library group. The six persons selected to represent the publishers and authors are Albert L. Batik (American Society for Testing Materials), Michael Harris (Wiley-Interscience Div., John Wiley and Sons, Inc.), Irwin Karp (Counsel, The Authors League), Richard L. Kenyon (American Chemical Society), Charles Lieb (Paskus, Gordon and Hyman) and Bella Linden (Linden and Deutsch). Alex Hoffman (Doubleday and Company) and Paul Zurkowski (Information Industry Association) are alternates.

### Federal Budget Reductions FY 1975

If the President's planned budget recisions are approved by Congress, library funding for fiscal year 1975 will be reduced by \$52,225,000. Public library programs would be reduced by \$26,749,000 and school library resources funds would be reduced by \$5 million. Funds for college library resources, undergraduate instructional equipment, training grants, and demonstration programs are completely eliminated, effectively terminating these programs.

Under provisions of the Congressional Budget and Impoundment Control Act of 1974 (P.L.93-344) Congress has 45 days in which to act on the President's proposed recisions. Approval by both the House and Senate is necessary before the recisions can become effective. If either body takes no action, the funds as appropriated by the Congress must be released. Details of the proposed recision and the President's justification for the proposal appear in the *Federal Register*, Feb 6, 1975, v. 40, p.5696-5697.

### GPO Document Distribution

In an effort to deal more effectively with continuing problems of document distribution and increasing costs of congressional printing, the Joint Committee on Printing has appointed a library specialist, a microfilm publishing specialist, and an additional research assistant to its staff. The new staff members are Bernadine A. Hoduski, formerly librarian of the U.S. Environmental Protection Agency, Region VII; Edward Stiles, formerly Senior Editor with *Encyclopaedia Britannica*; and Barbara Jones, formerly associated with Peat Marwick Mitchell & Company. The new appointees will focus on GPO problems.

Of possible interest to librarians and federal government document users in general is the recently released General Accounting Office *Report to the Joint Committee on Printing on Pricing of Publications Sold to the Public*, Nov 19, 1974 (no.B-114829). Address orders to General Accounting Office, Room 4522, 441 G Street, N.W., Washington, D.C. 20548. Price: \$1.00.

Ruth Fine  
Washington, D.C.

## PUBS

(75-048) **Annual Review of Information Science and Technology.** v.9. Cuadra, Carlos A., Ann W. Luke, and Jessica L. Harris, eds. Washington, D.C., American Society for Information Science, 1974. ii,457p. \$22.00 LC 66-25096 ISBN 0-87715-209-8

This review describes the developments and trends in the field of information science during the past year.

(75-049) **The Schools and Group Identity: Educating for a New Pluralism.** Herman, Judith. New York, Institute on Pluralism and Group Identity of the American Jewish Committee, 1974. xi,78p. \$1.75.

The role of schools in meeting the demands of diverse forms of group identity is explored.

(75-050) **Studies in Library Management.** v.2. Holroyd, Gileon, ed. Hamden, Conn., Linnet Books, 1975. 167p. \$10.00 ISBN 0-208-01357-1

Contains eight papers which discuss recent developments and trends in management theory and practice.

(75-051) **A Handbook of Comparative Librarianship.** 2d ed. Simsova, Silva and Monique MacKee. Hamden, Conn., Linnet Books, 1975. 548p. LC 74-14856 ISBN 0-208-01355-5

This revised edition of the original text is geared to students and librarians concerned with the international implications of the profession.

(75-052) **Journal of Field Archaeology.** v.1 (nos. 1/2). 1974. Boston, Boston University for The Association for Field Archaeology. \$25.00 per year.

The readership of this journal will be comprised of field archaeologists, historians, and anthropologists dealing with primary interpretation of excavated material.

(75-053) **Guide to Reference Sources in the Computer Sciences.** Carter, Ciel. New York, Macmillan Information, 1974. xi,237p. LC 74-13745 ISBN 0-02-468300-0

A selected, yet extensive, survey of literature of the field.

(75-054) **Medical Information Network for Ontario: Determination of Need.** London, Ont., Canada, School of Library and Information Science, University of Western Ontario, 1973. xiv, 382p.

This report contains the results of formal research into the need for an information network. The project was supported by the Ontario Department of Health under Demonstration Model Grant D.M. No.27.

(75-055) **The National Faculty Directory—1975.** 5th ed. 2v. Detroit, Mich., Gale Research Co., 1975. viii; 2327p. \$85.00 ISBN 0-8103-0652-2

An alphabetical list of approximately 435,000 members of the teaching faculty at United States and selected Canadian institutions. Information includes name, department, institution name, and street address.

(75-056) **Programs for Network Analysis.** Walton, H. and C. Staffurth, eds. Devon, England, NCC Publications, 1974. £5.20 (UK net) ISBN 0-85012-124-8

This volume supplies an overall view of the technology commercially available to network analysts in the U.K. The book was prepared by Intermet (U.K.) and the British Chapter of the International Management Systems Association with the aid of Loughborough University of Technology.

(75-057) **Classification Scheme for Illinois State Publications: As Applied to the Documents Collection at the Library, University of Illinois at Chicago Circle.** Makata, Yuri and Michele Strange. Champaign, Ill., University of Illinois, 1974. ii,39p. \$1.00 ISSN 0073-5310

This is number 116 in the Occasional Papers series of the Graduate School of Library Science, University of Illinois.

(75-058) **Books in Clinical Practice 1971-75: An Annotated List for Medical Practitioners Indexed by Subject and Author.** West, Kelly M., Ruth W. Wender, and Ruby S. May. Reprinted from *Post Graduate Medicine* 56(no.7) (Dec 1974). Single copies free.

List includes 516 volumes. Available from the Office of Publications Management, National Library of Medicine, 8600 Rockville Pike, Bethesda, Md. 20014.

(75-059) **Equal Opportunity in Housing: A Bibliography of Research.** 2d ed. U.S. Department of Housing and Urban Development Library, comp. Washington, D.C., U.S. Government Printing Office, 1974. iii,34p. \$85

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## Williams & Wilkins

On Feb 25, 1975, the Supreme Court divided 4-4 in the copyright infringement case of Williams & Wilkins with Justice Blackmun abstaining. Therefore, the judgment of the U.S. Court of Claims against Williams & Wilkins stands. Because the Supreme Court divided there will be no opinions published.

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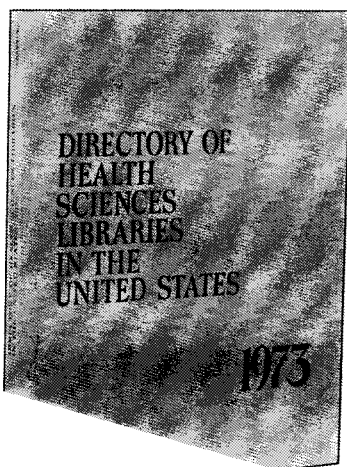
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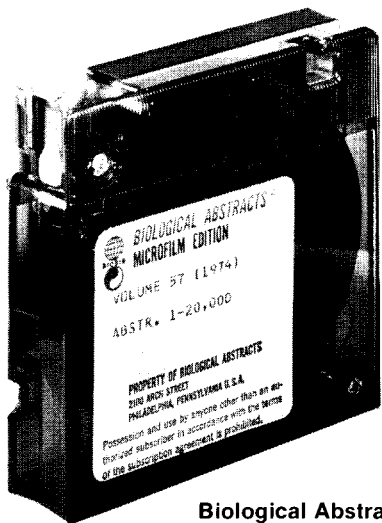
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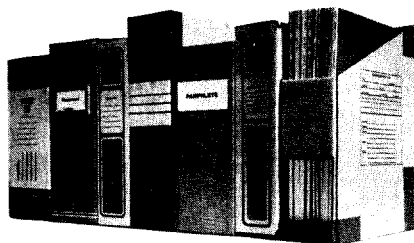
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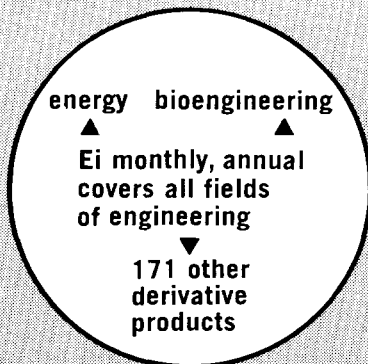
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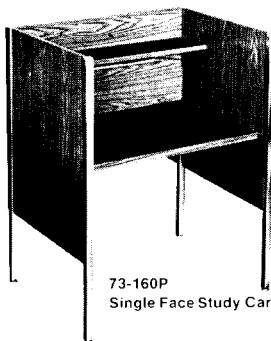
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# '75 NCC PREVIEW

## A PROGRAM OF HIGH RELEVANCE

As preparations for the 1975 National Computer Conference, May 19-22, reach the final stage, one thing is clear: this will be the most comprehensive and relevant data processing conference and exposition ever held on the West Coast. More than 400 industry leaders and experts will probe a wide range of topics with special emphasis on problems and solutions as they impact current technical, economic, and social issues.

As detailed in the '75 NCC Program Booklet, some 90 sessions will cover critical topics in three major areas . . . Data Processing Methods and Applications, Science and Technology, and Interaction with Society. In the Anaheim Convention Center's 230,000 square feet of exhibit space, thousands of products and services will be displayed by more than 250 organizations, permitting on-the-spot "hands-on" evaluation and comparison.

The conference opens May 19 with the NCC Keynote, Prof. Jay Forrester of MIT, discussing computer modeling of social systems with special reference to forces underlying current inflationary trends. The program and exhibits, featured speakers, special events, and social activities

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will make this year's NCC an imperative for data processing specialists, computer scientists, users, administrators, and educators.

## A SPECTRUM OF PRODUCTS AND SERVICES

Virtually every type of data processing technology, product, and service will be represented in displays and demonstrations at Anaheim. More than a thousand technical, marketing, and management representatives will be on hand to answer questions and supply technical and commercial data. NCC will be a showcase of mainframes, minicomputers, data communications systems, displays, terminals, memory systems, software systems, test equipment, time-sharing services, and much more . . . many shown for the first time.

## NCC PROGRAM: CHALLENGES AND SOLUTIONS

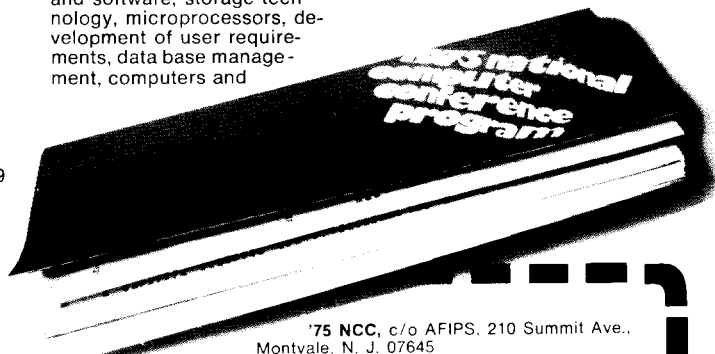
Rapid advances in computer technology and interaction of these developments with users and society will be analyzed during the '75 NCC program. The program will cover such relevant areas as the interaction of computer hardware and software, storage technology, microprocessors, development of user requirements, data base management, computers and

management, health care, banking, and computer-communications networks.

Detailed information on these program areas and others, plus additional aspects of the conference, are covered in the '75 NCC Program Booklet, available in advance to all full-conference preregistrants. Included are abstracts of each session, lists of chairmen and participants, a pullout schedule of sessions and events, a rundown on special activities, and general NCC information.

## ROUNDING OUT THE PROGRAM

A variety of high-interest special sessions and activities will round out the NCC program. These will include a special Pioneer Day program on Wednesday, May 21, to honor the team that was associated with Dr. John von Neumann at the Institute for Advanced Study, Princeton, N. J., presentation of SHARE's SILT Report describing projected demands on the data processing industry for 1980-1985, plus featured speakers, luncheons, a special NCC night at Disneyland, and others.



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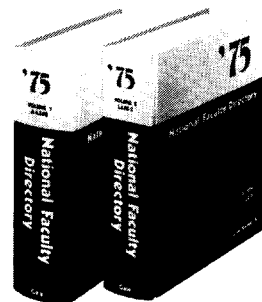
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