AUTOMATED LITERATURE PROCESSING HANDLING AND ANALYSIS SYSTEM —

FIRST GENERATION

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ABSTRACT

This report presents a summary of the development and the characteristics of the first generation of the Automated Literature Processing, Handling and Analysis (ALPHA-1) System currently being used by the Library Branch of the Redstone Scientific Information Center (RSIC), an element of the Directorate of Research and Development, U. S. Army Missile Command, jointly sponsored by the Army Missile Command and Marshall Space Flight Center, Huntsville, Alabama.

Descriptions of the computer technology of ALPHA-1 and of the use of this automated library technique in RSIC are both presented.

Each of the subsystems and modules now in operation are covered. While the discussion of various subsystems and their modules is not meant to be exhaustive, it provides a background for the reader who may be interested in adapting a part of or all of the ALPHA-1 System to another computer configuration or in another library environment.

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FOREWORD

The Automated Literature Processing, Handling and Analysis
(ALPHA) System is a development of the Redstone Scientific Infor-
mation Center (RSIC), an element of the Research and Development
Directorate, U. S. Army Missile Command, Redstone Arsenal, Alabama.
RSIC is jointly sponsored by the Army Missile Command and NASA's
Marshall Space Flight Center, and has as its primary duty the fur-
nishing of local information services to the scientists and engi-
neers of both agencies and the organizations which serve them. The
large patron group to be served, their broad spectrum of scientific
interests and the large and growing collection of books, serials
and documents established the climate which led to the development
of ALPHA -- a comprehensive, integrated system which automates the
maximum number of information handling and management functions in
RSIC.

The development of the first generation of the ALPHA System,
ALPHA-1, as an operating ADP library system has resulted from the
cooperative efforts of many individuals. The overall systems concept
was generated by F. E. Croxton, Director of the Redstone Scientific
Information Center, under whose guidance it was developed. Systems
specifications and programmer narratives were prepared by the Informa-
tion Retrieval Study Group, Computer Department, General Electric Com-
pany, Huntsville, Alabama, led by W. J. Wilson. Programming was per-
formed by the Information Retrieval Section, Commercial Programming
Branch, Computation Center, Army Missile Support Command, currently
supervised by C. R. Umstead. [1] Programmers extensively involved were
T. M. English, J. F. Ford, H. B. Lawson, and W. L. Anthony. Both
supervisory and non-supervisory employees of RSIC made significant
contributions in the course of development and implementation; the
efforts of L. J. Cooney and J. F. Bentley who coordinated implementa-
tion are particularly noteworthy.

The initial off-line generation of the system, ALPHA-1, is the system
with which this volume is concerned. Current developmental efforts at
RSIC are directed toward design and implementation of an advanced gen-
eration, ALPHA-2, an on-line system with the same objectives and scope,
but with wholly different operational characteristics and responses.

[1] W. T. Bowen, no longer with the Support Command, formerly held this
position and was also involved in initial programming activities.

Basic elements of the ALPHA System are subsystems for the control of patrons, language and the three basic types of information carriers: books, documents, and serials. Of these, patron control (including serial routing, and security access data); book circulation; book ordering, receiving and cataloging; serials ordering, receiving, binding, holdings and routing; language control; and document inventory are represented by viable operating programs complete with that documentation essential in the local library and computer support groups. Book cataloging and an improved version of the serials module are underway, but with the advent of ALPHA-2, no further local efforts are planned on ALPHA-1.

While existing documentation adequately served RSIC, it was felt that other Department of the Army libraries and information centers could benefit from a more thorough treatment including systems design description, programming data and operating procedures, than was available for purely local use. Consequently; the STINFO Division, Army Research Office made funds available to prepare documentation designed to provide sufficient information to permit the overall system to be easily understood and the entire system or individual subsystems adapted and applied by other installations. More recently this documentation effort has been made a part of the Army Technical Library Improvement Studies (ATLIS), Task 2A, "Automation of Library Services."

Any comments and/or suggestions with respect both to the ALPHA-1 system and to the documentation of it should be addressed to: Redstone Scientific Information Center, U. S. Army Missile Command, Redstone Arsenal, Alabama 35809, ATTN: AMSMI-RBP.

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Chapter 1

INTRODUCTION

1. What is ALPHA

The Automated Literature Processing, Handling and Analysis
(ALPHA) System is a technique for the integrated performance of all
functions of a library that are presently amenable to automation.
In many respects, it is a synthesis of existing techniques and proced-
ures derived from many sources and differs from most contemporary
efforts primarily in scope. In addition to the usual benefits that
accrue from automation, such as economy, timeliness, and increased
accuracy, it is intended that the personnel working in the library
be freed from as many of the repetitive tasks which claim such a
disproportionate share of their time as possible. This is related
to the need to improve quality of service while accommodating in-
creasing demand by means of increased productivity rather than by
increased manpower.

2. Why ALPHA was Devised

Before the environment of ALPHA-1 is clear it is important
that the functions of Redstone Scientific Information Center (RSIC),
see figure 1, and the information activity at Redstone Arsenal be
understood. This makes it possible to visualize the problems faced
by RSIC which serves the scientists and engineers of both the U. S.
Army Missile Command (USAMICOM) and National Aeronautics and Space
Administration, Marshall Space Flight Center (MSFC) and those con-
tractors who are located in the Huntsville area.

a. What is RSIC - Why it was Formed

RSIC is the functional activity resulting from a joint
Army-NASA examination of the need for scientific and technical infor-
mation service in the Redstone-Huntsville area. RSIC thus represents
the combination of the major library activities of Army Rocket and Guided
Missile Agency (ARGMA), Army Ballistics Missile Agency (ABMA), Ordnance
Guided Missile School (OGMS) and NASA into a single agency which serves
all area agencies and coordinates the total library effort at Redstone
Arsenal. It was established by joint agreement between the Army and NASA,
and operates under the guidance and advice of a joint board of four repre-
sentatives from USAMICOM and four from MSFC. Both organizations in turn
contribute to the support of RSIC. This arrangement, which eliminates
duplication and results in more effective service, appears to be unique
among libraries in the government. (OGMS was originally included but
now, as AMMCS, has a separate facility.)

RSIC is divided into four branches: Library, Research, Translation and Information Programs. The Library Branch is further subdivided into three sections: Operations, Readers Service, and Documents which also includes Defense Documentation Center (DDC) Extension Services. This organization is illustrated in figure 2.

RSIC has four major missions. First, through its Library Branch, it provides complete library services to its patrons, serving as a principal source of published and controlled literature on basic and applied research pertaining to development and testing of missiles, rockets, propellants, rocket motors and related items. It obtains and maintains exhaustive holdings in those scientific and technical disciplines for which USAMICOM and MSFC (NASA) have recognized missions.

Second, through the Research Branch, RSIC plans, coordinates and directs scientific and technical literature research surveys for those scientific disciplines in which USAMICOM and MSFC have recognized missions.

Third, through its Translation Branch, RSIC maintains capabilities and liasion service in the most important foreign languages and provides technical and non-technical translation service to USAMICOM and MSFC.

Fourth, and of immediate concern to the present study, through its Information Programs Branch, RSIC plans and conducts investigations, feasibility studies, and tests related to the development of modern information manipulation methods leading to improved information retrieval activities and technical communication techniques.

This report thus contains a description of the efforts of two branches of RSIC; the Information Programs Branch which has responsibility for the design and implementation of the ALPHA-1 ystem and the Library Branch which utilizes the system to perform its primary service mission.

When the abbreviation RSIC is used throughout this report, it will imply specific operation of the Library Branch unless context clearly indicates otherwise.

b. ALPHA-1 Development Environment

What may be the nation's largest concentration of scientists and engineers specializing in a unified group of scientific disciplines is now located in Huntsville. The missile and space vehicle programs

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did not develop near established seats of learning or near another major technological center. The information resources necessary to support the local programs, therefore, had to be developed "from scratch."

RSIC's potential patron group is over 40,000 employees including 7,500 scientific and engineering professionals. Currently its holdings include 125,000 books and bound volumes, 850,000 documents, and a journal subscription list of over 2,500 titles. Some of the requirements for information service imposed upon RSIC have increased over 50% during the last year. Naturally, manpower cannot be added at this rate. In fact, it has been necessary, due in part to Army reorganization and other factors which decreased the number of employees available in the Missile Command, to decrease the number of people performing library functions in spite of the heavy increase in service requirements

3. System Analysis

The ALPHA-1 system is based on the concept that all non-intellectual library operations are parts of an organic whole. This becomes clear upon consideration of the data base and the functions. All operations use the same facts.

Total system analysis revealed that the non-reference activities were by no means insignificant, and led to the conclusion that no effective solution of information retrieval problems was possible in the absence of unified automation of these functions.

Further analysis revealed that the kinds of non-reference activities and the administrative information required in the operation of a library can be classified broadly into two categories: patron and bibliographic.

Patron information includes all qualifying information such as names, social security numbers, addresses, profiles of interest, routing requirements, and security data.

In its broadest sense, the scope of bibliographic information includes all qualifying information relating to items such as books, documents and serials. The data are handled in these three categories. Reasons for this fragmentation include security requirements, physical differences in the media themselves, and the peculiar handling requirements of the three classes of bibliographic items. For example, serials must be circulated and later bound, and documents have stringent requirements for security "need to know." Still, there is a large measure of commonality among these categories; each must be ordered, received, indexed in some manner, and made available to the customer or patron.

In keeping with the concept of a single integrated system, every reasonable effort has been expended in the formulation of ALPHA-1 to develop procedural techniques for handling the various bibliographic entities (books, documents, and serials) in the same manner. Whenever possible, data elements and formats are made similar or identical. Caution has been exercised to prevent attainment of a spurious compatibility that would exist, for example, if "need to know" data were appended to book records where it is not needed.

In the development of ALPHA-1, seven almost axiomatic principles were borne in mind. These were:

Machine readability shall be obtained at the earliest possible time. In general, this is done at the time of ordering or receiving.

Redundant transcription shall be minimized by using pre-punched transaction cards; i.e., feedback shall be used to the maximum extent possible.

Generalizability is required to provide for possible changes in mission requirements. RSIC may grow, shrink or even change emphasis--the system must change with it.

Open-endedness and provisions for modification are essential if RSIC is to take advantage of the efforts of others such as NASA, DDC, AEC, or any other groups - local or central - who automate their information collection.

Many types of transactions are required to maintain the master and subsidiary files. The simplest external technique is the hopper method in which all transaction cards are thrown together and the machine makes all processing decisions.

RSIC will use the work of others wherever possible to avoid unnecessary expense and to speed its own efforts.

Each automated process must result in at least as satisfactory a tool as was available through manual methods in addition to a machine interrogatable file.

4. System Design

The design pattern of ALPHA-1 is probably best described as an off-line, data-base system which uses primarily batched-serial-processing techniques. That is to say, the transactions of any one application or module are accumulated into batches for a period of time and transported to a central computer center for processing. At the computer center the transactions are sorted into the same sequence in which the computer master file is organized for processing. Each record of the master file is looked at by the computer to determine if any of the incoming

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transactions apply. This technique of computer processing is called serial processing since each record is in order by some predetermined sequence and to locate any particular record you must in effect start with the first record and read down the file serially until you come to the record you are seeking. After the processing cycle the outputs in the form of updated listings and printouts of various extractions and by-products are returned from the computer center and distributed to the work stations.

ALPHA-1, the batched-serial system, includes functional service, processing, and management aspects of the library operation. The latter two have been emphasized since they consume so much manpower. The desirability of covering these three aspects in a single system is quite apparent when the extent of overlap in the data bases is considered.

The data bases contain three types of information: Control or authority data, basic but variable information files, and reference and statistical tables.

The subject term thesaurus and the patron register constitute the first type; bibliographic and inventory files represent the second, and the inverted subject file illustrates the third. Each file can be consulted and maintained directly and in some instances, affected indirectly.

Six kinds of transactions are allowed within the ALPHA-1 system: additions, deletions, changes, temporally controlled transactions, threaded transactions, and feedback transactions, see figure 3. These are all accepted on an intermixed or "hopper" basis with only subsystem sorts prior to processing.

Record additions can be made to each file except the derivative tables and statistical files, using specific transaction codes - usually code 1.

Record deletions are made in much the same way as additions. These are usually referred to as "purge" actions and are ordinarily coded 0.

Record changes or revisions to existing records are far more common than additions and deletions. Such transactions, which thus form the bulk of the input, are usually represented by several different transaction codes to permit separate paths for efficient processing.

Temporal transactions occur in a number of instances where the passage of time automatically calls for an action. One example is overdue notice production in the book circulation module of the book control subsystem. Triggers for such temporal transactions are built into the programs themselves and do not require control card or other human intervention.

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Threaded transactions originate as one of the first four kinds - and really most of the ALPHA-1 transactions are threaded. These occur when a single input action causes several transactions to occur within the file. As an example, the addition of a record in the basic bibliographic data file threads onward to the inventory file, the reference and statistical tables. It might also cause a further threaded action in the language control file.

Feedback transactions also originate as adds, deletes changes or temporal transactions. They are mentioned separately mainly because they have been found to be specially useful in ALPHA-1. Feedback transactions are those in which some step is taken to begin a future action required or implied by the present transaction. They are also used for error correction control.

5. ALPHA Subsystems and Relationships Among Them

The ALPHA-1 system flow diagram, figure 3, which shows only five tape files, expresses the gross characteristics of the system. The system requires only information about the patron, and about the holdings, or information carriers, whether they be books, serials, documents, etc.

A detailed systems analysis of what was actually·done in the library showed that the traditional distinction between the three types of information carriers mentioned was appropriate in at least early forms of mechanized systems. There were significant differences, particularly between serials and the other two types. ALPHA-1, therefore is composed of 5 basic parts: A master file of information about patrons, master files of information about the three primary kinds of information carriers, and a master language file.

In addition to the master files, there are others, of course, prepared from the masters to do jobs more efficiently, or prepared as transaction files prior to entry of records on the masters. Table I shows the general content and order of arrangement of the data in the records in the master files.

a. Patron File

The first column of Table I shows the generalized representation of the patron file records including the identifying and descriptive data and the requirements and interests profiles of each of RSIC's patrons. This file is arranged by social security number. Since RSIC serves several organizations at Redstone Arsenal, payroll numbers, badge numbers, and similar local identifications do not furnish unique identifiers; hence, the need for the social security number which can be used anywhere. Such identification will probably permit remote, multi-site efforts at some later date.

b. Serials File

The elements of this record appears in the second column
of Table I. (Here it has been impossible in ALPHA-1 to avoid a control
number.) There is information regarding the magazine itself, the
publishing data and cost aspects required for ordering, the predeter-
mined binding information, the holdings record, the list of lacks,
etc. The control number which heads this record is generally related
to the alphabetical order of titles and is the sequence field.

c. Books File

The general format of this record is on the following page.
Again, information about the book itself--first the call number and biblio-
graphic string--the inventory information, the descriptive information,
then the move complex data, such as the subject descriptors, etc.

.d. Documents File

In many ways the documents file records will be essentially
the same format as the records in the books file. Since there are some
differences in the elements of information and in many parts of the pro-
cessing, it appears appropriate to keep documents separated from books
at this time although a single file may be appropriate in a later ver-
sion. Particularly likely is some single subject retrieval file.

e. Language File

The format of the language file appears as the last item
of Table I. It displays the subject term, its associated data, comments,
suggested LC class number and cross references. In the ALPHA-1 System
the language file is the control authority for all subject terms used
in the cataloging and retrieval functions. It is maintained in alpha-
betical sequence by subject term.

Table I.
Master File Record Contents

PATRON FILE	SERIALS FILE
Social Security Number	Control Number
Name	Title
Building Location	Publisher
Mail Symbol	Vendor
Telephone Number	Purchasing Data
Periodicals Routed	Language
Security Clearance	Subject Field
Need-to-know	Frequency
Interest profile	Binding Instructions
	Holdings
	Lacks

Table I. (Cont.)

BOOKS FILE	DOCUMENTS FILE	LANGUAGE FILE
Call number	Number	Subject
Main entry	Data	Associated data
Bibliographic paragraph	Corporate author	Comments
Collation	Title	LC class number
Notes	Personal authors	Cross references
Copies available	Issuing agency	
Descriptive tracings	Pagination	
Subject tracings (Descriptors)	Form	
	Alternate numbers	
	Contract	
	Security data	
	Receipt data	
	Descriptors	

f. Subsidiary Files

In most of the functional modules of the ALPHA-1 system two files are involved. It is here in the modules that the subsidiary files of the master files come into play. In the case of the books file, for example, the major subsidiary files are (a) in-process and (b) inventory status.

An in-process file is used in conjunction with each of the three information master files--books, documents and serials. An inventory status file will be used for both books and documents.

The inventory file for books is essentially a combination of a brief traditional library shelf list and the traditional circulation record--it has an entry for every copy of every title--without the borrower name. Disposition, addition and loan information is posted to the file. A suitable extraction of this file is a circulation report. In ALPHA-1 the report is arranged in call number and in borrower name sequence. Overdue actions are triggered from this report. Resulting recall and inventory advisory action programs are now in use.

The in-process file is created as a by-product of the original ordering action. The on-order list, which comes from listing the in-process file, has flags showing those items actually received but not yet entered in the book master or inventory file. This flag is added on receipt of the book to show that the item is received but awaiting cataloging. When cataloging is completed, information is transferred, in the case of an added copy, to the inventory master or, in the case of a new title, to the book master as well. Periodically, the in-process file is summarized from a financial standpoint.

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Whenever necessary, the in-process file can be interrogated to determine whether there is an uncommitted copy of a book on order which can be used to satisfy a request. If not, recall or an additional order can be initiated.

Multiple sequencing of the book master can result in printed lists corresponding in usefulness to the traditional catalog. Retrospective information retrieval searches may also be performed against an inverted entry tape extracted from this bibliographic file.

The documents-related activities will be very similar to those for books. The same operations are involved for both types of material; however, there are certain differences. For example, there are no financial reports required but there are security restrictions. The book circulation method depends partially on the flow of a card with the book which is used to discharge the book upon return, while the corresponding documents circulation method retains this card in a manual file in the library, signed as a receipt for classified material prior to its use as a discharging mechanism.

The third major group of information carriers, serials, calls for a very different system. Here the patron has journals routed to him and he examines abstract lists to stay up to date in his field. Consequently, the ALPHA-1 products of the serials subsystem are lists of titles, route slips which are used as mailers, and what initially appears to non-librarians to be a rather simple, but what is actually a complicated financial, procurement, and non-receipt (claiming) package. It is possible to think of the routing file as conceptually similar to the inventory file used for books and documents; however, instead of a serials circulation list, thousands of route slips are produced to serve both to route copies and to help identify, on an exception basis, those magazines which must be claimed.

6. Current Status

Quantitatively ALPHA-1 has enabled RSIC to handle a greater workload in 1966 than in 1962 and with fewer employees. RSIC has simultaneously been able to build and make available to the user a reference facility which is vastly larger and more useful.

Functionally, ALPHA-1 has proceeded to the point where RSIC now has operating automation in the following activities:

a. Patron registration and control
b. Subject heading control for books
c. Subject heading control for documents
d. Book ordering, receiving, and expenditure control
e. Book circulation and follow-up

f. Cataloging of books
g. Serials routing
h. Serials holdings records
i. Serials binding production control
j. Serials renewals
k. Documents inventory assistance

Some specific advantages found in the ALPHA-1 modules now in operation are:

a. In Acquistions -

Simultaneous purchase order and accounting document production.
Automatic punched card production; this facilitates receiving, cataloging and circulation of the item.
Reduction of files and elimination of manual filing.
Availability of printout records of items on-order or in-process at multiple locations.
Controls of monetary limitations.
Ease in the collection and automatic production of financial reports and management data.
Better coordination.
Reduction of duplicate orders.
Automatic production of claims.

b. In Circulation -

Automatic card filing at machine speeds.
Reduction of files; elimination of manual files and up-to-date record displays in minimum space.
Automatic identification and production of overdue and recall notices.
Control of charges by call number, date, patron name, or organization with a single transaction card.
Automatic collection of statistics.

c. In Serials Control -

Automatic renewal of subscriptions.
Printing of binding slips at predetermined "time to bind."
Updating of bound holdings records.
Printing of periodicals catalog.
Automatic printing of journal circulation slips.
Automatic collection of statistics.
Automatic production of lacks. Lists are generated for procurement of gaps in holdings.
Production of lists by various arrangements such as country or origin, language, subject.

d. **In Maintaining Patron Data -**

Patron information is available in numerous locations in the library.
Data verfication notices printed automatically.
Automatic compilation of statistics.
Automatic production of lists by
Social Security Number
Name
Organization
Security Clearance

e. **In Language -**

Assures complete referencing.
Reduces the margin of error two ways:
The data is typed only once.
The computer checks the cataloger.
Formal and precise method of controlling books and documents language without:
Heavy typing loads.
Long tedious hours of filing and pulling cards.
Reduced clerical help.

f. **In General -**

Elimination of redundant manual recording.
Information is available more rapidly.
People don't handle and file little slips.
Accuracy is increased.
Clerical time is saved.
Management data is collected automatically.

7. **What's to Come**

The groundwork has been laid in ALPHA-1 for future generations of the system, each evolving logically from its predecessor with each future step in evolution to be dictated by experience, changing requirements, and new technology.

The second generation of the ALPHA System, which we will refer to as ALPHA-2, will be an extension and modification of the basic concepts of the ALPHA-1 System, but it will be "on-line."

You may visualize the ALPHA-2 System as consisting of remote inquiry stations located at various locations within the library. The configuration of these remote stations will consist of

combinations of typewriter keyboards, card readers, card punches, papertape readers, papertape punches and cathode-ray tube display devices.

Operationally the ALPHA-2 System will differ from ALPHA-1 in the form of processing. It will be an on-line real-time processing system. On-line implies that the user, through the remote inquiry stations, will appear to be connected at all times to the central computer, and can establish contact as soon as any data is entered from the inquiry station. Real-time can be defined as the processing of information or data in a sufficiently rapid manner so that the results appear to be accomplished simultaneously with the input. With direct access files, a record in the middle or at the end of the file can be located and processed with the same time factor as the first record of the file.

Quite naturally these terms imply sophisticated hardware or computer equipment, advanced communication equipment, different software or computer programs and different file organization techniques than the batched-serial-processing procedures used in ALPHA-1. It will be through these on-line real-time processing methods that the ALPHA-2 System will operate. It must await the availability of so-called third-generation computers.

Chapter 2

INFORMATION FOR THE LIBRARY STAFF

Section I.   INTRODUCTION

1.   General

      This chapter is addressed primarily to the professional staff
of any library that may be interested in adapting part or all of the
ALPHA System for their own use. However, anyone wanting to know the
working details of the system from the viewpoint of the library staff
will find them here.

      The first questions a library staff member will have about
an automation system being considered for use in his library are
predictable. They will be questions like these: "Will it help me to
do my job better? How will it change what I do? Will it maintain the
essential information? Can I trust its accuracy? Will it eliminate
anyone's job?"

      Under ALPHA, the traditional functions, activities, and rela-
tionships of the library remain intact. ALPHA maintains the necessary
information and makes it available to the library staff in a directly
usable form. Although the accuracy of the system is limited by the
accuracy of the information fed into it, in practice it is usually much
more accurate than unautomated methods. It will change the skills
required in some of the clerical people, but it will not eliminate the
jobs of professional staff members. On the contrary, it will free them
to spend more time in purely professional duties, less in clerical tasks.

      More specifically, let's consider the effects ALPHA has on
several functional divisions of a library. Take the main divisions of
acquisition, cataloging (or indexing), circulation and routing, and
reference.

      In acquisition, the ordering and receiving operations are
largely automated. ALPHA automatically handles or prepares most of the
required documents, and automatically produces a number of reports
required either periodically or on request. Selection, being an intel-
lectual operation, is not subject to automation. But ALPHA does provide
helpful information such as the On-Order List for use of the acquisitions
librarian. By consulting this list, the librarian can avoid duplicating
titles that are on order but not cataloged or not received; the list is
supplemented daily and reprinted in full form once a week. Several
copies of the list are made, so each person needing the information can
have an individual copy.

      In cataloging, automation at RSIC is incomplete, and ALPHA is
therefore not as instructive as it might be. Time is required to perfect
the operation of ALPHA in cataloging. But certain effects are apparent now.

There are new requirements for the cataloger, such as checking the length
of short titles to be sure they will fit into the available space on the
circulation card (a temporary requirement), and translating changes into
codes for the computer rather than just writing in each change. New pro-
ducts of cataloging, such as a computer-produced subject authority listing,
require some of the cataloger's time to maintain; they should be kept in a
manual system but often are not. Since acquisition has been automated
ahead of cataloging, it has been speeded up while cataloging, for the time
being, goes at about the same pace.

When automation of cataloging is complete, cataloging will gain
speed to keep pace with acquisition. The shelf list can be computer-
produced and updated, and classified catalog listing and an entry authority
listing will also be practical. Finally, still under the first phase of
ALPHA, an automated book catalog will be produced at a great saving in
human effort.

In circulation, ALPHA has had several noticeable effects.
Because the chargeout system uses EAM cards that are punched while the
patron waits, anyone working in circulation must be able to operate the
keypunch machine. A library technician in circulation has the task
of correcting errors on computer-printed lists, which requires considerable
knowledge of the automated circulation system's rules of operation. Card
filing is eliminated. Punched cards are used to create, maintain, and
correct the master file, from which two circulation listings are printed,
one in LC number sequence and one in patron name sequence.

Periodical routing remains essentially the same as before
ALPHA. The only difference is that the routing slip for each periodical
is a computer printout, rather than a manually created and maintained
item. Changes in routing are recorded on worksheets, which are converted
to punched cards at the circulation station and forwarded to the computer.

In reference there are as yet no changes because of ALPHA.

Clearly, then, the effects of ALPHA on any functional division
of a library are not so revolutionary as one might suppose. There are
some new skills required, different procedures, new products of the
functional division. The changes that do take place do not all come
about instantly, but over a period of time.

An automation system brings with it new requirements, the
reasons for which are fairly simple.

Before considering those reasons, let's look at the skeletal
outline of the computer operation in the ALPHA system. In outline, ALPHA
is just a very large filing system with special ways of filing information
and retrieving the filed information. The file is recorded on magnetic
tape. Information is added, changed, or deleted by making changes in the
recording. Information is retrieved from the file by "playing" the tape.

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Everything else that happens in the system is either a way of doing or a way of making it possible to do what has just been described.

The computer is a machine, not a super brain. It does what humans cause it to do, and nothing else.

Because the operation of a computer is purely mechanical in nature, an automated system requires of its user a rigorous consistency and adherence to the rules of operation. A computer does not have the ability to examine a difference between two supposedly-identical entries and conclude that the difference is unimportant. "Jones space comma" is not the same thing to a computer as "Jones comma space."

What, then, is the advantage of using the computer? The advantages a computer really offers have little in common with some of the magical attributes alleged in newspaper and magazine articles. The truth is impressive enough, but perhaps not so colorful. The biggest reason for using a computer is that it works very fast compared with a human. It is also very accurate at this high speed. Humans get tired; computers don't. Humans sometimes fail to remember facts and have difficulty in working according to a large number of exact rules; computers don't. Humans have difficulty in checking their own work; computers (within their limitations) don't. Humans get bored doing routine jobs; computers do routine jobs best of all.

A library manual system uses many scattered files, with much duplicated information. Use of an automated system makes it possible to maintain a few files centrally and print out listings of information needed by the library staff.

The ALPHA System is designed to reduce redundant data capture to the minimum, freeing its users from much repetitive mechanical work. Ideally a human should have to put a new piece of information into the system only once, at one point, and afterwards that piece of information should be available throughout the system as needed. Of course this increases the importance of entering the information correctly the first time.

As a working rule, data is entered into the system as soon as possible. For instance, automation of book ordering makes it possible to enter into the system a considerable amount of information about a book at the time it is ordered, rather than waiting until it is received. This reduces the amount of manual record keeping.

2. Special Terminology

As in any special field of knowledge, in automatic data processing there is a special vocabulary. Some of the most useful terms will be defined below. Others may be found in a glossary such as the U. S. Bureau of the Budget publication, Automatic Data Processing Glossary, which defines about 1800 terms, or the IBM booklet,

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Glossary for Information Processing, revised in 1964.

Two general cautions should be kept in mind when considering the following definitions. First, many special terms are taken from the general vocabulary of English but are given new meanings; sometimes this can lead to confusion of thought. Second, the definitions given here are those which apply when the terms are used in this book. There are other possible special meanings of some terms; for these, a general glossary should be consulted.

Automated data processing systems do what their name indicates; they process data or information (two terms that have a fine distinction but that are used as synonyms herein) without constant human attention. At first, the information will not go into a computer, being in a form such as written or spoken words that the computer is not designed to accept. Before it can be processed automatically it must be translated into a form that the computer can accept, such as punched cards or punched tape or magnetic tape. In such a form, it is called machine readable, and translating data into machine readable form is called data capture.

System means an assembly of procedures, processes, methods, routines, people, and equipment forming an organized whole carrying out certain defined operation. ALPHA is a system. A subsystem is a first-level division of a system. In ALPHA there are five subsystems: Patron Control, Serials Control, Language Control, Books Control, and Documents Control. In some subsystems there are second-level divisions, called modules. A module is a discrete subdivision of a system or subsystem that can be treated as a functional unit. It is interchangeable; it can be taken out and replaced by a new module without harming the operation of the system. In ALPHA, the five subsystems are designed to behave in this way with respect to the whole system, that is, their design is modular.

In order of ascending size, the units of machine readable data are bit, character, field, record, and file.

Bit is a contraction of "binary digit." A bit, the smallest unit of data, is a whole number in the binary scale of notation; it is either a zero (0) or a one (1). It may be equivalent to an on or off condition in an electrical circuit, a yes or no, a true or false, or any other two-valued pair of terms. (Bit should not be confused with byte, which a group of bits usually operated upon as a unit.)

A character is a group of bits representing one of a set of symbols, including the decimal digits 0 through 9, the letters A through Z, punctuation marks, and special operation symbols. At present in the ALPHA System there are six bits per character, the number may change because it depends on the equipment used, not on the basic system logic.

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A field is an assigned area in a record consistently used to record similar information and treated as a unit, whether or not there is any information actually recorded in that area. For example, the area in the patron's record devoted to recording his social security number is the social security number field. This remains true whether the area is on a punched card, paper tape, or magnetic tape, and whether the field contains the social security number or is empty. A field may be of fixed length--a specific number of characters long--or of variable length--as many characters long as needed to record the information, with a special symbol indicating the end of the field. In any event it will contain at least enough bits to represent one character.

A record is a set of fields treated as a unit. An example is the individual patron record, discussed in Section II of this chapter.

A file is a collection of records, either in sequence according to a key contained in each record or not in any particular sequence. For example, the collection of all patron records makes up the Patron Master File, which is in social security number sequence.

As mentioned above, data capture is changing information in any form, usually written, into a machine readable form, such as punched cards. Data capture makes the information available to the system as input, the term for information going into the computer. The opposite term output, is information coming out of the computer, transferred from computer internal storage to external media in a form readable by people. There are verb usages of both input and output, but the two terms will be used only as nouns in this book.

In the ALPHA System, data is captured through use of either keypunch machines (IBM 026's) or paper tape punching typewriters (Flexowriters). Alpha-numeric characters are used; i.e., the characters are such as are found on the ordinary typewriter keyboard: letters of the alphabet, numerals, punctuation, and special symbols.

A code is a system of alphabetic or numeric abbreviations used in preparing data for input to a machine. Codes are often used in capturing data. Examples are N for new and 01 for a new patron name card. (The Hollerith Code is a specified pattern of changing normal characters into machine characters; see above under character and below in the discussion of the punch card.)

A data element is a specified item of information in a set of data. Each item in this list is a data element: social security number, last name, first name, home address. Each data element occupies one field; in fact the terms "data element" and "field" are closely associated, field being tied more closely to the idea of space in a record.

In keypunching, cards of constant size and shape, adapted for being punched in a meaningful pattern, are used. The punch card used in the ALPHA system is the standard EAM card, 7 3/8" by 3 1/4" containing 80 columns, in each of which there are 12 positions that may be punched. (See Table X for an explanation of Hollerith code, which is used in punching cards.) A program card is used ordinarily with the IBM 026 keypunch machine. A program card is a punched card that is placed on the keypunch machine to control its operation. Although all of its functions can be obtained by manual operation and therefore it is not absolutely required, it is a practical necessity to take over partial control of the machine to gain speed in repetitive operation.

A hopper is the same thing as a card stacker, a receptable that accumulates cards automatically as they pass through a machine.

Two related terms are hardware and software. Hardware means the physical equipment and devices forming a computer, including the peripheral equipment, such as card readers, tape readers, and printers. Software means all programs and routines required to use and extend the capabilities of the hardware.

The term edit, as used here, means to check data elements against the possible correct forms. For example, a social security number may not contain a letter of the alphabet; if it does, it is certainly incorrect. An edit can be put in the program to cause all social security numbers containing letters or any other characters besides numerals to be rejected. A predetermined error message is then printed, explaining why the input was rejected.

A match is complete agreement, character by character, of a selected field on one record with the same field on another record.

To purge, or delete, a record is to remove it completely from the corresponding master file.

A run is the performance of one computer program, or several programs linked to form an operating unit, during which the computer operator need do little or nothing to control the machinery.

As used here, the term flow chart means a map of a sequence of operations by people and machines, using symbols to represent documents, machines, files, or actions taken. A flow chart does not show how or who, but what: what is done, in what order, with what logical relationships.

A descriptor is an indexing term consisting of a word or phrase. Included are "key words," "Uniterms," and all other kinds of aspect definitions, without distinction.

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A need-to-know code is one of a series of three-digit codes indicating specific fields of knowledge in security-classified documents to which a patron is authorized access. In order to be complete it requires the specification of the need-to-know type.

The need-to-know type is specified by one of two codes, NASA or COSATI. These codes refer to two mutually exclusive need-to-know code sets. The primary one is the COSATI set, published by the Committee on Scientific and Technical Information, a group responsible to the President's Office of Science and Technology. It consists of 22 two-digit codes for major subject fields, 01 through 22, each of which may be qualified by alphabetic characters indicating specific subject groups. The secondary one is the NASA set, published by the National Aeronautics and Space Administration. It consists of 53 three-digit codes, 001 through 053. The NASA codes will eventually be dropped in favor of the COSATI.

Section II. PATRON CONTROL SUBSYSTEM

1. Introduction

The patron control subsystem provides the library with an automated method for establishing, maintaining, and displaying patron information. This function corresponds most nearly to traditional practices that create and maintain a users' or borrowers' register.

A users' register ordinarily consists of a registration card file and, sometimes, a ledger or card file in a different sequence. The purpose of the register is to store users' addresses, so they can be reached by mail or phone when they have overdue books or other library materials. The register also shows how many users the library currently serves, and from it can be extracted information about their geographical distribution.

A typical public library users' register is set up as follows. Each person wanting to use the library fills out a registration card containing his name, address, phone number, and possibly the name and address of a reference. Each user is assigned a number and issued an identification card containing his number, name and address. Registration cards are filed alphabetically by name. Books are ordinarily charged out by user number rather than by name; for this reason, there must be a file in user number sequence to provide name and address when only the number is known. This file may be either a card file or a ledger.

The users' register, especially with a mobile population, is not likely to be very accurate. Public libraries of medium size or larger are abandoning users' registers and installing charging systems that maintain name and address for each item charged out, such as photocharging. With such an arrangement it is no longer possible to determine quickly who has a particular item charged out. But the users' register has proved too expensive to maintain, considering its limited usefulness.

Special libraries such as RSIC have different requirements. For example, their handling of security-classified documents means that their patron control files must store much more information about each patron, and of course they must know exactly who has each classified document in possession. Their files must be kept current. They often have longer loan periods than other kinds of libraries. Partly for this reason they feel it is necessary to be able to recall a book even though

the loan period may not have expired. They consider it essential to maintain not only the information found in the traditional users' register, but much more information about each patron.

Before ALPHA, RSIC maintained two separate patron card files, one for books and another for documents. There were two files primarily because circulation was controlled at two different physical locations. Now the requirements of both book circulation and documents circulation are met by the ALPHA patron control subsystem.

For each patron of the library, a magnetic tape record, figure 4, is created and maintained. All these records together, one for each patron, make up the Patron Master File.

Figure 4 is a diagram of the magnetic tape record for one patron. The numbers in each block show the number of characters available to record each data element and also the specific position numbers devoted to each data element. For example, 21 characters are available to record the patron's street address, which occupies on the record positions 98 through 118. Note that the data captured for each patron enables the librarian to identify him (positions 1-54 on the record), locate him by phone or mail (58-143), determine whether he is allowed to see a particular classified document (55-57 and 174-474), record any comments (usually of a security nature) that are necessary (475-670), route journals or other publications to him (671-1008), and tell when his record was established in the Patron Master File and when the most recent action affecting his record took place (144-153), which can be useful in file checking and periodic file review. There is also a reserved field of 10 characters (154-163).

The Patron Master File is the central source of patron information for both the librarian and the other subsystems of the ALPHA system. For library use, the contents of the Master File are displayed periodically in two listings: the Complete Patron List in Name Sequence, figure 5, and the Patron List in Social Security Sequence, figure 6. Some of the uses of the Master File by other ALPHA subsystems are: validation of social security number and patron name on charged items, providing mailing data for the production of notices to the patron, serving as a source for patron routing requirements, and providing security information, information about clearance, need-to-know, citizenship, etc.

Three kinds of action affecting the Master File may be taken. New patrons may be established on the file, established patron records may be revised, and records may be deleted or purged when patrons clear the installation. Data for these actions are keypunched into punched cards that are batched and periodically sent to the computer to update the Master File. When the computer receives changes to the Master File they are posted and new, updated listings are prepared for the library.

During the update of the Master File, several auxiliary outputs are produced in addition to the two listings mentioned above. These are the Patron Monitor, and unprocessed transaction cards, the Need-to-know Revalidation Notices, and the Patron Record Delete messages.

The Patron Monitor, figure 7, is a document that displays all transactions submitted for each update and provides a Patron Statistical Report, figure 8, summarizing the status of the Patron Master File. Transactions found to be in error are indicated on the Patron Monitor by a descriptive message to the right of the transaction. To help in the correction of the errors, the transactions cards containing errors are duplicated, except that the action code is omitted, and returned with the Patron Monitor.

Changes submitted to the Patron Master File affecting data elements that could influence the patron's need-to-know result in the production of the Need-to-know Revalidation Notice, figure 9, printed on a 5 x 8 card ready for mailing.

When a patron record is deleted from the Patron Master File, the complete set of information for that patron is printed on a 5 x 8 Patron Record Delete card, figure 10. This card is used to verify that the patron has cleared the library and the Documents Section, and is then filed as a historical record.

2. Establishment and Maintenance of Patron Master File

For the librarian, establishment and maintenance action on the Patron Master File begins with a data source document. At RSIC, this is a Form AMSMI-R-10, "RSIC Patron Card." In the following discussion, the term "Patron Card" will be used, and the Form 10 illustrated as typical. RSIC receives the completed Patron Card from the patron or his organization. After preliminary check, the card is given to the keypunch operator, who punches transaction cards which then go into the hopper.

Three types of actions can be requested by the Patron Card: establishment of a new patron on the file, revision (change) of an established patron record, complete removal (purge) of a patron record from the file.

Detailed discussion of processing the source document and keypunching the transaction cards for each type of action follows. Ordinarily the librarian will know if the source document is for a PURGE action, but may not know whether it is for a NEW or CHANGE action. A quick check of the complete Patron List in Name Sequence should clear up any doubt.

a.   New Patron - Check of Patron Card

        To establish a new patron record on the file, the librarian
must first verify that he is not already on the file by checking the
patron card against the Patron List in Social Security Sequence.   If
the new patron's social security number is not duplicated on the list,
he may be added to the file. But if the new patron's social security
number matches that of a patron already present in the Patron Master
File, further checking will be required. One of three conditions exists:

        (1) The new patron's social security number is incorrectly
recorded on the patron card and accidentally agrees with the number
of an already established patron. The correct number must be ob-
tained from the patron.

        (2) The new patron is already correctly established in the
file. The Patron List in Name Sequence should be checked against the
patron card to see whether there is new information or changed infor-
mation that would change the patron record. If changes to the patron
record are needed, a change action should be made (see below).

        (3) The new patron's number on the patron card is correct,
and the established patron's number is incorrect. The librarians
should obtain the established patron's correct number, purge his re-
cord (see below), and reestablish it with the correct number.

        The patron card for a new patron should also be checked to
verify that it contains the notation NEW and at least the following
information (see figure 11 for an example):

        (1) Surname and given names, including suffixes such as Jr.
or Sr. and titles such as Dr. or Lt.Col. if available.

        (2) Social security number

        (3) Organization symbol or business mailing address. Both
may be included, but only one is required.

        (4) Security clearance. If unknown, should be UNCLEARED.

        (5) Patron type.

        (6) Citizenship. Should either specify a country or indi-
cate as UNKNOWN.

        (7) Company name if a contractor employee.

        There are considered the absolutely essential data elements
for the purposes of the patron control subsystem. Any new patron

card that does not have them must be considered incomplete. The following information should also be included if available, but is not absolute essential:

    (1)   Phone number, including area code if out of town

    (2)   Extension

    (3)   Building number

    (4)   Room number

    (5)   Contract number if a contractor employee

    (6) Need-to-know type (NASA or COSATI) and need-to-know categories. (NOTE: NASA type will soon be obsolete, leaving only COSATI categories.)

    (7)   Comments

    If need-to-know categories are specified the need-to-know type must also be specified. If all categories of a type are assigned, the only required notation is ADD ALL. If only some categories of a type are assigned, each one must be listed. If comments are used in place of need-to-know categories, they should be on the patron card. The comments option is included primarily for need-to-know use, but may be used for other purposes if the submitting activity wishes.

    b.   New Patron - Preparation of Transaction Card

    In establishing new patrons on the file a name card (01) and either a local address card (02) or an address card (03), or both, must be keypunched. The need-to-know card (04), comments cards (05 through 08), and routing card (09) are punched only when such information is on the patron card or routing needs have been specified.

    Note: In the following discussion and elsewhere, "b," as in ADDbALL, means a space deliberately left blank.

    All transaction cards sent to the computer for new patrons must contain the following:

Cols	Data Element	Comments
1-10	Social security number	Left-justified. No dashes.
11-12	Card code	Must be one of these:
		01 Name card
		02 Local address card

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	03	Address card
	04	Need-to-know card
	05	Comment card
	06	Comment card
	07	Comment card
	09	Routing card

13	Action code	Must be N.
14-29	Surname	Left-justified. Must contain alphabetics or dashes only. Close up any blanks.
79	Origin code	If there is more than one keypunching station where patron file transaction cards are punched, this one-character code will be assigned to indicate which station punched each card.
80	Operator code	A one-character code identifying the keypunch operator.

Following are detailed formats and instructions for punching cards 01 through 09. Samples of all transaction cards for the Patron File are illustrated in figure 12. The name card (01) should be punched first; then it is possible to duplicate some data elements on the other cards to be punched for the same patron.

(1) Name Card (01).

Cols	Data Element	Comments
1-10	Social security number	Left-justified. No dashes.
11-12	Card code	Must be 01.
13	Action code	Must be N.

14-29	Surname	Left-justified. Must contain alphabetic characters or dashes only. Close up any blanks.
30-47	Given names	Left-justified. Copy exactly as on the patron card. Must contain only alphabetic characters, dashes, periods, or blanks.
48-50	*Surname suffix	*Examples: Jr., Sr., III, etc.
51-56	*Title	*Left-justified. Examples Dr., Col., etc.
57	Type	One of the following one-character codes:

N NASA civil servant
A Army civil servant
M Military (any)
C Contractor

Note: If this code is C for contractor, the contractor code (cols. 75-78) must be included.

| 58 | Security clearance | One of the following one-character codes: |

U Uncleared
C Confidential
S Secret
T Top secret

If necessary a comment (cards 05-08) may be used to qualify the security clearance.

59-60	Citizenship	A two-digit code taken from the official country code list, Table II.
61-63	*Area code	*Area code if telephone is out of town.
64-70	*Telephone number	*Left-justified. No dashes. All numeric.

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75-78	*Contractor code	*Use the four-digit code taken from the official contractor code list, Table III, if the patron is type C.
79	Origin code	If there is more than one keypunching station where patron file transaction cards are punched, this one-character code will be assigned to indicate which station punched each card.
80	Operator code	A one-character code identifying the keypunch operator. Will be an initial unless arranged otherwise.

*Optional elements.
All others are required.

(2) <u>Local Address Card (02)</u>.

<u>Cols</u>	<u>Data element</u>	<u>Comments</u>
1-10	Social security number	Duplicate.
11-12	Card code	Must be 02.
13	Action code	Duplicate.
14-29	Surname	Duplicate.
30-41	Organizational symbol	Left-justified. Use only for valid local mailing symbol.
42-46	Building number	Left-justified.
47-51	Room number	Left-justified.
79	Origin code	Duplicate.
80	Operator code	Duplicate.

(3) <u>Address Card (03)</u>.

<u>Cols</u>	<u>Data element</u>	<u>Comments</u>
1-10	Social security number	Duplicate.
11-12	Card code	Must be 03.
13	Action code	Duplicate.
14-29	Surname	Duplicate.
30-50	Street address	Left-justified. If longer than 21 digits, abbreviate.
51-65	City	Left-justified. If longer than 15 digits, abbreviate.
66-70	State	Left-justified. Use abbreviations where required, Table IV.
71-75	ZIP code	All numeric.
79	Origin code	Duplicate.
80	Operator code	Duplicate.

(4) <u>Need-To-Know Cards (04)</u>.

<u>Cols</u>	<u>Data element</u>	<u>Comments</u>
1-10	Social security number	Duplicate.
11-12	Card code	Must be 04.
13	Action code	Duplicate.
14-29	Surname	Duplicate.
30	Need-to-know type	Must be one of these: N NASA C COSATI
31-78	Need-to-know codes	Punch ADDbALL in cols 31 through 37 if so indicated in the source

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document. Otherwise, beginning in col 31, punch the three-digit codes, following each with an A for add. Use as many 04 cards as required to post the need-to-know codes, Table V.

79	Origin code	Duplicate.
80	Operator code	Duplicate.

(5) Comments Cards (05 through 07).

Cols	Data element	Comments
1-10	Social security number	Duplicate.
11-12	Card code	Must be one of these: 05, 06, 07, or 08. Begin each series with 05.
13	Action code	Duplicate.
14-29	Surname	Duplicate.
30-78	Comment	Left-justified. Where comment is too long, abbreviate but do not disturb the meaning of the comment. Comments may be divided among the set of comment cards if required or may run from one card to the next.
79	Origin code	Duplicate.
80	Operator code	Duplicate.

(6) Routing Card (09).

New patron routing information is submitted on a separate source document, which at RSIC is called the RSIC Routing Worksheet, figure 13. On figure 13, the the third entry has the appearance of one for a new patron, because all three action codes are A for Add.

However, an established patron might have an entry that looks exactly the same, so it cannot be concluded that the third entry does refer to a new patron. Information on the worksheet is punched in the following format:

Cols	Data element	Comments
1-10	Social security number	Duplicate.
11-12	Card code	Must be 09.
13	Action code	Duplicate.
14-29	Surname	Duplicate.
30-36	Journal 1 number	Left-justified.
37-40	Journal 1 copy number	Precede with leading zeroes.
41-42	Journal 1 priority	Copy priority.
43	Journal 1 action code	Must be A.
44-50	Journal 2 number	Left-justified.
51-54	Journal 2 copy number	Precede with leading zeroes.
55-56	Journal 2 priority	Copy priority.
57	Journal 2 action code	Must be A.
58-64	Journal 3 number	Left-justified.
65-68	Journal 3 copy number	Precede with leading zeroes.
69-70	Journal 3 priority	Copy priority.
71	Journal 3 action code	Must be A.
72-78	Blanks	
79	Origin code	Must be R.
80	Operator initial	

c. Revision - Check of Patron Card

To revise an established patron record, the librarian must first verify that the record to be changed is an established record by checking the patron card against the Patron List in Social Security Sequence.

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Usually the social security number will be found on the list, and the name and other data will agree with the patron card. In this case the revision may be taken as valid. But if the social security number on the patron card is not on the Patron List, some further checking will be required. One of three conditions exists:

(1) The patron is not established on the file. He should be established as a new patron.

(2) The patron is established on the file under a correct social security number, but the number on the patron card is incorrect. The correct number must be obtained from the patron; e.g., the number on the patron card verified.

(3) The number on the patron card agrees with a number on the Patron List, but the other data on the Patron List do not agree with the patron card. This probably means that the number on the patron card is correct but the data on the Patron List are entered under the wrong social security number. The record should be purged from the patron file, corrected, and entered as a new record.

Revisions to established records consist of three kinds of actions: one, adding data elements to established records, two, deleting data elements from established records, and three, changing data elements in established records. A patron card submitted for revising and established record (figure 14 is a sample) must contain the notation CHANGE and the following information:

(1) Social security number.

(2) Surname.

(3) The data elements to be added or changed. If data elements are to be deleted, this should be indicated by an asterisk or star in the information box of the element to be deleted.

Except for the special case of a name change (see below), a single patron card may cover additions, changes, and deletions of information. For example, one patron card might change the patron's organizational symbol, delete the old room number, and add a new telephone number.

Employee type, contractor code, and social security number may not be altered by a change transaction. When these elements must be changed, the old record must be purged and a new record established. This arrangement is necessary because a change in these data elements may very well indicate the need for a drastic change in the patron's access to classified information. Therefore, it is required that he be recertified as being an authorized patron.

Revision to need-to-know categories consists of one of these three possibilities: one, adding all categories of a type, two, deleting all categories of a type, three, adding or deleting some categories of a type. In all cases the need-to-know type must be specified as NASA or COSATI. If all categories are to be added, the notation ADD ALL should be on the back of the patron card. If all categories are to be deleted, the notation DELETE ALL should be there. If some categories are to be added or deleted, they should be listed, each with an A for add or a D for delete.

Revisions to comments may be indicated on the back of the patron card by specifying the comment number followed by the notation DELETE if the comment is to be deleted, or by supplying a new comment to replace the old one. If, as indicated by its number, the comment is a new one, it will simply be added to the comments already on the patron's record.

Revising the name of an established patron is a special case. Name changes are most frequently required because of marriage, divorce, or the patron's being incorrectly recorded in the first place. These things happen often enough to justify relieving the patron of the effort of completing the whole patron card and having it certified.

A name change must be covered by a patron containing no other actions. Surname, given names, or surname suffix--any or all may be changed by a name change transaction. The card should have the notation CHANGE, and must have on it the social security number, surname, given names, and surname suffix, if any. Nothing more should be included on the card, because the absence of other data identifies it as a name change action. If a previous surname suffix is to be deleted, this is indicated by an asterisk or star in that information block. Whatever changes are being made, the surname and given names, and surname suffix, if any, must be on the card.

d. Revision - Preparation of Transaction Cards

All changes to established records, except changes in routing requirements, will be initiated by patron cards with the notation CHANGE. Card types to be keypunched (01 through 08) will depend on the data elements that are affected. Changes in routing requirements will be initiated by a routing worksheet and require the punching of a card type 09 (covered later).

All transaction cards 01 through 08 for revision of established records must contain the following:

Cols	Data element	Comments
1-10	Social security number	Left-justified. No dashes.

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11-12	Card code	As required according to data elements being changed: 01, 02, 03, 04, 05, 06, 07, or 08.
13	Action code	Must be C except for name change action, which is /.
14-29	Surname	Left-justified. Must contain alphabetic characters or dashes only. Close up any blanks.
79	Origin code	If there is more than one keypunching station where patron file transaction cards are punched, this one-character code will be assigned to indicate which station punched each card.
80	Operator code	A one-character code identifying the keypunch operator.

In addition, the data elements to be changed or added must be included. For all card types except 09, if a data element is to be deleted, as indicated by an asterisk or star in the information block for that element, an asterisk should be punched in the first column of the field to be deleted.

Changes to need-to-know will be indicated on the patron card as described above. All need-to-know transaction cards, card type 04, must contain the need-to-know type code in column 30, either N for NASA or C for COSATI. If the patron card notation is ADD ALL, ADDbALL is punched in columns 31-37. If the notation is DELETE ALL, DELETEbALL is punched in columns 31-40. If specific categories are added or deleted, the categories with action codes--A for add or D for delete--are punched beginning in column 31. The maximum number of actions per card is twelve, but as many 04 cards as required may be punched.

As mentioned before, a patron's name can be changed without his being deleted and added back to the file. A patron card for a name change will be marked CHANGE and contain only the social security number, surname, given names, and in the surname suffix block, either a surname suffix or an asterisk or nothing. The following transaction

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card is punched for a name change:

Cols	Data element	Comments
1-10	Social security number	Left-justified. No dashes.
11-12	Card code	Must be 01.
13	Action code	Must be /.
14-29	Surname	Left-justified. Must contain only alphabetic characters or dashes. Close up any blanks.
30-47	Given names	Left-justified. Copy exactly as on the patron card. Must contain only alphabetics, dashes, periods, or blanks.
48-50	Surname suffix	Optional, include if on the patron card. If the patron card contains an asterisk in this location (indicating deletion of previous suffix) punch an asterisk in the first column of this field.
51-78	Blanks	
79	Origin code	If there is more than one keypunching station where patron file transaction cards are punched, this one-character code will be assigned to indicate which station punched each card.
80	Operator code	A one-character code identifying the keypunch operator.

Routing changes are submitted on the routing worksheet, figure 13. Data on the worksheet will be punched in the following format:

Cols	Data element	Comments
1-10	Social security number	Left-justified. No dashes.
11-12	Card code	Must be 09.
13	Action code	Must be C.
14-29	Surname	Left-justified. Must contain alphabetic characters or dashes only. Close up any blanks.
*30-36	Journal 1 number	Left-justified.
37-40	Journal 1 copy number	Precede with leading zeroes.
41-42	Journal 1 priority	Copy priority.
43	Journal 1 action code	Must be A for add, C for change, or D for delete.
44-50	Journal 2 number	Left-justified.
51-54	Journal 2 copy number	Precede with leading zeroes.
55-56	Journal 2 priority	Copy priority.
57	Journal 2 action code	Must be A, C, or D.
58-64	Journal 3 number	Left-justified.
65-68	Journal 3 copy number	Precede with leading zeroes.
69-70	Journal 3 priority	Copy priority.
71	Journal 3 action code	Must be A, C, or D.
72-78	Blanks	
79	Origin code	Must be R.
80	Operator initial	

*If the notation DELETE ALL appears on the worksheet, punch DELETEbALL in columns 30-39 in the place of the other data normally punched there, and make columns 40-78 blanks.

e. Purge - Check of Patron Card

        To completely delete (purge) a patron record from the file, the librarian must first verify that the record to be purged is an established record by checking the patron card against the Patron List in Social Security Sequence. Usually the social security number will be found on the list, and the name will agree with the patron card. In this case the purge may be taken as valid. But if the number is found on the file with the name of another patron, one of two conditions exists:

        (1) The social security number on the patron card is incorrect and accidentally agrees with the social security number of another established patron. The correct number must be obtained from the patron.

        (2) The number on the file is incorrect. Delete the record and add it back under the correct number.

        The second condition leaves a question: Is the patron whose record is to be purged established on the file? If the social security number on the patron card is not in the Patron List in Social Security Sequence, the librarian should look up the name in the Complete Patron List in Name Sequence. If the record is found there under a different social security number, the number on the patron card should be changed to agree with the number on the list. If neither the social security number nor the name are on the lists, the patron's record may have already been deleted. The Patron Record Delete file should be checked; if the record is there, the patron's record has already been deleted, and no other action is necessary.

        A patron card submitted for deleting an established record must contain the notation PURGE and the patron's social security number and surname.

f. Purge - Preparation of Transaction Cards

        All transaction cards punched for purging records from the Patron File must contain the following:

Cols	Data element	Comments
1-10	Social security number	Left-justified. No dashes.
11-12	Card code	Must be 00.
13	Action code	Must be P.
14-29	Surname	Left-justified. Must

		contain alphabetic charac- ters or dashes snly. Close up any blanks.
30-78	Blanks	
79	Origin code	If there is more than one keypunching station where patron file transaction cards are punched, this one- character code will be assigned to indicate which station punched each card.
80	Operator code	A one-character code identifying the keypunch operator.

3. Patron File Outputs

Patron file outputs are produced as often as the Patron Master File is updated. At RSIC the schedule is weekly at present. There are some possible variations in frequency of production, which are noted below. These are the six outputs:

a. Complete Patron List in Name Sequence. Since this is a very bulky listing, there is an option of not producing it during any particular update. It is not expected that this list will be printed more often than weekly no matter how frequent the updates may become.

b. Patron List in Social Security Sequence. This is always produced at update.

c. Patron Monitor, including Patron Statistical Report. This, too, is always produced at update.

d. Unprocessed Transaction Cards. These can be expected at every update. It is possible for there to be none, but only if every transaction card in the batch being processed passes all checks for correctness. This can be checked against the Patron Monitor for that update.

e. Need-to-know Revalidation Notices. These, too, can be expected at every update. None would be produced if there were no transactions changing any patron's organizational symbol or citizenship code.

f. Patron Record Deletes. And these, too, can be expected at every update, but none would be produced if there were no purge actions in the update.

All multi-copy outputs are standardized at six copies for convenience in the Computation Center.

The most important output is the Complete Patron List in Name Sequence, figure 5. It is a display of the total contents of the Patron Master File. The legend on the first page of the list explains its format. It is in sequence by patron surname and given names.

The primary purpose of the Patron List in Name Sequence is to display complete patron data for use in control of charging out, routing, and access to documents that are classified or otherwise restricted in circulation. It is a multi-copy output, and copies of it are kept at all circulation desks, as would be expected considering its purpose. The person responsible for maintaining the patron file also receives a copy.

There are many possible uses of this output aside from its primary one. Speaking generally, if a patron's name is known, one can refer to this list to find out anything else about him that is entered in the Patron Master File. To get from social security number to name, one would refer first to the Patron List in Social Security Sequence.

No exhaustive discussion of these possible uses can be presented here, but a few examples may be suggestive.

The Patron List in Social Security Sequence, figure 6, displays in abbreviated form each patron record in the Patron Master File. The legend on the first page explains its format. Its sequence corresponds to that of the Patron Master File.

The purpose of the Patron List in Social Security Sequence is to provide an entry to the patron file through the social security number. It provides direct access only to data about patron name, location, and security clearance. Used with the Complete Patron List in Name Sequence it provides access to all data in the Patron Master File. It is a multi-copy output, and is kept at the same places as the Complete Patron List in Name Sequence--at all circulation desks--with one exception. One copy of the Patron List in Social Security Sequence is kept in the Acquisitions Section. This small list has been found adequate for patron address data whenever a patron has requested a publication and, for instance, acquisition has been delayed. (The acquisition module of ALPHA uses social security numbers to refer to patrons.) The person responsible for maintaining the patron file also receives a copy of this output.

The possible uses of this output are similar to those of the Complete Patron List in Name Sequence. Indeed, as indicated

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before, the two will sometimes be used together. Its independent uses are limited because of the paucity of data it contains, and because its data is duplicated, together with much in addition, in the Complete Patron List in Name Sequence.

Need-to-know Revalidation Notices, figure 9, are produced automatically when either the organizational symbol or the citizenship code is changed in the records of patrons with a specified need-to-know. Changes in these data elements could affect the patron's need-to-know. The purposes of the notice is to provide a way of revalidating the patron's need-to-know or requesting information upon which to base a change in his need-to-know as recorded in the patron file. The format of the notice is explained by the illustration. It is produced as one copy on a 5 x 8 card, ready for mailing to the supervisor of the employing element, but before being mailed it is reviewed by the Documents Section.

Patron Record Deletes, figure 10, are produced immediately before complete deletion (purge) of a patron record from the Patron Master File. The purpose of this output is to provide a historical record of deleted patron data. The format of the Delete is explained by the illustration. It is produced as one copy on a 5 x 8 card.

The immediate use of the Patron Record Delete card is to verify that the patron has cleared the library. Also, if a patron record is mistakenly deleted, the card is a source of data to reestablish the record in the Master File. And the file of these cards is useful in determining whether the absence of a patron record from the file is a result of his having been deleted.

Delete cards are first sent to the main circulation desk, where they are used to verify the patron's clearing the library. They are then forwarded to the person maintaining the patron file, by whom they are filed in name sequence and held for two years, primarily for security audit trail purposes.

The Patron Monitor, figure 7, displays a record of each transaction in the update run. At the end of the Monitor is the Patron Statistical Report, figure 8, a statistical summary of the composition of the Patron Master File and the transactions against it during the update run. The legend of the first page of the Monitor explains its format; the format of the Statistical Report is self-explanatory. The Monitor is in social security number sequence.

The purpose of the Patron Monitor is to provide help in correcting errors in transactions cards. It also serves, for administrative people, as a "window" through which some of the behavior of the patron control subsystem can be observed. And it provides, by way of the Statistical Report, useful information for administrators about the most recent changes in the file and the current state of the file. The Patron Monitor and Statistical Report is a multi-copy output. Copies

go to the administrative offices most concerned with the patron file, including the person responsible for maintaining the file. The director of the information center and the chief of the library receive copies of the Statistical Report only.

Before considering exactly how the Patron Monitor is used in correcting transaction cards, it should be understood how error messages get on the monitor. Not all records of transactions will have error messages; the fewer that do, the better. But there will almost always be some. How do they come to be there?

The answer is through the operation of editing criteria, or "edits." As an aid in being as accurate as possible, a considerable number of edits are built into the system. These edits are rules specifying that certain things either must be or cannot be in specific data fields on the punched cards. Some examples, put in ordinary language:

(1) The social security number must be all numeric; if it is not, produce the error message INVALID SSN.

(2) If the patron is not a contractor employee, the company code field (cols 75-78) must be blank; if it is not, produce the error message NOT CONTRACTOR.

(3) If the transaction is coded NEW, it must match on social security number a record already in the file; if it does, produce the error message ALREADY IN FILE.

When an edit turns up an error, the transaction is not processed. A copy of the transaction card is returned with the Patron Monitor. These unprocessed transaction cards are identical to the original cards except that the action code (column 13) is left off. Unprocessed cards go, with a copy of the monitor, to the person who maintains the patron file.

That person uses the Patron Monitor as an aid in finding out what was wrong with the unprocessed transaction cards. The process of correcting the cards cannot be done in cursory fashion. The person doing the correcting has to consider very carefully what correction is required. One should be wary of relying on the error messages because they do not always tell exactly what the mistake was.

One should look for the mistake and be sure he understands it before changing the transaction card. Is there an obvious error on the card? Is the card code (columns 11-12) correct? If it isn't, the error message on the monitor may be no help at all. Here is the reason. In computer editing, data elements are checked on the assumption that the card code is correct if it satisfies its own editing check, which requires only that it be one of the two-digit codes 00

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through 09. If, for example, the card code is 01 but should have been 09, the data on the card will be evaluated as name data rather than as routing data. The result is a nonsense error message.

Was the original action code, noted on the Patron Monitor, correct? Sometimes the only correction required is a change in the action code. If the card code and action code are correct, the error message will probably make sense and will be helpful in tracking down the error. When the error is found and understood, the correction is made on the returned card or a new card is punched if required. Sometimes the only action needed will be to toss the transaction card into the wastebasket. Whatever the correction is, it should be understood and not just made blindly. Only in this way will the patron file be kept as accurate as possible.

4.   Editing Criteria

Following are all possible error messages, listed alphabetically, with explanations and suggested corrective actions.

Message	Meaning	Corrective Action
ALREADY IN FILE	This transaction, coded as NEW, matches on social security number a patron record already in the patron file. Either (1) the social security number of the transaction is incorrect and accidentally matched a record in the file, or (2) the transaction should have been coded CHANGE.	Correct and resubmit.
BAD NTK ACTION	At least one of the need-to-know categories on this card is followed by an action code that is not A, for add, or D, for delete.	Check all categories, supply the correct action codes, and resubmit.
BLANK DATA FIELD	Columns 30 through 78 of the transaction card contain no data (are all blank).	Add data and resubmit, or discard.
CL 51-78 NOT BLANK	This name change transaction card contains non-blank data in columns 51-78; it should contain data in columns 1 through 50 only.	Eliminate the data in columns 51-78 and resubmit.
CL 51-78 BLANK	This name card, coded CHANGE, contains nothing to change in columns 51-78.	Supply the data to be changed and resubmit.

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Message	Meaning	Corrective Action
INV ACTION CODE	The action code (col 13) of the transaction is either invalid or inconsistent with the card code. For card codes 01 through 09 (cols 11-12) the action code must be either N (new), C (change), or / (name change) only. For card code 00 the action code must be P (purge) only.	Correct the action code if invalid. If it is inconsistent with the card code, change one of the codes. Resubmit.
INV AREA CODE	The telephone area code (cols 61-63) is not all-numeric.	Correct and resubmit.
INV CARD CODE	The card code (cols 11-12 is not one of the codes 00 through 09.	Correct and resubmit.
INV CHANGE	A name card (code 01) was submitted with data in one or more of the following fields: given names or surname suffix, patron type, or contractor code. Changes in these data elements cannot be accomplished with a change transaction.	Research and resubmit.
INV CITIZENSHIP	The citizenship code (cols 59-60) is not all-numeric.	Correct and resubmit.
INV CLEARANCE	The patron security clearance (col 58) is not one of the following: U=uncleared, C=confidential, S=secret, or T=top secret.	Correct and resubmit.
INV CONTRACTOR	The contractor code (cols 75-78) is either missing or incorrectly recorded. A valid contractor code is required since column 57 specifies C for contractor.	Supply the correct contractor code or correct the patron type and resubmit.
INV EXTENSION	The telephone extension (cols 71-74) is not all-numeric.	Correct and resubmit.

Message	Meaning	Corrective Action
INV GIVEN NAMES	The given names (cols 30-47) contain characters other than alphabetics, periods, and dashes, or begin with a blank or invalid character.	Correct and resubmit.
INV NAME CHANGE	A name change transaction was submitted with data elements other than surname, given names, and surname suffix.	Eliminate the extraneous data and resubmit.
INV N-T-K CODE	At least one need-to-know category in cols 31-78 is invalid or inconsistent with the need-to-know type code (col 30).	Check all categories. correct, and resubmit.
INV N-T-K TYPE	The need-to-know type code (col 30) is not either C for COSATI or N for NASA.	Correct and resubmit.
INV NTK ACTION	At least one of the need-to-know actions in this transaction is invalid (adds a category already present or deletes one not present). If the action is ADD ALL the message means that the patron is already authorized all categories; if the action is DELETE ALL, it means that no categories are authorized for the patron.	Correct and resubmit.
INV PHONE NR	The telephone number (cols 64-70) is not all-numeric.	Correct and resubmit. (Alphabetic exchanges must be translated to their numeric equivalents.)
INV PURGE CARD	Columns 30-78 of the purge card contain non-blank data when they should be blank.	Correct and resubmit.
INV ROUTE ACTION	The action code following at least one of the routing requirements is something other than A for add, C for for change, or D for delete.	Check all routing requirement action codes, correct those that are incorrect, and and resubmit.

Message	Meaning	Corrective Action
INV ROUTE ADD	At least one of the routing requirements to be added by this transaction is already in the master file.	Review and resubmit a correct transaction card.
INV ROUTING	At least one of the routing requirements on this card is incorrect because of an invalid control number, copy number, or priority, or a combination of these.	Check all routing requirements and resubmit a correct transaction.
INV ROUTE DELETE	At least one of the routing requirements to be deleted by this transaction is not in the master file.	Review the routing requirements for this patron and resubmit a correct transaction.
INV TYPE CODE	The patron type code (col 57) is not one of the following: N=NASA, A=Army, M=Military, C=Contractor, or O=Other.	Correct and resubmit.
INVALID SSN	The social security number appearing on this transaction is not all-numeric.	Correct and resubmit.
INVALID SURNAME	The surname (cols 14-29) contains characters other than alphabetics, dashes, or blanks; or the initial letters of the name have a misplaced blank. (No blanks are permitted between characters in surname.)	Correct and resubmit.
NAME UN-CHANGED	This name change transaction contains name data identical to that already posted for the patron.	Supply the correct name data and resubmit.
NOT CONTRACTOR	Although this patron is not a contractor, something appears in the company code field (cols 75-78) of this card.	Remove the data in the company code field or change the patron type to contractor and resubmit.

Message	Meaning	Corrective Action
NTK-TYPE ERROR	The need-to-know type code (Col 30) does not agree with the need-to-know type code already posted for the patron.	Correct and resubmit.
OVER ROUTE MAX	At least one of the routing requirements to be added by this transaction was not added since it would cause the patron to exceed the limit of 25 journals.	Research and resubmit.
SSN NOT IN FILE	The social security number on this transaction is not in the master file, and the action code is something other than N for new patron. It may be that the number on the transaction card is incorrect, or perhaps the item to which it should match was never added to the master file or has been accidentally dropped from the file.	Research and resubmit if required.
UNMATCHED·SURNAME	This transaction matched a record in the master file on social security number but did not match on surname. Any of the following could be true: (1) The surname on the master file record is incorrect, (2) the surname on the tran-action card is incorrect, or (3) the social security number on the transaction card is incorrect and accidentally matched a record in the master file.	Research and resubmit.

Section III. LANGUAGE CONTROL SUBSYSTEM

1. Introduction

The language control subsystem provides the library with an automated method for establishing control of the authorization, establishment, maintenance, and assignment of subject terms used in the cataloging and retrieval functions of the ALPHA System. The language control subsystem, in traditional practice, would be comparable to a subject term or authority file.

A subject term or authority file is ordinarily a file of 3 x 5 cards containing library subject terms determined to be valid. These accepted terms are typed on a card along with the appropriate cross references, required comments, and suggested Library of Congress (LC) class number. Two cards would then be typed for each cross reference, one of which is for the subject term file and the other for the public catalog. When changes were necessary, both cards were pulled, the adjustments made, and the cards returned to their respective files.

Before ALPHA, RSIC maintained two separate language files, one for book terms and another for document terms. The documents language file consisted of subject terms and cross references established in the main documents catalog. The books catalog file was operating with a manual system of language control which created an authority file of subjects and related data on 3 x 5 cards in alphabetical sequence. The books catalog file was automated only to the extent that the cards for each subject heading were punched and sorted into alphabetical sequence by the computer. This produced as an output, a multi-copy printout of all acceptable book subject terms which could be used by the cataloger at her desk, rather than searching the central card file.

Both of these files used by RSIC created heavy typing loads, long tedious hours of filing and pulling cards, and in turn extra clerical effort was required to maintain an up-to-date status in these files. Under ALPHA this has changed, the language control subsystem has given RSIC a formal and precise method of controlling books and documents language without the previously mentioned adversities.

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The ALPHA System assures RSIC greater accuracy in three ways: first, the information is typed only once; secondly, the computer checks the cataloger; and thirdly, the system assures complete referencing of any term.

The language subsystem is designed to provide one program capable of controlling one language for books and another language for documents. It also provides the capability for using one language for both mediums, if in the future RSIC decides this to be a desirable course to follow.

Obviously, in order for the desired information to be retrieved, the same language already established in the language subsystem master files must be used. The language for both books and documents is formatted, processed, and maintained in the same manner, with some slight variations in the input data elements.

For each book and document subject term of the library, a magnetic tape record was created. Each magnetic tape record contains a subject term with its associated data. These magnetic tape records, one for each subject term with associated data, compiled and stored in a logical sequence, make up the Language Master Files.

These language files are the central source of language information for both the library catalogers and other subsystems of the ALPHA System. For library use the contents of the Language Master Files are displayed in two listings, one complete language control thesaurus for books and another for documents. (See figure 17.) Primary use of these information displays of the Language Master Files is made by the catalogers in determining if a term is authoritative in the cataloging and retrieving functions at the library.

Four types of actions affecting the Language Master Files may be taken: new language terms records may be added; revision of an existing language term record by adding, deleting, or changing various data; changing the base term of an existing language term record or purging of the complete language term record.

Input data for these actions is typed (punched-paper tape) and periodically sent to the computation center for update of the language master files. Upon receipt of input data, the computation center updates the language master files per actions indicated, and prepares updated language control thesaurus listings for the library.

During the update of the Language Master Files, three auxiliary outputs for each master file are produced in addition to the two language control thesauri listings previously mentioned. These are the Language Worksheet Errors, the Language Monitor, and a Language Statistical Report.

The Language Worksheet Errors, figure 18, is a display of all input transaction errors found during the conversion of raw transactions to language transactions; the Language Monitor, figure 19, is a display of all language transactions made during the update with an indicative processing or error message; and the Language Statistical Report, figure 20, is a summary of the composition of the Language Master Files and all transactions made during the present update.

2. Language Master Files

For the librarian, establishment and maintenance actions of the Language Master Files begin with the source document. At RSIC, this is the Language Control Input Form, figure 21. As you can see, this single form format provides spaces for all acceptable types of actions to be taken against either the books or documents language master file. Since all typing of the control input form is accomplished by the Flexowriter operator, placement of the forms internal data will be discussed in the Flexowriter procedure.

In order to prepare the basic Language Master Files, RSIC began by converting the main documents catalog and the books authority file to magnetic tape.

Conversion from punched paper tape to create the magnetic tape language master files was accomplished through use of a "Generalized Conversion Program" which is described in chapter 3, section III.

a. Format Content

The Language Master Files, displayed for library use as the language thesaurus, indicate five data elements: (1) the subject or base term: associated data (2) comments, (3) suggested LC class number, (4) cross references, and (5) see references. A general discussion of each of these data elements will follow.

Although subject terms for books and documents are processed in the same manner, utilizing the control input form for both, the subject terms themselves are selected by different rules and conventions.

Book terms are based on subject terms utilized in the Library of Congress Subject Headings.

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Document terms on the other hand are based on selected
Defense Documentation Center (DCC)[1] descriptors and identifiers, the
RSIC word list (an inhouse compilation of new subject terms established
at RSIC) and most of the rules and conventions used in Project LEX[2]
in building the Department of Defense (DOD) technical thesaurus.

Comments are notes defining the meaning of and the scope
of the subject term. Each comment forms a separate paragraph directly
beneath the term and is included primarily for the benefit of the
catalogers, but will also be helpful to the retrievers.

Library of Congress class numbers are self-explanatory.

Cross reference (substituent term) principles set forth
in Sears List of Subject Headings and the Library of Congress Subject
Headings have been utilized in the language control subsystem. Both
books and documents cross referencing principles are the same with
these exceptions, in documents each reference is qualified by a generic
relationship code (B) for broader term, (N) for narrower term and
(R) for related term without hierarchy; whereas, in books each term
in a base record will carry a single digit direction code X or S. In
other words, an "XX" see also reference with an inverted generic in-
dicator or direction code is generated from each term which follows
an "XX," see also from reference. See figures 22 and 23.

Some other noticeable document thesaurus format differ-
ences are the absence of subdivided terms and LC class numbers.

The subject term filing arrangement for books is alpha-
betical according to the Library of Congress filing rules; whereas,
term arrangement for documents is word by word and letter by letter.

[1]
The Defense Documentation Center (DDC), an agency of the Depart-
ment of Defense serving qualified organizations with scientific and
technical documents, abstract bibliography and reference tools.

[2]
Project LEX, a program to develop a DOD-wide technical thesaurus
instituted by the Office of Naval Research, in accordance with
a memorandum from Director of Defense Research and Engineering.

b. <u>Language File Update</u>

Update of the Language Master Files is accomplished through the use of transaction processing "term codes" and "action codes." The "term code" not only signifies whether it is a book or document term, but what type term it is. The "action code" signifies the action to be taken on each term. The same action codes are used for both books and documents. These transaction processing codes are :

(1) <u>Term Codes</u>.

(a) Document Terms (Type Code V) - Terms determined to be acceptable to RSIC as index points for documents.

(b) Book Terms (Type Code A) - Terms determined to be acceptable to RSIC as index points for books.

(c) Q-Terms (Type Code Q) - Ambiguous terms which may or may not be acceptable to RSIC as index points for documents depending on context.

(d) See Reference Terms - Books (Type Code B) - Terms determined to be unacceptable to RSIC as index points for books but which refer to other usable book terms.

(e) See Reference Terms - Documents (Type Code Z) - Terms determined to be unacceptable to RSIC as index points for documents but which refer to other usable document terms or Q-terms.

(f) Invalid Terms (Type Code I) - Terms determined to be unacceptable to RSIC as index points for documents. These terms do not require a see reference.

(2) <u>Action Codes</u>.

(a) Action Code 1 - Establish a new term record.

(b) Action Code 2 - Revise an existing term record by adding, deleting or changing various data.

(c) Action Code 3 - Change base term of existing term record.

(d) Action Code 0 - Purge complete term record.

Associated data accompanying each subject term to be up-dated will depend on the term code, whether books or documents.

Initial steps for an update processing transaction against the language master files are made by the cataloger. Request for one

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of the four transactions is made on a plain 3 x 5 card. This card will contain the base term to be affected, LC number (if applicable), source base term, and cataloger's name. This card is then forwarded to the lexicographer who verifys the term, adds LC number (if applicable), adds the cross references, adds proper processing codes, verifies data elements requirements per figure 24 and forwards the term to the Flexowriter operator.

As the input processing transactions are being typed on the language control input form a paper tape is punched simultaneously. This enables RSIC to apply source data automation techniques by capturing the data in machine readable form the first time. The use of Flexowriter paper tape data is employed since it is more advantageous when using free-form formats as opposed to fixed field formats which are effectively handled within the limitations of punched cards. The punched-paper tape is then converted to magnetic tape by the previously mentioned "generalized conversion program."

During the computer update operational sequence, transactions found to be in error are dropped off, printed, and returned to the library lexicographer as language worksheet errors with indicative error messages. These errors are the result of improper use of processing codes, improper format, etc. (Refer to paragraph 5, Editing Criteria.)

The terms which are accepted as valid language transactions are sorted by the computer according to term type and base term for processing against the language master file (which has been placed on a computer disc for random storage and direct access). The language master file is then updated, a language statistical report is accumulated, and a language monitor is printed.

The updated language master file is then sorted again alphabetically, formatted for display, and printed as the language control thesaurus.

Since RSIC uses the free-form paper tape transactions, advantage cannot be taken of the prepunched transaction feedback; therefore transaction errors must be retyped and resubmitted in correct form.

Even though input data for books and documents is processed in the same way, at the present time RSIC uses separate update runs for books and documents which results in separate outputs for each.

In the following a detailed discussion of the Flexowriter typing for input transaction for each type of term and action, editing criteria, and computer outputs will be presented.

3. Flexowriter Data Capture Procedure

In the following discussion it is assumed that the Flexowriter operator understands the setup and operation of the machine and knows the language terms and procedures well enough to use them. Additional information needed to use the Flexowriter to capture language data is provided here.

Because of the wide variability of format content combinations it is virtually impossible to depict graphically a typical or representative input transaction. Instead the following rules and operational instructions governing the format and content of input transactions are provided.

a. Format Rules

(1) Each tape record will contain no less than 4 and no more than 51 carriage return (C/R) characters.

(2) All data elements on a tape record will be typed in lower case letters except: in the term line, if parentheses are present, type them in upper case; and in the comments, all data elements will be typed upper-lower case.

(3) The last character in the field of each complete transaction record will be a record mark (+) which may or may not be preceded by a C/R.

(4) Line 1 will consist of the data preceding the first C/R, line 2 of the data preceding the second C/R and so on for a possible maxium of 52 lines.

(5) Carriage return characters may exist "back-to-back" signifying blank or empty lines as in the following:

Line 1 C/R Line 2 C/R Line 3 C/R Line 4 C/R C/R C/R C/R C/R C/R C/R C/R C/R C/R Line 15 C/R Line 16 C/R

In the above, lines 15 and 16 are present and lines 5 through 14 are missing.

(6) Except for lines 1 through 3, TABS should be ignored.

(7) The positional value of each TAB is:

TAB 1 - 15
TAB 2 - 33
TAB 3 - 51
TAB 4 - 69

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(8) Backspace (BSP) may exist in any line and adjustments must be made accordingly. In general, the function of the BSP which is inverse of the blank, is to govern the placement of characters following the BSP and results in one of two conditions:

(a) If no data exist before the BSP, it signifies an adjustment in the beginning position of the data.

(b) If data exist prior to the BSP, some of the data characters following the BSP may override and replace data characters preceding the BSP. The examples below illustrate typical adjustments:

Example A:

The term EXITbVELOCITY on line 4 was misspelled as EXXXITbVELOCI-
TY and corrected during transcription resulting in the following:
    BB
EXXXSSITbVELOSITY which was corrected to: EXITbVELOCITY.
    PP
Note: Two BSP were required to remove the two extra X's.

Example B:

For line 1 (action line) the following was intended to signify an
                T
action of new A1C/R; however, a second TAB was inadvertently added
                B
and BSP adjustments were made accordingly as follows:
                        TTBBBBBBBBBBBBBBBBB
                        AASSSSSSSSSSSSSSSSS1 C/R
                        BBPPPPPPPPPPPPPPPPPP
This data string must be corrected to the form originally intended.
Note: Sixteen BSP were required to remove the extra TAB (see positional values, step (7) and correct the error.

(9) The space (b) or blank character serves a dual function as follows:

(a) It always signifies an advancement in position within a line.

(b) It is treated as a character and retained between non-blank characters.

In the revision of established term records an "asterisk delete" convention will be used which operates as follows: data elements to be deleted will be preceded by an asterisk; data elements

to be added will be identified by the absence of an initial asterisk.

      b. <u>Data Capture</u>

        (1) <u>Action Line - Line 1 for a</u>:

New - TAB once and type a one and return carriage.

Revised - TAB twice and type a two and return carriage.

Purge - TAB three times and type zero and return carriage.

Term change - TAB four times and type a three and return carriage.

        (2) <u>Medium Line - Line 2 for a</u>:

Book - TAB once and type an X and return carriage.

Document - TAB twice and type an X and return carriage.

        (3) <u>Term Type Line - Line 3 for a</u>:

Valid term (books) - TAB once and type an A and return carriage.

Valid term (documents) - TAB once and type a V and return carriage.

See Reference (books) - TAB twice and type a B and return carriage.

See Reference (Documents) - TAB twice and type a Z and return carriage.

Q-Term - TAB three times and type a Q and return carriage.

Invalid term - TAB four times and type an I and return carriage.

        (4) <u>Term Line - Line 4</u>. Type term in straight forward manner and return carriage.

        (5) <u>Comments - Lines 5 thru 16</u>. Type in straight forward manner up to 12 lines and return carriage. If all lines are not used comply with format rule (5).

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(6) See Reference - Lines 17 thru 28. Type in straight forward manner, one reference per line, up to 12 lines and return carriage. If all lines are not used comply with format rule (5).

(7) See Also - Lines 29 thru 45. Type generic relationship code for documents or direction code for books in space allotted. Type in straight forward manner, one reference per line, up to 12 lines and return carriage. If all lines are not used comply with format rule (5).

(8) LC Class Number - Lines 46 thru 52. Type in straight forward manner, one LC class number per line, up to 12 lines and return carriage. If all lines are not used comply with format rule (5). Note: Insure compliance of format rule (3).

4. Language File Outputs

Language file outputs are prepared each time the master file is updated. At present, the schedule is monthly. All multi-copy printouts are standardized at six copies each on 8 1/2 x 11 paper. There are four outputs of each language master file, which are:

a. Language thesaurus

b. Language worksheet errors

c. Language monitor

d. Language statistical report

The language thesaurus, figure 17, whether for books or documents is the most important output of the master file. It is a complete display of the contents of the file. The thesaurus displays the base term and associated data of each record in alphabetical sequence. Copies of both books and documents thesauri are kept by each cataloger.

There are many possible uses of the thesaurus but primarily it is used in determining if a term is authoritative in the cataloging and retrieval functions of the ALPHA System.

The Language Worksheet Errors, figure 18, is a display of all raw input transactions found in error. All worksheet errors are formatted and printed in input sequence by base term with an indicative error message. Copies of the worksheet error report are kept by the library lexicographer.

The sole purpose of the Language Worksheet Errors report
is to assist the lexicographer in correcting input errors found
during the conversion of raw input transactions to language transactions
in the first computer run. In this run all input transaction are
edited and each transaction found in error is dropped off by the
computer, formatted and returned to the library lexicographer as language
worksheet errors. Errors which appear on this report are primarily the
direct result of improper use of the transaction codes, either term type
or action code and formatting errors. For a complete list of error
messages, their meaning and possible corrective action refer to paragraph
5, Editing Criteria.

The Language Monitor, figure 19, serves a three-fold purpose.
First, it presents a display of all transactions attempted or processed
during the update. Secondly, since it is a display of all transactions
of the update in complete form, it serves as an assist in correcting
update errors. Thirdly, it is a "management tool" by which some of
the behavior of the language control subsystem can be observed.

The Language Monitor displays each update transaction attempted
or processed by base term sequence along with a definitive error or
processing message. Copies of the Language Monitor are kept by the
library lexicographer.

Errors which appear on the monitor may be found prior to
and during the update of the Language Master Files. Following the
language transaction run where the language worksheet errors are found,
all input transactions are sorted into sequence for processing against
the Language Master Files. Upon completion of this sorting, all input
transactions are edited again. During this editing certain input
transactions, data relationship and update edits are employed. These
edits may disclose errors which will not allow the input transaction
to be processed into the Language Master Files.

For example, if a term type code was indicated in the correct
position in the language transaction conversion run, the transaction
would be forwarded to the next run but during the input transaction
editing the term type codes are identified; that is, it must be a valid
code otherwise the error message Invalid Term Code Not Processed will be
indicated. Assuming this is the case, the input transaction would not
be processed. The base term in error along with the editing error mes-
sage would appear on the Language Monitor.

Valid transactions which are processed into the Language
Master Files are entered on the Language Monitor along with an appropriate
processing message.

The Language Statistical Report, figure 20, which appears as the last page of the Language Monitor, is a summary of the composition of the Language Master Files. It is formatted and printed in term type sequence. Copies of the language statistical report are kept by management personnel of the library. Primary use of the report is for planning purposes.

5. Editing Criteria

Edits are rules specifying that certain things must be or cannot be in the specified data field of the language control input form or that certain term and action codes must be properly used. The following are all possible error or processing messages, listed alphabetically, with explanation and suggested corrective action.

Message	Meaning	Corrective Action
ACTION CODE MISSING	Action code has not been included in line 1 of field.	Determine code and resubmit.
ALREADY IN FILE. NEW ACTION NOT PROCESSED	In all term type transactions using action code (1) the base term must not be in the master file.	Research thesaurus to determine if base term is present, verify data and resubmit.
ALREADY POSTED. RE-VISE ACTION NOT PRO-CESSED	In the processing of (Q), (V), and (A) term type transactions using action code (2) each seen from and seen also from term must not be present in matching term record.	Research thesaurus, verify data and resubmit.
	In (B) and (Z) term type transactions using action code (2) no see terms may be present in matching term record.	Research thesaurus, verify data and resubmit.
BASE TERM OF NEXT LINE SUB-STITUENT TERM INVALID	Substituent term reference has not been typed in correct position or term reference is not compatible to medium.	Determine proper term type or position and resubmit.
BLANK BASE TERM NOT PRO-CESSED	Line 4 of record must be non-blank.	Determine base term and resubmit.

Message	Meaning	Corrective Action
CHANGE TO TERM AL- READY IN FILE. NOT PROCESSED	In the processing of all term type transactions using action code (3) the see or seen from term must not be in the master file.	Research thesaurus and verify data.
CHANGE TO TERM MISS- ING. TERM CHANGE NOT PROCESSED	In the processing of all action code (3) transac- tions there must be one see or seen from reference in the field, lines 17 thru 28.	Include omitted see or seen from reference and resubmit.
EXTRANEOUS DATA. NEW ACTION NOT PROCESSED	In (I) term type trans- actions using action code (1) the field cannot con- tain any see or seen from, see also from terms or LC number elements.	Delete extraneous data and resubmit.
	In (B) or (Z) term type transactions using action code (1) the record shall not contain any seen also from terms in the field, lines 29 thru 40.	Delete extraneous seen also from terms and resubmit.
EXTRANEOUS DATA. PURGE ACTION NOT NOT PROCESSED	In all action code (0) transactions, no variable data is permitted.	Verify data and resubmit or discard.
EXTRANEOUS DATA. REVISE ACTION NOT PROCESSED	In (B) and (Z) term type transactions using action code (2) the transaction shall not contain seen also from or LC number elements in the field.	Delete extraneous data and resubmit.
	In (I) term type trans- actions using action code (2) no elements other than comments shall appear in the field.	Delete extraneous data and resubmit.

Message	Meaning	Corrective Action
	In (Q) and (V) term type transactions using action code (2) the field shall not contain LC number element in lines 41 thru 52.	Delete extraneous data and resubmit.
EXTRANEOUS DATA. TERM CHANGE ACTION NOT PROCESSED	In (I), (B) and (Z) term type transactions using action code (3) no see also from or LC number may be present in the field, lines 29 thru 40.	Delete extraneous data and resubmit.
	In (Q) and (V) term transactions using action code (3) no LC numbers may be present in the field, lines 41 thru 52.	Delete extraneous data and resubmit.
INVALID ACTION CODE. NOT PROCESSED	Action code indicated in Line 1 of field must be either (0) for purge, (1) for new, (2) for revise or (3) for change of term.	Determine appropriate action code, and resubmit.
INVALID TERM CODE. XXXX ACTION NOT PROCESSED. WHERE XXXX INDICATES TERM TYPE CODE	Term type code indicated in Line 2 of field must be either (A) for book terms, (B) for book see reference terms (I) for invalid terms, (Q) for ambiguous terms, (V) for document terms or (Z) for document see reference terms.	Determine appropriate term and resubmit.
LAST CHAR-ACTER OF RECORD NOT GROUP MARKED.	Last character of record must be followed by a group mark.	Add group mark and resubmit.
LC DATA ALREADY POSTED	In (A) term type transactions using action code (2) each LC number must not be in matching term record.	Research thesaurus, verify data and resubmit if required.

Message	Meaning	Corrective Action
LC NUMBER NOT IN RECORD	In (A) term type transactions using action code (2) each *LC number must be in matching record.	Research thesaurus, verify and resubmit.
MEDIUM CODE MISSING	Medium code has not been included in line 2 of field.	Determine code and resubmit.
MEDIUM/ TERM TYPE INCONSISTENT	The medium "books" can only exist with term types "term and see references," that is, in a books term record (type A) there will always be see reference-books (type B) and book terms (type A).	Determine appropriate term and see references and resubmit.
MULTIPLE ACTION CODES	More than one action code has been included in line 1 of field.	Determine correct action code and resubmit.
MULTIPLE CHANGE TO TERM PRESENT. TERM CHANGES NOT PROCESSED	In all term type transaction using code (3) there cannot be more than one see or seen from reference in the field, lines 16 thru 28.	Delete extraneous data and resubmit.
MULTIPLE MEDIUM CODES	More than one medium code has been included in line 2 of record.	Determine correct medium code and resubmit.
MULTIPLE TERM TYPE CODES	More than one term type code has been included in line 3 of field.	Determine correct term type code and resubmit.
NOT IN FILE. NEW ACTION NOT PROCESSED	In (B) and (Z) term type transactions using action code (1) each see or seen from term must be in the master file.	Research thesaurus, verify data and resubmit if required.
NOT IN FILE. NEW TERM RECORD ESTABLISHED	In (A), (Q) and (V) term type transactions using action codes (1) and (2) each seen also from term must be in the master file.	Research thesaurus to determine if record was created and is applicable.

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Message	Meaning	Corrective Action
NOT IN FILE. PURGE ACTION NOT PROCESSED	In all term type transactions using action code (0) the base term of the record must be in the master file.	Research thesaurus to determine if base term is present, verify data and resubmit.
NOT IN FILE. REVISE ACTION NOT PROCESSED	In all term type transactions using action code (2) the base term of the record must be in the master file.	Research thesaurus to determine if base term is present, verify data and resubmit.
	In (B) and (Z) term type transactions using action code (2) each see term must be in the master file.	Research thesaurus, verify data and resubmit.
	In (B) and (Z) term type transactions using action code (2) each *see term must be in the master file.	Research thesaurus, verify data and resubmit.
	In (Q), (V) and (A) term type transactions using action code (2) each *seen from and *seen also from term must be in the master file.	Research thesaurus, verify data and resubmit.
NOT IN FILE. SEE REFERENCE CREATED	In (A), (Q) and (V) term type transactions using action code (1) each see or seen from reference must be in the master file.	Research thesaurus to determine if reference was created and is applicable.
	In (Q), (V) and (A) term type transactions using action code (2) each seen from term must be in the master file.	Research thesaurus to determine if reference was created and is applicable.
NOT IN FILE. TERM CHANGE NOT PROCESSED	In all term type transactions using action code (3) the base term must be in the master file.	Research thesaurus to determine if base term is present, verify data and resubmit.

Message	Meaning	Corrective Action
NOT IN RECORD. REVISE ACTION NOT PROCESSED	In (B) and (Z) term type transactions using action code (2) each *see term must be present in matching term record.	Research thesaurus, verify data and resubmit or discard.
	In (Q), (V) and (Z) term type transactions using action code (2) each *seen from and *seen also from term must be present in term record.	Research thesaurus, verify data and resubmit.
REVISE ACTION NOT PROCESSED. ALL TX ELE- MENTS INVALID	In all term type trans- actions using action code (2), if after editing, no data elements remain in the master file.	Research thesaurus, verify data and resubmit.
REVISION NOT INDICATED. NOT PROCESSED	In (I) term type trans- actions using action code (2) comments elements must be present in the field, lines 5 thru 16.	Include omitted data and resubmit.
	In (B) and (Z) term type transactions using action code (2) the transaction must contain either (or both) comment data or see or seen from data in the field.	Include omitted data and resubmit.
	In (Q) and (V) term type transactions using action code (2) the transaction must contain one or more of the following data ele- ments in the field: Comments, see, seen from, or seen also from.	Included omitted data and resubmit.
	In (A) term type transactions using action code (2) the record must contain one or more of the following data	Include omitted data and resubmit.

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Message	Meaning	Corrective Action
	elements in the field: comments, see or seen from, seen also from and LC number elements.	
SEEN TERM(S) MISSING. NEW ACTION NOT PROCESSED	In (B) or (Z) term type trans-actions using action code (1) the field must contain at least on see or seen from term in lines 17 thru 28.	Included omitted see or seen from terms and resubmit.
SUBSTITUENT TERM TYPE INVALID	Substituent term type must be compatible to medium.	Determine proper substituent term type and resubmit.
SUBSTITUENT TERM TYPE INVALID OR MISSING	Substituent term type has either been omitted or term type indicated is incorrect.	Determine if substituent term type is missing or in error and resubmit.
TERM MISSING	Base term has not been included in line 4 of field.	Determine base term and resubmit.
TERM TYPE MISSING	Term type has not been included in line 3 of field.	Determine term type code and resubmit.
TOO MANY BSP IN RECORD	Some characters following the BSP will override characters preceding the BSP when the BSP's are removed.	Retype eliminating excess BSP and resubmit.
TRANSACTION EXCEEDS MAX-IMUM LENGTH	Transaction shall contain no more than 51 C/R characters	Condense record to within maximum C/R characters and resubmit.
TRANSACTION NOT LONG ENOUGH	Transaction shall contain no less than 4 C/R characters.	Extend to correct length and resubmit.

Section IV. BOOKS CONTROL SUBSYSTEM

1. Introduction

The books control subsystem provides the library with an automated method for acquiring, cataloging, and circulating books. The function of books control is comparable to traditional practices under the same three broad headings.

2. Acquisition

Acquisition naturally falls into three divisions: selection, ordering, and receiving. Typical traditional practice in libraries creates certain records that summarize what is done at each stage in acquisition. Let's consider the acquisition records usually created in an unautomated but efficiently organized library.

Selection is by patron requests and by the library staff. Patron requests are screened to make sure the books are suitable for adding to the library's stock. Library staff selections usually originate in bibliographic listings that are compared against the shelf list to eliminate duplication. Selection leads to a record of titles selected, which is most frequently kept on a printed 3 x 5 forms, one for each title. In most modern libraries, a single multicopy form serves as record of selection, book order, accession record, and sometimes shelf list entry. This is the arrangement that will be described.

Each record of a title selected contains an accurate title, edition, author's name, publisher, and date of publication. One copy of the multicopy form is the record of selection. Upon receipt of the book, the same copy can be converted for use in the shelf list by noting the call number in the upper left hand corner.

To order the book, the remaining copies of the form have added to them the unit price, quantity ordered, date of order, and whether part of a series. At intervals orders are separated by vendor and mailed out, one or more copies to the vendor, who may be the publisher or a dealer. Another copy, with the name of the requesting person added, is filed in an on-order file in sequence by title or author. Sometimes this file and the selection file are the same. When the order is received, this suspense copy may be removed from the on-order file and annotated for use as an accession record, if accession records are kept, by adding the classification number and date received.

The procedures and records just described seem quite simple, but in practice they seldom are. They are often made more complicated (especially in government libraries or those with special funding) by the purchasing and accounting policies. It may be, for instance, that orders must be sent out combined on a single form for each address. Order numbers may have to be assigned at more than one stage in the process, and being different they will require cross referencing. There are many other possible complicating requirements.

In ALPHA the first step is selection, which is based on normal new title selection procedure in the library or on a specific request by a patron. Patron requests are made on the library request card, figure 28, which is turned into the circulation section, which tries to fill the request. In the process the circulation librarian checks to see that the requested item is:

-not available for circulation,
-not on order,
-not recallable,
-not flagged as reserve, and
-not outside the scope of the library.

If all of these requirements are met, the librarian adds to the request card any other information readily available, such as LC classification number (if an added copy), complete title and author. The request card is then forwarded to the acquisition unit.

The acquisition librarian verifies the citation. When it is decided to add the book to the holdings, the librarian completes the original request card by adding publisher, address, quantity to be ordered, unit cost, LC card number, and vendor. Request cards are grouped by vendor and placed in the to-be-ordered file.

The basic machine used in ordering and receiving is the IBM 632 electronic typing calculator. It produces typewritten copy on a typewriter, reads punched cards, and at the same time punches and prints information onto cards, following a punched tape program.

Daily, the typing calculator operator prepares the book orders, one for each vendor or type of order, figure 29. The order is a pinfed multipart continuous form. Using the continuous form reduces the time taken to insert and align paper in the typewriter. A plain form is used to eliminate the need for changing the form each time a different type of order is typed; it is easy to program the typing calculator to type in automatically the required headings and constant information. Requisitions, figure 30, are an exception; for them a preprinted form is used.

The heading on the book order is prepared automatically by inserting into the typing calculator a small deck of key-punched cards containing information about the vendor (vendor name, purchase order number, vendor address, etc.). The typing calculator reads this information and types it in the correct location at the top of the form.

Using a library request card as a source document, the operator types on the order the information required for ordering the requested item. The typing calculator spaces automatically. The operator then types, to the side of the order so that it does not appear on the order itself, additional information about the order, such as requesting patron identification (social security number and type code). The result of this onetime typing of information is the complete entry of the requested item on the order, plus a set of ordering input transaction cards, figure 31, that are automatically created by the typing calculator. Transaction card formats are presented in figure 32. These cards will be used by the computer to update the computer files.

The typing calculator automatically extends and totals the amount of each order. If a money limit has been imposed, the operator may check at any time to see whether the limit has been reached. The operator may also key in the next item to see whether it will overextend the amount, without disrupting the accumulated total. Such trial balances are also typed to the side of the order.

When the order is complete, the operator forwards it and the keypunched ordering cards to the librarian in charge of the ordering and receiving section, who checks the material. Copies of the order are separated and distributed to the vendor, purchasing department, accounting office, etc. The punched cards are sent to the computer, to be used to update the Master On-Order File.

The Master On-Order File, figure 33, is the central file for control of ordering and receiving. It is a magnetic tape file maintained on a line item basis; that is, a title and its associated data make up a single record. The file is in sequence by control number (primary) and item number (secondary); these two numbers taken together constitute a unique identification of the record.

The control number may be a coupon order number, a TL (Technical Library) number, or a requisition number. All of these are numbers related to funding control. The TL number is analogous to a procurement request number in sequence by fiscal year. It is a local requirement of RSIC but probably has equivalents elsewhere. The item number is one of a series showing sequence either within the individual order or within a funding period, depending on the type of order. It is

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the library's item number. For mixed source orders the vendor's item number--the item number used on the order to the dealer from the purchasing office--must be added. This data, along with purchase order number, vendor, and unit cost, is captured from a copy of the purchase order as sent the vendor.

The voucher number is a number assigned by the library upon receipt of the order, for accountability purposes. Voucher numbers run in sequence yearly. Only accountable, or nonexpendable, items are assigned voucher numbers. Accountability vouchers are maintained as required by AR 735-7600-1 to show quantities on hand. If and when this requirement is lifted and shelf list control permitted, the acquisition and receiving activity can be simplified.

On figure 33, XP means expendable and NXP nonexpendable; data in these fields is number of items or copies.

The receiving card number is arbitrarily assigned by the computer for use as a sequence number for the receiving cards.

Flag fields may contain codes indicating that the item has been received but not yet cataloged.

Data in the due-out field is the total number of copies that have been requested. The requestors' social security numbers are kept in the fields so labelled; their names and addresses for use on the patron mailing card are obtained from the Patron Master File. The one character field at the end of each social security number field labelled "Blank" will ordinarily contain an alphabetic code, the requestor's type indicator. In RSIC these are A for Army, N for NASA, or R for RSIC. The field can be blank.

The On-Order and Received Report, figure 34, a weekly computer output with cumulative daily supplements, is received by the ordering and receiving section, acquisition librarian, and circulation librarian. The report, in sequence by title, shows the status of all titles that have been ordered and not received or received but not yet cataloged. Decks of computer produced punched and printed cards, figure 35, each representing an item ordered, accompany the report to the ordering and receiving section. These cards are used in receiving, cataloging, and distributing the books when the order is filled. Each item on the report is associated with its cards by the receiving card (sequence) number assigned automatically by the computer. The cards are received in numerical sequence from the computer, and are filed in the same order without any manual sorting. Transaction card formats are presented in figure 32.

During the update of the Master On-Order File, several auxiliary outputs are produced in addition to the On-Order and Received Report and punched cards. They may be produced daily, weekly, monthly, or on special request. Auxiliary reports are the Financial Reports and Workload Summary (monthly), figure 36, Cancellation Notices, figure 38, Books Ordering and Receiving Input Transaction List, figure 39, Book Ordering and Receiving Error list, figure 40, Books On-Order Mail List, figure 41 and Outstanding Orders in Vendor Sequence, figure 42.

As each book is received from the vendor, it is checked against the On-Order and Received Report. After verification, the receiving, cataloging, and distribution cards are pulled from the file.

Receiving information--quantity received, price, date received, etc.--is written on the receiving cards (those obtained from the computer and filed by sequence number). The receiving cards are forwarded to the keypunch operator for keypunching the data, and then sent to the computer for processing. This results in updating the line item record showing a received status, a corrected price, etc.

The cataloging and patron mailing cards are placed in the book and go with it to the cataloging unit.

a.   Readers Services Section - Checking Library Request Card

In the discussion which follows, the presence of the card catalog is ignored, because it will be replaced by a printed catalog when ALPHA has been completely implemented.

All library request cards are received in the readers services section. In checking each card containing a book request, the first question is whether the book is in the library; the Inventory Control Master File is searched for the title or for a title that appears to refer to the same book. If the book is in the library, and available for circulation, it is charged out and mailed to the patron.

If the book is in the library but not available for for circulation, it may be flagged as reserve; that is, it may be kept in the reference section or it may be a copy 1, which is not circulated. The patron will be informed that he can see the book by coming to the library.

If the book is not available for circulation and not flagged as reserve, an attempt may be made to recall a copy. If it can be, it is recalled and charged out to the requesting patron. If it cannot be recalled or if use of a copy within the library is not practical, the library request card with LC classification number, complete title, and correct author's name is forwarded to the acquisition unit.

If the requested book is not cataloged, it may already be on order. The On-Order and Received Report is checked to see whether it is or not. If it is on order, and if enough copies have been ordered to cover the request, a transaction card is punched adding the requesting patron to the list of those to receive the book when it is cataloged. If not enough copies have been ordered, the request card is forwarded to the acquisition unit. If the book is not cataloged and not on order the request card is forwarded to the acquisition unit.

b. Acquisition - Checking Library Request Card

The acquisition unit receives library request cards that have been screened by the readers services section. If the request refers to a title already cataloged by the library, the card should have a correct author, title, publisher, and call number; the card may be regarded as a recommendation from readers services section to purchase. The acquisition librarian decides whether to add an additional copy or copies of the book to the holdings. If it is decided to add copies, the librarian verifies the data, adds to the request card the publisher's address, quantity to be ordered, unit cost, and vendor, and places the card in the to-be-ordered file grouped with any others for the same vendor.

If the request is for a new title, the notations to be made on the card are almost the same, but the acquisition unit has the responsibility for the full verification and adding the LC card order number. When the librarian identifies exactly what is wanted, he must then decide whether the book is within the scope of the library.

Once the new title is identified and it is decided to add it to the holdings, the request card is also placed in the to-be-ordered file. Thus, the request cards for the two kinds of acquisitions are the same, except that for new titles there is no LC classification number on the card, but (if the title has been cataloged by the LC) there is an LC card order number.

c. Acquisition Data Capture (Typing Orders and Punching Cards)

An IBM 632 typing calculator is used in typing orders and punching transaction cards for use as computer input. This machine produces typewritten copy on a typewriter, and at the same time reads punched cards and punches and prints information onto other cards. At the typing calculator, information is accepted into the ALPHA System from several sources: manual operation of the typewriter, punched cards, the memory of the typing calculator, or any combination of these.

The typing calculator operation must be trained on the machine operation and general procedures and policies followed

in ordering and receiving. The operator at this station has one of the most complex clerical jobs in the ALPHA System. The following discussion, although it goes into some detail on typing the several kinds of orders and producing transaction cards for computer input, is not detailed enough for an untrained person to operate the typing calculator by following it. The purpose of the discussion and tabular material is to give the reader a fair understanding of what the machine operator does. You should keep in mind that the following description of ordering is as arranged at RSIC, and that different requirements at other libraries would change some of the procedures.

Books may be ordered by any one of four different kinds of actions: "blanket" (mixed source) order, requisition, charge account order, or coupon order. There are also three other kinds of acquisition action at the typing calculator station: data capture on approval shipments, data capture on purchase orders, and data capture on received books.

"Blanket orders" are lists of needed books that are sent to the purchasing office, where one or more vendors are selected by competitive bidding or other authorized procedures. When the order is let by the purchasing office, the library receives a copy of the purchase order, which provides the information to supplement that captured at the time of preparing the blanket, that is captured as described below under "purchase orders."

Requisitions are orders sent to specified government agencies. They are typed on special forms. For this reason they require a change in the program tape in the typing calculator.

Charge account orders are those to be sent to vendors with whom the library has open purchase contracts which can be used by ordering officers within the library. At RSIC such orders are currently limited to $250 per day per vendor. The same vendors are also the only ones from whom approval shipments can be received. The items accepted make up part of the daily authorized orders.

Coupon orders are relatively small ones, to other government agencies, professional organizations, etc., with which payment in the form of previously purchased coupons is sent. Large orders to government agencies take the form of requisitions.

Approval shipments, as mentioned before, are like charge account orders except that they have been received on approval without having been ordered by title. They are received only from vendors with whom the library has open purchase contracts, or "charge accounts."

Purchase orders result from selection of vendors by the purchasing office to fill blanket orders. A copy of the purchase order is sent to the library, which uses it to capture vendor

name, purchase order number, and purchase order item number.

Operations at the typing calculator station may be divided into two kinds. One requires the production of a typewritten order, figure 29, as well as transaction cards, figure 31. The other requires only the punching of transaction cards. The latter can be done on the typing calculator or on a keypunch machine.

Operations requiring the production of a typewritten order and transaction cards are blanket orders, requisitions, charge account orders, and coupon orders. They are processed in order of priority as listed, unless the acquisition librarian has assigned a special priority to some orders. Special priority orders are of course processed before anything else.

Operations requiring only the punching of transaction cards are data capture on receipt of purchase orders, and the receipt of items on any kind of order.

Certain limits on orders are set up by policy or by practice. At RSIC, blanket orders are limited for the convenience of the Procurement and Contracting Division to 25 items each. Charge account orders, which are made under the delegated authority of the Small Purchases regulations, are limited to $250 per day per vendor. This limit is programmed into the typing calculator. Coupon orders to the Superintendant of Documents and the Clearinghouse for Federal Scientific and Technical Information are limited for convenience to $40 per order.

The sequence of actions by the operator in preparing for each kind of work is as follows:

Load the program tape (one for requisitions, a different one for all other kinds of orders).

Select and mount the program drum cards, one on the reader and one on the punch.

Insert the typing forms (stock four-part paper except for requisitions).

Set margins and tabulations.

Turn on power for all units.

Ready the card punch.

Ready the card reader.

Load the card punch.

Select the appropriate card deck for the reader.

Load the deck in the reader.

Ready the typewriter.

Clear the machine totals.

When all this has been done, the operator is ready to begin on a particular kind of job, such as charge account orders. When one kind of job is completed, most of the set-up operations will have to be done again in order to prepare for doing another kind of job.

In addition to the typed order, operation of the typing calculator also produces a set of transaction cards, figure 31. The cards, identified in the 400 transaction series, contain data to add items to the On-Order Master File and generate pending receipt cards. For each order, one transaction card, code 400, is produced. This is the vendor name card. For each line item, the following transaction cards are produced (required or optional, as noted):

410, author name card--optional

420, title card--required

430, title continuation card--optional

440, title continuation card--optional

450, quantity and unit cost card, call number, LC card number and date of order--required

460, patron reserve card--required, may be in multiple; library may be the "patron"

461, comments card--optional

Each 400 series transaction card contains the following fields:

Cols 1-3   Transaction code

    4-17   Control number

   18-21   Item number

   22-24   One or more fields of specific information

   75-80   Receiving card number (blank at time of ordering)

Cancellation or deletion of items from the On-Order Master file
is accomplished through use of the 399 transaction card, figure 43.
Each 399 transaction card will contain the following fields:

Cols   1-3   Transaction code

         4-17   Control number

      18-21   Item number

      22-31   Blank

      32-74   Explanation

      75-80   Zeros

The specific typing calculator operations for each type of job
are described in tabular form in paragraphs (1) thru (7). It is
assumed that each kind of job has been prepared for as discussed above.

(1) Operating Instructions for Charge Account Orders.
Stock four-part paper is used. Margin is set at 6, tabs at 14, 70, 87,
117, 149, and 167. The reader deck consists of a 7 card, a 3 card and
several 5 cards. Clear typewriter and enter date at beginning of each
ordering day. (To clear and enter date: tab to position 14, key in 1,
PROGRAM START. Then key in date - six digits - yr.(2), mo.(2), and
day(2). Then tab to position 87 and clear total by pressing TOTAL
button.)

Step	Operation Action	Machine Action

400 transaction card

Step	Operation Action	Machine Action
1	Position carriage at left margin 1 1/2" from top of paper and press READ FEED three times.	Types heading and punches code 400 in cols 1-3. Types P. O. number at positions 70-76. Punches TL number in cols 4-17, types TL number starting in position 84, and tabs to position 117. At 117 reads $250 into storage from the 3 card and stops at 124.
2	Key beginning item number from purchase order worksheet and press PROGRAM START.	Punches item number in cols 18-21 of 400 card, returns carriage, types and punches vendor name beginning in col 37, and 3 card releases 400 card from the punch station.

410 transaction card

3	Press READ START.	Punches code 410 in cols 1-3.
4	Press DUP.	Duplicates P. O. number in cols 4-17.
5	Press PROGRAM START.	Types and punches the first item number. Typewriter stops at position 14. Item number is punched in cols 18-21.
6	Type author name(s) as follows: First name initial, period, one space; second name initial, if any, period. If no second name initial, space once and type last name in full. If additional author names, type a / and space once, then repeat as above.	Punches first name initial, second name initial or a space, and last name in 410 card cols 22-74, then ejects 410 card to punch unit read station.
7	If punching author names did not cause 410 card to eject, release it by pressing REL key. Otherwise finish typing author names on form as before, then go to next step.	Releases the 410 card. Reader skips to col 22 of 5 card.

420 transaction card

8	Return carriage and tab to position 14, press READ START.	Punches 420 in cols 1-3. Dupes TL number cols 4-17 and item number in cols 18-21. Reader skips to col 34 of 5 card.
9	Type title string as follows until 420 card ejects at col 74 or title string is complete: Title, a / and one space, edition and one space, a / and one space, publisher's name, a / and one space, publisher's address.	Punches title string beginning in col 22, and prints title string beginning at position 14.

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If typing the title string causes the 420 card to eject, a 430 and possibly a 440 card will be required. If the 420 card ejects and the title string is incomplete, go to step 11. If in the middle of a word hypenate on paper, if in middle of number, start next card, finish number and return by hand. If title string is complete, go to step 10.

10	Press REL key once and READ SKIP twice. <u>Go to step 15.</u>	Releases 420 card. Read unit skips to col 52 of 5 card.

430 transaction card

11	Return carriage and tab to position 14, press READ START once.	Punches 430 in cols 1-3. Dupes TL number in cols 4-17 and item number in cols 18-21. Reader skips to col 34 of 5 card.
12	Continue typing title string and manually returning carriage as required .to position 14, next print line.	Punches title string in cols 22-74 and prints title string.
13	If 430 card is not full: press REL key and READ SKIP key once each. Go to step 15.	Releases 430 card to read station and registers blank card at punch station. Read unit skips to col 52 of 5 card.
	If 430 card is exactly full through col 74: Go to next step.	Has released 430 card. Read has skipped to col 52 of 5 card.

If a 440 transaction is necessary go to step 14; if a 440 transaction is not necessary go to step 15.

440 transaction card

14	Return carriage and tab to 14, and continue typing title string as before. After releasing 440 card by pressing REL key, go to step 15.	Duplicates 440 in cols 1-3 and TL number and item number in cols 4-21. Reads cols 44-46 of 5 card and skips to ready the 450 code.

450 transaction card

15	Press READ START once.	Carriage tabs to 70. Punches 450 in cols 1-3 and duplicates TL number and item number in cols 4-21.

450 transaction card

16	Key QUANTITY on companion keyboard and press PROGRAM START.	Prints quantity in positions 70-75, right justified, and carriage stops at 76. Punches quantity in cols 22-25.
17	Type units as follows: "Ea" for each, "set" or "sets", "lot" or "lots" followed by a space for set or lot.	Prints units and carriage stops at position 78 or 80.
18	Key unit price and press START PROGRAM.	Enters unit price into counter and punches unit price in cols 26-30. Calculates total cost. Types amount (punctuated) and tabs to position 117.
19	If call number required: Type call number beginning at position 117. Tab to position 149, and go to step 20.	Prints call number beginning at position 96. Punches call number beginning at col 31, and skips to col 61.
	If call number not required: Pull PUNCH CONTROL off, tab once to position 149, and push PUNCH CONTROL on.	Punch unit turns off, 450 card skips to col 61, and punch unit turns on.
20	If LC card number required: Key in LC card number and press PROGRAM START. Go to step 22.	Prints LC card number off-form at position 149. Punches LC card number in cols 61-67 and date in cols 68-73. Ejects 450 card to read station of punch unit. Read unit skips to col 66 of 5 card.
	If LC card number not required: Press O and PROGRAM START.	Prints date off-form and tabs to position 167. Punches zeroes in cols 61-67 and date in cols 68-73. Ejects 450 card to read station of punch unit. Read unit skips to col 66 of 5 card.

460 transaction card

21	Press READ START.	Punches 460 in cols 1-3.

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22	Press DUP on companion keyboard until card in punch unit reaches col 22.	Duplicates TL number and item number in cols 4-21. Punch unit ready light turns on.
23	Beginning at position 167, type the 9-digit social security number, space once, and type the code letter A for Army, N for NASA, or R for RSIC and contractor.	Punches that social security number in cols 22-30, a blank in cols 31, and the code letter in col 32. Prints what is typed off-form at position 167.

Note: When ordering the following types of copies, type the social security number as indicated:

FOR	TYPE
Reference copy	000000001 R
RSIC copy 1	000000000 R
Patron, Army	(SSN) A
Patron, NASA	(SSN) N
Patron, other	(SSN) R

24	Press REL key once.	Ejects the 460 card to the punch unit read station.

If comments are indicated on the request card a 461 card must be prepared; go to step 25. Otherwise, go to step 30.

461 transaction card

25	Press MP PCH key.	Punch unit turns on, as indicated by white lamp lighting.
26	Type 461 and press DUP key until 461 card has reached col 22.	Punches 461 in cols 1-3 and duplicates TL number and item number in cols 4-21. Prints 461 off-form to the right.
27	Type comments as written.	Punches comments beginning in col 22.

Note: If comments are longer than 59 characters, including spaces, type "Send as per listing on original request" and press REL key.

End-of-item procedure

28	Press REL and CARRIAGE RETURN.	460 or 461 card is released to the punch unit read station, and carriage returns to the left margin.

You are now ready for the next item.

    If no author, press READ SKIP button.

29	Press READ START, DUP, and PROGRAM START.	Types next item number in position 7-10, punches 410 in cols 1-3, and duplicates TL number in cols 4-17. Punches item number in cols 18-21, increments it by 1, and returns it to machine storage.
30	Go to step 6 or 8.	

Sub-total procedure

1	Space to position 130 and press PROGRAM START.	Beginning at position 130 automatically types the balance of $250 per vendor per day.

Note: If a minus sign is typed after the sub-total, the figure is the amount over $250 that has been ordered.

End-of-order total procedure

1	Return carriage twice, tab to position 87, and press TOTAL key on companion keyboard.	Types final total amount beginning at position 87; types "T" following the amount.
2	Return carriage to position 14, roll form three or four lines, and type only the following:	

Ordered by:

      (leave room for signature)
      Jane Doe (name of purchasing officer who will sign order)
      DATE (day, month, or year).

| 3 | Remove paper from carriage and output cards from punch unit; place output cards and patron request cards with completed order. | |

Error procedures

To correct amount or errors in total:

1	Move carriage to position 171, key the error amount, and press PROGRAM START.	Subtracts the error amount from the running total.
2	To verify subtraction of the error amount, go to position 130 and press PROGRAM START.	Types the remainder of $250 that was left before the error amount was keyed in.
3	Erase error from form carefully.	
4	Press Rel key.	Releases error card to punch unit read station.
5	Press READ SKIP until a 5 card is loaded in reader and at col 52.	Loads reader unit with 5 card and skips to col 52.
6	Press READ START.	Duplicates 450 in cols 1-3 of new card at punch station; duplicates TL number and item number into cols 4-21.
7	Go to position 70 and rekey quantity, unit, and correct unit price, as in steps 16-18.	Punches correct quantity, unit, and price in new 450 card. Prints correct quantity, unit, and unit price. Enters correct amount into machine counter and tabs to position 117.
8	Go to step 19.	

To correct errors in quantity:

| | Go to 70 off form and key in incorrect quantity, (-) minus and PROGRAM START. Release card, get card to 450 position, erase and correct error in page, press READ START for new 450 card. | Machine types amounts punched (-) and removes the amount from the total. |

(2) Operating Instruction for Blanket Orders. The procedure for typing blanket orders is the same as for charge account orders, paragraph (1), except:

(a) In the reader card deck a different 3 card is used for each blanket order typed, because the TL number changes with each order.

(b) The beginning item number for each blanket order is 1, for the same reason, that the TL number changes with each order.

(c) There is no money limit on blanket orders, and therefore, no need for the sub-total procedure.

(d) No signature block is typed at the end of the order, only the date.

(3) Operation Instructions for Coupon Orders. The procedure for typing coupon orders is the same as for charge account orders, paragraph (1), except:

(a) No publisher is punched.

(b) The beginning item number for each coupon order is 1.

(c) A different 3 card is used for each coupon order typed.

(d) There is no money limit on coupon orders (the $40 total is approximate), and therefore the sub-total procedure is not used.

(e) At the end of the order, start the total one line down from the last amount, typing as follows, beginning at position 14.

INCLOSURE: COUPONS IN THE AMOUNT OF ($ total)

(Return carriage 4 times)

(Signature block and date)

(Return carriage 2 times)

REQUEST POSSIBLE REFUND BE MADE BY COUPONS

(4) Operating Instructions for Requisitions. Instead of stock paper, special forms are used for typing requisitions. The first sheet is DD Form 1149-4, see figure 30, and the continuation sheet

is DD Form 1149-5. Eight copies are made. Margin is set at 6, tabs at 12, 54, 78, 87, 111, 117, 124, 148, 166, and 174. The requisitions program tape must be used, as well as requisition card reader and card punch drum cards. The reader deck consists of a 3 card, seven 6 cards, a 4 card, and several 5 cards. Before punching cards, add the rest of the requisition number to the number 3 program card (cols 36-38).

Step	Operator Action	Machine Action

400 transaction card

Step	Operator Action	Machine Action
1	Press PROGRAM START.	Punches 400 in cols 1-3, tabs to position 78 (block 6 on Form 1149-4), types first 11 digits of requisition number in top half of block 6, returns carriage, tabs to position 78, types rest of requisition number, and punches it in cols 4-17 of the 400 card. Tabs to position 111 off-form.
2	Enter item number: Key item number (1) and press PROGRAM START. Note: Requisition vendor is punched beginning in col 37 of 400 card, which ejects when col 74 is reached.	Enters first item number into storage and 400 card, returns carriage, ejects 3 card from reader unit, types heading data from the seven 6 cards. Carriage stops at position 166.
3	Enter date: Key two-digit year number, two-digit month number, and two-digit day number, in that order, and press PROGRAM START.	Enters date into storage and returns carriage to the left margin, Section II of Form 1149-4.
4	Type first item number: Space to position 10 and type item number. Space once to position 12. Note: For all items other than the first, skip this step and go to step 5. For first item complete this step and go to step 6.	Prints item number. Note: On the second and following item numbers, machine will type next item number at positions 7-10 (right justified), tab to position 12 and stop. Also enters 410 in cols 1-3 of card, duplicates requisition number (TL number) and item number in cols 4-21 of 410 card.

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410 transaction card

5	Start author card: Press READ START.	Duplicates 410 code, requisition number (TL number), and next item number in cols 1-21 of card.
6	Enter author(s): Type author name beginning at position 12. If additional authors are shown on request card, type / and space once before typing next author name. Note: Do not begin a name that cannot be typed completely before position 52 is reached. Carriage must be manually positioned to next line, position 12, as required until author names are completely typed. In any case, 410 card will eject when col 74 is reached, but typing must continue until all author names are entered on the requisition form.	Prints author(s) names beginning at position 12, and punches names beginning in col 22 of 410 card. At col 74, card ejects to punch unit read station.
7	End of 410 card: If col 74 of 410 card was not reached, press REL and go to step 8. If col 74 was reached, go straight to step 8.	Ejects 410 card to punch unit read station.

420, 430, or 440 transaction card

8	Start 420, 430, or 440 transaction: Press READ START.	Punches 420, 430, or 440 in cols 1-3. Duplicates requisition number and item number in cols 4-21.
9	Enter title: Return carriage, tab to position 12, and type title. Note 1: Only positions 12-52 on the form may be used. Repeat as above for as many lines as required. Title must not run over position 52.	Prints title and punches title in cols 22-74. When col 74 is reached, ejects card to punch unit read station.

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Note 2: If col 74 is punched
and additional title data remains,
a 430 and possibly a 440 title
continuation card will be required.
For each required continuation card,
repeat steps 8 and 9. If none are
required, go to step 10.

450 transaction card

10	Set up card read unit for 450: (a) If title continuation was not required, and 420 card did not eject, press RELEASE READ SKIP twice, READ START once, and tab to position 55, and go to step 12. (b) If title continuation into a 440 card was not required and 430 card did not eject, press RELEASE READ SKIP once, READ START once, tab to position 55, and go to step 12. Otherwise go to step 11.	Ejects 420 card to punch unit read station, punches 450 in cols 1-3 of new card, and duplicates requisition number and item number in cols 4-21. Ejects 430 card to punch unit read station, punches 450 in cols 1-3 of new card, and duplicates requisition number and item number in cols 4-21.
11	Press READ START and tab to position 55.	Punches 450 in cols 1-3 of new card and duplicates requisition number and item number in cols 4-21.
12	Enter unit of issue: Backspace once and type "ea" or "set" leaving carriage at position 57.	Prints unit of issue in positions 54-56.
13	Key quantity ordered and press PROGRAM START.	Enters quantity into storage; prints quantity in positions 57-61; punches quantity in cols 22-26.
14	Key unit price and press PROGRAM START.	Enters unit price into storage; types unit price in positions 78-84; punches unit price in cols 26-30 of 450 card. Calculates total cost and types it beginning at position 87, then tabs to position 124.

15	Enter call number, if any:	
	(a) If call number required, type it beginning at position 124, then tab to position 166. Note: Make sure the punch unit light is on; if it is not press MP PCH on companion keyboard.	Prints call number beginning at position 124, off-form. Punches call number in cols 31-60 of 450 card. Punch unit stops at col 61 after tabbing typewriter to position 166.
	(b) If call number not required, pull PUNCH CONTROL off, tab once to position 148, and push PUNCH CONTROL on, then tab to position 166.	Punch unit turns off, 450 card skips to col 61 and punch unit turns on.
16	Enter LC card number, if any:	
	(a) If LC card number required, key it, press PROGRAM START, and go to step 17.	Prints LC card number off-form at positions 166-172 (right justified), punches it in cols 61-67 of 450 card, and returns carriage and tabs to position 148.
	(b) If LC card number not required, press O and PROGRAM START.	Punches zero LC card number in cols 61-67 and date in cols 68-73 and ejects 450 card; returns carriage and tabs to position 148.

460 transaction card

| 17 | Press READ START once and DUP twice. | Punches 460 in cols 1-3 of new card and duplicates requisition number and item number in cols 4-21. |
| 18 | Beginning at position 174, type the 9-digit social security number, space once, and type the code letter A, N, or R. | Punches the social security number in cols 22-30, a blank in col 31, and the code letter in col 32. Prints what is typed off-form beginning at position 174. |

Note: When ordering the following types of copies, type the social security number as indicated:

FOR	TYPE
Reference copy	000000001 R
RSIC copy 1	000000000 R
Patron, Army	(SSN) A

	Patron, NASA (SSN) N Patron, other (SSN) R	
19	Press REL key and carriage return.	Ejects 5 card and returns carriage to left margin.
20	Press READ START, DUP and PROGRAM START and go to step 6.	Loads new 5 card. Duplicates 410, requisition number, and prints new item number in cols 1-21 of new 410 card.

End-of job procedure

If only 1149-4 has been used, go to step 2.

1	If Form 1149-5 (continuation sheet) has been used, type date, sheet numbers and num- of sheets, and bottom line of requisition number, then go to step 2.	None.
2	Roll platen away from you until two lines below the last item amount in total cost field on the form, and type a line across the column width, using the underline character. Roll platen two more lines, make sure you are at position 87, and press FINAL TOTAL button.	Prints line and total ·amount for this order to this vendor, followed by the letter T.
3	Roll platen toward you until bottom half of first print line is reached, at position 61. In block entitled "No. of Sheets": type total number of Form 1149-4 sheet used for this order, also type in the date on 1149-4 sheet.	Prints total number of sheets.
4	Press REL key and remove completed requisition and transaction cards from machine, and hold them for delivery to RSIC order unit.	

(5) Operating Instructions for Approval Shipments. Approval shipments are charge account orders received on approval from selected vendors with whom there are charge account arrangements.

Approval shipment "ordering" procedure is the same as for charge account orders, paragraph (1), except that the transaction cards are of the 500 series rather than the 400 series and the 560 card has the same function as the 600 card. Transaction card formats are presented in figure 32. Also, a double copy form is typed for approval shipments; they are used as records of orders in ordering office and purchasing and contracting office.

Approval shipments must be both "ordered" and "received." For each approval shipment from a vendor a transaction card code 500, the vendor name card, is created. For each line item the following cards are created, required or optional, as noted.

510, author name card--optional

520, title card--required

530, title continuation--optional

540, title continuation--optional

550, quantity unit cost, and date of order--required

560, receiving card--required

(6) Operating Instructions for Purchase Orders. Purchase order transactions are revisions of actions originally on blanket orders. They are ordinarily done on the 026 keypunch after the prepared purchase order is received from the purchasing office; however, with a special program tape, they may be done on the 632 typing calculator if no 026 is available. One transaction card code 501 is punched for each line item on the purchase order (Form 1155 and 1155C). Its purpose is to update on-order records with purchase order number, vendor and vendor P. O. item number.

Each 500 series transaction card contains the following fields:

Cols 1-3 Transaction code

4-17 Control number

18-21 Item number

22-80 (Specific information and blanks)

Step	Columns	Operator Action and Field Description
1	1-3	Transaction code. Key numeric 501.

2	4-17	TL number. Key TL number that appears in the "Requisition Number" box, or that preceeds the item description in the columns on Form 1155 headed "Schedule of Supplies or Services." Note: This TL number remains in effect for following items until another TL number appears or the last item is punched. Do not punch the asterisk that preceeds the TL number nor the number in parentheses, if any, that follows the TL number.
3	18-21	Item number. Key the number in parentheses following the item description; right justify in cols 18-21 and supply leading zeros as required. This is the sequence number of the original blanket order. Check ordering records to be sure of correct item number.
4	22-36	Purchase order number. Key the purchase order from the upper left block on Form 1155 beginning at the letter "C", as follows:

P.O. NUMBER   Key

PO 01-021-C5-0388(Z)   C5-0388-Z

If the number does not fill cols 22-36, skip to col 37.

5	37-74	Vendor. Key vendor name as typed on line 1 of the block headed "TO: (Contractor and Address)" on face of Form 1155 until the name is complete or col 74 is reached.
6	75-78	Purchase order item number. Key the item number from the column on Form 1155 headed "Item Number," supplying leading zeros as required.
7	79-80	Blanks
8		Repeat steps 1-7 above for each item number on Forms 1155 and 1155C. Be careful to change the TL number field only as noted in step 2.
9		When a 501 card has been punched for each item number on the purchase order, remove the 501 cards from the stacker, place them with the purchase order, and given them to the Order Unit for checking. The cards will be forwarded to the computer by the order unit.

(7) Operating Instructions for Receiving. When ordering
transactions are processed by the computer, transaction cards of the code
600 series, figure 35, are produced as one form of output and returned
to the library. They are kept in a receiving card file arranged in se-
quence by receiving card number. Following is an explanation of the purpose
and format of each such output transaction card.

Transaction card code 600 is the pending receipt
card. It contains information as follows:

Cols 1-3 Transaction code (600)

4-17 Control number

18-21 Item number

22-27 Date of order

28-69 Blank

70-73 Quantity ordered

74 Blank

75-80 Receiving card number

A 600 card is produced for each line item entered in the computer files
by 400 series transaction cards. When the item arrives, additional
information is added to the card as follows:

Cols 28-31 Quantity received

32-37 Voucher number

38-41 (If expendable) number of items

42-45 (If nonexpendable) number of items

46-51 Total cost

52-57 Date received

58 Blank if not a change; C if a change, for
error correction. If there is a C here,
all receiving information in the master file
will be changed.

Partial receipts require a special procedure, these are detailed later
in the operating instructions. The card with· the added information is
returned to the computer to update the files.

If the LC classification of a line item is unknown at the time of ordering, a transaction card code 610 is produced. If the LC classification is known, a transaction card code 611 is produced. These cards contain the following information:

Cols	1-3	Transaction code (610 or 611)
	4-17	Control number
	18-21	Item number
	22-51	LC class (In the 610 card there is no data in this field; in the 611 card there is data.)
	52-69	Blank
	70-73	Quantity ordered
	74	Blank
	75-80	Receiving card number

When the book is received the 610 or 611 card is forwarded to the cataloger along with the book.

Transaction card code 620 is the patron request card. It contains the following information:

Cols	1-3	Transaction code (620)
	4	Blank
	5-13	Patron's social security number
	14-15	Blank
	16-23	MAIL TO. (constant)
	24-37	Patron's surname
	38	Blank
	39-41	Surname suffix
	42-43	Patron's initials
	44-47	. . . (
	48-59	Mail symbol

60-61   )

                          62-67   BLDG..(constant)

                          68-72   Building number

                          73-74   Blank

                          75-80   Receiving card number

The 620 card is forwarded to the cataloger along with the book and
the 610 and 611 card, and eventually becomes a mailing label.

           If there is a transaction card code 461 (comments),
then a transaction card code 622, the comment card, is produced. It
contains the following information:

           Cols   1-3   Transaction code (622)

                  4-17   Control number

                  18-21 Item number

                  22-74 Comment

                  75-80 Receiving card number

           There are also two other transaction cards, figure
35, that may be punched by the library as input affecting items on order.
The 398 card adds comments when an item is received or cancelled; it has
the same information in the same format as the 622 card. The 621 card
reserves for a patron a book already on order; it has the same information
in the same format as the 460 card, with receiving number added.

           When an order is received, the code 600 cards
applying to it are punched with additional information: quantity re-
ceived, total cost, etc. This is ordinarily done on the 026 keypunch,
but with a special program tape could be done on the 632 typing calcu-
lator. Some transaction cards code 600 apply to nonexpendable (NXP)
items and others to expendable (XP) items. NXP and XP items can be
separated by noting whether the number of copies appears in the XP or
NXP item block on the face of the card (shown in figure 35).
In preparation for keypunching the following controls on the 026
keypunch should be in the "on" position: POWER, AUTO FEED, and PRINT.
AUTO SKIP and DUP should be "off."

Step   Card Col   Operator Action

600 transaction card for NXP items

1   Install the NXP program card on the drum and

		insert it into the keypunch.
2		Place 600 NXP transaction cards in the keypunch hopper and press FEED key twice.
		Press SKIP button to col 28.
3	28-31	Key 4-digit quantity received, supplying leading zeroes as required.
4	32-37	Key 6-digit voucher number, leaving out dashes (e.g. D-65-126 is keyed as D65126).
5	38-41	Blank. Used only for XP items.
6	42-45	Key 4-digit NXP item number (actually number of items), supplying leading zeros as required.
7	46-51	Key 6-digit total cost in dollars and cents, leaving out punctuation and supplying leading zeros as required.
8	52-57	Key date received as follows: 2-digit year number, 2-digit month number, 2-digit day number.
9		Release card. If additional 600 NXP transaction cards remain with same voucher number, turn AUTO SKIP-DUP button on which will automatically skip, and auto. dup the voucher number and yr. and mo. of the date. Go to step 3 and repeat steps 3-9 until all 600 NXP cards have been punched with receiving data.
10		Install the XP program card on the drum and insert it into the keypunch.
11		Place 600 XP transaction cards in the keypunch hopper and press FEED key twice.
12	28-31	Key 4-digit quantity received, supplying leading zeros as required.
13	32-37	Key "D" and five zeros.
14	38-41	Key 4-digit XP item number (number of items), supplying leading zeros as required.

15	42-45	Blank. Used only for NXP items.
16	46-51	Key 6-digit total cost in dollars and cents, leaving out punctuation and supplying leading zeros as required.
17	52-57	Key date received as follows: 2-digit year number, 2-digit month number, 2-digit day number.
18		Release card. If additional XP cards remain, turn on AUTO SKIP-DUP key which will automatically skip, and dup the voucher number and yr. and mo. of the date and go to step 12 and repeat steps 12-18 until all XP cards have been punched with receiving data.

Partial receipts

If the 600 XP or NXP quantity received is different from quantity ordered, that is a partial receipt, and the procedure to be followed is different. Here is how to punch transaction cards on partial receipts. Duplicate the 600 card changing the quantity ordered (col 70-74) to the remaining back ordered amount. Make a duplicate 611 card also changing the quantity ordered. Put these new cards back in files to be used when back order arrives. Then process the original 600 card as usual.

d. Acquisition File Outputs

Some acquisition file outputs are prepared each time the master file is updated, other outputs which are of a cumulative nature are prepared on a weekly, monthly or upon request basis. Outputs will be displayed as either multicopy printouts computer produced, punched and printed transaction cards. All multicopy printouts are standardized on 8 1/2 x 11 paper. The following is a list of all acquisition file outputs.

(1) Weekly On-Order List

(2) Daily On-Order List

(3) Receiving, cataloging and patron reserve transaction cards

(4) Books Ordering and Receiving Transaction List, error and recycle cards

(5) Books Ordering and Receiving Error List

(6) Books On-Order Mail List

(7) Cancelled Items

(8) Outstanding Orders in Vendor Sequence and 399
transaction cards

(9) Financial and Workload Analysis

The On-Order and Received List, figure 34, a weekly
computer output with cumulative daily supplements is the most im-
portant output of the master on order and receiving and cataloging
files. This list is a complete display of the files in sequence by
title and indicates the status of all titles that have been ordered
and not received or received and not cataloged.

The primary use of this list is made in deter-
mining if a vendor has supplied the item requested. Copies of the
list are returned to the ordering and receiving unit.

Decks of computer punched and printed transaction
cards, figure 35, each representing an item ordered, will accompany
the On-Order and Received List to the ordering and receiving unit.
These cards will be used in receiving, cataloging and circulation
of books when the order is filled. Each transaction card may be
associated with the On-Order and Received List by the receiving card
number which is assigned automatically by the computer. This num-
ber is assigned in sequence numerically and filed in the same order
without sorting. Ordering, receiving and patron reserve transaction
card formats are presented in figure 32.

The Books Ordering and Receiving Transaction List,
figure 39, serves a twofold purpose. First, it presents a display
of all transactions attempted or processed in the computer editing
run. Secondly, it presents a display of all transactions found in
error with an appropriate error message. The list is presented in
two parts, the first part consists of all book transactions found in
error in the editing run with an appropriate error message and the
second part of all acceptable book transactions which will be pro-
cessed against the master files. The list is displayed by control
number in raw input sequence.

The primary purpose of the list is to display all input
transactions and the processing action attempted. The list will also
serve as an assist in correcting input errors.

For each book transaction found in error in the editing
run the computer punches and prints a duplicate card of the transaction
card in error with the field in error left blank. This card, along

with the card in error, is returned to the ordering and receiving unit. Any transaction cards associated with the transaction card found in error will also be returned. These cards will be marked (recycle) and may be resubmitted with the computer produced card following corrective action of the error.

Copies of the Books Ordering and Receiving Transaction List, with duplicate error cards, if required, will be prepared at each update (at present daily) and returned to the ordering and receiving unit.

Cancelled Items, figure 38, are the result when a vendor cannot supply an item ordered. This list is generated through the submission of 399 transaction cards and represents all items cancelled and deleted from the master file. The list is formatted in alphabetical sequence by title and produced weekly. Copies of the list are returned to the ordering and receiving unit.

The Books Ordering and Receiving Error List, figure 40, is a display of all book transactions which could not be processed into the Master On-Order and Receiving and Cataloging Files in the update run. Following the editing run all acceptable book transactions are processed against the master files. During this update processing, the book transactions are edited again. The edits used here may disclose errors which will not allow the book transaction to be processed into the master files. An example of this could well be, if a 400 series transaction was properly prepared and passed all editing requirements in the edit run the transaction would be forwarded to the update run for processing against the master files. During the update run the computer dropped the transaction off and produced an error message "TRANS SHOULD NOT MATCH MASTER." This message signifies an error has been made. After evaluation it will probably be found that the transaction control number is in error. Copies of this error list are returned to the ordering and receiving unit.

Valid transactions which are processed into the Master On-Order and Receiving and Cataloging Files will be displayed in the On-Order and Received List.

The Books On-Order Mail List, figure 41, is a display of all items requested by patrons during the week. This list is presented in receiving card number sequence. Primary use of this list will be in determining correct patron mailing information. Copies of the list are returned to the ordering and receiving unit.

Errors found in the Books On-Order Mail List will be displayed on the first page of the listing.

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The Outstanding Order List, figure 42, is a complete listing of all items overdue in alphabetical sequence by vendor. This list may be produced on a quarterly, semi-annual or upon request basis. Primary use of the list will be made in evaluation of all overdue items for cancellation or re-order.

For each item appearing on the Outstanding Order List a 399 transaction card, figure 43, will be computer punched, printed and returned with the list to the ordering and receiving unit. The 399 transaction card will be used to cancel or delete an item from the Master On-Order File.

Copies of the Outstanding Order List along with the 399 transaction cards will be returned to the ordering and receiving unit.

The Financial and Workload Analysis, figure 36, is a statistical breakdown of the acquisition master files. This report is divided into two parts and presented on a monthly basis. The first part of the report, the Financial Analysis, is an up-to-date analysis of all expenditures with an outstanding amount for each vendor. This part will be in alphabetical sequence by vendor. The second part of the report, the Workload Analysis, indicates the number of titles ordered, received or cancelled and a breakdown of the copies received. This part will be in work element sequence.

Primary use of this report will be made in evaluation of expenditures and workload criteria. Copies of the report are kept by the ordering and receiving unit and administrative offices most concerned with the acquisition files.

An Error List, figure 37, is prepared if there are any errors found in the preparation of the Financial and Workload Analysis Report. Copies of this error list will accompany the report to the ordering and receiving unit.

e. Editing Criteria

Edits are rules specifying that certain things must be or cannot be in the specified data field of the input transaction cards or that certain transaction series must be properly used. The following are all possible error or processing messages, listed alphabetically, with explanation and suggested corrective action.

Message	Meaning	Corrective Action
ALPHA FIELD CONTAINS NUMERICS	Transaction card field contains numerics in alpha field. Check appropriate card code data field requirements in editing criteria.	Correct and resubmit.
BLKT ORD, PO NR MUST BE BLANK	Purchase order number is not blank for item number 001.	Correct and resubmit entire item.
BLKT ORD, VENDOR MUST BE BLANK	Vendor is not blank for item number 001.	Correct and resubmit entire item.
BOTH NXP AND XP, CANT BE BLANK	All items are either XP or NXP.	Correct and resubmit new 600 series transaction.
CANCELLING PATRON NOT FOUND	The 620 transaction submitted does not match any social security number on the master file. This could be a keypunch error on either TL and item number or social security number.	Check original patron request card, verify social security number and resubmit.
CTL, ITEM, CODE SAME AS PREU TX	Transaction submitted is duplicate to previous transaction or code is other than 460, 620 or 621.	Remove transaction card in error and resubmit correct transaction cards.
DEBIT/CREDIT CODE NOT D OR C	This message is self-explanatory.	Correct and resubmit entire item.
FACILITY CODE NOT A/N/C/M/R	This message is self-explanatory.	Correct and resubmit entire item.
FIELD CANNOT BE ALL BLANKS	Non-blank data field has been left blank. Check appropriate data field editing criteria.	Correct and resubmit.

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Message	Meaning	Corrective Action
FIELD MUST BE ALL BLANK ONLY	Non-blank data has been included in a blank field. Check appropriate card code data field editing criteria.	Correct and resubmit.
FIELD MUST BE NUMERIC ONLY	Transaction card field contain alphas in numeric field. Check appropriate card code data field editing criteria.	Correct and resubmit.
FIRST CHARACTER OF LC NR INVALID	This message is self-explanatory.	Correct and resubmit entire item.
FIRST CHAR FLD 4, IS NOT ALPHA	This message is self-explanatory.	Correct and resubmit entire item.
LC NR FLD 1, IS NOT PURE ALPHA	This message is self-explanatory.	Correct and resubmit entire item.
LC NR FLD 2, NOT PURE NUMERIC	This message is self-explanatory.	Research original request, correct and resubmit.
LC NR FLD 3, HAS PERIOD ONLY	Field is incomplete.	Research original request, determine LC number and resubmit.
LC NR FLD 3, MISSING PERIOD	Field must contain a period to be valid.	Research original request, correct and resubmit.
LC NR FLD 4, HAS ONE CHAR ONLY	LC number is incomplete.	Research original request, determine LC number and resubmit.
LC NR FLD 5, NOT PURE NUMERIC	This message is self-explanatory.	Research original request, correct and resubmit.

Message	Meaning	Corrective Action
MASTER MATCHING THIS TX RECEIVED	The master file probably made a match on a partial shipment.	Determine if the correct 600 series transaction were submitted or if the second copy of a partial shipment was held until first copy received was cataloged.
MAX NR OF TX, NOTIFY PROGRAM-MER	Ten patrons is the maximum number that can be handled on an individual order. This transaction exceeds the tenth patron.	Resubmit excess patron on new 400 series trans-actions.
NO RECEIVED FLAG FOR TRANS	610 or 611 transaction was submitted before item was received.	Send in 600 transaction card again. Hold 610 or 611 and send in at next update.
NO RECEIVED EXCEEDS NO ORDER	The 600 series transaction quantity received field exceeds master quantity ordered field. This is likely a keypunch error or vendor code.	Error in receiving correct and resubmit.
NO UNFLAGGED MASTER FOR TX	A 600 series transaction was submitted and masters matching were all flagged as received.	Usually the wrong receiving cards were pulled or possibly a partial shipment later, resubmit.
NON-XP LESS THAN QTY RECEIVED	NON-XP items received and quantity ordered must be equal.	Resubmit 600 series trans-action with correct NON-XP item received.
NUMERIC FIELD CONTAINS ALPHAS	This message is self-explanatory.	Correct and resubmit entire item.
OVER MAX RESERVATIONS ON BOOKS	Ten patrons is the maximum number that can be handled on an individual order. This transaction exceeds the tenth patron.	Resubmit request on new 400 transaction cards.

Message	Meaning	Corrective Action
PATRONS EXCEED BOOKS ON ORDER	Quantity ordered must equal or exceed patrons. In this case it was insufficient.	Resubmit request on new 400 transaction cards.
PRIORITY CODE NR IS INVALID	Code must be A-Army, N-NASA, C-Contractor or R-RSIC.	Check original request, determine correct code and resubmit.
QTY RCVD, GREATER THAN QTY ORD	Quantity received must equal quantity ordered.	Resubmit new 600 series transaction with correct quantity.
RCVD CARD CODE MUST BE BLANK	Receiving card code field 75-80 on all 400-500 series transactions must be blank. Check transaction code this may be in error.	Correct and resubmit.
RCVD CARD CODE NOT NUMERIC	Receiving card code field 75-80 must be all numeric.	Correct and resubmit.
SOCIAL SECU- RITY NR INVALID	Social security number not all numeric.	Determine correct social security number and re- submit entire item number.
SPACE NOT AVAILABLE FOR PATRON	When this error occurs the programmer will be notifi- fied as the quantity or- dered and the number of patrons both allow another patron but blank space is not found on the master.	Resubmit request on new 400 transaction cards.
TITLE FIELD CANNOT BE BLANK	Each 400-500 series trans- action submitted must have a title.	Determine title from ori- ginal request and resubmit entire item.
TRANSACTION CODE DOESN'T MATCH MASTER	This is a 600, 610, 621, 560, 399, etc. It erroneously did not match master.	Check input as well as print out to determine error. Re- submit request with correct information.
TRANSACTION CODE INVALID	This message is self- explanatory.	Resubmit with correct trans- action code.

Message	Meaning	Corrective Action
TRANS SHOULD NOT MATCH MASTER	This is in the case of a 400-500 series transaction matching the master. This should not happen.	There is an error in the TL number or item number. Correct and resubmit.
TX CODE IS AN INVALID CODE	Error in submitting a code other than 398, 399, 400, 500 or 600 in field 01-03.	Correct and resubmit.
TX 540 NOT PRECEDED BY TX 530	All 540 transactions must be preceded by a 530 transaction.	Delete 540 transaction if not required and resubmit entire transaction.
VENDOR CANNOT BE BLANK	All 400-500 series transactions must contain vendor identification for item numbers other than 001.	Determine vendor and resubmit entire item(s).
XP IS LESS THAN QTY RECEIVED	XP items received and quantity ordered must be equal.	Resubmit 600 series transaction with correct XP item received.
XP AND NXP COUNT IS TOO LOW	This means the XP and NXP count is less than quantity received in 600 transaction.	Correct by keypunching in the correct number and resubmit.
400-500 STRING INC OR DUPE TX	This message is self-explanatory.	Transaction string should be either 400 or 500. Correct and resubmit.

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3. Cataloging

In modern libraries cataloging usually includes three kinds
of activity: classification, choice of subject headings, and descrip-
tive cataloging.

Book classification consists of assigning each book to its
place, by rule, in some classification scheme such as the Library
of Congress classification. The purpose of classification is to
arrange the books in a collection systematically for convenience of
use.

Once a book has been assigned to its correct place in the
classification scheme, it must be decided under what subject heading
or headings it will be entered in the catalog. Lists of subject
headings are published, such as the Library of Congress List of Subject
Headings, but these are not always adequate, especially in science and
technology. The problem is to find up-to-date headings, and to be
consistent in applying them. Especially when headings are taken from
several sources, a subject heading authority list is required if any
kind of consistency is to be maintained.

Descriptive cataloging is the process by which certain infor-
mation about a book is transferred to a card, or other catalog entry,
according to rule. The card catalog is usually of the dictionary or
modified dictionary type. In the dictionary type of catalog, entry
cards for author, title, and subject are filed together in a single
alphabetical sequence. A common modification is the divided dictionary
catalog in which author and title entries are in one file and subjects
are in another.

The main entry card (usually the author card), contains call
number, author, title, edition, translator, imprint, collation, series
note, special features note or notes, and contents. Under the unit
card arrangement, added entry cards are the same as the main entry with
an added heading. They include a title card, subject card or cards,
editor card, translator card, series card, etc.

The primary record kept by the cataloging section is the
shelf list, a record of books in the library arranged in the same order
as the books on the shelves. Each entry requires only enough informa-
tion to identify the book, although if unit cataloging cards are used
the shelf list entry may be the same as the card catalog entry. The
shelf list can be used for taking inventory, showing number of copies
of a book owned by the library, showing what kind of books are in a
given class as an aid in classifying, showing the acquisition librarian
how many books the library already has in a given class, etc. When
the unit card system is used, the shelf list is the same thing as a
classified catalog, except that it is not open for use by the library
users.

That briefly summarizes the traditional activities in cataloging, with emphasis on the records created.

How does cataloging activity in the ALPHA System compare with that in a manual system? In ALPHA, bibliographic data for each book title owned by the library is captured and maintained on magnetic tape. The main file is the Books Bibliographic Master File, figure 46, which has one record per title, in call number sequence. The design of the file allows variable numbers of data elements each of variable length to be stored. Kinds of data stored are shown by figure 47, data element codes. Kinds of actions are indicated by action codes, shown in figure 48. The content of the Bibliographic Master File corresponds to that of the shelf list, when the shelf list entry is a unit card.

For the present, the card catalog is retained. A later plan is to produce catalog lists in various sequences (author, title, subject, and others) as computer printouts from the master file. When this is done, the card catalog may be eliminated.

Inventory data is maintained in the Inventory Control Master File, figure 49, also in call number sequence. The inventory status of individual copies is flagged in the individual copy fields, using codes as shown in figure 50.

In order to allow machine search on subject headings, the Search Master File, figure 51, is maintained in sequence by subject heading. An unlimited number of titles per record can be referenced by call number under a subject heading.

One other master file which is used in book cataloging is the Subject Authority Master File, figure 52. The source information for this file is obtained from the Language Master File, or the entries in it applying to books. This file is shown in abbreviated form in figure 53. Term type code A means the record is a book record: "Other Data Elements" are not detailed here because they have nothing to do with the use of the file in printing out the Subject Heading Authority List.

Books arriving for cataloging fall into three categories: additional copies of titles that have already been cataloged by the library, books cataloged by the Library of Congress but new to the library, and books for which complete original cataloging must be done.

The first category requires only a cataloger trainee or clerk, because only clerical work is required to finish the cataloging. The second category requires a cataloger with more experience, one who is familiar with the library's application of the Library of Congress

classification and cataloging rules, the local cutter and book number practices, etc. The third category requires an experienced cataloger.

For processing the first category of books, added copies, the clerk refers to the shelf list to make sure that LC classification on the punched 611 transaction card is correct. If the classification on the card is not found in the shelf list, a mistake was made. The clerk consults the card catalog under title and corrects the number on the punched card, if possible. Otherwise the clerk refers the book, with punched cards attached, to a cataloger.

If the classifications agree, the clerk updates the shelf list and posts the shelf list card with the added number. The clerk will also prepare an abbreviated work sheet containing all added copy numbers. This worksheet will be forwarded to the keypunch/ Flexowriter operator who captures the data required to update the Bibliographic Master File. If a patron has requested a copy of the book, the operator enters the patron's social security number in the master circulation card, reproduces it, and places the two circulation cards and the patron card in the book. The patron card is used to mail the book, after it has been lettered and pocketed.

Now the books, with original punched 610 or 611 transaction cards, circulation master cards, and patron cards, are forwarded for lettering, pocketing, etc. The cards are placed in the pockets, and the books are ready for final checking before shelving or circulation.

If the book has been requested by a patron, there are two circulation cards in the book. One of the cards is sent to the computer to update the Circulation Master File, and the other is placed in the book. The patron card is attached to the front of the book or to an envelope as a mailing label. The original 610 or 611 transaction card goes to the computer to notify the On-Order Master that the book has been cataloged and to remove the entry.

The first step in processing the second category of books, those cataloged by the Library of Congress but new to the library, is for a clerk to pull the LC card set from the LC card order file. Books and cards are referred to a cataloger, who reviews or modifies cataloging so that it is suitable for the RSIC library. Any changes required are made on one copy of the LC card which serves both as work copy and shelf list card. The shelf list card is then filed. At scheduled intervals the keypunch/Flexowriter operator will pull the shelf list card and capture the data required to update the Bibliographic Master File. Other cards are treated in the same way as added copies.

The books, with punched master circulation and cataloging

cards, follow the same route as books in the first category for completion of processing.

When a book in the third category, one for which original cataloging is required, has been cataloged, a work card in LC card format will be prepared by the cataloger. It will be forwarded to the keypunch/Flexowriter operator who captures the data required to update the Bibliographic Master File. The operator does the same things already described for the other two categories.

When a book has been completely processed it is either shelved or sent to a waiting patron. The patron mailing card and the master circulation card go with the book to the circulation desk, where the loan is actually processed. As indicated earlier, information on the mailing card includes the patron's address. This permits the card to be taped to the book or the messenger envelope containing the book to serve as an address label.

    a.   Establishment and Maintenance of the Bibliographic Master File

To create and maintain the Books Bibliographic Master File data about new titles and changes or deletions to titles already held must be captured. The data is captured on paper tape by a flexowriter operator, using either an LC card or the cataloging worksheet as the source document. The paper tape is converted to magnetic tape which is used to post the Books Bibliographic Master File.

The cataloging worksheet has two purposes. The primary purpose is to make it easier to capture data on changes and corrections; a secondary purpose is to enable a Flexowriter operator with little or no knowledge of cataloging rules to capture data on new titles. If an operator works from a worksheet that has been filled out by a cataloger, she does not need to know anything about cataloging. But in practice it is expected that the operator will be able to pick up data on new titles from the LC card, and the worksheet will be used for new titles only if the operator cannot do this. The worksheet ordinarily will be the source document for data capture only on changes to bibliographic data on titles already cataloged. It would be difficult to work from the LC card on changes because several changes may be made on the card at different times, and the operator could not determine just what the latest change consisted of. Use of the worksheet eliminates this problem.

In the following discussion, although the use of the worksheet as a source document for capture of data on both new titles and changes will be explained, the reader should keep in mind that ordinarily the new title data will be captured from LC cards. The same data is captured in either case.

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Three kinds of actions may be initiated by the cataloger's filling out the cataloging worksheet: A new bibliographic record for a new title may be established; an established bibliographic record may be deleted; an established bibliographic record may be revised by adding additional data, deleting specified data elements, changing specified data elements or action codes. Following are the procedures for completing the cataloging worksheet for each of these kinds of actions.

To establish a new bibliographic record on the file, fill out the worksheet as follows (items preceeded by an asterisk may be omitted):

(1) Indicate a new action by X'ing out the code 1, meaning new, at the top of the form.

(2) Enter the call number in the call number block.

(3) Enter the lowest assigned copy number in the copy number block.

(4) Enter the number of copies in the number of copies block.

(5) Enter your surname initial in the cataloger block.

(6) Indicate the type of main entry by X'ing either personal, corporate, title, or editor block.

(7) Enter the main entry heading in the block immediately below the main entry type.

(8) Enter the title or titles in the title block.

*(9) Enter the author or authors in the author block.

*(10) Enter the corporate author or authors in the corporate author block.

*(11) Enter the editor or editors in the editor block.

*(12) Enter the compiler in the compiler block.

*(13) Enter the translator in the translator block.

*(14) Enter the illustrator in the illustrator block.

(15) Enter the imprint in the place, publisher, and date blocks.

*(16) Enter the volume, pagination, and language in the blocks so headed.

*(17) Enter the series in the series block.

*(18) Enter variant title notes in the variant title notes block.

*(19) Enter informal notes in the informal notes block.

(20) Enter subject headings in the descriptor block.

All non-asterisked items must be entered, but the main entry need not be repeated. Asterisked items will be entered when the information. is available. Figure 54 shows an LC card and figure 55 a cataloging worksheet which will reflect the data on the card.

To delete a bibliographic record from the file, fill out the cataloging worksheet as follows:

(1) Indicate a delete action by X'ing out the code 0, meaning delete, at the top of the form.

(2) Enter the call number in the call number block.

(3) Note "All" in the copy number block.

(4) Note "All" in the number of copies block.

(5) Enter your surname initial in the cataloger block.

The result of this transaction is the complete deletion of the bibliographic record identified by the call number. This is comparable to removing the shelf list card and all associated cards from the card catalog. The transaction will not be processed by the computer if any copies of the call number are on loan.

Revisions to established bibliographic records consist of adding data, deleting data, or changing data.

Data to be added to an established bibliographic record is either added copies data or new bibliographic data elements. If it is added copies data, fill out the worksheet as follows:

(1) Indicate an add action by X'ing out the code 2, meaning add, at the top of the form.

(2) Enter the call number in the call number block.

(3) Enter the next available copy number in the copy number block.

(4) Enter the number of copies to be added in the number of copies block.

(5) Enter your surname initial in the cataloger block.

If additional data elements are to be added fill out the worksheet as follows:

(1) Indicate an add action by X'ing out the code 2, meaning add, at the top of the form.

(2) Enter the call number in the call number block.

(3) Enter your surname initial in the cataloger block.

(4) Enter the new data elements in the correct blocks.

Data to be deleted from an established bibliographic record is either deleted copies data or deleted data elements. If it is deleted copies data, fill out the worksheet as follows:

(1) Indicate a delete action by X'ing out the code 0, meaning delete, at the top of the form.

(2) Enter the call number in the call number block.

(3) Enter the copy number of the copy to be deleted in the copy number block.

(4) Enter "1" in the number of copies block.

(5) Enter your surname initial in the cataloger block.

If more than one copy of a title is to be deleted, a separate worksheet must be filled out for each copy to be deleted. If data elements are to be deleted, fill out the worksheet as follows:

(1) Indicate a delete action by X'ing out the code 0, meaning delete, at the top of the form.

(2) Enter the call number in the call number block.

(3) Enter your surname initial in the cataloger block.

(4) Secure the data element codes for the data elements to be deleted (see bibliographic file printout) and enter these, each followed by an asterisk, in the main entry block.

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Any data elements except copy number and number of copies may be changed. To change data elements or action codes, fill out the worksheet as follows:

(1) Indicate a change action by X'ing out the code 3, meaning change, at the top of the form.

(2) Enter the call number in the call number block.

(3) Enter your surname initial in the cataloger block.

(4) Secure the data element codes for the data elements to be changed and enter these, each followed by an asterisk, in the main entry block.

(5) Enter the corrected versions of the data elements in their blocks.

b. Cataloging Data Capture

Book cataloging data capture is based on the format of a typical Library of Congress catalog card. Data from the card or from a cataloging worksheet, figure 55, is typed on a Flexowriter. The data typed is displayed in typewritten form at the same time it is punched on paper tape with codes for field identification within the computer. In the following discussion it is assumed that the Flexowriter operator understands the operation of the machine and knows cataloging terms and procedures well enough to use them. Other information needed to use the Flexowriter to capture book cataloging data is provided here.

Because of the variation in data elements that must be captured from title to title, no step-by-step tabular procedure can be presented. The following instruction is therefore presented in two parts: (1) machine operation, which details the steps in operating the Flexowriter to capture bibliographic data, and (2) format rules which explain the detailed formats for capturing the header and trailer, first data entry, personal names, punctuation, titles, series and title notes, informal notes, and subject headings. The operator must select for any particular title the instructions applying to capture of the required data elements for that title, whatever they may be.

A preliminary note: Except that the data following the first READ START (code and LC number data) must be first, there is no necessary order to the data being captured. If you miss a code, jump over data that should have been captured, or skip data for any reason, you can capture the data by simply keying the correct data element code followed by the data.

Machine Operation. These rules must be kept in mind in operating the Flexowriter:

(1) After each READ START operation there is an automatic STOP.

(2) Make sure that each time you finish typing a data element you press READ START. This causes end-of-record codes to be transferred from the control tape to the data tape and positions the machine for the next data element.

(3) Refer to these instructions rather than guessing. If you have a question for which you cannot find the answer, put that work aside and ask about it when people who can answer are available.

(4) Before each data element goes into the data tape, some coding must be entered into the data tape from the control tape. Develop the habit of watching or listening so you will know that the code has been punched at the time it should be.

To set up the Flexowriter for operation, set the toggle switches to ON and ALL. Put the control tape on the punch tape reader. Be careful not to twist the control tape.

At the beginning of the day go through the header procedures; at the end of the day go through the trailer procedures.

Sometimes it is helpful to have an additional punch connected to the Flexowriter; it can be used to punch check tapes and master tapes to speed up data capture on books with many volumes. The additional punch connects to the front receptacle of the Flexowriter. It is turned on by turning on the Flexowriter, setting the near toggle switch in either ALL or SELECT position, pressing the upper-case key, and pressing the ON 2 key.

After completing the machine set up and capturing the header record you can begin capturing the cataloging information. In the following procedure, when you press READ START codes are punched by the control tape, which is diagrammed in figure 56. After each TAPE SKIP or READ START, wait until the machine stops before doing anything else. Here is the data capture procedure to create a new bibliographic record (action code 1). Other actions are covered later.

Press TAPE SKIP. When the Flexowriter stops, you are at the beginning of the control tape.

Press READ START. When the Flexowriter stops, type the action code, a space, and the call number.

Press READ START. Type the beginning copy number, the number of copies, and the special indicator code.

Press READ START. Determine the correct data element code, figure 47, for the main entry. Type the code; it will be in lower case.

Press READ START. Type the main entry.

Press READ START. Type the bibliographic paragraph, using upper and lower case as required.

Press READ START. If there are informal note paragraphs to be captured, type the data element code (alphabetic lower case o, numeric 01) and space once. Type the first informal note paragraph, using upper and lower case.

Press READ START. If additional paragraphs of informal notes must be captured, repeat the procedure to capture them, changing the data element code from o01 to o02, etc. Be sure to press READ START after each paragraph.

When you have captured all the informal notes, the remaining data to be captured will be typed in lower case only.

For each remaining data element to be captured the procedure is as follows:

(1) Determine the kind of data and choose the data element code that applies, figure 47.

(2) Type the data element code, letter lower case, two-digit number, space.

(3) Type the data element in lower case.

(4) Press READ START.

The control tape contains ten stop codes after the check point half inch tape feed area. You need not count the number of entries you have made; an end-of-control-tape check point has been provided. When you reach the end of the control tape the Flexowriter will tab twice, carriage return, and stop. If more data must be entered, you can turn the control tape back to the check point half inch tape feed area. When you do this, you must then press READ START.

When you have completed the data capture for a catalog card, press READ SKIP and the control tape will be positioned for capturing the data from the next catalog card.

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In capturing the data elements, follow the format rules as set forth below.

Header and Trailer, figure 57. At the beginning of each piece of paper tape to be used by the computer you must have the following information in exactly this order and format:

(1) Two feet of tape feed.

(2) Header data:

Position	Data
1-4	rsic
5-7	hdr
8-15	mm/dd/yy (mm is month number, dd is date number, and yy is year number)
16-26	Any eleven printing characters for identification, such as "book catalog"
27-29	001
30-79	spaces

At the end of each piece of paper tape to be used by the computer you must have the following:

(1) Three 2's, then backspace three times.

(2) Three 8's, then space.

(3) One foot of tape feed holes.

First Data Entry. Format of the first data entry must be as shown in figure 58; letters used here refer to the figure. A is the code for type of transaction: 1 for new entry, 2 for addition, 3 for change, 4 for lost, 5 for salvage, 6 for found, 7 for inventory out adjustment, and 0 for delete. It must be present. B is blank, and a blank space must be present. C is the alphabetic characters of the LC number. D is the numeric part of the LC number. E is the Cutter number; it must be one alphabetic character followed by three digits or less. F is the year of publication, which must be entered if available. If it is not available, enter nd with no punctuation. Work mark, if present, follows date or nd. A work mark may be any alphabetic or numeric character, and if present comes at the beginning of the G field. G is additional data to identify a book. It may take a number of different forms. It always follows the date and

preceeds the asterisk. Data in the G field may contain any or all of the following codes followed by alphabetic or numeric data: b for book, c for copy, i for index, p for part, s for supplement, section, or series, v for volume. H is an asterisk, which must be entered following the additional data and before the copy numbers. I is the number of the lowest numbered copy being worked on. It must be four digits, leading zeros being supplied as required. It must be entered. J is the number of copies in the group being worked on. It also must be four digits, and it must be entered. K is a code for special indication: R for reference, x for expendable, or s for expendable and reference. If there is no code, one space must be left blank.

Personal Name Entry. Format of the personal name entry must be as shown in figure 59; letters used here refer to the figure. A is the surname, to be entered as given. B is a comma; note that there are no spaces either side of the comma. C is the first name or initial, no period being used with an initial. Space follows the first name or initial only if there is also a second name or initial. D is the middle name or initial. There may be more than one; if so they must be separated by spaces but no punctuation. E is title, earned rank, or similar data. If more than one rank is given, capture all, separated by spaces but no punctuation. F is the years of birth and death if available. Four digits must be used for each year. No spaces are allowed between dates and dash. G is one of the following codes for personal names: Cp for compiler, Ed for editor, Il for illustrator, or Tr for translator. It is important to include four commas in each personal name entry even if they would not normally be included because of some data not being available. Any entry with less than four commas will be rejected by the computer. If extra commas are required, add them at some point where one comma would normally appear.

Title Entry. Titles will be captured as they appear on the worksheet or LC card. Usually titles are the first line of the major paragraph and end with a major punctuation mark (period, semicolon, or colon). Do not capture the final punctuation mark. If there is more than one title, this will be indicated in the Roman numeral series at the bottom of the card. If you have any doubt as to the exact title, ask a cataloger.

Series Entry. If you have any series to capture, they will be plainly marked in the tracings at the bottom of the LC card. However, the actual data to be captured normally appears in one of the informal notes paragraphs, usually in parentheses.

Informal Note Entry. Each informal note includes data from the worksheet or LC card. You must change the data element code with each paragraph change in the informal notes.

Subject Headings or Descriptors. Subject headings are listed at the bottom of the LC card or in the area on the worksheet headed "Descriptors." Enter them exactly as they are written, capturing all spaces, dashes, and punctuation marks exactly as they appear, except for the end punctuation mark. Omit the end punctuation mark unless it is used after an abbreviation. Be sure to distinguish between hyphens (- without separating spaces) and dashes (- with one space on each side).

Additional Punch. Use of an additional punch enables you to make a master tape and use it in capturing data on several volumes, saving time and effort. Use the additional punch as follows:

(1) Before you start, determine which data fields will change from one volume to the next.

(2) Turn on the additional punch and turn off the Flexowriter punch.

(3) Type the data onto the additional punch tape using regular procedures, except that where you have determined the data will change from one volume to the next you put a stop code.

(4) Test the tape by running it through the Flexowriter reader. Check for the right codes and correct data capture, as well as the machine stops being in the right places.

(5) Now run the tested tape through the Flexowriter reader with the second toggle switch in the ALL position. At each stop, type in the correct information for the specific volume, and then press the START READ button.

NOTE: Two non-print codes are required to insert record mark on master tape to be used in making tapes for use with auxiliary punch.

Actions on Established Records. To capture data for deletions, additions, and changes in established records, the Flexowriter is set up in the same way and the same control tape is used. The operating procedure, however, is different.

Referring to action codes, figure 48, it appears that there are seven possible actions other than creating a new bibliographic record. But because under delete, action code 0, you may delete a record or copies of a title or data elements on a record, and under add, action code 2, you may add either copies or data elements, there are really ten kinds of actions possible other than creating a new record.

Two general procedures for data capture are presented here, one applying only to changing data in an established record (action code 3) and adding data elements, not copies, to an established record (action code 2). The other procedure covers all other kinds of actions, including adding copies to an established record.

Changing Data and Adding Data Elements. Follow this procedure when you want to change data or add specific data elements, as indicated by the Cataloging Worksheet.

(1) If you are not at the start of the control tape, press TAPE SKIP.

(2) Press READ START.

(3) Type the action code as shown on the worksheet (either 2 or 3), space once, then type the call number.

(4) Press READ START.

(5) Space nine times.

(6) Press READ START.

(7) Turn the control tape to the codes, and type codes and data.

(8) Press TAPE SKIP.

(9) Press READ START.

Other Kinds of Actions. If the required action is anything other than changing data or adding data elements, follow this procedure for data capture. The variations for different kinds of actions in the following procedure should be noted and followed carefully.

(1) If you are not at the start of the control tape, press TAPE SKIP.

(2) Press READ START.

(3) Type the action code given on the worksheet, space once, and type the call number.

(4) Press READ START.

(5) In the copy number and number of copies fields, type one of the following:

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If the action code is 0 and you are deleting one copy type 0002 (where 2 is the number of the copy to be deleted), and then type 0001.

If the action code is 0 and you are deleting all copies space eight times.

If the action code is 2 and you are adding copies for the first time type 0002 (where 2 is the first copy number to be added), and then type 0006 (where 6 is the number of copies to be added).

If the action code is 4, 5, 6, or 7 type 0005 (where 5 is the number of the copy affected by the action), and then space four times.

(6) Type one of the valid special indicator codes or space once. If the action code is 7, this must be a space and not a code.

(7) Press READ START.

(8) If the action code is 0, type A, three spaces, asterisk, and press TAPE SKIP.

If the action code is 2, type A, three spaces, and press TAPE SKIP.

If the action code is 4, 5, 6, or 7, press TAPE SKIP.

NOTE: If you are adding a special indicator code to a copy already on record, follow the above instructions for action code 2 (in step 5) with this change: Type 0006 (where 6 is the number of the copy affected), type the special indicator code, and the type 001. For step 6, space once.

c. Cataloging Master File Outputs

Cataloging master file outputs are prepared each time the Bibliographic Master Files are updated. At present, the schedule is as required. All multicopy printouts are standardized on 8 1/2 x 11 paper with the exception of the accession, number, shelf, author, title and subject heading lists which are on 15 x 20 paper. The deleted bibliographic records will be produced on 5 x 8 cards. There are thirteen output displays of the cataloging master files which are:

(1) Edit Error List

(2) Book Cataloging Module Monitor Report

(3) Deleted Bibliographic Record

(4) Update Error List

(5) Accession List

(6) Number List

(7) Shelf List

(8) Author List

(9) Title List

(10) Subject Heading List

(11) Authority Check List

(12) Wash Action Error List

(13) Valid Transactions for Monitoring

The Cataloging Edit Errors List, figure 62, is a display
of all raw input transactions found in error. All raw transaction
errors are formatted and printed in call number sequence. The first
line of the print will be delegated to the error message, which is al-
ways printed in upper case. The following lines will contain the re-
cord in error. This list is produced each time the cataloging master
files are updated. Copies of the Edit Error List are kept by the
cataloging unit.

The sole purpose of the Edit Error List is to assist the
lexicographer in correcting input errors found during the conversion
of raw input transactions to raw bibliographic transactions prior to
the first computer run. For a complete list of error messages, their
meaning and possible corrective action refer to editing criteria, this
section.

The Book Cataloging Module Monitor Report, figure 60,
displays all valid actions processed against the Bibliographic Master
File. It is presented in call number sequence and produced at each
update. The primary use of this display will be made in determining
what was processed into the Bibliographic Master File. Copies of the
monitor are kept by the cataloging unit and the library lexicographer.

The Deleted Bibliographic Record, figure 61, displays on
a 5 x 8 card each record that is removed from the computer file as a
result of a record delete action. It is presented in call number se-
quence and produced at each update. Copies of the Deleted Bibliograph-
ic Record are kept by the cataloging unit.

The Update Error List, figure 63, displays all transactions
not processed during the update of the Bibliographic Master File. Each

transaction will be accompanied by an error message. This error list is presented in call number sequence and produced at each update. Primary use of this display is to assist the lexicographer in correcting update errors. Copies of the list are kept by the cataloging unit.

The general considerations in using the cataloging module edit and update error listings are the same as those in using the patron monitor, discussed in Section II. The person correcting errors should always be sure he understands what the error is before correcting it. The editing criteria contain a listing of all error messages, with explanations, when required. But errors cannot be corrected by following the messages and explanations blindly.

Corrective action for any error, edit or update, is to determine the correct input data and resubmit a corrected input. The procedure for data capture on corrected inputs is the same as for original inputs; since the incorrect input has not been accepted by the computer, the computer files remain in the same condition they were in before the input was submitted.

The Accession List is a display of all current titles added to the library holdings. This list will be presented in COSATI code and call number sequence and produced weekly. Copies of this list will be distributed to RSIC patrons to inform them of additions to the collection which might be of interest to them.

The Number List is a display of all library holdings presented in report and contract number sequence. This list will be prepared at each update. Copies of this will be kept by the cataloging unit and readers services section.

The Shelf List, figure 67, displays all library holdings by LC and special data element sequence. This list will be prepared at each update. Copies of this list will be kept by the cataloging unit.

The Author List, figure 68, displays all library holdings by author name sequence. This list will be prepared at each update. Copies of this list will be kept by the cataloging unit and readers services section.

The Title List, figure 69, displays all library holdings alphabetically by title. This list will be prepared at each update. Copies of this list will be kept by the cataloging unit and readers services section.

The Subject Heading List, figure 70, displays all library holding alphabetically by subject heading. This list will be prepared

at each update. Copies of this list will be kept by the cataloging
unit and readers services section.

The Authority Check List, figure 64, is a display of
daily cumulative listing reflecting additions and changes to the Subject
Authority Master. This list will be presented in subject sequence and
produced at each update. Copies of this list are kept by the cataloging
unit and library lexicographer.

The Wash Action Error List, figure 65, display all errors
found during the update of the Search Master File. This list will be
presented in subject heading sequence and produced at each update.
The first line of the print will be delegated to the error message
which is always printed in upper case. The following lines will contain
the subject in error. Copies of this list will be utilized by the
library lexicographer in correcting update errors.

Valid Transactions for Monitoring List, figure 68, dis-
plays each transaction processed into the Subject Authority Master
File. The monitor will be presented in subject sequence and produced
at each update. Copies of this list are kept by the cataloging unit.

d. Editing Criteria

Edits are rules specifying that certain things must be or
cannot be in the specified data field of the cataloging worksheet input
form or that certain data element and action codes must be properly used.
The following are all possible error or processing messages with expla-
nation and suggested corrective action.

Message	Meaning	Corrective Action
ACTION CODE VS DATA ELEMENT CODE INVALID.	The data element code is bbb or Abb but the action code is not 2, 4, 5, 6, or 7.	Research and resubmit.
THE BIBLIOGRAPHIC PARA-GRAPH IS BLANK.	There is a data element code N01 indicating the bibliographic paragraph, but no data follows the code.	Resubmit.
CATALOGER'S INITIAL IS NOT VALID.	There is something other than an alphabetic or blank character in the cataloger's initial field.	Resubmit.

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Message	Meaning	Corrective Action
CATALOGING OF THIS BOOK IS NOT COMPLETE. DATA ELEMENTS ---,---IS/ARE NOT PRESENT.	The action code is 1, and the required data elements specified by data element codes are missing. Required minimum data elements are main entry (code 00), at least one title (code B00 or B01), bibliographic paragraph (code N01), and at least one subject heading (code P01).	Research and resubmit.
COPY NUMBER FIELD IS NOT NUMERIC.	The action code is 4, 5, 6, or 7, but the copy number field either contains data other than numeric characters or is blank.	Research and resubmit.
CORPORATE AUTHOR'S FIELD IS BLANK.	There is a corporate author data element code but no corporate author data follows.	Research and resubmit.
CUTTER NUMBER CONTAINS MORE THAN ONE ALPHA CHARACTER.	Self explanatory. Only one alphabetic character can be in the Cutter number, and it must be the first one.	Research and resubmit.
CUTTER NUMBER IS TOO LONG.	The Cutter/number is over the maximum length of one alphabetic character and 3 numeric characters.	Research and resubmit.
CUTTER NUMBER NOT PRESENT.	Self explanatory.	Research and resubmit.
CUTTER NUMBER STARTS WITH NUMERIC CHARACTER.	Self explanatory. The first character must be alphabetic.	Research and resubmit.
DATA ELEMENT CODE DOES NOT AGREE WITH THE COPY NUMBER FIELD.	The action code is 0 and either (1) the copy number is ALLb or numeric, but the data element	Resubmit.

Message	Meaning	Corrective Action
	code is not either Abb or Pbb, or (2) the copy number is blank, but the data element code is something other than A followed by two numeric characters.	
DATA IN THE COPY NUMBER FIELD IS NOT VALID.	(1) The action code is 0 and the copy number field contains something other than blanks, ALLb, or numeric characters. (2) The action code is 2 and the data element codes are something other than A followed by two numeric characters, but data in the copy number field is not numeric characters. (3) The action code is 3 but the copy number field is not blank.	Research and resubmit.
DATA IN THE NUMBER OF COPIES FIELD IS NOT VALID.	(1) The action code is 0 and either (1) the copy number is ALLb but the number of copies is not ALLb, or (2) the copy number field is blank but the number of copies field is not blank, or (3) the copy number field has numeric characters but the number of copies field contains something other than 0001. (2) The action code is 2 and the data element codes are something other than A followed by two numeric characters, but the data in the copy number field is not numeric. (3) The action code is 3 but the number of copies field is not blank.	Resubmit.

Message	Meaning	Corrective Action
DATA NOT*	The data element code is Abb and the action code is 0, but the data field has something in it other than an asterisk.	Resubmit.
DATE FIELD CONTAINS AN INVALID BLANK.	Self explanatory.	Resubmit.
DATE FIELD HAS ALPHA OTHER THAN "ND."	Self explanatory.	Resubmit.
DATE NOT IN RANGE.	Date is outside the range 1600 to current year.	Resubmit.
DELETE TX DOES NOT CON-TAIN AN * IN THE DATA FIELD.	A transaction card sub-mitted to delete a biblio-graphic record, with the action code of 0, contains something other than an asterisk or is all blank in the data element field.	Resubmit.
FORMAT OF THE AUTHOR'S NAME IS INVALID.	Format of the author's name is other than: Brown,,,, Brown, R,,, Brown,,Sir,, Brown,,,1908-, There must be four commas.	Resubmit.
FORMAT OF THE COMPILER'S NAME IS INVALID.	The required format for compiler's name is the same as the author's, ex-cept the last two char-acters must be CP.	Resubmit using correct format.
FORMAT OF THE EDITOR'S NAME IS INVALID.	The required format for editor's name is the same as the author's, except the last two characters must be ED.	Resubmit using correct format.
FORMAT OF THE ILLUSTRA-TOR'S NAME IS INVALID.	The required format for illustrator's name is the same as the author's,	Resubmit using correct format.

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Message	Meaning	Corrective Action
	except the last two characters must be IL.	
FORMAT OF THE TRANSLA-TOR'S NAME IS INVALID.	The required format for translator's name is the same as the author's, except the last two characters must be TR.	Resubmit using correct format.
FURTHER SUBDIVISION IS TOO LONG.	The further subdivision of the LC classification is longer than the max-imum of 11 characters.	Research and resubmit.
THE INFORMAL NOTE FIELD IS BLANK.	There is a data element code indicating an in-formal note but no data following it.	Research and resubmit.
INVALID ACTION CODE.	There is something in the action code field other than 0, 1, 2, 3, 4, 5, 6, or 7.	Resubmit.
INVALID COSATI CODE.	There is something in the COSATI code field other than two digits in the range of 01 through 22.	Resubmit.
INVALID DATA ELEMENT CODE.	The data element code is not one of those listed in figure 47.	Resubmit.
INVALID SPECIAL INDICA-TOR CODE.	(1) The action code is 0, 2, or 3 and the special indicator code is something other than blank, N, R, S, X, or V.	Research and resubmit.
INVALID SPECIAL INDICA-TOR CODE (Cont'd)	(2) The action code is 4, 5, 6, or 7 and the special indicator code field is not blank, as required.	Resubmit.

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Message	Meaning	Corrective Action
THE LANGUAGE FIELD IS NOT ALPHABETIC.	There is at least one character in the language field that is not alphabetic.	Research and resubmit.
MAIN CLASS CONTAINS A NUMERIC CHARACTER.	Self explanatory.	Research and resubmit.
MAIN CLASS INVALID.	(1) The main class of the LC classification contains at least one non-alphabetic, non-numeric character. (2) The first character in the main class is I, O, W, X, or Y.	Research and resubmit.
MAIN CLASS TOO LONG	The main class of the LC classification is longer than two characters followed by one blank.	Research and resubmit.
NUMBER OF COPIES FIELD IS NOT BLANK.	The action code is 4, 5, 6, or 7; the number of copies field should be blank but is not.	Resubmit.
THE SERIES FIELD IS ALL BLANK.	There is a data element code indicating a series entry, but no data follows it.	Research and resubmit.
SPECIAL INDICATOR CODE INCONSISTENT WITH THE COPY NO. FIELD.	The action code is 1 and the copy number is 0002, but the special indicator code is something other than N or V.	Research and resubmit.
SUBDIVISION CONTAINS ALPHA CHARACTERS.	The LC subdivision contains at least one alphabetic character, rather than only numeric characters.	Research and resubmit.
SUBDIVISION NOT PRESENT.	There is no subdivision of the LC classification; it is required data.	Research and resubmit.

Message	Meaning	Corrective Action
SUBDIVISION TOO LONG.	There are more than 12 characters in the LC classification subdivision.	Research and resubmit.
SUBJECT HEADING FIELD IS BLANK.	There is a data element code indicating subject heading, but no data follows it.	Research and resubmit.
THIS BOOK DOES NOT HAVE A MAIN ENTRY.	The action code is 1, but the first data element code is something other than one alphabetic character followed by two zeros.	Resubmit.
THIS BOOK DOES NOT HAVE A TITLE.	Self explanatory.	Research and resubmit.
TITLE DATA IS BLANK.	The action code is 0, 1, 2, or 3, but the title field contains no data.	Resubmit.
BIB. MASTER ALREADY CONTAINS DATA UNDER THIS DATA ELEMENT CODE.	A data element to be added to an established bibliographic record has has been submitted with a data element code that duplicates the code of a data element already on the record.	Research and resubmit.
BIBLIOGRAPHIC RECORD DOES NOT HAVE A MAIN ENTRY.	The transaction submitted leaves the bibliographic master record without a main entry.	Research.
CALL NUMBER FOR COPIES TO BE ADDED NOT FOUND ON THE BIB. MASTER.	There is no record on the bibliographic master file with the call number specified in the input transaction adding copies.	Research.
CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER.	There is no record on the bibliographic master file with the call number specified in the input transaction changing data.	Research.

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Message	Meaning	Corrective Action
CALL NUMBER IS A DUPLICATE OF ONE ALREADY CONTAINED ON THE BIB. MASTER.	The input transaction creates a new record, but there is already a record on the bibliographic master file under the same call number.	Research.
COPY FOUND WAS NEVER REPORTED LOST.	The input transaction flags a copy as found, but the copy is not flagged on the master file as lost.	Research.
COPY NUMBER OUT Of OUR INVENTORY IS OUT ON CIRCULATION.	Self explanatory. A book copy that is charged out cannot be inventoried out.	Research.
COPY REPORTED LOST WAS NOT ON SHELF.	Self explanatory. The only condition from which a copy can be flagged "lost" is "shelf."	Research.
COPY TO BE DELETED IS NOT ON THE SHELF, IT IS_____. (Insert LOST, SALVAGED, CIRCULATED, 001 (out of inventory), NO COPY ONE - EXPENDABLE, or NO COPY ONE - NON EXPENDABLE.)	Self explanatory.	Research.
COPY TO BE SALVAGED NOT ON SHELF.	Self explanatory.	Research.
DATA ELEMENT TO BE CHANGED NOT FOUND ON BIB. MASTER.	Self explanatory.	Research.
THE DATA TO BE DELETED IS NOT ON THE BIB. MASTER.	Self explanatory.	Research.
DUPLICATE COPY NUMBER.	The copy number to be added is already on the bibliographic master record.	Research.

Message	Meaning	Corrective Action
RECORD TO BE DELETED WAS NOT FOUND ON BIB MASTER.	Self explanatory.	Research.

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4. Circulation

The circulation method used at RSIC in the period prior to automation was a fairly standard one. There were two three-by-five cards in a pocket in the back of each book available for loan. Whenever a patron wanted to borrow a book from the library, he was asked to sign both cards. A staff member wrote the borrower's name if it was a mail or phone request. The cards were then stamped with the date of the transaction; one was filed under the call number of the book and the other under the name of the patron. By this means RSIC was able to know at any given moment the location of any specific book and was able to furnish to each patron who requested it a complete and up-to-date inventory of the books charged to his account. This system did not give a due date and at that time one was not used. All books, therefore, were considered to be checked out on an indefinite loan, although they were all subject to recall at any time should this become necessary. No overdue notices as such were ever sent out. Thus it was necessary that the library have multiple copies copies of a great many titles.

In the ALPHA System, no files of cards are maintained at all, there are specific loan periods and overdue notices are sent.

For centralized control of all circulating books in the library, a magnetic tape record of each circulated book is created and maintained in a Circulation Master File. Figure 73 is a diagram of the tape record for one circulating book. The legend indicates the type of data and space requirements for each record. An accumulation of these tape records, one for each circulated book, make up the Circulation Master File.

Each circulating book in the library carries a pocketed and prepunched IBM card, see figure 74. This card, referred to as the Master Circulation Card, contains the action code, call number, the last name of the author and an abbreviated book title. The information on this card called "article identification," is prepunched in columns 1 through 50 and printed along the top edge of the card. All 50 columns may be used without fixed field limits; an asterisk is used to denote field separation between the call number and the author-title data.

When a book is charged out, the prepunched Master Circulation Card is pulled from the book and the loan information - type of loan, date, social security number and name of patron - is keypunched in columns 51 through 80, see figure 75. After the loan information is recorded on the card, the Master Circulation Card is duplicated, one copy of the card is inserted in the book pocket and the book is released to the patron. The duplicate card is forwarded to the computation center. The information on this card will be processed into a magnetic tape record used to update the Circulation Master File.

When a book is returned to the circulation desk either by mail or by personal delivery, the punched card is removed from the book pocket and inserted in the keypunch. The card is coded with an overpunch (an eleven punch) in column 1, see figure 75, to indicate to the computer that the item is to be deleted from the circulation listing. It is then released to the read station of the keypunch and a new card registered. Column 1 of the new card is punched with a "1" and columns 2 through 50 are duplicated from the other card, which is then sent to the computation center along with other cards representing loaned and returned items. The new card with columns 1 through 50 punched is now the Master Circulation Card for the book and stays in the pocket when the book is shelved.

Several other actions affecting the Circulation Master File may be accomplished; items may be recalled, renewed, indicated as lost and found, patron data or item titles may be changed. Data for these actions are keypunched into punch cards that are batched and periodically sent to the computation center to update the Circulation Master File. Each time the Circulation Master File is updated, new circulation listings are prepared for the library.

The primary outputs of the Circulation Master File are two circulation listings which reflect all items currently charged out; the Circulation Listing in Call Number Sequence, see figure 76, and the Circulation Listing in Patron Name Sequence, see figure 77. These listings are produced weekly. Each listing displays who has what and where each item is.

In addition to the two circulation listings, several auxiliary computer outputs are produced; these are: the unreadable circulation transaction cards, the Input Transaction Monitor and Error Listing, see figure 78, with processed error and kicked out transaction cards, the Circulation / Inventory Update Error List and Statistical Report, see figure 79, with unprocessed transaction cards, a Third Notice Reference List, see figure 80, Issue and Turn-in Slips, see figure 81, Recall Notices, see figures 82 and 83, Overdue Notices, see figures 84 thru 86, with transaction cards, and a Patron-Circulation Inventory Report, see figure 87, with transaction cards.

a.   Establishment and Maintenance of the Circulation
     Master File

For the librarian, establishment and maintenance actions on the Circulation Master File begins with the Master Circulation Card pocketed in each circulating book. Both establishment and maintenance actions will be accomplished through the use of circulation transaction processing "action codes" and "type loan and medium codes." The "action codes" will signify the action to be taken on each item. The "type loan and medium codes" will signify what type of loan is being made and medium of the item being loaned. The transaction processing codes are:

(1) <u>Valid Action Codes and Their Meaning.</u>

Action Code	De-coded	Meaning
1	1	Circulate
J	$\bar{1}$	Return
2	2	Recall
3	3	Renewal
Zero	0	Lost
Minus-zero	$\bar{0}$	Found
A	A	Patron change card
-	-	Title change

(2) <u>Type Loan and Medium Codes and Their Meaning.</u> Interrogation of the numeric bits of this code will provide information regarding the type of loan while the zone bits indicate the medium of the loaned item.

<u>Type</u>	Medium	<u>Meaning</u>
1		Regular book loan
2		Inter-library loan
8		Book loan requiring the production of an issue slip
9		Long-term book loan
Zero 1	(1)	Regular document loan
Zero 2	(S)	Inter-library loan on a document

Type	Medium	Meaning
Zero 8	(Y)	Document loan requiring the production of an issue slip
Zero 9	(Z)	Long-term document loan
- 1	(J)	Regular periodical loan
- 8	(Q)	Periodical loan requiring the production of an issue slip
- 2	(K)	Inter-library loan of a periodical
- 9	(R)	Long-term periodical loan
+ 1	(A)	Regular miscellaneous loan
+ 2	(B)	Inter-library loan miscellaneous
+ 8	(H)	Miscellaneous loan requiring production of an issue slip
+ 9	(I)	Long-term miscellaneous loan

Detailed instructions for keypunching of the Master Circulation Card and other transaction cards for each type of action affecting the Circulation Master File are presented in the data capture procedures.

b. Circulation Data Capture

An IBM 026 printing card punch is used to keypunch all circulation input transaction cards. This machine is capable of completing the

keypunching required on the Master Circulation Cards, producing a duplicate transaction card used in initiation of the Circulation Master File or preparation of transaction cards for any action required to update the Circulation Master File.

(1) <u>Circulate - Preparation of the Master Circulation Card.</u> To circulate an item, the librarian must first verify that the individual is a valid patron of RSIC. This is accomplished by checking the Patron List in Name Sequence. The librarian will then remove the Master Circulation Card from the book pocket and complete the keypunching of the loan information shown below.

Columns	Data Element	Comments
51	Security Classification	One of the following one character codes: 0 unclassified U unclassified
52	Type of loan	From the type loan and medium list, paragraph a.(2).
53	Current year	A one-character numeral.
54-56	Today date	Julian Form - (182nd day of the year.)
57-65	Patron's social security number	No dashes.
66-78	Patron's last name	Do not leave space in surname (e.g. Mc Kay would be McKay.)
79-80	Patron's initials	No periods.

If it is necessary to punch the entire Master Circulation Card for any reason, the following procedure should be used for "the article indentification," column 1 through 50.

Columns	Data Element	Comments
1	Action code	From the valid action code list, paragraph a.(1).

2-50	Call number and author / title	Punch the call number followed by an aster-isk and use the balance of the columns (through 50) for the author/title information.

The call number is divided into six major fields and immediately followed by an asterisk. The fields are described as follows:

Field 1 - This field, which is always alphabetic, may be composed of one or two alphabetic characters and must always be followed by a blank.

Field 2 - This field must always be all-numeric and must not exceed four characters. If there is no field 3, field 2 is followed by a blank.

Field 3 - This field, if it exists in the LC number, is always separated from field 2 by a decimal point (period) and cannot exceed seven characters.

Field 4 - This field must always begin with an alphabetic character followed by no more than three numbers. Field 4 is always followed by a blank.

Field 5 - This field must contain four numerics (date) or four numerics followed by a dash (-) and two numerics or in the case of no date, ND.

Field 6 - This field represents the balance of the LC number and is continued until completion of the LC number. The last alphabetic character in the string must be a "C" or "X." If "X" is the last character denoting the book as an expendable item it must be preceeded by a "C" denoting the copy number of the book. The last numeric characters in the string following the "C" must not be greater than "300." The last character of the string is always followed by an asterisk (*).

The Master Circulation Card will then be duplicated and the original card placed back in the book pocket and the item re-leased to the patron. The duplicate card will be placed in the box marked "circulation transactions." These cards will be forwarded to the computation center on a weekly basis.

(2) Discharge - Preparation of the Master Circulation Card. Normally, to accomplish the discharge of charged books, the circulation librarian will remove the Master Circulation Card from the book and:

(a) Overpunch (11 punch) in column 1.

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(b) Reproduce a new Master Circulation Card with a "1" in column 1. Duplicate through column 50.

(c) Place overpunched card in "circulation transaction box."

(d) Place reproduced Master Circulation Card in book and place book in shelving card.

(3) Recall - Preparation of Transaction Card. If a copy of a book is required for another patron or needed for reprocessing, the following will be accomplished.

Columns	Data Element	Comments
1	Action code "2"	Recall code.
2-37	Call number	See note below.
52	Type of loan	From the type loan and medium list, paragraph a.(2).
53-56	Date	See note below.

Note: If you wish to recall a book(s) for reprocessing (all the books for any given call number) you may do so by omitting the last "C" (copy number) and any information that would normally follow the copy number "C" except * and by punching a 9999 in the date field (columns 53-56).

If you wish to recall a book for reprocessing you may do so by specifying the given book by punching the call number plus the copy number and * and by punching a 9999 in columns 53-56 (date field).

If you wish to recall a book needed for loan to another patron you may do so by punching the call number minus the copy number, including * and by leaving the date field blank.

In each of the above cases column 1 must contain a "2" and column 52 must contain either 1, 8, or 9.

(4) To Flag a Copy of an Item as Lost - Preparation of Transaction Card. If a copy of an item (book or periodical) has been reported lost, flag the circulated copy as follows:

Columns	Data Element	Comments
1	Action code "O"	Lost code.
2 - 37	Call number and *	
52	Type of loan	From the type loan and medium list, paragraph a.(2).

(5) To Flag a Copy of an Item as Found - Preparation of Transaction Card. If a lost copy of an item has been found, and the patron is still charged with the loss, prepare a transaction card to remove the lost flag as follows:

Columns	Data Element	Comments
1	Action code "O"	Found code.
2 - 37	Call number and *	
52	Type of loan	From the type loan and medium list, paragraph a.(2).

(6) Renewal - Preparation of Transaction Card. If a patron wishes to renew a copy of a book at the library, the following will be accomplished.

Columns	Data Element	Comments
1	Action code "3"	Renew code.
2 - 50	Call number and author / title	Duplicate of master circulation card in book pocket.
51	Security code	Must be zero or U.
52	Type of loan	From the type loan and medium list, paragraph a.(2).
53 - 56	Julian date	Numeric (in range). (182nd day of the year.)
57 - 80	Patron social security number, patron last name and initials.	Duplicate of old master circulation card.

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This transaction card will then be duplicated, except for column one, which will be a "1." The duplicate card which is now the Master Circulation Card will be placed in the book and released to the patron. The transaction with the renewal action code of "3" will be placed in the box marked "circulation transactions."

If the renewal is for an extended loan, a computer prepared transaction card will be mailed to the patron with the first Extended Loan Renewal Notice. This transaction card is a duplicate of the Master Circulation Card with the exception that column 1 has been left blank. When this transaction card has been signed and returned to the library readers services section the following action is required:

Columns	Data Element	Comments
1	Action code "3"	Renew code

Place the transaction card in the box marked "circulation transactions." This card will update the Circulation Master File.

(7) Patron Change - Preparation of Transaction Card. This action is used to replace the information contained in the following fields of the circulation record with the information contained in the input transaction card.

(a) Patron name   (e) Patron "type" code
(b) Building   (f) Contractor code
(c) Telephone   (g) Type loan
(d) Mailing symbol

The transaction card will be prepared as follows:

Columns	Data Element	Comments
1	Action code "A"	Patron change code.
2 - 50	Call number and author / title	Duplicate of master circulation card in book pocket.
51	Security code	Must be zero or U.
52	Type of loan	From the type loan and medium list, paragraph a.(2).
53 - 56	Julian date	Numeric (in range).
57 - 65/6	Social security number	Numeric.
66/7 - 78	Patron surname	All alpha.

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Columns	Data Element	Comments
79 - 80	Patron initials	All alpha.

(8) <u>Title Change - Preparation of Transaction Card</u>. If it becomes necessary to change or correct a book title, the following will be accomplished.

Columns	Data Element	Comments
1	Action code "-"	Title change code.
2 - 50	Call number and author / title	Call number with CY 99, *, new title.
51 - 80		Regular valid data same as on new check out (action code "1").

    c. <u>Answering Questions Regarding Books Ordered by Patron But Not Yet Received</u>

        To facilitate answering patron questions regarding books on order, a copy of the Books On-Order and Received Report will be furnished to the circulation station. This report is displayed in title sequence. When a patron inquires about an item on order, he should furnish his social security number and the title of the book in question. Refer to the Books On-Order and Received Report for the status of the item. If the title is reflected on the report, look to the right margin to see if the book has been received. (This status exists if a "R" is present in the "Received Field.") Relay this information to the patron and tell him he will receive the book as soon as it has been cataloged. If the title does not exist on the report and sufficient time has passed for the book to have been ordered and received, check with the acquisition unit to see if book has been cancelled; if not check the patron file to see if it reflects the patron's correct mailing address. (Book could have been lost in the mail.) If his mailing address differs from the one shown on the patron file, inform the patron that the book may have been sent to his old address. Ask him to notify the library of any change in his address so that this type of delay in receiving his book will not recur.

    d. <u>Circulation Master File Outputs</u>

        Circulation file outputs are prepared each time the master file is updated. At present, the schedule is weekly. All multicopy printouts are standardized on 8 1/2 x 11 paper with exception of the overdue notices which are 5 x 8 cards. There are ten outputs of the

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Circulation Master File which are:

    (1) Circulation List in LC Number Sequence

    (2) Circulation List in Patron Name Sequence

    (3) Unreadable transaction cards

    (4) Circulation Monitor and Error List with processed error and kicked out transaction cards

    (5) Circulation / Inventory Update Error List and Statistical Report with upprocessed transaction cards

    (6) Third Notice Cross Reference List

    (7) Issue and Turn-in Slips

    (8) Recall Notices

    (9) Overdue Notices with transaction cards

    (10) Patron Circulation Statistical Report with transaction cards

The circulation lists, see figure 76 and 79, whether in LC number or name sequence, are the most important outputs of the master file. These lists are a complete display of the contents of the master file. The primary difference in the two lists is, the list in LC number sequence displays each book by call number in numerical sequence with supporting data such as patron name, social security number, book title / author etc., whereas the list in name sequence displays each patron name in alphabetical sequence with all books charged to him with supporting data. These output listings are a complete display of who has what and where each item is. Copies of both of the circulation lists are kept by the circulation librarian in the readers services section. One copy of the Circulation List in Name Sequence is forwarded to the RSIC librarian responsible for maintenance of the Patron Master File.

Unreadable transaction cards are the result when an input circulation transaction card will not pass the computer character check in the conversion from transaction card to magnetic tape. These cards are dropped off by the computer and returned to the circulation librarian in the readers services section in input sequence. These cards must be corrected and resubmitted at the next update.

The Circulation Monitor, see figure 78, presents a complete display of all transactions attempted or processed during the computer edit / match run. For each transaction found in error the monitor will display an appropriate error message and indicate if the transaction in error was processed or kicked out. Associated with the monitor will be

computer prepared processed error and kicked out transaction cards. These cards are a duplicate of the input transaction card with column 1, action code left blank. Copies of the Circulation Monitor with the duplicate computer prepared transaction cards are returned to the circulation librarian in the readers services section.

The Circulation / Inventory Update Error List, see figure 79, presents a complete display of all transactions not processed into the Circulation Master File. Each transaction found in error will be accompanied by a type error number. Cross referencing of this number with the Update Error List will present the applicable error message. Associated with the Update Error List will be computer prepared unprocessed transaction cards. These cards are a duplicate of the input transaction cards with column 1, action code left blank.

Appended to the Update Error List will be a Circulation Statistical Report, see figure 79, which will contain all circulation and inventory data current through this update. This report displays a complete statistical analysis of all items on loan by type. Copies of the Error List, Statistical Report and unprocessed transaction cards are returned to the circulation librarian in the readers services section.

The Third Notice Cross Reference List, see figure 80, is a display of all items for which a third overdue notice must be sent. This list presents the item LC number, title, patron name and social security number. Copies of this list are forwarded to the chief of the readers services section.

Issue and Turn-in Slips, see figure 81, are prepared for and utilized as property invoices for loans to branch libraries, laboratories or sections. These slips will display the LC number and title of all books loaned to a specific area and charged to a responsible representative of that area. All Issue and Turn-in Slips are kept by the acquisition librarian.

Patron Recall Request Notice, see figure 82, is prepared when all loan copies of a specific item are charged out. Each library patron who is charged with a copy of the item requested will receive a Patron Recall Request. The contents of this request are self-explanatory. Copies of all Patron Recall Requests are forwarded to the chief of the readers services section for review and disposition.

Recall for Reprocessing Notices, see figures 83 and 86, are prepared when a specific item(s) is being recalled for reprocessing by the library. These notices are prepared in three categories: first, second and third recall. The contents of each of these notices is self-explanatory. Copies of all Recall for Reprocessing Notices are forwarded to the chief of the readers services section for review and disposition.

Overdue Notices (Regular Loan), see figures 84 and 86,

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are prepared when an item has exceeded the regular loan period. These notices are prepared in three categories: first, second and third notice. The contents of each of these notices is self-explanatory. Copies of all Overdue Notices are forwarded to the chief of the readers services section for review and disposition.

Overdue Notices (Extended Loan), see figures 85 and 86, are prepared when an item has exceeded the extended loan period. These notices are prepared in three categories: first, second and third notice. Associated with the first notice will be a renewal transaction card which may be signed by the patron and returned to the library if he has continued requirements for the book. The contents of each of these notices is self-explanatory. Copies of all overdue notices are forwarded to the chief of the readers services section for review and disposition.

The Patron-Circulation Inventory Report, see figure 87, is a statistical analysis of the contents of the Circulation Master File indicating books per type loan circulation, types of patrons, number of patrons per type and number of books per type of patron. Associated with the inventory report will be a transaction card for each patron charged with fifty or more books. Copies of the Inventory Report with transaction cards are forwarded to the chief of the readers services section.

e. Circulation / Inventory Editing Error Listing

Errors appearing on this listing and also represented by punched cards were found during the editing of the input transactions and were not processed. They must be corrected and resubmitted. Listed below in card data field order are the various error messages, their meaning, and suggested corrective action:

Message	Meaning	Action
INVALID TRANSACTION CODE	Card col 1 does not contain a valid check out, return, lost, found, recall, or renewal code.	Determine correct TX code. Punch and re-submit for processing.
MAIN CLASS INVALID	First alpha character in the LC number is a I,O,W,X, or Y.	Determine correct LC. Punch and resubmit the TX.
MAIN CLASS TOO LONG	Card col 3 or 4 does not contain a blank.	Determine correct LC. Punch and resubmit the TX.
MAIN CLASS CONTAINS A NUMERIC CHARACTER	Card col 2 or 3 contains a numeric character.	Determine correct LC. Punch and resubmit the TX.

Message	Meaning	Action
SUBDIVISION TOO SHORT	Card column following first blank after card column 2 not numeric.	Determine correct LC. Punch and re-submit the TX.
SUBDIVISION TOO LONG	Blank or (.) not present to separate subdivision from cutter.	Determine correct LC. Punch and resubmit the TX.
SUBDIVISION CONTAINS ALPHA CHARACTERS	Alpha characters are present in the subdivision field. (Subdivision is between the first and second blank and/or period.)	Determine correct LC. Punch and resubmit the TX.
FURTHER SUBDIVISION IS TOO SHORT	There are no numeric characters after the period.	Determine correct LC. Punch and resubmit the TX.
FURTHER SUBDIVISION IS TOO LONG	More than seven characters follow the period without a blank to separate the field.	Determine correct LC. Punch and resubmit the TX.
CUTTER NUMBER STARTS WITH A NUMERIC CHARACTER	Self-explanatory.	Determine correct LC. Punch and resubmit the TX.
CUTTER NUMBER CONTAINS AN ALPHA CHARACTER AFTER THE FIRST CUTTER POSITION	Self-explanatory.	Determine correct LC. Punch and resubmit the TX.
CUTTER NUMBER IS TOO SHORT	Second character in the cutter number is not numeric.	Determine correct LC. Punch and resubmit the TX.
CUTTER NUMBER IS TOO LONG	Cutter number is not separated from the date field by a blank.	Determine correct LC. Punch and resubmit the TX.
DATE FIELD HAS ALPHA OTHER THAN "ND"	Self-explanatory.	Determine correct LC. Punch and resubmit the TX.
DATE FIELD CONTAINS A BLANK.	Self-explanatory.	Determine correct LC. Punch and resubmit the TX.

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Message	Meaning	Action
DATE NOT IN RANGE 1790-CURRENT YEAR	Self-explanatory.	Determine correct LC. Punch and resubmit the TX.
COPY NUMBER FIELD NOT PRESENT	Call number does not contain a copy number.	Determine correct LC. Punch and resubmit the TX.
COPY NUMBER IS BLANK	Character following the last "C" is blank.	Determine correct LC. Punch and resubmit the TX.
COPY NUMBER FIELD CONTAINS ALPHA OTHER THAN "X"	Characters following the last "C" in the LC is something other than a numeric character or a "X" meaning an expendable item.	Determine correct LC. Punch and resubmit the TX.
LC NUMBER HAS TOO MANY BLANKS IN BODY	Self-explanatory	Determine correct LC. Punch and resubmit the TX.
LC NUMBER HAS TOO MANY DECIMALS	Self-explanatory	Determine correct LC. Punch and resubmit the TX.
LC NUMBER DOES NOT HAVE ENOUGH FIELDS	Self-explanatory	Determine correct LC. Punch and resubmit the TX.
CALL NUMBER TOO LONG	Call number contains more than 36 characters.	Determine correct LC. Punch and resubmit the TX.
RECORD DOES NOT HAVE * AFTER CALL NUMBER	Self-explanatory	Determine correct LC. Punch and resubmit the TX.
FIELD SIX TOO LONG	Field in call number following the date field contains more than 27 characters.	Determine correct LC. Punch and resubmit the TX.

f.   RSIC Circulation / Inventory Update Error List

Errors appearing on this listing and also represented by punched cards were found during the update of the Circulation and Inventory Master Files and were not processed. Listed below in error code number sequence are the various error messages, their meaning, and suggested corrective action.

Error Code	Message	Meaning	Corrective Action
1	Trying to loan a book already on loan.	1. Transaction is a duplicate. 2. Return transaction never processed. 3. Copy number erroneously punched. 4. Call number erroneously punched.	If this is a duplicate transaction, no further action is required. If duplicate lettering of a copy number, see supervisor for corrective action. If copy number or call number was punched erroneously, punch a new transaction and resubmit.
2	Trying to loan a book recorded as lost.	Same as above.	Same as above, except punch two transactions a "J" and "1."
3	Recall of book not on loan.	Self-explanatory.	Check call number to see if it was punched correctly. If correct, check the transaction listing to see if a "return" was also processed before the recall action. If so, no action is required. If call number was correct, and no return has been processed, check for bug in program. If LC was wrong, punch a new transaction and resubmit.
4	Recall of book recorded as lost.	Self-explanatory.	Same as above, except a "lost" action rather than a return may have preceeded the recall action.

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Error Code	Message	Meaning	Corrective Action
5	Trying to renew a book not on loan.	Self-explanatory.	Check call number to see if it was punched correctly. If correct, check to see if book was on loan to patron requesting renewal. If so, resubmit. If not, charge correctly.
6	Trying to loan a periodical already on loan.	Self-explanatory.	Same as action for error code 1.
7	Trying to loan a periodical recorded as lost.	Self-explanatory.	Same as action for error code 2.
8	Trying to record lost book already recorded as lost.	Self-explanatory.	It is possible that this transaction is a duplicate. If this is the case no action is required. It is also possible that the call number or the copy number was punched wrong. If this is the case, punch a new transaction and resubmit. If neither of the above are true, the copy may have been flagged in error by the first "lost" transaction.
9	Return of book not recorded as loaned.	Self-explanatory.	Check call number to see if it was correctly punched. Check to see if transaction should have been a loan rather than a return.
10	Social security number does not match - return vs loan.	Transaction was incorrectly punched. Correction not reflected on card in book.	Punch J in column 1, call number, type loan in column 52 and patron's last name beginning in column 66.
11	Return of periodical not recorded as loaned.	Self-explanatory.	Same as action for error code 9.

Error Code	Message	Meaning	Corrective Action
12	Social security number does not match-lost vs loan.	Self-explanatory.	Same as action for error code 10 except 0 in column 1.
13	Found book action in book not shown as lost.	Self-explanatory.	Check call number to see if correctly punched. Check to see if flagged lost. If call number and / or copy is wrong, punch and resubmit the transaction.
14	Recall of periodical not on loan.	Self-explanatory.	Same as error code 9, except that a return could have been processed before the recall action. If this be the case no further action is required.
15	Recall of periodical recorded as lost.	Self-explanatory.	Check the call number to see if it was punched correctly. If correct, check the transaction listing to see if a "lost" was processed before the recall action. If so, no action is required. If call number was correct, and the "lost" action was not processed before the recall for the given day, check for bug in program. If call number was wrong, punch a new transaction and resubmit.
16	Trying to renew a periodical not on loan.	Self-explanatory.	Same as error code 5.
17	Trying to record lost periodical already recorded as lost.	Self-explanatory.	Same as error code 8.

Error Code	Message	Meaning	Corrective Action
18	Found periodical action on periodical not recorded as lost.	Self-explanatory.	Same as error code 13.
19	Trying to process a book not shown on inventory master file.	Self-explanatory.	Check call number to see if it was punched correctly. If so, resubmit.
20	(Not in use)		
21	(Not in use)		
22	Surnames do not match - return vs loan.	Self-explanatory.	Check to see if call number was correctly punched. If so check patron name and last five positions of SSN.
23	Surnames do not match - lost vs loan.	Self-explanatory.	Same as error code 22.
24	Surnames do not match - found vs lost.	Self-explanatory.	Sames as error code 22.
25	Call number does not match a call number on the circulation file.	Self-explanatory.	Check to see if call number was correctly punched. If so, re-submit.
26	Social security number does not match - found vs loan.	Self-explanatory.	Check last five positions of SSN. (May be blank)

Section V. SERIALS CONTROL SUBSYSTEM

1. Introduction

The serials control subsystem provides the library with an automated system for formal control of serials ordering, renewing, claiming, routing, holding and binding functions of the ALPHA System. The functions of the serials control subsystem are comparable to traditional practices under the same broad headings.

Typical traditional practices in libraries create certain records that provide control of the each aspect of serials handling. We will consider the serials records usually created in an unautomated but well organized library.

Selection is by patron request and by the library staff. Patron requests are screened to make sure the serials are suitable for adding to the library stock. Library staff selection usually orginates in national and international bibliographic listings which are compared against the serials record list to eliminate duplication.

Since the materials themselves are published on a variable basis and handling functions vary due to their nature, this has traditionally meant a separate set of records for ordering information, one for receipts, claims and holdings, another for binding and still another for disposition (routing and shelving). While the functions themselves must be handled separately, duplicate information is required in several sets of records.

When a subscription is requested for the first time, a 3" x 5" card, bearing the following information is prepared and filed: title of journal, frequency of publication, publisher and address, subscription term, price per subscription or volume, item number, and addressee. Upon completion of the card the subscription order is typed on a formal request for order. Many orders were written and many vendors were used, often for the same journal title but for different subscriptions.

Bound journals and serials may be classified and cataloged or in some cases, the bound journals are filed alphabetically by title with only records of holdings maintained in the catalog.

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At RSIC for each current subscription of active titles, plus inactive titles for which RSIC has bound holdings, a series of 80 character records is created and maintained. All of these records together, or one series of records for each title, make up the Serials[1] Master File.

The Serials Master File is the central source of serials information for serials ordering, renewing, claiming, routing, holding and binding in the ALPHA System. For library use, the contents of the Serials Master File are displayed as the Serials Master File List (complete), figure 89. Primary use of this information display of the Serials Master File will be made by the serials librarian in maintenance of each of the functions mentioned.

Three types of actions affecting the Serials Master File may be taken. New titles may be established on the file, established records may be revised, and records may be deleted. Data for these actions are keypunched into punch cards that are batched and periodically sent to computer to update the master file.

During the update of the Serials Master File, three auxiliary outputs are produced in addition to the Serials Master File List previously mentioned. These are the RSIC New Holdings List, Cancelled Items List and a Changed Items List.

Several computer outputs other than those produced at the Serials Master File update are prepared during the maintenance of the various subordinate files of the serial subsystem. A cumulative listing of all computer outputs and their meaning is presented in paragraph 4 of this section.

Figure 90 is a diagram of the series of 80 character records for one title. The series of records, each record identified by a two digit card code, is organized into basic groups according to content and purpose. Records 01-02 provide a standard title acceptable for ordering, renewing, claiming, holding, routing and binding functions. Records 03-09 are primarily data required for ordering control. Records 10-29 are pertinent to binding functions. Records 1A-1Z are pertinent to items claimed. The 30-59 records relate to holdings and lacks. Records 60-69 are used to record bound index holdings. Records 70-79 provide for cross reference of periodical titles. The purpose and content, when not self explanatory, of each possible type record is outlined below:

[1]Serial - "A library term for periodicals, annuals, reports and other publications appearing usually at regular, stated intervals." (Bookman's Glossary, 1961)

a. <u>Card 01</u>

This card contains up to 71 characters of the serial title. If the title is inactive, INACTIVE will be entered in positions 71-80, providing these positions are not required for the title. If these positions or any portion thereof are required for the title, INACTIVE will be entered in positions 71-80 of the 02 card. (See card 02 below.) Each control must have a type 01 record.

b. <u>Card 02</u>

Required only if the title and/or title plus IN-ACTIVE, exceeds 71 characters provided for in the type 01 record. Words should not be broken between 01 and 02 records. The inactive indicator (INACTIVE), when required in the 02 record should always be in positions 71-80.

c. <u>Card 03</u>

Required for all active titles. Contains vendor name currently providing the subscription and publisher's name.

d. <u>Card 04</u>

Required for all active titles. It contains the publisher's address.

e. <u>Card 05</u>

Required for all active titles. Contains the following elements:

(1) <u>Language or Text</u>. Two digit abbreviations of language for which articles within a journal are printed.

(2) <u>English Abstracts</u>. If journal is published in a foreign language and contains English abstracts, a "Y" is entered. If English abstracts are not included, a "N" will be entered.

(3) <u>Country of Origin</u>. Self explanatory.

(4) <u>Translated Edition</u>. If this title was originally published in another language, a "Y" will be entered, otherwise enter "N."

(5) <u>Subscription Price</u>. Current <u>list</u> price.

(6) <u>Number of Subscriptions</u>. Self explanatory.

(7) Subscription END. Two spaces for month and two spaces for year or FREE.

(8) Item Number. A five digit sequence number consecutively assigned to each item on a given purchase or requisition order.

(9) Delivery Order Number. A two digit number assigned consecutively during a given year to orders sent this vendor.

(10) Effective Date of Subscription. Self explanatory.

(11) J/N/S/C. All journals are code "J." All newspapers are code "N." All service items are code "S." All serials are code "C." All titles must be identified to one of these codes.

(12) SPC Code. (Code 1) Active titles not to be ordered, (code 2) active titles not to be routed, (code 3) active titles not to be ordered or routed, (code 4) active titles not to be published on the title list, (code 5) active titles to be routed in parts, (code 6) not routed, information to go only on the title list, will not effect routing.

    f.   Card 06

Required for all active and inactive titles. Contents are as follows:

(1) Addressee. Position 10-11 contains a two digit numeric code used to match the following mailing addresses when preparing purchase or requisition orders. Valid codes for RSIC use are 01, 02 and 05 which will print the following addresses:

```
01 - Magazine Room
     Building 4484
     Redstone Arsenal, Alabama 35809
     ATTN: RSIC 4484

02 - Commanding General
     U. S. Army Missile Command (AMSMI)
     Redstone Arsenal, Alabama
     ATTN:

05 - NASA
     Marshall Space Flight Center
     Huntsville, Alabama
     ATTN:
```

Positions 12-42 of the addressee field contains the attention line for the address.

(2) _Purchase Order Number_. The purchase order number on which this subscription was bought. Blank for requisition type items.

(3) _Requisition Number_. The requisition number on which this subscription was acquired. Blank for purchase order type items.

(4) _Technical Library Number_. The technical library number on which this subscription was bought. Blank for requisition, zeros in purchase order field.

(5) _Frequency_. The number of publications per year. For example, a daily publication would have 365, a weekly publication would have 052, etc. If frequency is irregular, as quite common with foreign publications, an arbitrary frequency will be entered with an overpunch (-) over position 79.

(6) _Purpose_. A code to indicate purpose of the subscription. Codes are as follows:

      L - Used for library purpose only.
      C - Available for circulation.
      D - Subscription sent direct to addressee reflected.
      R - Received at library but all copies may be routed. (No shelf copy retained in RSIC.)

g.   _Cards 07-09_

Use only if notes about ordering should be recorded. 213 characters, including blanks, are provided for notes.

h.   _Card 10_

Required only for current titles that are to be bound or that bound holdings are available in RSIC. Contents are:

(1) _General Subject_. Self explanatory.

(2) _Binding Schedule_. The month or months that some type of binding action should be taken on this title. In case of titles with irregular frequency of publication, an arbitrary schedule will be entered.

(3) _Volumes per Subscription_. Presently unused.

(4) _Issues per Volume_. Self explanatory.

(5) <u>Volumes per Year</u>. Self explanatory.

i. <u>Cards 11-12</u>

Presently unused.

j. <u>Card 13</u>

Required for all titles that are to be bound. Positions 10 through 17 contain numeric codes from which binding instructions, as reflected on the binding rub, may be printed. Codes by position are as follows:

<u>POSITION</u>	<u>ITEM</u>	<u>CODE</u>	<u>PRINTED INSTRUCTION</u>
10	Title	1	New title
		Blank	Repeat title
11	Title page and content	1	Separate
		2	Not published
		3	Stub for
		4	Bind without
12	Issue Content	1	Bind in place
		2	Bind in front
13	Index	1	Bind in front
		2	Bind in back
		3	Not published
		4	Bind without
		5	Stub for
14	Covers	1	Remove all
		2	Bind in all
		3	Bind in first cover only
		4	Bind on front cover only

POSITION	ITEM	CODE	PRINTED INSTRUCTION
15	Ads	1	Remove all
		2	Leave in all
		3	Remove all ads not having text
		4	Bind all ads in back of volume
		5	Ads with text bind in place
16	Parts, Supplements, Abstracts, Proceedings	1	Bind in place
		2	Bind in back of volume
17	Split Volumes	1	Yes
		Blank	No

The remainder of the 13 record contains the following:

Color - A four digit color code (color of covers.)

Size - Maximum 15 digit size (cover specifications.)

Bound For - Organization

Bind Cost - Presently unused.

     k.   Cards 14-19

       Use only if information concerning the publication or special handling of indexes needs recording.

     l.   Cards 20-29

       Use for recording notes concerning binding. Notes should be somewhat permanent in nature to justify recording in this file.

     m.   Cards 1A-1Z

       Use for recording information concerning items claimed.

     n.   Cards 30-39

       Use for recording bound or unbound periodicals,

microcard and microfiche holdings. Four sets of holdings are provided for in each 30 series record. A holdings set is comprised of a type (B-Bound, U-Unbound, C-Microcards, F-Microfilm, M-Microfiche), series, beginning volume, beginning year, the ending volume and ending year. A different set of holdings records is required each time a break in series or volume occurs. A maximum of 40 sets of holdings are provided for in the 30-39 series records.

o. Cards 40-49

Use for recording volume lacks. A set of volume lacks is of the same make-up as a set of holdings in the 30-39 records, except no type is required.

p. Cards 50-59

Use to record missing issues numbers by series, volume and year.

q. Cards 60-69

Use to record bound index holdings. The nature of these holdings are different from the periodical holdings, therefore a free hand form of recording is provided for in this series of records.

r. Cards 70-79

Use to record cross reference titles. These titles are coded in a manner which provides cross reference and current title lists in a forward or backward chain reference. Position 10 contains the reference code. Codes and their meaning are as follows:

S - See

F - Formerly in

C - Currently

P - Superseded

T - Continued as

A - Also in

R - See translation

The code will be followed with a period and a blank in positions 11-12. The remaining positions of the record are used to record the title. If the title exceeds the capacity of this 70 series record, an asterisk will be punched in position 80 and the remaining positions

of the title will be punched in the next 70 series record available beginning in position 10. Words should not be broken between two records.

2. Establishment and Maintenance of the Serials Master File

For the librarian, establishment and maintenance action on the Serials Master File begins with a data source document. At RSIC, this is the library request card, figure 28.

All library request cards are received in the readers services section. In checking each card containing a serial request, the first question is whether the serial is in the library; the Periodical Master File List is searched for the title or for a title that appears to refer to the same serial. If the serial is in the library, and available for circulation or routing, it is charged out or routed and mailed to the patron.

If the serial is in the library but not available for circulation or routing, it may be flagged as reserve; that is, it may be kept in the reference section or it may be a copy 1, which is not circulated or routed. The patron is informed that he can see the serial by coming to the library.

If the serial is not available for circulation or routing and not flagged as reserve, an attempt may be made to recall a copy. If it can be, it is recalled and charged out to the requesting patron. If it cannot be recalled or use of a copy within the library is not practical the library request card with LC classification number, complete title, and correct author's name is forwarded to the acquisition unit.

If the requested serial is not cataloged, it may already be on order. The serial to date on-order report is checked to see whether it is or not. If it is on order, and if enough copies have been ordered to cover the request, a transaction card is punched adding the requesting patron to the list of those to receive the serial when it is received and processed. If not enough copies have been ordered, the request card is forwarded to the acquisition unit. If the serial is not cataloged and not on order, the request card is forwarded to the acquisition unit.

The acquisition unit receives the library request cards that have been screened by the readers services section. If the request refers to a title that has been cataloged by the library, the card should have a correct author, title, publisher, and call number; the card may be regarded as a recommendation from readers services section to purchase. The acquisition librarian decides whether to add an additional copy or copies of the serial to the library holdings. If it is decided to add copies, the librarian verifies the data, adds to the request card or subscription order request, figure 91, the publisher's address, quantity to be ordered, unit cost, and vendor, and places the card or subscription

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order request in the to-be-ordered file grouped with any others for the same vendor.

If the request is for a new title, the notations to be made on the request card are almost the same, but the acquisition unit has the responsibility for the full verification. When the librarian identifies exactly what is wanted, the decision must then be made whether the serial is within the scope of the library.

Once the new title is identified and it is decided to add it to the library holdings, the request card or subscription order request is also placed in the to-be-ordered file. Thus, the request cards for the two kinds of acquisitions are the same, except that for new titles there is no LC classification number on the card, but (if the title has been cataloged by the LC) there is an LC card order number. Request cards with subscription orders are forwarded to the serials librarian.

Periodically, the serials librarian keypunches the 01-06 transaction cards for new titles which will be used to initiate orders for the requested serial and also update the Serials Master File.

Serials may be ordered by any of three different methods: purchase orders, requisition orders or technical library (TL) orders. Serials may also be procured as a "free" item.

Purchase orders result for the selection of vendors by the purchasing office to fill the library's requirements.

Requisitions are orders sent to specified government agencies.

Technical library (TL) orders result in the selection of vendors to furnish the library with self superceding services and non-vendor type publishers to furnish journals.

Renewals, those titles expiring on a specific future date, will also be examined by the serials librarian. The renewal date for each active subscription is indicated in the Renewal Review List furnished each month by the computation center. Associated with the Review List will be a computer prepared transaction card for each title appearing on the list. The serials librarian will complete the necessary keypunching of this transaction card to indicate renewal or cancellation of the title. Any changes or corrections may also be made at this time.

Transaction cards for new titles, renewals or cancellations are sent to the computation center once each month. Another computer

run will be made in accordance with this information and a copy of the list is sent to the serials librarian for verification. When the revised list is satisfactory the serials librarian will notify the computation center to print the serial orders which are sent to the serials librarian for final scrutiny and transmittal to the ordering agency.

Accompanying the serial orders will be updated 05-06 transaction cards which will replace those prepared initially for the new and renewed titles. The 01 thru 06 for new and 05 and 06 for renewed transaction cards will be used to update the Serials Master File when the subscription becomes effective.

All titles on order will be displayed on the to date on-order list.

3. Serial Data Capture

An IBM 026 printing card punch is used to transcribe the information from the source document to transaction cards. Detailed discussion of keypunching the transaction cards for each type of action follows.

The control number for each series of records is assigned in such a manner that its magnitude will alphabetize the title. The first five digits (numeric) of a control number are assigned to a given title. These five digits are referred to throughout the system as "basic control number." The sixth digit (alpha-numeric) distinguishes various subscriptions of a title. Three factors determine the number of subscription breakouts. These factors are different vendors, addresses, and subscription expiration dates. The desired list of breakouts is thirty-six, which uses all 26 letters of the alphabet and numerals 0-9. However, special characters may be used if required. If special characters are used, consideration should be given to the printability of such characters by the printer to be utilized.

The number of records required for a given control number will vary. As a rule, the primary subscription for a given title will be assigned an "A" in the 6th digit of the control number. All cross reference titles, binding and holdings records will be tied to this "A" control number.

a. Detailed Instructions by Card Code and Fields for New Titles.

CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
All	Control No.	1-6*	Right justify. Prefix with zeros to fill field.

CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
All	Action Code	7	Punch a "N" in all cards for a new title. See paragraph 2 for other than new items.
01	Card Code	8-9	
	Title	10-80*	Left justify. If the title being punched is inactive and cols 71-80 are not required for the title, punch INACTIVE in 71-80. If 71-80 are required for title, punch INACTIVE in 71-80 of the 02 card.
02	Card Code	8-9	
	Title (Continued)		Required only if title exceeds 71 positions provided for in the 01 card. Left justify. Words should not be broken between 01 and 02 cards. The inactive indicator (INACTIVE) when required, should always be punched in cols 71-80.
03	Card Code	8-9	
	Vendor	10-31*	Left justify. Suffix with spaces.
	Publisher	32-80	Left justify. Suffix with spaces.
04	Card Code	8-9	
	Publ. St. Address	10-50	Left justify. Suffix with spaces.
	Publ. City, State, Country	51-80	Left justify city. Space between city and state or city and country. Suffix fields with spaces.
05	Card Code	8-9	
	Language or Text	10-11	
	Language or Text	12-13	Punch the two digit languages as required.
	Language or Text	14-15	Punch the two digit languages as required.

CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	Language or Text	16-17	Punch the two digit languages as required.
	Language or Text	18-19	Punch the two digit languages as required.
	Language or Text	20-21	Punch the two digit languages as required.
	Language or Text	22-23	Punch the two digit languages as required.
	English Abstract	24	Punch "Y" for yes, "N" for no.
	Country of Origin	25-39*	Left justify. Suffix with spaces.
	Translated Edition	40	Punch "Y" for yes, "N" for no.
	Subscription Price	41-47*	Right justify. Prefix with zeros to fill field.
	No. of Subscriptions	48-51*	Right justify. Prefix with zeros to fill field.
	Subscription END	52-55*	Punch 2 digit month, 2 digit year, Example: For Jan 1964, punch 0164
	Item No.	56-60	Right justify. Prefix with zeros to fill field.
	Order No.	61-62	Right justify. Prefix with zeros to fill field.
	Date Subscription Effective	63-66*	Punch 2 digit month, 2 digit year See cols 52-55 above.
	J/S/N/C Code	67*	Punch "J" for Journal, "S" for Service Item, "N" for Newspapers and "C" for Serial.

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CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	Special Code	68	Punch "1" for non-order items. Punch "2" for non-routed items. Punch "3" for non-order, non-route items. Punch "4" for non-published items. Punch "5" for Routing suffix items. Punch "6" for not routed, information to so only on the title list, will not effect routing. For all other items, leave blank.
	Accountable Item Code	69	Punch "A" if item is accountable.
	Location Code	70	Punch "A" indicates item is located in periodical shelves in alphabetical sequence. Punch "B" indicates item is located in book shelves in classification sequence. Punch "C" indicates item is located with the abstracts and continuing bibliographies in alphabetical sequence.
06	Card Code	8-9	
	Addressee	10-42*	Punch 2 digit numeric code in cols 10-11. Punch addressee symbol, left justified, in cols 12-42.
	Purchase Order No.	43-51*	Left justify. Leave blank on Requisition items.
	Requisition No.	52-64*	Left justify. Leave blank on Purchase Order items.
	T.L. No.	65-76	Left justify. Do not punch "TL-"
	Frequency	77-79*	Right justify. Prefix with zeros to fill field.
	Purpose Code	80	Punch C,D,L, or R codes.

CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
07-09	Card Code	8-9	
	Ordering Notes	10-80	Punch free from left justified.

*NOTE: These fields are considered vital elements of data that should never be left blank when establishing records for new control numbers. Correct renewal and routing actions without these elements are impossible.

10	Card Code	8-9	
	General Subject	10-36	Left justify. Suffix with spaces.
	Binding Schedule	37-72	Punch 3 digit month abbreviation in respective field.
	Volume per Subscription	73-74	Presently unused.
	Issues per Volume	75-76	Right justify. Prefix with zeros.
	Volumes per Year	77-78	Right justify. Prefix with zeros.
11			Presently unused.
12			Presently unused.
13	Card Code	8-9	
	Binding Codes Title	10	Punch a "1" if new title is checked. Otherwise leave blank.
	Title Page and Content	11	Punch the number indicated by the block checked.
	Issue Content	12	Punch the number indicated by the block checked.

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CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	Index	13	Punch the number indicated by the block checked.
	Covers	14	Punch the number indicated by the block checked.
	Ads	15	Punch the number indicated by the block checked.
	Parts, Supplements, Abstracts	16	Punch the number indicated by the block checked.
	Split Vols	17	Punch the number indicated by the block checked.
	Color	26-29	Must be 4 numeric digits.
	Size	30-44	Punch left justified as it should appear on printouts. Suffix with spaces.
	Bound for	45-63	Left justify. Suffix with spaces.
	Binding Cost	64-68	Presently unused.
14-19	Card Codes	8-9	
	Index Data	10-80	Punch free from left justified.
20-29	Card Codes	8-9	
	Binding notes	10-80	Punch free form, left justified.
1A-1Z	Card Code	8-9	
	P. O., Req. or TL Number	10-22	Punch free from left justified.
	Delivery order number	23-24	Prefix with zeros to fill field.

CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	Item number	25-29	Prefix with zeros to fill field.
	Number of claim	30	One digit number.
	Date last claim	31-36	Prefix with zeros. Punch 2 digit month, 2 digit year, or 2 digit day.
	Items claimed	37-80	Punch free from left justified. If continued, go to card 1B-1Z.
30-39	Card Codes	8-9	
	First set of Hold-ings	10-26	
	Type	10	Punch B, U, C, M or F as applicable.
	Beginning Series	11-12	Right justify - prefix with zeros Punch zeros if no series.
	Beginning Volume	13-15	Right justify - prefix with zeros. Punch zeros if no volume.
	Beginning Year	16-19	Punch 4 digit year if known. Punch zeros if no year.
	Ending Volume	20-22	Right justify - prefix with zeros. Punch zeros if no volume.
	Ending Year	23-26	Punch 4 digit year. Punch zeros if no year.
	2nd Set of Hold-ings	27-43	See 1st set above.
	3rd Set of Hold-ings	44-60	See 1st set above.

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CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	4th Set of Hold-ings	61-77	See 1st set above.
	Inventory indicator	78	Punch "I" in 30 card only if the holdings being recorded have been physically inventoried.
40-49	Card Code	8-9	
	1st set of Volume Lacks	11-26	Same as 30 series holdings, except type is omitted.
	2nd set of volume lacks	28-43	
	3rd set of volume lacks	45-60	
	4th set of volume lacks	62-67	
50-59	Card Code	8-9	
	Issue Lacks Series	10-11	Punch right justified. Prefix with zero to fill field.
	Volume	12-14	Punch right justified. Prefix with zero to fill field.
	Year	15-18	Punch 4 digit year.
	Less Number 1	19-22	Punch right justified. Prefix with zeros to fill field.
	Less Number 2	23-26	Punch right justified. Prefix with zeros to fill field.

CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	Less Number 3	27-30	Punch right justified. Prefix with zeros to fill field.
	Less Number 4	31-34	Punch right justified. Prefix with zeros to fill field.
	Less Number 5	35-38	Punch right justified. Prefix with zeros to fill field.
	Less Number 6	39-42	Punch right justified. Prefix with zeros to fill field.
	Less Number 7	43-46	Punch right justified. Prefix with zeros to fill field.
	Less Number 8	47-50	Punch right justified. Prefix with zeros to fill field.
	Less Number 9	51-54	Punch right justified. Prefix with zeros to fill field.
	Less Number 10	55-58	Punch right justified. Prefix with zeros to fill field.
	Less Number 11	59-62	Punch right justified. Prefix with zeros to fill field.
	Less Number 12	63-66	Punch right justified. Prefix with zeros to fill field.
	Less Number 13	67-70	Punch right justified. Prefix with zeros to fill field.
	Less Number 14	71-74	Punch right justified. Prefix with zeros to fill field.

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CARD CODE	DATA ELEMENT	CARD COLS	COMMENTS
	Less Number 15	75-78	Punch right justified. Prefix with zeros to fill field.
60-69	Card Code	8-9	
	Index Holdings	10-80	Punch free form left justified.
70-79	Card Code	8-9	
	Cross Ref Title Code	10	Punch applicable 1 digit alpha code.
		11	Punch a period.
		12	Leave blank.
		13-80	Punch title left justified. If the title exceeds the capacity of 1 card, punch an asterisk in col 80 and begin punching the remaining title in col 10 of the next 70 series card.

   b. Instructions for Changes, Deletions, and Cancellations.

      (1) Contents of Codes 01-02, 07-09, 14-29, and 60-79 records already existing on the master file can be changed only by complete re-submission of the record to be changed. All other records can be changed individual fields within the record by submitting a card with the control number (cols 1-6), Card Code (cols 8-9), and the field or fields to be changed in their respective columns.

      (2) To blank out an existing field within a record, punch a zero in the high order column of the field to be blanked. For example, to blank out purchase order number in the 06 type record, punch a zero in column 43.

      (3) To delete from the master a complete record within a title, submit a card with control number (cols 1-6), action code "D" (col 7), and the card code (cols 8-9).

      (4) To delete from the master all records for a given control number (cancellations). Submit a card with the control number to be deleted in cols 1-6, and "00" in card code (cols 8-9).

4. Serial File Outputs

Some serial file outputs are prepared each time the master file is updated, other outputs which are of cumulative nature are prepared on a weekly, monthly, semiannual or upon request basis. Outputs will be displayed as either multicopy printouts, 5x8 cards or computer produced, punched and printed transaction cards. All multicopy printouts are standardized in 8 1/2x11 paper. The following is a list of all serial file outputs.

a. Complete Serial Master File List
b. RSIC New Holdings List
c. Serial Input Transaction Error List
d. Cancelled Items List
e. Changed Items List
f. Serials Update Error List
g. Binding Review List
h. Binding Error List
i. Serials Renewal Review List
j. Serials Renewal Review Error List
k. Cancellation List
l. Verification List
m. Renewal Update Error List
n. Requisition Item List
o. Purchase Order List
p. TL Order List
q. New and Renewal Items Statistical Report
r. To Date On-Order List
s. To Date On-Order Error List
t. To Date On-Order Delete List
u. Route slip
v. Review List of All Route Slips
w. Serials Condensed List
x. Serials Routing (General Statistics) and Error List
y. Claims Report
z. Titles and Holdings Cross Reference List (Periodical Catalog)

The Serials Master File List (complete), figure 89, in control number sequence is the most important serial file output. It is a display of the total contents of the Serials Master File.

The primary purpose of the Serials Master File List is to display the complete contents of the Serials Master File for use in ordering, binding, renewing, claiming, routing and recording holdings. The list is produced twice each month. Copies of the list are kept at the circulation desk, in the acquisition unit, at the branch libraries, by the contractor who does binding, and by the serials unit.

The New Holdings List, figure 92, is a display of all new holdings added to the Serials Master File at each update. This listing is presented in control number sequence. Copies of this listing are kept by the serials unit.

The Serials Input Transaction Error List, figure 93, is a display of all input transactions found in error. It is produced only if errors are found in the input transactions. This listing will be presented in control number sequence with an indicative error message. The sole purpose of this list is to assist the serials librarian in correcting input errors. Copies of this list are kept by the serials unit.

The Cancelled Items List, figure 94, is a display of all Serials Master File records deleted during each update. This listing will be presented in control number sequence. Primary use of this list will be made in determining what was cancelled from the Serials Master File. Copies of this list are kept by the serials unit.

The Changed Items List, figure 95, is a display of Serials Master File records which are changed during each update. This listing will be presented in control number sequence. Primary use of this list will be made in determining what was changed in the Serials Master File. Copies of this list are kept by the serials unit.

The Serials Master File Update Error List, figure 96, is a display of all transaction found in error during each update. It is produced only if errors are found in the update transactions. This listing will be presented in control number sequence with an indicative error message. The sole purpose of this list is to assist the serials librarian in correcting update errors. Copies of this list are kept by the serials unit.

The Binding Review List, figure 97, is a display of all titles which are to be considered for binding during the current month. Primary use of this list will be made in determining if the titles displayed will be bound. This listing, presented in control number sequence, is produced once each month. Copies of the list are kept by the serials unit.

The Binding Error List, figure 98, is a display of all binding records found in error. It is produced only if errors are found in the Binding Review List. This listing will be presented in control number sequence with an indicative error message. The sole purpose of this list is to assist the serials librarian in correcting binding errors. Copies of this list are kept by the serials unit.

The Serials Renewal Review List, figure 99, is a display of all titles which are to be considered for renewal for the next year.

Journals will appear on this list five months prior to renewal date; services, newspapers and requisitions will appear three months prior to renewal date. This list is presented in control number sequence. Primary use of this listing is to determine furture requirements for titles displayed on the Review List. Associated with the review list will be a computer produced transaction card for each item appearing on the list. Each transaction will be used to either renew or cancel an item appearing on the Review List. Copies of the Review List with transaction cards are kept by the serials unit.

The Serials Renewal Review Error List, figure 100, is a display of records found in error in the current month's review list. It is produced only if errors are found in the review list records. This list will be presented in control number sequence with an indicative error message. The sole purpose of this list is to assist the serials librarian in correcting renewal review errors. Copies of the error list are kept by the serials unit.

The Subscription Cancellation List, figure 101, is a display of all titles cancelled from the current month's renewal item master. This listing, presented in control number sequence, is produced once each month. Primary use of this list will be made in determining what was cancelled from the current month's renewal item master. Copies of this list are kept by the serials unit.

The Renewal Verification List, figure 102, is a display of all titles renewed, new records added or changes made to the current month's renewal items master. This list, presented in control number sequence, is produced one time (or more if needed) each month. Primary use of this list will be made in determining when all records in the renewal items master are correct. Associated with the Renewal Verification List will be computer produced Serials Master File maintenance transactions cards. These transaction cards represent changes which are to be made to the Serials Master File now or suspense changes which are to be made when the subscription becomes effective. Copies of the verification list with transaction cards are kept by the serials unit.

The Renewal Update Error List, 103, is a display of all records found in error during the current month's renewal item master update. It is produced only if errors are found in the update transactions. This list is presented in control number sequence with an indicative error message. The sole purpose of this list is to assist the serials librarian in correcting renewal item master update errors. Copies of the Error List are kept by the serials unit.

The Requisition Items List, figure 104, is a computer produced listing by requisition number, date and item number of all titles to be ordered on requisitions for the current month. Primary use of this list will be made in preparation of the requisition form. Copies of this list are kept by the serials unit.

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The Technical Library (TL) Order Item List, figure 106, is a computer produced listing by TL number, date and item number of all titles to be purchased on a TL number for the current month. Primary use of this list is made in preparation of the purchase order form. Copies of this list are kept by the serials unit.

The Purchase Order Item List, figure 105, is a computer produced listing by purchase order number, delivery order number, date and item number of all titles to be ordered on a purchase order for the current month. Primary use of this list is made in preparation of the purchase order form. Copies of this list are kept by the serial unit.

The Statistics of Renewal Report, figure 107, is a display of the cost of each new or renewed title and the total cost for each TL, purchase order or requisition by vendor. This report is presented in random sequence by vendor number and name. Primary use of this report will be in determining total amount expended per vendor and preparation of the purchase order, delivery order or requistion forms.

The To-Date On-Order List, figure 108, is a display of all titles on order current through the month. This listing, presented in control number sequence, is produced once each month. Primary use of the list is made in determining what has been previously ordered. Copies of this list are kept by the acquisition and serials units.

The To-Date On-Order Error List, figure 109, is a display of all records found in error during the update of the To-Date On-Order Master. It is produced only if errors are found in the update records. This listing will be presented in control number sequence with an indicative error message. The sole purpose of this list is to assist the serial librarian in correcting update errors. Copies of the list are kept by the serials unit.

The To-Date On-Order Delete List, figure 110, is a display of all records deleted from the To-Date On-Order Master during the update. It is produced only if records are deleted during the update. This list will be presented in control number sequence. Primary use of the list is in determining what was deleted from the To-Date On-Order Master.

Route Slip, figure 111, is a display of the complete routing requirement for one title. Route Slips are produced on a weekly, bi-weekly, monthly, bimonthly, quarterly and irregular frequency. These slips are prepared in control number sequence. Primary use of the Route Slips will be made in determining who gets what, where and when. All Route Slips are kept by the serials unit.

The Complete Review List of All Route Slips, figure 112, is a display of all titles routed and to whom each is routed. This

list, presented in control number sequence, is produced each week. Primary use of this list will be made in the adding of patrons to present routing requirements. Copies of this list are kept by the circulation and serials units.

The Serials Condensed List, figure 113, which is produced with the Complete Review List of All Route Slips is a display of all titles which are available for routing but have no routing requirement. Also displayed on this list are requests for items which are unavailable due to no record of subscription. This list, presented in control number sequence, is produced each week. Copies of this list are kept by the circulation and serials units.

Serials Routing System (General Statistics) and Error List, figure 114, which is produced with the Complete Review of All Route Slips, is a statistical display of the serials routing system and any error therein. This list, presented in the format shown, is produced once each week. Copies of this list are kept by the circulation, documents and serials units and the director of RSIC.

Claims Report, figure 115, is a computer produced display of all items which RSIC has ordered but has not received. This listing, presented in purchase order, delivery order and item number sequence is produced only upon request. Primary use of this list will be made in followup, expedite or re-order of the item ordered. Associated with each item appearing on the Claims Report will be a computer produced transaction card. This card will be used to delete the item from the Claims Report when the item is received. Copies of the Claims Report with transaction cards are kept by the serials unit.

The Titles and Holdings Cross Reference List (Periodical Catalog), figure 116, is a computer prepared display of all journal titles and holdings cross references held by RSIC. This list, presented in alphabetical sequence by title, is produced twice each year. Primary use of this list is made by the library staff and library patrons in determining what journal titles (active and inactive), cross references, and holdings are available at RSIC. One copy of the list is transmitted to the serials unit for verification prior to printing of catalogs.

5. Editing Criteria

Edits are rules specifying that certain things must be or cannot be in the specified field of the transaction record or that certain series must be properly used. Each transaction record found in error should be manually screened and corrective action taken. The following are error and processing messages with explanation and suggested corrective action.

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a. Serials Input Transaction Editing Criteria

Message	Meaning	Corrective Action
CONTROL NUMBER MISSING	Each transaction record processed must have a control number.	Research subscription request. Determine control number and submit correction per transaction change instructions.
INVALID CARD CODE-REJECTED	Card codes must be 01-79 or 1A-1Z. Card code could contain wrong code for specific action.	Determine correct card code and submit correction per transaction change instructions.
MISSING 01 CARD CODE	Each new transaction processed must have an 01 card.	Research subscription request. Determine appropriate data for 01 card code and submit new transaction card.
MISSING 03 CARD CODE	Each new transaction processed must have an 03 card.	Research subscription request. Determine appropriate data for 03 card code and submit new transaction card.
MISSING VENDOR IN 03 CARD	Vendor is a vital element for all new transactions.	Research subscription request. Determine vendor and submit correction per transaction change instructions.
MISSING 04 CARD CODE	Each new transaction processed should have an 04 card.	Research subscription request. Determine appropriate data for 04 card code and submit new transaction.
MISSING 05 CARD CODE	Each new transaction processed must have an 05 card.	Research subscription request. Determine appropriate data for 05 card code and submit new transaction.
MISSING COUNTRY OF ORIGIN IN 05 CARD	Country of origin is a vital element for all new transactions.	Research subscription request. Determine country of origin and submit correction per transaction change instructions.
MISSING NUMBER OF SUBSCRIPTIONS 05 CARD	Number of subscriptions is a vital element for all new	Research subscription request. Determine number of subscriptions and submit correction

Message	Meaning	Corrective Action
	transactions.	per transaction change instructions.
SUBSCRIPTION END DATE MISSING 05 CARD	Subscription end date is a vital element for all new transactions.	Research subscription request. Determine subscription end date and submit correction per transaction change instructions.
SUBSCRIPTION BEGINNING DATE MISSING 05 CARD	Subscription beginning date is a vital element for all new transactions.	Research subscription request. Determine subscription beginning date and submit correction per transaction change instructions.
COLUMN 67 IS NOT J,S,N,C 05 CARD	Column 67 of 05 card must be J,S,N or C.	Research subscription request. Determine correct type code and submit correction per transaction change instructions.
COLUMN 68 IS NOT BLANK, 1,2,3,4, 5,6 05 CARD	Column 68 of 05 card may reflect special code 1,2,3,4,5 or 6.	Determine special code if required and submit correction per transaction change instructions.
MISSING 06 CARD CODE	Each new transaction record processed should have an 06 card.	Research subscription request. Determine appropriate data for 06 card code and submit new transactions.
MAJOR ADDRESSEE CODE INCORRECT 06 CARD	Address code must be 01, 02 or 05.	Submit correction per transaction change instructions.
REQUISITION, P. O. AND TL NUMBER MISSING	Each 06 transaction card must contain either req, P.O. or T.L. number.	Determine appropriate number and submit correction per change instructions.
FREQUENCY NUMBER IS INCORRECT 06 CARD	Must be a three digit number. Prefix with zeros to fill field.	Determine appropriate frequency and submit correction per change instructions.
PURPOSE CODE IS NOT C,L,D OR R IN 06 CARD	Purpose code must be C,L,D or R.	Determine appropriate purpose code and submit correction per change instructions.
ACTION CODE N SHOULD NOT BE IN THIS CARD-RE- JECTED	This transaction card is for action other than new.	Determine purpose for this transaction card and submit change correction per change instructions.

b. <u>Serial Master File Update Editing Criteria</u>

<u>Message</u>	<u>Meaning</u>	<u>Corrective Action</u>
THE FOLLOWING CONTROL NUMBERS HAVE NO TITLE	The 01 transactions card have been omitted.	Research subscription request. Determine appropriate data for 01 card and submit new transaction.
THE FOLLOWING TRANSACTIONS WERE SUBMITTED WITH CONTROL NUMBER FIELDS DUPLICATE - FIRST TRANSAC- TION ONLY PRO- CESSED	The new transaction cards were submitted with the old ones being replaced.	Verify by screening serials master file list.

c. <u>Renew and Binding Editing Criteria</u>

<u>Message</u>	<u>Meaning</u>	<u>Corrective Action</u>
HAS NO TITLE IN 01 CARD	Title has been omitted in serials master file.	Research subscription request. Determine title and submit correction per change instruc- tions at next update.
HAS NO VOL. PER YR. IN 10 CARD	Self-explanatory.	Determine and submit per transaction change instruc- tions.
HAS NO ISSUES PER VOL. IN 10 CARD	Self-explanatory.	Same as preceding.
HAS NO VOL. PER SUBSCRIPTION IN 10 CARD	(Presently unused.)	
HAS NO GENERAL SUBSCRIPTION CLASSIFICATION IN 10 CARD	Self-explanatory.	Same as preceding.
HAS A 13 CARD BUT NO 10 CARD - (NO ACTION TAKEN)	Transaction card 10 is required for all titles that are to be bound on that bound holdings are available.	Determine and submit trans- action.

Message	Meaning	Corrective Action
HAS NO TITLE PAGE AND CONTENT INSTRUCTIONS	Self-explanatory.	Determine and submit per transaction change instructions.
HAS NO ADVERTISE-MENT INSTRUC-TIONS IN 13 CARD	Self-explanatory.	Same as preceding
HAS NO INDEX INSTRUCTIONS IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO BINDING COST IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO PTS PLUS ABSTRACT IN-STRUCTIONS IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO SIZE IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO COVER INFORMATION IN 13 CARD	Self-explanatory.	Same as preceding.
HAS 10 CARD BUT NO 13 CARD	Transaction card 13 contains all binding requirements for title which are to be bound.	Determine and submit transactions.
HAS NO ISSUE CONTENT INSTRUC-TIONS IN 13 CARD	Self-explanatory.	Determine and submit per transaction change instructions.
HAS NO COLOR SPECIFICATION IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO BINDING SCHEDULE IN 10 CARD	Self-explanatory.	Same as preceding.

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Section VI.   DOCUMENTS CONTROL SUBSYSTEM

Documents ordering and receiving, cataloging and circulation
have not been implemented under ALPHA-1. They have been planned
to be essentially the same as for books except for obviously
different requirements such as security, the different identifying
and retrieval points and the lack of financial record-keeping.
The patron and language subsystems are already available to support
the documents area.

No further efforts will be made under ALPHA-1 to implement the
automation of the documents handling, but ALPHA-2 includes this
aspect of RSIC's function.

Chapter 3

INFORMATION FOR DATA PROCESSING PERSONNEL

Section I. INTRODUCTION

1. General

   This chapter is addressed primarily to professional programmers who may be interested in adapting part or all of the ALPHA-1 System for their own use. However, anyone wanting to know the working details of the system from the viewpoint of the programmer will find them here.

   As indicated in earlier pages, ALPHA-1 is an integrated and automatic information and data processing, retrieval and control system for the library functions of RSIC.

   It is an external index type system which encompasses descriptive, subject and inventory control aspects for all types of information processed and controlled by RSIC as well as having a built-in flexibility for expansion and interconnection with other automated information systems.

2. System Principles

   The principles selected and used as system development criteria in synthesizing the ALPHA-1 System are formulated and listed below.

   a. The ALPHA-1 System must be open-ended and capable of expansion. It will be easy to modify, change, and extend.

   b. It must provide for incorporation of adaptable programmed subsystems, thesauri, authority lists, and planned and existing machine readable files, such as NASA tapes, DDC tapes, AEC tapes, and Library of Congress information.

   c. The system must supply, and in fact augment, the external lists and catalogs that are available for inspection by library personnel in the discharge of their duties.

   d. The computer will be used when the basis for decisions can be defined in terms of logic tables, reference tables, or inequalities, and when the action taken can be performed or expressed

automatically by the computer and its peripheral equipment. Human intervention will be minimized.

e. Operations performed and data included must be simplified and minimized. As many operations as possible will be included in a kind of closed-loop system so that its interrelated component functions are planned, tested, and proved compatible with the system as a whole to insure economic and efficient operation of the entire system.

f. Source Data. Original input data will be introduced into the system at the earliest possible point in the process. For books, this is at the time of ordering; for documents, at the time of receipt.

g. A "hopper" concept will be used for input data whenever practicable. This technique provides that transactions of differing types and priorities may be "thrown in the hopper" for the computer to determine what transactions affect which records, in what order, and to what extent. This procedure simplifies the rules and mechanical requirements imposed on library personnel operating externally to the system.

h. Feedback. The duplication of data stored, processed, and transcribed will be minimized through consolidation of files, integration of related functions, and use of feedback loops. For example, a prepunched card which is generated at the time of an order will serve later for the receiving transaction. When the item is received, it is necessary to add only the quantity received and order data specific to the action of receipt.

i. The computer will be used to perform checks on the validity and consistency of data entered into the system.

3. System Hardware Utilization

Central Processing. The USAMICOM Computation Center presently uses an IBM-7010 computer with 14 tape drives, supported for peripheral purposes (card-to-tape, printing, tape-to-punched card) with IBM-1460 computers.

Data Capture. Achieving the earliest machine readability required that peripheral hardware be housed in the library. This equipment includes Friden Flexowriters, an IBM 632 typing calculator and IBM 026 keypunch devices.

The 632, which utilizes both standard typewriter and ten-key adding machine keyboards, is used to create card input at the time of ordering. The machine contains sufficient core storage and has enough programmability to permit typing of various required hard-copy order

forms while simultaneously producing suitable cards for machine input purposes.

The Flexowriter is suited to the generation of long strings of information, such as machinable abstracts and bibliographies. To attempt this directly through the use of punched cards results in problems of splitting continuous information among a set of cards, all of which must then contain common information identifying the set as well as information specifying the sequential order of the cards. Input originating on punched paper tape will however be automatically converted to magnetic tape for input to the central computer. This is done for two reasons: The current machine configuration does not provide for paper tape input and, more importantly, a single input form is achieved for all transactions which is vital if the "hopper" concept is to be successfully implemented.

An added advantage of both the 632 and the Flexowriter is that they may be used as local output devices, when required, in the generation of special listings and card files.

4. System Editing Requirements

Throughout each subsystem and module of the ALPHA-1 System program edits are utilized extensively to validate file input and update information.

Generally speaking, edits are rules specifying that certain things must be or cannot be in a specific transaction. In ALPHA-1 edits are used to verify individual record information, specific field data and in some instances character identification. Edits are also used to validate alphabetic and numeric representation of the data. For example, all input transactions (whether transaction card or punched paper tape) are edited for validity. Generally two lists or one list and a file are produced following each edit. One list (or file) represents all acceptable input transactions, the other is an error listing of all unacceptable transactions.

Additional edits are utilized in the computer update runs. The primary purpose of these edits is to determine if the update transactions can be processed into the master file. Those transactions found undesirable by the update edits will be listed for display. Each acceptable transaction will be processed into the master file and become an integral part thereof.

In ALPHA-1 edits have been used for a twofold purpose; not only do they locate and extract erroneous information but when displayed they serve as an essential tool in correcting input errors and as a deterrent for recurrence of the same error.

Section II. PATRON CONTROL SUBSYSTEM

1. Purpose

The purpose of the patron control subsystem is to provide
an automated system for formal control over establishment, maintenance
and display of patron information.

2. Logic and Run Relations

Utilizing the computer run relations flow chart, figure
15, as a guideline the patron subsystem run relations are easily followed
from source document to printed patron lists.

Input patron transaction data for the patron control subsystem
is generated through the submission of an appropriately annotated
Patron Card to the library. Information contained on this form is
subsequently keypunch transcribed onto patron transaction cards,
figure 12, using an IBM 026 printing card punch.

As shown in the flow chart the main update run accepts a
variety of transaction types which are used to initiate and update
the Patron Master File records. Each of these transaction card formats
is presented in figure 16.

For computer processing, all data contained on these input
transaction cards is converted to magnetic tape. This conversion
is accomplished in the computation center by a standardized punch
card to magnetic tape conversion run which is presented in figure
15 as the conversion from transaction cards to magnetic tape.

During the conversion run all input transaction cards are
character checked for bit combinations by the computer. This check
is accomplished column by column throughout the transaction card field.
Transaction cards which fail these character checks are dropped off
and returned to the library as validity errors.

Even though the input transaction data has been verified
and is now in machine readable form, the information contained on
the magnetic tape file must be sorted into social security number
and action code sequence before processing against the Patron Master
File.

This sorting action will be accomplished in run 1, which
will sort all input transactions into the sequence mentioned above.

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When the input transactions have been properly sequenced, the patron records stored in the original Patron Master File from the last update must be made available in order to process the new transactions and update the Patron Master File.

At this point run 2 begins. During this run three types of actions are accomplished: one is, establish a new patron in the file; two, revise an established patron record; or three, purge an established patron record.

The original Patron Master File along with the input transaction file are now loaded onto the computer. The original Patron Master File is sequenced by social security number into computer memory along with the input transaction file. When a match of corresponding social security numbers is made in the two files the action indicated in the input transaction file is accomplished.

The input transactions, which may be any of the previously mentioned type actions, are edited during actual processing. These edits are input transaction, special and update edits. Utilization of these edits will determine final processing acceptability of the input transactions for subsequent processing against the Patron Master File. Errors found here, if any, will be displayed on the Patron Monitor, figure 7, along with an appropriate error message. Input transactions which are processed into the Patron Master File will also appear on the Patron Monitor along with an appropriate processing message.

During run 2 several Patron Master File outputs other than the Patron Monitor are produced for the library. These are: The Patron List in Social Security Sequence, figure 6, a file of unprocessed transactions, if any, a Patron Statistical Report, figure 8, which is included as the last page of the Patron Monitor, Need-to-Know Revalidation Notices, figure 9, Patron Records Deletes, figure 10 and a file of patron routing data which is used in the serial subsystem of the ALPHA system.

After completion of the update run, the complete contents of the Patron Master File may be prepared in patron name sequence, if desired. To accomplish this two additional computer runs are employed. The first run, which will be run 3, is a simple sort of the Patron Master File records into name sequence. The second run, run 4, is a re-formatting procedure of the complete contents of the Patron Master File records from the sorted sequence in run three to the format shown in figure 5.

Upon completion of all runs required the Patron Master File outputs are printed and forwarded to the library.

3. Run Details for Run 1

The purpose of run one, see figure 15, is to sort all input transactions from the card to magnetic tape run into social security sequence. This run will insure the proper sequencing of all input transactions for processing against the patron master file.

a. Run One Input

The input transactions data to run one will be a magnetic tape file of all input transaction in random sequence.

b. Run One Output

The output data from run one will be a magnetic tape file of all input transactions data sorted into major sequence by social security number, intermediate sequence by card code and minor sequence by action code.

c. Run One Sequence

Run one will process all input transactions into major sequence by social security number (cols 1-10), intermediate sequence by card code (cols 11-12) and minor sequence by action code (col 13).

4. Run Details for Run 2

The purpose of run two, see figure 15, is to edit all incoming transactions and update the Patron Master.

Each input transaction is edited according to transaction edits, special edits, update edits and is subsequently processed against the Patron Master File to accomplish one of the following actions: establish a new patron in the file; revise an established patron record; or purge an established patron record.

a. Run Two Inputs

(1) Patron Master. This file of records, figure 4, from previous update consists of form 1 records in sequence by social security number (cols 1-10) and will never exceed 15,000 records (probably one reel). No duplicate social security numbers are permitted on this file.

(2) Patron Transactions. This file of transactions, figure 16, consists of form 1 records in major sequence by social security number (cols 1-10), intermediate sequence by card code (cols 11-12) and minor sequence by action code (col 13.)

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b. Run Two Outputs

(1) Patron List in Social Security Sequence. This report, figure 6, in sequence by social security number, is to be assembled from the following abbreviated data elements.

Data Element	Input Field Length	Required	Length Adjustment	Comments
Social Security Number	10	yes	Fixed	Insert dashes
Surname	16	yes	Variable	
Given Names	18	yes	Variable	
Surname Suffix	3	no	Fixed	
Title	6	no	Fixed	
Type	1	yes	Fixed	Must be translated, i.e. A=ARMY, N=NASA, M=MILb, C=CONT, O=OTHR
Security	1	yes	Fixed	Join to type as follows: NASA(S) where S=clearance
Citizenship	2	yes	Fixed	If 01 translate to US, otherwise display as is.
Telephone Number	7	no	Fixed	Insert dash
Extension	4	no	Fixed	Insert notation EXTbNNNN where NNNN = extension nr.
Mailing Symbol	12	no	Variable	
Building Number	5	no	Fixed	Insert notation BLbNNNNN where NNNNN=building nr.

Since every patron record will not contain all these elements of information and further certain of the data elements may vary considerably, it is necessary that the print lines be constructed by "floating" in the data elements when present in the order shown in the data element construction. This technique will be referred to henceforth as "normalizing" the print line.

Data elements with a "No" in the "Required" column must be tested to determine the presence of non-blank data; if non-blank data is present the data element will be included in the print line. All elements with the notation "Variable" in the "Length Adjustment" column will be moved without terminal blanks and the print line adjusted accordingly. Appropriate punctuation marks (blanks, commas, etc.) will be inserted between data elements as indicated in figure 6.

The first page of the report consists of the explanatory or "legend" data shown on the upper half of figure 6.

(2)   Unprocessed Transactions. This file consists of card images, single form 1 records of input transactions described in input (2) above which fail the edits. The action code (col 13) will be blanked out.

(3)   Patron Monitor. This report, figure 7, will consist of a line item printout of all input transactions, with appropriate messages, and will be in sequence by social security number and will be followed by the accumulated statistics shown in figure 8.

(4)   Patron Statistical Report. This summary report, figure 8, should immediately follow the last page of the Patron Monitor and is formatted for display on 8 1/2 x 11 stock. Although the report is generally self-explanatory, comments on certain of the print lines are included below for clarification.

(a) Line a - The date shown here is the date of the last update or the date of the origination of the patron master input file.

(b) Line b - The number of patrons added is the number of valid 01 cards processed with action codes of N. It represents the number of new patron records created.

(c) Line c - The number of patrons deleted represents the number of patron records deleted from the file as a result of processing valid 00 cards with an action code of P.

(d) Line d - This number represents the number of valid input transactions processed with an action code of C only.

(e) Line e - This number represents the number of input transactions which fail the edits and are not processed.

(f) Line f - This number represents the total number of input transactions.

(g)   Line g - The number of patrons shown here is the number of patron records appearing on the updated output patron

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file produced during this update cycle. The date appearing in this line is that of the update. In the breakout appearing under these lines the figure for Total Per Type represents the total number of patrons of various types, i.e., Army, NASA, etc. Under Routing Requirements will appear the total number of routing requirements for each type of patron. Under Spec Routing Requirements will appear totals, per type, for all records having a non-blank special routing requirements field. Under the notation With Clearances will appear totals, by type, of all patrons having clearances of other than U (Uncleared). Under the notation Without Clearances will appear totals, per type, of all patrons having clearance of U only.

(h) Line h - The figure appearing in this line represents the number of Revalidation Notices issued during this update.

(5) Need-to-know Revalidation Notices. This report, figure 9, will be produced for every individual (1) whose patron data undergoes a change in organizational symbol (positions 76-87), citizenship code (positions 56-57) or security code (position 55) elements of information and (2) who has a positive need-to-know. A change is defined as changing the data of an established record and includes changing data to blanks but does not include changing data from blanks to non-blank data.

This report should be formatted for 5 x 8 cards as illustrated in the referenced figure. Non-constant lines are discussed in detail below:

(a) Line a - Insert the current mailing symbol and building number.

(b) Line b - Insert the surname, given names, and surname suffix and title, if any, in normalized form. Follow this with social security number with inserted dashes.

(c) Line c - Insert both the old and new elements of data. Line c may exist in multiples up to 3. Decode country code in accordance with Table II.

(d) Line d - Calculate the date 30 days from today's date and insert.

(e) Line e - Print as many need-to-know codes as required up to a maximum of 14 lines.

(6) Patron Record Deletes. This report, shown in figure 10, will be constructed for every patron deleted from the Patron Master File. To simplify the production of this report efforts have been directed toward the use, whenever possible, of the data fields exactly

as they appear in the patron master record. In certain instances fixed length constants have been inserted to improve readability.

(a) Line a - This line is formatted using the field length present in the patron master record with the following exception: dashes are inserted in the social security number and the constant CONTb precedes the company code. For missing (blank) data elements, the corresponding field(s) in this line are left blank.

(b) Line b - This line is formatted using the field lengths of the data in the patron master record. The constants, RM (room), BL (building), AC (area code), EXT (extension), and MISC (miscellaneous) precede the field if the field is non-blank.

(c) Line c - This is an optional print line produced only when these elements of data are present.

(d) Line d - This is an optional print line produced (with constant) only when the special routing requirements for the patron are non-blank.

(e) Line e - This line (or lines) is produced only when a need-to-know specification exists for the patron. The heading XXXXbNEED-TO-KNOW will included for XXXX NASA when the need-to-know type code is N and COSATI when the need-to-know type code is C. A maximum of eleven lines are permitted for this information.

(f) Line f - These lines (up to a maximum of three) will be printed as indicated in figure 10. With the notation COMMENTS placed as indicated. These will be printed only when at least one comment is non-blank.

(g) Line g - This line (or lines up to a maximum of seven) will be produced only when the patron has routing requirements. The constant ROUTING REQMTS will be placed as indicated.

(7) Patron Routing Data. This file, in sequence by social security number, consists of records (one for each routing requirement) in the format of the Patron Master File and will be produced on demand. Information contained in this file will be utilized in the serials routing module of the serials subsystem of the ALPHA System.

c. Run Two Sequence

This run will be processed in major sequence by social security number, intermediate sequence by card code and minor sequence by action code.

5. Run Details for Run 3

The purpose of run three, see figure 15, is to sort all master file patron records into name sequence.

    a. Run Three Input

Patron Master File of form 1 records in social security sequence.

    b. Run Three Output

Patron Master File sorted into sequence by surname, given name, surname suffix and title.

    c. Run Three Sequence

This run will be processed by surname, given name, surname suffix.

6. Run Details for Run 4

The purpose of run four, see figure 15, is to reformat for display the sorted Patron Master File from run 3.

    a. Run Four Input

Patron Master File sorted into sequence by surname, given name, surname suffix and title.

    b. Run Four Output

Reformatted Patron Master File, see figure 5, of each patron master record, see figure 4, assembled for report display in sequence by patron surname, given name, surname suffix and title.

The first page of the report contains the legend shown on the upper half of figure 5. The detailed production of each print line is discussed line-by-line below:

    (1) Line a. Patron surname, given names, surname suffix, and title are to be normalized and displayed as shown on the left-hand side of the line. The balance of the line, beginning in position 46 is in fixed field format for the following data elements: type code (decoded, A=ARMY, N=NASA, C=CONT, M=MILb, and O=OTHER), area code preceded by constant AC, telephone number with inserted dash, extension with constant EXTb, and company name, if any.

(2) Line b. Insert dashes in the social security number. Follow this with the organizational symbol, building number (with constant BLb), room number (with constant RMb) in normalized form. On this right side, beginning in position 46 display the mailing address elements in normalized form. If mailing address is not present, the right half of the line will be blank.

(3) Line c. Immediately after the constant CITIZENb insert the decoded country name. A list of not more than 99 names is provided which relate the two-digit code to the actual country name. Following this is the decoded need-to-know type code (N=NASA and C=COSATI). If N appears, the constant NASA is in positions 29 thru 32; if C appears, the constant COSATI is in positions 27 thru 32. The decoded type code should be followed by the constant N-T-KbCODES in positions 34 thru 44. Following this, beginning in position 46, are the decoded need-to-know codes with leading zeros eliminated and each separated by commas. If more than one line is required for the decoded need-to-know codes they will be printed on multiple lines each beginning in position 46. If the individual is authorized all the need-to-know codes for a particular type the notation ALL should appear in positions 46 thru 48 rather than a list of all the codes.

(4) Line d. This line begins with the constant CLEARANCEb followed by the decoded clearance code enclosed in dashes, i.e. -SECRET- for S. Comments, if any, appear on the right side beginning in position 46 and are preceded by the constant COMMENTSb (X) where X= the number of the comment. There may be up to three numbered comments.

(5) Line e. This line begins with the parenthesized date of addition to the Patron Master File and date of last action as shown in figure 5. On the right side are displayed special routing requirements, if any, decoded according to the criteria chart below and displayed beginning in position 46. Add separating blanks and commas as required.

1 in position 671=NOT USED AT PRESENT
1 in position 672=NOT USED AT PRESENT
1 in position 673=RSICbCIL
1 in position 674=C-STAR
1 in position 675=TAB
1 in position 676=IAA
1 in position 677=NSA
1 in position 678=RSICbUIL
1 in position 679=STAR
1 in position 680=NOT USED AT PRESENT
1 in position 681=NOT USED AT PRESENT

This line is preceded by the constant SPECIALbROUTING in positions 30 thru 44. If there are no special routing requirements, the production of this right-hand portion is omitted.

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(6) <u>Line f.</u> If there are any journal routing require-
ments for the patron these are displayed four to a line beginning
in position 46 for a maximum of seven lines. The first line is
preceded by the constant JOURNALbROUTING in positions 30 thru 44. This
constant is preceded by a count of the patron's total routing
requirements.

(7) <u>Line g.</u> If non-blank data appears in the patron
master record in the field in positions 154 thru 163 it is displayed
as-is beginning in position 46. It is preceded by the constant
MISCELLANEOUS beginning in position 32.

It should be noted that, beginning with line d, no
particular element of data can be assigned to the right hand portion
since elements may be absent or present in multiples. In general, the
punctuation inserting of blanks and commas should adhere as closely as
possible to the example in figure 5.

    c. <u>Run Four Sequence</u>

This run is processed into alphabetical sequence by
patron name.

    7. <u>Editing Criteria</u>

Patron edits are in three categories: input transaction edits,
special edit requirements for need-to-know transaction and update edit
criteria for specific actions. The following are all edits and error
messages used by the programmer.

    a. <u>Input Edits (All Transactions)</u>

<u>Cols</u>	<u>Data Element</u>	<u>Editing Criteria</u>	<u>Monitor Error Messages</u>
1-10	Social Security Number	Must be all-numeric	INVALID SSN
11-12	Card Code	Must be 00 thru 07 or 09	INV CARD CODE
13	Action Code	Must be N or C or / except where card code is 00 in which case must be P	INV ACTION CODE
14-29	Patron Surname	Initial characters must be of the form:	INVALID SURNAME

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XX or XbXX or XXbXX
where X's are valid
alphabetic charac-
ters. All non-blanks
in the Patron Surname
must be valid alpha-
betic character or
dashes. No multiple
blanks are permitted
in the Surname - if
these occur they will
be closed up to one
blank, i.e. MACbHENRY
will be changed to
MACbHENRY.

| 30-78 | Data Fields | Must be non-blank if card code is 01 thru 07 or 09. | BLANK DATA FIELD |

(1) The Purge Card (Card Code 00) will be edited as follows:

Cols	Data Element	Editing Criteria	Monitor Error Messages
30-78		Must be blank	INV PURGE CARD

(2) The Name Card (Card Code 01) will be edited as follows if action code is N:

Cols	Data Element	Editing Criteria	Monitor Error Messages
30-47	Given Names	First character must be alphabetic. All non-blank charac- ters must be alpha- betic, periods or dashes only.	INV GIVEN NAMES
57	Patron Type	Must be A,C,N,M,or O	INV TYPE CODE
58	Security Code	Must be U,C,S or T	INV CLEARANCE
59-60	Citizenship Code	Must be all-numeric	INV CITIZENSHIP
61-63	Area Code	Must be all-numeric or blank	INV AREA CODE
64-70	Telephone Number	Must be all-numeric or blank	INV PHONE NR.

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71-74	Extension Number	Must be all-numeric or blank	INV EXTENSION
75-78	Contractor Code	Must be all-numeric if Col 57 is C	INV CONTRACTOR
		Must match official contractor code list	UNMATCHED CONTRACTOR
		Must be blank if Col 57 is not C	NOT CONTRACTOR

(3) The Name Card (Card Code 01) will be edited as follows if the Action Code is C:

Cols	Data Element	Editing Criteria	Monitor Error Messages
30-50	Given Names and Surname Suffix	Must be blank or will be blanked by program	INV CHANGE
57	Patron Type	Must be blank or will be blanked by program	INV CHANGE
58	Security Type	Must be blank or U,C, S or T	INV CLEARANCE
61-63	Area Code	Must be blank or *bb, or all-numeric	INV AREA CODE
64-67	Telephone Number	Must be blank or *bbbbbb, or all-numeric	INV PHONE NR.
71-74	Extension Number	Must be blank or *bbb, or all-numeric	INV EXTENSION
75-78	Contractor Code	Must be blank	INV CHANGE

(4) The Name Card (Card Code 01) will be edited as follows if the Actions Code is /:

Cols	Data Element	Editing Criteria	Monitor Error Messages
30-47	Given Names	The first character must be alphabetic. All non-blank characters must be alphabetic, dashes, or periods only.	INV GIVEN NAMES

| 51-78 | Data Elements | Must be blank | INV NAME CHANGE |

(5) <u>Need-to-Know Card (Card Code 04) will be edited</u> as follows:

Cols	Data Element	Editing Criteria	Monitor Error Messages
30	Need-to-know type	Must be C or N	INV N-T-K TYPE
31-78	Need-to-know codes	See following paragraph "Special Editing Requirements for Need-to-know Trans-actions."	INV N-T-K CODE or INV NTK ACTION

(6) <u>Routing Requirements Card (Card Code 09) will be edited</u> as follows:

Cols	Data Element	Editing Criteria	Monitor Error Messages
30-78	Need-to-know codes	If the notation DELETEbALL does not appear in cols 30-39, each non-blank routing require-ment will be edited for valid control number, copy number, and route position.	INV ROUTING
	Action codes	The action code, following each requirement will be edited to insure codes A, C, or D.	INV ROUT ACTION

b. <u>Special Editing Requirements for Need-to-Know Transactions</u>

General - Two mutually exclusive need-to-know code sets will be used in the Patron File initially. There are the NASA Need-to-Know Codes and the COSATI Need-to-Know Codes, see Table V. Each master record containing need-to-know designations will carry a code indicating the type of need-to-know codes employed. It is expected that the COSATI codes will eventually become the standard supplanting the NASA codes.

Input transactions must have the notation ADDbALL in cols 31-37 or the notation DELETEbALL in cols 31 or 40 or:

(1) If col 30 is N, each non-blank need-to-know field must be of the form NNNA where NNN = 001 thru 053 and A = A or D, or:

(2) If col 30 is C, each non-blank need-to-know field must be on form NNXA where NN = 01 thru 22, A = A or D, and X must have the relationship shown on the following page:

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If NN = 01, X must be blank or A thru E
If NN = 02, X must be blank or A thru F
If NN = 03, X must be blank or A thru C
If NN = 04, X must be blank or A thru B
If NN = 05, X must be blank or A thru K
If NN = 06, X must be blank or A thru U
If NN = 07, X must be blank or A thru E
If NN = 08, X must be blank or A thru N
If NN = 09, X must be blank or A thru F
If NN = 10, X must be blank or A thru C
If NN = 11, X must be blank or A thru L
If NN = 12, X must be blank or A thru B
If NN = 13, X must be blank or A thru M
If NN = 14, X must be blank or A thru E
If NN = 15, X must be blank or A thru G
If NN = 16, X must be blank or A thru D
If NN = 17, X must be blank or A thru J
If NN = 18, X must be blank or A thru N
If NN = 19, X must be blank or A thru H
If NN = 20, X must be blank or A thru N
If NN = 21, X must be blank or A thru I
If NN = 22, X must be blank or A thru D
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c. Update Editing Criteria and Processing Actions

Card Code	Action Code	Edit Check	Monitor Error Message	Action if Valid
00 Purge Card	P	Must match a patron record on social security number	SSN NOT IN FILE	Delete complete patron record and write out on purged master record file.
		Must also match a patron record on patron surname	UNMATCHED NAME	
01 Name Card	N	Must not match any patron record on social security number	ALREADY IN FILE	Establish new Patron Master Record
	C	Must match a patron record on social security number	SSN NOT IN FILE	
		Must match a patron record on patron surname	UNMATCHED NAME	
	/	Must match a patron record on social security number	SSN NOT IN FILE	Replace appropriate fields (except surname) in the Patron Master with corresponding non-blank fields in the transaction card has an initial asterisk, blank out the corresponding field in the master record. If the card code is 01 and the action is / the surname is included as field to be changed.

Card Code	Action Code	Edit Check	Monitor Error Message	Action if Valid
02 Local Card	N	Must not match any patron record on social security number	ALREADY IN FILE	
	C	Must match a patron record on social security number	SSN NOT IN FILE	
		Must also match a patron record on patron surname		
03 Address Card	N	Must not match any patron record on social security number	ALREADY IN FILE	Replace appropriate fields in the Patron Master with corresponding non-blank fields from the transaction card. If the non-blank field in the transaction has an initial asterisk, blank out the corresponding field in the master record.
	C	Must match a patron record on social security number	SSN NOT IN FILE	
		Must also match a patron record	UNMATCHED NAME	
04 Need-to-know Card	N	Must not match any patron record on social security number	ALREADY IN FILE	Post Need-to-know Type Code if none is posted Post ADDbALL designation if present in the transaction action. If DELETEbALL is present in the transaction, turn all flags off and blank out the
	C	Must match a patron record on social security number	SSN NOT IN FILE	
		Must also match a patron record on patron surname	UNMATCHED NAME	

Card Code	Action Code	Edit Check	Monitor Error Message	Action if Valid
		If matching patron record has non-blank Need-to-know Type Code it must agree with the same code in the transaction	NTK-TYPE ERROR	Need-to-know Type Code. If action is other than ADDbALL or DELETEbALL, turn designated flags (Table V as indicated by the Need-to-know Type Code) ON where action is A and OFF where action is D.
		All need-to-know actions in each transaction must be validated before any action is posted, i.e. those to be added must not already be present. If action is ADDbALL at least one flag must be off;	BAD NTK ACTION	
05 thru N		Must not match any patron record on social security number	ALREADY IN FILE	If col 30 is an asterisk and:
Comments	C	Must match a patron record on social security number	SSN NOT IN FILE	If 05 card, blank out Comment Field 1 in master record.
		Must also match a patron record on patron surname	UNMATCHED NAME	If 06 card, blank out Comment Field 2 in master record.
				If 07 card, blank out Comment Field 3 in master record.
				If col 30 is not an asterisk and:

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The following is a rotated landscape table.

Card Code	Action Code	Edit Check	Monitor Error Message	Action if Valid
				If 05 card move comments to Comment Field 1 in master record.
				If 06 card move comments to Comment Field 2 in master record.
				If 07 card move comments to Comment Field 3 in master record.
09 Routing Reqmt's Card	N	Must not match any patron record on social security number	ALREADY IN FILE	Add, change, or delete routing requirements as specified by the action code associated with each requirement. If the notation DELETEbALL appears in cols 30-39, delete all routing requirements.
	C	Must match a patron record on social security number	SSN NOT IN FILE	
		Must also match a patron record on patron surname	UNMATCHED NAME	
		Routing requirements to be added must not already be present in the master record	INV ROUT ADD	

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Card Code	Action Code	Edit Check	Monitor Error Message	Action if Valid
		The journal number for the routing requirements to be changed must be present in the master record	INV ROUT CHANGE	
		Routing requirement to be deleted must be present in the master record	INV ROUTE DELETE	
		Addition of routing requirements must not exceed the fixed limit of 25 per patron		

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Section III. LANGUAGE CONTROL SUBSYSTEM

1. Introduction

The purpose of the language control subsystem is to establish
an automated system for formal control over the authorization, estab-
lishment, maintenance and assignment of subject terms used in the
indexing and retrieval functions of the ALPHA System.

These functions are accomplished through the medium of
two large files (the language masters) containing books and documents
terms and their associated data. Perhaps at some point the books and
documents master files may be combined or at least compared for dupli-
cation, but currently they are separately maintained. Initial input
to these files consisted of books subject headings, selected DDC
descriptors and identifiers, and terms from the RSIC wordlist.

2. Master File Organization

The Language Master File consists of a collection of logical
records, each identified by its "base term" or control. Each logical
record--hereafter referred to as the "term record"--will consist
essentially of a base term and its associated data as shown below:

Term Record

Base Term _____ Associated Data

a. Base Terms

Base terms consist of the following types identified
by type code and description:

(1) Document Terms (Type Code V). Terms determined to be
acceptable to RSIC as index points for documents.

(2) Book Terms (Type Code A). Terms determined to be
acceptable to RSIC as index points for books.

(3) Q-Terms (Type Code Q). Ambiguous terms which may
or may not be acceptable to RSIC as index points for documents depend-
ing on context.

(4) See Reference Terms - Books (Type Code B). Terms
determined to be unacceptable to RSIC as index points for books but
which refer to other usable book terms.

(5) See Reference Terms - Documents (Type Code Z) .
Terms determined to be unacceptable to RSIC as index points for
documents but which refer to other usable document terms or Q-terms.

(6) Invalid Terms (Type Code I). Terms determined to be
unacceptable to RSIC as index points for documents. These terms do not
require a see reference.

b. Associated Data

The data associated with each base term depend in
part on the nature of the base term itself and consist of:

(1) Substituent Terms

(2) Comments

(3) LC Number Elements

Shown in figure 25 are the Language Master File formats for
the various term records and their associated data. As can be seen, each
term record consists of a constant portion and a variable portion
containing the comments, substituent terms and LC number elements.

(1) Substituent Terms. By definition is any term other
than the base term appearing in a term record. The following relation-
ship will always hold:

(a) Each substituent term appears in its own right
elsewhere in the Language Master File as a base term.

(b) Each base term with substituent terms appears
itself elsewhere in the Language Master File as a substituent term.

(c) No duplicates are permitted in a substituent
term set. This takes into account, in the case of term records types Q,
V, and A, not only the term type but further qualifying codes explained
later.

Substituent terms may be any of the following:

(a) In a See Reference - Books (Type B) - There will
always be book terms (Type A).

(b) In a See Reference - Documents (Type Z) - There
will always be document terms (Type V) and Q-Terms (Type Q).

(c) In a Document Term Record (Type V) - There will
always be see reference - documents (Type Z), Q-Terms (Type Q), and
document terms (Type V).

(d) In a Q-Term Record (Type Q) - There will always be see reference - documents (Type Z), Q-Terms (Type Q), and document terms (Type V).

(e) In a Book Term Record (Type A) - There will always be see reference - books (Type B) and book terms (Type A).

All substituent terms are of variable length, separated by record marks, and the number of substituent terms per term record varies. Although the normal form of substituent terms for term records B and Z is as follows,

| Blank | Term
Type | Base
Term | Associated
Data | +
+ | Blank | Term
Type | Base
Term | Associated
Data | +
+ |

in the substituent term set for term records types A, Q, and V the following variation exists:

Each A-type substituent term in an A-type base record will carry a single digit direction code (X or S) as follows:

| Dir
Code
S or X | Term
Type
A | Term | Asso-
ciated
Data | +
+ | Dir
Code
S or X | Term
Type
A | Term | Asso-
ciated
Data | + |

Each Z and V Type substituent term in a Q or V type term record will carry a single-digit generic code following the term type as follows:

| Gen
Code | Term
Type | Term | Asso-
ciated
Data | +
+ | Gen
Code | Term
Type | Term | Asso-
ciated
Data | +
+ |

Whether or not substituent terms are arranged in sequence for ease of update is left to the discretion of the programmer. This applies as well to LC number elements. These elements are required to be in order when displayed on the books and documents thesauri.

(2) Comments. These are notes defining the meaning of the term and scope of the subject. Each comment forms a separate paragraph directly beneath the base term. These comments are included primarily for the benefit of the cataloger, but will also be helpful to the retriever.

(3) LC Number Elements. Library of Congress class numbers which are included as the last element are self explanatory.

3. <u>Logic and Run Relations</u>

Utilizing the computer run relation flow chart, figure 26, as a guideline the language subsystem run relations are easily followed from source document to printed thesauri.

Raw transactions input data will be generated on paper tape, obtained as a by-product of typing a standard lexicographic language control input form, figure 21, on a Friden Flexowriter.

The paper tape is then converted to magnetic tape by a general-ized conversion program.[1] The conversion run is shown in figure 26 as the conversion from paper tape to magnetic tape.

Even though the transactions input data is now in machine readable form, the information contained on the magnetic tape is rearranged into a more acceptable format before processing against the Language Master File. This will be accomplished in run 1, which will convert the raw transactions input data to usable language transactions. In this run con-siderable scanning to ascertain lines, line endings, position, etc. will be done. The input transaction format, figure 27, indicates positions and fields available for source information.

During run 1 edits will be performed on raw transactions input data to ascertain acceptability of information to be processed into language transactions. Any transaction which was not properly processed (that is, information which is not discernable) will be dropped off in the form of error transactions. Other data which was properly processed but contained an error is also dropped off, but in the form of language worksheet errors. These errors will be found through use of the raw transaction input edits. Together, all transactions found in error are returned to the library lexicographer as worksheet errors. The remaining data will be processed into language transactions for processing against the Language Master File.

These language transactions must then be sorted from their input sequence to an acceptable processing sequence. This will be accomplished in run 2, which is a simple sort of input transactions into term sequence. This run will insure a proper sequence for processing against the Language Master File and a usable output sequence for the Language Monitor.

[1] Paper tape to magnetic tape conversion program. Prepared by Army Computation Center, AMSC, Building 5201, Redstone Arsenal, Huntsville, Alabama.

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Now that the input transactions have been properly sorted, the original data stored in the Language Master File must be made available in order to process the new transactions and update the file. Run 3 will accomplish this task very easily by a simple recycle of the Language Master File from magnetic tape storage to the computer disc. During this run each language term record is located on the disc in such a manner (either algorithmically or via a directory) that it may be retrieved on demand in run 4 by presenting the base term and base term type. At this time also begins the accumulation of language statistics which are maintained and incorporated in statistical breakouts in run 4.

During run 4, four types of actions may be accomplished: one, establish a new term record; two, revise an established term record; three, change base term of an existing record; or four, purge an established term record.

The input transactions, which may be any of the preceding type actions, will be edited again using the input transaction, data relationship and update action edits to determine final processing acceptability and subsequently processed against the master file. Errors found here, if any, will be displayed on the Language Monitor. In the performance of the update, it is not only necessary to seek and modify a term record but also modify other term records referenced by substituent terms contained in the original term record sought.

During the update process the language statistics begun in run 3 are completed and formatted for display. Also, each input transaction processed is displayed on the Language Monitor with appropriate processing or error message thus providing an audit trial for all actions against the language master. The language statistics, contained as the last page of the monitor, along with the monitor itself, are printed and returned to the library lexicographer.

After completion of the update run, the contents of the Language Master File disc are dumped. This is accomplished in run 5, which is simply a dump in sequence by term type and base term, of the contents of the disc for input to runs 6, 7, and 8 consecutively which produces the thesauri utilized by the library in books and documents indexing and retrieval activities.

Upon receipt of the dump from run 5, run 6 selectively extracts the Language Master File for sorting in run 7 and formatting in run 8. This is accomplished by translation of all internal record marks to at signs (@), leaving the terminal record mark intact thereby creating standard form 1 records. This run also creates and attaches to the front of each term record an 80 digit sort header which will permit a standard library filing sequence to be achieved by the sort in run 7.

Utilizing the sort header established in run 6, a simple sort is processed. This is accomplished in run 7, whereby all records are processed into base term sequence.

All Language Master File records are now ready to be processed into usable outputs. This is done in run 8. The complete Language Master File is selectively prepared into two output reports for printing, the thesaurus for books and for documents. These outputs are printed and forwarded to the library as complete displays of the contents of the Language Master File.

4. Run Details for Run 1

The purpose of this run, see figure 26, is to convert raw input transactions, from the paper tape to magnetic tape run, into language transactions.

a. General Discussion

The philosophy of the thesaurus data capture procedures is based in part on the concept of "form definition" where the data capture form itself governs the location of data elements transcribed thereon. These may subsequently be identified and retrieved by evaluating line counts and positions within a line through explicit control information transferred to the paper tape during transcription.

In order to create the output required from this program it will be necessary to employ considerable scanning (character-by-character compares) to ascertain individual lines, line endings, and, for certain lines, positions within a line.

Line endings will be signified by carriage return (C/R) characters. Line 1 will consist of the data preceding the first C/R; line 2 of the data preceding the second C/R and so on for a maximum of 52 lines. Positions within a line are ascertained by counting blanks or tabs or combinations of these and by making adjustments for the occurrence of backspace characters. The spacing values of the tabs (up to 4) will be supplied as constants in the program.

Adjustments must also be made for the handling of extraneous blanks or spaces in accordance with the following rules:

(1) Initial blanks in data fields will be discarded and data elements left-justified with trailing blanks. For example bbTERMbb..will become TERMbb....

(2) Internal multiple blanks in data element fields will be reduced to one blank, for example the term HEATbbbCONVECTION will be adjusted to HEATbCONVECTION.

Detailed explanation of input format rules and Flexowriter typing are presented in chapter 2, section III under Flexowriter procedures.

b. Run One Input

Raw Transactions - Input to this run will consist of single variable length magnetic tape records in input sequence of the original paper tape images produced by the generalized paper-to-magnetic tape run.

c. Run One Output

(1) Thesaurus Transactions - This file consists of single, variable length records in input sequence assembled according to figures 24, nand 27 and criteria outlined below:

(a) Action codes will be assigned as follows by evaluating line 1:

Action	Action Code	Signified by
New	1	Non-blank character(s) in positions 13-18.
Revise	2	Non-blank character(s) in positions 31-36.
Purge	0	Non-blank character(s) in positions 49-54.
Term Change	3	Non-blank character(s) in positions 67-72.

(b) Term type codes will be assigned as follows by evaluating lines 2 and 3.

Medium	Term Type	Term Type Codes
Books	Term	A
Books	See Reference	B
Documents	Term	V
Documents	See Reference	Z
Documents	Q-Term	Q
Documents	Invalid	I

Medium	Signified by
Books	Non-blank character(s) in positions 13-18 of line 2.
Documents	Non-blank character(s) in positions 31-36 of line 2.

Term Type	Signified by
Term	Non-blank character(s) in positions 13-18 of line 3.
See Reference	Non-blank character(s) in positions 31-36 of line 3.
Q-Term	Non-blank character(s) in positions 49-54 of line 3.
Invalid	Non-blank character(s) in positions 67-72 of line 3.

(c) Base term (line 4) - Move to base term field. Left-justify with trailing blanks eliminating any leading blanks. Reduce multiple internal blanks to a single blank.

(d) Comments (lines 5-16) - Assemble all non-blank comments lines into a single continuous field, left-justified eliminating any leading blanks.

(e) Comment Length - Calculate the length of the field prepared in (d) above and place in the comment length field, right-justified with leading zeros.

(f) See or Seen From Terms (lines 17-28) - Assemble consecutively each "see or seen from term" into a fixed field of 72 digits, left-justified with trailing blanks. Reduce multiple internal blanks to a single blank.

(g) Nr. of See or Seen From Terms - Calculate, as a result of (f) above and place the factor in the output record, right-justified with leading zeros.

(h) Seen Also From Terms (lines 29-40) - Assemble consecutively each "seen also from term" into a fixed field of 72 digits, left-justified with trailing blanks. Reduce internal multiple blanks to a single blank.

(i) Nr. of Seen Also From Terms - Calculate, as a result of (h) above and place the factor in the output record, right-justified with leading zeros.

(j) LC Number Elements (lines 41-52) - Assemble consecutively each "LC number element" into a fixed field of 72 digits, left-justified with trailing blanks. Reduce multiple internal blanks to a single blank.

(k) Nr. of LC Number Elements - Calculate, as a result of (j) above and place the factor in the output record right-justified with leading zeros.

(2) Error Transactions. This file is identical in format to input and will consist of input transactions which are not discernable to the programmer.

(3) Language Worksheet Errors. This report, figure 18, consists of the base term of the input transactions in error together with an indicative error message.

d. Run One Sequence

Run one will be processed in input sequence of the original paper tape images.

5. Run Details for Run 2

The purpose of this run, see figure 26, is to sort all input transactions into term sequence for processing against the Language Master File. Although access to the Language Master File will be direct, the sort is required to insure a usable output sequence for the Language Monitor as well as to insure a proper priority at transaction sequence.

a. Run Two Input

Transaction file of single variable length records in input sequence which were assembled in run one.

b. Run Two Output

Language transaction records sorted into term sequence.

c. Run Two Sequence

Run two will be processed into major sequence by term type and base term and minor sequence by action code.

6. Run Details for Run 3

The purpose of this run, see figure 26, is to load the computer disc so the Language Master File may be updated. During this run each term record is located on the disc in such a manner (either algorithmically or via a directory) that it may be retrieved on demand in run four by presenting the base term and base term type. Also at this time the accumulation of language statistics will begin.

a.   Run Three Input

Recycled Language Master File from previous update runs.

b.   Run Three Output

Term records of the recycled Language Master File are located on the computer disc for update.

c.   Run Three Sequence

Run three processing sequence will be by term type and base term.

7.   Run Details for Run 4

The purpose of this run, see figure 26, is to edit input transactions, update the Language Master File and prepare the Language Monitor and Statistical Report. Each input transaction is edited according to action code and term type in accordance with input, data relationship and update editing criteria, and is subsequently processed against the Language Master File to accomplish one of the following four actions: purge (action code 0) an established term record; change the base term (action code 3) of an established term record to another base term not in the file; establish a new term record (action code 1); revise (action code 2) an established term record by adding, deleting or changing data elements.

In the performance of these actions it is not only necessary to seek and modify a term record but also to modify other term records referenced by substituent terms contained in the initial term record sought.

Each input transaction will be displayed on the Language Monitor with appropriate processing or error messages thus providing an audit trail for all actions against the Language Master File. The production of the Language Monitor is treated in detail in paragraph b.

a.   Run Four Input

(1)   Language Transactions. This file consists of form 3 records processed in run two and will be in major sequence by term type (col 2), intermediate sequence by base term (cols 3-72), and minor sequence by action code (col 1).

(2)   Language Master File. This file consists of form 3 records and will be available on demand from the disc on presentation of the base term and base term type. No duplicates are permitted in this file on both base term and base term type.

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b. Run Four Outputs

(1) Language Monitor. This record, figure 19, consists of print records and will be in the same sequence as input (1) above. It will contain an entry for every input transaction together with appropriate processing or error messages.

The first line of each entry consists of the base term followed by its decoded term type in parentheses followed by either a processing or error message. Data elements on this line are "floated" in as indicated in figure 19. If comments are present they follow below as an indented paragraph. When formatting the comments paragraph for display, replace word separator characters with plus signs (+), avoid breaking words at the end of a line and insure that no line begins with a punctuation symbol or blank.

Following the comments paragraph (or the first line in the event of no comments) are listed the various substituent terms with appropriate headings according to term type.

Any time an error is detected in an input transaction, a double asterisk ** will be extended to the left of the base term belonging to that transaction. This will be done for all entries containing error messages other than the following:

(NOT IN FILE, SEE REFERENCE CREATED)

(NOT IN FILE, NEW TERM RECORD ESTABLISHED)

All error messages appearing in the edit criteria portion of this section which are not parenthesized will appear on the first line of the entry immediately after the parenthesized term type. Error messages that are parenthesized will be placed immediately after the data elements in error. Shown in figure 19 is a list of representative entries with typical errors of various sorts.

(2) Language Statistics. This report, figure 20, consists of a single page of formatted statistics and will be generated as the last page of the Language Monitor.

c. Run Four Sequence

Run four will be processed into major sequence by term code, intermediate sequence by base term, and minor sequence by action code.

8. Run Details for Run 5

The purpose of this run, see figure 26, is to dump the contents of the disc in term type and base term sequence for input to runs six,

seven and eight, which will produce the thesauri needed in books and documents indexing and retrieval activities.

a. Run Five Input

Language Master File term records which were located on the computer disc.

b. Run Five Output

(1) Updated Language Master File.

(2) Complete file of purged master file records.

c. Run Five Sequence

Run five processing sequence will be by term type and base term.

9. Run Details for Run 6

The purpose of this run, see figure 26, is to accomplish the following:

Select from the Language Master File, according to date criteria furnished by control card, all records to be prepared for sorting according to the selection criteria outlined below.

Translate all internal record marks to at signs (@) leaving the terminal record mark intact thereby creating standard form 1 records.

Create and append to the front of each record an 80 digit sort header according to detailed selection criteria instructions below. The use of the header will permit a standard library filing sequence to be achieved by the sort in run seven.

a. Run Six Input

(1) Date Control Card. This card will read as the last card of the program deck.

(2) Language Master File. This file will consist of form 1 records with interspersed record marks, in random sequence.

b. Run Six Outputs

Language Master File with record marks replaced by at signs (@) and an 80 digit sort header which has been appended to the front of each record.

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c. Run Six Sequence

Run six processing sequence will be by term type and base term.

d. Selection Criteria

In selecting records for subsequent sorting use the following rule: output all records whose date added field, date field 1, or date field 2 contains a date later than the date furnished in the control card.

e. Sort Header Creation

In the creation of the sort header the following adjustments must be made to each base term:

(1) Scan for the following special characters: - , (

(2) When a dash is encountered which is immediately preceded and followed by non-blank characters, translate that dash to blank.

(3) When a dash is encountered which is immediately preceded by a blank, insert an additional blank before the dash.

(4) When a comma is encountered immediately preceded by a non-blank character, insert a blank before the comma.

(5) When a left parenthesis is encountered which is immediately preceded by a blank, insert an additional blank before the left parenthesis.

Shown below is the results of these actions performed on representative terms:

```
WATER-LOGGED       = WATERbLOGGED
WATERb-bANALYSIS   = WATERbb bANALYSIS
WATER,bMINERAL     = WATERb,bMINERAL
WATERb (SOLIDS)    = WATERbb (SOLIDS)
```

The above-mentioned operations must be accomplished for all occurrences of the special characters in each base term.

10. Run Details for Run 7

The purpose of this run, see figure 26, is to sort all Language Master File records into base term sequence.

a. Run Seven Input

Complete Language Master File of form 1 records with sort header attached in run six.

b. Run Seven Output

Sorted extract Language Master File.

c. Run Seven Sequence

Run seven processing sequence will be by base term.

11. Run Details for Run 8

The purpose of this run, see figure 26, is to selectively prepare two output reports for printing consisting of (1) the Books Thesaurus and (2) the Documents Thesaurus. These will be formatted for display on standard 8 1/2 x 11 paper.

a. Run Eight Input

Language Master File with record marks translated to at signs (@) in sequence by a special 80 digit sort header appended in run six.

b. Run Eight Output

(1) Books Thesaurus, figure 17, in sequence by base term according to standard library filing rules.

(2) Documents Thesaurus, figure 17, in sequence by base term.

c. Run Eight Sequence

Run eight sequence will be alphabetical by base term.

d. Discussion

Items for the Books Thesaurus will be extracted by selecting all term types A and B in the order which they appear. All other term types (I, Q, V, Z) will be displayed in the order encountered on the Documents Thesaurus.

12. Editing Criteria

Edits fall into three categories: raw input transaction edits, input transaction and data relationship edits, and update edit criteria for specific actions. The following are all edits and error messages used by the programmer.

a. Raw Input Transaction Edits

These edits are used to determine if the raw input transactions to be processed contain the basic elements and proper format for processing as input transactions.

Criteria	Worksheet Error Message
Action code must be present.	ACTION CODE MISSING
Only one action code must be present.	MULTIPLE ACTION CODES
Medium code must be present.	MEDIUM CODE MISSING
Only one medium code must be present.	MULTIPLE MEDIUM CODES
Term type must be present.	TERM TYPE MISSING
Only one term type must be present.	MULTIPLE TERM TYPE CODES
Term must be present.	TERM MISSING
The medium "Books" can exist only with term types "Term and See Reference."	MEDIUM/TERM TYPE INCONSISTENT
Transaction will contain no less than 4 C/R characters.	TRANSACTION NOT LONG ENOUGH
Last character of record must be followed by a group mark.	LAST CHARACTER OF RECORD NOT GROUP MARKED
Data following BSP overrides characters preceding BSP.	TOO MANY BSP IN RECORD
Transaction will contain no more than 51 C/R characters.	TRANSACTION EXCEEDS MAXIMUM LENGTH
Substituent term reference must be compatible to base term type.	SUBSTITUENT TERM TYPE INVALID
Substituent term reference has not been properly formatted or term reference must be compatible to base term type.	BASE TERM OF NEXT LINE SUBSTITUENT TERM INVALID
Substituent term type invalid or missing.	SUBSTITUENT TERM TYPE INVALID OR MISSING

When the raw input transactions have been determined to contain basic elements required for processing and have been converted to language transactions the following input, data relationship, and update edits are used to determine that the basic elements indicated are correct in content.

b. Input Edits (All Transaction)

Cols	Data Element	Editing Criteria	Monitor Error Message
1	Action Code	Must be 0,1,2,or 3.	INVALID ACTION CODE. NOT PROCESSED
2	Term Type Code	Must be A,B,I,Q,V, or Z.	INVALID TERM CODE. XXXXX ACTION NOT PROCESSED. WHERE XXXXX IS NEW, PURGE, REVISE OR TERM CHANGE.
3-72	Base Term	Field must be non-blank	BLANK BASE TERM. NOT PROCESSED

c. Data Relationship Edits

The following relationship edits will be accomplished as follows according to action code and term type.

Action Code	Type	Editing Criteria	Monitor Error Message
0	All	No variable data is permitted.	EXTRANEOUS DATA. PURGE ACTION NOT PROCESSED.
3	All	There must be one see or seen from term in the transaction.	CHANGE TO TERM MISSING. TERM CHANGE ACTION NOT PROCESSED.
		There must not be more than one see or seen from term in the record.	MULTIPLE CHANGE TO TERMS PRESENT. TERM CHANGE ACTION NOT PROCESSED.
	I,B, Z	Seen also from and LC number elements must not be present.	EXTRANEOUS DATA. TERM CHANGE ACTION NOT PROCESSED.
	Q,V	Cannot contain LC number elements.	

Action Code	Term Type	Editing Criteria	Monitor Error Message
1	I	Record cannot contain see or seen from terms, seen also from terms, or LC number elements.	EXTRANEOUS DATA. NEW ACTION NOT PROCESSED.
	B,Z	There must be at least one see or seen from term in the record.	SEEN TERM(S) MISSING. NEW ACTION NOT PROCESSED.
		Record cannot contain seen also from or LC number elements.	EXTRANEOUS DATA. NEW ACTION NOT PROCESSED.
2	I	Comments element must be present.	REVISION NOT INDICATED. NOT PROCESSED.
		Elements, other than comments must not be present.	EXTRANEOUS DATA. REVISE ACTION NOT PROCESSED.
	B,Z	Transaction must contain either (or both) comments data or see or seen from data.	REVISION NOT INDICATED. NOT PROCESSED.
		Transaction must not contain seen also from or LC number elements.	EXTRANEOUS DATA. REVISE ACTION NOT PROCESSED.
	Q,V	Transaction must contain one or more of the following data elements: comments, see or seen from or seen also from.	REVISION NOT INDICATED. NOT PROCESSED.
		Record cannot contain LC number elements.	EXTRANEOUS DATA. REVISE ACTION NOT PROCESSED.
	A	Record must contain one or more of the following data elements: comments see or seen from, seen also from, and LC number elements.	REVISION NOT INDICATED. NOT PROCESSED

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d. Update Edits for Specific Actions

The following edits will be accomplished for the specific action indicated by action code. In the revision of established term records the "asterisk delete" convention will be used which operates as follows: data elements to be deleted will be preceded by an asterisk; data elements to be added will be identified by the absence of an initial asterisk.

(1) Edit Criteria for "Purge" Actions (Action Code 0). The monitor message for all purge actions is PURGED.

Term Type	Editing Criteria	Monitor Error Message	Action if Valid
I	Base term must be in file.	NOT IN FILE. PURGE ACTION NOT PROCESSED.	Purge matching term record.
B,Z	Base term must be in file.	NOT IN FILE. PURGE ACTION NOT PROCESSED.	Purge matching term record and perform the following actions for each substituent term appearing in the purged record: a. Seek the term record matching each substituent term and remove from it the substituent term reference to the term record being purged. Post today's date in date field 2 of all such records.
Q,V,A	Base term must be in file.	NOT IN FILE. PURGE ACTION NOT PROCESSED.	Purge matching term record and perform the following actions for each substituent term appearing in the purged record: a. Seek the term record matching each substituent term (via term type and term only) and remove it from the substituent term reference to the term record being purged. Post today's date in date field 2 of all such records.

Term
Type   Editing Criteria   Monitor Error Message   Action if Valid

                                                     b. In the performance of a. above, of
                                                         the matching term record is a see
                                                         reference (B or Z) and if after re-
                                                         moving from it the reference to the
                                                         original term record, no substituent
                                                         terms remain in the see reference,
                                                         then purge the see reference also.
                                                         When this occurs, include the follow-
                                                         ing notation on the monitor:

                                                         SEEN FROM   TERM (SEE REFERENCE PURGED)

(2) Edit Criteria for "New" Actions (Action Code 1).   The monitor message for all new
actions is ADDED.

Term
Type   Editing Criteria   Monitor Error Message   Action if Valid

A   Base term must not ALREADY IN FILE, NEW   Establish new term record and post today's
        be in file.   ACTION NOT PROCESSED.   date in date added field and date field 1.
                                                     For each seen from term found in the file;
        Each see or seen   (NOT IN FILE, SEE REFER- add to the substituent term set of that
        from term must be   ENCE CREATED)   record the base term of the newly-established
        in file.   record and post today's date in date field 2.
                                                     For each seen from term not in the file,
        Each seen also   (NOT IN FILE, NEW TERM   create an applicable see reference record
        from term must be   RECORD ESTABLISHED)   (term type B) posting in it today's date in
        in file.   the date added field and date field 1.

                                                     For each seen also from term found in the
                                                     file, add to the substituent term set of
                                                     that record the base term of the newly-
                                                     established record and change the direction
                                                     code from S to X or X to S.

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Term Type	Editing Criteria	Monitor Error Message	Action if Valid
I	Base term must not be in file.	ALREADY IN FILE, NEW ACTION NOT PROCESSED.	Post today's date in date field 2 of each such record. For each seen also from term not in the file, create an applicable term record and change the direction code from S to X or X to S. Post today's date in date added field and date field 1 of each such record.
B, Z	Base term must not be in file.	ALREADY IN FILE, NEW ACTION NOT PROCESSED.	Establish new term record and post today's date in date added field and date field 1.
	Each see or seen from term must be in file.	(NOT IN FILE)	Establish new term record and post today's date in date added field and date field 1. Add the base term of the record being added to the substituent term set of each see term found and post today's date in date field 2 of each such record.
	At least one see or seen from term must be in file.	NO SEE TERMS IN FILE, NEW ACTION NOT PROCESSED.	
Q, V	Base term must not be in file.	ALREADY IN FILE. NEW ACTION NOT PROCESSED.	Establish new term record and post today's date in date added field and date field 1.
	Each seen from term must be in file.	(NOT IN FILE, SEE REFERENCE CREATED)	For each seen from term found in the file, add to the substituent term set of that record the base term of the newly-established record and post today's date in date field 2 of each such record. For each seen from term not in the file, create an applicable
	Each seen also from term must be in file.	(NOT IN FILE, NEW TERM RECORD ESTABLISHED)	

Term
Type | Editing Criteria | Monitor Error Message | Action if Valid

Action if Valid

see reference record (term type Z) and post today's date in the date added field and date field 1.

For each seen also from term found in the file, add to the substituent term set of that record the base term of the newly-established record and post today's date in date field 2 of each such record. When posting, invert the generic code as follows: If the code is B, change it to N; if the code is N change it to B. Post all other generic codes as R. For each seen also from term not as in the file, create an applicable term record inverting the generic code in the manner mentioned above. Post today's date in the date added field and date field 1 of each such record.

(3) Edit Criteria for "Revise" Actions (Action Code 2). The monitor message for all revise actions is REVISED.

Term
Type | Editing Criteria | Monitor Error Message | Action if Valid

Term
Type: I

Editing Criteria: Base term must be in file.

Monitor Error Message: NOT IN FILE, REVISE ACTION NOT PROCESSED.

Action if Valid: Post today's date in date field 1 of the matching term record and accomplish the following: if comments field contains initial * blank out comments field of matching term record and list on the monitor, in lieu of comments, the message COMMENTS DELETED. Otherwise replace comments field of matching term record with the comments of the transaction.

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Term Type	Editing Criteria	Monitor Error Message	Action if Valid
B,Z	Base term must be in file.	NOT IN FILE, REVISE ACTION NOT PROCESSED.	Post today's date in date field 1 of the matching term record and accomplish the following: If comments data is present, process it against matching term record according to the paragraph above.
	Each see term must be in file.	(NOT IN FILE)	Add each see term to the matching term record and post the base term to the substituent term set of the see term. Post today's date in date field 2 of all such records.
	Each see term must not be present in matching term record.	(ALREADY POSTED)	
	Each *see term must be present in matching term record.	(NOT IN RECORD)	Delete each *see term from the matching term record and remove the base term from the substituent term set of the see term. Post today's date in date field 2 of all such records. If, in deleting *see terms from a base record, no substituent terms remain, purge the record and include the following notation on the monitor:
	Each *see term must be in file.	(NOT IN FILE)	
	If, after editing no data elements remain, post the following message on the monitor:	REVISE ACTION NOT PROCESSED, ALL TX ELEMENTS INVALID.	DELETED AS A RESULT OF REVISION
Q,V	Base term must be in file.	NOT IN FILE, REVISE ACTION NOT PROCESSED.	Post today's date in date field 1 of the matching term record and accomplish the following: If comments data is present, process it according to the criteria found in the paragraph for term type I.
	Each seen from term must be in file.	(SEE REFERENCE CREATED)	Add seen from terms to the matching term record. For each seen from term found in
	Each seen from and seen also from term	(ALREADY POSTED)	

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Term Type	Editing Criteria	Monitor Error Message	Action if Valid
	must not be present in matching term record.	(NOT IN RECORD)	the file, add to the substituent term set of that record the base term and post today's date in date field 2 of all such records. For each seen from term not in the file, create an applicable see reference record (Type Z) and post today's date in the date added field and date field 2 of all such newly-created see reference records.
	Each *seen from and *seen also from term must be present in matching term record.		Delete *seen from terms from the matching term record. For each *seen from term found in the file, remove the base term from the substituent terms set of that record and post today's date in date field 2 of all such records. If, in removing terms from such records, no further terms remain, purge that record and append the following message on the monitor:

SEEN FROM   TERM (SEE REFERENCE PURGED) |
	Each *seen from and *seen also from term must be in file.	(NOT IN FILE)	
	After editing, at least one process-able element of data must remain.	REVISE ACTION NOT PROCESSED, ALL TX ELEMENTS INVALID.	
	Each seen also from term must be in file.	(NOT IN FILE, NEW TERM RECORD ESTABLISHED)	Add seen also from terms to the matching term record. For each seen also from term found on the file, add the base term to the substituent term set of that record and post today's date in date field 2 of all such records. When posting invert the generic code as follows: If the code is B, change it to N; if the code is N, change it to B. Post all other codes as R. For each seen also from term not in the file, create an applicable term record inverting the generic code in the manner mentioned above.

Term Type	Editing Criteria	Monitor Error Message	Action if Valid
222			Post today's date in the date added field and date field 1 of each such record.
			Delete *seen also from terms from the matching term record. For each *seen also from term found in the file, remove the base term from the substituent term set of that record and post today's date in date field 2 of each such record.
A	Base term must be in file.	NOT IN FILE, REVISE ACTION NOT PROCESSED.	Post today's date in date field 1 of the matching term record and accomplish the following: If comments data is present on the transaction, process it according to the criteria found in the paragraph for term type I.
	Each seen from term must be in file.	(SEE REFERENCE CREATED)	Add seen from terms to the matching term record. For each seen from term found on the file, add the base term to the substituent term set of that record and post today's date in date field 2 of all such records. For each seen from term not in the file, create an applicable see reference record (Type B) and post today's date in the date field and date field 2 of all such newly-created see reference records.
	Each seen from and seen also from term must not be present in matching term record.	(ALREADY POSTED)	
	Each *seen from and *seen also from must be present in matching term record.	(NOT IN RECORD)	

Term Type	Editing Criteria	Monitor Error Message	Action if Valid
	Each *seen from and *seen also from term must be in file.	(NOT IN FILE)	Delete *seen from terms from the matching term record. For each *seen from term found in the file, remove the base term from the substituent term set of that record and post today's date in date field 2 of all such records. If in removing terms from such records, no further terms remain, purge that record and append the following message to the monitor:
			SEEN FROM _____ TERM(SEE REFERENCE PURGED)
	Each seen also from term must be in file.RECORD ESTABLISHED).	(NOT IN FILE, NEW TERM RECORD ESTABLISHED).	Add seen also from terms to the matching term record. For each seen also from term found in the file, add the base term to the substituent term set of that record and change the direction code from X to S or S to X. Post today's date in date field 2 of each such record.
A	Each *LC number must be in matching term record.	(LC NUMBER NOT IN RECORD)	For each seen also from term not in the file, create an applicable term record and change the direction code from X to S or S to X. Post today's date in date added field and date field 2 of each such record.
	Each LC number must not be in matching term record.	(LC DATA ALREADY POSTED)	
	After editing, at least one process-able element of data must remain.	REVISE ACTION NOT PROCESSED, ALL DATA ELEMENTS INVALID.	Delete *seen also from terms from the matching term record. For each *seen also from term found in the file, remove

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Term Type	Editing Criteria	Monitor Error Message	Action if Valid

the base term from the substituent term set of that record and post today's date in date field 2 of each such record.

Remove *LC Numbers from the matching term record and add LC numbers to the matching term record.

(4) Edit Criteria for "Term Change" Actions (Action Code 3). The monitor action message for all term change actions processed is: CHANGED TO XXXXX. (Where XXXXX is the new term.)

Term Type	Editing Criteria	Monitor Error Message	Action if Valid
All	Base term must be in file.	NOT IN FILE. TERM CHANGE NOT PROCESSED.	Change base term of matching term record to term appearing in see or seen from field. Post today's date in date field 1. Process all other elements of data as if the transaction were a "Revise" (action code 2) action.
	See or seen from term must not be in file.	CHANGE TO TERM ALREADY IN FILE. NOT PROCESSED.	Base term records matching each substituent term appearing in the changed term record must be sought and the reference to the original base term must be deleted and the revised base term posted. If the term record for a substituent term is not present in the file, that substituent term should be deleted from the record and the following notation should be posted on the monitor:

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Term Type	Editing Criteria	Monitor Error Message	Action if Valid
			SUBSTITUENT TERM XXXXX NOT IN FILE, NOT RETAINED. (Where XXXXX is the substituent term not found in the file.)
			For each term found in the file and altered, post today's date in date field 2 of each such record.

Section IV. BOOKS CONTROL SUBSYSTEM

1. Introduction

The purpose of the books control subsystem is to establish an automated system for formal control over acquisition, cataloging and circulation functions of the ALPHA System.

Each function of the books control subsystem will be described in the following order: acquisition module, cataloging module and circulation module.

2. Acquisition Module

The purpose of the acquisition module is to monitor and maintain central control files for all book ordering and receiving.

a. Acquisition Master File Organization

Because of the data requirements it was decided to maintain the on-order and receipt magnetic tape files on a line item basis--that is, a given title and its associated data will constitute a single record, figure 33. On the source documents for ordering, figures 29 and 30, appears a vendor name followed by a set of line items for the titles ordered. It was therefore necessary that each line item carry appropriate vendor name when it is specified on the ordering document. However, it is not proposed that each input order transaction card carry vendor name as this would be too wasteful of space since vendor name occupies a maximum of 45 characters. If this alternative were chosen, the vendor name together with the required control numbers and transaction code would leave only the 14 characters per card available for unique information. To solve this problem the vendor name is introduced as a special transaction and all subsequent line items of data "belong" to that vendor name till another vendor name is introduced in the incoming transactions.

Because of the large amount of data associated with each master tape record, multiple series of transactions are required both in the creation of these records and in their maintenance. Transaction codes have been assigned both to indentify individual transactions and to insure proper priority of processing. For ordering and receiving functions, these fall into four major transactions code series: 300, 400, 500, and 600. Each of these series is further subdivided into individual transactions. Refer to editing criteria and figure 32. It is possible, for a given series, that certain transactions may be legitimately absent.

On the other hand, certain combinations are required. These require-
ments are explained in detail in the editing criteria accompanying each
transaction type.

The sequence of all input transactions is as follows:

Control Number	Major
Item Number	Intermediate
Transaction Code	Minor

b. Acquisition Logic and Run Relations

Utilizing the computer run relation flow chart, figure
45, as a guideline, the acquisition module of the books control subsystem
run relations are easily followed from source documents to receipt of
item.

Input ordering transaction data is generated through the
submission of an appropriately annotated library request card by either
a patron or a member of the library staff to the circulation section.
Information contained on this form is subsequently keypunch transcribed
onto ordering transaction cards, figure 31, using an IBM 632 typing
calculator.

As shown in the flow chart the computer accepts a variety
of transaction types which are used to initiate and update the ordering
and receiving and master on-order file records.

For computer processing, all data contained on these input
transactions cards is converted to magnetic tape. This conversion is
accomplished in the computation center by a special punch card to magne-
tic tape conversion run which is presented in figure 45 as the conversion
from transaction card to magnetic tape.

During this conversion run which produces magnetic tape
images of input transaction card formats a 30 digit sort control word is
appended to the front of each record. This word, which may be either
call number or ordering control number depending on the type of transac-
tion, is determined through interrogation of the transaction code
appearing in columns 1-3 of each input record. At this point format
consistency for sorting purposes will be achieved.

When the input transaction data is in a machine readable
form and has been appended by the sort control word, the information
contained on the magnetic tape file is sorted into major sequence by con-
trol number, intermediate sequence by item number and minor sequence by
transaction code before processing against the master on order and
receiving and cataloging files.

This sorting action will be accomplished in run 2, which
will sort all input transactions into the sequence mentioned above.

Output from the sorting action in run two serves an input for a special editing program in run 3 which will edit each transaction per detailed book input transaction editing criteria and prepare a new transaction card, when required, for those transactions found in error. Information under the column "DATA TYPE" furnished for each transaction code type indicates the kind of field editing required. Utilization of these edits will determine processing acceptability of the book transtions to be processed against the Master On-Order and Receiving and Cataloging Files. Cycle errors found during this edit, if any, will be displayed on the first page of the Book Ordering and Receiving Transaction List with an indicative error message. As indicated earlier, for each transaction in error a new transaction card is punched with the field in error left blank. Any valid transactions associated with the transaction in error will be returned to the library marked (Recycle). A magnetic tape file of these recycled transactions is retained in the computation section to insure that no transaction is omitted when the transaction in error and its associated cards are resubmitted following indicated corrective action. Book transactions which have passed all editing requirements will be processed into a file of edited book transactions and used to update the Master On-Order and Receiving and Cataloging Files in the update run. These edited book transactions will be displayed on the second and subsequent pages of the Books Ordering and Receiving Transaction List and returned to the library.

One other output, the Books General Transaction File which contains 600 series card images generated by the 400 series book transactions is produced for use in runs six, seven, eight and nine to prepare the receiving, cataloging, patron cards (either for a patron or RSIC and the Books On-Order Mail List. Each 600 series transaction generated will be assigned a receiving card number by the computer.

When the book transactions have been properly sorted and edited, the Master On-Order and the Receiving and Cataloging Files from the last update must be made available in order to process the book edited transactions and update the master files.

During the update run, run 4, three types of actions affecting the Master On-Order and Receiving and Cataloging Files may be accomplished: one, new items may be added to the Master On-Order File; two, changes may be made to the files by addition of comments or update actions indicating an item is received and not cataloged; or three, deletion when an item is cataloged or cancelled.

The Master On-Order and Receiving and Cataloging Files from the last update along with the edited book transactions file are loaded onto the computer. The Master On-Order and Receiving and Cataloging Files will be sequenced control number by number into computer memory along with the edited book transactions. When a match of corresponding control numbers is made in either the Master On-Order and Receiving

and Cataloging Files with a corresponding number in the edited book transactions, the action indicated in the edited book transactions will be accomplished. All other items in the edited book transactions, which are new items to be added to the Master On-Order File, will be sequenced onto the Master On-Order File in control number sequence.

The edited book transactions, which may be any of the previously mentioned type actions, will be edited again during actual update processing. Utilization of these update edits will determine final processing acceptability of the edited book transactions, which are subsequently processed against the Master On-Order and Receiving and Cataloging Files. Errors found here, if any, will be displayed on the Book Ordering and Receiving Error List, figure 40, along with an appropriate error message.

The updated Master On-Order and Receiving and Cataloging Files will be displayed in three separate listings, the Weekly On-Order List, Daily On-Order List and a List of Cancelled Items. In order to prepare these outputs the print master and canned items files produced in run 4 are sorted into title sequence in runs 4A and 4B and processed through a book ordering and receiving generator run, run 5, which produces a master print file used in the preparation of the desired outputs. As would be expected, the Weekly On-Order List is produced and printed weekly. The Daily On-Order List is a supplement to the Weekly On-Order List and is accumulated in the Weekly On-Order List. The Cancelled Items List is prepared on request or every six months. One other output is produced in run 4, this is the Daily Receipt File which is not used at the present time.

Run 6 is a sort of all 600 series transactions from the edit run into transaction code and social security sequence. The output from this file will be used in run 7, the weekly book order match, along with the Patron File in Social Security Number Sequence to determine appropriate patron mailing information. Two output files will be obtained from run 7, one is a file of all unmatched transactions and the other of all matched transactions. The file of matched transactions will be sorted in run 8 into receiving card number and control number sequence. Following the sort in run 8 a book order weekly report generator run, run 9, will accumulate a weekly mailing file in receiving card number and control number sequence. This file along with the unmatched transaction file from run 7 will be processed into two outputs, the Books On-Order Mail List in receiving card number sequence and computer produced 600 series transaction cards for each matched and unmatched item. These transaction cards will be used in receiving, cataloging and reservation of a book for a patron.

Run 10A is a sort of all vendor authorization cards into control number sequence. This file will serve as input to run 10B, the

book order monthly financial report run, which will be displayed as the Financial and Workload Analysis, figure 36.

Run 11 is utilized to prepare an on order overdue file, which will be displayed as the Outstanding Orders in Vendor Sequence List, figure 42 and a computer produced 399 transaction card, figure 43, for each item overdue.

c. Run Details for Run 1

The purpose of this run, see figure 45, is to convert all daily transaction cards to magnetic tape appending to the front of each record a 30 digit sort control word.

(1) Run One Input

Raw transactions - Input to this run will consist of 398, 399, 400, 500 or 600 series transaction cards in input sequence.

(2) Run One Output

Book transactions - This file consists of magnetic tape images of daily transaction cards with the 30 digit sort control words appended. Record will be blocked ten records per block to facilitate sorting in run two.

(3) Run One Sequence

Run one will be processed in input sequence of the raw transactions.

d. Run Details for Run 2

The purpose of run two, see figure 45, is to sort all book transactions from run one into sequence according to appended sort control word.

(1) Run Two Input

Book transactions - This file will consist of magnetic tape images of daily transaction cards with a 30 digit sort control word appended.

(2) Run Two Output

Sorted book transactions - This file will consist of book transactions sorted according to the appended control words.

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(3) Run Two Sequence

Run two transactions will be processed into control number (major), item number (intermediate) and transaction code (minor) sequence.

e. Run Details for Run 3

The purpose of run three, see figure 45, is to edit all book transactions, generate a file of receiving, cataloging notification and patron reserve card images and assign receiving card number to each record.

Each book transaction will be edited according to input edits. and detailed editing criteria furnished for each type of transaction. Refer to editing criteria, paragraph p. this section.

For each 400 series transaction record approved in the edit run a file of 600 series transactions (receiving, cataloging notification and patron reserve cards) will be generated.

For each 600 series transaction generated a receiving card number will be assigned to the transaction by the computer.

(1) Run Three Input

(a) Book transactions - This file consists of sorted book transactions from run two.

(b) Recycled transactions - This file, if any, will consist of all transactions which were associated with a transaction found in error in a previous edit run.

(2) Run Three Output

(a) Edited book transactions - This file consists of book transactions which passed all editing criteria and will be used to update the Master On-Order and Receiving and Cataloging Files in run four.

(b) Book Ordering and Receiving Transaction List, see figure 39 - This list is a display of all book transactions attempted or processed in this update. Book transactions found in error, if any, will be displayed on the first page of this list with an appropriate error message. Book transactions, which passed all editing criteria, will be displayed on the second and subsequent page of this list.

(c) Recycled transaction cards - For each book transaction found in error the computer will produce a new transaction card

with the field in error left blank. The new transaction cards along with the input transaction cards in error will be returned to the library.

(d) Recycled transaction file - This file consists of card images of all book transactions associated with a transaction found in error. This file is retained in the computation center to insure that no transaction is omitted when the transaction in error is resubmitted following corrective action. All book transaction cards associated with an error transaction are returned to the library.

(e) Book general transactions - This file consists of all 600 series transactions generated by the approved 400 series transaction and is used to prepare the receiving, cataloging notification and patron reserve cards and the Books On-Order Mail List in run six.

(3) Run Three Sequence

Run three will be processed in control number (major), item number (intermediate) and transaction code (minor) sequence. A computer end of job routine writes from two work tapes onto a book miscellaneous tape the Book Ordering and Receiving Transaction List to be displayed in the format shown in figure 39.

f. Run Details for Run 4

The purpose of run four, see figure 45, is to update the Master On-Order and Receiving and Cataloging Files, prepare output files for daily and weekly on-order displays, a canned item file for weekly display and an error file.

(1) Run Four Input

(a) Edited book transactions - This file consists of all book transactions which passed the editing criteria in run three.

(b) Recycled receiving and cataloging file - This file consists of all book transactions which have been ordered, received and cataloged during the month.

(c) Recycled Master On-Order File - This file consists of all book transactions which have been ordered but not received or cataloged.

(2) Run Four Output

(a) Updated Master On-Order File - This file consists of the previously recycled Master On-Order File updated to include any

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new book transactions added, addition of comment to existing on order transactions and exclusion of transactions cancelled during the update. The Master On-Order File will be used to prepare the Financial Analysis and Workload Summary in run 10B.

(b) Print master file - This file consists of all transactions added to the master file during this update.

(c) Canned items - This file consists of items which were cancelled from the Master On-Order File during this update.

(d) Updated Receiving and Cataloging File - This file consists of the recycled Receiving and Cataloging File update to include any book transactions received or cataloged during this update. The Receiving and Cataloging File will be used to prepare the Financial Analysis and Workload Summary in run 10B.

(e) Error file - This file consists of all transactions which would not pass the update editing criteria and were not processed into either the Master On-Order or Cataloging and Receiving Files. These transactions will be displayed on the Book Ordering and Receiving Error List, figure 40.

(f) Daily receipts file - This file is retrieved in the update run but is not presently used.

(3) Run Four Sequence

Run four will be processed in control number (major) and item number (minor) sequence.

g. Run Details for Runs 4A and 4B

The purpose of run 4A and 4B, see figure 45, is to sort the canned items and print master files into alphabetical sequence by title.

(1) Runs 4A and 4B Input

(a) Canned items - This file consists of all cancelled items from this update run in control number sequence.

(b) Print master - This file consists of all items added to the Master On-Order File during this update.

(2) Runs 4A and 4B Output

(a) Sorted print master - This file consists of all items added to the Master On-Order File sorted into alphabetical sequence by title.

(b) Sorted canned items - This file consists of all cancelled items from the update run sorted into alphabetical sequence by title.

(3) Runs 4A and 4B Sequence

Runs 4A and 4B will be processed by title in alphabetical sequence.

h. Run Details for Run 5

The purpose of run five, see figure 45, is to generate a master print file, which produces a Daily On-Order List, a Weekly On-Order List and a Cancelled Items List from the canned item and print master files in run four.

(1) Run Five Input

(a) Sorted print master - This file from run 4B sorted into alphabetical sequence by title.

(b) Sorted canned items - This file from run 4A sorted into alphabetical sequence by title.

(2) Run Five Output

(a) Daily On-Order List - This list, see figure 34, consists of all transactions added to the Master On-Order File during this update.

(b) Weekly On-Order List - This list, see figure 34, consists of all daily transactions (accumulated) added to the Master On-Order File during the week.

(c) Cancelled Items List - This list, see figure 38, consists of all item deleted from the Master On-Order File due to cancellation.

(3) Run Five Sequence

Run five will be processed by title in alphabetical sequence.

i. Run Details for Run 6

The purpose of run six, see figure 45, is to sort the book general transactions file from run three into transaction code (major) and social security number (minor) sequence.

(1) <u>Run Six Input</u>

Book general transactions - This file consists of all 600 series transactions generated in run three, sequence of this file is control number (major), item number (intermediate) and transaction code (minor).

(2) <u>Run Six Output</u>

Sorted book general transactions - This file consists of all 600 series transactions sorted into transaction code (major) and social security number (minor) sequence.

(3) <u>Run Six Sequence</u>

Run six will be processed in transaction code (major) and social security number (minor) sequence.

j. <u>Run Details for Run 7</u>

The purpose of run seven, see figure 45, is to match all sorted book general transactions from run six with the Patron Master File in Social Security Sequence to obtain patron data for preparation of the mailing list and patron reserve cards in run nine.

(1) <u>Run Seven Input</u>

(a) Sorted book general transactions - This file consists of all 600 series transactions sorted into transaction code (major) and social security number (minor) sequence.

(b) Patron Master File - This file consists of all library patrons listed in social security number sequence.

(2) <u>Run Seven Output</u>

(a) Unmatched transactions - This file consists of all 600 series transactions which did not match a patron social security number.

(b) Matched transactions - This file consists of all 600 series transactions which matched a social security number in the patron file.

(3) <u>Run Seven Sequence</u>

Run seven will be processed in social security number sequence.

k. <u>Run Details for Run 8</u>

The purpose of run eight, see figure 45, is to sort all the

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matched transactions from run seven into receiving card number (major) and control number (minor) sequence.

(1) Run Eight Input

Matched transactions - This file consists of all matched 600 series transactions from run seven in social security number sequence.

(2) Run Eight Output

Sorted matched transactions - This file consists of all matched 600 series transactions sorted into receiving card number (major) and control number (minor) sequence.

(3) Run Eight Sequence

Run eight will be processed in receiving card number (major) and control number (minor) sequence.

1. Run Details for Run 9

The purpose of run nine, see figure 45, is to generate a list and punch file, which produces the receiving, cataloging notification and patron reserve cards and Books On-Order Mail List weekly.

(1) Run Nine Input

Sorted matched transactions - This file consists of all matched 600 series transactions from run eight sorted into receiving card number (major) and control number (minor) sequence.

(2) Run Nine Output

List and punch file - This file consists of all matched and unmatched transactions stacked according to receiving code number (major) and control number (minor) sequence will produce for display the Books On-Order Mail List, figure 41, and the ordering output transaction cards, figure 35.

(3) Run Nine Sequence

Run nine will be processed in receiving card number (major) and control number (minor) sequence.

m. Run Details for Run 10A

The purpose of run 10A, see figure 45, is to sort the vendor authorization cards into control number sequence.

(1) Run 10A Input

Authorization card file - This file consists of magnetic tape images of all vendor authorization cards in raw input sequence.

(2) Run 10A Output

Sorted authorization card file - This file consists of magnetic tape images of vendor authorization cards in control number sequence.

(3) Run 10A Sequence

Run 10A will be processed in control number sequence.

n. Run Details for Run 10B

The purpose of run 10B, see figure 45, is to prepare a monthly Financial and Workload Analysis.

(1) Run 10B Input

(a) Master On-Order File - This file is from the last daily run of the month.

(b) Receiving and Cataloging File - This file is from the last daily run of the month. Note: This file will be retired at the end of each month.

(c) Recycled year to date file - This file will contain a complete financial analysis of acquisitions made through the last daily run of the preceding month.

(d) Sorted authorization cards - This file will contain tape images of vendor authorization cards in control number sequence.

(2) Run 10B Output

(a) Updated year to date file - This file will contain a complete financial and statistical analysis of acquisitions made by month and year through the last daily run of the month. This file will be recycled and used in preparation of the next month's statistical reports.

(b) Error, financial and workload file - This file will contain any errors indicated, if any, along with the financial analysis and workload analysis. This file will be displayed as an Error List, figure 37, and the Financial and Workload Analysis, figure 36.

(3) Run 10B Sequence

Run 10B will be processed in control number sequence.

A computer end of job routine formats the financial analysis list in alphabetical sequence by vendor.

o. Run Details for Run 11

The purpose of run 11, see figure 45, is to produce a list of on-order overdue in vendor sequence. This run will be made on a semi-annual or request basis.

(1) Run Eleven Input

Master On-Order File - This file is from the last daily update run of the month (semi-annually) or the requested date.

(2) Run Eleven Output

(a) File of overdue items - This file will contain a complete listing of all items on order and overdue. This file will be displayed as the Outstanding Order List, figure 42.

(b) 399 cards file - This file will contain tape images of all overdue items and will produce 399 transaction cards for each, see figure 43.

(3) Run Eleven Sequence

Run eleven will be processed in control number sequence.

p. Editing Criteria

Edits are rules which specify that certain data must be or cannot be in a specific field of the transaction card, and that certain transaction cards are either required or optional in a transaction series.

The acquisition edits are presented in the following manner. First is an explanation of the purpose of each individual transaction series, the transaction card format requirements for each card in the series and the editing requirements for each card. Information under the column "DATA TYPE" furnished for each transaction card indicates the kind of field editing required. This is followed by a listing of all computer edits presently used in the acquisition module of the books control subsystem. These computer edits are divided into two types, input and update. The input edits are used in the computer editing run and refer to field editing requirements. The update edits are used in the computer update run and refer to specific action which must be met before inclusion into and update of the master files can be accomplished.

(1) TC 399 Card

The purpose of the TC 399 is to cancel or delete a record on the Master On-Order File.

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TC	FUNCTION	REQUIRED IN SERIES	REMARKS
399	To cancel or delete a record on the Master On-Order File.	Optional	Must match Master On-Order File on control and item number.

CARD COLUMN	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	399 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 27	Blank	6	Blank
28 - 45	Explanation	18	A
46 - 80	Blank	35	Blank

Transaction code 399 is used to cancel or delete an item on the master file. It must match an item already on the master: If an item has been deleted it will be flagged as a deletion (d) or cancellation (c) and written on the received and cataloged tape.

If an explanation is needed (alpha information in columns 28 - 45), it should be moved to the beginning of the quantity received field of the Master On-Order before writing out.

(2) TC 400 Series

The purpose of the TC 400 series is to add new items to the On-Order Master File and to generate pending receipt cards. A set of such cards is required to create each line item added to the file as shown below:

TC	FUNCTION	REQUIRED IN SERIES	REMARKS
400	To furnish vendor name for all subsequent line item members of a given order.	Yes	Vendor name "holds" until another TC 400 is encountered or a non-400 series transaction is read.
410	To furnish author for individual line item.	Optional	

TC	FUNCTION	REQUIRED IN SERIES	REMARKS
420	To furnish title for individual line item.	Yes	
430	Title continuation if required.	Optional	
440	Title continuation if required.	Optional	
450	To furnish quantity and unit cost to individual line item.	Yes	
460	To reserve individual line item for patron.	Yes	May exist in multiples.
461	To furnish "note" information.	Optional	

As can be seen above a given 400 series requires as a minimum the TC 400, 420, 450 and 460 transactions with equivalent control and item numbers to create a master on-order record. Therefore every 400 series should be edited to insure the presence of these transactions. Additional editing detail is furnished with the individual TC descriptions which follow.

(a) Transaction Code 400

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	400 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 36	Purchase Order No.	15	AN or Blank
37 - 74	Vendor	38	A or Blank
75 - 80	Receiving Card No.	6	Blank

When editing TC 400, if purchase order number and vendor

are blank, item number must be 001. If this condition exists it indicates the first item of a blanket purchase order and is a valid transaction. All other TC 400's should have a vendor to pass the edit test. Items being purchased on coupon requests may have a blank purchase order number field; therefore blank purchase order number fields are valid.

In the update program the TC code 400 should never contain control number and item number equal to a record on the master on-order tape. TC code 400 with unmatched control number and item number is a signal to the computer to add a new item.

TC 400's which pass the edit will be held in memory to supply vendor name for all master on order records created from subsequent transactions with equivalent control numbers. A given TC 400 vendor name will "hold" till another TC 400 transaction is read or a different series of TC codes is encountered.

(b) Transaction Code 410

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	410 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Author	53	A
75 - 80	Receiving Card Code	6	Blank

This transaction code is not always present in the TC 400 Series as the author may not be known at the time of ordering. If the TC 410 is present and the control number and the item number are equivalent to the preceding record, the preceding record should be TC 400. If the TC 400 is present and the control number is equal to but the item number is greater than the preceding record, the preceding record should be TC 450 or TC 460. This condition signifies a new line item. Any other condition is an error.

The left justified author field should be edited for alpha information. Unused portions of the field will contain blanks. (Author's will be separated with a slash character.)

(c) Transaction Code 420

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	420 (Constant)

4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Title	53	A
75 - 80	Receiving Card Code	6	Blank

The TC 420 transaction must be present in the TC 400 series and must be immediately preceded by one of the following types of transactions:

1. TC 400 with equivalent control and item number.
2. TC 410 with equivalent control and item number.
3. TC 450 or 460 with equivalent control and lower item number.

(d) Transaction Code 430

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	430 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Title (Continued)	53	A
75 - 80	Receiving Card Code	6	Blank

This transaction is not always present in the 400 series. If it is present it must be immediately preceded by a TC 420 transaction with equivalent contol and item numbers.

(e) Transaction Code 440

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	440 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Title (Continued)	53	A

| 75 - 80 | Receiving Card Code | 6 | Blank |

This transaction is not always present in 400 series. If it is present it must be immediately preceded by a TX 430 transaction with equivalent control and item numbers.

(f) Transaction Code 450

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	450 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 25	Quantity Ordered	4	N
26 - 30	Unit Cost	5	N
31 - 60	L C Classification	30	AN or Blank
61 - 67	L C Card Order Number	7	N or Blank
68 - 73	Date	6	N
74 -	Blank	1	Blank
75 - 80	Receiving Card Code	6	Blank

The TC 450 transaction code must be present in the 400 series. The control number and the item number must be equal to the preceding transaction. It must have a quantity equal to or greater than one. It must have a unit cost equal to or greater than one. It may or may not have a Library of Congress classification. If it does have a Library of Congress classification the receipt card generated from this item on order must reflect the Library of Congress classification and a transaction code of 611. If the Library of Congress classification is not known the receipt field will be blank and a transaction code of 610 will be assigned. (See transaction code 610) A Library of Congress card order number may or may not appear in the card. The date of the order must always be present. The next field will always be blank.

(g) Transaction Code 460

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	460 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 31	Social Security No.	10	N
32	Priority Code	1	N
33	Facility Code	1	AN or Blank
34 - 36	Reserved	3	Blank
37 - 74	Blank	38	Blank
75 - 80	Receiving Card Code	6	Blank

The 460 transaction code is not always present in the 400 series. If present it must be immediately preceded by a TC 450 transaction with equivalent control and item numbers. If the TC 460 transaction is present a receipt card must be generated with the TC 620. (See transaction code 620)

If more than one patron has requested the ordering of this book, multiple TC 460 transactions may be present, and multiple TC 620's must be generated.

(h) Transaction code 461

CARD COLUMN	FIELDS	LENGTH	DATA TYPE
1 -3	Transaction Code	3	461 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Comment	53	AN
75 - 80	Receiving Card Code	6	Blank

The TC 461 comment code is not always present in the TC 400 series. If present it must be immediately preceded by a TC 450 or TC 460 transaction with equivalent control and item numbers. If the TC 461 transaction is present, a receipt card must be generated with TC 622. (See transaction code TC 622.)

(3) TC 500 Series

The purpose of the TC 500 series (excluding TC 501) is to process "approval shipments" (unordered receipts) by adding them to the On-Order Master File. No pending receipt card is created for this series.

TC	FUNCTION	REQUIRED IN SERIES	REMARKS
500	To furnish vendor name for all subsequent line item members of a given order.	Yes	Vendor name "holds" till another TC 500 is encountered or a non-500 series is read.
501	To update on order records with purchase order, vendor and item number for blanket orders.	N/A	Must match Master On-Order File on control and item number.
510	To furnish author for individual line item.	Yes	
520	To furnish title for individual line item.	Yes	
530	Title continuation if required.	Optional	
540	Title continuation if required.	Optional	
550	To furnish quantity, unit cost, etc., to individual line item.	Yes	
560	To update the receiving fields of the master on order record.	Yes	

(a) Transaction Code 500

CARD COLUMNS	FIELDS	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	500 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 36	Purchase Order No.	15	N or Blank
37 - 74	Vendor	38	A
75 - 80	Blank	6	Blank

TC 500 is an "approval shipment" type of transaction. By this we mean the item has been received without having been ordered. Therefore, no receiving cards will be produced by the computer for the 500 series of transactions.

All TC 500's should have a vendor to pass the edit test. They will not have a purchase order number at the time they are being added to the master file, therefore, the purchase order field will be blank.

In the update program, the TC code 500 should never contain a control number and item number equal to a record on the master on-order tape. TC code 500 with unmatched control and item number is a signal to the computer to add a new item.

TC 500's which pass the edit and go to the update program will be held in memory to supply vendor name for all master on-order records created from subsequent transactions with equivalent control numbers. A given TC 500 vendor name will "hold" till another TC 500 transaction is read or a different series of transaction codes is encountered.

(b) Transaction Code 501

The purpose of this transaction is to update the Master On-Order File with vendor, purchase order number and item number, which were unknown at the time of ordering as is the case with blanket orders.

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	501 (Constant)
4 - 17	Control Number	14	AN

18 - 21	Item Number	4	N
22 - 36	Purchase Order No.	15	N
37 - 74	Vendor	38	A
75 - 78	Item Number	4	Blank
79 - 80	Blank	2	Blank

The control number and item number of TC 501 must match on item and the On-Order Master File. This transaction will update the purchase order field of the on order master. It will not replace the item number that is part of the control.

(c) Transaction Code 510

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	510 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Author	53	A
75 - 80	Blank	6	Blank

The logic for the TC 510 transaction is the same as the TC 410 with the exception that the TC 510 will always be present in the series and the author field should never be blank.

(d) Transaction Code 520

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	520 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Title	53	A
75 - 80	Blank	6	Blank

The TC 520 transaction must be present in the 500 series and must be immediately preceded by a TC 510 transaction with equivalent control and item numbers. It will update the title field of the File On-Order Master.

(e) Transaction Code 530

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	530 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Title (Continued)	53	A
75 - 80	Blank	6	Blank

This transaction is not always present in the 500 series. If it is present, it must be preceded by a TC 520 with equivalent control and item number.

(f) Transaction Code 540

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	540 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Title (Continued)	53	A
75 - 80	Blank	6	Blank

This transaction is not always present in the 500 series. If it is present, it must be preceded by a TC 530 with equivalent control and item number.

(g) Transaction Code 550

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	550 (Constant)

248

4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 25	Quantity Ordered	4	N
26 - 30	Unit Cost	5	N or Blank
31 - 60	L. C. Classification	30	AN or Blank
61 - 67	L. C. Card Order No.	7	N or Blank
68 - 73	Date	6	N
74	Blank	1	Blank
75 - 80	Blank	6	Blank

The TC 550 transaction must be present in the 500 series. It must contain the quantity ordered and the date of the order. It may or may not have a Library of Congress classification and unit cost. It will never have a Library of Congress card order. A receiving card will not be produced from this transaction, since the book will have been received before an order was placed.

(h) Transaction Code 560

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	560 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 27	Blank	6	Blank
28 - 31	Quantity Received	4	N
32 - 37	Voucher Number	6	AN or Blank
38 - 41	XP	4	N or Blank
42 - 45	NXP	4	N or Blank
46 - 51	Total Cost	6	N or Blank
52 - 57	Date Received	6	N

| 58 - 80 | Blank | 23 | Blank |

This transaction must always be present in the TC 500 series. It will update the receiving portion of the master at the time the item is being added to the master tape and will flag the received field. It must always contain the quantity received. The voucher field may be blank; if it is blank a number quantity must appear in the XP field. This amount must be the same as the quantity received.

If the voucher number is not blank, a numeric amount equal to the amount received must appear in the NXP field. It may or may not have a total cost. The date received should always be the same as the date ordered in the master.

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(4) GENERAL LOGIC FOR PROCESSING TC 600'S

Does TC 600 Match Master on Control & Item Number? — NO → ERROR Unmatched TC 600

YES

Is there an unflagged Master for this transaction? — NO → ERROR NO Unflagged Master

YES

Is this a Partial Shipment? — YES → Subtract Amount Received From Amount Ordered and Save Difference → Flag Master as "Pending Cataloging" → POST TO MASTER: Quantity Received, Voucher, XP or NXP, Total Cost and Date Received. → Write Out Master Less Patron Trailers → UNFLAG MASTER Replace Amount Ordered with saved "Difference" Blank out Amount Received and Voucher, XP or NXP Total Cost, Date Received. Restore Master for other possible transactions. → OUT

NO

POST TO MASTER: Quantity Received, Voucher, XP or NXP, Total Cost and Date Received. → FLAG MASTER as "pending" Cataloging → OUT

(a) Transaction Code 600

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	600 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 27	Date of Order	6	N
28 - 31	Quantity Received	4	N
32 - 37	Voucher	6	AN
38 - 41	XP	4	N or Blank
42 - 45	NXP	4	N or Blank
46 - 51	Total Cost	6	N
52 - 57	Date Received	6	N
58	Change	1	A or Blank
59 - 69	Blank	11	Blank
70 - 73	Quantity Ordered	4	N
74 -	Blank	1	Blank
75 - 80	Receiving Card No.	6	N

On receipt of ordering transactions (TC series 400) a special pending receipt card TC 600 is produced to serve as a receiving transaction when the items actually arrive. When produced the TC 600 card contains information in columns 1 - 27, 70 - 73, and 75 - 80 only with the remaining blank fields to be filled in by the receiving clerk at the time of receipt of the items. Thus, when completed, the TC 600 card serves as a receiving document.

TC 600 must match the Master On-Order File on both control and item number as indicated on the accompaning block diagram.

TC 600's will not be processed against items flagged as received and not yet cataloged.

If C appears in Column 58 all receiving information will be changed.

(b) Transaction Code 602 (Replaced by 398)

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	398 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Comments	53	A
75 - 80	Receiving Card Code	6	N

TC 398 is used to place comments in the master record at the time an item has been received or cancelled.

(c) Transaction Code 610

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	610 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 51	L. C., Dewey Class	30	AN
52 - 69	Blank	19	Blank
70 - 73	Quantity Ordered	4	N
75 - 80	Receiving Card Number	6	N

Transaction code 610 is produced by the computer during the addition of new lines to the master for which the call number is unknown (TC 400 Series). Note: Each time a new item is added to the Master On-Order File thru the 400 series either a TC 610 or a TC 611 will be produced by the computer. If the Library of Congress classification field is blank after TC 450 has been processed, a TC 610 will be produced. If the Library of Congress classification field is not blank, a TC 611 will be produced.

Once the item has been received, the TC 610 will
be pulled from the on order manual file and forwarded to the cataloger
along with the book. Once the book has been cataloged, the cataloger
will punch the Library of Congress classification into columns 22 - 51,
and return the TC 610 transaction card to the computer. The update pro-
gram will take the information contained in the TC 610 and place it in
the Library of Congress classification field before it is transferred
to the received and cataloged file. The item will at time be taken off
the on-order master.

(d) Transaction Code 611

CARD COLUMNS	FIELDS	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	611 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 51	L.C./Dewey Class.	30	AN
52 - 69	Blank	18	Blank
70 - 73	Quantity Ordered	4	N
74	Blank	1	Blank
75 - 80	Receiving Card Code	6	N

Transaction code 611 will be produced by the computer
during the addition of new items to the Master On-Order File. (TC 400
series only) Each time a new item is added to the Master On-Order File
thru the TC 400 series either a 610 of a TC 611 will be produced by the
computer. If the Library of Congress classification field is blank
after the TC 450 has been processed, a TC 610 will be produced.
If the Library of Congress classification field is not blank, a TC 611
will be produced.

Once the item has been received, the TC 611 will be
pulled from the on-order manual file, and forwarded to the cataloger
along with the book. When the book has been cataloged, the cataloger
will return the transaction card, TC 611 to the computer. The TC 611
is a signal to the update program that this item has been cataloged and
is ready to be transferred to the received and cataloged tape. The
item, will at this time, be taken off the on-order master.

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	620 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 31	Social Security No.	10	N
32	Priority Code	1	N
33 - 69	Blank	37	Blank
70 - 73	Quantity Ordered	4	N
74	Blank	1	Blank
75 - 80	Receiving Card Code	6	N

TC 620 is originally produced by the computer at the time of adding TC 400 series to the on-order master. TC 620 will be returned to the computer to remove the patron request whenever a partial shipment of an item is received, or if an order has been received prior to the patron request and the librarian chooses to fill his request before the item ordered for him is received.

If an item is received completely, TC 620 will not be returned to the computer for removal of the patron.

(f) Transaction Code 621

CARD COLUMNS	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	621 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 31	Social Security No.	10	N
32	Priority Code	1	N
33 - 69	Blank	37	Blank

70 - 73	Quantity Ordered	4	N
74	Blank	1	Blank
75 - 80	Receiving Card Code	6	N

The TC 621 will be prepared by the circulation librarian to reserve a book on order for a patron. In the update portion of the daily run, TC 621 should match a item on the Master On-Order File. It will add another patron to the end of the variable length record. The due-out field of the master on-order field should be increased by one.

(g) Transaction Code 622

CARD COLUMN	FIELD	LENGTH	DATA TYPE
1 - 3	Transaction Code	3	622 (Constant)
4 - 17	Control Number	14	AN
18 - 21	Item Number	4	N
22 - 74	Comment	53	AN
75 - 80	Receiving Card Code	6	Blank

The TC 622 comment card is produced by the TC 461 comment card.

(5) Input Transaction Edits

Message	Meaning	Corrective Action
ALPHA FIELD CONTAINS NUMERICS	Transaction card field contains numerics in alpha field. Check appropriate card code data field requirements in editing criteria.	Correct and resubmit.
BLKT ORD, PO NR MUST BE BLANK	Purchase order number is not blank for item number 001.	Correct and resubmit entire item.
BLKT ORD, VENDOR MUST BE BLANK	Vendor is not blank for item number 001.	Correct and resubmit entire item.

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Message	Meaning	Corrective Action
BOTH NXP AND XP, CANT BE BLANK	All items are either XP or NXP.	Correct and resubmit new 600 series transaction.
CTL, ITEM, CODE SAME AS PREU TX	Transaction submitted is duplicate to previous transaction or code is other than 460, 620 or 621.	Remove transaction card in error and resubmit correct transaction cards.
DEBIT/CREDIT CODE NOT D OR C	This message is self-explanatory.	Correct and resubmit entire item.
FACILITY CODE NOT A/N/C/M/R	This message is self-explanatory.	Correct and resubmit entire item.
FIELD CANNOT BE ALL BLANKS	Non-blank data field has been left blank. Check appropriate data field editing criteria.	Correct and resubmit.
FIELD MUST BE ALL BLANK ONLY	Non-blank data has been included in a blank field. Check appropriate card code data field editing criteria.	Correct and resubmit.
FIELD MUST BE NUMERIC ONLY	Transaction card field contain alphas in numeric field. Check appropriate card code data field editing criteria.	Correct and resubmit.
FIRST CHARAC-TER OF LC NR INVALID	This message is self-explanatory.	Correct and resubmit entire item.
FIRST CHAR FLD 4, IS NOT ALPHA	This message is self-explanatory.	Correct and resubmit entire item.
LC NR FLD 1, IS NOT PURE ALPHA	This message is self-explanatory.	Correct and resubmit entire item.
LC NR FLD 2, NOT PURE NUMERIC	This message is self-explanatory.	Research original request, correct and resubmit.

Message	Meaning	Corrective Action
LC NR FLD 3, HAS PERIOD ONLY	Field is incomplete.	Research original request, determine LC number and resubmit.
LC NR FLD 3, MISSING PERIOD	Field must contain a period to be valid.	Research original request, correct and resubmit.
LC NR FLD 4, HAS ONE CHAR ONLY	LC number is incomplete.	Research orignal request, determine LC number and resubmit.
LC NR FLD 5, NOT PURE NUMERIC	This message is self-explanatory.	Research original request, correct and resubmit.
MAX NR OF TX, NOTIFY PROGRAMMER	Ten patrons is the maximum number that can be handled on an individual order. This transaction exceeds the tenth patron.	Resubmit excess patron on new 400 series transactions.
NON-XP LESS THAN QTY RECEIVED	NON-XP items received and quantity ordered must be equal.	Resubmit 600 series transaction with correct NON-XP item received.
NUMERIC FIELD CONTAINS ALPHAS	This message is self-explanatory.	Correct and resubmit entire item.
PRIORITY CODE NR IS INVALID	Code must be A-Army, N-NASA, C-Contractor or R-RSIC.	Check original request, determine correct code and resubmit.
QTY RCVD, GREATER THAN QTY ORD	Quantity received must equal quantity ordered.	Resubmit new 600 series transaction with correct quantity.
RCVD CARD CODE MUST BE BLANK	Receiving card code field 75-80 on all 400-500 series transactions must be blank. Check transaction code this may be in error.	Correct and resubmit.
RCVD CARD CODE NOT NUMERIC	Receiving card code field 75-80 must be all numeric.	Correct and resubmit.

Message	Meaning	Corrective Action
SOCIAL SECU-RITY NR INVALID	Social security number not all numeric.	Determine correct social security number and re-submit entire item number.
TITLE FIELD CANNOT BE BLANK	Each 400-500 series transaction submitted must have a title.	Determine title from original request and resubmit entire item.
TX 540 NOT PRECEDED BY TX 530	All 540 transactions must be preceded by a 530 transaction.	Delete 540 transaction if not required and resubmit entire transaction.
VENDOR CANNOT BE BLANK	All 400-500 series transactions must contain vendor identification for item numbers other than 001.	Determine vendor and resubmit entire item(s).
XP IS LESS THAN QTY RECEIVED	XP items received and quantity ordered must be equal.	Resubmit 600 series transaction with correct XP item received.
XP AND NXP COUNT IS TOO LOW	This means the XP and NXP count is less than quantity received in 600 transaction.	Correct by keypunching in the correct number and resubmit.

(6) Update Transaction Edits

Message	Meaning	Corrective Action
OVER MAX RESERVATIONS ON BOOKS	Ten patrons is the maximum number that can be handled on an individual order. This transaction exceeds the tenth patron.	Resubmit request on new 400 transaction cards.
CANCELLING PATRON NOT FOUND	The 620 transaction submitted does not match any social security number on the master file. This could be a keypunch error on either TL and item number or social security number.	Check original patron request card, verify social security number and resubmit.
SPACE NOT AVAILABLE FOR PATRON	When this error occurs the programmer will be notified as the quantity ordered and the number of patrons both allow another patron but blank space is not found on the master.	Resubmit request on new 400 transaction cards.

Message	Meaning	Corrective Action
TRANSACTION CODE INVALID	This message is self-explanatory.	Resubmit with correct transaction code.
TRANSACTION CODE DOESN'T MATCH MASTER	This is a 600, 610, 621, 560, 399, etc. It erroneously did not match master.	Check input as well as print out to determine error. Resubmit request with correct information.
400-500 STRING INC OR DUPE TX	This message is self-explanatory.	Transaction string should be either 400 or 500. Correct and resubmit.
PATRONS EXCEED BOOKS ON ORDER	Quantity ordered must equal or exceed patrons. In this case it was insufficient.	Resubmit request on new 400 transaction cards.
NO UNFLAGGED MASTER FOR TX	A 600 series transaction was submitted and masters matching were all flagged as received.	Usually the wrong receiving cards were pulled or possibly a partial shipment later, resubmit.
NO RECEIVED EXCEEDS NO ORDER	The 600 series transaction quantity received field exceeds master quantity ordered field. This is likely a keypunch error or vendor code.	Error in receiving correct and resubmit.
NO RECEIVED FLAG FOR TRANS	610 or 611 transaction was submitted before item was received.	Send in 600 transaction card again. Hold 610 or 611 and send in at next update.
TX CODE IS AN INVALID CODE	Error in submitting a code other than 398, 399, 400, 500 or 600 in field 01-03.	Correct and resubmit.
TRANS SHOULD NOT MATCH MASTER	This is in the case of a 400-500 series transaction matching the master. This should not happen.	There is an error in the TL number or item number. Correct and resubmit.
MASTER MATCHING THIS TX RECEIVED	The master file probably made a match on a partial shipment.	Determine if the correct 600 series transaction were submitted or if the second copy of a partial shipment was held until first copy received was cataloged.

3. Cataloging Module

    The purpose of the cataloging module is to establish, monitor
and maintain central control files of bibliographic data for all
cataloged book holdings.

    a. Cataloging Module Master Files

    The book cataloging module consists of a series of computer
runs as shown in figure 72 designed to maintain the following master
files:

    (1) Bibliographic Master, figure 46.
    (2) Inventory Control Master, figure 49.
    (3) Search Master, figure 51.
    (4) Subject Heading Authority Master, figure 52.

    The design of the book cataloging module is based on the
concept of imputting bibliographic data consisting of variable num-
bers of data elements each of variable length. These bibliographic
data elements are identified by standard codes shown in figure 47.
In addition, the preservation of case designation for the main entry,
the bibliographic paragraph, and the informal notes will be maintained
thruout the system. Because of these, and other requirements raw input
data, figure 71, to the cataloging module will be captured on paper
tape according to instructions contained in paragraph 3.b. in the
cataloging data capture procedures, chapter 2, section IV and then
converted to magnetic tape.

    Primary input to the system will consist of bibliographic
data for new holdings; deletions, adds, and changes to existing
holdings; and total deletes of bibliographic data.

    The cataloging module features authority checks on all
incoming call numbers and subject headings.

    b. Cataloging Logic and Run Relations

    Utilizing the computer run relations flow chart, figure 72,
as a guideline, the cataloging module of the book control subsystem
run relations are easily followed from source document to printed shelf
list.

    Raw transactions input data will be generated on paper tape
obtained as a by-product of typing a standard lexicographic cataloging
control input form, figure 55, on a Friden Flexowriter.

    The paper tape is then converted to magnetic tape by a
specialized conversion program. The conversion is shown in figure 72

as the conversion from paper tape to magnetic tape.

Even though the transactions input data is now in a machine readable form, the information contained on the magnetic tape must be edited and rearranged into a more acceptable format before processing against the cataloging master files.

The first computer run will validate the call numbers, data element codes, data elements, action codes, and other data. It will create a unit record for all valid data elements from the raw input data and reformat each call number into a machine sortable form. Any transactions which failed to pass the edits will be dropped off in the form of error transactions.

Run 2 will take the valid transactions from the edit run and the previous day's wash actions from the subject heading update run and sort them into call number, data element code, action code and copy number sequence.

When the input transactions have been properly sorted, the original data stored in the Bibliographic and Inventory Master Files from the last update must be made available in order to process the sorted transactions and update the master files.

During the update run, run 3, several types of actions, as indicated by figure 48, affecting the Bibliographic and Inventory Master Files may be accomplished.

The Bibliogaphic and Inventory Master Files from the last update along with the sorted input transactions file are loaded onto the computer. The Bibliographic and Inventory Master Files will be sequenced call number by call number into computer memory along with the sorted transactions file. When a match of corresponding call numbers is made in either the Bibliographic or Inventory Master Files with a corresponding call number in the sorted transactions file, the action indicated in the sorted transactions file will be accomplished. All other items in the sorted transactions file, which must be new items to be added to the Bibliographic and Inventory Master Files, will be sequenced onto the Bibliographic and Inventory Master Files in call number sequence.

The sorted transactions, which may be any of the type indicated in figure 48 will be edited again during actual update processing. Utilization of those update edits will determine final processing acceptability of the sorted transaction, which are subsequently processed against the Bibliographic and Inventory Master Files. Errors found here, if any, will be displayed on the Update Error List, figure 63, along with an appropriate error message. Any transaction containing subject headings will be written onto the daily monitor and subject heading tapes.

The updated Bibliographic Master File will be extracted in run 4 and sorted for display as an Accession List, Number List, Shelf List, Author List, Title List and Subject Heading List.

Run 5 will sort the subject heading actions and wash actions from the daily bibliographic update run into subject heading sequence.

Run 6 will post new subject headings to the Subject Heading Master File, and to the search master. At this time feedback transaction will be prepared to delete any subject headings that were assigned in error. New subject headings will be flagged, selected, validated and written for display in a cumlative manner.

c. Run Details For Run 1

The purpose of this run, see figure 72, is to edit for validity of call numbers, data element codes, data elements, action codes and other data; create unit records for each valid data element appearing in the raw bibliographic data; and reformat the call numbers associated with each unit record into machine sortable form.

Each input record will be edited for a valid call number according to the editing criteria, paragraph i. this section. If a call number error is detected during the edit run, the entire input record will appear on the error listing, figure 62, together with an appropriate error message explaining the cause of the error. If any data element associated with a given call number fails to pass the edits, an error message together with the data element failing the edit will appear as an error. Individual records will be generated in this run for all valid data elements.

(1) Run One Input

Raw bibliographic data, figure 71, in input sequence.

(2) Run One Output

(a) Formatted data element records, figure 46, in random sequence.

(b) Edit error tape to be formatted for display as the Edit Error List, figure 62.

(3) Run One Sequence

Run one will be processed in input sequence of the raw transactions.

d. Run Details For Run 2

The purpose of this run, see figure 72, is to take the valid transactions for the edit run and the previous day's wash actions from the subject heading update run and sort them into call number, data element code, action code and copy number sequence.

    (1) Run One Input

        (a) Formatted data element records file from run one.

        (b) Wash actions file from the previous day's subject heading update.

    (2) Run One Output

Wash action and valid data element record sorted into call number, data element code, action code and copy number sequence.

    (3) Run Two Sequence

Run two will be processed in call number, data element code, action code, and copy number sequence.

e. Run Details For Run 3

The purpose of this run is to authorize input call numbers, update the Bibliographic and Inventory Master Files, select new accessions for subsequent production of the weekly accessions notice, and to select and isolate subject heading transactions.

    (1) Run Three Input

        (a) Bibliographic transactions, figure 46, in sequence by call number.

        (b) Inventory Control Master, figure 49, in sequence by call number.

        (c) Bibliographic Master, figure 46, in sequence by call number.

        (d) Wash actions - Same as figure 46.

    (2) Run Three Output

        (a) Daily Monitor Report, figure 60, in sequence by call number.

(b) Cumulative accessions, figure 46, in sequence by call number (weekly).

(c) Updated inventory control master - Same as input (b) above.

(d) Updated inventory control master - Same as input above.

(e) Error tape, figure 60, in sequence by call number.

(f) Wash actions and subject headings - same as figure 46.

(3) Run Three Sequence

Run three will be processed in call number sequence.

(4) Discussion

The daily update of the Bibliographic and Inventory Masters accepts a variety of actions from the daily action tape. During the processing run the Inventory Master and Bibliographic Master are updated. Error messages along with the error record are produced. New titles are flagged and once a week are written onto an output tape for further processing. A supplement listing reflecting changes in the Bibliographic Master will be produced on a daily basis.

During this run the call numbers will be checked for duplicates. Any duplicates will appear on the update error listing. Any call number failing to match a call number on the Inventory Master File will be checked further to see if it is a new addition to the holdings. If it is new, the records will be added to the Bibliographic and Inventory Masters. If not new, all individual records containing this call number will appear on the update error listing. Records containing subject headings will be written onto the daily monitor tape and onto the subject heading TX tape.

The following text will present the logic for updating by action code.

(a) "Delete" Action Code 0. There are different types of format for a delete action code. One format, figure Ao, will delete all the subject headings from the Search Master by preparing wash actions, and/or delete an entire record from the Inventory Master File as well as the Bibliographic Master File. One format, figure Bo, will delete a specific copy from the Inventory Master (provided the specified copy is coded as "being on the shelf"). The other, format Co, will delete an element of data from the Bibliographic Master File.

In each case the call number of the action TX must match both the Inventory and the Bibliographic Master Files.

Valid Formats for Delete Actions Going to Update

Figure A_o

Figure B_o

Figure C_o

NOTE: In each case the * is the only character present in the data field.

If the format of a delete TX is the same as figure Ao, and the data element code is Abb, the inventory and bibliographic record will be deleted. The deleted bibliographic record will be flagged and written onto the daily monitor tape. During the print program the flagged deleted records will be separated and written onto a delete tape and printed as per figure 61. If the record being deleted contains subject heading data ("P" type element codes) a delete wash action will be prepared and written onto the "wash action" and subject heading TX tape. If the format is Ao and the data element code is Pbb, the action will have no effect on the Bibliographic or Inventory Masters. It will go directly to the subject heading TX tape and delete all the terms during the updating of the Search Master.

If the format of a delete TX is the same as figure Bo, and the copy number of the copy to be deleted on the Inventory Master is coded "shelf," change the flag to blank and subtract one from the number of copies and quantity on hand fields in the Inventory Master and one from the number of copies in the Bibliographic Master record.

If the format of a delete TX is the same as figure Co, and the data element code matches a data element code on the Bibliographic Master record, delete the matching record and write it onto the daily monitor tape. If the data being deleted is the "main entry" set a switch to assure that another TX bears the new "main entry." If the data element code is one of the subject heading codes, prepare a delete wash action and write it onto the "wash action" and subject heading TX tape.

(b) "New" Action Code 1.

Call No.	Copy No.	No. of Copies			*ANN	1	Data Variable	$\pm$
52	4	4	1	1	3	1		

Cataloger's Initial
Special Indication
Data Element Code
Action Code

*A=Alpha, N=Numeric   Bibliographic Master

Figure D_o

If the call number of the TX is not equal to the Inventory Master (authority), and the action code is "1," build a new record for the Bibliographic Master and the Inventory Master. If the following TX's have the same call number and action code of "1," zero the copy number, number of copies, special indicator, and cataloger code fields, and add them to the Bibliographic Master. The first

author data element will affect the author field in the Inventory Master, and the first title data element will affect the title field of the Inventory Master. (It may be necessary to truncate both the author and the title.) "P" type element data codes will affect the subject heading TX tape and the Bibliographic Master. The new records will be written onto the Bibliographic Master (figure 46), the Inventory Master, figure Eo, the Subject Heading Master ("P" types only), figure Fo, and the daily monitor tape, figure Do.

If the copy number of the first action contains 0002, flag the first copy of the Inventory Master as "N" or "V" and starting with copy two, flag the individual copies as shelf as per number of copies; otherwise, start flagging the copies as "shelf" with copy one. Add the TX's number of copies to the inventory number of copies field and inventory quantity on hand fields. Zero the inventory's times circulated field.

Place the date of the run in the Inventory Master's "date originated" field. Make all "P" type TX's going to the subject heading TX tape 70 data element characters long.

The cataloger's initial will become the "New Accession" flag.

Call No.	Blank	Author	Title	No. of Copies	Qty. on Hand	Time Cir.	300 Individual Copy No. Fields	Date Originated	
52	4	25	50	4	4	6	300	5	

Inventory Master Record
Figure Eo

Call No.	PNN	1	Subject Heading	
52	3	1	70	

Data Element   Action
Code   Code

Subject Heading TX Record
Figure Fo

(c) "Add" Action Code 2. There are two different types of format for an add action code. One format, figure Go, will add

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additional copies to any existing bibliographic and inventory record. The other, figure Ho, will add additional data to any existing Bibliographic, Inventory, and (in the case of "P" data element codes) Search Masters.

LC No.	Copy No.	No. of Copies	Special Indicator Code	Cataloger's Initial	Data Element Code	Action Code	ǂ
52	4	4	1	1	3	1	1

Figure G_o

LC No.	Copy No.	No. of Copies	Special Indicator Code	Cataloger's Initial	Data Element Code	Action Code	Data Variable	ǂ
52	4	4	1	1	3	1		1

Figure H_o

If the format of an add TX is the same as figure Go, and the data element code is Abb, the "number of copies" field in both the matching Inventory Master and Bibliographic Master will be updated. In addition to this, the inventory's individual copy number fields will be updated starting with the copy number contained in the TX copy number field and continuing until the specified number of copies in the TX have been flagged as "on the shelf." The processed TX will be written onto the daily monitor tape.

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If the format of an add TX is the same as figure Ho, and the data element code is alpha, numeric and valid, the call number of the TX must match the Inventory and Bibliographic Masters, but the data element code must not match any present on the Bibliographic Master. If this be the case, add the new data to the Bibliographic Master. If the new data element code being added is a "zero, zero" or a "first title" it will also cause the "author" or "title" field in the Inventory Master to be changed.

In building, changing, or adding to the author and title fields of the Inventory Master the following logic should be followed:

The author field will contain.the data element that has been coded as the main entry. (This will normally be the first author of the book, and that is why this field has been called the author field.)

The title field will contain the data element that has been coded as the first title of the book, unless the title also happens to be the main entry. If the title of the book is also the main entry, the title would appear in the author field and the title field of the inventory record when the title is more than 25 characters in length.

If the data is a subject heading it will be written onto the subject heading TX tape as well as the daily monitor tape. (Data may not be added to the bibliographic paragraph--data element code N01--therefore data element codes N02 thru N99 are invalid codes.)

(d) "Change" Action Code 3. The call number of a change TX must match a call number contained on both the Inventory Master and the Bibliographic Master. The TX's data element code must also match a data element code contained on the Bibliographic Master.

Write the TX onto the daily monitor tape.

Call No.	Copy No.	No. of Copies	Special Indicator		ANN	Action Code 3	Data Variable	‡
52	4	4	1	1	3		1	

Figure J_o

Once a match has been found, change the data on the Bibliographic Master to that contained in the TX. If the main entry (Alpha, zero, zero) and/or the first title on the Bibliographic

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Master is being changed, the Inventory Master's author or title field must be changed also. If the data element code in the TX is a "P" type data element code, prepare a delete and add action and write in onto the subject heading TX tape.

(e) "Lost," "Found," "Salvage," and "Inventory Adjust Out" Action Codes 4, 5, 6 and 7, respectively.

Call Number	Copy No.	No. of Copies	Special Indicator	Cataloger's Initial			‡
52	4	4	1	1	3	1	

Action Code

Figure K_o

In the daily update of the Bibliographic and Inventory Master run, the lost, found, salvage, and inventory adjustment out actions will affect the Inventory Master only. In each case, they will become errors if the specified copy does not contain a valid condition for the action code to change.

For example: A "lost" action must find the copy flagged "shelf."
A "found" action must find the copy flagged "lost."
A "salvage" action must find the copy flagged "shelf."
An "IAO" action must find the copy flagged "shelf," "lost" or "salvage."

(In any case where a "lost" has been "found" change the flag to "shelf." Write each valid action onto the monitor tape.)
Note: Scan the record after updating the inventory out TX. If all copies have been flagged as inventory out, delete the record from the Bibliographic Master. Flag and print as it were deleted by a delete TX.

f. Run Details For Run 4

The purpose of this run, see figure 72, is to selectively extract from the bibliographic data and sort for display an Accession List, a Number List, a Shelf List, a Title List, a Subject Heading List and an Author List.

(1) Run Four Input

Updated Bibliographic Master File from last update run.

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(2) Run Four Output

(a) Shelf list file to be sorted to LC and special data element sequence, formatted and displayed as the Shelf List, figure 67.

(b) Author file to be sorted alphabetically by author name, formatted and displayed as the Author List, figure 68.

(c) Title file to be sorted alphabetically by title, formatted and displayed as the Title List, figure 69.

(d) Subject headings file to be sorted alphabetically by subject heading, formatted and displayed as the Subject Headings List, figure 70.

(e) Accession file to be sorted to COSATI code and title sequence, formatted and displayed as the Accession List.

(f) Number list file to be sorted to main entry title and call number sequence, formatted and displayed at the Number List.

(3) Run Four Sequence

Run four will be processed in the sequence of the output displays.

g. Run Details For Run 5

The purpose of this run, see figure 72, is to sort the subject heading actions and the wash actions from the daily bibliographic update run into subject heading sequence.

(1) Run Five Input

Wash actions and subject heading actions from the bibliographic update.

(2) Run Five Output

Wash actions and subject heading actions sorted to subject heading sequence.

(3) Run Five Sequence

Run five will be processed in subject heading sequence.

h. Run Details For Run 6

The purpose of this run, see figure 72, is to post new

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subject headings to the Subject Heading Master; prepare feedback trans-
actions to delete from the Bibliographic Master File already assigned
subject headings found to be in error; flag and select valid new subject
headings for display in a cumulative list.

The daily actions to the subject heading tape which were
sorted to subject heading sequence and are processed against the
Subject Authority Master, and the Search Master. Subject headings with
an action code of "1" or "2" not found on the Subject Authority Master
will be added and flagged as temporary until authorized by the Language
Control Authority. (Wash deletes will be processed against the Biblio-
graphic Master on the next run cycle in order to keep the two masters
in phase.) A cumulative listing reflecting additions and changes
to the Subject Authority Master will be produced daily.

All valid actions will be printed daily in order that any
error in spelling of words not discovered in the edit checks may be
corrected.

(1) Run Six Input

(a) Subject Heading Authority File, figure 7, in se-
quence by subject heading.

(b) Sorted subject heading transactions, figure 5,
in sequence by subject headings.

(c) Search Master, figure 8, in sequence by subject
heading.

(2) Run Six Output

(a) Updated Subject Authority File - Same as Input a.
above.

(b) Updated cumulative additions to Subject Authority
File - Same as Input b. above.

(c) Wash actions, figure 5, in sequence by subject
heading.

(d) Errors, figure 11, in sequence by subject heading.

(e) Updated Search Master, figure 8, in sequence by
subject heading.

(f) Valid TX's processed.

(3) Run Six Sequence

Run six will be processed in subject heading sequence.

i. Editing Criteria

Cataloging editing criteria is presented in three categories; input transaction edits, LC call number edits and valid data element code edits. Also indicated will be a valid action code vs data element code action list. This will be followed by a listing of all edits and error messages used by the programmer.

(1) Input Transaction Edits. These edits are used to determine if the input transaction to be processed contain the basic element and proper format for processing.

(a) All input transactions will be edited as follows:

Data Field	Criteria	Message
Cataloger's Initial	Must be alpha	CATALOGERS INITIAL IS NOT VALID
Action Code	Must be 0 thru 7	INVALID ACTION CODE

(b) Action Code 0 items will be edited as follows:

Data Field	Criteria	Message
Copy Number	Must be blanks or ALLb or all numeric.	DATA IN THE COPY NUMBER FIELD IS NOT VALID.
Number of Copies Field	Must be ALLb if Copy Number field is ALLb. Must be blank if Copy Number field is blank. Must be 0001 if Copy Number field is numeric.	DATA IN THE NUMBER OF COPIES FIELD IS NOT VALID.
Special Indicator Code	Must be blank, N, R, S, X, or V.	INVALID SPECIAL INDICATOR CODE.
Data Element Code	Must contain Abb or Pbb if Copy Number field is ALLb or numeric. Must contain ANN if the Copy Number field is bbbb.	DATA ELEMENT CODE DOES NOT AGREE WITH THE COPY NUMBER FIELD.
Data Element	Must be an asterisk.	DELETE TX DOES NOT CONTAIN AN * IN THE DATA FIELD.

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(c) Action Code 1 items will be edited as follows:

Data Field	Criteria	Message
Copy Number	Must be 0001 or 0002. If 0002, the special indicator code must be either N (for no copy 1 and non-expendable) or V (no copy 1, expendable.)	SPECIAL INDICATOR CODE DOES NOT AGREE WITH THE COPY NUMBER FIELD.
1st Data Element Code	Must be of the form XOO where X is an alpha character.	THIS BOOK DOES NOT HAVE A MAIN ENTRY.
Data Element Code	Must be code listed in figure 47.	See the valid data element codes, edits and error messages.
	The following codes must be present when a new bibliographic record is being processed. A main entry code 00, at least one title – B00 or B01, B01 N01 and P01. If any of these record are missing the record must be kicked out.	CATALOGING OF THIS BOOK IS NOT COMPLETE. DATA ELEMENT ____, ____, IS/ARE NOT PRESENT.
	When processing a new bibliographic record, a corporate author's address (DNN) must have a corporate author (CNN). However, a corporate author may be present without a corporate authors address.	BOOK DOES NOT HAVE A CORPORATE AUTHOR.

Data Field	Criteria	Message
Data Elements	Edit according to the criteria in valid data element codes.	See valid data element codes, edits, and error messages.

(d) Action Code 2 items will be edited as follows:

Data Field	Criteria	Message
Copy Number Field	Must be numeric if data element codes are not of the form ANN.	DATA IN THE COPY NUMBER FIELD IS NOT VALID.
Number of Copies Field	Same as above.	DATA IN THE NUMBER OF COPIES FIELD IS NOT VALID.
Special Indicator Code	b,N,R,S,X, or V.	INVALID SPECIAL INDICATOR CODE
Data Element Code	Must be Code listed in figure 47.	INVALID DATA ELEMENT CODE
Data Elements	Edit according to the criteria in valid data element codes.	See valid data element codes, edits, and error messages.

(e) Action Code 3 items will be edited as follows:

Data Field	Criteria	Message
Copy Number	Must be blank.	DATA IN THE COPY NUMBER FIELD IS NOT VALID.
Number of Copies	Must be blank.	DATA IN THE NUMBER OF COPIES FIELD IS NOT VALID.
Special Indicator Code	Must be b,N,R,S, X, or V.	INVALID SPECIAL INDICATOR CODE.
Data Element Code	Must be a code listed in figure 47.	INVALID DATA ELEMENT CODE.
Data Elements	Edit according to the criteria in valid data element codes.	See valid data element codes, edits, and error messages.

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(f) Action Codes 4, 5, 6, and 7 items will be edited as follows:

Data Field	Criteria	Message
Copy Number Field	Must be numeric.	COPY NUMBER FIELD IS NOT NUMERIC.
Number of Copies Field	Must be blanks.	NUMBER OF COPIES FIELD IS NOT NUMERIC.
Special Indicator Code	Must be blank.	INVALID SPECIAL INDICATOR CODE.
Data Element Codes	None. (In spreading the record for the update run, make a 3 character blank data element code field.	

(2) LC Call Number Edits. These edits are used in conjuction with the input transaction edits and will indicate specific editing requirement for LC call numbers.

Legend: A --- ALPHA Character
         N --- NUMERIC Character
         C --- ALPHA or NUMERIC Character
         b --- BLANK Column Separator
        ND --- NO DATE Constant

Note: An "*" will be the terminal character of the LC number, and the total length of fields 1, 2, 3, and 4 of the LC number must not exceed 32 characters excluding the "*."

Main Class Division

Minimum of 1 ALPHA Character followed by a blank.
Maximum of 2 ALPHA Characters followed by a blank.
(First ALPHA Character cannot be I, O, W, X, or Y.
A list of valid LC classes and sub classes may be found on the following page.

Subdivision/Further Subdivision

Minimum of 1 NUMERIC Character followed by a blank.
Maximum of 12 CHARACTERS followed by a blank.

Subdivision Examples	Subdivision Examples with Further Subdivision Examples	
Nb	N. followed	Cb

```
NNb                    NN.      by         CCb
NNNb                   NNN.     any        CCCb
NNNNb                  NNNN.    combination CCCCb
                                of         CCCCCb
                                           CCCCCCb
                                           CCCCCCCb
```

(If further subdivision is present, the subdivision
must be followed by a "." instead of a "b".)

Cutter Number

Minimum of 1 ALPHA Character followed by 1 NUMERIC
Character.
Maximum of 1 ALPHA Character followed by 3 NUMERIC
Characters.

Cutter Number Examples

ANb
ANNb
ANNNb

Date

A constant of "ND," or a maximum of 4 NUMERIC Charac-
ters followed by a "-", followed by 2 NUMERIC Charac-
ters.

Date Examples

NN
NNNN
NNNN-NN

Note: When all of the biblio-
graphic data has been
gathered and corrected
this field will be
shortened to four
characters.

(Date must fall within a range of 1600 or current year.)

Valid LC Classes and Sub Classes

```
AC AE AG AI AN AP AS AY AZ
B BC BD BF BH BJ BM BP BR BS BT BV BX
CB CC CD CE CJ CR CS CT
D DA DB DC DD DE DF DG DH DJ DK DL DP DQ DR DS DT DU DX
E
F
G GA GB GC GF GN GR GT GV
H HA HB HC HD HE HF HG HM HN HQ HS HT HV HX
J JA JC JK JL JN JQ JS JV JX
K
L LA LB LC LD LE LF LG LH LJ LT
```

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M ML MT
N NA NB NC ND NE NK
P PA PB PC PD PE PF PG PH PJ PK PL PM PN PQ PR PS PT PZ
Q QA QB QC QD QE QH QL QM QP QR
R RA RB RC RD RE RF RG RJ RK RL RM RS RT RV RX RZ
S SB SD SF SH SK
T TA TC TD TE TF TG TH TJ TK TL TN TP TR TS TT TX
U UA UB UC UD UE UF UG UH
V VA VB VC VD VE VF VG VK VM
Z
```

(3) <u>Valid Data Element Codes, Edits and Error Messages</u>

Data Element Codes	Action Codes	Type Data	Edit of Data	Error Messages
bbb Abb	4,5,6,7 2,	None None	None None	ACTION CODE VS DATA ELEMENT CODE INVALID.
Abb	0	An Asterisk	*	DATA NOT *
A00 thru A99	0,1,2,3	Authors	Brown,,,, Brown, R,,, Brown,,Sir,, Brown,,,1908-,	FORMAT OF THE AUTHOR'S NAME IS INVALID.
B00 thru B99	0,1,2,3	Titles	Alpha/Numeric	TITLE DATA IS BLANK.
C00 thru C99	0,1,2,3	Corporate Authors	Alpha/Numeric	CORPORATE AUTHOR'S FIELD IS BLANK.
D01 thru D99	0,1,2,3	Corporate Address	Alpha/Numeric	CORPORATE ADDRESS FIELD IS BLANK.
E00 thru E99	0,1,2,3	Editors	Same as Author except last Character must be "ED."	FORMAT OF THE EDITOR'S NAME IS INVALID.
F00 thru F99	0,1,2,3	Compilers	Same as Author except last character must be CP.	FORMAT OF THE COMPILER'S NAME IS INVALID.
G00 thru G99	0,1,2,3	Translators	Same as Author except last	FORMAT OF THE TRANSLATOR'S

Data Element Codes	Action Codes	Type Data	Edit of Data	Error Messages
			character must be TR.	NAME IS INVALID.
H00 thru H99	0,1,2,3	Illustrators	Same as author except last character must be IL.	FORMAT OF THE ILLUSTRATOR'S NAME IS INVALID.
L01 thru L99	0,1,2,3	Language	Alpha	THE LANGUAGE FIELD IS NOT ALPHABETIC.
M01 thru M99	0,1,2,3	Series	Alpha/Numeric	THE SERIES FIELD IS ALL BLANK.
N01	0,1,3	Bibliographic Paragraph	Alpha/Numeric	THE BIBLIO-GRAPHIC PARA-GRAPH IS BLANK.
01 thru 099	0,1,2,3	Informal Notes	Alpha/Numeric	THE INFORMAL NOTE FIELD IS BLANK.
Pbb	0	Subject Headings	Alpha/Numeric	SUBJECT HEADING FIELD IS BLANK.
P01 thru P99	0,1,2,3	Subject Headings	Alpha/Numeric	SUBJECT HEADING FIELD IS BLANK.
Q01	0,1,2,3	COSATI Subject Code	Two Digits 01 thru 22.	INVALID COSATI CODE.
T01 thru T29	0,1,2,3	Contract Number	Alpha/Numeric	
T31 thru T59	0,1,2,3	Subcontract Number	Alpha/Numeric	
T61 thru T89	0,1,2,3	Project Number	Alpha/Numeric	
T91 thru T99	0,1,2,3	Grant Numbers	Alpha/Numeric	
V01 thru V99	0,1,2,3	Report Numbers	Alpha/Numeric	

Valid Action Code vs Data Element Code Editing Criteria

Action Code	Inventory Master and Bibliographic Master Match Data Element Codes	Inventory Master and Bibliographic Master Match
1	No - A01 thru S99	No - Build New Record
2	No - Abb	Yes - Update Copy and No. of Copies
2	No - A01 thru S99	Yes - Add Data By Building New Sub. Record
3	No - Abb	Yes - Change Copy No. and No. of Copies
3	Yes - A01 thru S99	Yes - Change Data in Master
4	No - bbb	Yes - Flag Copy Lost
5	No - bbb	Yes - Flag Copy as Salvaged
6	No - bbb	Yes - Flag Copy as returned to shelf
0	No - Abb	Yes - Delete Copies so specified by transaction
0	Yes - A01 - S99	Yes - Delete Data from Master File
0	Yes - Pbb	Yes - Write TX onto the Subject Heading TX Tape for further processing
7	No	Yes - Flagged specified copies as X.

When the action code of the transaction is not one of the above, the error message will read - INVALID ACTION CODE.

(5) Messages Appearing On the Edit Error List

Message	Meaning	Corrective Action
ACTION CODE VS DATA	The data element code is	Research and resubmit.

Message	Meaning	Corrective Action
ELEMENT CODE INVALID.	bbb or Abb but the action code is not 2, 4, 5, 6, or 7.	
THE BIBLIOGRAPHIC PARA-GRAPH IS BLANK.	There is a data element code NO1 indicating the bibliographic paragraph, but no data follows the code.	Resubmit.
CATALOGER'S INITIAL IS NOT VALID.	There is something other than an alphabetic or blank character in the cataloger's initial field.	Resubmit.
CATALOGING OF THIS BOOK IS NOT COMPLETE. DATA ELEMENTS ---,---IS/ARE NOT PRESENT.	The action code is 1, and the required data elements specified by data element codes are missing. Required min-imum data elements are main entry (code 00), at least one title (code BOO or B01), bib-liographic paragraph (code NO1), and at least one subject head-ing (code P01).	Research and resubmit.
COPY NUMBER FIELD IS NOT NUMERIC.	The action code is 4, 5, 6, or 7, but the copy number field either con-tains data other than numeric characters or is blank.	Research and resubmit.
CORPORATE AUTHOR'S FIELD IS BLANK.	There is a corporate au-thor data element code but no corporate author data follows.	Research and resubmit.
CUTTER NUMBER CONTAINS MORE THAN ONE ALPHA CHARACTER.	Self explanatory. Only one alphabetic character can be in the Cutter num-ber, and it must be the first one.	Research and resubmit.
CUTTER NUMBER IS TOO LONG.	The Cutter/number is over the maximum length of	Research and resubmit.

Message	Meaning	Corrective Action
	one alphabetic character and 3 numeric characters.	
CUTTER NUMBER NOT PRESENT.	Self explanatory.	Research and resubmit.
CUTTER NUMBER STARTS WITH NUMERIC CHARAC-TER.	Self explanatory. The first character must be alphabetic.	Research and resubmit.
DATA ELEMENT CODE DOES NOT AGREE WITH THE COPY NUMBER FIELD.	The action code is 0 and either (1) the copy number is ALLb or numeric, but the data element code is not either Abb or Pbb, or (2) the copy number is blank, but the data element code is something other than A followed by two numeric characters.	Resubmit.
DATA IN THE COPY NUMBER FIELD IS NOT VALID.	(1) The action code is 0 and the copy number field contains something other than blanks, ALLb, or numeric characters. (2) The action code is 2 and the data element codes are something other than A followed by two numeric characters, but data in the copy number field is not numeric characters. (3) The action code is 3 but the copy number field is not blank.	Research and resubmit.
DATA IN THE NUMBER OF COPIES FIELD IS NOT VALID.	(1) The action code is 0 and either (1) the copy number is ALLb but the number of copies is not ALLb, or (2) the copy number field is blank but the number of copies field is not blank, or (3) the copy number field has numeric	Resubmit.

Message	Meaning	Corrective Action
	characters but the number of copies field contains something other than 0001. (2) The action code is 2 and the data element codes are something other than A followed by two numeric characters, but the data in the copy number field is not numeric. (3) The action code is 3 but the number of copies field is not blank.	
DATA NOT*	The data element code is Abb and the action code is 0, but the data field has something in it other than an asterisk.	Resubmit.
DATE FIELD CONTAINS AN INVALID BLANK.	Self explanatory.	Resubmit.
DATE FIELD HAS ALPHA OTHER THAN "ND".	Self explanatory.	Resubmit.
DATE NOT IN RANGE.	Date is outside the range 1600 to current year.	Resubmit.
DELETE TX DOES NOT CONTAIN AN * IN THE DATA FIELD.	A transaction card submitted to delete a bibliographic record, with the action code of 0, contains something other than an asterisk or is all blank in the data element field.	Resubmit.
FORMAT OF THE AUTHOR'S NAME IS INVALID.	Format of the author's name is other than: Brown,,,, Brown, R,,, Brown,,Sir,, Brown,,,1908-, There must be four commas.	Resubmit.

Message	Meaning	Corrective Action
FORMAT OF THE COMPILER'S NAME IS INVALID.	The required format for compiler's name is the same as the author's, except the last two characters must be CP.	Resubmit using correct format.
FORMAT OF THE EDITOR'S NAME IS INVALID.	The required format for editor's name is the same as the author's, except the last two characters must be ED.	Resubmit using correct format.
FORMAT OF THE ILLUSTRA-TOR'S NAME IS INVALID.	The required format for illustrator's name is the same as the author's, except the last two characters must be IL.	Resubmit using correct format.
FORMAT OF THE TRANSLA-TOR'S NAME IS INVALID.	The required format for translator's name is the same as the author's, except the last two characters must be TR.	Resubmit using correct format.
FURTHER SUBDIVISION IS TOO LONG.	The further subdivision of the LC classification is longer than the maximum of 11 characters.	Research and resubmit.
THE INFORMAL NOTE FIELD IS BLANK.	There is a data element code indicating an informal note but no data following it.	Research and resubmit.
INVALID ACTION CODE.	There is something in the action code field other than 0, 1, 2, 3, 4, 5, 6, or 7.	Resubmit.
INVALID COSATI CODE.	There is something in the COSATI code field other than two digits in the range of 01 through 22.	Resubmit.
INVALID DATA ELEMENT CODE.	The data element code is not one of those listed in figure 47.	Resubmit.

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Message	Meaning	Corrective Action
INVALID SPECIAL INDICA-TOR CODE.	(1) The action code is 0, 2, or 3 and the special indicator code is something other than blank, N, R, S, X, or V.	Research and resubmit.
	(2) The action code is 4, 5, 6, or 7 and the special indicator code field is not blank, as required.	Resubmit.
THE LANGUAGE FIELD IS NOT ALPHABETIC.	There is at least one character in the lan-guage field that is not alphabetic.	Research and resubmit.
MAIN CLASS CONTAINS A NUMERIC CHARACTER.	Self explanatory.	Research and resubmit.
MAIN CLASS INVALID.	(1) The main class of the LC classification contains at least one non-alphabetic, non-numeric character. (2) The first charac-ter in the main class is I, O, W, X, or Y.	Research and resubmit.
MAIN CLASS TOO LONG	The main class of the LC classification is longer than two char-acters followed by one blank.	Research and resubmit.
NUMBER OF COPIES FIELD IS NOT BLANK.	The action code is 4, 5, 6, or 7; the number of copies field should be blank but is not.	Resubmit.
THE SERIES FIELD IS ALL BLANK.	There is a data element code indicating a series entry, but no data fol-lows it.	Research and resubmit.
SPECIAL INDICATOR CODE INCONSISTENT WITH THE	The action code is 1 and the copy number is 0002,	Research and resubmit.

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Message	Meaning	Corrective Action
COPY NO. FIELD.	but the special indicator code is something other than N or V.	
SUBDIVISION CONTAINS ALPHA CHARACTERS.	The LC subdivision contains at least one alphabetic character, rather than only numeric characters.	Research and resubmit.
SUBDIVISION NOT PRESENT.	There is no subdivision of the LC classification; it is required data.	Research and resubmit.
SUBDIVISION TOO LONG.	There are more than 12 characters in the LC classification subdivision.	Research and resubmit.
SUBJECT HEADING FIELD IS BLANK.	There is a data element code indicating subject heading, but no data follows it.	Research and resubmit.
THIS BOOK DOES NOT HAVE A MAIN ENTRY.	The action code is 1, but the first data element code is something other than one alphabetic character followed by two zeros.	Resubmit.
THIS BOOK DOES NOT HAVE A TITLE.	Self explanatory.	Research and resubmit.
TITLE DATA IS BLANK.	The action code is 0, 1, 2, or 3, but the title field contains no data.	Resubmit.

(6) Messages Appearing on the Update Error List

Message	Meaning	Corrective Action
BIB. MASTER ALREADY CONTAINS DATA UNDER THIS DATA ELEMENT CODE.	A data element to be added to an established bibliographic record has has been submitted with a data element code that	Research and resubmit.

Message	Meaning	Corrective Action
	duplicates the code of a data element already on the record.	
BIBLIOGRAPHIC RECORD DOES NOT HAVE A MAIN ENTRY.	The transaction submitted leaves the Bibliographic Master record without a main entry.	Research.
CALL NUMBER FOR COPIES TO BE ADDED NOT FOUND ON THE BIB. MASTER.	There is no record on the Bibliographic Master File with the call number specified in the input transaction adding copies.	Research.
CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER.	There is no record on the Bibliographic Master File with the call number specified in the input transaction changing data.	Research.
CALL NUMBER IS A DUPLI-CATE OF ONE ALREADY CONTAINED ON THE BIB. MASTER.	The input transaction creates a new record, but there is already a record on the Bibliographic Master File under the same call number.	Research.
COPY FOUND WAS NEVER REPORTED LOST.	The input transaction flags a copy as found, but the copy is not flagged on the master file as lost.	Research.
COPY NUMBER OUT Of OUR INVENTORY IS OUT ON CIRCULATION.	Self explanatory. A book copy that is charged out cannot be inventoried out.	Research.
COPY REPORTED LOST WAS NOT ON SHELF.	Self explanatory. The only condition from which a copy can be flagged "lost" is "shelf."	Research.
COPY TO BE DELETED IS NOT ON THE SHELF, IT	Self explanatory.	Research.

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Message	Meaning	Corrective Action
IS _____ . (Insert LOST, SALVAGED, CIRCULATED, 001 (out of inventory), NO COPY ONE - EXPENDABLE, or NO COPY ONE - NON EXPENDABLE.)		
COPY TO BE SALVAGED NOT ON SHELF.	Self explanatory.	Research.
DATA ELEMENT TO BE CHANGED NOT FOUND ON BIB. MASTER.	Self explanatory.	Research.
THE DATA TO BE DELETED IS NOT ON THE BIB. MASTER.	Self explanatory.	Research.
DUPLICATE COPY NUMBER.	The copy number to be added is already on the bibliographic master record.	Research.
RECORD TO BE DELETED WAS NOT FOUND ON BIB MASTER.	Self explanatory.	Research.

4. Circulation Module

The purpose of the circulation module is to monitor and maintain central control files for all books and serials on loan to patrons, branch libraries or items at the bindery.

a. Circulation Logic and Run Relations

Utilizing the computer run relation flow chart, figure 88, as a guideline the circulation module of the books control subsystem run relations are easily followed from issue to return of item.

As shown in the flow chart the computer accepts a variety of transactions which are used to initiate and update the Circulation and Inventory Master Files.

For computer processing, all data contained on these input transaction cards is converted to magnetic tape. This conversion is accomplished in the computation center by a standardized punch card to magnetic tape conversion run which is presented in figure 88 as run one, the conversion from transaction cards to magnetic tape.

During the conversion run all input circulation transaction cards are character checked throughout the transaction card field. Transactions which fail the character check are dropped off and returned to the library as unreadable transaction cards.

When the remaining circulation transactions are in a machine readable form and each has been appended with a record mark, the information contained on the magnetic tape file will be sorted into social security number sequence. This sorting action, accomplished in run two, will properly sequence the input transactions for the edit / match program in run three.

Run three will edit all input transactions per input transaction editing criteria, paragraph m., this section. All transactions attempted or processed in this run will be written out on the Circulation Monitor and Error List, see figure 78. Transactions found in error, if any, will be so indicated by an appropriate error message. For each transaction in error, either processed or kicked out, a duplicate computer produced transaction card will be prepared with col 1, action code, left blank.

All processed error and valid circulation transactions from run three will be resorted into call number sequence in run four. Output files from this sorting action will serve as input to the main update run, run five.

When the preceding actions have been completed the Circulation and Inventory Master Files from the last update must be made available in order to process the input transactions and update the master files.

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During the update run several types of actions affecting
the Circulation and Inventory Master Files may be accomplished: items
may be circulated, returned, recalled, renewed, indicated as lost or
found, the patron who has an item checked out may have a name change or
the item checked out may have a title change.

The Circulation and Inventory Master Files from the last
update along with the input circulation transactions file are loaded
onto the computer. The Circulation and Inventory Master Files will be
sequenced into computer memory by call number along with the input
transactions file. When a match of corresponding call numbers is made
in either the circulation or inventory files with a corresponding num-
ber in the input transactions file the action indicated in the input
transactions file will be accomplished. All other items in the input
transactions file which must be items to be added to the Circulation
Master File will be sequenced onto the Circulation Master File in call
number sequence.

The input circulation transactions which may be any of the
previously mentioned type actions will be edited again during actual
update processing. Utilization of these update edits will determine
final processing acceptability of the input transactions which are
subsequently processed against the Circulation and Inventory Master
Files. Errors found here, if any, will be displayed on the Circula-
tion / Inventory Update Error Listing, see figure 79. For each trans-
action in error a duplicate computer produced transaction card will be
prepared with col 1, action code, left blank. Appended to the error
listing will be a Statistical Report, see figure 79, of all circulation
and inventory records current through this update.

Other outputs from the update run are the Receipts File
which is used in run 5A to prepare all Issue and Turn In Slips, see
figure 81, a Third Notice Cross Reference Listing, see figure 80,
indicating items by call number and item name with the patron's name
and social security number and a recall file which is used to prepare
all Recall / Renew Notices in run six.

Run 5B is a simple sort of the recall file from run five
into social security number sequence. Output from this run will serve
as input to run 5C which will match the Recall / Renew records against
the Patron Master File to obtain the latest patron mailing information.
Run 5D is a sort of the output from run 5C into address sequence.
Run 5E is a sort of the weekly updated Circulation Master File into
patron name sequence.

Run six will selectively prepare the output displays re-
quired by the library for maintenance of the circulation module. In-
put to this run will be the sorted Recall / Renew File from run 5D,
the sorted Circulation Master File from run 5E and the unsorted Circula-
tion Master File from run five. Run six will prepare the following

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outputs in the sequence presented: two complete circulation listings, one in name sequence, see figure 77, and the other in call number sequence, see figure 76, all recall and overdue notices plus renewal transaction cards, see figures 82 through 86, and a complete patron-circulation/inventory report with associated transaction cards, see figure 87.

    b.   Run Details for Run 1

    The purpose of run one, see figure 88, is to convert all daily transaction cards to magnetic tape appending a record mark to the end of each card image.

    (1) Run One Input. Circulation transaction cards - Input to this run will consist of input circulation transaction cards to be used in this update.

    (2) Run One Output

    (a) Circulation transactions - This file consists of magnetic tape images of the input circulation transaction cards with a record mark appended to each transaction card image. All circulation transactions will be blocked ten to a block.

    (b) Unreadable transaction cards - Any cards which has an invalid combination of punches will be dropped off and returned to the library for correction and re-submission.

    (3) Run One Sequence. Run one will be processed in input sequence of circulation transaction cards.

    c.   Run Details for Run 2

    The purpose of run two, see figure 88, is to sort all circulation transaction cards into social security number sequence.

    (1) Run Two Input. Circulation transactions - This file will consist of magnetic tape images of circulation transaction cards prepared in run one.

    (2) Run Two Output. Sorted circulation transactions - This file will consist of circulation transaction sorted into social security number sequence.

    (3) Run Two Sequence. Run two will be processed in social security number sequence.

    d.   Run Details for Run 3

    The purpose of run three, see figure 88, is to edit all sorted circulation transactions per input transaction editing criteria and prepare a

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file of processed error and valid circulation transactions, a monitor and edit error file and a file of processed and error transactions.

       (1)   Run Three Input

          (a) Sorted circulation transactions - This file consists of circulation transactions sorted into social security number sequence in run two.

          (b) Patron Master - This file contains all library patrons listed in social security number sequence.

       (2)   Run Three Output

          (a) Processed errors and valid circulation transactions - This file contains all transaction which will be used to update the Circulation and Inventory Master Files in run five. Processed errors are transactions which appear correct in content but do not match with the Patron Master File.

          (b) Processed and edit error transactions - This file contains tape images of all transactions found in error. For each transaction in error, either processed or kicked out, a duplicate computer produced transaction card will be prepared with col 1, action code, left blank.

          (c) Monitor and edit errors - This file contains tape images of all transactions attempted or processed in the edit / match run. This file will be displayed in the format shown in figure 78. All transactions found in error will be accompanied by an appropriate error message.

       (3)   Format of Output Files From Run Three

Processed / Valid Circulation Transactions		Monitor and Edit Error		Processed / Edit Error Tape	
Data Fields	No Char.	Data Fields	No Char.	Data Fields	No Char.
Call number	56	Error message	52	Blank	1
Action code	1	Action code	1	Remainder of	
Author	25	Blank	1	Original transaction	
Title	50	Remainder of		Image	79
Lost flag	1	Original transaction	79		
Patron name	45				
Social security no.	10				
Yr. / date (Julian)	5				
Expendability flag	1				
Security code	1				
Type loan / medium	1				

Processed / Valid Circulation Transactions		Monitor and Edit Error		Processed / Edit Error Tape	
Data Fields	No Char.	Data Fields	No Char.	Data Fields	No Char.
Org. symbol	12				
Telephone	7				
Blank	1				
No patron flag	1				
Print code	1				
Recall repr. flag	1				
Recall repr. date	5				
Auto. renewal flag	1				
Auto. renewal date	5				
Recall patron flag	1				
Recall patron date	5				
Inter-lib loan flag	1				
Inter-lib loan date	5				
Blank	21				
Bldg. Number	5				
Blank	1				
Type employee	1				
Contractor code	4				
Blank	4				
Original Transaction image	80				

(4) Run Three Sequence. Run three will be processed in social security number sequence.

e. Run Details for Run 4

The purpose of run four, see figure 88, is to sort all processed errors and valid circulation transactions into call number, date and action code sequence.

(1) Run Four Input. Processed errors and valid circulation transactions - This file contains all edited transactions from run three.

(2) Run Four Output. Sorted processed error and valid circulation transactions - This file will contain all edited transactions sorted into call number, date and action code sequence.

(3) Run Four Sequence. Run four will be processed in call number, date and action code sequence.

f. Run Details for Run 5

The purpose of run five, see figure 88, is to update the Circulation and Inventory Master Files, prepare a Recall / Renew File,

an Issue and Turn-In File, a Third Notice Cross Reference File and an Update Error Listing and Statistical Report File.

The following logic will apply to each and every record read from the Inventory and Circulation Masters during run 5.

Each Circulation Master's call number minus the copy number must match a call number contained on the Inventory Master File.

There can be no duplication of call numbers plus copy numbers on the Circulation Master File.

The Inventory's call number need not match with a Circulation Master call number; however, if they do not match the Inventory Master copy number fields must be coded as on the shelf, blank, lost, inventory adjustment out, or salvage.

The Inventory Master File cannot contain a duplicate call number.

Check the status of each circulation record read and add "1" to the appropriate "beginning" field(s) of the statistical report.

Transactions that are to be processed against the Circulation and Inventory Masters will be processed as per update editing criteria.

If four or more transactions bearing the same date are to be processed against any given copy of an item, write all of the transaction onto the error tape for review by RSIC, otherwise process as per action code.

Check the status of each record to see if a 1st, 2nd, or 3rd Recall / Renewal Notice is due.

Add "1" to the appropriate statistical report "ending" field(s).

(1) Run Five Input

(a) Recycled Circulation Master - This file contains all circulation records through the last update.

(b) Recycled Inventory Master - This file contains all inventory records through the last update.

(c) Sorted processed errors and valid circulation transactions - This file will contain all edited transactions sorted in run four.

(2) Format of Input Files to Run Five

Input Processed/Valid Circulation Transactions		Input/Output Recycled Circulation Master File		Input/Output Recycled Inventory Master	
Data Fields	No Char.	Data Fields	No Char.	Data Fields	No Char.
Call number + copy no.	56	Call number + copy no.	56	Call number	56
Action code	1	Action code	1	Author	25
Author	25	Author	25	Title	50
Title	50	Title	50	No. of copies	4
Lost flag	1	Lost flag	1	Qty. on hand	4
Patron name	45	Patron name	45	Times title	
Social security no.	10	SS no.	10	Circulated	6
Yr./date (Julian)	5	Yr./date (Julian)	5	Individual	
				Copy fields	300
Expendability flag	1	Type item XP - NXP	1	Date first	
				Circulated	5
Security code	1	Security code	1		
Type loan/medium	1	Type loan/ medium	1		
Org. symbol	12	Mail symbol	12		
Telephone	7	Telephone	7		
Blank	1	Blank	1		
No patron flag	1	No patron flag	1		
Print code	1	Print code	1		
Recall repr. flag	1	Recall repr. flag	1		
Recall repr. date	5	Recall repr. date	5		
Auto. renewal flag	1	Auto. renewal flag	1		
Auto. renewal date	5	Auto. renewal date	5		
Recall patron flag	1	Recall patron flag	1		
Recall patron date	5	Recall patron date	5		
Inter-lib. loan flag	1	Inter-lib. loan flag	1		
Inter-lib. loan date	5	Inter-lib. loan date	5		
Blank	21	Blank	21		
Bldg. number	5	Bldg. number	5		
Blank	1	Blank	1		
Type employee	1	Type employee	1		
Contractor codes	4	Contractor codes	4		

Input Processed/Valid Circulation Transactions		Input/Output Recycled Circulation Master File		Input/Output Recycled Inventory Master	
Data Fields	No Char.	Data Fields	No Char.	Data Fields	No Char.
Blank	4	Blank	4		
Original transaction card image	80	Upspread call number	36		

The original trans-
action card image at
the end of this record
becomes the output/
input to circulation/
inventory statistical
file. A two digit code
will accompany each
record to designate
the type error found.

This record format
becomes the output/
input for the follow-
ing files and runs:
Sort patron name run 5E
Sort to SS. Nr. run 5B

(3) Run Five Output

(a) Updated Circulation Master - This file contains
all circulation records current through this update.

(b) Updated Inventory Master - This file contains
all circulation records current through this update.

(c) Recall/Renew Notices - This file contains all
data pertaining to Recall/Renew Notices per flagged fields in circulation
records. This file is sorted and formatted for display in run six.

(d) Receipts - This file contains all data pertaining
to Issue and Turn-In slips and is sorted for display in run 5A.

(e) Third Notice - This file contains cross refer-
ence data for all Third Notices. This file is displayed as the
Third Notice Cross Reference List, see figure 80.

(f) Circulation/Inventory Statistics - This file
contains all circulation and inventory data current through this update
Utilization of a special 1401 computer run displays this file as an
Error Listing and a Statistical Report, see figure 79. For each trans-
action found in error a duplicate computer produced transaction card
is prepared with col 1, action code, left blank.

(4) Run Five Sequence. Run five will be processed in call
number sequence.

g. Run Details for Run 5A

The purpose of run 5A, see figure 88, is to sort the receipts file from run five into address (major) and type (minor) sequence.

(1) Run 5A Input. Receipts - This file from run five contains all data pertaining to Issue and Turn-In Slips.

(2) Run 5A Output. Sorted receipts - This file will contain all data pertaining to Issue and Turn-In Slips sorted to address (major) and type (minor) sequence. Utilization of a special 1401 computer run will display this file as Issue and Turn-In Slips, see figure 81.

If the type/loan medium field of the record in memory is "blank" a Turn-In Slip should be prepared for this and any other record that may follow that has the same address.

If the type/loan medium code of the record in memory is an "8" an Issue Slip should be prepared for this and any other record that may follow that has the same address.

(3) Run 5A Sequence. Run 5A will be processed in address (major) and type (minor) sequence.

h. Run Details for Run 5B

The purpose of run 5B, see figure 88, is to sort the recall/renew file into social security number and type loan sequence.

(1) Run 5B Input. Recall/renew records - This file from run five will contain all recall/renew records per flagged fields in circulation records.

(2) Run 5B Output. Sorted recall/renew records - This file will contain all recall/renew records sorted into social security number sequence.

(3) Run 5B Sequence. Run 5B will be processed in social security number sequence.

i. Run Details for Run 5C

The purpose of run 5C, see figure 88, is to match the recall/renew records against the patron file to obtain the latest patron mailing address. Appropriate Recall/Renew Notice(s) will be written per the various recall/renew flag fields.

(1) Run 5C Input

(a) Sorted recall/renew records - This file from run 5B

contains all recall/renew records in social security number sequence.

(b) Patron Master - This file contains a listing of all library patrons in social security number sequence.

(2) Run 5C Output. Matched and formatted recall/renew file - This file contains all recall/renew records matched with Patron Master File and formatted.

(3) Run 5C Sequence. Run 5C is processed in social security number sequence.

j. Run Details for Run 5D

The purpose of run 5D, see figure 88, is to sort all matched and formatted recall/renew records into address sequence.

(1) Run 5D Input. Matched and formatted recall/renew records - This file from run 5C contains all recall/renew records in social security sequence.

(2) Run 5D Output. Sorted matched and formatted recall/ renew records - This file contains all recall/renew records sorted into address sequence.

(3) Run 5D Sequence. Run 5D is processed in address sequence.

k. Run Details for Run 5E

The purpose of run 5E, see figure 88, is to sort the weekly updated Circulation Master into patron name, social security number and call number sequence.

(1) Run 5E Input. Weekly updated Circulation Master - This file from run five contains all circulation records current through this update in call number sequence.

(2) Run 5E Output. Sorted Circulation Master - This file contains all circulation records sorted into patron name, social security number and call number sequence.

(3) Run 5E Sequence. Run 5E is processed in patron name, social security number and call number sequence.

l. Run Details for Run 6

The purpose of run 6, see figure 88, is to selectively prepare two circulation listings, an action listing, all overdue notices and a patron-circulation inventory report for display.

(1) Run Six Input

    (a) Sorted matched and formatted recall/renew records - This file from run 5D contains all recall/renew records in address sequence.

    (b) Updated Circulation Master - This file form run five contains all circulation records current through this update in call number sequence.

    (c) Sorted Circulation Master - This file from run 5E contains, all circulation records current through this update in patron name, social security number and call number sequence.

(2) Run Six Output

    (a) Circulation Listing in Call Number Sequence - This list, see figure 76, contains all circulation records in call number sequence.

    (b) Circulation Listing in Patron Nname Sequence - This list, see figure 77, contains all circulation records in patron name sequence.

    (c) RSIC Action File - This file, displayed for library use as the Third Recall Notices, see figure 86, contains a listing of all books which have exceeded the first and second notices for regular, extended loans or recall for reprocessing notices.

    (d) Overdue Notices - These notices, see figure 84, are prepared for each book on regular loan which has exceeded the first and second loan periods.

    (e) Extended Recall Notices - These notices, see figure 85, are prepared for each book on extended loan which has exceeded the first and second loan periods. A computer prepared 80 digit column renewal transaction card accompanies the first overdue notice for extended loans.

    (f) Patron-Circulation Inventory Report - This report, see figure 87, is a statistical analysis of the contents of Circulation Master File indicating books per patron circulation. A computer prepared 80 digit column card for each patron with fifty books or more will accompany this report. The card format will be as follows:

Cols.	Data
1 - 12	Social Security Number
13	Blank
14 - 38	Patron Name
39	Blank
40 - 52	Organization Symbol

Cols.		Data
53		Blank
54 - 59		Building
60		Blank
61 - 68		Phone
69		Blank
70		Type of Patron
71 - 76		Blank
77 - 80		Total Number of Items on Loan.

(g) Recall for Reprocessing Notices - These notices, see figure 83, are prepared for each book on regular or extended loan which must be called into the library for reprocessing.

(h) Patron Recall Request - These requests, see figure 82, are prepared when all circulation copies of a book have been check-out and another patron requests the same book.

(3) Run Six Sequence. Run six will be processed in LC number, name and address sequence.

m. Editing Criteria

Circulation/inventory editing criteria is presented in three categories: input transaction and patron match edits, LC call number edits and update edits. The following are all edits and error messages used by the programmer.

(1) Input Transaction and Patron Match Edits. These edits are used to determine if the input transactions to be processed contain the basic elements and proper format for processing.

(a) A transaction with an action code of "1" will be edited as follows:

Cols.	Data Element	Editing Criteria	Error Message
1	Action Code	1	INVALID ACTION CODE
2 - 37	Call Number	(See LC call number editing criteria)	
38 - 50	Author/Title	Not Blank	NO AUTHOR/TITLE
51	Security Code	Zero or U	INVALID SECURITY CODE
52	Type Loan/ Medium	Must be a code appearing 4.a(2), section IV, chapter 2.	INVALID TYPE LOAN

Cols.	Data Element	Editing Criteria	Error Message
53 - 56	Julian Date	Numeric (In Range)	INVALID LOAN DATE

Match this transaction against the Patron Master. If it matches on social security plus first 4 characters of name, move the patron name, building, phone, mailing symbol, and patron type code into the circulation transaction record; otherwise, flag as PROCESSED error.

Note: In editing the social security field, if the social security number is a nine digit number, column 66 must contain a valid alphabetic character. If it is a ten digit number, column 67 must contain a valid alphabetic character.

Errors detected on this action code will fall into two categories: PROCESSED - meaning the original transaction will go into the update run. KICKED OUT - meaning the original transaction will stop with this run. Error cards will be produced. Information will be the same as the original transaction with the exception of the action code. Leave the action code blank.

(b) A transaction with an action code of "2" will be edited as follows:

Cols.	Data Element	Editing Criteria	Error Message
1	Action Code	2	INVALID ACTION CODE
2 - 37	Call Number	See Note Below	
52	Type Loan/ Medium	Must be code appearing in paragraph 4.a(2), section IV, chapter 2.	INVALID TYPE LOAN
53 - 56	Julian Date	Blank or 9999	INVALID DATE FORMAT

Note: The regular call number edit as described in LC call number editing criteria should allow these conditions to be valid for an action code "2".

1. Call Number minus copy number plus a 9999 date of loan.
2. Call Number minus copy number plus a blank date of loan.
3. Call Number plus copy number plus a 9999 date of loan.
4. Call Number plus copy number plus a blank date of loan.

By-pass matching this transaction against the Patron Master.

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Errors detected on this action code will fall into one category: KICKED OUT - meaning the original transaction will stop with this run. Error cards will be produced. Information will be the same as the original transaction with the exception of the action code. Leave the action code blank.

(c) A transaction with an action ·code of "3" in column one of a transaction should follow the same edits, errors and matching logic as a transaction with an action code of "1."

(d) A transaction with an action code of "zero" will be edited as follows:

Cols.	Data Element	Editing Criteria	Error Message
1	Action Code	Zero	INVALID ACTION CODE
2 - 37	Call Number	(See LC call number editing criteria)	
52	Type Loan/Medium	Must be a code appearing in paragraph 4.a(2), section IV, chapter 2.	INVALID TYPE LOAN

By-pass matching this transaction against the patron master.

Errors detected on this action code will fall into one category: KICKED OUT - meaning the original transaction will stop with this run. Error cards will be produced. Information will be the same as the original transaction with the exception of the action code. Leave the action code blank.

(e) A transaction with an action code of "J" will be edited as follows:

Cols.	Data Element	Editing Criteria	Error Message
1	Action Code	J	INVALID ACTION CODE
2 - 37	Call Number	(See LC call number editing criteria)	
38 - 50	Author/Title		
51	Security Code		
52	Type Loan/Medium	Must be code appearing in paragraph 4.a(2), section IV, chapter 2.	INVALID TYPE LOAN

Cols.	Data Element	Editing Criteria	Error Message
53 - 56	Julian Date		
57 - 65/6	Social Security Number		
66/7 - 78	Patron Surname		
79 - 80	Patron Initials		

By-pass matching this transaction against the Patron File.

Errors detected on this action code will fall into one category: KICKED OUT - meaning the original transaction will stop with this run. Error cards will be produced. Information will be the same as the original transaction with the exception of the action code. Leave the action code blank.

(f) A transaction with an action code of "A" will be edited as follows:

Cols.	Data Element	Editing Criteria	Error Message
1	Action Code	A	INVALID ACTION CODE
2 - 37	Call Number	(See LC editing criteria)	
38 - 50	Author/Title	Not Blank	NO AUTHOR/TITLE
51	Security Code	Zero or U	INVALID SECURITY CODE
52	Type Loan/Medium	Must be a code appearing in paragraph 4.a(2), section IV, chapter 2.	INVALID TYPE LOAN
53 - 56	Julian Date	Numeric (In Range)	INVALID LOAN DATE
57 - 65/6	Social Security Number	Numeric	*INVALID SS NUMBER
66/7 -78	Patron Surname	Alpha	*INVALID SURNAME
79 - 80	Patron Initials	Alpha	*INVALID PATRON INITIAL

Match this transaction against the Patron Master. If it matches on social security plus first 4 characters of name, move the patron name, building, phone, mailing symbol, and patron type code from the Patron

Master into the circulation transaction record; otherwise, flag as a KICKED-OUT error.

In editing the social security field, if the social security number is a nine digit number, column 66 must contain a valid alphabetic character. If it is a ten digit number, column 67 must contain a valid alphabetic character.

Errors detected on this action code will fall into one category: *KICKED OUT - meaning the original transaction will stop with this run. Error cards will be produced. Information will be the same as the original transaction with the exception of the action code. Leave the action code blank.

(g) A transaction with an action code of "minus zero" in column one of a transaction should follow the same edits, errors, and matching logic as a transaction with an action code of "1."

(h) A transaction with an action code " " in column one of a transaction card should follow the same edits, errors, and matching logic as a transaction card with an action code "1."

Inventory/Circulation title change action code "_."

Put in " " (eleven punch) action code with call number and CY99. The inventory title and all circulated through CY99 will be changed. No matching transactions for the same call number should be input unless each has a corresponding title change transaction. New titles will include all of the following information.

Col.	Contents
1	" _ "
2 - 50	Call number with CY99, *, new title
51 - 80	Regular valid data same as on new check out (action code "1")

(2) LC Call Number Edits. These edits are used in conjunction with the input transaction edits and will indicate specific editing requirements for LC call numbers.

Legend: A --- ALPHA Character
        N --- NUMERIC Character
        C --- ALPHA or NUMERIC Character
        B --- BLANK Column Separator
       ND --- NO DATE CONSTANT

NOTE: An "*" will be the terminal character of ANY call number. THE CALL NUMBER MUST NOT EXCEED 36 CHARACTERS EXCLUDING THE "*."

MAIN CLASS/DIVISION

Minimum of 1 ALPHA character followed by a blank.
Maximum of 2 ALPHA characters followed by a blank.

SUBDIVISION/FURTHER SUBDIVISION

Minimum of 1 NUMERIC character followed by a blank.
Maximum of 12 CHARACTERS followed by a blank.

SUBDIVISION EXAMPLES	SUBDIVISION EXAMPLES WITH FURTHER SUBDIVISION EX.	
Nb	N. followed	Cb
NNb	NN. by	CCb
NNNb	NNN. any	CCCb
NNNNb	NNNN. combination	CCCCb
	of	CCCCCb
		CCCCCCb
		CCCCCCCb

NOTE: If "Further Subdivision" is present, the subdivision must be followed by a "." instead of a "b."

CUTTER NUMBER

Minimum of 1 ALPHA character followed by 1 NUMERIC character, and a blank.
Maximum of 1 ALPHA character followed by 3 NUMERIC characters, and a blank.

CUTTER NUMBER EXAMPLES

ANb
ANNb
ANNNb

DATE

A constant of "ND," or a maximum of 4 NUMERIC characters followed by a "-," followed by 2 NUMERIC characters.

DATE EXAMPLES

ND
NNNN
NNNN-NN

NOTE: Date must fall within a range of 1790 to current year.

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VOLUME/SERIAL/COPY

This field may contain a maximum of 27 characters.
An * will signify the end of the field.
The copy number immediately preceeding the "*" must
be of the form:

COPY NUMBER EXAMPLES

AN	ANX
ANN	ANNX
ANNN	ANNNX

where "A" is a constant "C" and "X" is designating
an expendable item. The numeric value of the copy number may not be
greater than 300.

NOTE: The only exception to the copy number rule is
found in transactions recalling all books falling within a given call
number. If no copy number is present, the action code in column 1 of
the transaction must be "2."

PERIODICAL EDIT CHECK

If the first character in the call number field is
blank, check column 52 for a "Q." If column 52 contains a "Q" the re-
cord is a periodical and should by-pass the edit checks on the call
number. If column 52 is anything other than "Q" it is an error.

(3) Circulation/Inventory Editing Error Listing. Errors
appearing on this listing and also represented by punched cards were
found during the editing of the transactions and were not processed.
They must be corrected and resubmitted. Listed below in card data field
order are the various error messages, their meaning, and suggested
corrective action:

Message	Meaning	Action
INVALID TRANSACTION CODE	Card col 1 does not contain a valid check out, return, lost, found, recall, or renewal code.	Determine correct transaction code. Punch and resubmit for processing.
MAIN CLASS INVALID	First alpha character in the LC number is a I,O,W,X, or Y.	Determine correct LC. Punch and re-submit the transaction.

Message	Meaning	Action
MAIN CLASS TOO LONG	Card col. 3 or 4 does not contain a blank.	Determine correct LC. Punch and re-submit the transaction.
MAIN CLASS CONTAINS A NUMERIC CHARACTER	Card col. 2 or 3 contains a numeric character.	Determine correct LC. Punch and resubmit the transcation.
SUBDIVISION TOO SHORT	Card column following first blank after card column 2 not numeric.	Determine correct LC. Punch and re-submit the transaction.
SUBDIVISION TOO LONG	Blank or (.) not present to separate subdivision from cutter.	Determine correct LC. Punch and resubmit the transaction.
SUBDIVISION CONTAINS ALPHA CHARACTERS	Alpha characters are present in the sub-division field. (Subdivision is be-tween the first and second blank and/or period.)	Determine correct LC. Punch and resubmit the transaction.
FURTHER SUBDIVISION IS TOO SHORT	There are no numeric characters after the period.	Determine correct LC. Punch and resubmit the transaction.
FURTHER SUBDIVISION IS TOO LONG	More than seven characters follow the period without a blank to separate the field.	Determine correct LC. Punch and resubmit the transaction.
CUTTER NUMBER STARTS WITH A NUMERIC CHARACTER	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
CUTTER NUMBER CONTAINS AN ALPHA CHARACTER AFTER THE FIRST CUTTER POSITION	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
CUTTER NUMBER IS TOO SHORT	Second character in the cutter number is not numeric.	Determine correct LC. Punch and resubmit the transaction.

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Message	Meaning	Action
CUTTER NUMBER IS TOO LONG	Cutter number is not separated from the date field by a blank.	Determine correct LC. Punch and resubmit the transaction.
DATE FIELD HAS ALPHA OTHER THAN "ND"	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
DATE FIELD CONTAINS A BLANK	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
DATE NOT IN RANGE 1790 – CURRENT YEAR	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
COPY NUMBER FIELD NOT PRESENT	Call number does not contain a copy number.	Determine correct LC. Punch and re-submit the transaction.
COPY NUMBER IS BLANK	Character following the last "C" is blank.	Determine correct LC. Punch and resubmit the transaction.
COPY NUMBER FIELD CONTAINS ALPHA OTHER THAN "X"	Characters following the last "C" in the LC is something other than a numeric character or a "X" meaning an expendable item.	Determine correct LC. Punch and resubmit the transaction.
LC NUMBER HAS TOO MANY BLANKS IN BODY	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
LC NUMBER HAS TOO MANY DECIMALS	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
LC NUMBER DOES NOT HAVE ENOUGH FIELDS	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
CALL NUMBER TOO LONG	Call number contains more than 36 characters.	Determine correct LC. Punch and resubmit the transaction.

Message	Meaning	Action
RECORD DOES NOT HAVE * AFTER CALL NUMBER	Self explanatory.	Determine correct LC. Punch and resubmit the transaction.
FIELD SIX TOO LONG	Field in call number following the date field contains more than 27 characters.	Determine correct LC. Punch and resubmit the transaction.

(4) Transaction Editing Criteria for Updating the Circulation and Inventory Master Files.

(a) A transaction updating the Circulation Master File with an action code of "1" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
1	May/May Not Match	May Not Match	1,2,6,7

Action if Valid Transaction. Build a new circulation master record. Move author/title from inventory master record into the author/title field of the Circulation Master. Add "1" to items circulated "during" field of statistical report. If the type loan/medium field contains an "8" prepare an Issue Slip notice.

(b) A transaction updating the Inventory Master File with an action code of "1" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
1	Unmatched	Unmatched	None

Build a new inventory master. Move author/title from transaction to title field in inventory master record. Blank number of copies field and quantity on hand field. Move loan date from transaction to date first circulated. Flag appropriate copy number field as circulated. Add "1" to the times title circulated field.

1	Match	Matched, and Copy Number Code reflects on shelf, or blank.	1,2,6,7

Flag appropriate copy number as circulated. Add "1" to times title circulated field.

(c) A transaction updating the Circulation Master File
with an action code of "2" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
2	Must Match	May or May Not Match	3,4,14,15

Action if Valid Transaction

A valid action code of 2 can serve three purposes:
1. Recall for reprocessing any or all books on loan.
2. Recall for patron any or all books on loan.
3. Recall of an inter-library loan.

Recall for Reprocessing Logic

TX Type Loan	TX LC Minus Copy	TX Date Field	Logic for Updating
1,8,9	Yes	99999	

(All books circulated for given
 call number are to be recalled)

TX Type Loan	TX LC Plus Copy	TX Date Field
1,8,9	Yes	99999

(Specified copy to be recalled
only.)

Program this leg to allow any
other transactions against this
call number to process before
writing a recall notice then
move a "1" into the recall for
reprocessing flag field, date
of update run into the recall
for reprocessing date field,
and write the record on both
the recall notice tape as well
as the updated circulation mas-
ter tape. Add "1" to the recall
for reprocessing "during" statis-
tical report field.

If after 30 days the book has
not been returned, trigger a
2nd notice by moving a "2" into
the recall for reprocessing flag
field, date of update run into
the recall for reprocessing date
field. Write the record on both
the recall notice tape and the
updated circulation master tape.
Add "1" to the 2nd notice recall
for reprocessing statistical
report during field.

If after 30 days from the 2nd no-
tice the book has not been returned,
trigger a 3rd notice RSIC action
list by moving a "3" into the

TX Type Loan	TX LC Minus Copy	TX Date Field	Logic for Updating
			recall for reprocessing flag field, date of update run into the recall for reprocessing date field. Write the record on both the recall notice tape as well as the updated circulation master tape. Add "1" to RSIC action "during" field of statistical report.

Recall for Patron Logic

TX Type Loan	TX LC Minus Copy	TX Date Field	Logic for Updating
1,9	Yes	Blank	Program this leg to allow any other transactions against this call number to process before writing a recall notice then move a "1" into the recall for patron flag field, date of update run into the recall for patron date field. Write the record on both the recall notice tape as well as the updated circulation master tape. Add "1" to the recall for patron statistical report "during" field.

(All books circulated for given call number and type loan are to be recalled.)

Before writing recall, check to be sure it has not already been recalled for patron; i.e., do not duplicate recall in one 30 day period.

If after 30 days the book has not been returned, unflag the recall for patron flag and blank the recall for patron date field.

(d) A transaction updating the Inventory Master File with an action code of "2" will be edited as follows:

A transaction with an action code of "2" must match a call number on the Inventory Master, if so, no further action is required. Error codes 3,4,14,15.

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(e) A transaction updating the circulation master file with an action code of "3" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
3	Must Match	Must Match	5, 16

Action if Valid Transaction. A valid action code of 3 can serve 2 purposes; renewal of any type item on loan, and renewal of an extended loan that is the results of the logic below.

Automatic Overdue Logic. Note: At the request of RSIC, check each circulation master before writing and take the following action. (Now in effect for part of patrons, based on type and org. symbol.)

Type Loan	Action	Date Criteria
1	Produce Figure 56	180 days or more
9	Produce Figure 57 and a renewal card.	365 days or more
2	Produce Figure 56	30 days or more

Second notices will be prepared at the request of RSIC, on types 1, 2 and 9 if the item has not been returned or renewed. Add "1" to the designated stat report "during" field.

Renewal Logic for Action Code 3

Type Loan	Logic for Updating
1,/,J,A,9,Z,R,I	Blank all recall flags on renewal and the automatic renewal date field. Move the date of the update run into the date of loan field. Add "1" to the number of times book has been renewed field. Add a "1" to the items circulated stat reports "during" field. Change type loan code to correspond with incoming transaction and remove any lost flags.

(f) A transaction updating the inventory master file with an action code of "3" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
3	Must Match	Must Match & Copy Must relect loan.	5, 16

Add "1" to times title circulated field.

(g) A transaction updating the Circulation Master File with an action code of "J" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
J	Must Match	Must Match	9, 11

Additional Checks on Social Security and Surname Fields. If the social security number of the transaction is blank, and/or the social security number field of the circulation record is blank, then the first two characters of the surname must match. Error Code 22.

If the social security number of the transaction is numeric, and/or the social security number field of the circulation record is numeric, then the last five characters of the social security number plus the first two characters of the surname must match. Error Code 10.

Action if Valid Transaction. Delete the circulation record. Add "1" to the items returned "during" field of the statistical report, unless the type loan medium is "8". If the type loan is an "8", write the circulation master onto the issue/turn-in tape before deleting the record. If item was coded as lost, add "1" to found "during" field.

(h) A transaction updating the Inventory Master File with an action code of "J" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
J	Must Match	Must match, and copy number flagged with a valid "loaned" or "lost" code.	9, 11

Action if Valid Transaction. Flag the copy number field with an appropriate returned to shelf code.

(i) A transaction updating the Circulation Master File with an action code of "zero" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
Zero	May or May Not Match	Must match if inventory copy number is coded "loaned". Must not match if inventory record is coded as shelf.	8, 17

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Additional Checks on Social Security and Surname

Fields if Item is on Loan. If the social security number of the transaction is blank, and/or the social security number field of the circulation record is blank, then the first two characters of the surname must match. Error Code 23.

If the social security number of the transaction is numeric, and/or the social security number field of the circulation record is numeric, then the last five characters of the social security number plus the first two characters of the surname must match. Error Code 12.

Action if Valid Transaction. If the copy number on the inventory master is coded as loaned, flag the circulation copy as "lost". If the copy number on the inventory master is coded as shelf, or blank, build a new circulation master record and flag it as "lost" by RSIC. Add "1" to the items lost "during" field of the statistical report.

(j) A transaction updating the Inventory Master File with an action code of "zero" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
Zero	Must Match	Must Match	8, 17

Action if Valid Transaction. Flag the appropriate copy number with a "lost" flag.

(k) A transaction updating the Circulation Master File with an action code of "minus zero" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
Minus Zero	Must Match	Must Match	13, 18

Additional Checks on Social Security and Surname

Fields. If the social security number of the transaction is blank, and/or the social security number field of the circulation record is blank, then the first two characters of the surname must match. Error Code 24.

If the social security number of the transaction is numeric, and/or the social security number field of the circulation record is numeric, then the last five characters of the social security number plus the first two characters of the surname must match. Error Code 26.

Action If Valid Transaction. Remove the lost flag
from the circulation master. Add "1" to the items found "during"
field of the statistical report.

(1) A transaction updating the Inventory Master File
with an action code of "minus zero" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
Minus Zero	Must Match	Must match and copy number must be coded as lost.	13, 18

Action if Valid Transaction. Change the copy number
flag to reflect a proper circulated loan code.

(m) A transaction updating the Circulation Master
File with an action code of "A" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
A	Must Match	Must Match	25

Action if Valid Transaction. Replace the information
contained in the following fields of the circulation record with the
information contained in the transaction record:

a. Patron Name   e. Patron Type Code
b. Building   f. Contractor Code
c. Telephone   g. Type Loan
d. Mailing Symbol

(n) A transaction updating the Inventory Master File
with an action code of "A" will be edited as follows:

Action Code	Edit Check LC Nr. Minus Copy Nr.	Edit Check LC Nr. Plus Copy Nr.	Error Codes
A	Must Match	Must Match	25

Action if Valid Transaction. No further action is
required.

(o) A transaction updating the Circulation Master File
with an action code of "-" will be edited as follows:

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| Action | Edit Check | Edit Check | Error |
Code	LC Nr. Minus Copy Nr.	LC Nr. Plus Copy Nr.	Codes
" - "	Must Match	May Not Match	None

Action if Valid Transaction. On match of LC nr. minus copy nr., change the author/title in the circulation master record to agree with that in the corresponding inventory control master record.

(p) A transaction updating the Inventory Master File with an action code of " - " will be edited as follows:

| Action | Edit Check | Edit Check | Error |
Code	LC Nr. Minus Copy Nr.	LC Nr. Plus Copy Nr.	Codes
" - "	Must Match	N/A	19

Move the author/title from the incoming transaction to the title field of the inventory control master record.

(5) Circulation/Inventory Update Error List

Error Code	Meaning	Action Code	Decoded
ERROR 1	Trying to loan a book already on loan.	1	1
ERROR 2	Trying to loan a book recorded as lost.	1	1
ERROR 3	Recall of book not on loan.	2	2
ERROR 4	Recall of book recorded as lost.	2	2
ERROR 5	Trying to renew a book not on loan.	3	3
ERROR 6	Trying to loan a periodical already on loan.	1	1
ERROR 7	Trying to loan a periodical recorded as lost.	1	1
ERROR 8	Trying to record lost book already recorded as lost.	Zero	0
ERROR 9	Return of book not recorded as loaned.	J	11 & 1
ERROR 10	Social security number does not match - Return J vs loan.	J	11 & 1

Error Code	Meaning	Action Code	Decoded
ERROR 11	Return of periodical not recorded as loaned.	J	11 & 1
ERROR 12	Social security number does not match - Lost vs loan.	Zero	0
ERROR 13	Found book action on book not shown as lost.	$\bar{0}$	11 & 0
ERROR 14	Recall of periodical not on loan.	2	2
ERROR 15	Recall of periodical recorded as lost.	2	2
ERROR 16	Trying to renew a periodical not on loan.	3	3
ERROR 17	Trying to record lost periodical already recorded as lost.	Zero	0
ERROR 18	Found periodical action on periodical not recorded as lost.	$\bar{0}$	11 & 0
ERROR 19	Trying to process a book not shown in inventory master file.	J	11 & 1
ERROR 20	(Not in use).		-------
ERROR 21	(Not in use).		-------
ERROR 22	Surnames do not match - Return vs loan.	J	11 & 1
ERROR 23	Surnames do not match - Lost vs loan.	Zero	0
ERROR 24	Surnames do not match - Found vs lost.	(-)Zero	(-)Zero
ERROR 25	Call number does not match a call number on the circulation file.	A	12 & 1
ERROR 26	Social security number does not match - Found vs loan.	$\bar{0}$	11 & 0

Section V. SERIALS CONTROL SUBSYSTEM

1. Purpose

The purpose of serials control subsystem is to provide an automated system for formal control of serials ordering, renewing, claiming, routing, holding and binding functions of the ALPHA System.

2. Serials Master File

The Serials Master File is composed of a series of 80 character records for each current subscription of active titles, plus inactive titles for which RSIC has bound holdings. Each series of records for a given title and/or subscription is tied together by a six digit control number, a one digit action code and a two digit card code.

The control number for each series of records is assigned so that its magnitude will alphabetize the title. The first five digits (numeric) of a control number are assigned to a given title. These five digits are referred to throughout the system as "basic control number." The sixth digit (alpha-numeric) distinguishes various subscriptions of a title. Three factors determine the number of subscription breakouts. These factors are different vendors, addresses, and subscription expiration dates. The desired list of breakouts is thirty-six, which uses all 26 letters of the alphabet and numerals 0-9. However, special characters may be used if required. If special characters are used, consideration should be given to the printability of such characters by the printer to be utilized.

The number of records required for a given control number will vary. As a rule, the primary subscription for a given title will vary. As a rule, the primary subscription for a given title will be assigned an "A" in the sixth digit of the control number. All cross reference titles, binding and holdings records will be tied to this "A" control number. An exception to this rule will be when all subscriptions ordered by RSIC are for direct delivery to other addresses. Control numbers with other than "A" in sixth digit requires all records 01 through 09.

The action code (if required) assigned to each record will depend upon the action required. The following represents all action codes and actions which may be taken against the master file.

"N" action code will be indicated in col 7 of all records for new titles.

"D" action code will be indicated in col 7 of each individual record which is to be deleted within a control number.

To blank out an existing field within a record, punch a zero in the high order column of the field to be blanked.

To delete from the master file all records for a given control number, submit a transaction card with the control number to be deleted in (cols 1-6) and "00" in card code (cols 8-9).

The contents of records 01-02, 07-09, 14-29, and 60-79 already existing in the master file can be changed only by a complete resubmission of the record to be changed. All other records can be changed by individual fields within the record by submitting a card with the control number (cols 1-6), card code (cols 8-9) and the field or fields to be changed in their respective columns.

As previously mentioned, the number of 80-character records required for each control number will vary according to the nature of the item. The series of records, each record identified by a two digit card code, are organized into basic groups according to content and purpose. Records 01-02 provide a standard title acceptable for ordering, renewing, claiming, holding, routing, and binding functions. Records 03-09 are primarily data required for ordering control. Records 10-29 are pertinent to binding functions. Records 1A-1Z are pertinent to items claimed. The 30-59 records relate to holdings and lacks. Records 60-69 are used to record bound index holdings. Records 70-79 provide for cross reference of periodical titles.

The purpose and content, when not self explanatory, of each possible type record required for a given control number is outlined below:

    a.   Card 01

This card contains up to 71 characters of the serial title. If the title is inactive, (INACTIVE) will be entered in positions 71-80, providing these positions are not required for the title. If these positions or any portion thereof are required for the title, (INACTIVE) will be entered in positions 71-80 of the 02 card. (See card 02 below.) Each control must have a type 01 record.

    b.   Card 02

Required only if the title and/or title plus (INACTIVE) exceeds 71 characters provided for in the type 01 record. Words should not be broken between 01 and 02 records. The inactive indicator (INACTIVE), when required in the 02 record, should always be in positions 71-80.

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c. Card 03

Required for all titles. Contains vendor name currently providing the subscription and publisher's name.

d. Card 04

Required for all active titles. It contains the publisher's address.

e. Card 05

Required for all titles. Contains the following elements:

(1) Language or Text. Two digit abbreviations of language for which articles within a journal are printed.

(2) English Abstracts. If journal is published in a foreign language and contains English abstracts, a "Y" is entered. If English abstracts are not included, an "N" will be entered.

(3) Country of Origin. Self explanatory.

(4) Translated Edition. If this title was originally published in another language, a "Y" will be entered, otherwise enter "N."

(5) Subscription Price. Current list price.

(6) Number of Subscriptions. Self explanatory.

(7) Subscription END. Two spaces for month and two spaces for year or FREE.

(8) Item Number. A five digit sequence number consecutively assigned to each item on a given purchase or requisition order.

(9) Delivery Order Number. A two digit number assigned consecutively during a given year to orders sent this vendor.

(10) Effective Date of Subscription. Self explanatory.

(11) J/N/S/C. All journals are code "J." All newspapers are code "N." All service items are code "S". All serials are code "C." All titles must be identified by one of these codes.

(12) SPC Code. (Code 1) Active titles not to be ordered, (code 2) active titles not to be routed, (code 3) active titles not

to be ordered or routed, (code 4) active titles not to be published on the title list, (code 5) active titles to be routed in parts, (code 6) not routed, information to go only on the title list.

      f.   <u>Card 06</u>

      Required for all active and inactive titles. Contents are as follows:

      (1) <u>Addressee</u>. Positions 10-11 contain a two digit numeric code used to match the following mailing addresses when preparing purchase or requisition orders. Valid codes for RSIC use are 01, 02 and 05 which will print the following addresses:

          01 - Redstone Scientific Information Center
              U. S. Army Missile Command
              Redstone Arsenal, Alabama
              ATTN:

          02 - Commanding General
              U. S. Army Missile Command (AMSMI)
              Redstone Arsenal, Alabama
              ATTN:

          05 - NASA
              Marshall Space Flight Center
              Huntsville, Alabama
              ATTN:

Positions 12-42 of the addressee field contain the attention line for the address.

      (2) <u>Purchase Order Number</u>. The purchase order number on which this subscription was bought. Blank for requisition type items.

      (3) <u>Requisition Number</u>. The requisition number on which this subscription was acquired. Blank for purchase order type items.

      (4) <u>Technical Library Number</u>. The technical library number on which this subscription was bought. Blank for requisition or purchase order type items.

      (5) <u>Frequency</u>. The number of publications per year. For example, a daily publication would have 365, a weekly publication would have 052, etc. If frequency is irregular, as quite common with foreign publications, an arbitrary frequency will be entered with an overpunch (-) over position 79.

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(6) _Purpose._ A code to indicate purpose of the sub-scription. Codes are as follows:

> L - Used for library purposes only.
> C - Available for circulation.
> D - Subscription sent direct to addressee re-flected.
> R - Received at library but all copies may be routed. (No shelf copy retained in RSIC.)

g. _Cards 07-09_

Use only if notes about ordering should be recorded. 213 characters, including blanks, are provided for notes.

h. _Card 10_

Required only for current titles that are to be bound or for which bound holdings are available in RSIC. Contents are:

(1) _General Subject._ Self explanatory.

(2) _Binding Schedule._ The month or months that some type of binding action should be taken on this title. In case of titles with irregular frequency of publication, an arbitrary schedule will be entered.

(3) _Volumes per Subscription._ Presently unused.

(4) _Issues per Volume._ Self explanatory.

(5) _Volumes per Year._ Self explanatory.

i. _Cards 11-12_

Presently unused.

j. _Card 13_

Required for all titles that are to be bound. Positions 10 through 17 contain numeric codes from which binding instructions, as reflected on the binding rub, may be printed. Codes by position are as follows:

POSITION	ITEM	CODE	PRINTED INSTRUCTION
10	Title	1	New title
		Blank	Repeat title

POSITION	ITEM	CODE	PRINTED INSTRUCTION
11	Title page and content	1	Separate
		2	Not published
		3	Stub for
		4	Bind without
12·	Issue Content	1	Bind in place
		2	Bind in front
13	Index	1	Bind in front
		2	Bind in back
		3	Not published
		4	Bind without
		5	Stub for
14	Covers	1	Remove all
		2	Bind in all
		3	Bind in first cover only
		4	Bind on front cover only
15	Ads	1	Remove all
		2	Leave in all
		3	Remove all ads not having text
		4	Bind all ads in back of volume
		5	Ads with text bind in place
16	Parts, Supplements, Abstracts, Proceedings	1	Bind in place
		2	Bind in back of volume

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POSITION	ITEM	CODE	PRINTED INSTRUCTION
17	Split Volumes	1	Yes
		Blank	No

The remainder of the 13 record contains the following:

Color - A four digit color code (color of covers).

Size - Maximum 15 digit size (cover specs.).

Bound For - Organization

Bind Cost - Presently unused.

k. <u>Cards 14-19</u>

Use only if information concerning the publication or special handling of indexes needs recording.

l. <u>Cards 20-29</u>

Use for recording notes concerning binding. Notes should be somewhat permanent in nature to justify recording in this file.

m. <u>Cards 1A-1Z</u>

Use for recording information concerning items claimed.

n. <u>Cards 30-39</u>

Use for recording bound or unbound periodicals, microfilm and microfiche holdings. Four sets of holdings are provided for in each 30 series record. A holdings set is comprised of a type (B-Bound, U-Unbound, C-Microcards, F-Microfilm, M-Microfiche), series, beginning volume, beginning year, the ending volume and ending year. A different set of holdings records is required each time a break in series or volume occurs. A maximum of 40 sets of holdings are provided for in the 30-39 series records.

o. <u>Cards 40-49</u>

Use for recording volume lacks. A set of volume lacks is of the same make-up as a set of holdings in the 30-39 records, except no type is required.

p. <u>Cards 50-59</u>

Use to record missing issues numbers by series, volume and year.

q. Cards 60-69

Use to record bound index holdings. The nature of
these holdings is different from the periodical holdings, therefore
a free form of recording is provided for in this series of
records.

r. Cards 70-79

Use to record cross reference titles. These titles
are coded in a manner which provides cross reference and current title
lists in a forward or backward chain reference. Position 10 contains
the reference code. Codes and their meaning are as follows:

S - See

F - Formerly in

C - Currently

P - Superseded

T - Continued as

A - Also in

R - See translation

The code will be followed with a period and a blank in positions 11-12.
The remaining positions of the record are used to record the title.
If the title exceeds the capacity of this 70 series record, an
asterisk will be punched in position 80 and the remaining positions
of the title will be punched in the next 70 series record available
beginning in position 10. Words should not be broken between two
records.

3. Serial Logic and Run Relations

Utilizing the computer run relations flow chart, figure
117, as a guideline the serials control subsystem run relations are
easily followed from source document to printed serials lists.

Input serials transaction data for the serials control
subsystem is generated through the submission of an appropriately
annotated library request card by either a patron or a member of the
library staff to the circulation section. Information contained on
this form is subsequently keypunched into the previously described

series of transaction records using an IBM 026 printing card punch.

As shown in the flow chart the computer accepts a variety of transaction records which are used to initiate and update the Serials Master File records.

For computer processing, all data contained on these input transaction records is converted to magnetic tape. This conversion is accomplished in the computation center by a standardized punch card to magnetic tape conversion run which is presented in figure 117 as the conversion from transaction card to magnetic tape.

During this conversion run which produces magnetic tape images of input transaction card formats a record mark is appended to each input records. All records will be blocked ten records per block to facilitate sorting in run 1.

When the input transaction data is in a machine readable form, the information contained on the magnetic tape file is sorted into major sequence by control number and minor sequence by card code before processing against the Serials Master File.

This sorting action will be accomplished in run 1, which will sort all input transactions into the sequence mentioned above.

Output from this sorting action in run one will serve as input to the file maintenance transaction editing program in run 2 which will edit each transaction per detailed serial input transaction editing criteria and prepare an error list of all transactions found in error.

One other output, the new holdings file is generated in the edit run. This file displayed as the New Holdings List reflects all new titles to be added to the Serials Master File as of the date of the update.

When the serial input transactions have been edited, the Serial Master File from the last update must be made available in order to process the edited serial transactions and update the master file.

During the update run, run 3, three types of actions affecting the Serials Master File may be accomplished: one, establish a new record in the file; two, change as established serial record, or three, delete an established record from the file.

The Serials Master File from the last update along with the edited serials transactions file are loaded onto the computer. The Serials Master File will be sequenced control number and card number into computer memory along with the edited serials transactions file.

When a match of corresponding control numbers is made in the Serials Master File with control number in the edited serials transactions file, the action indicated in the edited serials transactions file will be accomplished as indicated by the card code and action code. All other items in the edited serials transaction file, not currently in the master file, will be sequenced onto the master file in control number and card number sequence.

The edited serials transactions, which may be any of the previously mentioned type actions, will be edited again during actual update processing. Utilization of these update edits will determine final processing acceptability of the edited serials transactions which are subsequently processed against the Serials Master File. Errors found here, if any, will be indicated on the update print tape along with the cancelled and changed records. Contents of the print tape will be displayed as an Error List, figure 96, a Cancelled Item List, figure 94, and a Changed Item List, figure 95.

The updated Serials Master File will be displayed as the Serials Master File List (complete), figure 89. One other file output is produced in run 3, this is the Routing Master which will be used in conjunction with the Patron Routing Master (from the patron control subsystem) to determine the latest patron mailing information for preparation of Routing Slips, a Complete Serials Review List of All Routing Slips and a Statistical Report.

Run 4, the renewal review and binding run will search the Serials Master File and produce a Binding Review List, figure 97, and a Renewal Review List (with renewal status transaction cards), figure 99, which will be used by the library in planning future serials binding and renewal requirements. The renewal transaction cards obtained in this run will serve as input to run 5 and subsequent update of the Renewal Items Master in run 7. A Renewal Items Master, retrieved in this run, containing all items which appear on the Renewal Review List will also serve as input to update the Renewal Items Master File. Errors found in this run will be displayed in the Binding Error List, figure 98, and the Renewal Error List, figure 100.

Run 5 converts to magnetic tape images all input renewal status transaction cards, from run 4, along with any new or changed item transaction cards to be added to the Renewal Items Master and produces a renewal update transaction file.

Conversion on input transaction data, appending of the record mark and blocking of records is identical to the procedures accomplished prior to run 1.

Run 6 is a simple sort of the renewal update transaction file into control number and card code sequence.

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These sorted renewal update transactions along with the Renewal Items Master from run 4 will be utilized to update the current month's Renewal Items Master File.

The Renewal Items Master File along with the renewal update transactions will be sequenced into computer memory control number by number until all actions indicated by the renewal update transactions file have been accomplished.

The Renewal Items Master File will be generated and maintained current for a one month period of orders after which it will be dropped.

Output from the Renewal Items Master File is a Cancellation List, figure 101, of all items which will not be renewed, an Update Error List, figure 103, of any items found in error and a Verification List (with change suspense and change now transaction cards) figure 102, indicating exactly what appears in the Renewal Items Master File.

Following the Renewal Items Master File update the contents of the updated file will be sorted into control number, action code and card code sequence in run 8 for input to a renewal report generator run, run 9 which will prepare an on-order monthly file of all items on order, a list of Requisition Orders, figure 104, a list of Purchase Orders, figure 106, a list of (TL) Technical Library Orders, figure 105, and a Statistical Report, figure 107, of all items ordered and a file of updated 05-06 maintenance transaction card images.

Run 10 will sort the updated file maintenance transactions from run 9 into control number and card code sequence for display as 05-06 serial file maintenance transaction cards. These 05-06 transaction cards will be integrated with the change now and change suspense transaction cards from run 7 prior to updating of the Serials Master File.

Run 11 is a sort of the on-order monthly file from run 9 into control number and card code sequence. Output from this sorting action will serve as input to run 12, the monthly on-order report generator run which updates the to date On-Order Master File.

The To Date On-Order Master File from the last update along with the sorted on-order monthly file will be processed into computer memory control number by number until all actions indicated by the on-order monthly file have been accomplished. Output from run 12 will be a To Date On-Order List, figure 108, current through this update, a Delete List, figure 110, of all items deleted during the update, an Error List, figure 109, of all transactions found in error and an Undelivered List which is presently unused.

Run 13 is a simple sort of the contents of the Patron Routing Master (from the patron control subsystem) into control number, copy number and priority sequence.

Output from the sort in run 13 along with the Routing Master from serial file maintenance update run will serve as input to a format run, run 14 which formats all Route Slips, figure 111, prepare a Review List of All Route Slips, figure 112, a Condensed List, figure 113, of all serials available for routing and a combined error and statistical file.

Run 15 selectively sequences for display the Serial Routing Statistics, figure 114, with routing status errors.

Run 16 selectively extracts from the updated Serials Master File those items which RSIC ordered but did not receive and produces a transaction card for each. This file will be sorted to purchase order, delivery order and item number in run 17. Output from this sort will serve as input to run 18 which produces a Claims Report, figure 115, of all items ordered but not received. The transaction cards produced in run 16 are utilized to delete items from the Claims Report as they are received.

Run 19 selectively extracts from the updated Serials Master a file of titles and holdings cross references. This file will be sorted in run 20 to title, holding and cross reference sequence and displayed in run 21 as the Titles and Holdings Cross Reference List Periodical Catalog), figure 116.

4. Run Details for Run 1

The purpose of run one, see figure 117, is to sort all input transactions from the card to magnetic tape run into control number (major) and card code (minor) sequence. This run will insure the proper sequencing of all input transactions for processing against the Serials Master File.

a. Run One Input

The input transactions data to run one will be a magnetic tape file of all input transactions in random sequence.

b. Run One Output

The output data from run one will be a magnetic tape file of all input transactions sorted into major sequence by control number and minor sequence by card code.

c.   Run One Sequence

Run one will process all input transactions into major
sequence by control number (cols 1-6) and minor sequence by card
code (cols 8-9).

5.   Run Details for Run 2

The purpose of run two, see figure 117, is to edit all sorted
input transactions per input transaction editing criteria and pro-
duce a file of RSIC new holdings, a file of edited transactions used
to update the Serials Master File and an error list of all input
transactions found in error.

a.   Run Two Input

Sorted input transaction file from run one.

b.   Run Two Output

(1) RSIC New Holdings List, figure 92, of new holdings
to be added to the Serials Master File.

(2) Transaction error list, figure 93, of all input
transactions found in error. Each transaction in error will be
accompanied by an appropriate error message.

(3) Edited file maintenance transactions to be used in
the update of the Serials Master File.

c.   Run Two Sequence

Run two will be processed in control number (cols 1-6)
major and card code (cols 8-9) minor sequence.

6.   Run Details for Run 3

The purpose of run three, see figure 117, is to update the
Serials Master File and produce a Complete Serials Master List,
a List of Cancelled Items, a List of Changed Items, an Error List of
items in error (if any) and a Routing Master.

a.   Run Three Input

(1) Edited file maintenance transactions from run two.

(2) Recyled Serials Master File from last update.

b. Run Three Output

        (1) Updated Serials Master File consisting of the previously recycled Serials Master File to include any new serial transactions added, changes to the existing Serials Master File records and deletion of transactions cancelled during the update.

        (2) Routing Master File which will be used in conjunction with the Patron Routing Master File (from the patron control subsystem) to meet all serials routing requirements.

        (3) Complete Serials Master File List, figure 89, is a display of the contents of the master file current through this update.

        (4) Cancelled Items List, figure 94, is a display of all items cancelled during this update.

        (5) Changed Items List, figure 95, is a display of all master file records changed during this update.

        (6) Update Error List, figure 96, is a display of all transaction found in error during the master file update.

c. Run Three Sequence

        Run three will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

7. Run Details for Run 4

        The purpose of run four, see figure 117, is to search the Serials Master File and produce a Serials Renewal List (with renewal status transaction cards), a Renewal Error List, a Candidate for Binding List and a Binding Error List.

a. Run Four Input

        Updated Serials Master File from run three.

b. Run Four Output

        (1) Serials Renewal List, figure 99, is a display of all items which are to be considered for renewal for the next year. Journal items will appear on this list five months prior to renew date; services, newspapers and requisitions will appear on this list three months prior to renew date.

        (2) Renewal Error List, figure 100, is a display of all renewal transactions found in error.

(3) Renewal status cards will be computer prepared for each item appearing on the Serials Renewal Review List. These cards will serve as input transactions to the renewal item file update in run six.

(4) Candidate for Binding List, figure 97, is a display of all items which are to be considered for binding. Items appearing on this list will be for current month.

(5) Binding Error List, figure 98, is a display of all binding transactions found in error.

(6) Renewal Items Master File consisting of all items appearing on the renewal item list which may be renewed or cancelled in run seven.

c.   Run Four Sequence

Run four will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

8.   Run Details for Run 5

The purpose of run five, see figure 117, is to convert all new, change and renewal item transaction cards to magnetic tape appending a record mark to the end of each card image.

a.   Run Five Input

Input to this run will consist of renewal status transaction cards from run four and all new or changed item transaction cards to be added to the Renewal Item Master.

b.   Run Five Output

This file will consist of magnetic tape images of the new changed and renewal transaction cards with a record mark appended to each transaction card image. All transactions will be blocked ten to a block.

c.   Run Five Sequence

Run five will be processed in input sequence of the transaction cards.

9.   Run Details for Run 6

The purpose of run six, see figure 117, is to sort all input transactions from run five into control number (major) and card code

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(minor) sequence. This run will insure the proper sequencing of all input transactions for processing against the Renewal Item Master File.

a. Run Six Input

The input transaction data to run six will be a magnetic tape file of all renewal and new transactions in input sequence.

b. Run Six Output

The output data from run six will be a magnetic tape file of all input transactions sorted into major sequence by control number and minor sequence by card code.

c. Run Six Sequence

Run six will process all input transactions into major sequence by control number (cols 1-6) and minor sequence by card code (cols 8-9).

10. Run Details for Run 7

The purpose of run seven, see figure 117, is to update the Renewal Items Master and produce a list of Cancelled Items, a Vertification List of all items renewed, a file of change suspense cards, a file of charge now cards and a Renewal Update Error List.

a. Run Seven Input

(1) Renewal Items Master from run four consisting of all items which appeared on the renewal items list.

(2) Sorted renewal update transactions file from run six consisting of all new, changed and renewal status transactions.

(3) Recycled Renewal Items Master File for current month.

b. Run Seven Output

(1) Cancellation List, figure 102, is a display of all items deleted from the Renewal Items Master.

(2) Verification List, figure 102, is a display of all items renewed, new items added or changes made to the renewal items master.

(3) Renewal Update Error List, figure 103, is a

display of transactions found in error during the Renewal Items Master update.

(4) File maintenance change suspense cards are transaction cards representing changes to be made to the Serials Master File when the subscription is effective.

(5) File maintenance change new cards are transaction cards representing changes to be made to the Serials Master File now.

(6) Updated Renewal Items Master consisting of all new items, renewed items to be added and changes to be made to the To Date On-Order Master. The Renewal Items Master will be dropped after one month and a new item master begun.

c.   Run Seven Sequence

Run seven will be processed in control number (major) and card code (minor) sequence.

11. Run Details for Run 8

The purpose of run eight, see figure 117, is to sort the updated Renewal Items Master into control number (major); action code (intermediate) and card code (minor) sequence.

a.   Run Eight Input

Updated Renewal Items Master from run seven.

b.   Run Eight Output

Sorted Renewal Items Master.

c.   Run Eight Sequence

Run eight will be processed in control number (major) action code (intermediate) and card code minor sequence.

12. Run Details for Run 9

The purpose of run nine, see figure 117, is to generate a new and renewal items statistical report, a requisition items list, a purchase order items list, a file of serials file maintenance transactions and an on order monthly file.

a.   Run Nine Input

Input to this run will be the sorted Renewal Items

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Master from run eight.

      b.   <u>Run Nine Output</u>

      (1) New and Renewal Items Statistical Report, figure 107, is a display of the cost of all new and renewed items by vendor.

      (2) Requisition Items, figure 104, is a display of all items ordered on requisitions.

      (3) Purchase Order Items, figure 106, is a display of all items ordered on purchase orders.

      (4) Technical Library Items, figure 105, is a display of all items ordered on TL numbers.

      (5) File maintenance transactions. These will be 05 transactions updated to include language, country of origin, translation price etc., and 06 transactions to include address, purchase order number, frequency and purpose.

      (6) On-order monthly consisting of all new items, renewed item and changes to the To Date On-Order Master File.

      c.   <u>Run Nine Sequence</u>

      Run nine will be processed in control number (major), action code (intermediate) and card code (minor) sequence.

    13. <u>Run Details for Run 10</u>

      The purpose of run ten, see figure 117, is to sort the renewal file maintenance transactions into control number (major) and card code (minor) sequence and produce 05-06 file maintenance transaction cards used to update the Serials Master File monthly.

      a.   <u>Run Ten Input</u>

      Renewal file maintenance transactions in control number (major), action code (intermediate) and card code (minor) sequence.

      b.   <u>Run Ten Output</u>

      Sorted file maintenance transactions in control number (major) and card code (minor) sequence. This file will be displayed as 05-06 file maintenance transaction cards and integrated into change suspense and change now from run seven prior to processing against the Serials Master File.

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c.   Run Ten Sequence

Run ten will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

14. Run Details for Run 11

The purpose of run eleven, see figure 117, is to sort the on-order monthly file into control number (major) and card code (minor) sequence.

a.   Run Eleven Input

On-order monthly file of all new items, renewed items and changes to the To Date On-Order Master File.

b.   Run Eleven Output

On-order monthly file sorted into control number (major) and card code (minor) sequence.

c.   Run Eleven Sequence

Run eleven will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

15. Run Details for Run 12

The purpose of run twelve, see figure 117, is to update the To Date On-Order Master File and produce a current To Date On-Order List, a delete list of all items deleted from the file and an error list of all items in error (if any). An undelivered file is recovered in this run, but at present it is not in use.

a.   Run Twelve Input

Sorted on-order monthly file from run eleven.

b.   Run Twelve Output

(1) Updated To Date On-Order Master File consisting of the previously recycled To Date On-Order Master File to include any new ordered transactions added, changes to the existing To Date On-Order Master File and deletion of transactions dropped during the update.

(2) Complete To Date On-Order List, figure 108, is a display of the contents of the master file current through this update.

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(3) Delete List, figure 110, is a display of all items deleted from the To Date On-Order Master File during the update.

(4) To Date On-Order Error List, figure 109, is a display of all transactions found in error during the update of the to date on order master file.

   c.   Run Twelve Sequence

Run twelve will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

16. Run Details for Run 13

The purpose of run thirteen, see figure 117, is to sort the patron routing master (from the patron control subsystem) into control number (major), copy number (intermediate) and priority (minor) sequence.

   a.   Run Thirteen Input

Patron routing master from the patron control subsystem in social security number sequence.

   b.   Run Thirteen Output

Patron routing master sorted into control number (major), copy number (intermediate) and priority (minor) sequence.

   c.   Run Thirteen Sequence

Run thirteen will be processed in control number (major), copy number (intermediate) and priority (minor) sequence.

17. Run Details for Run 14

The purpose of run fourteen, see figure 117, is to format route slip assignments and produce all route slips, a reference list, a condensed list and a combined error and statistical file.

   a.   Run Fourteen Input

(1) Sorted patron routing master file from run thirteen.

(2) Routing master from run three, serials file maintenance update.

   b.   Run Fourteen Output

(1) Route slips, figure 111, is a typical routing display

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for one item.

(2) Complete Review Listing of All Route Slips, figure 112, is a display of all items routed and to whom each is routed.

(3) Condensed List, figure 113, is a display of all serials which are available for routing.

(4) Combined Error and Statistical File containing both journal records and patron records found in error and complete serials routing statistics.

c.   Run Fourteen Sequence

Run fourteen will be processed in control number (major), copy number (intermediate) and priority (minor) sequence.

18. Run Details for Run 15

The purpose of run fifteen, see figure 117, is to selectively sequence for display the serials routing statistics, the journal error list and the patron error list.

a.   Run Fifteen Input

Combined error and statistical file from run fourteen.

b.   Run Fifteen Output

Serials routing statistics, figure 114 is a display of general statistics related to serials routing.

c.   Run Fifteen Sequence

Run fifteen will be processed in the sequence of the output displays.

19. Run Details for Run 16

The purpose of run sixteen, see figure 117, is selectively extract from the serials master a file those items which RSIC ordered but did not receive from the vendor and produce a transaction card for each.

a.   Run Sixteen Input

Updated Serials Master File from run three.

b. Run Sixteen Output

(1) Updated claims card for each item appearing on the Serials Master File which RSIC has not received from the vendor.

(2) Claims Master File consisting of those items for which updated claim cards were prepared.

c. Run Sixteen Sequence

Run sixteen will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

20. Run Details for Run 17

The purpose of run seventeen, see figure 117, is to sort the Claims Master File into purchase order (major), delivery order (intermediate) and item number (minor) sequence.

a. Run Seventeen Input

Claims Master File from run sixteen in control number and card code sequence.

b. Run Seventeen Output

Claims Master File sorted into purchase order (major), delivery order (intermediate) and item number (minor) sequence.

c. Run Seventeen Sequence

Run seventeen will be processed in purchase order (major), delivery order (intermediate) and item number (minor) sequence.

21. Run Details for Run 18

The purpose of run eighteen, see figure 117, is to produce a claim extract report for display of those items RSIC did not receive from the vendor.

a. Run Eighteen Input

Claims Master File from run eighteen sorted into purchase order (major), delivery order (intermediate) and item number (minor) sequence.

b. Run Eighteen Output

Claim extract report, figure 115, of all items which

RSIC has ordered but did not receive.

c. Run Eighteen Sequence

Run eighteen will be processed in purchase order (major), delivery order (intermediate) and item number (minor) sequence.

22. Run Details for Run 19

The purpose of run nineteen, see figure 117, is to selectively extract from the Serials Master a file of titles and holdings cross references.

a. Run Nineteen Input

Updated Serials Master File from run three.

b. Run Nineteen Output

(1) Error List of all errors found in the extract run.

(2) Titles and Holdings Cross Reference File of all RSIC serials.

c. Run Nineteen Sequence

Run nineteen will be processed in control number (cols 1-6) major and card code (cols 8-9) minor sequence.

23. Run Details for Run 20

The purpose of run twenty, see figure 117, is to sort the Title and Holdings Cross Reference File into title (major), holding (intermediate) and cross reference (minor) sequence.

a. Run Twenty Input

Titles and Holdings Cross Reference File from run nineteen in control number (major) and card code (minor) sequence.

b. Run Twenty Output

Titles and Holdings Cross Reference File sorted into title (major), holding (intermediate) and cross reference (minor) sequence.

c. Run Twenty Sequence

Run twenty will be processed in title (major), holdings (intermediate) and cross reference (minor) sequence.

24. Run Details for Run 21

The purpose of run twenty-one, see figure 117, is to produce for display a Serial Titles and Holdings Cross Reference List (presented as the Periodicals Catalog).

    a.   Run Twenty-One Input

Titles and Holdings Cross Reference File from run twenty sorted into title (major), holding (intermediate) and cross reference (minor) sequence.

    b.   Run Twenty-One Output

Periodicals Catalog, figure 116, of all serial titles and holdings cross references held by RSIC.

    c.   Run Twenty-One Sequence

Run twenty-one will be processed in title (major), holding (intermediate) and cross reference (minor) sequence.

25. Editing Criteria

Edits are rules specifying that certain things must be or cannot be in the specified field of the transaction record or that certain series must be properly used. Each transaction record found in error should be manually screened and corrective action taken. The following are error and processing messages with explanation and suggested corrective action.

    a.   Serials Input Transaction Editing Criteria

Message	Meaning	Corrective Action
CONTROL NUMBER MISSING	Each transaction record processed must have a control number.	Research subscription request. Determine control number and submit correction per transaction change instructions.
INVALID CARD CODE-REJECTED	Card codes must be 01-79 or 1A-1Z. Card code could contain wrong code for specific action.	Determine correct card code and submit correction per transaction change instructions.
MISSING 01 CARD CODE	Each new transaction processed must have	Research subscription request. Determine appropriate data

Message	Meaning	Corrective Action
	an 01 card.	for 01 card code and submit new transaction card.
MISSING 03 CARD CODE	Each new transaction processed must have an 03 card.	Research subscription request. Determine appropriate data for 03 card code and submit new transaction card.
MISSING VENDOR IN 03 CARD	Vendor is a vital element for all new transactions.	Research subscription request. Determine vendor and submit correction per transaction change instructions.
MISSING 04 CARD CODE	Each new transaction processed should have an 04 card.	Research subscription request. Determine appropriate data for 04 card code and submit new transaction.
MISSING 05 CARD CODE	Each new transaction processed must have an 05 card.	Research subscription request. Determine appropriate data for 05 card code and submit new transaction..
MISSING COUNTRY OF ORIGIN IN 05 CARD	Country of origin is a vital element for all new transactions.	Research subscription request. Determine country of origin and submit correction per transaction change instructions.
MISSING NUMBER OF SUBSCRIPTIONS 05 CARD	Number of subscriptions is a vital element for all new transactions.	Research subscription request. Determine number of subscriptions and submit correction per transaction change instructions.
SUBSCRIPTION END DATE MISSING 05 CARD	Subscription end date is a vital element for all new transactions.	Research subscription request. Determine subscription end date and submit correction per transaction change instructions.
SUBSCRIPTION BEGINNING DATE MISSING 05 CARD	Subscription beginning date is a vital element for all new transactions.	Research subscription request. Determine subscription beginning date and submit correction per transaction change instructions.
COLUMN 67 IS NOT J,S,N,C 05 CARD	Column 67 of 05 card must be J,S,N or C.	Research subscription request. Determine correct type code

Message	Meaning	Corrective Action
		and submit correction per transaction change instructions.
COLUMN 68 IS NOT BLANK, 1,2,3,4, 5,6 05 CARD	Column 68 of 05 card must special code 1 2,3,4,5 or 6.	Determine special code and submit correction per transaction change instructions.
MISSING 06 CARD CODE	Each new transaction record processed should have an 06 card.	Research subscription request. Determine appropriate data for 06 card code and submit new transactions.
MAJOR ADDRESSEE CODE INCORRECT 06 CARD	Address code must be 01, 02 or 05.	Submit correction per transaction change instructions.
REQUISITION, P. O. AND TL NUMBER MISSING	Each 06 transaction card must contain either req, P.O. or T.L. number.	Determine appropriate number and submit correction per change instructions.
FREQUENCY NUMBER IS INCORRECT 06 CARD	Must be a three digit number. Prefix with zeros to fill field.	Determine appropriate frequency and submit correction per change instructions.
PURPOSE CODE IS NOT C,L,D OR R IN 06 CARD	Purpose code must be C,L,D or R.	Determine appropriate purpose code and submit correction per change instructions.
ACTION CODE N SHOULD NOT BE IN THIS CARD-RE-JECTED	This transaction card is for action other than new.	Determine purpose for this transaction card and submit change correction per change instructions.

b. Serials Master File Update Editing Criteria

Message	Meaning	Corrective Action
THE FOLLOWING CONTROL NUMBERS HAVE NO TITLE	The 01 transactions card have been omitted.	Research subscription request. Determine appropriate data for 01 card and submit new transaction.
THE FOLLOWING TRANSACTIONS WERE SUBMITTED WITH CONTROL NUMBER FIELDS DUPLICATE -	The new transaction cards were submitted with the old ones being replaced.	Verify by screening Serials Master File list.

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Message	Meaning	Corrective Action
FIRST TRANSAC- TION ONLY PRO- CESSED		

c. Renew and Binding Editing Criteria

Message	Meaning	Corrective Action
HAS NO TITLE IN 01 CARD	Title has been omitted in Serials Master File.	Research subscription request. Determine title and submit correction per change instructions at next update.
HAS NO VOL. PER YR. IN 10 CARD	Self-explanatory.	Determine and submit per transaction change instructions.
HAS NO ISSUES PER VOL. IN 10 CARD	Self-explanatory.	Same as preceding.
HAS NO VOL. PER SUBSCRIPTION IN 10 CARD	(Presently unused.)	
HAS NO GENERAL SUBSCRIPTION CLASSIFICATION IN 10 CARD	Self-explanatory.	Same as preceding.
HAS A 13 CARD BUT NO 10 CARD - (NO ACTION TAKEN)	Transaction card 10 is required for all titles that are to be bound on that bound holdings are available.	Determine and submit transaction.
HAS NO TITLE PAGE AND CONTENT INSTRUCTIONS	Self-explanatory.	Determine and submit per transaction change instructions.
HAS NO ADVERTISE- MENT INSTRUC- TIONS IN 13 CARD	Self-explanatory.	Same as preceding
HAS NO INDEX INSTRUCTIONS IN 13 CARD	Self-explanatory.	Same as preceding.

Message	Meaning	Corrective Action
HAS NO BINDING COST IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO PTS PLUS ABSTRACT IN-STRUCTIONS IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO SIZE IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO COVER INFORMATION IN 13 CARD	Self-explanatory.	Same as preceding.
HAS 10 CARD BUT NO 13 CARD	Transaction card 13 contains all binding requirements for title which are to be bound.	Determine and submit transactions.
HAS NO ISSUE CONTENT INSTRUC-TIONS IN 13 CARD	Self-explanatory.	Determine and submit per transaction change instructions.
HAS NO COLOR SPECIFICATION IN 13 CARD	Self-explanatory.	Same as preceding.
HAS NO BINDING SCHEDULE IN 10 CARD	Self-explanatory.	Same as preceding.

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Section VI. DOCUMENTS CONTROL SUBSYSTEM

Documents ordering and receiving, cataloging and circulation have not been implemented under ALPHA-1. They have been planned to be essentially the same as for books except for obviously different requirements such as security, the different identifying and retrieval points and the lack of financial record-keeping. The patron and language subsystems are already available to support the documents area.

No further efforts will be made under ALPHA-1 to implement the automation of the documents handling, but ALPHA-2 includes this aspect of RSIC's function.

Table II. Official Country Codes

Country-to-code list			Code-to-country list	
Country	Code		Code	Country
Argentina	25		01	United States
Australia	14		02	Canada
Austria	24		03	England
Bolivia	26		04	West Germany
Canada	02		05	France
China	21		06	Japan
Denmark	17		07	Spain
Egypt	27		08	Italy
England	03		09	Turkey
France	05		10	Israel
Greece	16		11	Mexico
India	15		12	Portugal
Ireland	28		13	Phillipines
Israel	10		14	Australia
Italy	08		15	India
Japan	06		16	Greece
Jordan	29		17	Denmark
Korea	30		18	Sweden
Malaysia	31		19	Norway
Mexico	11		20	Netherlands
Netherlands	20		21	China
Norway	19		22	Taiwan

Table II. Official Country Codes (con't)

Country-to-code list			Code-to-country list	
Country	Code		Code	Country
Pakistan	23		23	Pakistan
Phillipines	13		24	Austria
Portugal	12		25	Argentina
Spain	07		26	Bolivia
Sweden	18		27	Egypt
Switzerland	32		28	Ireland
Taiwan	22		29	Jordan
Turkey	09		30	Korea
United States	01		31	Malaysia
West Germany	04		32	Switzerland

Table III. Official Contractor Codes

Contractor	Code
Adcom Inc	0080
Aerojet-General Corporation	0090
Air Reduction Co Inc	0155
Arde Engineering Division Ardee Assoc	0410
Arinc Research Corp	0420
Assoc Aero of Alabama	0460
Astro Space Labs Inc	0480
Auburn University	0520
Battelle Memorial Institute	0625
Belock Instrument Corp	0670
Bendix Corp	0680
Boeing Co	0750
Borders Electronics Corporation	0755
Burroughs Corp	0800
Brown Engineering Co Inc	0780
Chrysler Corp Space Div Huntsville Operations	0910
Computer Application Inc	1000
Computer Science Corp	1100
Douglas Aircraft Co	1180
Emerson Electronics Co	1350
Federal Electric Corp	1425
General Dynamics Corp	1560

Table III. Official Contractor Codes (con't)

Contractor	Code
General Electric Computer Department	1570
General Electric Apollo Support Div	1590
Hayes International Corp	1780
Heat Technology Labs	1790
Honeywell	1865
HRB Singer	1870
Hughes Aircraft Co	1920
Illinois Institute of Technology Research Institute	1975
IBM Corp	1980
International Harvester/Solar Div.	2000
International Telephone/Telegraph Co	2085
Kentron Hawaii Ltd	2155
Lear Siegler Electronic Instrumentation Division	2190
Ling-Tempco-Vought Corp	2240
Lockheed Missiles and Space Co	2270
Management Services Inc of Tenn.	2300
Martin Company	2410
Melpar Inc	2430
Planning Res. Corp	2460
National Academy of Sciences	2670
Nees Company	2700
North American Aviation/Rocketdyne	2755
Northrop Space Labs	2770

Table III. Official Contractor Codes (con't)

Contractor	Code
Philco Corp	2890
Pratt and Whitney Aircraft Corp	2930
Raytheon Co	3020
RCA Service Co	3040
Fairchild Hiller Corp	3080
Ridge Instrument Corp	3100
Rohm 'and Haas Co	3165
Southern Library Bindery	3475
Space Craft Inc	3510
Spaco Inc	3550
Sperry Rand Space Support Division	3585
Stanford Research Institute	3595
Systems Engineering Co	3660
Tec Productions	3710
Thiokol Chemical Corp	3780
University of Alabama Research Institute	3910
US Post Office	4115
Vitro Labs Div Vitro Corp of America	4190
Volt-Tech	4195
Watland Inc	4200
Western Electric Co	4235
Westinghouse Electric Corp	4250
Whittaker Corp	4260
Wyle Labs	4310

Table IV. Abbreviations of State Names

Name of state	Abbreviation
Alabama	ALA
Alaska	ALASK
Arizona	ARIZ
Arkansas	ARK
California	CALIF
Canal Zone	CbZ
Colorado	COLO
Connecticut	CONN
Delaware	DEL
District of Columbia	DbC
Florida	FLA
Georgia	GA
Guam	GUAM
Hawaii	HbI
Idaho	IDAHO
Illinois	ILL
Indiana	IND
Iowa	IOWA
Kansas	KANS
Kentucky	KY
Louisiana	LA
Maine	MAINE

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Table IV. Abbreviations of State Names (con't)

Name of state	Abbreviation
Maryland	MD
Massachusetts	MASS
Michigan	MICH
Minnesota	MINN
Mississippi	MISS
Missouri	MO
Montana	MONT
Nebraska	NEBR
Nevada	NEV
New Hampshire	NbH
New Jersey	NbJ
New Mexico	NbMEX
New York	NbY
North Carolina	NbC
North Dakota	NbDAK
Ohio	OHIO
Oklahoma	OKLA
Oregon	OREG
Pennsylvania	PA
Puerto Rico	PbR
Rhode Island	RbI
South Carolina	SbC
South Dakota	SbDAK

Table IV. Abbreviations of State Names (con't)

Name of state	Abbreviation
Tennessee	TENN
Texas	TEX
Utah	UTAH
Vermont	VT
Virgin Islands	VbI
Virginia	VA
Washington	WASH
West Virginia	WbVA
Wisconsin	WIS
Wyoming	WYO

Table V. Need-to-Know Codes

In the COSATI section of the following table, you will notice that some code numbers that would be present in a straight numerical sequence are skipped. For example, 01E is 006 and the next category is 02b, which is 011. The reason for such skips is that there are COSATI categories covering subjects which RSIC does not have or acquire holdings on. However, space is left in the numeric code sequence in case it is ever required to add these categories to the system.

Category	Code	Category	Code	Category	Code	Category	Code
				NASA			
01	001	15	015	29	029	43	043
02	002	16	016	30	030	44	044
03	003	17	017	31	031	45	045
04	004	18	018	32	032	46	046
05	005	19	019	33	033	47	047
06	006	20	020	34	034	48	048
07	007	21	021	35	035	49	049
08	008	22	022	36	036	50	050
09	009	23	023	37	037	51	051
10	010	24	024	38	038	52	052
11	011	25	025	39	039	53	053
12	012	26	026	40	040		
13	013	27	027	41	041		
14	014	28	028	42	042		
				COSATI			
01b	001	02B	013	03C	025	05D	041
01A	002	02C	014	04b	030	05E	042
01B	003	02D	015	04A	031	05F	043
01C	004	02E	016	04B	032	05G	044

Table V. Need-to-Know Codes (con't)

Category	Code	Category	Code	Category	Code	Category	Code
				COSATI			
01D	005	02F	017	05b	037	05H	045
01E	006	03b	022	05A	038	051	046
02b	011	03A	023	05B	039	05J	047
02A	012	03B	024	05C	040	05K	048
06b	053	07B	081	09E	113	13B	153
06A	054	07C	082	09F	114	13C	154
06B	055	07D	083	10b	119	13D	155
06C	056	07E	084	10A	120	13E	156
06D	057	08b	089	10B	121	13F	157
06E	058	08A	090	10C	122	13G	158
06F	059	08B	091	11b	127	13H	159
06G	060	08C	092	11A	128	131	160
06H	061	08D	093	11B	129	13J	161
061	062	08E	094	11C	130	13K	162
06J	063	08F	095	11D	131	13L	163
06K	064	08G	096	11E	132	13M	164
06L	065	08H	097	11F	133	14b	169
06M	066	081	098	11G	134	14A	170
06N	067	08J	099	11H	135	14B	171
060	068	08K	100	11I	136	14C	172
06P	069	08L	101	11J	137	14D	173
06Q	070	08M	102	11K	138	14E	174

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Table V. Need-to-Know Codes (con't)

Category	Code	Category	Code	Category	Code	Category	Code
				COSATI			
06R	071	08N	103	11L	139	15b	179
06S	072	09b	108	12b	144	15A	180
06T	073	09A	109	12A	145	15B	181
06U	074	09B	110	12B	146	15C	182
07b	079	09C	111	13b	151	15	183
07A	080	09D	112	13A	152	15E	184
15F	185	18E	220	20D	251	22B	282
15G	186	18F	221	20E	252	22C	283
16b	191	18G	222	20F	253	22D	284
16A	192	18H	223	20G	254		
16B	193	18I	224	20H	255		
16C	194	18J	225	20I	256		
16D	195	18K	226	20J	257		
17b	200	18L	227	20K	258		
17A	201	18M	228	20L	259		
17B	202	18N	229	20M	260		
17C	203	19b	234	20N	261		
17D	204	19A	235	21b	266		
17E	205	19B	236	21A	267		
17F	206	19C	237	21B	268		
17G	207	19D	238	21C	269		
17H	208	19E	239	21D	270		

Table V. Need-to-Know Codes (con't)

Category	Code	Category	Code	Category	Code	Category	Code
				COSATI			
17I	209	19F	240	21E	271		
17J	210	19G	241	21F	272		
18b	215	19H	242	21G	273		
18A	216	20b	247	21H	274		
18B	217	20A	248	21I	275		
18C	218	20B	249	22b	280		
18D	219	20C	250	22A	281		

Figure 1. Redstone Scientific Information Center
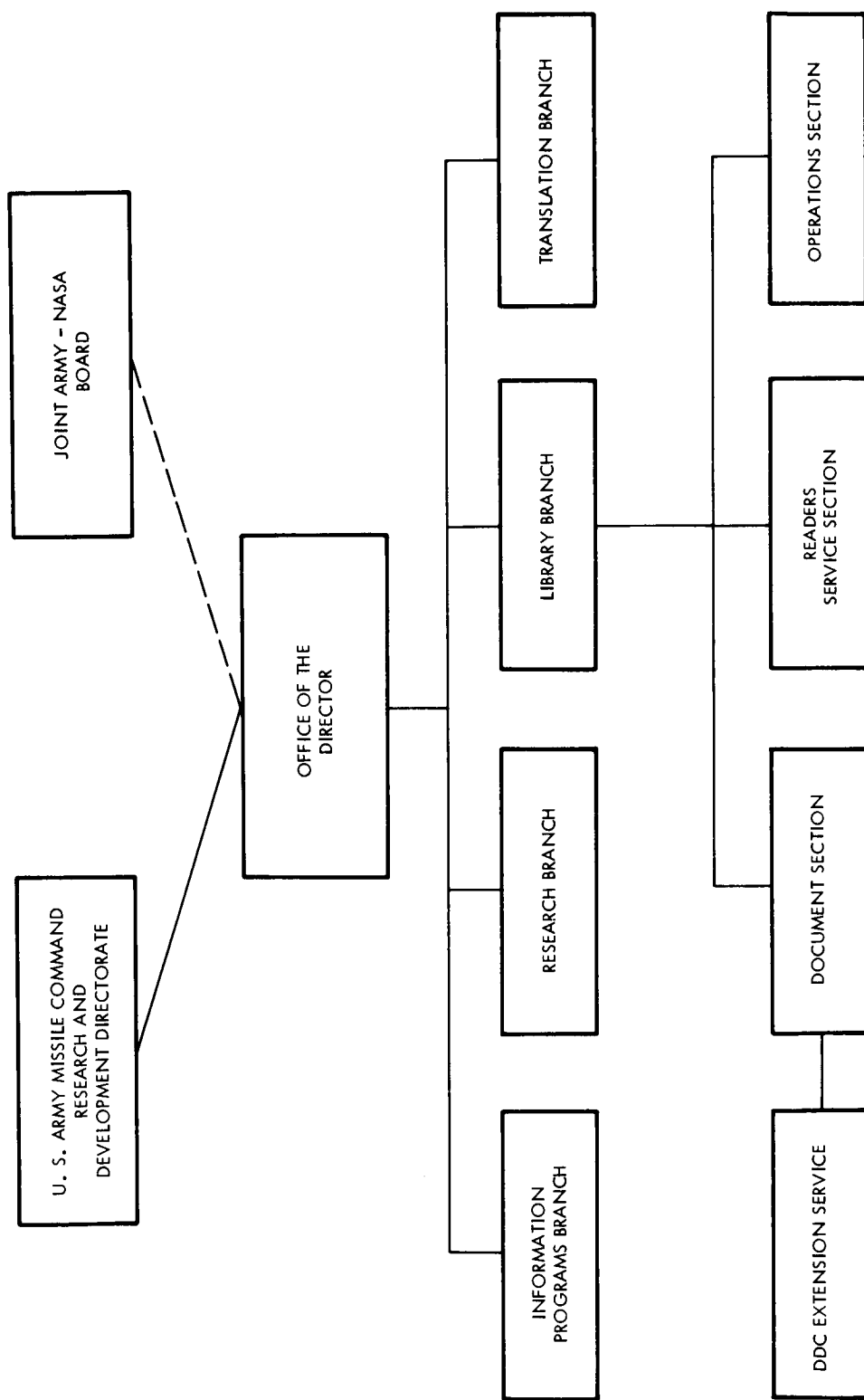
Figure 2. Organization Chart

JOINT ARMY - NASA BOARD

U. S. ARMY MISSILE COMMAND RESEARCH AND DEVELOPMENT DIRECTORATE

OFFICE OF THE DIRECTOR

TRANSLATION BRANCH

LIBRARY BRANCH

RESEARCH BRANCH

INFORMATION PROGRAMS BRANCH

OPERATIONS SECTION

READERS SERVICE SECTION

DOCUMENT SECTION

DDC EXTENSION SERVICE
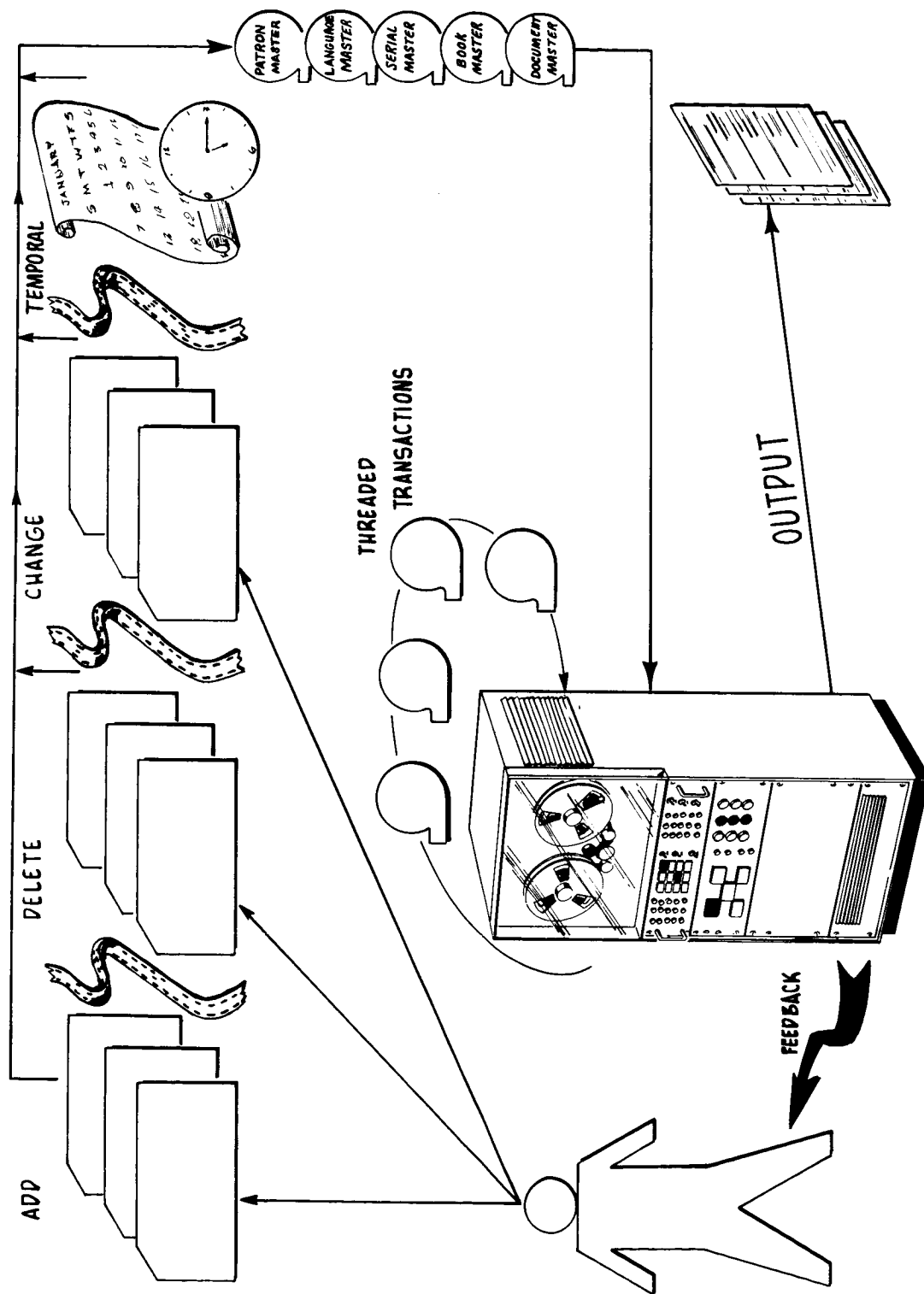
Figure 3. Flow Chart of ALPHA System

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Field	Position	Size
SOCIAL SECURITY NUMBER	1-10	10
SURNAME	11-26	16
GIVEN NAMES	27-44	18
SURNAME SUFFIX	45-47	3
TITLE	48-53	6
TYPE	54	1
SECURITY CODE	55	1
CITIZENSHIP CODE	56-57	2
AREA CODE	58-60	3
PHONE NUMBER	61-67	7
EXTENSION	68-71	4
CONTRACTOR CODE	72-75	4
MAIL SYMBOL	76-87	12
BUILDING NR.	88-92	5
ROOM NUMBER	93-97	5
STREET ADDRESS	98-118	21
CITY	119-133	15
STATE	134-138	5
ZIP CODE	139-143	5
DATE PUT ON FILE	144-148	5
DATE OF LAST ACTION	149-153	5
MISCELLANEOUS	154-163	10
BLANKS	164-173	10
NEED-TO-KNOW TYPE	174	1
NEED-TO-KNOW CODES	175-474	300
COMMENT 1	475-523	49
COMMENT 2	524-572	49
COMMENT 3	573-621	49
DECODED CONTRACTOR NAME	622-670	49
SPECIAL ROUTING REQUIREMENTS	671-683	19
JOURNAL ROUTING REQUIREMENTS	684-1008	325

Figure 4. Patron Master File Record

REDSTONE SCIENTIFIC INFORMATION CENTER

01 JAN 64   PAGE 00001

COMPLETE PATRON LIST IN NAME SEQUENCE

THIS IS A COMPLETE LIST OF ALL RSIC PATRON DATA ARRANGED IN ORDER BY PATRON NAME (SURNAME AND GIVEN NAMES). THE FIRST LINE OF EACH ENTRY CONSISTS OF SURNAME, GIVEN NAMES, SURNAME SUFFIX, TITLE, TYPE EMPLOYEE, AREA CODE, TELEPHONE NUMBER, EXTENSION AND COMPANY NAME, IF CONTRACTOR. THE SECOND LINE CONSISTS OF SOCIAL SECURITY NUMBER, ORGANIZATIONAL SYMBOL, BUILDING AND ROOM NUMBERS, AND MAILING ADDRESS, IF ANY.

THE THIRD LINE CONSISTS OF COUNTRY OF CITIZENSHIP AND DEFINED (NASA OR COSATI) NEED-TO-KNOW CATEGORIES, IF ANY. IF REQUIRED, THE NEED-TO-KNOW CODES WILL BE PRINTED ON MULTIPLE LINES. THE FOURTH LINE, ON THE LEFT-HAND SIDE, CONSISTS OF LEVEL OF CLEARANCE WITH COMMENTS, IF ANY, APPEARING ON THE RIGHT-HAND SIDE. COMMENTS MAY OCCUPY UP TO FOUR LINES. FOLLOWING THE COMMENTS IS A LINE FOR THE SPECIAL ROUTING REQUIREMENTS IF THEY EXIST. FOLLOWING THIS ARE THE JOURNAL ROUTING REQUIREMENTS UP TO A MAXIMUM OF SEVEN LINES. (THE DATES IN PARENTHESES IN LINE FIVE REPRESENT RESPECTIVELY DATE OF ADDITION TO THE FILE AND DATE OF LAST ACTION.)

01 JAN 64   COMPLETE PATRON LIST IN NAME SEQUENCE   PAGE XXXXX

(a) WILLIAMSON, JAMES, B., JR., LT COL   NASA AC 705 876-5432 EXT 1234 COMPANY----NAME
(b) 410-48-2001 AMSMI-RB-XYZ BL 12345 RM 12345   2115 SAN JACINTO ST., DALLAS, TEXAS, 12345
(c) CITIZEN UNITED KINGDOM COSATI N-T-K CODES   1,2,3,4,5,6,7,8,9,10,13,14,16,17,19,20,40
(d) CLEARANCE – CONFIDENTIAL – COMMENT (1)   ACCORDED ACCESS TO AFC ORIGINATED FILES
(e) (21 JUN 64, 18 OCT 65) COMMENT (2)   DENIED ACCESS TO BOEING ORIGINATED REPORTS
(f) SPECIAL ROUTING   RSIC UIL, STAR, TAB, IAA
(g) 09 JOURNAL ROUTING   XXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXX
                                                           XXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXX
                                                           XXXXXXXXXXXXXX
(h) MISCELLANEOUS   XXXXXXXXXX

Figure 5.   Patron List In Name Sequence

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REDSTONE SCIENTIFIC INFORMATION CENTER

PAGE 00001

01 JAN 64

PATRON LIST IN SOCIAL SECURITY SEQUENCE

THIS IS A LIST OF RSIC PATRONS ARRANGED IN ORDER BY SOCIAL SECURITY NUMBER. EACH LINE CONTAINS SELECTED ELEMENTS OF PATRON DATA ALL OF WHICH APPEAR IN THE COMPANION LIST ARRANGED ALPHABETICALLY BY NAME.

THE ENTRIES TAKE THE FOLLOWING FORM - SOCIAL SECURITY NUMBER, NAME, TITLE, EMPLOYEE TYPE, CLEARANCE, CITIZENSHIP CODE, TELEPHONE NUMBER, EXTENSION, ORGANIZATIONAL SYMBOL, AND BUILDING NUMBER AS SHOWN BELOW.

410-48-2001 DOE, JOHN Q., JR., LT COL, NASA(S) US 876-5432, EXT 1234, AMSMI-RB, BL 4491

PAGE XXXXX

01 JAN 64

PATRON LIST IN SOCIAL SECURITY SEQUENCE

410-48-2001 WILLIAMSON, JAMES B., JR., LT COL, MIL (S) US 876-5432, EXT 1234, AMSMI-RB, BL 4491
410-49-2938 HOWERTON, PAUL K., NASA (S) US 881-4857
410-50-2039 WILLIAMS, P. K., ARMY (U) US 881-3847
411-38-2837 CARLETON, M. M., MAJ, MIL (U) US 876-3485, AMSMI-RB, BL 4491

Figure 6.   Patron List in Social Security Sequence

REDSTONE SCIENTIFIC INFORMATION CENTER

PATRON MONITOR

09 JAN 67   PAGE 00001

    THIS IS A COMPLETE LIST OF ALL INPUT TRANSACTIONS TO THE PATRON MASTER FILE AND IS IN ORDER BY SOCIAL SECURITY NUMBER.
NOTATIONS TO THE LEFT OF THE TRANSACTIONS CONSIST OF THE DECODED ACTION CODE OF THE TRANSACTION, I.E. NEW FOR NEW PATRON DATA
ADDED FOR THE FIRST TIME, CHG FOR ALL TRANSACTIONS CHANGING OR REVISING ESTABLISHED RECORDS AND PRG FOR RECORDS BEING COMPLETELY
DELETED OR PURGED FROM THE FILE. NOTATIONS APPEARING ON THE RIGHT ARE ERROR MESSAGES EXPLAINING WHY THE ADJACENT TRANSACTION
WAS NOT PROCESSED. RESEARCH AND CORRECTIVE ACTION CAN BE ACCOMPLISHED WITH THE TRANSACTION CARDS FORWARDED WITH THIS LISTING.

PATRON MONITOR

09 JAN 67   PAGE 00008

```
        0         1         2         3         4         5         6         7         8
        1.........0.........0.........0.........0.........0.........0.........0.........0
CHG  421092244  09CHAYLES        02445  000699D02445  000220A                           RF  INV ROUT DELETE
CHG  421092244  09CHAYLES        90200  000160D                                         RF
CHG  421100682  09CWARRICK       05600  000105D                                         RF
CHG  421183737  09CMURPHREE      02650  000210D02650  000160A                           RF
CHG  421324295  09CASHWORTH      90200  000130D                                         RF
CHG  421342590  09CSANDLIN       93150  000185D                                         RF
CHG  421346447  09CBROWN         02200  000553D02200  000165A                           RF
CHG  421486146  09CDEBEEK        05600  000270D                                         RF
NEW  421544020  01NCRAWFORD      CHARLES DAVID         CC018769494         3780 DJ
NEW  421544020  02NCRAWFORD            7611  210                                 DJ
NEW  421544020  03NCRAWFORD      THIOKOL        RSA      ALA.                      DJ
NEW  421544020  04NCRAWFORD      C16 A17 A18 A19 A20 A21 A22 A                      DJ
CHG  421545939  09CLACKNER       02050  000210D02050  000145A                     RF
CHG  422188406  09CADAMS         02445  000520D02445  000429A                     RF
CHG  422426888  01CFRENCH                                         8769612         DJ
CHG  422512858  09CPLEMANS                                                        RF  UNMATCHED NAME
PRG  422601176  00PPRUETT                        NO BKS                           DJ
CHG  423090658  01CWHITE         INELIGIBLE TO RECEIVE LIBRARY MATERIAL           DJ
CHG  423090658  05CWHITE                                     S01 8764986          DJ
CHG  423141143  01CMATHEWS       93150  000290D                                   DJ
```

Figure 7. Patron Monitor

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REDSTONE SCIENTIFIC INFORMATION CENTER

PATRON STATISTICAL REPORT

15 JUL 67

THERE WERE 7745 PATRONS IN FILE AS OF 07 JUL 67.   SINCE THAT TIME THE FOLLOWING ACTIONS HAVE TRANSPIRED -

42 PATRONS ADDED
13 PATRONS DELETED
106 PATRONS RECORDS CHANGED
11 UNPROCESSED TRANSACTIONS
264 TOTAL TRANSACTIONS

THERE ARE NOW 7774 PATRONS IN FILE AS OF 15 JUL 67. THEIR STATUS IS SHOWN BELOW.

PATRON TYPE	TOTAL PER TYPE	ROUTING REQUIREMENTS	SPEC ROUTING REQUIREMENTS	WITH CLEARANCES	WITHOUT CLEARANCES
ARMY	2400	2812	13	2374	26
NASA	2387	2976	7	2315	72
MILITARY	174	179	0	167	7
CONTRACTOR	2790	91	14	2578	212
OTHER	23	0	0	16	7
TOTAL	7774	6058	34	7450	324

DURING THIS PROCESSING CYCLE THERE WERE   20 N-T-K REVALIDATION NOTICES ISSUED AS OF THIS DATE THERE ARE 1132 PATRONS WITH ROUTING REQUIREMENTS.

Figure 8.   Patron Statistical Report

(a)
(b)   TO XXXXX-XXX   BL XXXX

      ATTN CHIEF   XX   XXXXXX, XXXXXXX X., XXX-XX-XXXX

      WE HAVE RECEIVED A CHANGE IN DATA REGARDING THE ABOVE NAMED INDIVIDUAL WHOM WE
      ADDRESS IN CARE OF YOUR ORGANIZATION. DATA ELEMENTS CHANGED ARE

(c)   MAILING SYMBOL------ FORMERLY   XXXXX-XXX   CURRENTLY   XXXXX-XXX
      SECURITY CLASS------- FORMERLY   XXXXX   CURRENTLY   XXXXX
      CITIZENSHIP---- ------ FORMERLY   XX   CURRENTLY   XX

(d)   SINCE THE CHANGES WE HAVE RECEIVED INDICATE THERE MAY BE CAUSE TO REVISE THE NEED-TO-
      KNOW LIMITATIONS, PLEASE REAFFIRM OR MODIFY THIS CERTIFICATION IN ACCORDANCE WITH
      MICOM REGULATION 705-7 BY XX XXX XX.   IF WE DO NOT RECEIVE A RESPONSE BY THAT TIME,
      ACCESS TO ALL RSIC CLASSIFIED INFORMATION WILL BE DENIED.   IN THE FORMER STATUS THE
      CERTIFIED NEED-TO-KNOW FOR THIS INDIVIDUAL IN ACCORDANCE WITH ATTACHMENT TO
      REFERENCED REGULATION WAS

(e)   COSATI
      XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX,
      XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX,
      XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX,
      XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX,
      XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX, XXX

Figure 9.   Need-To-Know Revalidation Notice

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PATRON RECORD DELETES ADDED ON 21 JAN 65 DELETED ON 27 MAR 65

(a) 410-48-2001 WILLIAMSONbbbbb JAMES B.bbbbbbbbb III LTbCOL N S 01 CONTb 1234
(b) AMSMI-RBbbbb RMb12345 BLb 12345 ACb123 876-3728 EXTb 1234 MISCbXXXXXXXXXXXX
(c) 2115 SAM JACINTO ST.b DALLASbbbbbbbbb TEXbb 12345
(d) SPECIAL ROUTING REQUIREMENTS 111111111111
(e) NASA NEED-TO-KNOW 1,2,3,4,5,6,7,8,9,10,14,15,16,17,18
(f) COMMENTS   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
(g) ROUTING REQMTS   2739384756473 2938475647372 2938475647382 293847564738²
                      3746575748394 48394857665⁷⁴

NOTE: FOR MISSING DATA ELEMENTS THE SPACE IS LEFT BLANK. PREFIXED CONSTANTS ARE NOT
       PRINTED IF THEY WOULD BE FOLLOWED BY A BLANK DATA FIELD.

Figure 10.   Patron Record Delete Notice

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Figure 11. New Patron Card (sample)

Section 3 (Sponsor or Supervisor)

NEED-TO-KNOW (Specify subject categories in accordance with MICOM Reg 705-7)

COSATI--1-22

APPROVED: The individual named on reverse of this card is authorized (access) (loan of material). Security clearance as shown on reverse and need-to-know as indicated above are certified.

DATE

SIGNATURE AND ORGANIZATION (Appr. Auth.)

1 Mar 66   AMICOM Hq, Sec Off

NEW

Section I (To Be Completed By Individual)

LAST NAME	GIVEN NAMES		TITLE OR RANK (Dr, Col, Etc)
Doe, John Wesley			Lt Col
SOCIAL SECURITY NR	PHONE NR		EXTENSION
130-63-1234	876-1234		321
ORGANIZATION SYMBOL	BL NR		ROOM NR
AMSMI-ABCD	1234		231

BUSINESS MAILING ADDRESS (If Applicable)

SECURITY CLEARANCE	CITIZENSHIP (Specify Country)
Secret	U. S.

PATRON TYPE (Check One)   IF CONTRACTOR STATE COMPANY

☐ Army Contractor
☐ NASA Contractor   ☐ CS NASA   CONTRACT (S)
☒ Military   ☐ Other
☐ CS Army

I understand I am responsible for any material released to me. I will safe-guard classified documents in accordance with current security regulations and clear RSIC prior to termination.

DATE   SIGNATURE

1 Mar 66   John Doe

Section 2 (Contractors Only)

Above individual has security clearance as shown. This employee will be required to clear RSIC when need for access is terminated.

DATE   SIGNATURE (Company Security Officer)

RSIC PATRON CARD

AMSMI-R FORM 10,
1 MAY 66 PREVIOUS
EDITION MAY BE USED

(See reverse for NEED-TO-KNOW)

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Figure 12. Patron Transaction Cards

INTERIM RSIC ROUTING WORKSHEET

SOCIAL SECURITY NUMBER	PATRON SURNAME	JOURNAL 1				JOURNAL 2				JOURNAL 3			
		NUMBER	COPY	PRI	A C D	NUMBER	COPY	PRI	A C D	NUMBER	COPY	PRI	A C D
410–48–2001	Williamson	135	5	01	A	26501	4	10	C	1357	7	99	D
411–38–2837	Carleton	1234567	9	99	C	643	11	20	A	43821	3	01	A
410–49–2938	Howerton	645	8	40	A	22381	9	25	A	4711	6	10	A
410–50–2039	Williams	2041	4	01	C	40365	6	30	C	1357	4	20	C

Figure 13. Interim RSIC Routing Worksheet

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CHANGE

Section 1 (To Be Completed By Individual)

LAST NAME	GIVEN NAMES	TITLE OR RANK (Dr, Col, Etc)
Doe		Col

SOCIAL SECURITY NR	PHONE NR	EXTENSION
130-63-1234	876-4321	*

ORGANIZATION SYMBOL	BL NR	ROOM NR
AMSMI-AB	2345	*

BUSINESS MAILING ADDRESS (If Applicable)

SECURITY CLEARANCE   CITIZENSHIP (Specify Country)

PATRON TYPE (Check One)   IF CONTRACTOR STATE COMPANY

☐ Army Contractor
☐ NASA Contractor
☐ Military   ☐ CS NASA   CONTRACT (S)
☐ CS Army   ☐ Other

I understand I am responsible for any material released to me. I will safe-guard classified documents in accordance with current security regulations and clear RSIC prior to termination.

DATE   SIGNATURE
31 Mar 66   *John Doe*

Section 2 (Contractors Only)

Above individual has security clearance as shown. This employee will be required to clear RSIC when need for access is terminated.

DATE   SIGNATURE (Company Security Officer)

RSIC PATRON CARD

AMSMI-R FORM 10,
1 MAY 66 PREVIOUS
EDITION MAY BE USED

(See reverse for NEED-TO-KNOW)

Section 3 (Sponsor or Supervisor)

NEED-TO-KNOW (Specify subject categories in accordance with MICOM Reg 705-7)

COSATI--
  02 Delete

APPROVED: The individual named on reverse of this card is authorized (access) (loan of material). Security clearance as shown on reverse and need-to-know as indicated above are certified.

J. R. Jones
SIGNATURE AND ORGANIZATION (Appr. Auth.)

DATE
31 Mar 66   AMICOM Hq, Sec Off

Figure 14.   Change Patron Card (sample)

Figure 15. Computer Run Relation Flow Chart

Figure 16. Patron File Transaction Card Formats

01 SEP 66   RSIC LANGUAGE CONTROL THESAURUS–BOOKS   00956

SPACE CARS   SEE   SPACE STATIONS

SPACE FLIGHT – BIBLIOGRAPHY
    LC   Z5064.S7

SPACE FLIGHT – LAW AND LEGISLATION   SEE   SPACE LAW

SPACE FLIGHT – PHYSIOLOGICAL ASPECTS – CONGRESSES

SPACE SCIENCES
    HERE ARE ENTERED GENERAL WORKS WHICH INCLUDE THE REQUISITE SCIENCES FOR ASTRONAUTICAL UNDERTAKINGS, FOR THE SCIENTIFIC RESULTS OF SPACE EXPLORATION, AND FOR THE SCIENTIFIC APPLICATIONS OF SPACE FLIGHT. GENERAL WORKS ON THE UNIVERSE ARE ENTERED UNDER ASTRONOMY. GENERAL WORKS ON SPACE FLIGHT ARE ENTERED UNDER ASTRONAUTICS. SPECIAL ASPECTS ARE ENTERED UNDER PARTICULAR SUBJECTS, E. G. ASTRONAUTICS IN METEOROLOGY.
    LC   QB500
    SA   COSMIC PHYSICS   X   SCIENCE AND SPACE
         ETHER (OF SPACE)   XX   ASTRONAUTICS
         GEOPHYSICS   ASTRONOMY
         OUTER SPACE   COSMOLOGY
         SPACE BIOLOGY   SCIENCE

---

01 SEP 66   RSIC LANGUAGE CONTROL THESAURUS-DOCUMENTS   00002

AERODYNAMIC SLOTS
    NOZZLE-SHAPED OPENINGS IN AERODYNAMIC CONFIGURATIONS TO IMPROVE FLOW CONDITIONS AT HIGH ANGLES OF ATTACK.

    X   SLOTS (AERODYNAMIC)   SUCTION SLOTS (N)
    XX   AERODYNAMIC CONFIGURATIONS (B)   WING SLOTS (N)
         SLOTTED FLAPS (N)   DUCTS (R)

AEROLOGICAL BALLOONS   SEE   METEOROLOGICAL BALLOONS

ATOLL (INVALID TERM)
    CRESENT SHAPED CORAL ISLAND.   NOT RELEVANT TO AEROSPACE TERMINOLOGY.

ATLAS (Q-TERM)
    A HOMOGRAPH WHOSE USABLE MEANING IS THE MISSILE NAME.

Figure 17.   RSIC Language Control Thesaurus

BASE TERM	ERROR MESSAGE
CHILDREN	ACTION CODE MISSING
X X V LOUISANA	MULTIPLE ACTION CODE
X X Z AUTOGYROS	ACTION CODE MISSING
A O D S	BASE TERM OF NEXT LINE
ALL-ORDNANCE DESTRUCT SYSTEM	SUB TERM TYPE INVALID
A P U	BASE TERM OF NEXT LINE
AUXILIARY POWER UNIT	SUB TERM TYPE INVALID
A R E S	BASE TERM OF NEXT LINE
ADVANCED ROCKET ENGINE - STORABLE	SUB TERM TYPE INVALID
A S E S S	BASE TERM OF NEXT LINE
AERO-SPACE ENVIRONMENT SIMULATION SYSTEM	SUB TERM TYPE INVALID
A S P S	BASE TERM OF NEXT LINE
ACOUSTIC SHIP POSITIONING SYSTEM	SUB TERM TYPE INVALID
ANCHORS +(STRUCTURAL+)	BASE TERM OF NEXT LINE
ANCHOR PLATES	SUB TERM TYPE INVALID
ANCHORS +(STRUCTURAL+)	BASE TERM OF NEXT LINE
ANCHOR BOLTS	SUB TERM TYPE INVALID
ANCHORS +(STRUCTURAL+)	BASE TERM OF NEXT LINE
GROUND ANCHORS	SUB TERM TYPE INVALID
ANCHORS +(STRUCTURAL+)	BASE TERM OF NEXT LINE
GUY STAKES	SUB TERM TYPE INVALID
ANCHORS +(STRUCTURAL+)	BASE TERM OF NEXT LINE
STAKES	SUB TERM TYPE INVALID
AUDIO AMPLIFIERS	BASE TERM OF NEXT LINE
AUDIOFREQUENCY AMPLIFIERS	SUB TERM TYPE INVALID
AUDIO AMPLIFIERS	BASE TERM OF NEXT LINE
AMPLIFIERS	SUB TERM TYPE INVALID
X X V BATTERIES AND COMPONENTS	B ELECTRACTION CODE MISSING
BOOST-GLIDE MISSILES	BASE TERM OF NEXT LINE
BOOST-GLIDE VEHICLES	SUB TERM TYPE INVALID
C A P	BASE TERM OF NEXT LINE
CRYOGENIC ASSOCIATIVE PROCESSOR	SUB TERM TYPE INVALID
C I N D A	BASE TERM OF NEXT LINE
COMPUTER INDEX NEUTRON DATA	SUB TERM TYPE INVALID
C O P S	BASE TERM OF NEXT LINE
COST OPTIMIZED PLATFORM SYSTEM	SUB TERM TYPE INVALID
C P M	BASE TERM OF NEXT LINE
CRITICAL PATH METHOD	SUB TERM TYPE INVALID
C P S	BASE TERM OF NEXT LINE
CRITICAL PATH SCHEDULING	SUB TERM TYPE INVALID
C P S S	BASE TERM OF NEXT LINE
CORPORATE PROGRAMMING SUPPORT SYSTEM	SUB TERM TYPE INVALID

Figure 18.   Language Worksheet Errors

Figure 19. RSIC Language Monitor

01 SEP 66   RSIC LANGUAGE MONITOR-BOOKS   00005

**ANTI-FREEZE SOLUTIONS (BOOKS TERM) NOT IN FILE. PURGE ACTION NOT PROCESSED.

**APOLLO PROJECT (SEE REFERENCE - BOOKS) NO SEE TERMS IN FILE, NEW ACTION NOT PROCESSED.

    SEE PROJECT APOLLO (NOT IN FILE)

**APPARATUS, CHEMICAL (SEE REFERENCE - BOOKS) REVISE ACTION NOT PROCESSED, DATA ELEMENTS INVALID.

    SEE CHEMICAL APPARATUS

ASTRODYNAMICS (BOOKS TERM) ADDED.

    XX   ASTRONAUTICS
          INERTIAL NAVIGATION (ASTRONAUTICS)
          NAVIGATION (ASTRONAUTICS)
          SPACE FLIGHT
          SPACE TRAJECTORIES

    LC   TL 1050

---

31 JAN 67   RSIC LANGUAGE MONITOR-DOCUMENTS   PAGE 00254

SOUTH DAKOTA (DOCUMENT TERM) ADDED

**SOUTH DAKOTA (DOCUMENT TERM) ALREADY IN FILE, NEW ACTION NOT PROCESSED.

SPACE BIOLOGY (DOCUMENT TERM) REVISED

    STUDIES OF ORGANISMS OUTSIDE THE EARTHS ATMOSPHERE.   FOR STUDIES DIRECTED PRIMARILY
    TOWARD DETERMINING THE EFFECTS OF THE SPACE ENVIRONMENT, SPACE FLIGHT, ETC. ON MAN, SEE SPACE MEDICINE.

SPACE CAPSULES (DOCUMENT TERM) REVISED

    PRESSURIZED ENCLOSURES THAT CONVEY MEN OR ANIMALS IN ORBITAL OR SUBORBITAL FLIGHT
    BEYOND THE EARTHS ATMOSPHERE.

    XX   SPACECRAFT (B)
          BOOST-GLIDE VEHICLES (R)
          RE-ENTRY VEHICLES (R) (NOT IN FILE, NEW TERM RECORD ESTABLISHED)

15 JAN 65

LANGUAGE STATISTICAL REPORT

	BEGINNING (08 JAN 65)	ADDED	PURGED	REVISED	TERM CHANGES	ENDING (15 JAN 65)
BOOK TERMS	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
SEE REFERENCES - BOOKS	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
SUBTOTAL (BOOKS)	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
DOCUMENT TERMS	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
Q-TERMS	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
SEE REFERENCES - DOCS	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
INVALID TERMS	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
SUBTOTAL (DOCS)	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
GRAND TOTAL	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX

Figure 20. Language Statistical Report

TAB POSITION	m 1	t 2		t 3		t 4		t 5
ACTION	NEW		REVISE		PURGE		TERM CHANGE	
MEDIUM	BOOKS		DOCUMENTS					
TERM TYPE	TERM		SEE REF.		Q-TERM		INVALID TERM	
TERM								

COMMENTS (UP TO 12 LINES)	
SEE OR SEEN FROM (UP TO 12, 1 TO EACH LINE)	
SEE ALSO (UP TO 12, 1 TO EACH LINE)	
LC CLASS NUMBER (UP TO 12, 1 TO EACH LINE)	

Figure 21. Language Control Input Form

01 SEP 66   RSIC LANGUAGE CONTROL THESAURUS–BOOKS   00181

CHEMICAL GEOLOGY   SEE   GEOCHEMISTRY

CHEMISTRY
    SA   GEOCHEMISTRY
          MICROCHEMISTRY
          PHYSIOLOGICAL CHEMISTRY
          STEREOCHEMISTRY

GEOCHEMISTRY
    X   CHEMICAL GEOLOGY
    XX   CHEMISTRY

GEOCHEMISTRY
    X   CHEMICAL GEOLOGY
    XX   CHEMISTRY
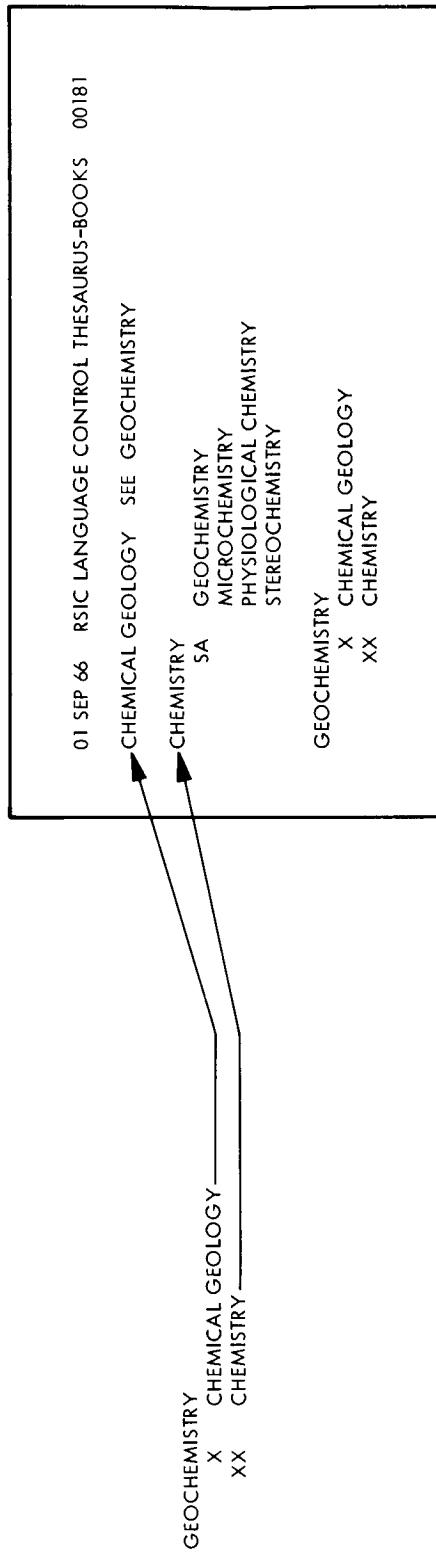
THAT IS:

X   CHEMICAL GEOLOGY IS A "SEE REFERENCE" TO GEOCHEMISTRY.

XX   CHEMISTRY IS A "SEE ALSO FROM" TO GEOCHEMISTRY.

SA   GEOCHEMISTRY, MICROCHEMISTRY, PHYSIOLOGICAL CHEMISTRY, STEREOCHEMISTRY ARE "SEE ALSO" REFERENCES TO CHEMISTRY.

Figure 22.   Cross References - Books
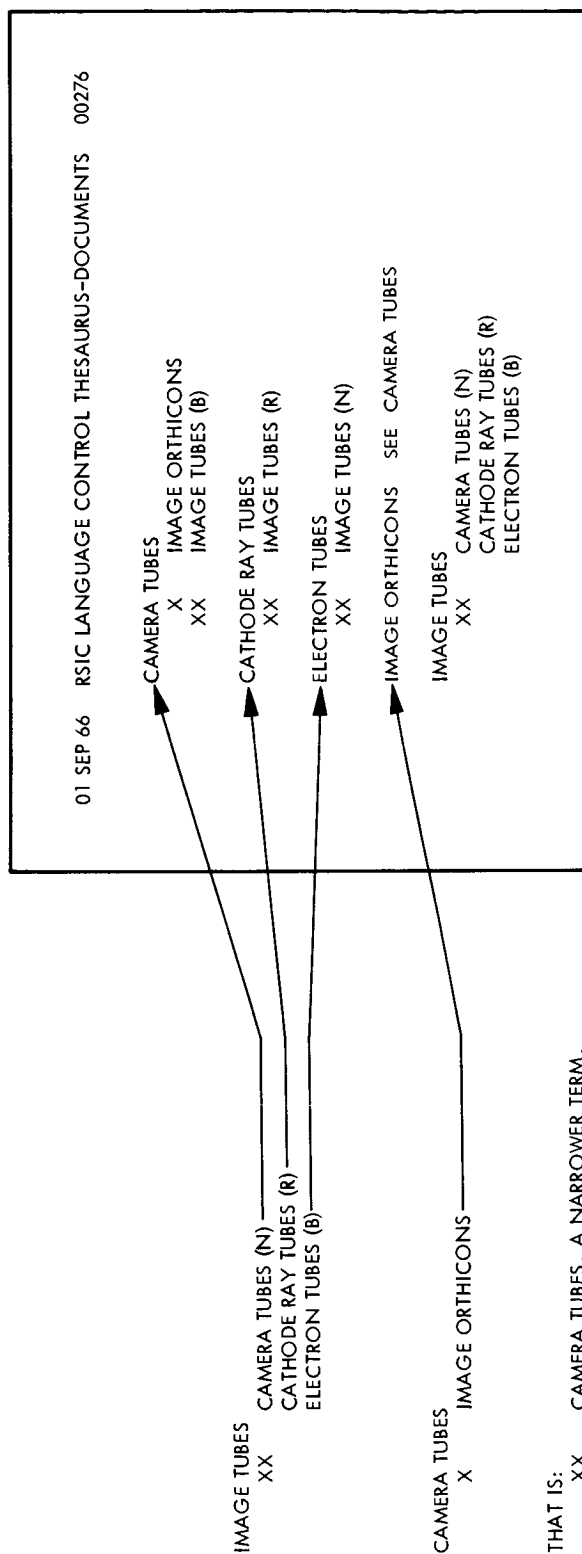
Figure 23. Cross References - Documents

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ACTION CODE	TERM TYPE	COMMENTS	SEE OR SEEN FROM	SEEN ALSO FROM	LC NUMBERS
0	I	NONE	NONE	NONE	NONE
	B	NONE	NONE	NONE	NONE
	N	NONE	NONE	NONE	NONE
	Q	NONE	NONE	NONE	NONE
	V	NONE	NONE	NONE	NONE
	A	NONE	NONE	NONE	NONE
1	I	OPTIONAL	NONE	NONE	NONE
	B	OPTIONAL	REQUIRED	NONE	NONE
	N	OPTIONAL	REQUIRED	NONE	NONE
	Q	OPTIONAL	OPTIONAL	OPTIONAL	NONE
	V	OPTIONAL	OPTIONAL	OPTIONAL	NONE
	A	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
2	I	REQUIRED	NONE	NONE	NONE
	B	OPTIONAL	OPTIONAL	NONE	NONE
	N	OPTIONAL	OPTIONAL	NONE	NONE
	Q	OPTIONAL	OPTIONAL	OPTIONAL	NONE
	V	OPTIONAL	OPTIONAL	OPTIONAL	NONE
	A	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
3	I	OPTIONAL	REQUIRED	NONE	NONE
	B	OPTIONAL	REQUIRED	NONE	NONE
	N	OPTIONAL	REQUIRED	NONE	NONE
	Q	OPTIONAL	REQUIRED	OPTIONAL	NONE
	V	OPTIONAL	REQUIRED	OPTIONAL	NONE
	A	OPTIONAL	REQUIRED	OPTIONAL	OPTIONAL

NOTE: FOR ACTION CODE 2 (REVISE) AT LEAST ONE OR MORE OF THE OPTIONAL DATA ELEMENTS MUST BE PRESENT FOR A VALID TRANSACTION.

Figure 24. Input Transaction Data Element Requirements

Figure 25. Language Master File Format

TERM TYPE		AUTH CODE	DATE ADDED	DATE FIELD 1	DATE FIELD 2	USE COUNT	COMMENT LENGTH		ZEROS / LC NR.	BLANK	DELETE	COMMENTS		
TERM TYPE I	INVALID TERM	AUTH CODE	DATE ADDED	DATE FIELD 1	DATE FIELD 2	USE COUNT	COMMENT LENGTH	BLANKS	ZEROS	BLANK	DELETE	COMMENTS *		
	70	1	5	5	5	5	5	5	5	4	1	V ≤ 1000		
TERM TYPE B	SEE REFERENCE (BOOKS)	AUTH CODE	DATE ADDED	DATE FIELD 1	DATE FIELD 2	USE COUNT	COMMENT LENGTH	NR. SUB. TERMS	ZEROS	BLANK	DELETE	COMMENTS *	SUBSTITUENT TERMS TYPE A ONLY SEPARATED BY *	
	70	1	5	5	5	5	5	5	5	4	1	V ≤ 1000	V ≤ 1000 *	
TERM TYPE Z	SEE REFERENCE (DOCS)	AUTH CODE	DATE ADDED	DATE FIELD 1	DATE FIELD 2	USE COUNT	COMMENT LENGTH	NR. SUB. TERMS	ZEROS	BLANK	DELETE	COMMENTS *	SUBSTITUENT TERMS TYPES Q & V ONLY SEPARATED BY *	
	70	1	5	5	5	5	5	5	5	4	1	V ≤ 1000	V ≤ 1000 *	
TERM TYPE Q OR V	Q-TERM OR DOCS TERM	AUTH CODE	DATE ADDED	DATE FIELD 1	DATE FIELD 2	USE COUNT	COMMENT LENGTH	NR. SUB. TERMS	ZEROS	BLANK	DELETE	COMMENTS *	SUBSTITUENT TERMS TYPES Z, Q, &V ONLY SEPARATED BY *	
	70	1	5	5	5	5	5	5	5	4	1	V ≤ 1000	V ≤ 1500 *	
TERM TYPE A	BOOKS TERM	AUTH CODE	DATE ADDED	DATE FIELD 1	DATE FIELD 2	USE COUNT	COMMENT LENGTH	NR. SUB. TERMS	LC NR.	BLANK	DELETE	COMMENTS *	SUBSTITUENT TERMS TYPES B & A ONLY	LC NUMBER ELEMENTS SEPARATED BY *
	70	1	5	5	5	5	5	5	5	4	1	V ≤ 1000	V ≤ 1500 *	*

CONSTANT PORTION ———— VARIABLE PORTION ————

NOTE: THE NUMERICAL NUMBER APPEARING IN THE LOWER PORTION OF THE DATA ELEMENT BLOCK INDICATES FIELD AVAILABLE IN THE MASTER RECORD FOR THAT SPECIFIC ELEMENT.

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Figure 26. Computer Run Relations Flow Chart

ACTION CODE	TERM TYPE	BASE TERM	COMMENT LENGTH	NR. OF SEE OR SEEN FROM TERMS	NR. OF SEEN ALSO FROM TERMS	NR. OF LC NUMBER ELEMENTS	COMMENTS	SEE OR SEEN FROM TERMS MULTIPLES OF 72	SEEN ALSO FROM TERMS MULTIPLES OF 72	LC NUMBER ELEMENTS MULTIPLES OF 72
1	1	70	5	5	5	5	$V \le 1000$	MAX = 1080	MAX = 1080	MAX = 1080

CONSTANT PORTION — VARIABLE PORTION

NOTE: THE ABSENCE OR PRESENCE OF DATA ELEMENTS IN THE VARIABLE PORTION DEPENDS ON ACTION CODE AND TERM TYPE. A COMPLETE BREAKDOWN OF THE RELATIONSHIPS IS SHOWN IN FIGURE 25.

Figure 27. Language Input Transaction Format

LIBRARY REQUEST FORM

REQUESTED BY

SOCIAL SECURITY NR.

MAIL ADDR.

PHONE

BL

DATE

AUTHOR(S)

TITLE

BOOK

MAGAZINE

REPORT

EDITION

MAGAZINE TITLE

REPORT NUMBER(S)

PUBLISHER

ISSUING AGENCY(S)

CITY

VOL.

DATE

PAGE

THRU

DATE

CONTRACT NR.

CALL NR.

DATE

CLASSIFICATION

REFERENCE OBTAINED FROM

LIBRARY USE ONLY

L C CARD NR.

QTY TO BE ORDERED

UNIT PRICE

VENDOR

CHECKED BY

RSA FORM 29, 1 SEPT 63
REPLACES RSA FORMS 29 & 30, WHICH ARE OBSOLETE

Figure 28. Library Request Card

NAME OF CONTRACTOR OR VENDOR

THE BOOK INN

REQUEST NUMBER

		A-0108	TL-3-2-67
39	QUALITY CONTROL AND APPLIED STATISTICS, VOL. 5, 1960 AND VOL. 10, 1965 BOUND/EXECUTIVE SCIENCES INSTITUTE/ P.O. DRAWER M, WHIPPANY, N. J. 07981	1 LOT 180.00	180.00
40	D. O. PEDERSON INTRODUCTION TO ELECTRONIC SYSTEMS, CIRCUITS AND DEVIC- ES/ 1966/ MCGRAW HILL/ N.Y.	1 EA 15.00	15.00
41	R. KINGSLAKE, EDITOR APPLIED OPTICS AND OPTICAL ENGINEERING, VOL. 1/ 1965/ A- CADEMIC PRESS	1 EA 15.00	15.00
42	R. COURANT/ F. JOHN INTRODUCTION TO CALCULUS AND ANALYSIS. VOL. 1/ 1965/ INTERSCIENCE-WILEY/ N.Y.	1 EA 10.50	10.50
43	WILSON/STEPHENSON DISSEMINATION OF INFORMATION/ 1966/ PHILOSOPHICAL LIB- TARY/ N.Y.	2 EA 4.75	9.50
44	SHIH-1 PAI VISCOUS FLOW THEORY VOL. 1, LAMINAR FLOW/ VAN NOSTRAND/ PRINCETON, N.J.	1 EA 11.50	11.50
45	SHIH-1 PAI VISCOUS FLOW THEORY VOL. 2, TRUBULENT FLOW/ VAN NOSTRAN- D/ PRINCETON, N. J.	1 EA 8.25	8.25
			249.75T

ORDERED BY:

CAROLYN C. SLAYDEN DATE 14, FEB. 1967

Figure 29. Book Orders (Multipart Continuous Form)

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Figure 30. Book Orders (Requisitions)

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Figure 31. Ordering Input Transaction Cards (400 Series)

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Figure 32. Ordering and Receiving Transaction Card Formats (Sheet 1 of 2)

Figure 32.   Ordering and Receiving Transaction Card Formats (Sheet 2 of 2)

Figure 33. Master On Order, Received And Cataloged Record Format (Sheet 1 of 4)

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COMPUTER RECORD DESIGN FORMAT

RECORD TITLE:

NUMBER OF CHARACTERS:

TYPE RECORD:

DESIGNED BY:

DATE:

TITLE

PURCHASE ORDER

| 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 |

NUMBER

VENDOR

| 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 |

VENDOR'S ITEM NUMBER | QUANTITY ORDERED | UNIT COST | LC CLASSIFICATION

| 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 |

LC CARD ORDER NUMBER | DATE OF ORDER | QUANTITY RECEIVED | VOUCHER NUMBER | XP | NXP | TOTAL

| 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 |

COST | DATE RECEIVED | RECEIVING CARD NUMBER | FLAG REC. | FLAG DEL. | 601 COMMENT FIELD

| 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 |

Figure 33. Master On Order, Received And Cataloged Record Format (Sheet 2 of 4)

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Figure 33. Master On Order, Received And Cataloged Record Format (Sheet 3 of 4)

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COMPUTER RECORD DESIGN FORMAT | RECORD TITLE: | NUMBER OF CHARACTERS:

TYPE RECORD: | DESIGNED BY: | DATE:

SOCIAL SECURITY NUMBER
PATRON NO. 8

| 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 |

SOCIAL SECURITY NUMBER
PATRON NO. 9

| 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 367 | 638 | 639 | 640 |

SOCIAL SECURITY NUMBER
PATRON NO. 10

| 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 |

| 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 |

| 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 |

Figure 33. Master On Order, Received And Cataloged Record Format (Sheet 4 of 4)

WEEKLY ON ORDER

6 FEB 67   PAGE 00001

TITLE OF BOOK PUBLISHER	AUTHOR	TL NR	ITEM NR	QTY ORD	UNIT COST	RCV	DUE OUT	PATRON SSN	ORG
ACETYLENE CHEMICAL PROPERTIES AND USES 2 VOLS, 1966, BENN, 154 FEET ST LONDON E C 4	S A MILLER	*TL-1-6-66 * PO NR *	*0326	* 0001*	37.00 * RCV CD VOUCHER 031379			* 01 *000000000	* R
WALTER J JOHNSON INC COMMENTS-VOL ONE RECD 660923	DATE ORDERED 660615	DATE RCVD 000000	VENDOR ITEM						
ACIERS INOXYDABLES ACIERS REFRACTAIRES, 2ND, DUNOD, 92 RUE BONAPARTE PARIS 6E	L COLOMBIER	*TL-7-7-66 * PO NR *	*0014	* 0001*	25.00 * RCV CD VOUCHER 031951			* 01 *000000000	* R

DAILY ON ORDER

9 FEB 67   PAGE 00001

TITLE OF BOOK PUBLISHER	AUTHOR	TL NR	ITEM NR	QTY ORD	UNIT COST	RCV	DUE OUT	PATRON SSN	ORG
ABUNDANCE DETERMINATIONS IN STELLAR SPEC TRA, ACADEMIC	* HUBENET * * *	*TL-3-3-67 * PO NR *	*0174	* 0002*	20.00 * RCV CD VOUCHER D67183	* R	*	*	*
BURKETT INC * COMMENTS-	DATE ORDERED 670207	DATE RCVD 670207	VENDOR ITEM						
ADVANCED LAUNCH VEHICLES AND PROPULSION SYSTEMS CONFERENCE HUNTSVILLE ALABAMA JU NE 14-16 1966 PROCEEDINGS PAPERS NRS 660 440-660463, SOC OF AUTOMATIVE ENGINEERS	* * * * *	*TL-3-3-67 * PO NR *	*0139	* 0001*	24.00 * RCV CD VOUCHER 035900			* 01 *000000000	* R
BURKETT INC * COMMENTS-RSIC – BINDING	DATE ORDERED 670202	DATE RCVD	VENDOR ITEM						

Figure 34. Weekly and Daily On Order Lists

Figure 35. Ordering Output Transaction Cards (600 Series)

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WORKLOAD ANALYSIS FOR JAN 67

WORK ELEMENT	CURR MO	FYTD
ORDERING		
TITLES	779	5331
COPIES	1107	13524
CANCELLATIONS		
TITLES	16	581
COPIES	22	844
RECEIVING		
TITLES	592	4813
COPIES	1208	14637

BREAKDOWN OF TOTAL COPIES RECEIVED

	CURRENT MONTH		YEAR TO DATE	
	NXP	XP	NXP	XP
ARMY (CIV)	63	15	559	95
NASA	107	22	746	169
MILITARY				
PSIC	197	348	2453	7319
OTHER	271	185	1999	1297
TOTAL	638	570	5757	8880

FINANCIAL ANALYSIS FOR JAN 67

CHARGE ACCOUNTS AUTHORIZED MONTHLY / YTD	COMMITTED CURR MO	COMMITTED ACCUM FYTD		EXPENDED MONTHLY	EXPENDED YTD	NET CHANGE CURR MO	EOM ORDERS OUTSTANDING
AIAA							
500.00 3,500.00	14.00	2,296.00	QTY REC X UNIT COST..	45.00	2,221.00	55.00-	134.00
CANCELLED.....	24.00	224.00	TOTAL COST............	50.00	2,218.00		
BELL AND HOWELL							
.00 .00	.00	.00	QTY REC X UNIT COST..	.00	.00	.00	64.75-
CANCELLED.....	.00	211.75	TOTAL COST............	.00	.00		
BOOK INN							
500.00 3,500.00	483.40	2,993.75	QTY REC X UNIT COST..	117.40	2,089.95	346.80	1,391.30
CANCELLED.....	19.20	1,510.77	TOTAL COST............	94.41	1,914.20		
BURKETT							
5,000.00 35,000.00	3,149.50	24,246.02	QTY REC X UNIT COST..	2,444.85	22,465.29	649.15	2,743.55
CANCELLED.....	55.50	3,031.88	TOTAL COST............	2,292.00	20,626.46		
CHARGE ACCOUNTS TOTAL							
26,400.00 179,000.00	14,196.73	97,430.79	QTY REC X UNIT COST..	10,660.10	85,422.43	3,294.23	33,993.99
CANCELLED.....	242.40	10,041.09	TOTAL COST............	9,866.40	80,220.02		
BOOK BLANKET TOTAL							
	1,689.97	18,239.46	QTY REC X UNIT COST..	2,125.95	12,514.19	682.98-	10,278.82
CANCELLED.....	247.00	8,080.60	TOTAL COST............	2,672.60	13,939.28		
REQUISITIONS TOTAL							
	61.95	1,603.78	QTY REC X UNIT COST..	40.00	461.53	21.95	1,176.55
CANCELLED.....	.00	10.80	TOTAL COST............	40.00	456.78		
GRAND TOTAL							
26,400.00 179,000.00	15,948.65	117,274.03	QTY REC X UNIT COST..	12,826.05	98,398.15	2,633.20	45,449.36
CANCELLED.....	489.40	18,132.49	TOTAL COST............	12,579.00	94,616.08		

Figure 36.   Financial And Workload Analysis

```
                                    ERROR LIST AS OF  NOV 66                          PAGE 0001

MESSAGE                  ERROR CARD OR MASTER RECORD

VENDOR IS NOT IN TABLE   TL-128-64     00000000STECHERT-HAFNER                640630 AUTHORIZATION
NO AUTHORIZATION CARD    TL-127-64    0438FLORIDAS TAYLOR-CARLISLE BOOK CORP         ON ORDER
NO AUTHORIZATION CARD    TL-127-64    0451FLORIDAS TAYLOR-CARLISLE BOOK CORP         ON ORDER
NO AUTHORIZATION CARD    TL-127-64    0556FLORIDAS TAYLOR-CARLISLE BOOK CORP         ON ORDER
NO AUTHORIZATION CARD    TL-127-64    0581FLORIDAS TAYLOR-CARLISLE BOOK CORP         ON ORDER
NO AUTHORIZATION CARD    TL-128-64    0121STECHERT-HAFNER                            ON ORDER
VENDOR IS NOT IN TABLE   TL-143-8-64   00300000STECHERT-HAFNER               640731 AUTHORIZATION
NO AUTHORIZATION CARD    TL-143-7-64  0274SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-7-64  0275SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-7-64  0327SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-7-64  0602SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-7-64  0946SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-7-64  1041SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-7-64  1216SPECIALIZED BOOK  SERVICE                  ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0048STECHERT-HAFNER  INC.                      ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0111STECHERT-HAFNER  INC.                      ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0112STECHERT-HAFNER  INC.                      ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0211STECHERT-HAFNER                            ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0336STECHERT-HAFNER                            ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0508STECHERT-HAFNER                            ON ORDER
NO AUTHORIZATION CARD    TL-143-8-64  0587STECHERT-HAFNER                            ON ORDER
```

Figure 37. Error List (Financial Analysis)

CANCELLED ITEMS

10 FEB 67   PAGE 00001

| TITLE OF BOOK | AUTHOR | TL NR | ITEM NR | QTY ORD | UNIT COST | RCV | DUE OUT | PATRON SSN | ORG |
| PUBLISHER | | | | | | | | | |

ORGANOSILICON COMPOUNDS 530 P CLOTHBOUND * C EABORN   *TL-3-10-67   *0009 * 0001* 28.75 * D * 01 *015263903 * R
, 1960, ACADEMIC PRESS, NY   *   * PO NR   RCV CD VOUCHER
                                          *   035647   N/A
                                          *   *
                          * DATE ORDERED 670120 DATE RCVD   VENDOR ITEM
UNIVERSITY MICROFILMS   UNABL OBTAIN PERMISSION FROM PUB TO REPRO   0000
* COMMENTS-RUSH

Figure 38.   Cancelled Items

THE FOLLOWING TRANSACTIONS ARE IN ERROR AND MUST BE CORRECTED AND RESUBMITTED INTO THE NEXT EDIT RUN.
ANY VALID TRANSACTIONS FOR ANY OF THE BELOW ITEMS HAVE BEEN RETURNED TO THE BOOK SECTION AND MARKED (RECYCLES)

```
         0         1         2         3         4         5         6         7         8
1........0.........0.........0.........0.........0.........0.........0.........0.........0        INVALID CONDITION                CHECK
                                                                                                                                 CD COLS

620 000000000                                                                           033226   SOCIAL SECURITY NR INVALID        22-31

420TL-3-4-67   024IPULSE DIGITAL AND SWITCHING WAVEFORMS+ 1965+ MCGRAW H                          CTL,ITEM,CODE SAME AS NEXT TX
420TL-3-4-67   024ICONCEPTS OF THERMOCYNAMICS+ 1960 LATEST+MCGRAW HILL+                           CTL,ITEM,CODE SAME AS NEXT TX

430TL-3-4-67   024IILL                                                                           CTL,ITEM,CODE SAME AS NEXT TX
430TL-3-4-67   024INY                                                                            CTL,ITEM,CODE SAME AS NEXT TX

450TL-3-4-67   0241000101150TJ265 012                        000000670216                        CTL,ITEM,CODE SAME AS NEXT TX
450TL-3-4-67   0241000101800TK7870 M655                      000000670216                        CTL,ITEM,CODE SAME AS PREV TX

622TL-7-5-66   0133RSIC – BINDING                                                       033226   TX CODE IS AN INVALID CODE        01-03
```

BOOKS ORDERING AND RECEIVING INPUT TRANSACTION LIST AS OF 30 JUN 66

```
         0         1         2         3         4         5         6         7         8
1........0.........0.........0.........0.........0.........0.........0.........0.........0

430TL-1-11-66   0173MICROFILMS+ 300 ZEEB RD ANN ARBOR MICH
450TL-1-11-66   017300010400                                              000000660630
460TL-1-11-66   0173000000000 R
461TL-1-11-66   0173GIVE TO SERIALS LIBRARIAN

610TL-1-12-66   0094                              000000                  0001 029925
611TL-1-12-66   0141QC178 S989                    000000                  0001 031071
610TL-1-12-66   0147
500TL-1-12-66   0164            WESTERN PERIODICALS
520TL-1-12-66   0164INTERSCIENCE TRACTS ON PHYSICS AND ASTRONOMY NO 25 19
530TL-1-12-66   016465
550TL-1-12-66   016400100650                                             000000660629
560TL-1-12-66   0164    0001D66293    000100059860629
520TL-1-12-66   0165CHEMICAL ENGINEERING PROGRESS SYMPOSIUM SERIES VOL 61
530TL-1-12166   0165NO 56 57 59 60 VOL 62 NO 61 62 63 64
550TL-1-12-66   0165000112000                                            000000660629
560TL-1-12-66   0165    0001    0001    01200660629

400TL-1-2-66    0002            BELL AND HOWELL CO MICRO PHOTO DIV
410TL-1-2-66    0002U R EVANS
420TL-1-2-66    0002METALS AND METALLIC COMPOUNDS VOL I DP 3854 CLOTHBOUN
430TL-1-2-66    0002D+ 1923+ EDWARD ARNOLD+ 41 MADDOX ST LONDON
450TL-1-2-66    000200101600                                             000000660630
```

Figure 39.   Book Ordering and Receiving Input Transaction List

```
30 JUN 66                    BOOK ORDERING AND RECEIVING ERROR LIST                    PAGE   1

ERROR INDICATION             TRANSACTION IN ERROR
TRANS. DOESN T MATCH MASTER  399TL-1-4-66    0222    N/R                                000000

NO RECEIVED FLAG FOR TRANS   610TL-1-4-66    0904              6517961            0001  030877
```

Figure 40, Book Ordering And Receiving Error List

```
620 419468303  MAIL TO.DICKSON      RE...(AMSMI-RDD  )  BLDG..5400   0315449
600TL-1-4-66     1124660622                             0001   031550
611TL-1-4-66     1124QD553 P866              0000000    0001   031550
620 412365389  MAIL TO.COOPER       R ...(R-QUAL-AMS )  BLDG..4708   031550
600TL-1-4-66     1125660622                             0001   031551
611TL-1-4-66     1125QD931 K11               0000000    0001   031551
620 405423899  MAIL TO.BERRYMAN     G ...(R-ASTR-R    )  BLDG..4487   031551
600TL-1-4-66     1126660622                             0001   031552
611TL-1-4-66     1126TG265 R628              0000000    0001   031552
620 418365443  MAIL TO.SMITH        RA...(R-P+VE-SAE )  BLDG..4610   031552
600TL-1-4-66     1127660622                             0001   031553
611TL-1-4-66     1127QC21 044                0000000    0001   031553
620 419561874  MAIL TO.RHODES       JE...(R-TEST-IIM  )  BLDG..4566   031553
600TL-1-4-66     1128660622                             0002   031554
610TL-1-4-66     1128                        0000000    0002   031554
620 404441211  MAIL TO.GRIFFIN      JR...(AMSMI-RKP  )  BLDG..7120   031554
620 000000000                                                  031554
600TL-1-4-66     1129660622                             0002   031555
610TL-1-4-66     1129                        0000000    0002   031555
620 000000000                                                  031555
620 472321101  MAIL TO.HOLTER       DE...(AMSMI-REO  )  BLDG..5400   031555
600TL-1-5-66     0723660622                             0001   031556
610TL-1-5-66     0723                        0000000    0001   031556
620 000000000                                                  031556
600TL-1-5-66     0724660622                             0001   031557
610TL-1-5-66     0724                        0000000    0001   031557
620 000000000                                                  031557
600TL-1-5-66     0725660622                             0001   031558
610TL-1-5-66     0725                        0000000    0001   031558
620 000000000                                                  031558
600TL-1-5-66     0726660622                             0001   031559
611TL-1-5-66     0726TL3000 I61              0000000    0001   031559
620 000000000                                                  031559
600TL-1-5-66     0727660622                             0002   031560
610TL-1-5-66     0727                        0000000    0002   031560
620 000000000                                                  031560
620 543463151  MAIL TO.MURPHY       GL...(R-P+VE-PTF )  BLDG..4610   031560
600TL-1-5-66     0728660622                             0001   031561
611TL-1-5-66     0728TL1100 A512             0000000    0001   031561
620 477208628  MAIL TO.WOOD         RD...(            )  BLDG..       031561
600TL-1-5-66     0729660622                             0001   031562
610TL-1-5-66     0729                        0000000    0001   031562
620 418604507  MAIL TO.DANNENBERG   KK...(R-SA        )  BLDG..4200   031562
600TL-1-5-66     0730660622                             0001   031563
611TL-1-5-66     0730QD921 H669              0000000    0001   031563
620 411585000  MAIL TO.NERREN       BH...(R-QUAL-AVP )  BLDG..4752   031563
600TL-1-5-66     0731660622                             0001   031564
611TL-1-5-66     0731QH652 T837              0000000    0001   031564
620 410506756  MAIL TO.NORMAN       RL...(AMSMI-RNM  )  BLDG..4505   031564
600TL-1-5-66     0732660622                             0002   031565
610TL-1-5-66     0732                        0000000    0002   031565
620 265307728  MAIL TO.DRIGGERS     WG...(R-COMP-GE)  BLDG..4663   031565
620 000000000                                                  031565
600TL-1-6-66     0347660622                             0001   031566
610TL-1-6-66     0347                        0000000    0001   031566
620 000000000                                                  031566
600TL-1-6-66     0348660622                             0001   031567
```

Figure 41.   Books On Order Mail List

FEB 67 OUTSTANDING ORDERS PAGE 00007

ATTACHED IS A LIST OF OUTSTANDING ORDERS PLACED PRIOR TO 1 OCT 66 PLEASE REPORT THE STATUS OF EACH ITEM ACCORDING TO YOUR RECORDS. IF ITS STATUS CANNOT BE DETERMINED, OR THE ITEM SHIPPED BY 30 MAR 67 PLEASE REPORT ACCORDINGLY AND THE ITEM WILL BE CONSIDERED CANCELLED.

TITLE OF BOOK PUBLISHER	AUTHOR	TL NR	ITEM NR	QTY ORD	UNIT COST	RCV	DUE OUT	PATRON SSN	ORG
MULTIPOLE FIELDS OP 13301 CLOTHBOUND, IS T, WILEY, NY	* M E ROSE	*TL-1-11-66 * PO NR * *	*0001 RCV CD VOUCHER 027955	* 0001*	6.00 *		* 01	*457583829 *	N
UNIVERSITY MICROFILMS * COMMENTS–	* DATE ORDERED 660103	DATE RCVD	VENDOR ITEM						
MATHEMATICAL THEORY OF HUYGENS PRINCIPLE 192 PP CLOTHBOUND, 1950, CLARENDON PRES S	* B B BAKER+ E T COPSON * * *	*TL-1-11-66 * PO NR * *	*0032 RCV CD VOUCHER 028431	* 0001*	13.00 *		* 01	*449647192 *	R
UNIVERSITY MICROFILMS * COMMENTS–	* DATE ORDERED 660117	DATE RCVD	VENDOR ITEM						
NUCLEAR EXCITATION BY 1 MEV TO 3 MEV ELE CTRONS ORDER NR 64–11 616 CLOTHBOUND, 19 64, UNIV MICROFILMS, ANN ARBOR MICHIGAN	* B T CHERTOK * * *	*TL-1-11-66 * PO NR * *	*0035 RCV CD VOUCHER 028478	* 0001*	8.25 *		* 02	*433545738 000000000	N R
UNIVERSITY MICROFILMS * COMMENTS–	* DATE ORDERED 660119	DATE RCVD	VENDOR ITEM						
ONCE FORBIDDEN BETA SPECTRUM TO T1 206 0 RDER NR 63–3831 CLOTHBOUND, 1962, UNIV M ICROFILMS, ANN ARBOR	* D A HOWE * * *	*TL-1-11-66 * PO NR * *	*0036 RCV CD VOUCHER 028479	* 0001*	7.00 *		* 02	*433545738 000000000	N R
UNIVERSITY MICROFILMS * COMMENTS–	* DATE ORDERED 660119	DATE RCVD	VENDOR ITEM						
HANDBOOK OF NONFERROUS METALLURGY RE COVERY OF THE METALS 2ND ED OP 16419 CLOTH BOUND, 1945, MCGRAW-HILL	* D M LIDDELL EDITOR * * *	*TL-1-11-66 * PO NR * *	*0045 RCV CD VOUCHER 028719	* 0001*	28.05 *		* 01	*000000000 *	R

Figure 42. Outstanding Orders In Vendor Sequence

Figure 43.   Cancel Or Delete Transaction Card (399)

407

Figure 44. Year To Date Master Record Format (Sheet 1 of 2)

Figure 44. Year To Date Master Record Format (Sheet 2 of 2)

409

398
399
400 thru 461
500 thru 560
600 thru 622

Daily Ordering and
Receiving Transactions

Run 1. Conversion
from Transaction Card to
Magnetic Tape
1401

Book
Transactions
(6PBA0120)

Run 2. Sort
Book Transactions
(6PBA01B2)
7010

Sorted Book
Transactions
(6PBA0150)

A3
Transaction
Work Tape

B
Rec
Transc

Books Ordering
and Receiving
Transaction List

A2
Book
Miscellaneous
List

End of Job Routine
7010

Run 3. Edit Book Transaction
(6PBA01B1)
7010

To Ordering and
Receiving Unit

B3
Books Work
Tape Errors

Error Cards
(Original Card in Error)

A4
Cycle Errors

E
Rec
Transc

Recycled Transaction
Cards

IBM 557 Interpreted

Error Card (Duplicate)
With Field in Error
Left Blank

To Ordering and
Receiving Unit

A1
Book Edited
Transactions
(6PBA0151)

B1
Master on
Order
(6PBA0251)

B2
Receiving
and Cataloging
(6PBA0250)

Run 4. Update Ordering
and Receiving Files
(6PBA02B1)
7010

Weekly

Daily

B5
Canned Items
(6PBA0252)

B4
Print Master
(6PBA0253)

B3
Daily Receipts
(6PBA0254)

A4
Error File
(6PBA0230)

B1
Master on
Order
(6PBA025

Run 4A. Sort Canned Items
(6PBA02B2)
7010

Run 4B. Sort Print Master
(6PBA02B2)
7010

To Tape Vault
(Presently Not Used)

Error List

To Ordering and
Receiving Unit

Sorted
Print Master
(6PBA0256)

Sorted
Canned Items
(6PBA0255)

A

Run 5. Book Ordering and
Receiving Generator
(6PBA03B1)
7010

Master Print
(6PBA0330)

Daily (Cumulative Through
Weekly Period)

We

Daily on Order
List

Canned Items

To Ordering and
Receiving Unit

To Ordering and
Receiving Unit

411-1

A

B2
Book General
Transactions
(6PBA0153)

Run 6. Book Order
Disk Sort
(6PBA06B2)
7010

Sorted
Book General
Transaction
(6PBA0650)

Run 7. Book O
Weekly Match

Patron File
(6PEA0251)

B2
Receiving
and Cataloging
(6PBA0250)

1)

B

C

ekly

411-2

rder
(6PBA07B1)
7010

Vendor Authorization Cards → Conversion from Transaction Cards to Magnetic Tape 1401 →

List and Punch Unmatched Transactions (6PBA0730)

All Matched 600 Series and Transactions (6PBA0750)

Run Sort (6PBA

Run 8. Sort of Matched Item (6PBA0852) 7010

Sorted Matched Transactions (6PBA0850)

B → Run Mont

C →

Run 9. Book Order Weekly Stack Report Generator (6PBA0951) 1401

Error Financial & Workload Analysis File (6PBA1030)

Error List Financial & Workload Analysis Records

List and Punch Un-matched Trans. Mail List (6PBA0730)

Book on Order Mail List 600, 611, 622, 610 and 620

Unmatched 620 Card

Feed Back 600, 610 and 611

To Ordering and Receiving U Director of RSIC Chief of Operations Sect Chief of Library Branch

Ordering and Receiving Unit

To Ordering and Receiving Unit

Figure 45. Computer Run Relation Flow Chart

Call Number	Copy Number	Number of Copies	Special Indicator Code
1-52 52	53-56 4	57-60	61 1

Cataloger's Initial	Data Element Code	Action Code	Data Element	‡
62 1	63-65 3	66 1	67- Variable Length	

Notes: (1) Copy Number is the number of the first copy cataloged; Number of Copies is the last assigned number.

(2) Special Indicator Code Applies to the first copy; it is N for no copy one non expendable, R for reference, S for expendable reference, X for expendable, or V for no copy one expendable.

(3) Data Element Code classifies the data element it preceeds (see figure of codes); Action Code tells what kind of action is called for (see figure of action codes).

(4) Data Element Code, Action Code, and Data Element may be repeated an indefinite number of times before the end of the record, which is indicated by the record mark.

Figure 46.   Books Bibliographic Master File Record

413

Code	Kind of data
A01-A99	Authors
B01-B99	Titles
C01-C99	Corporate authors
D01-D99	Corporate addresses
E01-E99	Editors
F01-F99	Compilers
G01-G99	Translators
H01-H99	Illustrators
L01-L99	Language
M01-M99	Series
N01	Bibliographic paragraph
001-099	Informal notes
P01-P99	Subject headings
Q01	COSATI subject category code
Abb	None, used for sequence only
Pbb	Subject headings

Figure 47. Data Element Codes Used in Bibliographic Master File

414

Action Code	Function
0	Delete
1	Create New Record
2	Add data to established record
3	Change data in established record
4	Flag copies lost
5	Flag copies found
6	Flag copies salvaged
7	Inventory adjustment out

Note: It should be noted that the specific action is also governed by evaluating the Action Code together with the Data element code of the incoming transaction

Special Indicator Code

B = Blank

N = No Copy one - non expendable

R = Reference non expendable

S = Expendable and reference

X = Expendable

V = No copy one - expendable

Figure 48. Valid Action Codes and Their Functions

Call Number	Truncated Author	Truncated Title	Copy Number
1-52 52	53-77 15	78-127 50	128-131 4

Number of Copies	Times Circulated	Individual Copy Fields
132-135 4	136-140 5	141-440 300

Date Record Originated	
441-445 5	‡

Notes: (1) Author and Title are truncated in a simple mechanical fashion: any letters that will not fit are dropped, with no abbreviation of the whole. It is expected in the future to change this so that abbreviation (as by dropping vowels, for instance) will be done, and also possibly that in the title the most significant words may be moved to the front.

(2) Copy Number is the lowest assigned copy number; Number of Copies is the last assigned copy number.

(3) The Times Circulated field is updated by input from the Circulation Module; it refers to the title.

(4) In the Individual Copy Fields, inventory status of copies is flagged using the codes listed in figure 50. Copy number is indicated position of the field; 141 refers to copy 1, 142 refers to copy 2, etc.

Figure 49. Inventory Control Master File Record

416

		Inv Flag	
Action Code	Meaning	Non-Exp	Exp
0	Delete		
1	New	1	J
2	Add	1	J
3	Change		
4	Lost	3	L
5	Found	1	J
6	Salvage	4	M
7	IAO	5	N
	Reference	6	O
	* Circulated	2	K

Examination of the Special Indicator Code determines Expendable

or Non-Expendable Status. In addition, the S.I.C. is used to flag

"Reference"

* Used in the Book Circulation Module.

Figure 50. Codes for Flagging Individual Copies
on the Inventory Master

417

Subject Heading	Record Identification	Call Number	Data Element Code
1-70 70	71 1	72-123 52	124-126 3

Call Number	Data Element Code	Call Number	Data Element Code
127-178 52	179-181 3	182-233 52	234-236 3

Call Number	Data Element Code	Call Number	Data Element Code
237-288 52	289-291 3	292-343 52	344-346 3

Call Number	Data Element Code	
347-398 52	399-401 3	‡

Notes: (1) Record Identification is coded; 1 means header record and 2 means trailer record. Each Search Master File record has one header record and as many trailer records as required to record the data.

(2) Data Element Code is one of the subject heading codes, P01-P99, as used in the Bibliographic Master File.

Figure 51. Search Master File Record

Subject Heading	Temporary Valid Subject Heading Flag	‡
1-70 70	71 1	

Note: Later this record will be expanded to agree with the length of the records in the Language Module.

Figure 52. Subject Authority Master File Record Format

419

Term Type Code	Subject Heading	(Other data elements)	
1	2-71	Variable length	‡
1	71		

Figure 53. Book Subject Heading Record Format (From Language Master File)

420

American Society of Tool and Manufacturing Engineers.
   Handbook of industrial metrology; a reference book on
principles, techniques, and instrumentation design and ap-
plication for physical measurements in the manufacturing
industries. Prepared under policy supervision of Publica-
tions Committee. Englewood Cliffs, N. J., Prentice-Hall
[1967]
   xiii, 492 p. illus. 24 cm. (ASTME manufacturing engineering
series)
   Includes bibliographies.
   1. Mensuration. ɪ. Title. ɪɪ. Title: Industrial metrology.
(Series: American Society of Tool and Manufacturing Engineers.
Manufacturing engineering series)

T50.A4   681'.2   67–12084

Library of Congress   [8]

Figure 54.   Sample LC Card

Figure 55. Cataloging Worksheet

422

| T S R | C R | C R | S T P | L C | N P | 2 8 0 | 2 8 0 s p | P R | S P | S T P | U C | * | L C | S T P | C R | L C | N P | 2 8 | P R | S T | 0 | 0 | S P | L C | S T P | C R | L C | N P | 2 8 0 | P R | N | 0 | 1 | S P | S T P |

| TAPE FEED | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P |

| L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S P P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | T A B | T A B | C R | S T P |

ALTERNATE PROGRAM TAPE FOR USE WITH SELECTA-DATA READER:

ADDRESS CODES

1 = NEW TX
2 = ADD COPIES
4 = ADD DATA
7 = INVENTORY ADJUSTMENT OUT

| A D D 1 | C R | C R | S T P | L C | N P | 2 8 0 | 2 8 0 S p | P R | S P | 1 | S P | S T P | U C | * | L C | S T P | C R | L C | N P | 2 8 0 | P R | S T P | 0 | 0 | S P | L C | S T P | C R | L C | N P | 2 8 0 | P R |

| N | 0 | 1 | S P | S T P | T S R | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R | S T P |

| L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | 2 8 0 | P R | S T | L C | C R | 2 8 | P R | S T | T A B | T A B | C R | S T P |

| A D D 2 | C R | C R | S T P | L C | N P | 2 8 0 | 2 8 0 S p | P R | S p | 2 | S P | S T P | U C | * | L C | S T P | C R | L C | N P | 2 8 0 | P R | C R | L C | C A | S P | S P | S P | S T P |

| A D D 4 | C R | C R | S T P | L C | N P | 2 8 0 | 2 8 0 S p | P R | 2 | S P | S T P | U C | * | L C | b | b | b | b | b | b | b | b | b | b | N P | 2 8 0 | P R | L C | C R | S T P | T S | L C | C R | N P | 2 8 0 | P R | S T P | L C | C R | N P | 2 8 0 | P R |

| S T P | L C | C R | N P | 2 8 0 | P R | S T P | T A B | T A B | C R | S T P |

| A D D 7 | C R | C R | S T P | L C | N P | 2 8 0 | 2 8 0 S p | P R | 7 | S P | S T P | U C | * | L C | S T P | b | b | b | b | b | | | | S T P | T A B | T A B | C R | S T P |

Figure 56. Diagram of Flexowriter Control Tape
for Bibliographic Data Capture

423

Header Tape

Trailer Tape

Figure 57. Header and Trailer Formats for Bibliographic Data Capture

Figure 58. First Data Entry Format for Bibliographic Data Capture
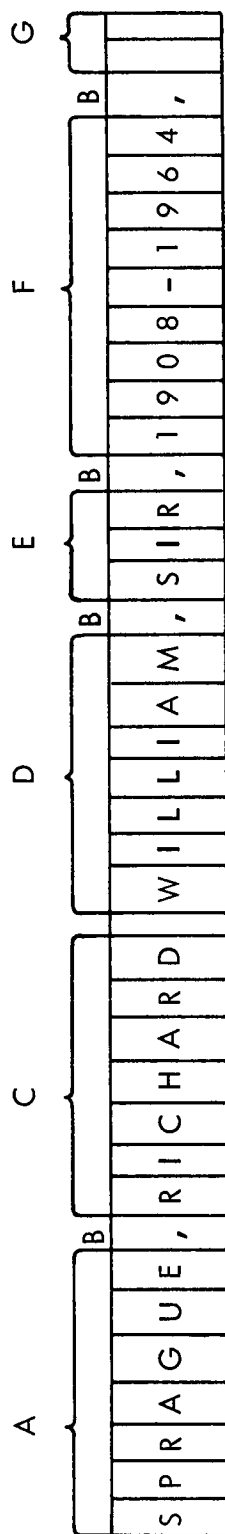
Figure 59. Personal Name Entry Format for Bibliographic Data Capture

DAILY MONITOR REPORT   13 MAR 67   PAGE   1

ACTION
CODE

1 CT 101   D554 1966V3   00010002   B001+D ICTIONARY OF INTERNATIONA
    L BIOGRAPHY+

1 CT 101   D554 1966V3   E011HANDLEY-TAYLOR,GEOFFREY,,,ED

1 CT 101   D554 1966V3   N011+D ICTIONARY OF INTERNATIONAL
    BIOGRAPHY+   A BIOGRAPHICAL RECORD OF CONTEMPORARY ACHIEVEMENT TOGETHER WITH A KEY TO THE LOC
    ATION OF THE ORIGINAL GIOGRAPHICAL NOTES. +C OMPLIED BY +G EOFFREY +H ANDLEY--+T AYLOR. +L O
    NDON, +D ICTIONARY OF +I NTERNATIONAL +B IOGRAPHY +C O. 1966.

1 CT 101   D554 1966V3   00113 V.

1 CT 101   D554 1966V3   P011BIOGRAPHY - 20TH CENTURY - D
    ICTIONARIES

1 G 1019   H225 1966   00010001R   B011AMBASSADOR WORLD ATLAS

1 G 1019   H225 1966   C001+H AMMOND +(C. S.) AND +C O
    MPANY, INC.

1 G 1019   H225 1966   N011+A MBASSADOR WORLD ATLAS. +M
    APLEWPPD, +N.J.,   1966.

1 G 1019   H225 1966   O0114 V. ILLUS., MAPS +(PART CO
    L.+)

1 G 1019   H225 1966   O021+E ACH ISSUE INCLUDES FOLD.
    COL. WALL MAP OF THE WORLD IN POCKET.

1 G 1019   H225 1966   P011ATLASES

1 HA 17   D383 1965   00010001R   B001+D EMOGRAPHIC YEARBOOK.

Figure 60.   Book Cataloging Daily Monitor Report

427

DELETED BIBLIOGRAPHIC RECORD   17 MAY 67   PAGE   1

CALL NUMBER   NUMBER OF COPIES

QA   331   F951 1964V1   2

+F UCHS,+B A ,,   .   SHABAT,B V,, .   FUNCTIONS OF A COMPLEX VARIABLE AND S
OME OF THEIR APPLICATIONS   .   +F UNCTIONS OF A COMPLEX VARIABLE AND SOME OF
THEIR APPLICATIONS BY +B. A. F UCHS AND +B. V. S HABAT. +O RIGINAL TRANSLA
TION BY +J. B ERRY. + O XFORD, +(E NG.+) P ERGAMON +P RESS, 1964.   V.   .
+V OL. 1 TRANSLATED FROM +R USSIAN 2D ED. +F UNKTSII KOMPLEKSNOGO PEREMENNO
GO I NGKOTORYYE IKH PRILOZHENIYA +S PETSIAL NYYE GLAVY, +F ISMATIGIZ, +M O
SCOW, 1959. +V OL. 2 ORIGINALLY PUBLISHED IN +R USSIAN IN 1949. . FUNCTIO
NS OF COMPLEX VARIABLES

Figure 61.   Deleted Bibliographic Record

CATALOG MODULE – EDIT ERRORS

21 FEB 67
PAGE 0001

INPUT TX IS INCORRECT FORMAT, ASTERISK ENDING LC NO IS NOT IN CORRECT POSITION
1HDR BLACK00001BK CAT OTX *

INVALID DATA ELEMENT CODE.
QC 789.D3   L694   1952   *

INVALID DATA ELEMENT CODE.
QC 790   B643   1962   *

INVALID DATA ELEMENT CODE.
QC 790   B643   1962   *

INVALID DATA ELEMENT CODE.
QC 790   Z99   1964   YIELDS AND THEIR MASS DISTRIBUTION   *

THIS TRANS HAS DUPLICATE DATA ELEMENT CODES, DUPLICATE ELEMENT BELOW IS KICKED OUT.
QC 791   A792   1964   P01 CONTROLLED FUSION *

THIS TRANS HAS DUPLICATE DATA ELEMENT CODES, DUPLICATE ELEMENT BELOW IS KICKED OUT.
QC 791   A792   1964   P02 PLASMA (IONIZED GASES)   *

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QC 791   A792   1964   B01 CONTROLLED THERMONUCLEAR REACTIONS   *

THIS TRANS HAS DUPLICATE DATA ELEMENT CODES, DUPLICATE ELEMENT BELOW IS KICKED OUT.
QC 791   A792   1964   M01 PLASMA PHYSICS AND LABORATORY ASTROP
HYSICS, V.1   *

INVALID DATA ELEMENT CODE.
QC 792   I61   1955V1   -V.7. NUCLEAR CHEMISTRY AND EFFECTS OF I
RRADIATION. -V.8 PRODUCTION TECHNOLOGY OF THE MATERIALS USED FOR NUCLEAR ENERGY. -V.9. REACT
OR TECHNOLOGY AND CHEMICAL PROCESSING. 1V.10. RADIOACTIVE ISOTOPES AND NUCLEAR RADIATIONS I
N MEDICINE. -V.11. BIOLOGICAL EFFECTS OF RADIATION. V.12. RADIOACTIVE ISOTOPES AND IONIZING
RADIATIONS IN AGRICULTURE, PHYSIOLOGY, AND BIOCHEMISTRY. -V.13. LEGAL, ADMINISTRATIVE, HEAL
TH AND SAFETY ASPECTS OF LARGE-SCALE USE OF NUCLEAR ENERGY. -V.14. GENERAL ASPECTS OF THE US
E OF RADIOACTIVE ISOTOPES DOSIMETRY. -V.15. APPLICATIONS OF RADIOACTIVE ISOTOPES AND FISSI
ON PRODUCTS IN RESEARCH AND INDUSTRY. -V.16. RECORD OF THE CONFERENCE. -V.17. INDEX. *

Figure 62. Edit Error List

429

CATALOG MODULE – UPDATING ERRORS

10 OCT 66

PAGE 18

00010001 N011+T HE +I NTERNATIONAL WHO+' S WHO

00010001R O011V.PORTS.

00010001 P011BIOGRAPHY – DICTIONARIES

DUPLICATE TRANSACTION INPUT
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. +L ONDON, +E UROPA PUBLICATIONS, LTD. 23RD, 1959.

DUPLICATE TRANSACTION INPUT
CT 120 161 1959

DUPLICATE TRANSACTION INPUT
CT 120 161 1959

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
CT 120 161 1964 0003

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
CT 9400 L434 1964/65V6 0002

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
DK 14 M147 1961 0003

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
DK 18 M465 1962 0002

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
DS 711 G799 1961 0002

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
DS 774 C649 1964 0002

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
E 14 C744 1962 0002

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
E 185.8 N877 1965 0003

CALL NUMBER FOR DATA TO BE CHANGED NOT FOUND ON BIB. MASTER
E 745.M37 P746 1963V1 0002

Figure 63. Update Error List

CATALOG MODULE - TEMPORARY SUBJECT HEADERS   DAY MON YEAR   PAGE   1

ELECTRONIC CALCULATING - MACHINES
TJ 213.5 W884 1957
TJ 214 A565 1962
TJ 214 B932 1967

Figure 64.   Authority Check List

431

CATALOG MODULE - SEARCH ERRORS   DA MON YR   PAGE

The format for displaying the errors found during both the updating of the bibliographic and search modules will be the same as the edit module. Using the same print format will eliminate the necessity for two additional print programs. The headings may be changed to reflect the correct title by a program switch. The errors will be printed on 8 1/2 x 11 paper.

Figure 65. Wash Action Error List

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CATALOG MODULE - VALID TX        28 FEB 67        PAGE  2

QC  792    161    1965V4           P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1965V1           P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1965V11          P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1965V13          P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1955V1           P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1955V10          P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1955V12          P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1955V14          P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1958V6           P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1958V8           P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1958V30          P011
ATOMIC ENERGY - CONGRESSES

QC  792    161    1958V32          P011
ATOMIC ENERGY - CONGRESSES
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Figure 66.   Valid Transactions for Monitoring

433

BC 135 M967 1961
+M UNOZ,+V INCENTE,,
 +D E LA AXIOMATICA A LOS SISTEMAS FORMALES.
+M ADRID, +I NSTITUTO DE +M ATEMATICAS + J ORGE
+J UAN,+ 1961. 001 80P. +(C ONFERENCIAS DE
MATEMATICA, 5+) 002 +A T HEAD OF TITLE+ C ONS-
EJO +S UPERIOR DE +I NVESTIGACIONES +C [ENTIFICA-
S. 2 CYS BO1 DE LA AXIOMATICA A LOS SISTEMAS
FORMALES MO1 SPAIN. CONSEJO SUPERIOR DE INVESTIG-
ACIONES CIENTIFICAS. INSTITUTO JORGE JUAN DE
MATEMATICAS. CONFERENCIAS DE MATEMATICA, 5 PO1
LOGIC, SYMBOLIC AND MATHEMATICAL PO2 MATHEMATICS
- PHILOSOPHY

BC 135 N664 1962
+N IDDITCH,+P H,,
 +P ROPOSITIONAL CALCULUS. +N EW +Y ORK, +F REE
+P RESS OF +G LENCOE, 1962. 001 88P. +(M ONOGRA-
PHS IN MODERN LOGIC+) 2 CYS BO1 PROPOSITIONAL
CALCULUS MO1 MONOGRAPHS IN MODERN LOGIC PO1 LOGIC,
SYMBOLIC AND MATHEMATICAL

BC 135 N943 1964
+N OVIKOV,+P ETR +S ERGEEVICH,,
 +E LEMENTS OF MATHEMATICAL LOGIC +(BY+) +P.S.
N OVIKOV. +T RANSLATED BY +L EO +F.B ORON. +W ITH
A PREF. AND NOTES BY +R.L.G OODSTEIN. +E DINBUR-
GH, +O LIVER AND +B OYD +R EADING, +M ASS.,+A DD-
ISON - +W ESLEY +P UB. +C O.+(1964+) 001 XI,
296P. +(+A DIWES INTERNATIONAL SERIES IN MATHEM-
ATICS+) 2 CYS BO1 ELEMENTS OF MATHEMATICAL LOGIC
MO1 ADDISON - WEGEEEY INTERNATIONAL SERIES IN
MATHEMATICS PO1 LOGIC, SYMBOLIC AND MATHEMATICAL

BC 135 P857 1941
+P OST,+E MIL +L EON,,1897-
 +T HE TWO - VALUED ITERATIVE SYSTEMS OF MATHEM-
ATICAL LOGIC, BY +E MIL +L.P OST. +P RINCETON,
+P RINCETON UNIVERSITY PRESS +L ONDON, +H.M ILFO-
RD, +O XFORD UNIVERSITY PRESS, 1941. 001 4P. L.,
122P. DIAGRS. +(A NNALS OF MATHEMATICS STUDIES,
NO.5+) 002 LITHOPRINTED 003 BIBLIOGRAPHY+ P.
119 - 122 4 CYS BO1 THE TWO - VALUED ITERATIVE
SYSTEMS OF MATHEMATICAL LOGIC MO1 ANNALS OF MATH-
EMATICS STUDIES, NO.5 PO1 LOGEC, SYMBOLIC AND
MATHEMATICAL

BC 135 Q7 1951
+Q UINE,+W ILLARD +V AN +O RMAN,,
 +M ATHEMATICAL LOGIC. +R EV. ED. +C AMBRIDGE,
+H AVARD +U NIVERSITY +P RESS, 1951. +N EW +Y ORK,
+H ARPER TORCHBOOKKKKKKK 001 346P.   3 CYS BO1
MATHEMATICAL LOGIC PO1 LOGIC, SYMBOLIC AND MATHE-
MATICAL

BC 135 Q7 1965
+Q UINE,+W ILLARD +V AN +O RMAN,,
 +E LEMENTARY LOGIC. +R EV. ED. +N EW +Y ORK AND
+R OW +(1965+) 001 X, 129P. +(H ARPER TORCHBO-
OKS. +T HE SCIENCE LIBRARY,+TB 577 +J) 002
BIBLIOGRAPHICAL REFERENCES INCLUDED IN FOOTNOTE
2 CYS BO1 ELEMENTARY LOGIC MO1 HARPER TORCHBOOKS.
 THE SCIENCE LIBRARY, TB577J PO1 LOGIC, SYMBOLIC
AND MATHEMATICAL

 +T HE ELEMENTS OF MATHEMATICAL LOGIC. +(1ST ED.
+N EW +Y ORK+) +D OVER +P UBLICATIONS, 1950.
001 IV, 214P. +(T HE +D OVER SERIES IN MATHEMATICS
AND PHYSICS+) 002 + B IBLIOGRAPHICAL AND OTHER
REMARKS+   P. 194 - 208 BO1 THE ELEMENTS OF
MATHEMATICAL LOGIC MO1 THE DOVER SERIES IN MATHE-
MATICS AND PHYSICS PO1 LOGIC, SYMBOLIC AND MATHE-
MATICAL

BC 135 R828 1953
+R OSSER,+J OHN +B ARKLEY,,1907-
 +L OGIC FOR MATHEMATICIANS. +N EW +Y ORK. +M C-
+G RAW - +H ILL,1953. 001 530P. ILLUS. +(I NTER-
NATICNAL SERIES IN PURE AND APPLIED MATHEMATICS+-
) 3 CYS BO1 LOGIC FOR MATHEMATICIANS MO1 INTER-
NATIONAL SERIES IN PURE AND APPLIED MATHEMATICS
PO1 LOGIC, SYMBOLIC AND MATHEMATICAL

BC 135 S351 1959V1

+S CHMIDT,+H A RNOLD,,1902-
 +M ATHEMATISCHE +G ESETZE DER +L OGIK. +B ERLIN,
+S PINGER, 1960 +(C1959+) - 001 1 V. ILLUS.
+(D IE +G RUNDLEHREN DER MATHEMATISCHEN +W ISSEN-
SCHAFTEN IN +E INZELDARSTELLUNGEN, +B D. 69+)
002 BIBLIOGRAPHY+ V.1,P. 543 - 544. 003 CONTE-
NTS. - 1. +V ORLESUNGEN UBER +A USSAGENLOGIK. 1
CY BO1 MATHEMATISCHE GESETZE DER LOGIK BO2 VORLE-
SUNGEN UBER AUSSAGENLOGIK V. 1 MO1 DIE GRUNDLEHREN
DER MATHEMATIDCHEN WISSINSCHAFTEN IN EINZELDARST-
ELLUNGEN, BD. 69 PO1 LOGIC, SYMBOLIC AND MATHEMA-
TICAL

BC 135 S368 1961
+S CHOLZ,+H EINRICH,,1884-1956
 +G RUNDZUGE DER MATHEMATISCHEN +L OGIK, VON
+H EINRICH +S CHOLZ UND +G ISBERT +H ASENJAEGER.
+B ERLIN, +S PRINGER, 1961. 001 XV, 504P. +(D IE
+G RUNDLEHREN DER MATHEMATISCHEN +W ISSENSCHAFTEN
IN +E INZELDARSTELLUNGER, +B D.106+) 002 +B IB-
LIOGRAPHY+ P.+(490+) - 494 1 CY AO1 HASENJA-
EGER,GISVERT,, BO1 GRUNDZUGE DER MATHEMATISCHEN
LOGIK MO1 DIE GRUNDLEHREN DER MATHEMATISCHEN
WISSENSCHAFTEN IN EINZELDARSTELLUNGEN, BD. 106 PO1
LOGIC, SYMBOLIC AND MATHEMATICAL

BC 135 S381 1961
+S CHRODER,+E RNST,,1841-1902
 +V ORLESUNGEN UBER DIE +A LGEBRA DER +L OGIK
+(E SAKTE +L OGIK+) (20 ED.+) N EW +Y ORK, +C H-
ELSEA +P UB +C O. +(1966+) 001 3 V. 002 +R E-
PRINT OF THE 1ST ED., IN WHICH VARIOUS SUPPLEMEN-
TARY REMARKS BY THE AUTHOR HAVE BEEN INCORPORATED
INTO THE TEXT AND TO WHICH HAS BEEN ADDED, AS AN
APPENDIX TH VOL. 3, THE WORK +A BRISS   DER +A L-
GEBRA DER +L OGIK BY +E.M UELLER. 003 +V OL.3 HAS
TITLE+ A LGEBRA UND +L OGIK DER +R ELATIVE. 1.
+A BETILUNG. 1 CY AO1 LUROTH,JAKOB,,1844-1910 A02
MULLER,KARL EUGEN,,1865-1932 BO1 VORLESUNGEN UBER
DIE ALGEBRA DER LOGIK BO2 ALGEBRA UND LOGIK DER
RELATIVE.1.ABFILUNG CO1 DEUTSCHE MATHEMATIKER -
VEREINIGUNG PO1 LOGIC, SYMBOLIC AND MATHEMATICAL

BC 135 S381 1966V2
+S CHRODER,+E RNST,,1841-1902
 +V ORLESUNGEN UBER DIE +A LGEBRA DER +L OGIK
+(E XAKTE +L OGIK+) (20 ED.+) N EW +Y ORK, +C H-
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+R EPRINT OF THE 1ST ED., IN WHICH VARIOUS SUPPL-
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ADDED, AS AN APPENDIX TO VOL.3, THE WORK +A BRISS
DER +A LGEBRA DER +L OGIK BY +E.M UELLER. 003
+V OL.3 HAS TITLE+. A LGEBRA UND +L OGIK DER
+R ELATIVE.1. +A BTEILUNG. 1 CY AO1 LUROTH,JAKO-
B,,1844-1910 A02 MULLER,KARL EUGEN,,1865-1932 BO1
VORLESUNGEN UBER DIE ALGEBRA DER LOGIK BO2 ALGEBRA
UND LOGIK DER RELATIVE.1. ABTILUNG CO1 DEUTSCHE
MATHEMATIKER - VEREINIGUNG PO1 LOGIC, SYMBOLIC AND
MATHEMATICAL

BC 135 S381 1966V3P1
+S CHRODER,+E RNST,,1841-1902
 +V ORLESUNGEN UBER DIE +A LGEBRA DER +L OGIK
+(E XAKTE +L OGIK+) (20 ED.+) N EW +Y ORK, +C H-
ELSEA +P UB +C O.+ +(1966+) 001 3 V. 002 +R E-
PRINT OF THE 1ST ED., IN WHICH VARIOUS SUPPLIMEN-
TARY REMARKS BY THE AUTHOR HAVE BEEN INCORPORATED
 INTO THE TEXT AND TO WHICH HAS BEEN ADDED, AS AN
APPENDIX T   VOL.3, THE WORK +A BRISS DER +A LG-
EBRA DER +L OGIK BY +E.M UELLER. 003 +V OL.3 HAS
TITLE+. A LGEBRA UND +L OGIK DER +R ELATIVE.1.
+A BTEILUNG. 1 CY AO1 LUROTH,JAKOB,,1844-1910 BO1
VORLESUNGEN UBER DIE ALGEBRA DER LOGIK BO2 ALGEBRA
UND LOGIK DER RELATIVE.1. ABEILUNG CO1 DEUTSCHE
MATHEMATIKER - VEREINIGUNG PO1 LOGIC, SYMBOLIC AND
MATHEMATICAL

BC 135 V282 1963V1
+V AN +T HEMAAT,+W A V ERLOREN,,
 +R AUMLICHE +V ORSTELLUNG UND MATHEMATISCHES
+E RKENNTNISVERMOGEN. V.1 - +D ORDRECHT, +H OLL-
AND, +D. R EIDEL +(1963+) 001 V. 002 +S UMM-
ARIES IN +E NGLISH,+D UTCH,+G ERMAN AND +E SPERA-

Figure 67. Shelf List

KRAFT,VICTOR, 1880-
    ERKENNTNISLEHRE. WIEN, SPRINGER, 1960. VIII,
379P. (BD 163 K89 1960)

KUKULA,RICHARD, 1857 - 1927,ED
    MINERVA
    MINERVA JAHRBUCH DER GELEHRTEN WELT. 1
JAHRG. 1952. BERLIN (ETC.) W. DE GRUYTER
(ETC.) VOLS. 31- ISSUED IN PARTS. TITLE VARIES
SLIGHTLY. PUBLICATION SUSPENDED 1915-19 AND
1939-51. (AS 2 M664 1952V1)

KUKULA,RICHARD, 1857-1927,ED
    MINERVA
    MINERVA JAHRVUCH DER GELEHRTEN WELT. 2 (P.1)
JAHRG. 1956. BERLIN (ETC.) W. DE GRUYTER
(ETC.) 2V. IN 3 PORTS. PUBLICATION SUSPENDED
1915-19 AND 1939-51. VOLS. 31- ISSUED IN
PARTS. TITLE VARIES SLIGHTLY. FOUNDED AND FOR
SOME YEARS EDITED BY R. KUKULA AND K. TRUBNER.
(AS 2 M664 1956V2P1)

    MINERVA
    MINERVA JAHRVUCH DER GELEHRTEN WELT. 2 (P.2)
JAHRG. 1956. BERLIN (ETC.) W. DE GRUYTER
(ETC.) TITLE VARIES SLIGHTLY. VOLS. 31- ISSUED
IN PARTS. 2V. IN 3 PORTS. FOUNDED AND FOR SOME
YEARS EDITED BY R. KUKULA AND K. TRUBNER.
PUBLICATION SUSPENDED 1915-19 AND 1939-51. (AS
2 M664 1956V2P2)

LANGER, SUSANNE KATHERINA (KNAUTH), 1895-
    AN INTRODUCTION TO SYMBOLIC LOGIC. 2D ED.
(REV.) NEW YORK, DOVER PUBLICATIONS (1953)
367P. ILLUS. FIRST PUBLISHED IN 1937. (BC 135
L267 1953)

LEBED,ANDREI, ,ED
    INSTITUT ZUR ERFORSCHUNG DER UDSSR.
    PROMINENT PERSONNEL OF THE ACADEMIES OF
SCIENCES OF THE USSR AND UNION REPUBLICS.
MUNICH, 1963. AT HEAD OF TITLE INSTITUTE FOR
THE STUDY OF THE USSR. RESEARCH SECTION. XI,
71P. (ITS (RESEARCH AND MATERIALS) SER. 2, NO.
87 (I.E. 85)) VERANTWORTLICH FUR DEN INHALT
A. LEBED. (AS 258 I59 1963)

LEE,IRVING J, 1909-1955
    LANGUAGE HABITS IN HUMAN AFFAIRS AN INTRODU-
CTION TO GENERAL SEMANTICS, WITH A FOREWORD BY
ALFRED KORZYBSKI. (BY) IRVING J. LEE ... NEW
YORK,LONDON,HARPER AND BROTHERS (C1941) XXVII
P., 1)., 278 P. ILLUS., DIAGRS. FIRST EDITIO-
N. INCLUDES BIBLIOGRAPHIES (B 820 L478 1941)

LERNER,DANIEL, ,
    EVIDENCE AND INFERENCE THE HAYDEN COLLOQUIUM
OF SCIENTIFIC CONCEPT AND METHOD. CONTRIBUTORS
RAYMOND AROM 9AND OTHERS. CHICAGO) FREE PRESS
OF GLENCOE (1960, C1959) INCLUDES BIBLIOGRAPH-
IES 164P. ILLUS. THIS GROUP OF ESSAYS ORIGIN-
ATED IN THE HAYDEN COLLOQUIUM OF THE MASSACHU-
SETTS INSTITUTE OF TECHNOLOGY AND WAS FIRST
PUBLISHED IN DAEDALUS, THE JOURNAL OF THE
AMERICAM ACADEMY OF ARTS AND SCIENCES. (BD
241 L616 1959)

LERNER,DANIEL, ,ED.
    QUANTITY AND QUALITY
    QUANTITY AND QUALITY. EDITED BY DANIEL LERN-
ER. CONTRIBUTORS JOHN G.KIMENY (AND OTHERS.
NEW YORK) FREE PRESS OF GLENCOE (1961) 221P.
DIAGRS. (THE HAYDEN COLLOQUIUM ON SCIENTIFIC
METHOD AND CONCEPT) INCLUDES BIBLIOGRAPHICAL
REFERENCES (BD 241 Q1 1961)

LONERGAN,BERNARD J F,
    (INSIGHT) A STUDY OF HUMAN UNDERSTANDING.
NEW YORK, PHILOSOPHICAL LIBRARY (1957) REV.
ED., 1958 785P. (BD 161 L847 1958)

LORENZEN,PAUL,
    EINFUHRUNG IN DIE OPERATIVE LOGIK UND MATHE-
MATIK. BERLIN, SPRINGER, 1955. 298P. (DEEE
GRUNDLEHREN DER MATHEMATISCHEN WISSENSCHAFTEN
IN EINZELDATSTELLUNGEN MIT BESONDERER BERUCK-
SICHTIGUNG DER ANWENDUNGEEEBIERE, BD.78) (BC
135 L896 1955)

LORENZEN,PAUL,
    FORMALE LOGIK. 2., VERB. AUFL. BERLIN, WALTER
DE GRUYTER, 1962. INCLUDES BIBLIOGRAPHY 169P.
(SAMMLUNG GOSCHEN, BD. 1176 / 1176A) (BC 135
L869 1962)

LUKASIEWICZ,JAN,
    ELEMENTS OF MATHEMATICAL LOGIC. TRANSLATED
FROM POLISH BY OLGIERD WOJTASIEWIEZ. (2D ED.)
NEW YORK, MACMILLAN (1964, C.1963) XI, 124P.
(INTERNATIONAL SERIES OF MONOGRAPHS ON PURE AND
APPLIED MATHEMATICS, V.31) A PERGAMON PRESS
BOOK. BIBLGGGRAPHY P.(122) - 124 (BC 135 L954
1963)

LUROTH,JAKOB, 1844-1910
    SCHRODER,ERNST, 1841-1902
    VORLESUNGEN UBER DIE ALGEBRA DER LOGIK (ESA-
KTE LOGIK) (2D ED.) NEW YORK, CHELSEA PUB CO.
(1966) REPRINT OF THE 1ST ED., IN WHICH VARIOUS
SUPPLEMENTARY REMARKS BY THE AUTHOR HAVE BEEN
INCORPORATED INTO THE TEXT AND TO WHICH HAS
BEEN ADDED, AS AN APPENDIX TH VOL. 3, THE WORK
ABRISS   DER ALGEBRA DER LOGIK BY E.MUELLER.
3 V. VOL.3 HAS TITLE ALGEBRA UND LOGIK DER
RELATIVE. 1. ABETILUNG. (BC 135 S381 1966V1)

    SCHRODER,ERNST, 1841-1902
    VORLESUNGEN UBER DIE ALGEBRA DER LOGIK (EXA-
KTE LOGIK) (2D ED.) NEW YORK, CHELSEA PUB CO.
(1966) 3 V. VOL.3 HAS TITLE. ALGEBRA UND LOGIK
DER RELATIVE.1. ABTEILUNG. REPRINT OF THE 1ST
ED., IN WHICH VARIOUS SUPPLEMENTARY REMARKS BY
THE AUTHOR HAVE BEEN INCORPORATED INTO THE
TEXT AND TO WHICH HAS BEEN ADDED, AS AN APPEN-
DIX TO VOL.3, THE WORK ABRISS DER ALGEBRA DER
LOGIK BY E.MUELLER. (BC 135 S381 1966V2)

    SCHRODER,ERNST, 1841-1902
    VORLESUNGEN UBER DIE ALGEBRA DER LOGIK (EXA-
KTE LOGIK) (2D ED.) NEW YORK, CHELSEA PUB CO.
(1966) 3 V. REPRINT OF THE 1ST ED., IN WHICH
VARIOUS SUPPLIMENTARY REMARKS BY THE AUTHOR
HAVE BEEN INCORPORATED INTO THE TEXT AND TO
WHICH HAS BEEN ADDED, AS AN APPENDIX T   VOL.3,
THE WORK ABRISS DER ALGEBRA DER LOGIK BY
E.MUELLER. VOL.3 HAS TITLE. ALGEBRA UND LOGIK
DER RELATIVE.1. ABTEILUNG. (BC 135 S381 1966V-
3P1)

LYNDON,ROGER C,
    NOTES ON LOGIC, BY ROGER C. LYNDON. PRINCET-
ON, N.J., VAN NOSTRAND (1966) BIBLIOGRAPHY P.
91 - 92 VI, 94P. (VAN NOSTRAND MATHEMATICAL
STUDIES, NO.6) (BC 135 L988 1966)

NATIONAL RESEARCH COUNCIL
    SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
    UNITED STATES AND CANADA
    SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
UNITED STATES AND CANADA. 7TH ED. WASHINGTON,
NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEA-
RCH COUNCIL, 1961. TITLE VARIES 1ST - 5TH ED.
, HANDBOOK OF SCIENTIFIC AND TECHNICAL SOCIET-

Figure 68. Author List

FORMULATIONS OF THE PERSON AND THE SOCIAL
CONTEXT. - STUDY 11. EMPIRICAL SUBSTRUCTURE AND
RELATIONS WITH OTHER SCIENCES - V.4. BIOLOG-
ICALLY ORIENTED FIELDS. - V.5. THE PROCESS
AREAS, THE PERSON, AND SOME APPLIED FIELDS. -
V.6. INVESTIGATIONS OF MAN AS SOCIUS. POSTCRIPT
TO THE STUDY - V.7. PSYCHOLOGY AND THE HUMAN
AGENT. 6V. ILLUS. (BF 38 P974 1962V4)

PSYCHOLOGY A STUDY OF A SCIENCE. EDITED BY
SIGMUND KOCH. NEW YORK, MCGRAW - HILL, 1963.
CONTENTS. - STUDY 1. CONCEPTUAL AND SYSTEMATIC
- V.1. SENSORY, PERCEPTUAL, AND PHYSIOLOGICAL
FORMULATIONS. - V.2. GENERAL SYSTEMATIC FORMU-
LATICNS, LEARNING AND SPECIAL PROCESSES. - V.3.
FORMULATIONS OF THE PERSON AND THE SOCIAL
CONTEXT. - STUDY 11. EMPIRICAL SUBSTRUCTURE AND
RELATICNS WITH OTHER SCIENCES - V.4. BIOLOG-
ICALLY ORIENTED FIELDS. - V.5. THE PROCESS
AREAS, THE PERSON, AND SOME APPLIED FIELDS. -
V.6. INVESTIGATIONS OF MAN AS SOCIUS. POSTCRIPT
TO THE STUDY - V.7. PSYCHOLOGY AND THE HUMAN
AGENT. 6V. ILLUS. (BF 38 P974 1963V5)

PUBLIC ADMINISTRATION ORGANIZATIONS
     PUBLIC ADMINISTRATION ORGANIZATIONS, A DIRE-
CTORY OF UNOFFICIAL ORGANIZATIONS IN THE FIELD
OF PUBLIC ADMINISTRATION IN THE UNITED STATES
AND CANADA. 7TH ED. 1954 CHICAGO, ILL., PUBLIC
ADMINISTRATION CLEARING HOUSE(1954) 1V. TITLE
VARIES 1932. ORGANIZATIONS IN THE FIELD OF
PUBLIC ADMINISTRATION, A DIRECTORY.1934 - 36,
A DIRECTORY OF ORGANIZATIONS IN THE FIELD OF
PUBLIC ADMINISTRATION. 1938 - PUBLIC ADMINI-
STRATICN ORGANIZATIONS, A DIRECTORY ... EDIT-
OR 1932- R.M. PAIGE. (AS 18 P976 1954)

QUANTITY AND QUALITY
     QUANTITY AND QUALITY. EDITED BY DANIEL LERN-
ER. CONTRIBUTORS JOHN G.KIMENY (AND OTHERS.
NEW YORK) FREE PRESS OF GLENCOE (1961) INCLU-
DES BIBLIOGRAPHICAL REFERENCES 221P. DIAGRS.
(THE HAYDEN COLLOQUIUM ON SCIENTIFIC METHOD AND
CONCEPT) (BD 241 Q1 1961)

RAUMLICHE VORSTELLUNG UND MATHEMATISCHES ERKENN-
     TNISVERMOGEN
VAN THEMAAT,W A VERLOREN,
     RAUMLICHE VORSTELLUNG UND MATHEMATISCHES
ERKENNTNISVERMOGEN. V.1 - DORDRECHT, HOLLAND,
D. REIDEL (1963) SUMMARIES IN ENGLISH,DUTCH,-
GERMAN AND ESPERANTO. V. BIBLIOGRAPHY INCLUDED.
(BC 135 V282 1963V1)

RIFTS IN THE UNIVERSE
MOORE,JARED SPARKO, 1879-
     RIFTS IN THE UNIVERSE A STUDY OF THE HISTORIC
DICHOTCMIES AND MODALITIES OF BEING. NEW
HAVEN, YALE UNIVERSITY PRESS, 1927. 130P.
ILLUS. PUBLISHED ON THE FOUNDATION ESTABLISHED
IN MEMORY OF JAMES WESLEY COOPER OF THE CLASS
PF 1865, YALE COLLEGE. (BD 311 M822 1927)

RISK AND GAMBLING
COHEN,JOHN, 1911-
     RISK AND GAMBLING THE STUDY OF SUBJECTIVE
PROBABILITY, BY JOHN COHEN AND MARK HANSEL. NEW
YORK, PHILOSOPHICAL LIBRARU, 1956. 153P.
ILLUS. (BC 141 C678 1956)

SCIENCE AND SANITY
KORZYBSKI,ALFRED, 1879-1950
     SCIENCE AND SANITY AN INTRODUCTION TO NON-A-
RISTOTELIAN SYSTEMS AND GENERAL SEMANTICS. 4TH
ED., WITH NEW PREF. BY RUSSELL MEYERS. LAKEV-
ILLE, CONN., INTERNATIONAL NON-ARISTOTELIAN
LIBRARY PUB. CO. DISTRIBUTED BY INSTITUTE OF
GENERAL SEMANTICS (1958) 806 P. ILLUS INCLUDES
BIBLIOGRAPHY (B 820 K85 1958)

SCIENTIFIC AND TECHNICAL SOCIETIES OF THE UNITED
     STATES AND CANADA
     SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
UNITED STATES AND CANEA. 5TH ED. WASHINGTON,
NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEA-
RCH COUNCIL, 1948. TITLE VARIES 1ST - 5TH ED.
, HANDBOOK OF SCIENTIFIC AND TECHNICAL SOCIET-
IES AND INSTITUTIONS OF THE UNITED STATES AND
CANADA. 3V. THE 1ST - 5TH ED. ISSUED AS BULLE-
TIN OF THE NATIONAL RESEARCH COUNCIL (Q11.N29-
2) 6TH - ED, AS ITS PUBLICATION 369. CANAD-
IAN SECTION COMPILED BY THE NATIONAL RESEARCH
COUNCIL, CANADA. (AS 15 S416 1948)

     SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
UNITED STATES AND CANEA. 6TH ED. WASHINGTON,
NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEA-
RCH COUNCIL, 1955. THE 1ST - 5TH ED. ISSUED AS
BULLETIN OF THE NATIONAL RESEARCH COUNCIL
(Q11.N292) 6TH - ED, AS ITS PUBLICATION 369.
3V. CANADIAN SECTION COMPILED BY THE NATIONAL
RESEARCH COUNCIL, CANADA. TITLE VARIES 1ST -
5TH ED., HANDBOOK OF SCIENTIFIC AND TECHNICAL
SOCIETIES AND INSTITUTIONS OF THE UNITED STATES
AND CANADA. (AS 15 S416 1955)

     SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
UNITED STATES AND CANADA. 7TH ED. WASHINGTON,
NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEA-
RCH COUNCIL, 1961. CANADIAN SECTION COMPILED BY
THE NATIONAL RESEARCH COUNCIL, CANADA. THE 1ST
- 5TH ED. ISSUED AS BULLETIN OF THE NATIONAL
RESEARCH COUNCIL (Q11.N292) 6TH - ED. AS ITS
PUVLICATION 369. TITLE VARIES 1ST - 5TH ED.,
HANDBOOK OF SCIENTIFIC AND TECHNICAL SOCIETIES
AND INSTITUTIONS OF THE UNITED STATES AND
CANADA. 3V. (AS 15 S416 1961)

SOURCES OF INFORMATION AND UNUSUAL SERVICES
     SOURCES OF INFORMATION AND UNUSUAL SERVICES
A GUIDE TO ORGANIZATIONS AND AGENCIES WHICH ARE
SOURCES OF INFORMATION OF GENERAL AND NATIONAL
INTEREST, OR WHICH RENDER UNUSUAL SERVICES. 7TH
ED. NEW YORK, INFORMATIONAL DIRECTORY CO.
1964. 3V. SUBTITLE VARIES. (AG 521 S724 1964)

SPACE, TIME, AND CREATION
MUNITZ,MILTON KARL, 1913-
     SPACE, TIME, AND CREATION PHILOSOPHICAL
ASPECTS OF SCIENTIFIC COSMOLOGY. GLENCOE, ILL.
, FREE PRESS (1957) 182P. (BD 511 M966 1957)

SUBSTANCE AND FUNCTION
CASSIRER,ERNST, 1874-
     SUBSTANCE AND FUNCTION, AND EINSTEIN'S THEORY
OF RELATIVITY, BY ERNST CASSIRER AUTHORIZED
TRANSLATION BY WILLIAM CURTIS SWABEY AND MARIE
COLLINS SWABEY, CHICAGO, OPEN COURT PUBLISHING
COMPANY, 1923 DOVER EDITION, 1953. THE FIRST
PART OF THE PRESENT BOOK, SUBSTANZBEGRIFF UND
FUNKTIONSBEGRIFF, WAS PUBLISHED IN 1910 WHILE
THE SECOND PART, WHICH WE HAVE CALLED THE
SUPPLEMENT, ZUR EINSTEIN'SCHEN RELATIVITATSTH-
EORIE, APPEARED IN 1921. XII, 465P. BIBLIO-
GRAPHY P. 457 - 460. (BD 221 C345 1953)

THE BASIC LAWS OF ARITHMETIC
FREGE,GOTTLOB, 1848-1925
     THE BASIC LAWS OF ARITHMETIC EXPOSITION OF
THE SYSTEM. TRANSLATED AND EDITED, WITH AN
INTROD., BY MONTGOMERY FURTH. BERKELEY, UNIV-
ERSITY OF CALIFORNIA PRESS,1964. BIBLIOGRAPHY
OF WORKS BY FREGE CITED IN THE INTRODUCTION -
P.LVIII - LIX. LXIII, 142P. TRANSLATION OF ..
TTTHE INTRODUCTORY PORTIONS OF THE FIRST VOLUME
AND AN EPILOGUE APPENDED TO THE SECOND. (BC
135 F858 1964)

Figure 69.   Title List

436

PUBLIC ADMINISTRATION ORGANIZATIONS
   PUBLIC ADMINISTRATION ORGANIZATIONS, A DIRE-
CTORY OF UNOFFICIAL ORGANIZATIONS IN THE FIELD
OF PUBLIC ADMINISTRATION IN THE UNITED STATES
AND CANADA. 7TH ED. 1954 CHICAGO, ILL., PUBLIC
ADMINISTRATION CLEARING HOUSE(1954) TITLE
VARIES 1932, ORGANIZATIONS IN THE FIELD OF
PUBLIC ADMINISTRATION, A DIRECTORY.1934 - 36,
A DIRECTORY OF ORGANIZATIONS IN THE FIELD OF
PUBLIC ADMINISTRATION. 1938 - PUBLIC ADMINI-
STRATICN ORGANIZATIONS, A DIRECTORY ... 1V.
EDITOR 1932- R.M. PAIGE. (AS 18 P976 1954)

STATISTICS - YEARBOOKS
   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1957) TITLE VARIES 18 -93, THE WORLD ALMA-
NAC. 1894-1944, THE WORLD ALMANAC AND ENCYCL-
OPEDIA. 1923- THE WORLD ALMANAC AND BOOK OF
FACTS. 9V. ILLUS. (MAP) TABLES. EDITORS 1923-
-37, R.H. LYMAN. - 1938- E.E. IRVINE. PUBLI-
SHED BY THE PRESS PUBLISHING CO. (ETC.) 18
-1923   THE NEW YORK WORLD, 1924-31 THE NEW
YORK WORLD - TELEGRAM, 1932-   (AY 67.N5 W927
1957)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1958) EDITORS 1923-37, R.H. LYMAN. - 1938-
E.E. IRVINE. PUBLISHED BY THE PRESS PUBLISH-
ING CO. (ETC.) 18 -1923   THE NEW YORK WORLD,
1924-31 THE NEW YORK WORLD - TELEGRAM, 1932-
   9V. ILLUS. (MAP) TABLES. TITLE VARIES 18
-93, THE WORLD ALMANAC. 1894-1944, THE WORLD
ALMANAC AND ENCYCLOPEDIA. 1923- THE WORLD
ALMANAC AND BOOK OF FACTS. (AY 67.N5 W927
1958)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1959). TITLE VARIES 18 -93, THE WORLD
ALMANAC. 1894-1944, THE WORLD ALMANAC AND
ENCYCLOPEDIA. 1923- THE WORLD ALMANAC AND
BOOK OF FACTS. 9V. ILLUS. (MAP) TABLES. EDITO-
RS 1923-37, R.H.LYMAN. - 1938- E.E. IRVINE.
PUBLISHED BY THE PRESS PUBLISHING CO. (ETC.)
18 -1923   THE NEW YORK WORLD, 1924-31 THE
NEW YORK WORLD - TELEGRAM, 1932-   (AY 67.N5
W927 1959)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1961). TITLE VARIES 18 -93, THE WORLD
ALMANAC. 1894-1944, THE WORLD ALMANAC AND
ENCYCLOPEDIA. 1923- THE WORLD ALMANAC AND
BOOK OF FACTS. 9V. ILLUS. (MAP) TABLES. EDITO-
RS 1923-37, R.H.LYMAN. - 1938- E.E. IRVINE.
PUBLISHED BY THE PRESS PUBLISHING CO. (ETC.)
18 -1923   THE NEW YORK WORLD, 1924-31 THE
NEW YORK WORLD - TELEGRAM, 1932-   (AY 67.N5
W927 1961)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC.,
1962). TITLE VARIES 18 -93, THE WORLD ALMAN-
AC. 1894-1944, THE WORLD ALMANAC AND ENCYCLO-
PEDIA. 1923- THE WORLD ALMANAC AND BOOK OF
FACTS. 9V. ILLUS. (MAP) TABLES. EDITORS 1923-
-37, R.H. LYMAN. - 1938- E.E. IRVINE. PUBLI-
SHED BY THE PRESS PUBLISHING CO. (ETC.) 18
-1923   THE NEW YORK WORLD, 1924-31 THE NEW
YORK WORLD - TELEGRAM, 1932-   (AY 67.N5 W927
1962)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC.,
1963). TITLE VARIES 18 -93, THE WORLD ALMAN-

AC. 1894-1944, THE WORLD ALMANAC AND ENCYCLO-
PEDIA. 1923- THE WORLD ALMANAC AND BOOK OF
FACTS. EDITORS 1923-37, R.H. LYMAN. - 1938-
E.E. IRVINE. PUBLISHED BY THE PRESS PUBLISHING
CO. (ETC.) 18 -1923   THE NEW YORK WORLD,
1924-31 THE NEW YORK WORLD - TELEGRAM, 1932-
   9V. ILLUS. (MAP) TABLES. (AY 67.N5 W927 1963)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1964). TITLE VARIES 18 -93, THE WORLD
ALMANAC. 1894-1944, THE WORLD ALMANAC AND
ENCYCLOPEDIA. 1923- THE WORLD ALMANAC AND
BOOK OF FACTS. EDITORS 1923-37, R.H. LYMAN. -
1938- E.E. IRVINE. PUBLISHED BY THE PRESS
PUBLISHING CO. (ETC.) 18 -1923   THE NEW YORK
WORLD, 1924-31 THE NEW YORK WORLD - TELEGRAM,
1932-   9V. ILLUS. (MAP) TABLES. (AY 67.N5 W927
1964)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1965). TITLE VARIES 18 -93, THE WORLD
ALMANAC. 1894-1944, THE WORLD ALMANAC AND
ENCYCLOPEDIA. 1923- THE WORLD ALMANAC AND
BOOK OF FACTS. 9V. ILLUS. (MAP) TABLES. EDITO-
RS 1923-37, R.H. LYMAN. - 1938- E.E. IRVINE.
PUBLISHED BY THE PRESS PUBLISHING CO. (ETC.)
18 -1923   THE NEW YORK WORLD, 1924-31 THE
NEW YORK WORLD - TELEGRAM, 1932-   (AY 67.N5
W927 1965)

   THE WORLD ALMANAC AND BOOK OF FACTS
   THE WORLD ALMANAC AND BOOK OF FACTS. NEW
YORK, THE NEW YORK WORLD - TELEGRAM (ETC., 18
-1966). TITLE VARIES 18 -93, THE WORLD
ALMANAC. 1894-1944, THE WORLD ALMANAC AND BOOK
OF FACTS. 9V. ILLUS. (MAPS) TABLES. EDITORS
1923-37, R.H. LYMAN. - 1938- E.E. IRVINE.
PUBLISHED BY THE PRESS PUBLISHING CO. (ETC.) 18
-1923   THE NEW YORK WORLD, 1924-31 THE NEW
YORK WORLD - TELEGRAM, 1932-   (AY 67.N5 W927
1966)

SUBSTANCE (PHILOSOPHY)
   CASSIRER,ERNST, 1874-
   SUBSTANCE AND FUNCTION, AND EINSTEIN'S THEORY
OF RELATIVITY, BY ERNST CASSIRER AUTHORIZED
TRANSLATION BY WILLIAM CURTIS SWABEY AND MARIE
COLLINS SWABEY, CHICAGO, OPEN COURT PUBLISHING
COMPANY, 1923 DOVER EDITION, 1953. BIBLIOGRAP-
HY P. 457 - 460. THE FIRST PART OF THE PRES-
ENT BOOK, SUBSTANZBEGRIFF UND FUNKTIONSBEGRIFF,
WAS PUBLISHED IN 1910 WHILE THE SECOND PART,
WHICH WE HAVE CALLED THE SUPPLEMENT, ZUR EINS-
TEIN'SCHEN RELATIVITATSTHEORIE, APPEARED IN
1921. XII, 465P. (BD 221 C345 1953)

SYLLOGISM
   MCCALL,STORRS,
   ARISTOTLE'S MODAL SYLLOGISMS. AMSTERDAM,
NORTH-HOLLAND PUB. CO., 1963 BIBLIOGRAPHICAL
FOOTNOTES IMPRINT COVERED BY LABEL NEW YORK,
HUMANITIES PRESS. VIII, 100 P. DIAGRS (STUDIES
IN LOGIC AND THE FOUNDATIONS OF MATHEMATICS)
(B 491.L8 M122 1963)

TECHNICAL SOCIETIES
   SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
      UNITED STATES AND CANADA
   SCIENTIFIC AND TECHNICAL SOCIETIES OF THE
UNITED STATES AND CANEA. 5TH ED. WASHINGTON,
NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEA-
RCH COUNCIL, 1948. 3V. THE 1ST - 5TH ED. ISSUED
AS BULLETIN OF THE NATIONAL RESEARCH COUNCIL
(Q11.N292) 6TH - ED, AS ITS PUBLICATION 369.
TITLE VARIES 1ST - 5TH ED., HANDBOOK OF SCIE-
NTIFIC AND TECHNICAL SOCIETIES AND INSTITUTIONS
OF THE UNITED STATES AND CANADA. CANADIAN

Figure 70. Subject List

Cataloger's Action Call Copy No. of Special
Initial Code No. No. Copies Indication

| 1 | E | 181 | W881 | 1928 | * | 0001 | 0001 | ‡ |

AOO	WOOD, WILLIAM CHARLES HENRY,, 1864-,,AU‡
BO1	IN DEFENSE OF LIBERTY‡
AO1	GABRIEL, RALPH HENRY,, 1890-,AU‡
IO1	NEW HAVEN‡
JO1	YALE UNIVERSITY PRESS ‡
KO1	1928‡
AO1	370‡
MO1	(THE PAGENT OF AMERICA, V,7)‡
OO1	COL, FRONT,, ILLUS, (INCL, PORTS,, MAPS, FACSIMS,) COL, PLATES, ‡
PO1	U, S, HISTORY, MILITARY,‡
PO2	U, S, HISTORY - CIVIL WAR, ‡
PO3	EUROPEAN WAR, 1914-1918 - U,S,‡

Data Element

Figure 71. Raw Input Data

438

Bibliography Master

Run 3. Update Inventory And Bibliography Masters Flag New Accessions, Etc. 7010

Update Bibliography Master Call Number Sequence

New Accessions

Daily Monitor

Deleted Bibliography

Error Transactions

Run 4. Extract And Produce Records To Be Sorted Into Author, Title, Subject, Shelf Number, And Accession Sequence 7010

Presently Unused

Daily Monitor

Deletes

Update Error

To Cataloging Unit

To Cataloging Unit

To Cataloging Unit

Title List

Subject Headings List

Shelf List

Number List

Subject Authority Master

Title Sequence 7010

Sort To Subject Heading Sequence 7010

Sort To Shelf Sequence 7010

Sort To Number Sequence 7010

Sorted Title List

Sorted Subject Headings List

Sorted Shelf List

Sorted Number List

Updated Subject Authority Master

Display Format 7010

Display Format 7010

Display Format 7010

Display Format 7010

Title List

Subject Headings List

Shelf List

Number List

To Cataloging Unit

Reader Service Section

440-1

Figure 72. Computer Run Relations Flow Chart

A. Action Code Column 1

B. Call Number - Author/Title Field Columns 2-50

C. Security Code Column 51

D. Type Loan/Medium Column 52

E. Julian Date Columns 53-56

F. Social Security Number Columns 57-65//6

G. Patron Surname Columns 66/7-78

H. Patron Initial Columns 79-80

Figure 73.   Input Circulation Transaction Card Format

441

(MASTER CIRCULATION CARD)

Figure 74. Master Circulation Card

442

(CHARGED)

(DISCHARGED)

Figure 75.   Master Circulation Card (Book Charged To and Discharged From Patron)

443

RSIC CIRCULATION LIST IN LC SEQUENCE

CALL NUMBER			PATRON NAME	AUTHOR/TITLE	COPY	SOC SEC	CODES	DATE LOAN	PHONE NO	MAIL SYMBOL
AZ 361	S674	1959	ARTNER, W. G.	SNOW TWO CULTURES AND SCIEN	2	360-26-9719	0 1	10 MAY 67	842-3860	AMSMI-RS
B 799	S623	1957	THORNTON, J. O.	SIU TAO OF SCIENCE	5	253-22-5175	0 1	20 APR 67	876-1212	AMSMI-R
B 799	W348	1961	MCDANIEL, J. L.	WATTS PSYCHOTHERAPHY EAST WEST	2	420-12-3546	0 9	09 DEC 66	876-1468	AMSMI-R
B 820 ODL1	K85	1958	LECHNER, L. E.	KORZYBSKI SCIENCE SANITY	2	508-42-3485	0 9	14 JUL 66	876-7285	R-AERO-G
BC 50	D519	1938	RES LAB LIB	DEWEY LOGIC	2	---------	0 8	10 APR 67	---------	
BC 71	B724	1948	R-COMP-LIB	BOOLE MATH ANAL LOGIC	2X	---------	0 8	03 DEC 65	---------	
BC 108	S959	1957	BURROWS, R. R.	SUPPES INTROD TO LOGIC	3	537-32-1468	0 9	10 NOV 66	876-5085	R-AERO-GG
BC 135	B322	1960	FREESE, R. J.	BASSON INTRODUCTION SYMB LOGIC	2	046-26-6320	0 1	08 MAR 67	876-7274	R-COMP-ACS
			COLEMAN, H. C.		3	225-32-9345	0 1	30 JUN 67	876-1805	R-COMP
			R-COMP-LIB		4	---------	0 8	25 AUG 64	---------	
			BURROWS, R. R.		5	537-32-1468	0 9	16 NOV66	876-5085	R-AERO-GG
BC 135	B724	1951	GRIFFIN, J. R.	BOOLE INVESTI LAW OF THOUGHT	4X	404-44-1211	0 9	29 MAR 67	876-6769	AMSMI-RKP
BC 135	B742	1959	R-COMP-LIB	BOCHENSKI PRECIS MATHE LOGIC	2	---------	0 8	25 AUG 64	---------	
BC 135	C561	1956V1	MCDANIEL, J. L.	CHURCH INTR MATH LOGIC	4	420-12-3546	0 9	01 FEB 67	876-1468	AMSMI-R
BC 135	C976	1950	BRANHAM, W. F.	CURRY THEORY FORMAL DEDUCIB	2	560-28-2376	0 9	11 MAY 67	877-3059	AMSMI-RDI
BC 135	F889	1966	PROP LAB LIB	FREUDENTHAL LANGUAGE LOGIC	2	---------	0 8	12 JUN 67	---------	AMSMI-RFO
			FARMER, D. J.		3	523-46-8184	0 1	23 JUN 67	876-4622	

Figure 76. Circulation List in LC Sequence

PATRON NAME / AUTHOR/TITLE	SOCIAL SECURITY / CALL NUMBER	PHONE NUMBER	MAIL SYMBOL	BLDG NO	COPY NO	CODES	DATE LOAN	STATUS
ABERG, J. O.	122-24-4962	876-1777	R-P+VE-V	4610				
GOODE SYSTEM ENGINEERING	TA 153	G647 1957			14	0 9	3 AUG 66	
US AIR UNIV US AIR FORCE DICT	UG 630	U5 1956			18	0 9	23 JUN 66	
ACCARDI, R. R.	054-10-1274	876-4526	AMSMI-RHT	4505				
WORLD ALMANAC BK FACTS	AY 67.N5	W927 1966			2	0 1	14 SEP 66	
COLE ARDENNES	D 756.5A7	C689 1965			2	0 1	16 NOV 66	
WHOS WHO IN AMERICA	E 663	W628 1964V33			4	0 1	13 JAN 67	
CASSELLS SPANISH DICTIONARY	PC 4640	C334 1959			3	0 1	14 SEP 66	
LEWIS WORD POW MAD EAS	PE 1449	L675 1949			4	0 1	12 OCT 66	
BERNSTEIN CAREFUL WRITER	PE 1460	B531 1965			2	0 1	26 JAN 67	
SHAW ERR ENGL WAYS CORR THEM	PE 1460	S534 1962			10	0 1	12 OCT 66	
FERNALD FUNK + WAG HDBK SYN	PE 1591	F362 1947			4	0 9	2 NOV 66	
LEWIS NEW ROGETS THESAURUS	PE 1591	L675 1961			17	0 1	14 SEP 66	
BRINKLEY JAPANESE ENGL DICT	PL 679	B858 1963V1			3	0 1	1 FEB 67	
BRINKLEY JAPANESE ENGL DICT	PL 679	B858 1963V2			2	0 1	1 FEB 67	
HEGARTY HOW WRITE A SPEECH	PN 4121	H462 1951			2	0 1	28 NOV 66	
OLIVER COMM SPEECH	PN 4121	O48 1962			2	0 1	28 NOV 66	
ROSS SPEAK WITH EASE	PN 4121	R825 1961			2	0 1	28 NOV 66	
US ADJUT-GEN OFF US ARMY REGIS	U 11	U5 1966V1			2X	0 1	30 DEC 66	
ACOSTA, O.	438-64-5600	-						NP
BOAST ILLUMINATION ENGR	TK 4161	B662 1953			2	0 1	30 JAN 67	
ILL ENGR SOC IES LIGHT HDNDB	TK 4161	129 1959			6	0 1	30 JAN 67	
SUMMER ULTRA VIOLET INFR RED	TK 4500	S955 1962			4	0 1	30 JAN 67	
ACUFF, J. B.	922-24-9009	876-8407	TS-SS	8023				
AISC MANUAL OF STEEL CONSTR	TA 684	A512 1963			41	0 9	27 OCT 66	
ADAIR, B. M.	410-50-1120	876-2668	R-ASTR-IT	4487				
COCHRAN EXPERIMENTAL DESIGNS	Q 180.A1	C663 1957			10	0 1	24 AUG 66	
ABBOTT NAT ELECTR CO HDBK	TK 260	A126 1963			10	0 1	20 JAN 67	
LEE STAT THEO COMMUN	TK 5101	L482 1960			16	0 1	24 AUG 66	ODR1
DOYLE THIN FILM SEMICOND	TK 7874	D754 1966			2	0 1	16 DEC 66	
STILTZ AEROSPA TEL SUP	TL 694.T35	S857 1966V2S			3	0 1	19 SEP 66	ODR1

Figure 77.   Circulation List in Patron Name Sequence

CIRC I/P MONITOR AND ERROR LIST   10 FEB 67   PAGE 000025

1..2......10......20......30......40......50......60......70......80

ERROR EXPLANATION

J QA 76 J66 1963C2* JOHNSON ANALOG COMPUTER TECH 0162102315212891HUANG	TF	
3 620.18 P 33430*POLUSHKIN DEFECTS + FAILURE OF MET0970262328882 3CATALDO	CE	PATRON IS NOT ON PATRON FILE
3 QA 401 S114 1961C2*SABBAGH CIRCUIT ANAL 09703823414928OROBINSON	WJ	
1 QZ 433 B651 1962C2*BLOCK INTR TENSOR ANALY 01703723456997 7URBANSKI	JJ	
1 QA 433 B583 1962C9*BICKLEY VIA VECTOR TO TENSOR 01703723456997 7URBANSKI	JJ	
J TL 4015 B878 1961C2*BROWN GRD SUPT MSL SP VEH 0170242357225 54ROBINSON	TA	
J QA 871 M874 1957C9*MORRILL MECHAN VIBRA 0162152363024 36GARRETT	RS	
1 QA 261 S399 1960C8**SCHWARTZ VECTOR ANALYSIS 0170332376285 52CARTER	BW	
1 QA 303 G653 1963C2*GOODMAN ANAL GEOMETRY CAL 0170332395674 78CORPENING	JK	
J TL 571.5 H418 1959C5*HAYES HYPERSONIC FLOW THEORY0163142395889 11COBLE	DF	
1 HD 38 B929 1963C3*BUFFA MODEL PROD OPER MGT 017037241289485DELIONBACK	LM	PATRON IS NOT ON PATRON FILE
1 HD 38 B348 1963C6*BAUMGARTNER PROJ MANAGEMENT 017037241289485DELIONBACK	LM	PATRON IS NOT ON PATRON FILE
J QA 47 M426 1951C4*MATH TABLES HDBK CHEM PHYS 01702624148395 4BUTLER	WR	
J TK 7872.C27 T951 1964V1-2C2*TURNER PRAC OSCILLOSC01701924148395 4BUTLER	WR	
1 TK 7870 S338 1963C12*SCHLABACH PRINT INTEG CIRC 0170332415294 19BYRD	JL	
J QA 401 W983 1960C3*WYLIE ADV ENGR MATHE 0162632415294 19BYRD	JL	
J TP 490 A244 1962V8C10*ADV CRYOGEN ENRG 016322416487608MOSES	JL	
	KO	INVALID LOAN CODE COL 52

Figure 78. Circulation Input Transaction Monitor and Error List

```
                -RSIC CIRCULATION/INVENTORY UPDATE ERROR LIST-  9 MAR 67   PAGE   1

TYPE   1   2     10        20        30        40        50        60        70        80
ERROR  X   X.......X.........X.........X.........X.........X.........X.........X.........X

  3    2   HD  9661.U5  S678  1965M22C2X*                          19999

  1    1   HF  5500  B954  1964C2*BURGER SURVIVAL EXECU JUNGLE   097061246120381HONEYCUTT      BT

  1    1   HF  5500  B954  1964C2*BURGER SURVIVAL EXECU JUNGLE   097061246120381HONEYCUTT      BT

 19    J   Q  185  G945  1963C3*                                   1          REISIG

 22    J   QA  37  B166  1966C2*                                   1          REISIG

  9    J   QA  37  V947  1940C4*VON KARMAN MATH METHOD ENGR  013240418602692REISIG            GH

  9    J   QA  76  G727  1958V1C6*GRABBE HANDB AUTO COMPU      016272415440060THOMAS           LJ

  9    J   QA  76  S989  1965C3*SYM ON-LINE COMPUTER SYSTEMS   016279532244559CAMPBELL         RD

 19    J   QA  76.4  I72  1960C7*                                 1          REISIG

 19    2   QA  97  H518  1964*                                    1

 22    J   QA  263  Z96  1961C2*ZURMUHL MATRIZEN UND IHRE TECH  096048422529369EUTHERNECK      ET

  1    1   QA  275  T675  1955C2*TOPPING ERRORS OBSERVATION     013122418602692REISIG          GH

 22    J   QA  276  K33  1961V2C6*KENDALL ADV THEO STAT         017026305441737SHCRDER         BJ

 10    J   QA  371  S755  1958C14*SPIEGEL APPL DIFF EQUA        097060321322893CAMPBELL        RA

  1    1   QA  371  S755  1958C14*SPIEGEL APPL DIFF EQUA        097065321327893CAMPBELL        RA

 10    J   QA  372  M978   1960C10*MURPHY ORD DIF EQUA          097060321322893CAMPBELL        RA

  1    1   QA  372  M978   1960C10*MURPHY ORD DIF EQUA          097065321327893CAMPBELL        RA
```

```
    -RSIC CIRCULATION STATISTICAL REPORT-                9 MAR 67    PAGE 1 OF 1

                        WEEKLY      BEGINNING     DURING      END
        LOANS                        32128        745       31884
            REGULAR LOANS            16156        651       15795
            LONG TERM LOANS          12175         66       12265
            BRANCH LIBRARY LOANS      3797         28        3824
            INTERLIBRARY LOANS          -           -          -

        RETURNS                        -          989         -

        RENEWALS                       -          794         -

        ITEMS POSTED LOST            150          29         165

        ITEMS FOUND                    -          14          -

        ITEMS INV ADJ OUT              -           -          -

        TOTAL TRANSACTIONS             -         2571         -

        RECALL NOTICES               4279        2209       4858
            PATRON RECALLS            465         214        519
            OVERDUE NOTICES          1124         279        989
                2ND NOTICE            315         100        329
            REPROCESSING RECALLS       13           2         11
                2ND NOTICE              5           4          9
            LONG TERM REVIEW NOTICES  877        1545       1794
                2ND NOTICE              -          44         44
            RSIC ACTION NOTICE LIST  1480          21       1163
```

Figure 79. Circulation/ Inventory Update Error List
            and Statistical Report

R.S.I.C. CALL NUMBER	—3RD NOTICE REFERENCE LIST—	—CALL NR SEQ— CPY SOC SEC NR	NAME	9 MAR 67 SYMBOL	PAGE 2
QC 638 G883 1962C2X	GROVER INDUCTANCE CALC	2 457-46-0209	MILTON, R. D.	AMSMI-REP	
T 223.K K66 1965C2	KLOOSTER GRANT INVENT RIGHT	2 410-50-9739	BRINK, H. L.	R-TEST-IES	
TA 405 D794 1963C6	DRUCKER FRACTURE OF SOLIDS	6 418-30-2529	LILE, Z. B.	R-P+VE-MMA	
TH 1725 C645 1966C4	CLOSE SOUN CONTRO THER INSULA	4 319-28-9433	WILHOLD, G. A.	R-AERO-AU	
TK 6553 M787 1947C21	MONTGOMERY TECH OF MICROW ME	21 420-32-9721	RILEY, L. H.	AMSMI-RTR	
TL 794 K77 1961C70	KOELLE HANDB ASTRO ENGINEER	70 339-26-0240	POE, P. D.	R-P+VE-PPF	
TR 270 S798 1965C2X	STRAVROUDIS SPOT DIAG PRED LEN	2 325-32-8192	WERNLE, R. E.	AMSMI-KOLPM	
548.83 K 57464	KLUG X-RAY DIFFRACTION PROC	1 491-26-1578	EICHENBERGER, T. L.	AMSMI-IELC	

Figure 80.   Circulation 3rd Notice Reference List

ISSUE SLIP PAGE 1

15 MAR 67

FROM CLEO S. CASON, ACCT, PROP. AGT.
RSIC LIBRARY BR., ACCT L3-10.2

TO   MSFC, MS-IL
      BLDG. 4200

      ATTN. LOIS ROBERTSON

ITEM   CALL NUMBER   TITLE

001 Q 141 A512 1966V4C2   AMER MAN OF SCIENCE
002 QC 225 T654 1966C5   TOLSTOY OCEAN ACUSTICS
003 TL 789.8U5 A298 1966C2   US AIR FORCE SPA
004 TL 3250 Q1 1966C2   QUASIUS STAR TRACK SYS DESIGN
005 Z 731 A512 1967C2   AMER LIB DIRECT CLASS LIST LIB
006 Z 6941 U45 19665 1C3X   ULRICH INTER PERIOD DIR SUPP
**********************************LAST ITEM**

QUANTITIES ITEMIZED ABOVE HAVE BEEN RECEIVED.

RESPONSIBLE REPRESENTIVE SIGNED....................................DATE.................

TURN IN PAGE 1

15 MAR 67

FROM AMSMI-RE-RLL
      BLDG. 5400

      ATTN. DOROTHY WEBB

TO   CLEO S. CASON, ACCT. PROP. AGT.
      RSIC LIBRARY BR., ACCT L3-10.2

ITEM   CALL NUMBER   TITLE

001 QC 20 S697 1954V4C4   SOMMERFRLD LECT ON THEORET
**********************************LAST ITEM**

ISSUED BY................................   DATE...............

RECEIVED BY ....   DATE...............

Figure 81.   Circulation Issue and Turn-In Slips

TO   HOGGE, H. D.
      R-RP-N
      BLDG. 4481 RM 65A

                                        226-62-1451   1 MAR 67
                                        PHONE 876-8036
                                        DATE OF LOAN 26 JAN 67

                    -PATRON RECALL REQUEST-

FROM LIBRARY BRANCH, RSIC
     BUILDING 4484 , AMSMI-RBLS
     REDSTONE ARSENAL , ALABAMA
     PHONE 876-5195

     THE BOOK LISTED BELOW IS NEEDED FOR LOAN TO ANOTHER PATRON. IF NO LONGER REQUIRED, PLEASE RETURN IT TO THE ABOVE
ADDRESS IN PERSON OR BY MAIL ALONG WITH THIS NOTICE.

CALL NUMBER....QC 225 H945 1957C3   COPY NR   003
AUTHOR/TITLE...HUNTER ACOUSTICS

Figure 82.   Patron Recall Request

Figure 83. Recall for Reprocessing 1st and 2nd Notices

TO SCHILLOFF, W. A.
    I B M CORP
    150 SPARKMAN DR.
    HUNTSVILLE ALA.

149-30-9045   1 MAR 67
PHONE 837-4000
DATE OF LOAN 1 MAR 67

-RECALL FOR REPROCESSING 1ST NOTICE-

FROM LIBRARY BRANCH, RSIC
     BUILDING 4484 , AMSMI-RBLS
     REDSTONE ARSENAL , ALABAMA
     PHONE 876-5195

THE BOOK LISTED BELOW IS BEING RECALLED FOR REPROCESSING. PLEASE RETURN IT TO THE ABOVE ADDRESS
WITH THIS NOTICE TO SPEED HANDLING IN THE LIBRARY. IF YOU WISH THE BOOK RETURNED TO YOU AFTER REPROCESSING,
PLEASE CHECK HERE ....

CALL NUMBER....TK 7815 M256 1963C6   COPY NR 006
AUTHOR/TITLE...MALMSTADT ELEC SCIENTISTS

TO SCHILLOFF, W. A.
    I B M CORP
    150 SPARKMAN DR.
    HUNTSVILLE ALA.

149-30-9045   1 MAR 67
PHONE 837-4000
DATE OF LOAN 1 MAR 67

-RECALL FOR REPROCESSING 2ND NOTICE-

FROM LIBRARY BRANCH, RSIC
     BUILDING 4484 , AMSMI-RBLS
     REDSTONE ARSENAL , ALABAMA
     PHONE 876-5195

THE BOOK LISTED BELOW IS BEING RECALLED FOR REPROCESSING. PLEASE RETURN IT TO THE ABOVE ADDRESS
WITH THIS NOTICE TO SPEED HANDLING IN THE LIBRARY. IF YOU WISH THE BOOK RETURNED TO YOU AFTER REPROCESSING,
PLEASE CHECK HERE ....

CALL NUMBER....TK 7815 M256 1963C6   COPY NR 006
AUTHOR/TITLE...MALMSTADT ELEC SCIENTISTS

451

Figure 84. Regular Loan - 1st and 2nd Overdue Notices

452

TO   HALLUM, M. M.   259-46-6924   15 MAR 67
     AMSMI-RDD   PHONE 876-0337
     BLDG. 5400 RM B-148

                    EXTENDED LOAN RENEWAL

    ..   **

FROM LIBRARY BRANCH, RSIC
     BUILDING 4484 , AMSMI-RBLS
     REDSTONE ARSENAL , ALABAMA
     PHONE 876-5195

     THE BOOKS LISTED BELOW HAVE BEEN ON EXTENDED LOAN TO YOU FOR MORE THAN A YEAR. ANY WHICH ARE NO LONGER NEEDED
SHOULD BE RETURNED. FOR THOSE YOU STILL NEED, SIGN THE ENCLOSED CARD (PERSONAL SIGNATURE REQUIRED) SEND THE CARD TO THE
LIBRARY, BUT DO NOT RETURN THE BOOK.
     THIS IS A SECOND REMINDER FOR ENTRIES PRECEDED BY ASTERISK.

CALL NUMBER....TJ 213 C594 1962C5   COPY NR 005   DATE OF LOAN   4 MAR 66
AUTHOR/TITLE...CLARK INTR AUTOMA CONTR

Figure 85.   Extended Loan Renewal - 1st and 2nd Notices

453

12 MAY 66

PAGE 1

TO   CHIEF, UNIVERSITY OF ALABAMA RESEARCH INSTITUTE   301 SPARKMAN DRIVE   HUNTSVILLE   ALA

FROM   LIBRARY BRANCH, RSIC(AMSMI-RBLS) BL. 4484, REDSTONE ARSENAL, ALABAMA 876-5195

SUBJ   THIRD RECALL NOTICES

WE HAVE ATTEMPTED RECALL OF THE BOOKS SHOWN BY MEANS OF TWO ROUTINE NOTICES. SINCE OUR RECORDS SHOW THAT THESE BOOKS HAVE NOT BEEN RETURNED, WE REQUEST YOU EXERCISE WHATEVER SUPERVISORY AUTHORITY IS REQUIRED TO ASSURE POSITIVE ACTION UNDER MICOM R 705-7 or MSFC R 25-8.

GARRETT, W. R.   QC 721   161   1964   COPY NR 008 OVERDUE
424-46-3509   DATE OF LOAN   22 APR 65   INT CONF PHYS ATOMIC COLLIS PRO

Figure 86.   Third Recall Notice - Regular and Extended Loan and Recall for Reprocessing

NUMBER OF CHARGES	CODE NINE	ALL CODES
ONE	403	817
TWO	182	416
THREE	138	339
FOUR	104	245
FIVE	72	201
SIX	52	147
SEVEN	56	144
EIGHT	43	116
NINE	25	87
TEN	36	80
ELEVEN	28	62
TWELVE	17	48
THIRTEEN	13	54
FOURTEEN	19	49
FIFTEEN	17	27
SIXTEEN	14	32
SEVENTEEN	11	31
EIGHTEEN	9	33
NINETEEN	7	36
TWENTY	11	23
TWENTY-ONE	11	19
TWENTY-TWO	9	19
TWENTY-THREE	7	26
TWENTY-FOUR	7	13
TWENTY-FIVE	7	9
OVERTWENTYFIVE	120	

NUMBER OF CHARGES	CODE NINE	ALL CODES
TWENTY-SIX		20
TWENTY-SEVEN		11
TWENTY-EIGHT		11
TWENTY-NINE		10
THIRTY		14
THIRTY-ONE		8
THIRTY-TWO		6
THIRTY-THREE		5
THIRTY-FOUR		13
THIRTY-FIVE		8
THIRTY-SIX		10
THIRTY-SEVEN		8
THIRTY-EIGHT		7
THIRTY-NINE		3
FORTY		7
FORTY-ONE		4
FORTY-TWO		5
FORTY-THREE		6
FORTY-FOUR		2
FORTY-FIVE		6
FORTY-SIX		1
FORTY-SEVEN		4
FORTY-EIGHT		4
FORTY-NINE		1
FIFTY		7
OVER-FIFTY		68

TYPE OF PATRON	NUMBER OF PATRONS	NUMBER OF BOOKS
ARMY	909	8444
NASA	1239	11588
MILITARY	58	450
CONTRACTOR	1044	7311
OTHER	72	4091
TOTAL	3322	31884

OF THESE, 1418 PATRONS HAVE 12264 BOOKS CHARGE NINE

Figure 87. Patron - Circulation Inventory Report

455

1 Circulate

T̄ Return

2 Recall

3 Renewal

0 Lost

0̄ Found

A Patron Charge

— Title Change

Circulation Transaction Cards

Run 1. Conversion From Transaction Cards To Magnetic Tape
1401

Unsorted Circulation Transactions

Unreadable Circulation Transaction Cards

Run 2. Sort To Social Security Number Sequence
7010

Patron Master File In SSN Sequence

Sorted Circulation Transactions

Monitor And Error Listing

Monitor And Edit Error Tape

Run 3. Edit Patron Match Spread LC
7010

Processed Error Cards

Processed And Error Transactions

Processed Error & Valid Circulation Transactions

Kicked Out Error Cards

Run 4. Sort To Call Number Sequence
7010

Sorted Processed Errors & Valid Circulation Transactions

To Reader Service Section
Circulation Librarian

456

457

Updated
Circulation
Master
File

B5
Circulation
Master File
(Call Number
Sequence)

Run 5E. Sort To Patron
Name And Social Security
Number Sequence
7010

Sorted
Circulation
Master
File

A5
Renew

Renew Transaction Card

To Chief Of Reader
Service Section

Sorted Recall/Renew

Run 6. Statistics, Recall And Report Generator

7010

B4
Extended
Recalls

A1
Punch
Tape

A2
Master
Print

A3
Patron
Action

A4
RSIC Action
File

B2
Statistical
File

Extended Loan
1st Notice

Extended Loan
2nd Notice

To Chief Of Reader
Service Section

Transaction Card—Patron
With 51 Books Or More

To Chief Of Reader
Service Section

Circulation List In
LC Number
Sequence

Circulation List In
Name Sequence

To Reader Service
Section Circulation
Librarian

To Chief Of Documents
Section

Patron Recall

Recall For
Reprocessing 1st
And 2nd Notice

Recall For Overdue
Regular Loan
1st And 2nd Notice

To Chief Of Reader
Service Section

3rd Notice
RECALL FOR:
—Reprocessing
—Overdue Regular Loan
—Extended Loan

To Chief Of Reader
Service Section

Patron –
Circulation
Inventory Report

To Chief Of Reader
Service Section

Figure 88.   Computer Run Relation Flow Chart

00470A 14 INDEX IN NO.12, ALSO TP WHICH IS LOOSE

HLDS..T SER VOL YEAR VOL YEAR*T SER VOL YEAR VOL YEAR*T SER VOL YEAR VOL YEAR*T SER VOL YEAR VOL YE
30 B   10 1962   *B   12 1964   13 1965 *U   11 1963   *
V-LACKS
40   1   9 1961*   *
I-LACKS SER VOL YEAR................ISSUE NUMBERS..................
50   11 1963   2
70 C. ACADEMIE POLONAISE DES SCIENCE. BULLETIN. CLASSE III. MATHEMATIQUE   *
71 ASTRONOMIE, PHYSIQUE, CHIMIE, GEOLOGIQUES ET GEOGRAPHIQUES
72 C. ACADEMIE POLONAISE DES SCIENCES. BULLETIN SERIE DES SCIENCES,   *
73 CHIMIQUES, GEOLOGIQUES ET GEOGRAPHIQUES

00570A01 ACADEMIE POLONAISE DES SCIENCES. BULLETIN. SERIE DES SCIENCES
02 GEOLOGIQUES ET GEOGRAPHIQUES
03 AMERICAN NEWS   ACADEMIE POLONAISE DES SCIENCES
04 MIODOWA 10   WARSAW 1 POLAND
05   POLAND $14.75 0001
06 01RSIC 4484   012
08 TO ORDER SEE NOTE UNDER 00470A
10   AUG   J 1-NON ORDER
BIND..NTI TPC ICT IND COV ADS P/S SPV   COLOR SIZE   BOUND-FOR   L   BIND COST
13   1   2   1   1   8852 9 1/2 x 6 3/4 RSIC 4484 $.
14 INDEX AND TPC IN LAST ISSUE OR NO. 4.
20 BIND 2-VOLS. TOGETHER.

HLDS..T SER VOL YEAR VOL YEAR*T SER VOL YEAR VOL YEAR*T SER VOL YEAR VOL YEAR*T SER VOL YEAR VOL YEAR
30 B   11 1963   12 1964*U   13 1965   *   *
V-LACKS
40   1   10   *   *
70 C. ACADEMIE POLONAISE DES SCIENCES. BULLETIN. CLASSE III. MATHEMATIQUE*
71 ASTRONOMIE, PHYSIQUE, CHIMIE, GEOLOGIQUES ET GEOGRAPHIQUES
72 C. ACADEMIE POLONAISE DES SCIENCES. BULLETIN SERIE DES SCIENCES,   *
73 CHIMIQUES, GEOLOGIQUES ET GEOGRAPHIQUES

Figure 89. Complete Serials Master File List

Figure 90. Serials Master File Record Formats (Sheet 1 of 3)

Figure 90. Serials Master File Record Formats (Sheet 2 of 3)

461

Figure 90. Serials Master File Record Formats (Sheet 3 of 3)

462

TITLE

TITLE

TITLE_____NEW_____ADDED SUBSCRIPTION_____

EDITOR_____NO. SUBSCRIPTIONS TO BE ENTERED_____NON VENDOR_____
SUBSCRIPTION PERIOD_____
PUBLISHER'S NAME AND ADDRESS   _____

                                    _____

                                    _____

ADDRESSEE (FOR BRANCH LIBRARY)   R-P&VE-LIB 4612_____ ( )
                                  R-COMP-LIB 4663_____ ( )
                                  MS-IL-LIB 4200_____ ( )
                                  AMSMI-RE-RLL LIB 5400_____ ( )
                                  AMSMI-RKXPLL 7120_____ ( )
JOURNAL (J)_____NEWSPAPER (N)_____SERVICE (S)_____
PRICE: Per Year_____Per Volume_____

FREQUENCY: Weekly_____Semi-monthly_____
            Monthly_____Volumes per year_____
            Quarterly_____Irregular_____
            Bi-monthly_____Other_____

INITIAL PUBLICATION DATE_____

TITLE CHANGE: Make cross reference from_____
               to current title.

LANGUAGE (S) OF TEXT_____
                        1. Translated into English: Yes_____No_____
                        2. Contains English abstracts or summaries_____
                        3. Table of contents in English_____
                        4. Language of original text_____
                        5. Original title_____

TO BE FILED WITH: 1. Journals_____ 4. Basic publication_____
                        2. Abstracts and continuing   5. Cataloging Unit_____
                            bibliographies_____ 6. Other_____
                        3. Acquisition Unit_____

CIRCULATION REQUESTED BY: Name_____
                           Address_____

INDEXED IN_____

SOURCE OF INFORMATION _____

REVIEWED AND SUBMITTED BY:_____DATE_____

Figure 91.   Subscription Order Request

THE FOLLOWING NEW HOLDINGS WERE PLACED IN THE PERIODICAL MASTER AS OF   16 AUG 66

```
70275A  01PHILIPS IN SCIENCE AND INDUSTRY
70275A  03MAXWELL          CENTREX  PUBLISHING  COMPANY
70275A  04                                EINDHOVEN NETHERLANDS
70275A  05              NETHERLANDS  N00003500001126600971020166J
70275A  0601RSIC 4484                   C5-14011Z                    006L
70275A  10                        FEB                                0601
70275A  131  343        88528 1/4 X 11 1/2 RSIC 4484
70275A  14CONTENTS ISSUED LOOSE IN NO. 6 OF VOL.
70275A  15NO TP PUBLISHED
70275A  20BIND CONTENTS IN BACK
70275A  70C. SCIENCE AND INDUSTRY. NETHERLANDS.

80625A  01REVUE DE PHYSIQUE APPLIQUEE
80625A  03                         SOCIETE FRANCAISE DE PHYSIQUE
80625A  04                                      PARIS   E  FRANCE
80625A  05              FRANCE            0001                        J3
80625A  0601RSIC 4484                                                004L
80625A  07FREE SUPPLEMENT WITH SUB TO JOUNAL DE PHYSIQUE.
80625A  20VOL 1, NO. 1 MARCH 1966

81158A  01RICERCA SCIENTIFICA. SUPPLEMENTO          (INACTIVE)
81158A  03              CONSIGLIO NAZIONALE DELLE RICHERCHE
81158A  04                                      ROME ITALY
81158A  05              ITALY                                        L    J
81158A  0601RSIC 4484
81158A  30U02003196400000000
81158A  40 00001000000020000
```

PAGE 003

Figure 92.   RSIC New Holdings List

464

```
2-04700AD1A66-D-0534      01012692670429NO ISS FOR 1967

2-09150AD1A66-D-0533      01000782670429NO ISS FOR 1967

2-13600AD1A66-D-0534      31312722670429NO ISS FOR 1967

2-13850AD1A66-D-0534      01011882670429NO ISS FOR 1967

2-15750AD1A66-D-0533      01001142670429NO ISS FOR 1967

2-17725AD1A66-D-0533      01001362670429NO ISS FOR 1967

2-27475AD1A66-D-0534      01011892670429NO ISS FOR 1967

2-43450AD1A66-D-0533      010030326703 3NO ISS FOR 1967

2-48700AD1A66-D-0534      01006192670429NO ISS FOR 1967

2-49615AD1A66-D-0533      01003552670429NO ISS FOR 1967

2-72525AD1A

2-77212AD1A66-D-0534      01010042670429NO ISS FOR 1967
```

Figure 93.   Serials Input Transaction Error List

```
1........10........20........30........40........50........60........70........80........90........100........110........120
S
1THE FOLLOWING TITLES WERE CANCELLED FROM THE PERIODICAL MASTER AS OF     7 APR 67 *
/13450A  01ASSOCIATION FOR COMPUTING MACHINERY. COMMUNICATIONS                     *    82
/13450A  03READER-SERVICES        ASSOCIATION FOR COMPUTING MACHINERY              *   164
/13450A  04211 EAST 43RD STREET              NEW YORK 17 NEWYORK                   *   246
/13450A  05EN        USA          N0001500000312670009910167J                     *   328
/13450A  0601RSIC 4484                   66-D-0533      0              012C        *   410
                                                                                      492
/13450A  10                                                 1201                   *   574
/13450A  13 2 331          JAN                                                     *   656
/13450A  14NO TP + C OR INDEX      885211 X 8 1/2      RSIC                        *   738
                                                                          TAPE REC *   820

/13450A  20BIND MONTHLY CONTENTS PAGES IN FRONT OF VOL. THE ONR DIGITAL COMPUTER   *    82
/13450A  21NEWSLETTER WAS FORMERLY PUBLISHED IN ASSOC. FOR COMPUTING MACHINERY.    *   164
/13450A  22JOURNAL. V.10 OF THE NEWSLETTER WAS PUBLISHED IN V.1 OF THE             *   246
/13450A  23COMMUNICATIONS + CONTINUED THROUGH V.12(1960)(THIS IS ACTUALLY A        *   328
/13450A  24REPRINT OF A QUARTERLY PUBLISHED BY THE OFFICE OF NAVAL RESEARCH.)      *   410
/13450A  25AFTER DEC 1961, THE NEWSLETTER WAS ONLY AVAILABLE FROM OUR (SEE MAY     *   574
/13450A  261961 ISSUE OF THE COMMUNICATIONS FOR THIS NOTE). COMPUTING REVIEWS,     *   656
/13450A  27V.1 WAS ORIGINALLY IN THE COMMUNICATIONS, BUT WAS LATER REPRINTED       *   738
/13450A  28SEPARATELY AS V.1.                                                      *   820
/13450A  30B0000119580091966O                                      —      TAPE REC

/13450A  70F. DIGITAL COMPUTER NEWSLETTER                                          *    82
/13450BN01ASSOCIATION FOR COMPUTING MACHINERY. COMMUNICATIONS                      *   164
/13450BN03READER-SERVICES         ASSOCIATION FOR COMPUTING MACHINERY              *   246
/13450BN04211  EAST 43RD STREET               NEW YORK 17 NEWYORK                  *   328
/13450BN05EN       USA          N0001500001126700846010167J                       *   410
/13450BN0605R-COMP-LIB 4663            66-D-0533              012D                  *   492
/13450D  01ASSOCIATION FOR COMPUTING MACHINERY. COMMUNICATIONS                     *   574
/13450D  03READER-SERVICES        ASSOCIATION FOR COMPUTING MACHINERY              *   656
/13450D  04211 EAST 43RD STREET             NEW YORK 17 NEWYORK                    *   738
/13450D  05EN        USA          0001400000112670076801O167J             TAPE REC *   820
```

Figure 94. Cancelled Items List

```
1........10........20........30........40........50........60........70........80........90........100........110........120

/THE FIRST LINE IS THE ORIGINAL, THE SECOND LINE INDICATES RECORD CHANGE
S                                                                               +
                                                                                +          410
                                                                                +          492
/02523A  20VOL 1, CYS 1-7) (VOL 2, CYS 1-8) (VOL 3, CYS 1-4)                     +          574
/02523A  20VOL 1, CYS 1-7) (VOL 2, CYS 1-8) (VOL 3, CYS 1-5)                     +          656
/                                                                               +          738
                                                                                +  TAPE REC 820

/02750A  05EN        ENGLAND      0001000000412670016701 67J                     +           82
/02750A  05                       0001585                                        +          164
/                                                                               +          246
/02940A  05EN        ENGLAND      0001800000212670016801 67J                     +          328
/02940A  05                       0002400                                        +          410
/                                                                               +          492
/03200A  30B0003519550401960U0000441964000000                              —     +          574
/03200A  30          U0000441964040461966                                       +          656
/                                                                               +          738
/03600A  30B0004119580481 9650      0                                      —     +  TAPE REC 820

/03600A  30          U0004919660000000                                          +           82
/                                                                               +          164
/03950A  31B0001500000361964U000006193400000000U000010193800000000U000012194000000000  +  246
/03950A  31B0001519430371965                                                    +          328
/                                                                               +          410
/03950A  32U0001419420000000U000037196503 81966                                 +          492
/03950A  32          U000038 19660000000                                        +          574
/                                                                               +          656
/05000A  30B0000019610001964U00000019650001966                             —     +          738
/05000A  30          B00000196600000000U0000001965000000000                     +  TAPE REC 820

/05320A  05          FRANCE        0004350000112670056601 67J                    +           82
/05320A  05                        0004400                                       +          164
/                                                                               +          246
/06665A  042 EAST 64TH STREET                   NEW YORK 21 NEWYORK              +          328
/06665A  041290 SIXTH AVE.                      NEW YORK, NEW YORK 10019         +          410
                                                                                +          492
```

Figure 95. Changed Items List

1.........10.........20.........30.........40.........50.........60.........70.........80.........90.........100.........110.........120

S
1THE FOLLOWING TRANSACTIONS WERE SUBMITTED WITH CONTROL FILEDS DUPLICATE ‡   PAGE 002‡   410
/THE FIRST CARD ONLY WAS PROCESSED FOR EACH CONTROL NR AND CARD CODE ‡   492
/CHECK INPUT TRANS, CHANGE, AND NEW HOLDING LIST FOR CORRECTIVE ACTION ‡   574
S   656
/15900AD1AC5-1401IZ   020014926704 91SS 2 FOR V 56 1966 ‡   TAPE REC   738
    820

/76850A 5000037196600060011 ‡   82
/77015AD07 ‡   164
/97150A 05   0001000‡   PAGE 001‡   246
S   328

Figure 96.   Serials Update Error List

468

R E D S T O N E   S C I E N T I F I C   I N F O R M A T I O N   C E N T E R
CANDIATE FOR BINDING LIST   15 MAR 67

00942A   ACADEMY OF SCIENCES. USSR. PROCEEDINGS. BIOLOGICAL SCIENCES

GEN. SUB. =   BINDING SCHEDULE =   MAR
    VOL. PER. SUB.   01 ISSUES PER. VOL.   06 BOL. PER. YEAR
(NEW TITLE) (DO NOT PUBLISH TPC.) (BOUND FOR RSIC 4484   ) (REMOVE ALL ADS.
(COLOR 8852) (BIND INDEX IN BACK)
(DONT SPLIT) (SIZE. 10 3/4 X 8 1/2) (BIND IN FRONT COVERS ONLY) (BIND ISSUE CONTENTS IN PLACE.

INDEX DATA   INDEX IN LAST VOL OF YEAR

BINDING NOTES BIND 6 VOLS OR 1 YEAR TOGETHER

HOLDINGS   SER VOL YEAR VOL YEAR T * SER VOL YEAR T * SER VOL YEAR VOL YEAR T * SER VOL YEAR VOL YEAR T * SER VOL YEAR VOL YEAR T *
              00 154 1964–159 1964 B *

Figure 97. Binding Review List

THE FOLLOWING ERRORS PRETAIN TO BINDING. CORRECTIONS MUST BE SUBMITTED
INTO THE NEXT FILE MAINT. RUN IF AN ACCURATE BINDING LIST IS DESIRED........

****
CONTROL NUMBER 01950A HAS NO TITLE PAGE AND CONTENT INST. COL. 11 CD 13
****
CONTROL NUMBER 01970A HAS NO VOL.PER.YEAR IN 10 CARD.
****
CONTROL NUMBER 02440A HAS NO BINDING SCHEDULE IN TEN (10) CARD.
****
CONTROL NUMBER 02700A HAS NO BINDING SCHEDULE IN TEN (10) CARD.
****
CONTROL NUMBER 02945A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 03000A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 03545A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 03850A HAS NO BINDING SCHEDULE IN TEN (10) CARD.
****
CONTROL NUMBER 03935A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 03940A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 05050A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 05500A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 06770A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 06775A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 06777A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 08700B HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 08750A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****
CONTROL NUMBER 09825A HAS A 13 CARD BUT NO 10 CARD. NO ACTION TAKEN
****

Figure 98. Binding Error List

10950C*   APPLIED OPTICS

    AMERICAN NEWS

          OPTICAL SOCIETY OF AMERICA
          1155 SIXTEENTH STREET, N. W.   WASHINGTON 6 D.C.
    USA $ 15.00   01   06 66   JOURNAL
    02AMSMI-RE-RLL LIB 5400   C5-0025IZ

11450A ARCHITECTURAL RECORD

    AFSA DIV OF FRANK SQ

          MCGRAW-HILL PUB CO
          330 WEST 42ND STREET   NEW YORK NEW YORK 10036
    USA $ 5.50   03   12 66   JOURNAL
    01RSIC 4484   C5-1401OZ

11450C*   ARCHITECTURAL RECORD

    AMERICAN NEWS

          MCGRAW-HILL PUB CO
          330 WEST 42ND STREET   NEW YORK NEW YORK 10036
    USA $ 5.50   01   06 66   JOURNAL
    01RSIC 4484   C5-0025IZ

114500 ARCHITECTURAL RECORD

    AMERICAN NEWS

          F. W. DODGE CORP
          119 WEST 40TH STREET   NEW YORK 18 NEW YORK
    USA $ 5.50   01   12 65   JOURNAL
    05F+D-M 4200   C5-0025IZ

Figure 99.   Serials Renewal Review List

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THE FOLLOWING ITEMS ARE MISSING DATA REQUIRED TO DETERMINE RENEWAL ACTION. THEY
SHOULD BE MANUALLY SCREENED AND CORRECTIVE ACTION TAKEN   PAGE NR.0001

CONTROL NR 02584A HAS A MISSING OR INVALID 05 CARD
CONTROL NR 25850C HAS A MISSING OR INVALID JOURNAL-SERVICE-NEWSPAPER ID.
CONTROL NR 30166   HAS A MISSING OR INVALID 05 CARD

Figure 100.   Serials Renewal Review Error List

15 FEB 66   PERIODICAL SUBSCRIPTION CANCELLATION LIST   PAGE NO.001

08760A   AMERICAN SOCIETY FOR QUALITY CONTROL. ELECTRONICS DIVISION. JOURNAL
          AMERICAN NEWS   AMERICAN SOCIETY FOR QUALITY CONTROL
          161 W. WISCONSIN AVE.   MILWAUKEE 3 WISCONSIN
          USA $6.00   2 BEG   END   0666   JOURNAL
            01RSIC 4484   C5-0025IZ   FREQ   6

31950E   ELECTRO-TECHNOLOGY
          AMERICAN NEWS   C-M TECHNICAL PUBLICATIONS
          205 E. 42TH STREET   NEW YORK 17 NEWYORK
          USA $15.00   1 BEG   END   0666   JOURNAL
            02AMSMI-RE-RLL LIB 5400   C5-0025IZ   FREQ   12

61150C   MISSILE/ORDANCE LETTER
          AMERICAN NEWS   CALLAHAN PUBLICATIONS
          P O B 3751, 1007 THOMAS JEFFERSON ST N W   WASHINGTON D. C. 20007
          USA $100.00   1 BEG   END   0666   JOURNAL
            01RSIC 4484   C5-0025IZ   FREQ   26

69800A   PERSONNEL MANAGEMENT ABSTRACTS
          AMERICAN NEWS   PERSONNEL MANAGEMENT ABSTRACTS
          P.O. BOX 71, BENJAMIN FRANKLIN STATION   WASHINGTON 4 D. C.
          USA $10.00   1 BEG   END   0666   JOURNAL
            01RSIC 4484   C5-0025IZ   FREQ   4

74512A   PROBLEMY PEREDACI INFORMACII
          MAXWELL   NAUKA
                                                         MOSCOW USSR
          USSR $5.00   1 BEG   END   0666   JOURNAL
            01RSIC 4484   C5-00252Z   FREQ   4

74930A   PROGRESS IN CARDIOVASCULAR DISEASES
          SUBS. SER. CO.   GRUNE AND STRATTON
          381 PARK AVENUE SOUTH   NEW YORK 16 NEWYORK
          USA $10.00   1 BEG   END   0666   JOURNAL
            03SMIDW-H 112   C5-15017Z   FREQ   6

Figure 101. Cancellation List

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PERIODICAL RENEWAL VERIFICATION LIST

C   66

40600A   HARWOOD S MISSILE RESEARCH INDEX
          AFSA DIV CF FRANK SQ   INTERNATIONAL HARWOOD CO.
          42-42-80 STREET   ELMHURST   NEW YORK 11373
          USA $12.00   1   BEG 0766   END 0667   JOURNAL
              01RSIC 4484   C5-0025IZ   FREQ 6

41020A   HIGH TEMPERATURE
          AFSA DIV CF FRANK SQ   AMERICAN INSTITUTE OF PHYSICS
          335 EAST 45TH STREET   NEW YORK 17 NEW YORK
          USA $50.00   2   BEG 0766   END 0667   JOURNAL
              01RSIC 4484   C5-14010Z   FREQ 6

42940B   INDUSTRIAL AND ENGINEERING CHEMISTRY (INCLUDES I+EC FUNDAMENTALS, I+EC
          PROCESS DESIGN + DEVELOPMENT, +I+EC RESEARCH + DEVELOPMENT)
          AFSA DIV OF FRANK SQ   AMERICAN CHEMICAL SOCIETY
          1155 - 16TH STREET, N. W.   WASHINGTON 6.D.C.
          USA $12.00   1   BEG 0766   END 0667   JOURNAL
              05R-P+VE-M LIB 4612   C5-0025IZ   FREQ 12

43200D   INDUSTRIAL ELECTRONICS
          MAXWELL   IFIFFE AND SON LTD.
          DORSET HOUSE STAMFORD ST.   LONDON S.E. 1 ENGLAND
          ENGLAND $10.00   1   BEG 0166   END 1266   JOURNAL
              02AMSMI-RE-RLL LIB 5400   C5-14011Z   FREQ 12

43850C   INDUSTRIAL RESEARCH
          AFSA DIV CF FRANK SQ   INDUSTRIAL RESEARCH
                                                   BEVERLY SHORES,INDIANA
          USA $7.00   1   BEG 0766   END 0667   JOURNAL
              05R-P+VE-M LIB 4612   C5-0025IZ   FREQ 12

44425A   INGENIEUR, CANADA
          MAXWELL   ASSOCIATION DES DIPLOMES DE POLYTECHNIQUE
          2500 MARIE GUYARD AVE.   MONTREAL CANADA
          CANADA $5.00   1   BEG 0166   END 1266   JOURNAL
              01RSIC 4484   C5-14011Z   FREQ 6

Figure 102. Verification List

```
                PERIODICAL RENEWAL UPDATE ERRORS                    17 APR 67

THESE ERRORS MUST BE CORRECTED AND CORRECTIONS SUBMITTED TO NEXT RENEWAL UPDATE.

MISSING 1,3,4,5,6 CARD CTL. NR. 32670B                      0001  ERRORS ON TAPE 20
```

Figure 103.   Renewal Update Error List

THE FOLLOWING PAGES ARE (DOMESTIC) (JOURNALS).SUBSCRIPTIONS TO BEGIN 01 66 TO END 12 66
ORDERED ON REQUISITION NO. 006045-6100

SUPT. OF DOCUMENTS

DELIVER THE FOLLOWING PUBLICATIONS PRINTED IN USE

TO REDSTONE SCIENTIFIC INFORMATION CENTER
U. S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA
ATTN RSIC 4484

ITEM NO.	NOMENCLATURE	TOTAL SUBS.	UNIT COST	T
0001	NAVAL RESEARCH REVIEWS	2	$1.50	$
	OFFICE OF NAVAL RESEARCH			
	WASHINGTON 25 D. C.			
0002	SURVEY OF CURRENT BUSINESS	2	$4.00	$
	U. S. DEPARTMENT OF COMMERCE			
	WASHINGTON D. C.			

PAGE NO.

Figure 104. Requisition Item List

THE FOLLOWING PAGES ARE (DOMESTIC) (JOURNALS),SUBSCRIPTIONS TO BEGIN 01 66 TO END 12 66
ORDERED ON DELIVER ORDER NO.   TL-003-03-66   PURCHASE OR

DELIVER THE FOLLOWING PUBLICATIONS PRINTED IN USA

TO REDSTONE SCIENTIFIC INFORMATION CENTER
U. S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA
ATTN RSIC 4484

ITEM NO.	NOMENCLATURE	TOTAL SUBS.	UNIT COST	TOTAL COST
0001	AMERICAN ASTRONAUTICAL SOCIETY NEWSLETTER	1	$3.00	$3.00
	AMER. ASTRONAUTICAL SOCIETY NEWSLETTER BOX 979 PALO ALTO CALIFORNIA			
0002	BIO-ACOUSTICS BULLETIN	1	$2.00	$2.00
	LABORATORY OF ONITHOLOGY, CORNELL UNIVERSITY ITHACA NEW YORK			

DELIVER THE FOLLOWING PUBLICATIONS PRINTED IN USA

TO NASA
MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA
ATTN MS-IL LIB 4200

PAGE NO.

Figure 105. TL Order List

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THE FOLLOWING PAGES ARE (FOREIGN) (JOURNALS), SUBSCRIPTIONS TO BEGIN 01 66 TO END 12 66 ORDERED ON DELIVER ORDER NO. 16
PURCHASE ORDER C5-14011Z

MAXWELL

DELIVER THE FOLLOWING PUBLICATIONS PRINTED IN CZECHOSLOVAKIA

TO REDSTONE SCIENTIFIC INFORMATION CENTER
U. S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA
ATTN RSIC 4484
P.O. C5-14011Z   D.O. 16

ITEM NO.	NOMENCLATURE	TOTAL SUBS.	UNIT COST
0001	STUDIA GEOPHYSICA ET GEODAETICA	1	$6.00

PUBLISHING HOUSE OF THE CZECHOSLOVAK ACAD OF SCI
VODICKOVA 10
PRAGUE CZECHOSLOVAKIA

DELIVER THE FOLLOWING PUBLICATIONS PRINTED IN GERMANY

TO REDSTONE SCIENTIFIC INFORMATION CENTER
U. S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA
ATTN RSIC 4484
P.O. C5-14011Z   D.O. 16

ITEM NO.	NOMENCLATURE	TOTAL SUBS.	UNIT COST
0002	ENERGIETECHNIK	1	$15.25

VEB DEUTSCHER VERLAG FUER GRUNDSTOFFINDUSTRIE
KARL-HEINE-STR 27
LEIPZIG W.31 GERMANY

PAGE NO.

Figure 106. Purchase Order List

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Code	Organization	Country	Item	Count	Amount
11-		-USA	01RSIC 4484	2$	5.00
11-		-USA	05MS-IL LIB 4200	2$	103.00
11-		-USA		4$	108.00
11-		-		4$	108.00
11AFSA DIV OF FRANK SQ		USA	01RSIC 4484	15$	224.00
11AFSA DIV OF FRANK SQ		USA	02AMSMI-RE-RLL LIB 5400	1$	5.00
11AFSA DIV OF FRANK SQ		USA		16$	229.00
11AFSA DIV OF FRANK SQ				16$	229.00
14SUPT. OF DOCUMENTS		USA	01RSIC 4484	4$	11.00
14SUPT. OF DOCUMENTS		USA		4$	11.00
14SUPT. OF DOCUMENTS				4$	11.00
15LIBRARY OF CONGRESS		USA	01RSIC 4484	1$	201.50
15LIBRARY OF CONGRESS		USA		1$	201.50
15LIBRARY OF CONGRESS				1$	201.50
21MAXWELL		AFRICA	01RSIC 4484	2$	12.00
21MAXWELL		AFRICA		2$	12.00
21MAXWELL		AUSTRALIA	01RSIC 4484	2$	12.00
21MAXWELL		AUSTRALIA		2$	12.00
21MAXWELL		CANADA	01RSIC 4484	1$	5.00
21MAXWELL		CANADA		1$	5.00
21MAXWELL		ENGLAND	02AMSMI-RE-RLL LIB 5400	1$	10.00
21MAXWELL		ENGLAND		1$	10.00
21MAXWELL		FRANCE	05R-COMP-LIB 4663	1$	7.00
21MAXWELL		FRANCE		1$	7.00
21MAXWELL		NETHERLANDS	01RSIC 4484	$	.00
21MAXWELL		NETHERLANDS		$	.00
11-		-USA	05R-P+VE-M LIB 4612	7$	46.00
11-		-USA		1$	20.00
11-		-		1$	20.00
11AFSA DIV OF FRANK SQ		USA	01RSIC 4484	61$	2841.35
11AFSA DIV OF FRANK SQ		USA	02AMSMI-RE-RLL LIB 5400	17$	224.00
11AFSA DIV OF FRANK SQ		USA	02AMSMI-RKXPLL 7120	4$	427.00
11AFSA DIV OF FRANK SQ		USA	05MS-IL LIB 4200	1$	15.00
11AFSA DIV OF FRANK SQ		USA	05R-COMP-LIB 4663	2$	135.00
11AFSA DIV OF FRANK SQ		USA	05R-P+VE-M LIB 4612	25$	860.00
11AFSA DIV OF FRANK SQ				110$	4502.35
11AFSA DIV OF FRANK SQ				110$	4502.35

Figure 107. New And Renewal Items Statistical Report

479

TO DATE ON-ORDER LIST OF PERIODICALS—PREPARED ON 15 MAR 67   PAGE 0002

	DATE/ORD	N/S	U/PRICE*TOT. COST

00350A ACADEMIE BULGARE DES SCIENCES. COMPTES RENDUS
(PUBL) BULGARIAN ACADEMY OF SCIENCES
(DO-NR)01 (TL/NR)   (PO/REQ)   67-D-0534
(ADDRESSEE) RSIC 4484
(VEND) MAXWELL
(ITEM/NR)00090(EFF/DATE)01-67(EXPDT)12-67
15 JUL 66   *0001*   7.50*   7.50*

00410A ACADEMIE DES SCIENCES. COMPTES RENDUM HEBDOMADAIRES DES SEANCES.
PT. 1, SER A, SCIENCES MATHEMATIQUES, SER B. SCIENCES PHYSIQUES
(PUBL) GAUTHIER-VILLARS
(DO-NR)01 (TL/NR)   (PO/REQ)   67-D-0534
(ADDRESSEE) RSIC 4484
(VEND) MAXWELL
(ITEM/NR)0560(EFF/DATE)01-67(EXPDT)12-67
15 JUL 66   *0001*   70.00*   70.00*

00420A ACADEMIE DES SCIENCES. COMPTES RENDUM HEBDOMADAIRES DES SEANCES.
PT. 2, SER C. SCIENCES CHIMIQUES
(PUBL) GAUTHIER-VILLARS
(DO-NR)01 (TL/NR)   (PO/REQ)   67-D-0534
(ADDRESSEE) RSIC 4484
(VEND) MAXWELL
(ITEM/NR)0561(EFF/DATE)01-67(EXPDT)12-67
15 JUL 66   *0001*   70.00*   70.00*

00430A ACADEMIE DES SCIENCES. COMPTES RENDUM HERDOMADAIRES DES SEANCES.
PT. 3, SER D, SCIENCES NATURELLES
(PUBL) GAUTHIER-VILLARS
(DO-NR)01 (TL/NR)   (PO/REQ)   67-D-0534
(ADDRESSEE) RSIC 4484
(VEND) MAXWELL
(ITEM/NR)0562(EFF/DATE)01-67(EXPDT)12-67
15 JUL 66   *0001*   70.00*   70.00*

00470A ACADEMIE POLONAISE DES SCIENCES. ALL CLASSES
CHIMIQUES
(PUBL) ACADEMIE POLONAISE DES SCIENCES.
(DO-NR)01 (TL/NR)   (PO/REQ)   67-D-0534
(ADDRESSEE) RSIC 4484
(VEND) MAXWELL
(ITEM/NR)1142(EFF/DATE)01-67(EXPOT)12-67
15 JUL 66   *0001*   14.75*   14.75*

00700A ACADEMIE ROYALE DE BELGIQUE. CLASSE DES SCIENCES. BULLETIN
(PUBL) ACADEMIE ROYALE DE BELGIQUE
(DO-NR)01 (TL/NR)   (PO/REQ)   67-D-0534
(ADDRESSEE) RSIC 4484
(VEND) MAXWELL
(ITEM/NR)0054(EFF/DATE)01-67(EXPDT)12-67
15 JUL 66   *0002*   7.50*   15.00*

Figure 108.   To Date On-Order List

Although provided in the programs, no error lists have actually resulted from this run since the On-Order Lists have been previously reviewed and corrected.

Figure 109. To Date On-Order Error List

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LIST OF DELETED ITEMS

CONTROL NO	TITLE	DATE ORDERED	EFF DATE	NUMBER SUBS
28160A	CURRENT PAPERS IN PHYSICS	6601*		0002
29535A	DEUTSCHE HYDROGRAPHISCHE ZEITSCHRIFT	6601*		0001
30630A	DYNA	6601*		0001
30655A	EARTH SCIENCE	6601*		0002
30775A	ECONOMIC GEOLOGY USSR	6601*		0001
31550A	ELECTRICAL CONSTRUCTION AND MAINTENANCE	6601*		0001
31625A	ELECTRICAL ENGINEER	6601*		0002
31865A	ELECTRICIEN	6601*		0001
32425A	ELECTRONIC INSTRUMENT DIGEST	6601*		0002
33000A	ELECTRONIQUE	6601*		0001
33025A	ELECTRONIQUE-PROFESSIONELLE BELGE (FRENCH EDITION)	6601*		0001
33080A	ELEKTRIZITAETSWIRTSCHAFT	6601*		0001
33150B	ELEKTRONISCHE DATENVERARBEITUNG	6601*		0001
33375A	ELEKTROTEKNIKEREN	6601*		0001
33380A	ELEKTROTEKNISK TIDSSKRIFT	6601*		0001
33740A	ENERGIE	6601*		0001
33745A	ENERGIETECHNIK	6601*		0001
33870A	ENGINEERING GEOLOGY	6601*		0002
34750A	ENVIRONMENTAL ENGINEERING	6601*		0001
34952A	EUCLIDES	6601*		0002
35025A	EUROPEAN ENGINEERING	6601*		0002
35080A	EUROPEAN TECHNICAL DIGESTS (ENGLISH EDITION)	6601*		0001
35090A	EUROTEC	6601*		0001
36150A	FEDERAL REGISTER (DAILY)	6601*		0001
36268A	FEDERATION NATIONALE DES INDUSTRIES ELECTRONIQUES, BULLETIN	6601*		0001
36510A	FILTRATION	6601*		0001
36925A	FORM, INTERNATIONALE REVUE	6601*		0001

Figure 110. To Date On-Order Delete List

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04 JUL 66   026   CPY 0002   CTL NR 3260

ELECTRONICS

ORGANIZATION	BUILDING	ROUTE TO			RECEIPT INFO
					INTL DATE
AMCPM-SES-MS	5250	PETERS		J.D.	[.....l.....]
AMCPM-HA	4488	HENDRIKS		J.G.	[.....l.....]
AMCPM-MAS	4488	HASKINS		J.R.	[.....l.....]
AMCPM-HAEA	4488	FOX		J.	[.....l.....]
AMSMI-XGC	4488	UBERT	2/L	H.J.	[.....l.....]
AMSMI-IEP	4500	JOHNSON		J.D.	[.....l.....]
AMSMI-IEP	4500	KIRSHTEIN		J.E.	[.....l.....]
AMSMI-IESE	4500	HEISLER		A.M.	[.....l.....]
R.S.I.C.	4484	PHONE...876-0347			

Figure 111.   Route Slip

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05950 ,COPY=0002...AMERICAN CERAMIC SOCIETY. JOURNAL

    R-P+VE-MNC   4712   SEITZINGER   V.F.   25 333163812   ....CHANGES.........

05950 ,COPY=0003...AMSMI-RKK
    R-RP-T   7120   MORGAN   D.A.   10 264600873
                  4481   GATES   D.W.   10 412149006
    AMSMI-RR   5429   STEVERDING   DR. B.   50 146322884

06000 ,COPY=0000...AMERICAN CHEMICAL SOCIETY. JOURNAL   ....CHANGES.........

                            RETAIN THIS COPY FOR LIBRARY SHELF USE

06000 ,COPY=0001...AMSMI-RRC
    AMSMI-RRC   5436   ROBERTSON   L.C.   20 411528542
    AMSMI-RRC   5436   MITCHELL   R.W.   40 416401721
    AMSMI-RKL   4762   WHARTON   DR. W.W.   60 541304882
    AMSMI-RKL   4762   MARTIGNONI   DR. P.   99 313207850

06000 ,COPY=0002...R-P+VE-MNP
    R-P+VE-MNP   4612   CURRY   J.E.   30 260325090
    R-P+VE-MNP   4612   BYRD   J.E.   40 428565166
    R-P+VE-MCC   4612   PERRY   C.L.   45 317308866

06000 ,COPY=0003...AMSMI-RFC
    AMSMI-IELC   4505   RICCA   1/L P.J.   05 082309355
                  4500   CLEM   R.B.   10 421469729
    R-P+VE-MNM   4612   HILL   W.E.   15 415507720
    AMSMI-RKI   7120   SAYLES   DR. D.C.   80 354124591
    AMSMI-RKC   7120   ODOM   DR. R.E.   85 417409682

06100 ,COPY=0000...AMERICAN CONCRETE INSTITUTE. JOURNAL   ....CHANGES.........

                            RETAIN THIS COPY FOR LIBRARY SHELF USE

06100 ,COPY=0001...R-P+VE-MNC
    R-TEST-BD   4612   SMOCK   A.W.   10 076058553
                  4666   MEDENICA   W.V.   99 080284528

06200 ,COPY=0000...AMERICAN DOCUMENTATION

Figure 112.   Review List Of All Route Slips

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THE FOLLOWING COPIES ARE AVAILABLE FOR ROUTING.

00020	0040002	A B S QUARTERLY CHECK-LIST OF GEOPHYSICS	AVAILABLE
00030	0040002	A B S QUARTERLY CHECK-LIST OF PHYSICS	AVAILABLE
00150	0040002	ABSTRACTS OF ARTICLES ON GEODESY AND RELATED FIELDS	AVAILABLE
00450	0120002	ACADEMIE POLONAISE DES SCIENCES. BULLETIN. SERIE DES SCIENCES	AVAILABLE
02500	0120002	ADVANCEMENT OF SCIENCE	AVAILABLE
02584	0000	ADVANCES IN OPTICAL AND ELECTRON MICROSCOPY (QH201 A244)	AVAILABLE
03450	0120002	AIR CONDITIONING, HEATING + VENTILATING	AVAILABLE
03547	0120002	AIR FORCE CAMBRIDGE RESEARCH LABORATORIES. RESEARCH BULLETIN	AVAILABLE
03750	0040002	AIR REDUCTION COMPANY WELDING NEWS	AVAILABLE
04985	0120002	ALCOA ALUMINUM NEWSLETTER	AVAILABLE
09600	0040002	ANALYZER	AVAILABLE

JOURNALS FOR THE FOLLOWING REQUESTS ARE UNAVAILABLE DUE TO NO RECORD OF SUBSCRIPTION.

255467931	NSSCOGGINS	JRR-AERO-Y	4200	8765645	03320	0130	NO PERIODICAL AVA
304208095	NSKAUFMANN	JRR-ASTRO-MD	4487	8761575	03320	0140	NO PERIODICAL AVA
105165705	ASWHEELAHAN	EJAMSMI-RSM	5400	8766628	10880	0105	NO PERIODICAL AVA
447347847	NUGAUSE	RLR-P+VE-ME	4612	8764589	10880	0120	NO PERIODICAL AVA
438346039	NSRIEHL	WAR-P+VE-MC	4612	8761730	10880	0130	NO PERIODICAL AVA
302032855	ASNIEBERLEIN	VAAMSMI-RRS	5411	8760268	10880	0140	NO PERIODICAL AVA
26644975	ASBENZEL	DR.JFAMSMI-RRS	5411	8760406	10880	0150	NO PERIODICAL AVA
416506746	ASWRIGHT	JR JWAMSMI-RKP	7120	8772301	10880	0155	NO PERIODICAL AVA
416401721	ASMITCHELL	RWAMSMI-RRC	5436	8772447	22850	0110	NO PERIODICAL AVA
413284656	ASMERRITT	DR.JAAMSMI-RRC	5436	8772449	22850	0115	NO PERIODICAL AVA
161326926	MSPITTMAN	JR. CUAMSMI-RKC	7120	8763322	22850	0120	NO PERIODICAL AVA
354124591	ATSAYLES	DR.DCAMSMI-RKI	7120	8764343	22850	0127	NO PERIODICAL AVA
494482649	MSVANLANDUYT	PVTD AMSMI-RK	7120	8762638	22850	0128	NO PERIODICAL AVA
313207850	ASMARTIGNONI	DR.P AMSMI-RKL	4762	8764356	22850	0130	NO PERIODICAL AVA
317308866	NSPERRY	CLR-P+VE-MCS	4612	8766622	22850	0150	NO PERIODICAL AVA
260325090	NSCURRY	JER-P+VE-MNP	4612	8762807	22850	0170	NO PERIODICAL AVA

Figure 113. Serials Condensed List

```
3 APR 67                    PERIODICAL ROUTING SYSTEM (GENERAL STATISTICS)                              PAGE

** PERIODICAL STATISTICS **

TOTAL TITLES = 02494 , TOTAL COPIES = 04181 , SHELF COPIES = 02454 , ROUTED COPIES = 01727

BY FREQUENCIES...01   02   03   04   05   06   07   08   09   10   11   12   24   26   52   365 UNKN

TOTAL TITLES = 0017  0061 0030 0629 0017 0430 0003 0018 0002 0010 0001 1081 0007 0083 0104      0001

TOTAL COPIES = 0023  0075 0043 0913 0028 0623 0004 0027 0003 0013 0001 1913 0014 0185 0316      0000

** PATRON STATISTICS **

TOTAL REQUESTS = 06261 , ARMY = 02926 , NASA = 03079 , CONT = 00095 , MLTY = 00156 , UNKWN =

BY FREQUENCIES...01   02   03   04   05   06   07   08   09   10   11   12   24   26   52   365 UNKN

TOTAL REQUESTS = 0002 0028 0028 0813 0010 0665 0002 0026 0001 0012      3160 0030 0478 1001

** PERIODICAL DATA ERRORS **                         ** PATRON DATA ERRORS **

PERIODICAL RECORD ERRORS = 0002                      PATRON RECORD ERRORS = 0005
INVALID CONTROL NUMBERS = 0000                       INVALID CONTROL NUMBERS = 0000
INVALID ROUTING FREQUENCY = 0001                     INVALID COPY NUMBERS = 0000
INVALID NUMBER OF COPIES = 0001                      INVALID PRIORITY NUMBERS = 0000
NO TITLE INDICATED = 0000                            NO PATRON NAME INDICATED = 0000
UNREQUESTED TITLES = 0139 = COPIES = 0163            INVALID ORGANIZATION CODE = 0000
                                                     INVALID BUILDING NUMBERS = 0005
```

Figure 114.   Serials Routing (General Statistics) And Error List (Sheet 1 of 2)

486

** ROUTING STATUS ERRORS **

** PERIODICALS **

** PATRONS **

EXCESS REQUESTED COPIES = 0030
NUMBER OF COPY SHORTAGES = 0004
SLIPS WITH OVER 9 ASSIGNED = 0000
SLIPS WITH OVER 15 ASSIGNED = 0000

REQUESTS FOR UNAVAILABLE TITLES = 0016
PATRONS ASSIGNED TO UNAVAILABLE COPIES = 0013
PATRONS ASSIGNED OVER 9 = 0000
PATRONS ASSIGNED OVER 15 = 0000

** THIS WEEKS FREQUENCIES = 052.

THE FOLLOWING JOURNAL RECORDS ARE IN ERROR, CORRECTIONS MUST BE MADE TO THE PERIODICAL MASTER FILE.

02584   0000 ADVANCES IN OPTICAL AND ELECTRON MICROSCOPY (QH201 A244)   INVALID ROUTE FREQUENCY
02584   0000 ADVANCES IN OPTICAL AND ELECTRON MICROSCOPY (QH201 A244)   NO COPIES INDICATED

THE FOLLOWING PATRON RECORDS ARE IN ERROR, CORRECTIONS MUST BE MADE TO THE RSIC PATRON MASTER FILE.

496148872 ATPAUTLER   ACAMCPM-NXR   8764826   12500   0850   INVALID BLDG NUMBER
496148872 ATPAUTLER   ACAMCPM-NXR   8764826   13670   0120   INVALID BLDG NUMBER
496148872 ATPAUTLER   ACAMCPM-NXR   8764826   20300   0235   INVALID BLDG NUMBER
496148872 ATPAUTLER   ACAMCPM-NXR   8764826   46450   0330   INVALID BLDG NUMBER
496148872 ATPAUTLER   ACAMCPM-NXR   8764826   56650   0140   INVALID BLDG NUMBER

Figure 114.   Serials Routing (General Statistics) And Error List (Sheet 2 of 2)

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WITH RESPECT TO OUR PURCHASE ORDER C5-0025Z   WE CLAIM THE MATERIAL INDICATED BELOW.

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Figure 115.   Claims Report

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SEE............ALLGEMEINE ELEKTRICITAETS GESELLSCHAFT. MITTEILUNGEN

AEG MITTEILUNGEN
SEE...........ALLGEMEINE ELEKTRICITAETS GESELLSCHAFT. MITTEILUNGEN

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AERO REVUE
    B   V. 35 (1960)   B   V. 37 (1962) - V. 39 (1964)

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AERONAUTICAL ENGINEERING   (INACTIVE)
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    FORMERLY.........AERONAUTICS (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)

AERONAUTICAL ENGINEERING REVIEW   (INACTIVE)
    B   V.   1 (1942) - V. 16 (1957)
    FORMERLY.........JOURNAL OF THE AERONAUTICAL SCIENCES. AERONAUTICAL REVIEW SECTION
    CONTINUED AS...AEROSPACE ENGINEERING

AERONAUTICAL JOURNAL   (INACTIVE)
    B   V.   1 (1897) - V. 26 (1922)

AERONAUTICAL JOURNAL
    CURRENTLY........ROYAL AERONAUTICAL SOCIETY. JOURNAL

AERONAUTICAL QUARTERLY
    B   V.   1 (1949) - V. 15 (1964)

AERONAUTICAL SOCIETY OF INDIA. JOURNAL
    B   V.   1 (1949) - V. 14 (1962)

AERONAUTICS
    B   V. 40 (1959) - V. 45 (1962)

AERONAUTICS (AMERICAN SOCIETY OF MECHANICAL ENGINEERS)   (INACTIVE)

Figure 116. Titles And Holdings Cross Reference List (Periodical Catalog)

Q1 – 02 Title
03 – 09 Ordering Control
10 – 29 Binding
1A – 1Z Claims
30-40-50-60 Holding And Lacks
70 – 79 Cross Reference Title

Transaction Cards

Conversion From Transaction Card to Magnetic Tape
1401

Serial Transactions File

Run 1. Sort To Control Number Sequence (6PAA01B2)
7010

Sorted Serial Transactions

List

RSIC Transaction Errors

Run 2. Edit Serial Transactions For File Maintenance (6PAA02B1)
7010

List — To Serials Librarian

RSIC New Holdings

Edited File Maint. Transactions

List Cancelled Error Changes

Print Type

Run 3. Serial File Maintenance Update (6PAA03B1)
7010

To Serials Librarian
Ordering And Receiving Unit
Chief Of Operations
Circulation Librarian
Cataloging Librarian
Chief Of Reader Service
Branch Libraries

List

Complete Serial Master File

Patron Routing Master (6PEA0250) A5

Run 13. Sort To Control Number, Copy Number And Priority Sequence
7010

Sorted Patron Routing Master (6PEA0550) B5

Routing Master (6PAA0350) A2

To Serial Librarian

5 x 8 Route Slip

Route Slip File A1

Run 14. Format Route Slip Assignments
7010

To Serial Librarian
Circulation Librarian

Review List Of All Route Slips

Reference File B1

To Serial Librarian
Circulation Librarian

Condensed List

Condensed File B3

Error And Statistical List

Sorted Error File A4

Run 15. Sort
7010

Error File A3

To
Serial Librarian
Circulation Librarian
Director Of RSIC
Chief Of Library
Documents Section

490

Renewal Update Transactions

Run 5. Conversion From Transaction Card To Magnetic Tape 1401

Renewal Update Transaction File

Run 6. Sort (6PAB02B2) 7010

Sorted Renewal Update Transactions

Renewal Items Master

Run 4. Renewal Review And Binding (6PAB01) 7010

Run 7. Renewal Item File Update (6PAB03B1) 7010

Binding Error List — To Serials Librarian
Binding Error File

Binding Review List — To Serials Librarian
Binding Review File

Renewal Error List — To Serials Librarian
Renewal Error File

Renew Review List — To Serials Librarian
Renewal Review File

Renewal Status Cards — To Serials Librarian
Renewal Status File

File Maintenance Changes Suspense Cards — To Serials Librarian
File Maint. Charges Suspense

File Maintenance Changes Now Cards — To Serials Librarian
File Maint. Changes New

Renewal Update Error List — To Serials Librarian
Renewal Update Error File

Cancellation List — To Serials Librarian
Cancellation File

Verification List — To Serials Librarian
Verification File

Serial Master File

Update Serial Master File

Update Claims Cards — To Serials Librarian
Updated Claims File

Run 16. Claims Extracts (6PAC01B1) 7010

Claims Master

Run 17. Sort (6PAC03B2) 7010

Claims Report — To Serials Librarian
Claims File

Run 18. Claims Extracts Report Generator (6PAC03B1) 7010

Sorted Claims Master

Error List — To Serials Librarian
Error File

Run 19. Titles And Holding Cross Reference Extracts (6B226) 7010

Extracts File

Run 20. Sort 7010

Title And Holding Cross Reference List — To Serials Librarian
T-H-CR File
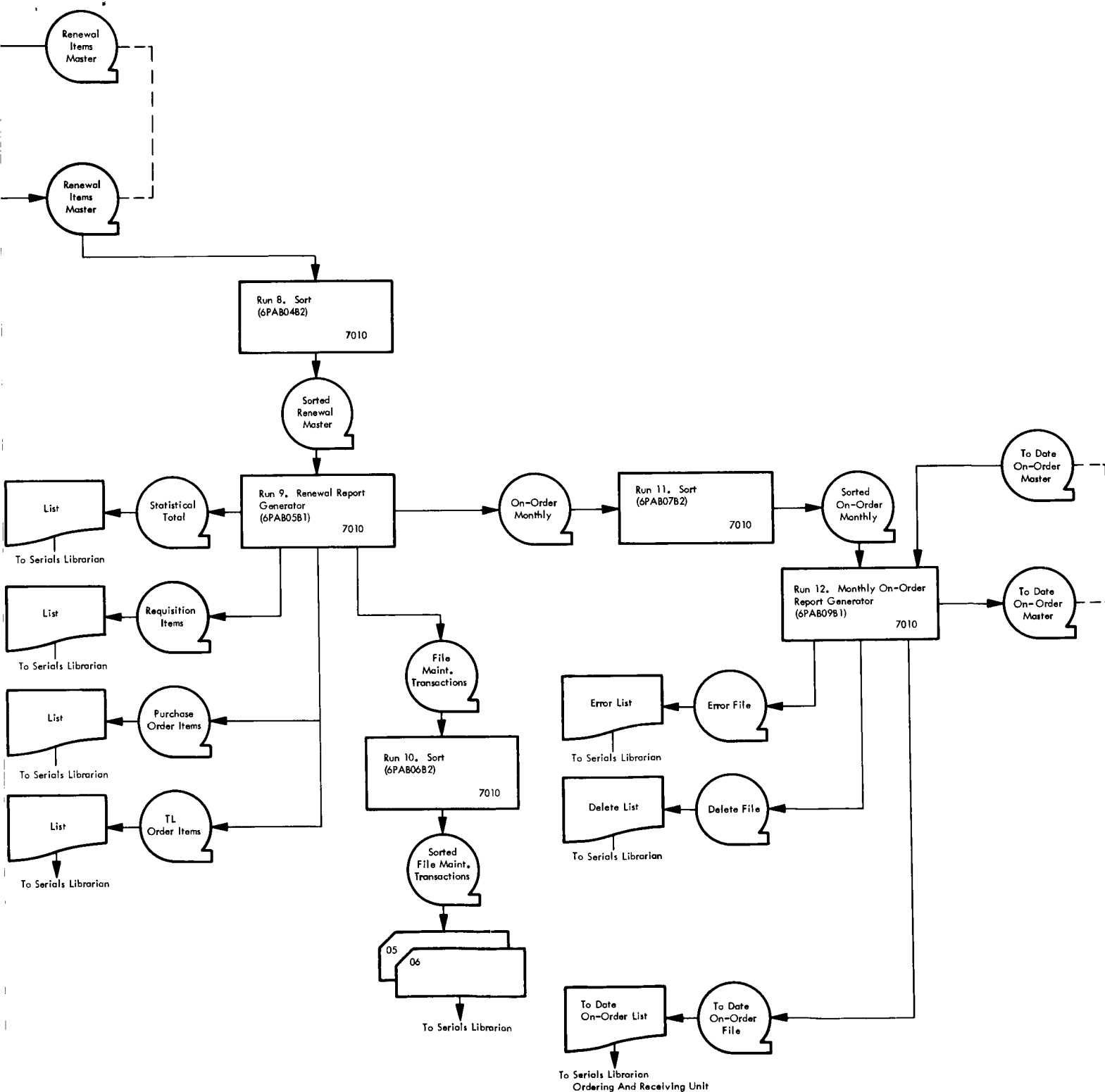
Run 21. Title And Holding Cross Reference Report Generator (6B227) 7010

Sorted T-H-CR

Figure 117. Computer Run Relation Flow Chart

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

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	2b. GROUP N/A

3. REPORT TITLE

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4. DESCRIPTIVE NOTES *(Type of report and inclusive dates)*

N/A

5. AUTHOR(S) *(First name, middle initial, last name)*

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13. ABSTRACT

This report presents a summary of the development and the characteristics of the first generation of the Automated Literature Processing, Handling and Analysis (ALPHA-1) System currently being used by the Library Branch of the Redstone Scientific Information Center (RSIC), an element of the Directorate of Research and Development, U. S. Army Missile Command, jointly sponsored by the Army Missile Command and Marshall Space Flight Center, Huntsville, Alabama.

Descriptions of the computer technology of ALPHA-1 and of the use of this automated library technique in RSIC are both presented.

Each of the subsystems and modules now in operation are covered. While the discussion of various subsystems and their modules is not meant to be exhaustive, it provides a background for the reader who may be interested in adapting a part of or all of the ALPHA-1 System to another computer configuration or in another library environment.

DD FORM 1473 REPLACES DD FORM 1473, 1 JAN 64, WHICH IS OBSOLETE FOR ARMY USE.

14. KEY WORDS	LINK A		LINK B		LINK C	
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