COMPUTER BASED ACQUISITIONS SYSTEM AT TEXAS A&I UNIVERSITY

Ned C. MORRIS: Texas A&I University, Kingsville, Texas.

In September, 1966, a system was initiated at the University which provides for the use of automatically produced multiple orders and for the use of change cards to update order information on previously placed orders already on disk storage. The system is geared to an IBM 1620 Central Processing Unit (40K) which has processed a total of 10, 222 order transactions the first year. It is believed that the system will lend itself to further development within its existing framework and that it will be capable of handling future work loads.

In 1925, the library at Texas A&I University (first known as South Texas State Teachers College and later as Texas College of Arts and Industries) had an opening day collection of some 2,500 volumes. By the end of August, 1965, the library's collection had grown to 142,362 volumes, including 3,597 volumes purchased that year. The book budget doubled in September of 1965, and the acquisitions system was severely taxed as the library added by purchase a total of 6,562 volumes. After one full year under the mechanized system discussed below, a total of 9,062 volumes had been added by purchase. Counting gifts, transfers, and cancellations, the computer actually handled 10,222 order transactions the first year.

The computer-based acquisitions system now in operation was initiated in September of 1966, eleven months after the decision was made to mechanize the process. The library had already experienced successes in computerizing the circulation and serial systems and, because a rapidly expanding book budget had caused the old traditional type of acquisitions system to become unwieldy and seemingly obsolete, it seemed imminent that the installation of a computerized acquisitions system would follow. Furthermore, it was agreed that acquisitions could make use of the computer at no additional cost, since the library was already paying its share of the machine rental costs for circulation and serials.

Following the decision to go ahead with the project of computerizing the acquisitions system, a preliminary survey was made of the literature on the subject, and a plan for approaching the task conceived. Briefly, the plan hinged upon the idea of an automatically produced multiple order form similar to that proposed by IBM (1). It also provided for use of the change card, reported by Becker to be "a unique and very important part of the Penn State System" (2). It further provided for the automatic production of a weekly books on order list or "Processing Information List" similar to that reported by Schultheiss to be in use at the University of Illinois Libraries (3). The plan was written in the form of a proposal which was then sent with an accompanying flow chart to the director of the campus computer center for consideration. The basic proposal for the new system was accepted, and work toward implementation of the system was begun immediately. As was expected, the plan and flow chart had to be altered in some areas as the project progressed.

As a first step, the book order request form was redesigned to serve as a work slip in the verification routine, as a source document for keypunching, and, in the end, as notification to the requester that a requested item had been cataloged. The redesigned request card consisted of a single record form printed on one side of an IBM tab card (Figure 1). The only objection to usage of this form appeared to be that the requester would have no record of his request unless he produced one for himself. However, this form was adopted because it was judged less expensive

ANTIMOR'S LOST IMENTS	First	Names	(100 million - 100 million	De	ot.	Notify
Title		Contractor and			1999 - C. C.	
Volumes [comple	te set] Volume	[only] Fr	lition			
Series:						
Place:	Publisher:			Ye	ar:	
Number of Copies:	List Price:	D	Dealer:			
Date Quoted:	Cat. No.:	Item No.:				
FOR LIBRARY STAFF USE	ONLY]: OWR	L.C. Number			Coll No.	•
		Standing order CBI	LC	CC		
Confirmation Order	·	aland alant				

Fig. 1. Example of Book Request Form

and not as complex as, for example, the five-part form Cox reported in use at the University of Maryland (4).

As a second step, a new 3x5-inch, five-part, continuous purchase order form (Figure 2) was designed especially for printing out orders on the



Fig. 2. Example of Purchase Order Form

IBM 1443 printer. Functions of this five-part order form will be discussed in more detail later in this report. The form may also be traced in the Flow Chart (Figure 3).

PROCEDURES

Requests for library materials are typed on Book Request Forms and sent to the Acquisitions Department of the Library. These request cards are verified in the standard trade bibliographies and sent to the Computer Center for use as source documents in the keypunching procedure. The keypunch operator punches the data according to the Order Card Record Layout (Figure 4), and from this original keypunching two abbreviated main entry cards, referred to as "change cards" (Figure 5), are produced automatically for each item requested. Basic order information is processed through an IBM 1620, and 3x5-inch, five-part, serially-numbered, continuous-form orders are printed out automatically by the IBM 1443 printer. Order information is then stored on a magnetic disk through use of an IBM 1311 disk drive. After the change cards have been interpreted by the IBM 548 interpreter, all parts of the orders, the original request cards, and both change cards are delivered to the Library, where order parts are separated and the originals are mailed to their respective dealers. Parts two and three of the orders are sent to the catalog department for use in the Library of Congress card order procedure. Parts four and five of the orders, the original request cards, and both change cards are filed alphabetically, first by dealer and then by main entry, to await receipt of items ordered.



Fig. 3. Flow Chart of the Acquisitions System at Texas A&I University

4 Journal of Library Automation Vol. 1/1March, 1968



Fig. 4. Order Card Record Layout

Computer Based Acquisitions System/MORRIS

CR

	ACADEMIC FREEDOM CATH UNI			FIDES	1967	DIRECT	14313	10	11/13/67	GEN	
AAHPER	YEARBOOK			AAHPER		10001 1000	00018	10.	10/07/67	HPE	50
AARSLEFF HANS	STUDY OF LANGUAGE ENGLAND 1780			PRINCETON U	1966	MCCLURG	09693	10	18/02/67	ENG	RECD
AAIEA	TEACHER EDUCATION IN AGRICULTURE			INTERSTATE PRINT	1000	DIRECT	10196	20	10/26/6/	AED	RECD
ABAD CARRETERU L	NINEL T FILUSUFIA			COLEGIO DE MEX	1957	STECHERT	10592	10.	10/14/67	MDL	
ABARBANEL CLARA	ANTONIO CADDA IAL			RANDUM	1936	CANNER	04745	10	02/22/6/	ENG	RECD
ABARDA CRISANIU	HANDBOOK OF BOOADCASTING	4		SUCIEDAD MEA	1902	STACEY	10503	10	05/11/67	GEN	RELD
ABDUH MUHAMMAN	THEOLOCY OF UNITY TO BY I MUSAN		-	MU GRAW-BILL	1951	STACET	10593	10	10/14/6/	SPE	
ABEL ELTE	MISSILE CRISIS			LIPPINCOTT	1966	BAT	12565	10	12/01/07	CEN	
ABERIESP	INDIAN AMERICAS UNFINISHED BUS			U DE ORIA	1966	MCCLUPC	12304	10	12/01/01	CEN	9600
ABRAHAM GERALD	RIMSKY-KORSAKOV			DUCKWORTH	1949	CONFIRM	14312	10	11/13/67	CEN	RECU
ABRAHAMS E	ANCIENT GREEK DRESS			ARGUNAUT	1964	DIRECT	12286	10	11/09/67	HST	RECO
ABREU GOMEZ E	CLASICOS ROMANTICOS MODERNOS			BOTAS S A	1934	CONFIRM.	08731	10	05/11/67	MDI	CAT
ABRIL XAVIER	CESAR VALLEJO O TEORIA POETICA			TAURUS	1962	STECHERT	10594	10	10/14/67	MUL	U.I.I
ACCOCE PIERRE	A MAN CALLED LUCY	¥		COWARD MCCANN	1967	MCCLURG	07517	10	03/29/67	FWD	
ACEVEDU EVANIST	TEORIA E INTERPRET DEL HUMOR ESP			STECHERT-HAFNER	1966	STECHERT	10595	10	10/14/67	MDL	
ACHESON E G	PATHFINDER			ACHESON INDUST	1965		09301	10	06/14/67	GFT	CAT
ACHURY VALENZU	ANALI CRI AFEC ESPI SOR F JOSEFA			IMP NAC COLOMBIA	1962	STECHERT	10596	IC	10/14/67	MOL	
ACOSTA JOSE DE	HISTORIA NATURAL MORAL INDIAS			FONDO	1962	STECHERT	05713	10	04/06/67	HST	RECD
ACTON JUHN .	HISTORY OF FREEDOM	PT PER CHIRA PROVIDENCE		BOOKS FOR LIB	1907	DIRECT	07148	10	06/26/67	GEN	RECD
	ACTS OF THE APOSTLES	VOL	31 ONLY	DOUBLEDAY	1967	CONFIRM	09302	10	06/19/67	GEN	RECD
ADAMS CHARLES	CAREER FACTS 1966-67			ADDISON-WESLEY	1966	MCCLURG	05035	10	06/29/67	GEN	CAT
ADAMS ELEANOR B	BIO-BIBL FRANCIS AUTH COLON C AM			ACAD AM FRANC H	1953	DIRECT	10597	10	10/26/67	MDL	RECD
ADAMS FAT G	TEACHING CHILDREN TU READ ED	3	Sint Sons	RONALD PRESS	1963	STACEY	08732	10	09/25/67	FWD	RECD
ADAMS G P	CONTEMPORARY AMERICAN PHILOSOPHY	SET	OF 2 V	RUSSELL + RUSSEL	1962	DIRECT	11215	10	10/21/67	GEN -	14
ADAMS HENRY	GREAT SECESSION WINTER OF 1860-6			BARNES	1962	DIRECT	10598	10	10/14/67	HST	
AUAMS HENRT	HISTORY U S AMER DUR ADMIN JEF M			UNIV OF CHICAGO	1967	B+T	12566	10	12/01/67	GEN	
ADAMS JAMES I	THE FUUNDING OF NEW ENGLAND			LITTLE BROWN	1963	STACEY	09076	10	07/26/67	ENG	RECD
ADAMS DURN K	RARKIETI BEECHER STUWE			IWAYNE	1963	MCCLURG	09694	10	18/02/6/	ENG	RECD
ADAME UTILIAN	TOELAND TOTEL ENTEDATION NEW HOD			DUCCELL	1900	STALET	09075	10	07/17/67	ENG	RECO
ADAMSTIN INHN	EVIEDNALS AND ESSENTIALS			RUSSELL	1.032	DIDECT	06755	10	01/02/67	HSI	CAT
ADAMUS BREMENSIS	HISTORY ARCHBISHOPS HAMBURG-BREM			COLUMBIA UNIV PR	1950	B+T	12567	10	12/01/67	HET	RECD
ADDY GEORGE N	ENLIGHTENMENT IN U OF SALAMANCA		- 14	DURE U PRESS	1966	STACEY	09077	10	08/17/67	HST	RECO
ADELINE JULES .	ADELINE ART DICTIONARY TERMS			UNGAR	1965	MCCLURG	06756	10	07/02/67	GEN	CAT
ADELMAN IRVING	NODERN DRAMA			SCARECRUN PR	1967	DIRECT	10599	10	10/27/67	GEN	RECD
ADELNANN M	RHODES			DOUBLEDAY	1967	8+T	12568	10	12/01/67	GEN	ALCO
ADKISUN W L	COLORADO TO NEW YORK			AMER ASS PET GEU	1966	DIRECT	10197	10	10/07/67	GED	
ADLER ALFRED	SUPERIORITY AND SOCIAL INTEREST			NORTHWESTERN UN	1964	MCCLURG	00205	10	11/17/66	GEN	RECD
ADLER BILL	LETTERS FROM VIETNAM			DUTTON	1967	B+T	12569	10	12701767	GEN	
ADLER IRVING	A NEW LOOK AT GEOMETRY			JOHN DAY	1966	MCCLURG	06758	10	04/10/67	GEN	RECD
ADRIAN EDGAR D	BASIS OF SENSATION	100 10 10 1000		HAFNER	1964	DIRECT	11225	IC	10/21/67	PSY	
	ADVANCES APPLIED MECHANICS	VOL	10 ONLY	ACADEMIC	1967	CONFIRM	10198	10	10/10/67	EN	RECD
	ADVANCES IN AGRONOMY			ACADEMIC PRESS			00001	10	10/07/67	AG	SÚ
	ADVANCES IN APPL MECHAN			ACADEMIC PRESS			00002	10	10/07/67	EN	so
	ADVANCES IN APPL MICROBIOL			ACADEMIC PRESS			00003	10	10/07/67	B10	50
	ADVANCES IN CANCER RESEARCH			ACADEMIC PRESS			00004	10	10/07/67	810	SO
	ADVANCES IN CATAL AND RELATED			ACADEMIC PRESS			00005	10	10/07/67	EN	50
	ADVANCES IN CHEMICAL ENGINEERING			ACADEMIC			04729	10	10/07/67	EN	· SO
	ADVANCES IN CHROMATOGRAPHY			MARCEL DEKKER			10587	10	10/07/67	EN	SO
	ADVANCES IN CHROMATOGRAPHY.	VOL	1 ONLY	DEKKER	1965	CONFIRM	14314	10	11/13/67	EN	
	ADVANCES IN CHROMATOGRAPHY	VOL	2 ONLY	DEKKER	1966	CONFIRM	14315	10	11/13/67	EN	
	ADVANCES IN CHROMATOGRAPHY	VOL	3 ONLY	DEKKER	1966	CONFIRM	14316	10	11/13/67	EN	
	ADVANCES IN CHRUMATUGRAPHY	VOL	4 ONLY	DEKKER	1967	CONFIRM	14317	10	11/13/67	EN	
				2							

. .

Fig. 6. Example of Computer Produced Books on Order List



Fig. 5. Example of Change Card

The computer's role in the program, in addition to its part in the production of orders, is to maintain by disk storage and print out a weekly "books on order" list by main entry (Figure 6). The computer also prints out weekly statements (Figure 7) of encumbrances and unencumbered balances by fund, each department having been assigned a fund code

DEPARTMENT	BUDGET	ENCUMBERED	LIQUIDATED	BALANCE	05/15/67
AGRICULTURAL EDUCATION	185.00	.00	.00	185.00	
AGRICULTURE	1033.00	110.60	201.85	720.55	
ART	1007.00	12.90	1257.65	263.55-	
BIOLOGY	1419.00	965.55	1633.66	1180.21-	
BUSINESS ADMINISTRATION	3358.00	1492.13	3872.98	-2007.11-	
CHEMISTRY	1182.00	385.20	646.19	150.61	
EDUCATION	4399.00	1755.05	1094.34	1549.61	
ENGINEERING	2904.00	1143.60	1938.56	178.16-	
ENGLISH ·	4205.00	1591.00	1463.43	1150.57	
GEDGRAPHY	671.00	1310.75	826.58	1466.33-	
GOVERNMENT	2733.00	1001.85	1356.31	374.84	
HISTORY	3091.00	1666.95	2856.31	1432.26-	
HEALTH AND PHYSICAL EDUCATION	626.00	132.60	215.16	278.24	
HOME ECONOMICS	675.00	429.17	8.92	236.91	
INDUSTRIAL ARTS	891.00	193.57	29.21	668.22	
JOURNAL ISM	312.00	83.40	115.41	113.19	
MATHEMATICS	1114.00	907.85	311.74	105.59-	
MODERN LANGUAGE	1801.00	626.45	978.38	196.17	
MUSIC	1882.00	1214.15	338.92	328.93	
PHYSICS	1494.00	634.30	823.19	36.51	
PSYCHOLOGY	1132.00	582.00	571.60	21.60-	
SOCIOLOGY	739.00	197.45	69.96	471.59	
SPEECH	1192.00	991.00	421.48	220.48-	
GENERAL	26351.00	8557.10	16907.12	886.78	
				1. 	
TOTAL	64396.00	25984.62	37938.95	472.43	

VALUE OF GIFTS AND TRANSFERS 7643.29

Fig. 7. Example of Computer Produced Financial Statement

(Figure 8) for budgetary purposes. The computer also gives credit to the appropriate fund for items cancelled. This accounting is accomplished through the use of one of the change cards mentioned above. The "books on order" list mentioned above is necessarily cumulative to include all new orders processed, since all new requests are checked against this list for possible duplications. This list always provides current information on the status of an order, enabling the user to find out to what stage in the total process a given order has progressed. Non-book materials are differentiated from book materials through use of Form Codes (Figure 9) which appear on the "books on order" print-out.

Code	Department
AED	Agricultural Education
AG	Agriculture
ART	Art
BIO	Biology
BA	Business Administration
CHM	Chemistry
ED	Education
EN	Engineering
ENG	English
GEO	Geography
GOV	Government
HST	History
HPE	Health and Physical Education
HE	Home Economics
IA	Industrial Arts
IRN	Journalism
MTH	Mathematics
MDL	Modern Language
MUS	Music
PHY	Physics
PSY	Psychology
SOC	Sociology
SPE	Speech
GEN	General
GFT	Gifts and Trasnfers

Fig. 8. Fund Codes Used in the Acquisitions System

Form	Code
MICROFORMS	M
FILMS	C
FILMSTRIPS	S
RECORDS	D
TAPES	T
MAPS	A
MANUSCRIPTS	U
SERIALS	P

Fig. 9. Form Codes Used for Non-book Materials

USE OF CHANGE CARDS

If a dealer reports an item unavailable, cancellation data is noted on the first change card, which then is sent to the Computer Center. Here cancellation data is keypunched into the change card and the change card is fed into the computer to remove all information pertaining to the order from disk storage and consequently from the "books on order" list. The second change card is then discarded. If a dealer supplies an item, actual cost and date received is indicated on the first change card, which is then returned to the Computer Center. Here cost and date received is keypunched into the change card and the change card is processed through the computer to record receipt of the item and to adjust the corresponding account if necessary. The second change card then accompanies the newly acquired item through the various stages of cataloging. At the appropriate time during the cataloging routine, the call number is written on the second change card. When the catalog cards are ready to be filed in the public catalog, the second change card is returned to the Computer Center where the call number is keypunched into it. From here this change card, usually in a group of several hundred, is fed into the computer and a list of current acquisitions (Figure 10) is printed out. The second change card then is coded so as to make possible the deletion from disk storage of all information pertaining to an order which has appeared on an acquisitions list for as long as two months after the item has been cataloged. This allows the Catalog Department ample time to file cards in the public catalog, thus reducing the possibility of unintentional duplication. Once deleted, the item no longer appears on the "books on order" list.

USE OF FIVE-PART ORDER FORM

Part one (the original) of the order is sent to the dealer. Part two is sent to the catalog department for use as an order for cards from the Library of Congress. Part three differs from part two in color only and serves primarily as a record of the Library of Congress card order. Part four, with part five and corresponding change cards, is filed alphabetically first by dealer and then by main entry. Part four serves as a report form on which to record dealer reports and other messages pertaining to the status of the item on order. In the event that an order is cancelled, part four is sent to the catalog department as a signal that Library of Congress cards may also be cancelled. Part four is discarded if a claim or cancel procedure is negated by receipt of an ordered item. Part five, with part four and corresponding change cards, is filed in the same manner as part four above. When an item is received and paid for, cost and date received is recorded on this copy of the order. Part five, designated as the Control Copy, then is filed by order number in the library's "control" file for possible use in the identification of items already approved for

10 Journal of Library Automation Vol. 1/1 March, 1968

F.	/G183DS	GARLAND HAM	A DAUGHTER OF THE MIDDLE BORDER PETER SMITH 1960
015.72	/G5896F V1+2	GONZALEZ LUIS	FUENTES DE LA HIST CONTEMP MEX COLEGIO MEXICO MEX 1961
016.37139	97H383P	HENDERSHOT CARL	PROGRAMED LEARNING BIBLIOGRAPHY ED 3 THE AUTHOR MICH 1964
016.519	/IN8B	WOLD HERMAN O	BIBLIDGRAPHY ON TIME SERIES MIT PRESS MASS 1966
016.9	/K953D	KUEHL W F	DISSERTATIONS HISTORY UNIV OF KENTUCKY KY 1965
028.52	/86448	AMER LIB ASSOC	BOOKS FOR CHILDREN 1960-1965 AM LI ASSOC CHIC 1966
029.6	/M1990	MCKERROW R B	ON THE PUBLICATION OF RESEARCH MLA N Y
031.	/W569F	WHEELER WILL A	FAMILIAR ALLUSIONS GALE
056.	/IN25 V3 1963	PAN AM UNION	INDEX TO LATIN AMER PERIODICALS ED 3 SCARECROW 1965
060.	/W893 1966 67		WORLD OF LEARNING 1966-67 ED 17 INTERNATL 1967
110.	/M494E	MELSEN A VAN	EVOLUTION AND PHILOSOPHY DUQUESNE 1965
130.1	/V631B	VESEY GOD N A	BODY AND MIND READINGS IN PHILO HUMANITIES 1965
131.	/K1396P	KANTOR J R	PROBLEMS OF PHYSIOLOGICAL PSY PRINCIPIA PRESS IND 1947
131.3464	/W632I	WICKES FRAN G	THE INNER WORLD OF MAN UNGAR N Y 1959
137.842	/B388R V1 1961	BECK SAMUEL J V 1(ONLY),	RORSCHACKS TEST BASIC PROCESS ED 3 GRUNE 1961
137.842	/B388R V2	BECK SAM J V 2(ONLY)	RORSCHACKS TEST VARIETY OF PER GRUNE 1949
137.842	/B388R V3	BECK SAMUEL J V 3(ONLY)	RORSCHACKS TEST ADVANCES IN GRUNE 1952
150.1943	3 /B78B	BROADBENT D E	BEHAVIOR BASIC BOOKS 1961

Fig. 10. Example of Computer Produced Current Acquisitions List

payment which may no longer appear on the "books on order" list. It further provides official evidence that purchase was duly authorized.

GIFTS AND TRANSFERS

A gift item is processed in the same manner as a purchase except that part one of the order is discarded. An estimate of the value of each title is submitted so that the total value of gifts can be produced automatically for a given period. An item transferred from the Bookstore or any other department of the institution is processed in the same manner as a gift, except that the actual cost of the item is used rather than an estimate.

STANDING AND CONTINUATION ORDERS

A standing or continuation order for a series is keypunched with coded information which causes it to appear indefinitely on the "books on order" list. The two-fold purpose of this is to eliminate the possibility of unintentional duplication and to serve as evidence that the order was authorized. An item actually received on a standing or continuation order basis is processed as a confirmation order and is assigned an order number different from the one assigned the original order. In this way, the item received will appear on the "books on order" list next to the original entry only as long as it takes to catalog the item.

CLEARANCE OF INVOICES AND FINAL ROUTINES

Upon receipt of shipment and corresponding invoice, an item is accepted (if as ordered) and the date of acceptance and cost (as per invoice) is noted on the first change card. This change card is then returned (usually in a group of several hundred) to the Computer Center, where cost and receipt date are keypunched into it. This information is fed into the computer and accurate accounting results. The next printout of the "books on order" list will indicate that the item was received on the date noted. Part four of the order is discarded. Part five of the order, bearing cost and date received, is filed by order number in the "control" file. The second change card and the original request card accompany the book to the catalog department. Book pockets are pasted in the books at this point to accommodate the second change card and, later, the IBM circulation card used by the library's circulation department. At the end of the cataloging routine, the original request card is sent to the requester as notification that the item is ready for use.

DISCUSSION

No attempt has been made to compare costs of the new system to the old. On the surface, however, there appears to be considerable saving in time and clerical personnel. Automatic accounting alone results in a net gain of approximately twenty hours per week in clerical time which can be applied to other necessary manual tasks. Manual typing of orders has been completely eliminated with the use of the computer produced order, resulting in further savings in clerical time.

Limitations of the new system are about the same as those encountered by other mechanized systems, the limiting factors of space in input and electronic storage being most obvious. The present disk storage equipment is capable of storing data on approximately thirteen thousand book orders and this capacity could be doubled with the addition of another disk unit. The problem of disk storage space is not critical at present because removal of order information from storage at two-month intervals after the cataloging process creates additional space for new orders.

Although the new system has definite advantages, perfection was never expected nor does it exist. The human error factor in the book verification and keypunching processes shows up now and then. Experience bears out the fact that output is only as perfect as input. Nevertheless, there has been a noticeable gain in accuracy with the installation of the new system, mainly because the more exacting method of procedure helps in detecting an error before it is beyond retraction. Even keypunching accuracy has been much greater than expected.

CONCLUSION

The new acquisitions system at Texas A&I University does the job that it was designed to do. It has resulted in faster clearance of orders, better control over unintentional duplication of orders, and automatic accounting. It is believed that the system will lend itself to further development within its existing framework and that it will be capable of handling future work loads.

ACKNOWLEDGEMENTS

Much of the credit for the success of the program goes to Dr. J. R. Guinn, Professor and Chairman of the Department of Electrical Engineering. His time in reviewing the original proposal and his subsequent efforts toward the implementation of the project resulted in a workable, practical system. Credit goes also to Mr. Patrick Barkey, former Librarian at Texas A&I University (then known as Texas College of Arts and Industries) for the encouragement he gave to the writer and for the support he gave to the project. Appreciation is extended also to Mr. R. C. Janeway, Librarian at Texas Technological College, for submitting some worthy ideas on design of order forms and on acquisitions procedures in general.

REFERENCES

- 1. International Business Machines: "Mechanized Library Procedures," IBM Data Processing Application Manual (White Plains: IBM, n. d.), p. 11.
- 2. Becker, Joseph: "System Analysis-Prelude to Library Data Processing," ALA Bulletin, 59 (March 1965), 296.
- 3. Schultheiss, Louis A.: "Data Processing Aids in Acquisitions Work," Library Resources and Technical Services, 9 (Winter 1965), 68.
- 4. Cox, Carl C.: "Mechanized Acquisitions Procedures at the University of Maryland," College and Research Libraries, 26 (May 1965), 232.