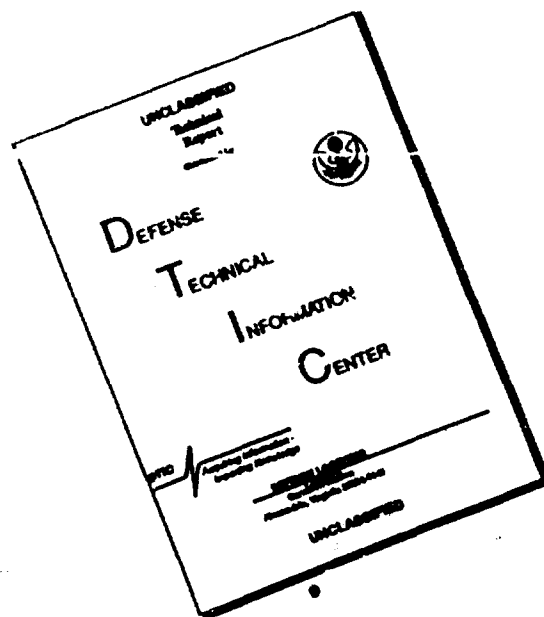


DISCLAIMER NOTICE



**THIS DOCUMENT IS BEST
QUALITY AVAILABLE. THE COPY
FURNISHED TO DTIC CONTAINED
A SIGNIFICANT NUMBER OF
PAGES WHICH DO NOT
REPRODUCE LEGIBLY.**

PEARL -- THE AUTOMATED PERIODICALS CONTROL SYSTEM

Cecily J. Surace*

The Rand Corporation, Santa Monica, California

Introduction

The Rand Corporation Library decided to re-design its periodicals program when it became apparent the Corporation had plans to install an IBM 360/65 computer and the prospects of continued emulation or simulation of the IBM 1401 Autocder program, originally written in 1964, were bleak. For several years the program had been run under emulation on the IBM 7044 and no one was eager to continue work on it. In addition, the old program was very limited in design and was aimed primarily at eliminating the monthly typing of periodicals renewal lists. It was evident, with over 2,000 active titles totaling over 3,000 copies, a large number of inactive holdings, periodicals routed and filed in various end locations, etc., the library required a more sophisticated program which would eliminate or reduce many of the manual operations and provide for automatic check-in, routing, renewal lists, purchase order letters, inventory and binding control, etc., as well as provide the opportunity to introduce more reference/user-oriented capabilities.

Thus in March 1968 the Computer Sciences Department was contacted and a system analyst and programmer were assigned to work with the Library on a new periodicals program. A review of the literature was started, and trips to local libraries with automated periodicals systems were made. The only constraint was that the proposed system would operate in a batch mode environment.

*Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of The Rand Corporation or the official opinion or policy of any of its governmental or private research sponsors. Papers are reproduced by The Rand Corporation as a courtesy to members of its staff.

ACKNOWLEDGMENTS

The author would like to express her appreciation to Al MacInnes, System Analyst, Virgil Wood, Programmer, and members of the Rand Library staff, especially Sheila Thornton and Anne Beggin for their comments on this paper.

ABSTRACTS

Describes PEARL (Periodicals Automation Rand Library) -- an automated periodicals control system which provides for automatic check-in and routing of periodicals. Instead of using claims cards or lists, the program produces double-column pressure sensitive labels combining check-in and routing in one operation. Negative reporting of non-received items is the basis for automatic update of holdings, rather than positive reporting. Other features are discussed, e.g., automated production of purchase order letters, claims and scrap lists, cross references and notes, etc.

PEARL operates on the 360/65 and controls over 2,000 active periodical titles, 3,000 copies, and 680 inactive titles.

By August 1968 the basic system objectives, requirements, and output formats were well defined. Data collection began in September 1968 and by September 1969 over 12,500 lines of data had been keypunched. Since we were able to save most of the data from the 1401 program's master file, the conversion to the new master was completed in September and became operational in November 1969 producing the Master List, statistical recap sheet, and the renewal list. The old program had been replaced.

By March 1970 the new program was generating purchase order letters for renewals, as well as additional management control reports. The Library also was testing the automatic check-in and routing system in parallel with the manual Kardex and routing systems. In June the manual routing system was dropped, followed by the complete elimination of the manual Kardex system in December 1970.

The Library's major objectives had been achieved in spite of a halt in programming support early in May which forced us to cut our sails. The binding control sub-system, and selected reports were not completed. Fortunately the programmer was able to devote some time to debug problem areas as they developed. Further improvements or refinements to the system will depend upon a happier economic environment.

The PEARL System Programs

The PEARL (Periodicals Automation, Rand Library) System (Figure 1) is written in PL/I and is now operating on the IBM 360/65 OS MVT. The system's objective is to facilitate the processing, routing, and control of the Library's periodicals subscriptions and holdings.

PEARL consists of two major programs (an Update and a Print Generator) and two sort programs which are run monthly to produce the output reports. The Update Program (LB.PS.0310) maintains the master file which contains about 4,000 variable length records ordered by an alpha-numeric six-character

title code which provides for alphabetic arrangement. A record consists of a basic 200-character fixed length portion with a varying number of 54-character fixed length informational fields appended to it. These fields can be added or deleted in entirety or updated individually. The maximum record length is delineated at 5,000 characters. The Update Program generates the Master List, Check-In and Routing Labels, Claims Cards, Error Report, Arrival Data List, Statistics Report, and a Report Generator Work File.

The program requires approximately 300K bytes of core and 408 seconds of CPU. There are over 25,000 I/O's and operating time is one-half hour. Data is stored on six tapes with disc used as temporary storage units. Supporting sub-programs include: LB.PS.0110 -- Detail Sort Program which accepts all punched input containing the month's transactions and produces a sorted work tape; LB.PS.0410 -- Work File Sort Program which sorts the work tape file records for appropriate input to the print generator program; LB.PS.0510 -- Print Generator Program which creates purchase order letters, department renewal, periodicals routing, and receipt notification lists; LB.PS.0710 -- Semi-Annual Reference List Program which produces an inventory printout of all library holdings in three indexes -- alphabetical, subject, language; LB.PS.09.10 -- Special reports program which generates various lists: claims, scrap, cancelled subscription, and inactive status lists, and a vendor activity report.

A brief review of all output reports follows:

Master List. A monthly alphabetical list of periodicals currently in the Rand Library. (Figure 2)

Error Report. Monthly list of file discrepancies. (Figure 3)

Check-In and Routing Labels. Monthly pressure sensitive, two-part labels used for receipt of an item and its routing. (Figure 4)

Predicted Arrival Punch Cards. Monthly claim cards which can be input to the system to indicate non-receipt of an expected item and to create an updated claims list. (Figure 5)

Department Renewal List. Monthly lists of periodicals up for renewal, sorted by Rand department responsible for initiating the subscriptions. (Figure 6)

Subscription Renewal Purchase Orders. Monthly purchase order letters for subscriptions selected to be renewed. (Figure 7)

Receipt Notification List. A monthly listing of notification of receipt of the first issue of a new or renewed subscription. (Figure 8)

Statistics Report. Monthly report showing number and types of subscriptions and costs. (Figure 9)

Claims List. Monthly, cumulative list of all issues not received, in alphabetical order by vendor. (Figure 10)

Arrival Data List. Frequency and pattern data used to compute the expected arrival and volume, issue, date, etc. of periodicals. (Figure 11). Available on request.

Semi-Annual Periodical Reference List. A cross-reference (title, subject, language) index of all periodicals held at Rand. (Figure 12)

Department Periodicals Routing List. Lists titles in alphabetical order by initiating department. Shows cost, and secondary routings. (Figure 13)

Cancelled Subscription List. Shows periodicals cancelled (not renewed) within the monthly reporting period. (Figure 14). Available on request.

Inactive Status Listing. Lists all periodical holdings still in the Library, but whose subscriptions are no longer active. (Figure 15). Available on request.

Scrap List. Lists titles and their retention period if less than 99 years. (Figure 16). Available on request.

Vendor Activity Report. Lists periodicals and costs by vendor, showing number of outstanding claims. (Figure 17). Available on request.

All of the reports listed are new to the Library except for the Department Renewal, Statistics, and Semi-Annual Periodical Reference lists.

The remainder of this paper will discuss some unique aspects of PEARL which have not been seen in the literature on periodical control systems.

Automatic Check-In and Routing System

Several considerations influenced the design of the automatic check-in system, the principal factor being the desire to avoid handling large numbers of punched claims cards which were characteristic of most of the automated (batch) periodicals control systems reviewed.¹ These systems were based on positive notification to the program of receipt of an issue -- hence the need for pre-punched cards showing the volume, issue, and date of the periodicals expected to arrive in a given period.

The position taken by the Rand Library was that since most periodicals have a regular frequency of publication, and since most are received in the expected arrival time, it would be simpler to notify the program of non-receipt of a periodical. To effect this, the system analyst suggested the concept of negative reporting, i.e., a periodicals holdings record of the last issue received would be updated automatically to reflect the latest issue received, unless a claims card was input indicating non-receipt of the item.

Once this concept was agreed upon, the alternatives to handling punch cards were studied. It was felt card files were slow to process and an alternate means had to be provided for identifying the periodicals which did not arrive. A printed listing of expected arrivals would suffice, if appropriately marked, but this left routing of periodicals as a separate operation. At this point the system analyst suggested using a double column of pressure-sensitive labels with pre-printed identification and routing data (Figure 4). This approach, which appeared to satisfy all the objectives (the concept of negative reporting, elimination of daily handling of claims cards, and the merging of check-in and routing steps in one operation) was ultimately adopted.

At the beginning of each month the program produces routing labels, stubs, and a corresponding batch of pre-punched claims cards for the issues

¹ Refer to Selected References at end of paper.

expected to arrive during that month. The stubs and their routing² labels are in alphabetical order by title code. Each stub carries the title code, title, volume, issue, part number, etc., and copy number, and is the portion which is matched against the incoming item. When a match is made, the routing label is pulled and affixed to the issue. At the end of the month, the claims cards corresponding to the stubs with routing labels remaining, are pulled and input to the program along with other transactions for the month. These cards represent items not received, and the program will so record them, and enter the missing issues on the monthly Master List with a "C" indicating they are claim items. At the same time a claims list will be printed including the latest not-received items. The stubs and routing labels will be repeated on the next monthly labels run, along with the new expected arrivals; a complete set of claims cards will be produced. Cards for the previous month are discarded after the claims cards for not-received items are pulled.

The heart of the Automatic Check-In and Routing System is the series of algorithms used to predict the expected arrival period, and the correct volume, issue and part number, date, etc. of each periodical. PEARL's algorithms are based on the frequency and pattern of publication, and the initial, and latest, issue received. Data collected for analysis was derived from the manual Kardex file and in some cases perusal of the periodicals. This data is still being refined, based on experience with the program. Seventeen Default Patterns (Figure 18) or algorithms determine the arrival prediction information. Figure 11 illustrates the arrival data used.

If the predicted information is incorrect, the correct data is entered in red on the stub. At the end of the month this data is entered on a

² Although the program permits routing to individuals as well as departments, most of the routing is to Department Control Centers where subsequent routing to individuals occurs. The impact of undertaking all individual routing has not been investigated.

transmittal form, and if necessary is also checked against the Arrival Data List to determine if the Default Pattern requires adjustment. If an item arrives earlier than expected, the receipt is entered on a transmittal form, and a manual routing slip is prepared.

Our experience indicates that 300 to 350 claims cards are pulled each month, representing less than three percent of the total file. While a large number of claims cards are discarded monthly, the benefit from faster processing, the ability to scan the labels quickly, and the elimination of a separate routing process more than compensates for this "waste" of cards.

In those cases where the expected arrival cannot be predicted, labels are produced showing only the title code, title, copy number, and routing. When the item arrives, the pertinent control data (volume, issue, date of receipt, publication date, etc.) is written in red on the stub, and the routing label is pulled. At the end of the month, the control data is entered on a transmittal form for keypunch to update the holdings on the Master File. There is no automatic updating of these titles as they are updated via positive reporting of receipt. However, the history of the dates of receipt can be maintained in the data base and updated for future use in determining if a prediction schedule for label production is possible.

Currently there are 260 out of 2,407 titles (11 percent) whose arrival or publication pattern cannot be predicted. The Library has accepted the fact that without a manual Kardex to alert to the non-receipt of these titles, the only way to determine non-receipt is to review the Arrival Data List for all "X's" in the IRG (Irregular) column, and then check the Master List for latest holdings. This is acceptable because the titles involved are mostly foreign language, especially Russian, and our experience in claiming has been very poor. If this procedure should prove difficult we can revert to a Kardex for these titles, and the system will print labels directing the checker to the Kardex for entry.

Data Elements

The Periodicals Input Sheet (Figure 19) shows the data elements and illustrates in abbreviated form, the various transmittals used. The data elements shown are self-explanatory, as are most of the codes defined in Figure 20, Periodicals Identification Input Transmittal Codes. Of some interest may be the Transliterate Code which eliminates the need to write the transliterated title on the covers of non-Roman alphabet periodicals, e.g., Russian and Chinese. If "Y" is entered on the appropriate transmittal form, the program will produce an extra label containing the transliterated title which is affixed to the periodical upon receipt, and used to assist in identification and shelving of the issue.

Also of some interest may be the Stub and Routing Label Codes (Figure 21) which appear, as required, on the stubs and in some cases, labels. These codes alert the Periodicals Workroom Staff to specific conditions or actions to be taken, e.g., CA on a stub indicates the label has been reprinted for a delinquent issue; TR indicates there is a transliterated title label to be affixed to the periodical. Other codes such as CI, NR and CL assist the shelvees and appear on both parts of the label.

Cross References and Notes

A very useful capability of PEARL is the provision for entering cross references and notes for display in the Master List and Semi-Annual Reference List.³ The old program had essentially no cross reference capability, and the user was confused because there was no easy way to determine when a periodical had changed title -- all holdings for the periodical, regardless of title changes, were listed as a unit under the latest title. To obtain an accurate history, the user had to look under earlier titles. This situation was compounded by a change in title shelving in 1968 when it was decided

³Notes are displayed in the Master List only.

periodicals should be filed by their original titles and not physically shifted to reflect a title change.

In PEARL, cross references for title changes or mergers provide a way of illustrating all previous titles and holdings under the current title. (Figure 2). If a periodical has undergone several title changes, the history of these changes and the Library's holdings are reflected in stages under each new title up to the current title which reflects all previous history. The program permits up to ten lines of cross references, and ten lines of notes per title.

The notes capability was designed to assist the Periodicals Workroom staff and provide the Reference librarians with the opportunity to enter pertinent information relative to a title. The notes may be used to alert the staff to an action, e.g., "Subscription Sent Direct," or "Staple Pages Together," or "Prior to 1965 Stored at Main Street." Other uses may be to indicate the source of the exchange title, the professional association responsible for the publication, the fact the title is received as a supplement to another subscription, etc.

In designing the cross reference capability the Library hoped it would be possible to include automatic deletion of reciprocal cross reference, when a title was deleted. Unfortunately this was not possible due to the cutback in programming support and the detailed coding required. As a result, when a title is to be deleted, it is necessary to review the Master List to determine if a cross-reference structure exists and to take the appropriate action to correct the file.

Cost Information

As is well known, it is difficult to provide meaningful or comparative cost data. Therefore the very general figures presented are offered to assuage the reader who will feel he has missed something if costs are omitted.

The Library's costs are estimated at \$3,800.00 of which \$2,200.00 represent system formulation costs and the remainder data origination. The Computer Sciences Department's costs were approximately \$21,000 for labor and \$4,000 to \$5,000 for machine costs including keypunch. The machine costs, however, include some production costs and not just development costs. All labor costs exclude overhead or fringe. The monthly recurring costs are approximately \$70.00 for keypunch and \$100.00 for one-half hour of block computer time.

Summary

Before reviewing some of the lessons learned, it may be useful to list some of the benefits derived from PEARL, without elaborating on their full impact. These benefits include elimination of the Kardex through automatic posting of receipt of items, a Master List which shows complete holdings to date, end filing location for periodicals, a claims list which provides faster claims response, automatic routing, cross references, automatic production of purchase order letters for renewals, automatic notification to Purchasing of receipt of the first issue of a new or renewed subscription, departmental routing and cost data, cancelled, inactive and scrap lists, and improved statistics reporting to improve control, etc. There are other benefits, but one which should not be overlooked is the improved morale of the Periodicals Workroom Staff. Their job has been made more interesting through increased job responsibility and decision-making. They receive information from PEARL on a faster basis than the manual system, and must respond faster. In addition, they have been relieved of a lot of dull, routine work.

Lessons Learned

If we had it to do over again, there are several changes we would make. For example, although we specifically considered the user and his needs, PEARL is still more oriented to assisting the Periodicals Staff. The

Master List display may confuse the occasional user. Perhaps two masters should be produced -- one for the staff and one for the user. Or the Semi-Annual Reference List should be expanded and issued more frequently.

The routing program would be redesigned to permit changes and deletions without having to re-input all the routing data for a copy. This problem is aggravated when a title code must be changed -- all the data must be re-input. Fortunately this occurs very infrequently.

It would be useful to have the capability to list all items routed to an individual or department when they are not the primary recipient. The only capability now is a prime departmental routing list. There is no capability to produce a routing list by individual names.

Another desirable capability, and one which could not be completed because of lack of programming support, is the automatic generation of claims letters or postcards. It would also be useful to complete the binding sub-program.

Finally, a thorn in our sides which is irritating but can be lived with, is the fact that a claim item shown in the Master List will also appear as the last issue received if no subsequent issue has been received.

SELECTED REFERENCES

1. Pizer, Irwin H., et al. "Mechanization of Library Procedures in the Medium-Sized Medical Library: I. The Serial Record," Medical Library Association Bulletin, 51:313-338, July 1963.
2. University of California. San Diego. Serials Computer Report. Final Report. May 1964.
Uses pre-punched arrival cards to update holdings.
3. Srygley, Ted F. "Serials Record Instructions for a Computerized Serial System," Library Resources and Technical Services, 8(3):248-256, Summer 1964.
4. Bishop, David, et al. "Publication Patterns of Scientific Serials," American Documentation, 16:113-121, April 1965.
5. University of Illinois. Library Automation Project. A Synopsis of an Automated Library Serials System Plus Instructions for Coding. Appendix II. July 1965. 38p.
Uses pre-punched arrival cards to update holdings.
6. Eyman, Eleanor G., et al. "Periodicals Automation at Miami-Dade Junior College," Library Resources and Technical Services, 10(3):341-361, Summer 1966.
Uses edge-punch cards, but no prediction arrival data.
Cards include routing and shelving information.
7. Stewart, Bruce W. "Data Processing in an Academic Library," Wilson Library Bulletin, 41:388-395, December 1966.
Plans were to use arrival cards to update holdings in the Texas A&M University Library.
8. Lebowitz, Abraham I. "The AEC Library Serial Record: A Study in Library Mechanization," Special Libraries, 58:154-159, March 1967.
Uses arrival cards to update holdings.
9. Hammer, Donald P. Private Communication. December 8, 1967.
Check-in system will "not use the arrival card method, but will use printouts instead."

10. New York State Library Periodicals Control System. Unpublished report.
1968?
Weekly check-in lists. Arrival data is then put into machine-readable form to update holdings.
11. Texas A&M University. Private communication. 1968.
Utilizes an 80 column card with 960 columns of printed data as the arrival card.
12. Roper, Fred W. "A Computer-Based Serials Control System for a Large Biomedical Library," American Documentation, 19:151-157, April 1968.
Uses arrival check-in cards based on elapsed time prediction to update holdings.
13. Fayollat, Jim, and Luck, Don. Summary Report on the UCLA Biomedical Library Control System for Serials. October 1968. 12p.
14. Opstrup, Shirley B. and Klein, Ann S. Journal Control System at Oak Ridge National Laboratory. January 1969. 57p. (ORNL-4314).
Uses arrival check-in cards to update holdings.
15. Grosch, Audrey N. "University of Minnesota Bio-Medical Library Serials System," Special Libraries, 60(6):349-360, July-August 1969.
Uses check-in list which is keypunched daily for updating of holdings.
16. Bosseau, Don L. "The University of California at San Diego Serials System -- Revisited," Program, 4(1):1-29, January 1970.
Reflects changes in UCSD's periodicals system, including the use of an arrival check-in list with subsequent pulling of arrival cards to update holdings.
17. Lasich, Bernard J. Dow Chemical Company. Private Communication.
January 5, 1971.
Punch cards based on predicted lag time. Receipt of journal is recorded on card and used to update monthly holdings list.

TITLE REC CARD DATA
 ACT CODE TYPE NO 13.....20.....25.....30.....35.....40.....45.....50.....55.....60.....65.....70.....75.....80

C03650 SUBSCRIPTION EXPIRED--NO RENEWAL
 C03650 NO SUBSCRIP DURATION WHERE REQUIRED
 C03650 NO ARRIVAL DATA FOR ACTIVE TITLE
 C12500 INVALID OR MISSING RETENTION DATA
 C12000 NO SUBJECT CODE
 C20000 NO PURCH. ORDER DATE WHERE REQUIRED
 C20000 NO SUBSCRIP DURATION WHERE REQUIRED
 C20000 NO VENDOR NUMBER WHERE REQUIRED
 C20000 MORE THAN 1 VENDOR FOR A TITLE
 C32000 NO PURCH. ORDER DATE WHERE REQUIRED
 C32000 NO SUBSCRIP DURATION WHERE REQUIRED
 C32000 NO SUBSCRIP PRICE WHERE REQUIRED
 C32000 NO VENDOR NUMBER WHERE REQUIRED
 C32000 MORE THAN 1 VENDOR FOR A TITLE
 C40500 SUBSCRIPTION EXPIRED--NO RENEWAL
 C41900 NO ID PFC LOCATED;SKELETON REC MADE
 C41900 NO LAST ID DATA LOCATED
 C42600 SUBSCRIPTION EXPIRED--NO RENEWAL
 C47200 NO LANGUAGE CODE
 C47200 NO SUBJECT CODE
 C47200 NO PURCH. ORDER DATE WHERE REQUIRED
 C47450 SUBSCRIPTION EXPIRED--NO RENEWAL
 C51000 SUBSCRIPTION EXPIRED--NO RENEWAL
 C51250 NO LANGUAGE CODE
 C59100 SUBSCRIPTION EXPIRED--NO RENEWAL
 C61100 NO SUBJECT CODE
 C70200 SUBSCRIPTION EXPIRED--NO RENEWAL
 C74200 NO SUBJECT CODE
 C79400 SOURCES SENSITIVE CODE INVALID
 C77000 SUBSCRIPTION EXPIRED--NO RENEWAL
 C26000 NO SUBSCRIP PRICE WHERE REQUIRED
 C41000 SUBSCRIPTION EXPIRED--NO RENEWAL
 C49000 NO SUBJECT CODE
 C54000 SUBSCRIPTION EXPIRED--NO RENEWAL
 C57900 SUBSCRIPTION EXPIRED--NO RENEWAL
 C56000 SUBSCRIPTION EXPIRED--NO RENEWAL
 C70750 SUBSCRIPTION EXPIRED--NO RENEWAL
 C70750 NO PURCH. ORDER DATE WHERE REQUIRED
 C70750 NO VENDOR NUMBER WHERE REQUIRED
 C70750 MORE THAN 1 VENDOR FOR A TITLE
 C70750 SUBSCRIPTION EXPIRED--NO RENEWAL
 C71000 NO PURCH. ORDER DATE WHERE REQUIRED
 C71000 NO SUBSCRIP DURATION WHERE REQUIRED
 C71000 NO VENDOR NUMBER WHERE REQUIRED
 C71000 MORE THAN 1 VENDOR FOR A TITLE
 C90200 SUBSCRIPTION EXPIRED--NO RENEWAL
 C30000 SUBSCRIPTION EXPIRED--NO RENEWAL
 C11700 SUBSCRIPTION EXPIRED--NO RENEWAL
 C30295 INVALID OR MISSING RETENTION DATA
 C30750 SKELETON RECORD UNEXPECTED
 C43000 SUBSCRIPTION EXPIRED--NO RENEWAL

01 DTL

05 01 01010 REF

Reproduced from
 best available copy.

L-05-05-21

ECONOMICS DEPARTMENT PERIODICALS RENEWAL LIST

4- 1-71 PAGE 5

TITLE CODE	TITLE	COPY NO	TOT COP	LIB COP	OTHER DEPT	USERS	VENDOR	RENEWAL DATE	MOS DUR	SUBSCR. PRICE
E15500	ECONOMIC DEVELOPMENT AND CULTURAL CHANGE	1	3				1415466	8 1 71	12	8.00
E15500	ECONOMIC DEVELOPMENT AND CULTURAL CHANGE	2	3				1415466	8 1 71	12	8.00
L17800	LEHET KIT'EI ITONUT BIV'AYUT YISRAEL-ARAV (AIR MAIL)	1	1				0000000	8 1 71	6	6.53

ITEMS COST

*** CURRENT RENEWALS 3 22.53
 ANNUAL RENEWALS TO DATE 18 2,031.50
 TOTAL SUBSCRIPTIONS 214
 TITLES ROUTED 243
 NEW TITLES ADDED 1971 3

The RAND Corporation

1700 MAIN ST. • SANTA MONICA • CALIFORNIA 90406

DATE 11-1-70
REF. NO. 1493-70
1373975

UNIPUB, INC.
POST OFFICE BOX 433
NEW YORK, NEW YORK 10016

Reproduced from
best available copy.

GENTLEMEN:

PLEASE RENEW OUR SUBSCRIPTION(S) TO THE PERIODICAL(S) LISTED BELOW. INCLUDE OUR REF. NO. AND THE LINE 'ATTENTION: LIBRARY (P)' ON ALL ADDRESS LABELS. UNLESS ACKNOWLEDGED EITHER BY RECEIPT OF MATERIAL OR WRITTEN COMMUNICATION, THIS OFFER TO BUY WILL TERMINATE NINETY (90) DAYS FROM THE DATE WRITTEN.

COPIES	TITLE	BEGINNING	
		SUBSCR. DATE	DURATION
1	CERES - FAD REVIEW	1 JAN 71	12 MOS.
2	IMPACT OF SCIENCE ON SOCIETY	1 JAN 71	12 MOS.
1	MEETINGS ON ATOMIC ENERGY	1 JAN 71	12 MOS.
1	NUCLEAR FUSION	1 JAN 71	12 MOS.

VERY TRULY YOURS,

JOHN CULL, BUYER
THE RAND CORPORATION

LB.PS.05.23	LIBRARY PERIODICALS RECEIPT NOTIFICATION LIST	04-01-71	PAGE	1	COPY NO.
	VENDOR				
	P.C. NO				
	NUMBER				
L-0000	999999				01
R-7438	C192768				01
R-7597	0006632				01
R-8081	C192766				01
R-3194	1478517				01
RC-8758	117850				01
RC-8963	0571060				01
RC-9110	0910655				01
RC-9235	1462400				01
RC-9452	0768459				01
RC-9465	0276780				01
RC-9609	0691920				01
RC-9729	0955550				01
RC-9812	1451100				01
RC-9818	1142260				01
1018-70	0442978				01
1019-70	0519100				01
1023-70	0442978				01
1042-70	1278200				01
1174-70	0166500				01
1211-70	0343800				01
1252-70	0466100				01
1336-70	0717432				01
1422-70	1062700				01
1539-71	0072009				01
1544-71	0442978				01
1547-71	0865002				01
1552-71	0449999				01
1554-71	0660100				01
1556-71	0805002				01
1557-71	0913200				01
1558-71	0558300				01
1561-71	1038025				01
1562-71	1209600				01
1566-71	0273819				01
1570-71	0762475				01
1574-71	1340355				01
3001-67	1142300				01
4083-71	1450630				01
5034-71	0442978				01
5160-71	0134900				01
6398-68	0837950				01
6519-68	0442978				01
	BUSINESS STATISTICS				
	COMMUNICATIONS IN BEHAVIORAL BIOLOGY PART A				
	COMMUNICATIONS IN BEHAVIORAL BIOLOGY PART B:				
	ABSTRACTS AND INDEX				
	CIVIL SERVICE JOURNAL				
	TREASURY BULLETIN				
	CURRENT GEOGRAPHY				
	C ESTADO DE S PAULO				
	PEKING INFORMERS				
	VIETNAM				
	INVESTIGATIVE OPHTHALMOLOGY				
	WESTERN FIRE JOURNAL				
	LE MONDE WEEKLY				
	CRY CALIFORNIA				
	ATOMS IN JAPAN				
	NEW MIDDLE EAST, THE				
	WASHINGTON SCIENCE TRENDS				
	ME-SAJE				
	PROGRESS IN CARDIOVASCULAR DISEASES				
	EAST-WEST DIGEST				
	PMI PHOTO METHODS FOR INDUSTRY				
	ASTROPHYSICS AND ASTRONOMY				
	NEW YORK TIMES DAILY				
	NEW YORK TIMES SUNDAY				
	COLLEGE & UNIVERSITY BUSINESS				
	EL ESPECTADOR				
	SUVETSKI VOJN				
	AUTOMATION AND REMOTE CONTROL				
	JOURNAL OF LIBRARY AUTOMATION				
	ABC				
	ARCHITECTURAL RECORD				
	PERIPHERALS WEEKLY				
	CURRENT CONTENTS, LIFE SCIENCES				
	AVIATION WEEK AND SPACE TECHNOLOGY				
	MULTIPHASIC SCREENING NEWSLETTER				
	NEW YORK				
	PSYCHOLOGY TODAY				
	CRIME CONTROL DIGEST				
	JOURNAL OF LATIN AMERICAN STUDIES				
	LE NOUVEL GOSERVATEUR				
	INNOVATION				
	POLITICA Y ESPIRITU				
	WASHINGTON MONTHLY				
	COMPUTERS AND AUTOMATION				
	NUCLEAR INDUSTRY				
	BUSINESS MANAGEMENT				
	EASTERN ECONOMIST				
	FOREIGN SERVICE JOURNAL				

LIBRARY NAME	LIBRARY PERIODICALS CLAIMS LIST	PAGE	04-01-71	P.C	IDENTIFICATION	FREQ	AGE	PREVIOUS
TITLE CODE	PERIODICAL TITLE	VENDOR NUMBER	NUMBER	NUMBER		YR	(MOS)	CLAIM SENT
AC0300	VENDOR NAME NOT LOCATED IN FILE AIP NEWSLETTER				V4,N10,S,10-70 V4,N11,S,11-70 V4,N12,S,12-70 V6,N1,01-71 V5,N12,12-70 V5,N11,11-70 V5,N2,04-71 V6,N4,08-70 03-01-71 V4,N9,01-71 V4,N10,02-71 03-04-71 03-22-71 02-08-71 03-01-71 02-15-71 03-15-71 02-22-71 03-29-71 V9,N7,02-15-71 V9,N8,02-22-71 V25,N1,02-71 V24,N5,12-70 V18,N5,03-01-71 V16,N12,12-70 V16,N11,11-70 V17,N1,01-71 03-71 02-71 01-71 02-71 V12,N3,12-70 N26,5,10-70 02-71 N32C,09-70 02-71 N321,10-70 V3,N43,07-70 V3,N41,05-70 V3,N42,06-70 V50,N1,03-71 V6,N13,01-71 V27,N7,A,12-71 V26,N6,12-70 V26,N5,11-70 01-71 V24,N11,11-70 V5,N2,05-70 V5,N4,07-70 V5,N3,06-70 V24,N26,12-70 V23,N25,11-70 V22,N24,10-70 V11,N3,10-70 V22,N24,10-70	12	2	NONE
AC1400	AIP NEWSLETTER					12	1	NONE
AL1090	AEROSPACE					4	2	NONE
AL1900	AEROSPACE INTERNATIONAL					6	1	NONE
AL7600	AIR FORCE PULICY LETTER FOR COMMANDERS					24		NONE
AL8700	AIR MAIL NEWS FROM LATIN AMERICA					12	1	NONE
A24000	AIRPORT HIGHLIGHTS					52		NONE
A33400	ALLIANCE FOR PROGRESS					52		NONE
A50400	AMERICAN STATISTICIAN					5		NONE
A62600	APPLIED PHYSICS LETTERS					24	2	NONE
A63500	ARAB WORLD					12	2	NONE
A70600	ARMY RESERVE MAGAZINE					10	1	NONE
A73300	ASIAN ANALYST					12	1	NONE
A84500	AUSTRALIAN JOURNAL OF STATISTICS					3		NONE
B01300	BANCO CENTRAL DE VENEZUELA. CARACAS. BOLETIN					6	2	NONE
B02700	BIBLIOGRAFICO BANCO CENTRAL DE VENEZUELA. CARACAS. BOLETIN MENSUAL					12	1	NONE
B07000	BANK OF LONDON & SO AMERICA. FORTNIGHTLY REVIEW					12	2	NONE
B14500	BELL TELEPHONE MAGAZINE					6	1	NONE
B33700	BIORESEARCH INDEX					12	1	NONE
B51600	BUSINESS & COMMERCIAL AVIATION					12		NONE
CC3700	CALIFORNIA ECONOMIC INDICATORS					12	1	NONE
CC7000	CALIFORNIA STATE PUBLICATIONS. MONTHLY LISTING					12	2	NONE
CC9200	CANADIAN FORCES BULLETIN					12	2	NONE
C16200	CENTER FORUM					12	1	NONE
C47000	COMMENTAIRES MATHEMATIQUES UNIVERSITATIS CAROLINA E					4	2	NONE

LIBRARY PERIODICALS -- HOLDINGS AS OF FEBRUARY, 1971

TITLE CODE	TITLE	ISSUES PER YR	MEDIA	STATUS	HOLDINGS HISTORY	INCOMP HOLDGS
A00100	AACE BULLETIN	4	H.C.	ACTIVE	LATEST 02 YEARS RETAINED	
A00150	A3C	312	H.C.	ACTIVE	NOT RETAINED.	
A00160	A4SEES. SOVIET AND EAST EUROPEAN ABSTRACTS SERIES	4	H.C.	ACTIVE	41,07-70 -	
A00181	AEDS MONITOR SYSTEMS	12	H.C.	ACTIVE	10-68 -	
A00192	AEDS JOURNAL	4	H.C.	ACTIVE	V3, N4 -	
A00200	AFMF NEWSLETTER	12	H.C.	ACTIVE	V2, N2, 1968 -	
A00500	A1AA BULLETIN ASTRONAUTICS	12	H.C.	ACTIVE	N1, 1964 -	
A00500	A1AA JOURNAL FORMERLY AFS JOURNAL V29, 1959-V32, 1952 FORMERLY JET PROPULSION V24, 1954-V28, 1958 FORMERLY AFS JOURNAL N56, JUNE 1946-V23, 1953	12	H.C.	ACTIVE	V1, 1963 -	
A00900	A I C C ECONOMIC REVIEW	12	H.C.	NO LONGER REC	V12, N5, 1960 - V20, N23, 1969	
A01400	AIP NEWSLETTER SEE ALSO AMER INST OF PLANNERS, JOURNAL	12	H.C.	ACTIVE	LATEST 02 YEARS RETAINED	
A01500	APA MONITOR SUPSDS WASHINGTON REPORT	12	H.C.	ACTIVE	LATEST 01 YEARS RETAINED	
A01600	APCA ABSTRACTS SEE ALSO AIR POLLUTION CONTROL ASSOCIATION JOURNAL	12	H.C.	CEASED PUBL	V4, N6, 1950 - V15, N9, 02-70	
A01690	APCO BULLETIN	12	H.C.	ACTIVE	V33, N7, 1967 -	
A02000	APM SCIENCE LETTER. SCIENCE AND ENGINEERING	52	H.C.	ACTIVE	N3, 1968 -	
A02100	APR - AFAP REPORT AND RECORD	24	H.C.	ACTIVE	N1, 1968 -	
A02200	APS JOURNAL SUPSD BY JET PROPULSION	24	H.C.	CEASED PUBL	N66, 06-66 - V23, 1953	YES
A02210	ARS JOURNAL FORMERLY JET PROPULSION V24, 1954-V28, 1958 FORMERLY AFS JOURNAL N66, JUNE 1946-V23, 1953 SUPSD BY A1AA JOURNAL	24	H.C.	NO LONGER REC	V29, 1959 - V32, 1962	
A03000	ASTE BULLETIN	4	H.C.	ACTIVE	V11, N1, SPRING, 60 -	
A03900	AV COMMUNICATION REVIEW	4	H.C.	ACTIVE	V1, N1, 1953 -	
A03950	ABSTRACT JOURNAL. SCIENTIFIC & TECHNICAL INFORMATION SEE ALSO RUSSIAN EDITION-REF. 24. OTD VYPUSK NAUCHNAIA I TEKHNICHESKATA INFORMATSIIA	12	H.C.	ACTIVE	N1, 1968 -	YES
A03970	ABSTRACTS OF HOSPITAL MANAGEMENT STUDIES	4	H.C.	ACTIVE	V1, N1, 06-64 -	
A03980	ABSTRACTS OF MILITARY BIBLIOGRAPHY	6	H.C.	ACTIVE	V2, N1, 1968 -	
A04000	ACADEMIE DES SCIENCES COMPTES-RENDUS MEMORADAIRES DES SEANCES	6	H.C.	NO LONGER REC	V234, 1952 - V260, 1965	
A04300	ACADEMY OF MANAGEMENT. JOURNAL	4	H.C.	ACTIVE	V3, 1960 -	
A04450	ACADEMY OF POLITICAL SCIENCE. PROCEEDINGS	4	H.C.	ACTIVE	V29, N1, 1968 -	
A04700	ACAD OF SCI USSR DUAL. ATMOSPHERIC AND OCEANIC PHYSICS FORMERLY ACAD OF SCI USSR BULL. GEOPHYSICS SERIES V1, 1957-V8, 1964	12	H.C.	ACTIVE	V1, N1, 1965 -	
A05000	ACAD OF SCI USSR BULL. GEOLOGIC SERIES SEE ALSO RUSSIAN EDITION AKAD NAUK SSSR. IZV. SERIJA GEOLOGICHESKATA	12	H.C.	NO LONGER REC	N1, 1960 - N12, 1962	

TITLE CODE	TITLE	COPY TOT	LIB	OTHER	USERS	RENEWAL DATE	MOS	SUBSCR. PRICE
		NO	COP	NAME	OP	DEPARTMENT		
E08400	EBONY	1	1	FOWLER, T.		0442978	1	1 72 12 8.00
				MFS BEACH, S.				
				ENGS				
				LIB				
				PRP				
E55400	EMPLOYEE BENEFIT PLAN REVIEW	1	1	D'GRADY, M.		0442978	9	1 71 12 18.00
J35600	JOURNAL OF COLLEGE PLACEMENT	1	1	JENSEN, J.		1074570	7	1 71 12 120.00
P65900	PRENTICE-HALL. LABOR RELATIONS	1	1	JENSEN, J.		1074570	1	1 72 12 114.00
P67100	PRENTICE-HALL. PERSONNEL MANAGEMENT POLICIES AND P	1	1					
S06600	SALARY SURVEY	1	1					
S36500	SOCIAL POLICY	1	1	FOWLER, T.		0671632	1	1 72 12 8.00
W02000	MALL STREET JOURNAL	10	14			0442978	1	1 72 12 32.00

ITEMS	COST
CURRENT RENEWALS	1 120.00
ANNUAL RENEWALS TO DATE	1 30.00
TOTAL SUBSCRIPTIONS	6 300.00
TITLES RGUTED	20
NEW TITLES ADDED 1971	1

LB.PS.05.33

VENDOR ACTIVITY REPORT

2- 1-71

PAGE 1

REFFERENCE NUMBER COST PER COPY COPIES TOTAL COST ***** SUBSCRIPTION DATA ***** OUTSTANDING CLAIMS

VENDOR NAME TITLE CODE PERIODICAL TITLE

VENDOR NUMBER

VENDOR NAME NOT LOCATED IN FILE

0000000

A10590 ANATOMICAL QUARTERLY

23.90

C69070 HOSPITAL MANAGEMENT

4.00

H27100 DIE HEUE GESLLLSCHAFT

15.00

R36650

25.00

TOTALS PER VENDOR 5 TITLES 10.00

ABSTRACTS OF MILITARY BIBLIOGRAPHY

0005700

ABSTRACTS OF MILITARY BIBLIOGRAPHY

25.00

TOTALS PER VENDOR 1 TITLE 25.00

ACADEMIC PRESS, INCORPORATED

0005632

A09600 ADVANCEMENT OF SCIENCE

11.00

A55900 ANALYTICAL BIOCHEMISTRY

150.00

C51000 COMMUNICATIONS IN PLANTVIVAL BIOLOGY PART A

22.50

C51250 COMMUNICATIONS IN PLANTVIVAL BIOLOGY PART B:

10.00

ABSTRACTS AND INDEX

10.00

C52200 COMPUTERS AND MEDICAL RESEARCH

29.00

E01500 ENVIRONMENTAL RESEARCH

25.00

E07700 EXPERIMENTAL EYE RESEARCH

62.00

H40110 HIGH TEMPERATURE SCIENCE

32.00

INTERNATIONAL JOURNAL OF BIOM-MACHINIC STUDIES

17.00

J00010 JOURNAL OF APPLIED MATHEMATICS

22.00

J00020 JOURNAL OF CHEMICAL THERMODYNAMICS

24.50

J00030 JOURNAL OF COLLOIDAL THEORY, SERIES A

32.00

J00040 JOURNAL OF COLLOIDAL THEORY, SERIES B

32.00

J00050 JOURNAL OF COMPUTATIONAL PHYSICS

25.00

J00060 JOURNAL OF COMPUTATIONAL SYSTEM SCIENCES

26.00

J00070 JOURNAL OF DIFFERENTIAL EQUATIONS

24.00

J00080 JOURNAL OF ECONOMIC THEORY

25.00

J00090 JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS

128.00

M39500 MICROVASCULAR RESEARCH

24.00

N46400 NUCLEAR DATA - SECTION A

22.00

N46600 NUCLEAR DATA - SECTION B

18.00

TOTALS PER VENDOR 21 TITLES 919.00

VENDOR NAME NOT LOCATED IN FILE

0007750

A06300 ACTION LIBERAL

15.00

TOTALS PER VENDOR 1 TITLE 15.00

ACTION NEWSPAPER, INC.

0014055

A09250 ACTION

20.00

TOTALS PER VENDOR 1 TITLE 20.00

1

20.00

1

20.00

1

20.00

1

20.00

1

20.00

1

20.00

1

Reproduced from the original source

Table 1
 FREQUENCY - DEFAULT PATTERNS

<u>Category</u>	<u>Frequency Per Year - Per Week</u>	<u>Incls Reg</u>	<u>Default Patterns</u>	<u>Spans</u>	
1	1		Y010000	Years	
2	2		M060000	Months	
3	3		M040000	"	
4	4		M030000	"	
5	5, 6, 7	6	M020000	"	
6	8 thru 20	12	M010000	"	
7	21 thru 24		S011500	1st, 15th ea mon.	
8	25 thru 33		D140000	14 days	
9	34 thru 43		T011020	1st, 10th, 20th ea mon.	
10	44 thru 55	1	52	7000000	7 days
11	56 thru 65	1		5000000	5 days
12	66 thru 125	2	104	4300000	Days
13	126 thru 185	3	156	3220000	"
14	186 thru 245	4	208	4111000	"
15	246 thru 300	5	260	3111100	"
16	301 thru 330	6	312	2111110	"
17	331 thru 365	7	365	1111111	1 day

PERIODICALS INPUT SHEET

DATE _____

TITLE CODE
3 4 5 6 7 8

REC. CARD NO.	TITLE	CODEN NO.
9 10 11 12	15 20 25 30 35 40 45 50 55 60 65 70 75 80	65 70 75 80
0 1 0 1		
0 1 0 2		

REC. CARD NO.	NAME	DEPT.	PROC. CODES
9 10 11 12	DEPT./INIT. DEPT./INIT. DEPT./INIT.	DEPT./INIT. DEPT./INIT. DEPT./INIT.	1 2 1 2
0 5 0 1			
0 5 0 2			

PURCHASE ORDER	P. O. NO.	P. O. DATE	VENDOR NO.	ESTIMATED SUBSCRIPTION PRICE	VENDOR REFERENCE NO.
9 10 11 12	15 20 25 30 35 40 45 50 55 60 65 70 75 80	MO DAY YR	MO DAY YR	NO DAY YR	NO DAY YR
0 7 0 1					

ARRIVAL	FREQUENCY	VOLUME CHANGE FACTOR	ARRIVAL MONTHS	INDEX, TITLE PAGE, T. OF C.
9 10 11 12	13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	MO DAY YR	J F M A M J J A S O N D	F O R
0 9 0 1				
0 9 0 2				

IDENTIFICATION	REC. CARD NO.	VOLUME NO.	ISSUE NO.	PUBL. DATE	END LOCATION	LANGUAGES	SUBJECTS
9 10 11 12	13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	MO DAY YR	MO DAY YR	MO DAY YR	MO DAY YR	1 2 1 2 3 4 5	1 2 3 4 5
0 0 1 0 1							

MISCELLANEOUS	TYPE CARD NO.	SEE FORMERLY	TITLE	REMARKS
9 10 11 12	13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60			
0 0 1 0 1				

Figure 19

PERIODICALS IDENTIFICATION INPUT TRANSMITTAL CODES

PSA CODES

P = Part
S = Supplement
A = Annual
I = Index
B = Binder

SEASON CODES

SP = Spring
SU = Summer
FA = Fall
WI = Winter

STATUS CODES

A = Active Title
C = Ceased Publication
N = No Longer Received
S = See Reference
O = On Order

MEDIA CODES

H = Hard Copy
M = Microfilm
F = Microfiche

END LOCATION CODES

CAT = Cataloging
NRT = Not retained
OC = Oriental Collection
OCL = O. C. Librarian
OD = Order Dept.
OFF = Lib. Manager's Office
PRR = Periodicals Reading Room
REF = Reference Desk
RM12 = Room 12
RR = Reading Room - Not PRR
SI = Slavic Library
V = Vault

RETENTION CODES

1M thru 9M = Retained 9 months or less
01 thru 98 = Retained 1 year thru 98 years
99 = Retained Indefinitely

BINDING CODES

B = Bind per Instructions
U = Leave Unbound
P = Pre-Bound by Publisher

DELIVERY CODES

S = Surface Mail Delivery
A = Air Mail Delivery

CLAIM CODES

Y = Claim if not received when due
N = Do not claim if not received when due

LABEL CODES

Y = Routing labels to be made for expected arrivals
N = No routing labels generated by program

TRANSLITERATE CODES

Y = Title is transliterated
N = Title is not transliterated

HOLDINGS BREAK CODE

Y = Holdings are incomplete
N = Holdings are complete

STUB & ROUTING LABEL CODES

I.D.	SOURCE OF CODE		CODE	MEANING	SUBS. LABEL		SUBS. LABEL		OTHER ACTION
	P.C. ARS.	REC. ARS.			STUB LABEL	LINE LABEL	FO. ARS.	REC. ARS.	
		CLM REC.	CA	LABEL IS FOR CLAIM ARRIVAL	X				IF RECEIVED - LINE GOT ENTRY ON CLAIMS LIST
		QUICK ARR. NOS.	GA	LABEL IS FOR GUESSED ARRIVAL	X				ANALYZE FAST ARRIVALS CHG. TO RES
		IRREG. ARR. NOS.	IA	LABEL IS FOR IRREGULAR ARRIVAL	X				✓
		ERR. ARR. NOS.	EA	LABEL IS FOR ERR. LATELY ARRIVAL	X				MARK STUB WITH RED X
		ERR. ARR. NOS.	∅∅	LABEL FOR 1 ST ISSUE OF NEW SUBSC.	X				VERIFY
		END ALL SUBS. DATA	SR	LABEL FOR 1 ST ISSUE OF SUBSC. RENEW.	X				IF ALL REC. INPUT CLAIM
		TRANS. CODE	CC	LABEL IS FOR CANCELLED COPY	X				VERIFY
		PROC. CODE	TR	ITEM HAS TRANSLITERATED TITLE	X				APPLY TRANSL. TITLE STUB TO ITEM
		PROC. CODE	CI	LABEL IS FOR CURRENT ISSUE	X				APPLY CURRENT ISSUE LABEL
		PROC. CODE	FB	TITLES TO BE FILED IN BINDER	X				FILE ITEM IN BINDER
		PROC. CODE	RE	STEM TO BE ROUTED IN ENVELOPE	X				ROUTE ITEM IN ENVELOPE
		PROC. CODE	ML	MASTER LIST HAS ADD'L INSTR.	X				SEE MASTER LIST
		PROC. CODE	PB	ITEM SHOULD ARCHIVE PRE-BOUND	X				VERIFY
		PROC. CODE	ME	ITEM SHOULD BE MICRO-FILM	X				VERIFY
		PROC. CODE	NR	ITEM NOT RETAINED AFTER ROUTING	X				DISCARD ISSUE IF RETURNED
		PROC. CODE	CL	LABEL IS FOR CLIPPING COPY	X				✓

Reproduced from
 best available copy.

Figure 21