

AUTOMATION OF BOOKS IN FRENCH
LIST PREPARATION AND BOOK PROCESSING
AT AFRICAN REGIONAL SERVICES
EMBASSY OF THE UNITED STATES OF AMERICA
PARIS, FRANCE

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Contract No: ARS-236-0046

October 1988

INTRODUCTION

At the request of the U.S. Information Service African Resources Center (ARS) Paris a study was undertaken to determine if automation could be used to improve the effectiveness of ARS's production of its Books in French (BIF) list and book ordering procedures.¹

ARS acts as a service center for Posts needing French Language Materials (books, documents, etc.) for their libraries, for information centers, for presentation, or for internal use. The Books in French list is published quarterly and announces to the 25 Posts ARS serves materials that may be appropriate for them. The bibliographic citations and annotations of the citations that appear on the list are prepared by ARS staff and about 50 citations appear on a single list.

Once the BIF list has been distributed, Posts are free to make selections from it. They forward their selections to ARS by cable indicating the list number, item number, and quantity of the title they wish to order. ARS collates orders from all Posts and places consolidated orders with its book jobbers. The second part of this study of ARS's operation was to analyze the book ordering procedure.

This report begins by describing the current methods used to produce the BIF List and to place orders. Then it discusses the problems with the current system and suggests alternative software and hardware solutions.

¹The author wishes to acknowledge the assistance of Germaine Raux in providing the author with the background information necessary to understand the system and for her suggestions about how to redesign it. I am also appreciative of the information provided my by the following ARS staff: John Archibald, John Holbert, Daniel Schuman, Francois Balladur, and Anne Marie D'Athis.

Volume of Transactions Processed at ARS

During Fiscal Year 1987 ARS received orders for 210 titles from its BIF List and 400 titles that were not on the current BIF List. In all, 3010 volumes were ordered at a total purchase price of \$36,904. In Fiscal Year 1988 the volume of transactions jumped to 205 titles ordered from the BIF List and 800 titles ordered that were not on it. The number of volumes ordered in FY1988 was 4559 and the purchase price was \$59,592.

DESCRIPTION OF PRESENT SYSTEM

Hardware

ARS, like the rest of USIS, uses Wang computer systems for its word processing activities. At Paris, ARS uses a Wang OIS system with workstations in many ARS staff offices. ARS uses the Wang List Processing feature to perform the database management functions it requires (add, edit, delete, select, print, and display records). The Wang system is overloaded and when any significant List Processing operation or telecommunications operations (in conjunction with List Processing) take place, the system response time degrades considerably and/or Wang system errors occur.

Preparation of BIF List

The preparation of the BIF List is performed by the Bibliographic Services Division of ARS. Titles are selected for inclusion in the list and then bibliographic information about the titles is entered into a Wang List Processing file. That file has the following fields:²

1. The number of the BIF List on which the title appears
2. A sequential number assigned to each item on the BIF List
3. A 'Category' assigned to each item and used as a basis for classifying the item on the BIF list (Biography, Film, Reference, etc.)
4. Author
5. French Language Title of item
6. English Language Title of item
7. French Publisher of item
8. American Publisher of item
9. Year of publication in France

²Some fields that are not currently used have been omitted from this list. The order of the fields in this list does not correspond to the order in which they are entered into the file.

10. Year of Publication in the U.S.
11. Jobber in France supplying the item to ARS
12. Number of pages in item
13. Indicator of whether the item is paperback or hardback
14. Type of binding
15. Name of collection in which title is found
16. Price in French Francs
17. Price in US Dollars
18. Subject Headings (2 maximum)
19. Annotation (10 lines * 60 characters per line)
20. An indicator of whether the item is a reference work (used for printing catalog cards)
21. The First three letters of the Author's last name (used for printing catalog cards)
22. Call number (used for printing catalog cards)
23. Number of copies of book ordered by all posts (manually recorded)

Data is entered into this file to produce the BIF Lists. When approximately 50 titles have been entered, the file is formatted using a Wang Define Form style sheet to produce the printed version of the BIF List. See Appendix A for sample pages from one BIF List. The formatting involves sorting the list so that the bibliographic records are arranged by the 'Category' under which they have been described in the record (field number 3 above) such as Biography, Film, Reference). This list is then sent to the Posts and serves as a basis for ordering.

Not all the data in the BIF record is added to a file during the first data entry phase. The task is divided between entering data necessary to produce the BIF List and entering data used to produce catalog cards. The data entry process is relatively primitive compared to current standards. Certain fields must be left justified, and others must be right justified, within the field in order for the output to print correctly. Also, the area of ten lines reserved for the annotation must be

formatted exactly as it will appear in the BIF list. (Each line will be printed as it is typed, not as spacing or line justification would allow).

Financial Procedures

Orders from the Posts arrive at ARS by cable with a copy sent to M/CBR in Washington. The cable that ARS receives indicates the number of copies of a book on a particular BIF list that the Post wants to order along with the account to be charged for the purchase. ARS accumulates the order information it receives from all Posts and then places an order with a French book jobber for the number of copies required.

When M/CBR receives a copy of the order cable from a Post, it determines whether there are sufficient funds in the Post's RMS account for the purchase. If there are sufficient funds, it informs ARS that the items can be purchased for the Post.

Ordering Procedure

After a BIF List is printed and distributed to the Posts, ARS waits while cable orders from the Post arrive in Paris. After a lapse of time, a computer file containing the bibliographic records of the items to be ordered from one vendor is produced.

The new file of records to be ordered from a vendor has blank spaces in it to hold the number of items to be ordered and the total price for all copies of the title. The number of copies are then manually entered into this new file and multiplied by the unit price (which was entered into the file when it was created - field number 16) to create a total price for the title. The process is repeated until totals for all items have been computed. Then the file is printed. The printed listing is attached to a Purchase Order which is prepared by the Paris Embassy Budget and Fiscal Office. The purchase order and list of bibliographic records is sent to the jobber for fulfillment. A sample Purchase Order is shown in Appendix B and sample list of items attached to the Purchase Order is given in Appendix C. A manual summary is maintained of the number of copies of each title ordered for each post and a copy of that summary is shown in Appendix D along with a computer generated key which is used to decode the title numbers on the spreadsheet.

The Purchase Order that the Budget and Fiscal Office prepare always shows that funds to be used to pay for Post orders will come from ARS's account number 2210. At the beginning of the fiscal year, USIA Washington allocates ARS a certain amount of money in ARS's 2210 account. ARS then purchases materials from its 2210 account and Washington deducts the money from the Post account and adds it to ARS's 2210 account.

The effect of these transactions is that ARS does not need to keep any financial information related to ordering except the balance in its 2210 account. All other financial information is recorded by either by the Paris Embassy Budget and Fiscal Office or M/CBR in Washington. This means that ARS's ordering procedure is considerably more simplified than most library acquisitions departments because it does not need to keep any funding information about specific items ordered for specific Posts.

One consequence of this procedure is that if a Post orders something and does not receive it because the item is out of stock, the Post's money is not returned. On the other hand, if the item costs more than its price on the BIF List, the Post is not charged for the excess.

Vendors ship completed orders to ARS's warehouse in Aubervillers (a suburb of Paris). In Aubervillers the items are accumulated to be sent to the Posts. Each ordered item is forwarded to the Post with catalog cards, a spine label, a book pocket and a checkout card. Appendix E contains an example of catalog cards, and Appendix F an example of a spine label, a book pocket, and a checkout card produced by the system.

A shipment to the Post includes an invoice which indicates the quantity of each item that is being sent in that shipment. (See Appendix G).

ARS produces its own catalog cards, spine labels, book pockets, and check-out cards. The catalog cards are produced using the BIF file of data and a Wang Design Form called 'Catalog'. The current system creates some severe problems in catalog card production. Because of a limitation on the length of a Wang Form, (86 lines) only five catalog cards can be produced. In some instances Posts need more than five cards and ARS staff must manually edit the Wang Word Processing document containing the card images to add an additional card to the output file. This is extremely laborious.

There are other problems with card production. First, the Wang printer that is used to produce the cards is not designed for the task and frequently breaks down. Second, each card set for each book is individually printed. The person in charge of the ordering process tells the person in charge of card printing how many cards to print for a single title, and the printing is repeated until the required number is printed for all copies of the title.

Spine labels, book pockets, and checkout cards are also printed in a rather cumbersome manner. For each title, a stencil (remember them?) is typed with the bibliographic data on it. There are as many stencils as there are titles to process. The stencils are then loaded onto a duplicating machine and the labels, pockets, and checkout cards are printed in sufficient number for the number of titles ordered.

PROBLEMS WITH PRESENT SYSTEM

There are numerous problems with the current procedures:

1. The Wang hardware and software is nearing capacity. ARS is using the Wang OIS List Processing feature to store the BIF bibliographic records and the system has reached its capacity level. There are a number of indicators of this problem:
 - a. The physical size of the BIF file is so large that the Wang system cannot hold it.
 - b. When the List Processing 'selection' function is performed on the BIF file, system response time slows down considerably.
 - c. It is not possible to add any more printers or workstations to the present system due to hardware limitations.
 - d. Dual column printing is no longer done on the system because it severely degrades system performance. This feature was previously used for printing catalog cards.
 - e. When the system is used for telecommunications purposes, such as to receive the 'Wireless' file from Washington, and the BIF file is also being used, OIS fatal errors occur.
2. Production of the BIF list itself requires manual intervention to make it a published product. The BIF file has to be converted from a List Processing to a Word Processing document and then manually edited to produce final copy. Author, title, and subject indexes are manually added to the BIF list.
3. When bibliographic data is entered into the Wang List Processing file of BIF data, all accented characters must be typed as special symbols. When the file is printed, a Wang Glossary is attached to translate the special symbols into the appropriate accents in French.
4. The book ordering procedure works, but it is almost entirely a manual process. While lists of titles ordered from a vendor are produced from the BIF file, and shipping lists are also produced, the rest of the process is essentially manual. The result is that there is little control in tracking orders and developing management statistics.

5. The procedure for printing catalog cards takes considerable manual effort and machine resources. One person spends a large amount of time insuring that the catalog cards are produced correctly. Sometimes text editing of the files is necessary to produce the correct number of catalog cards per title.
6. The procedure involving stencils for printing spine labels, book pockets, and checkout cards is cumbersome.

OPTIONS FOR A NEW SYSTEM

There are several options available to ARS to solve problems with the current system. These options range from small refinements in the manual procedures to hardware and software changes.

A Simple Expedient

Currently the production of catalog cards, spine labels, book pockets, and checkout cards is a time consuming process. One way to reduce ARS's effort is to have a contractor reproduce the items. The existing procedures would be modified to produce only one copy of all items for each title. Master copies of the cards, labels, pockets and checkout cards would be sent to the contractor to reproduce in the correct quantity. ARS staff would then process the books with contractor supplied materials or another contractor could do that as well.

Automation of the BIF List Production System

There is really only one feasible path to follow to solve the problem of an overloaded Wang List Processing system. It has two parts and each requires the procurement of new hardware and developing new software:

- (1) automation of the BIF List production system and
- (2) automation of the ordering process.

The current procedure for producing a BIF list is to enter the bibliographic data into a Wang List Processing document. The file of bibliographic data becomes the basis for producing the BIF List and for the ordering process.

IBM Personal Computer to Store BIF File

The most reasonable alternative for dealing with the capacity problems of the Wang, the difficulties in preparing cataloging data, and the problems of printing spine labels, book pockets, and checkout cards is to move the entire file of BIF data onto its own computer.

This option would require ARS to purchase an IBM Personal Computer. The system would also need to have a laser printer attached to it to print reports, cards, and labels quietly and quickly. The Hewlett Packard LaserJet Series II printer is recommended.

To exercise this option, ARS should contract for the development of software to allow the BIF bibliographic records to be managed in the IBM Personal Computer. The simplest way for a contractor to develop this software would be to use a commercially available database management system such as DBASE III+ (or DBASE IV if it is available) as a basis. By specifying the use of DBASE, ARS would reduce the cost of program development. Once the programs were developed, it is highly likely that ARS staff could maintain them if they were written in DBASE.

Design of BIF List Software

Programs would need to be written to perform a number of basic tasks to replace the Wang system in managing the BIF bibliographic data:

1. Allow new records to be added to the file of BIF records.
2. Allow existing records to be deleted from the file of BIF records.
3. Edit records in the file (i.e. allow any piece of information in any field in a BIF record to be changed).
4. Locate a specific record in the file by searching by the name of the author, title, or other search key.
5. Browse through the file. Be able to type part of an author's name or book title and see those BIF records that closely matched, but not exactly matched, the record being sought.
6. Print records in the file on the laser printer.

There are certain types of output that the system would need to produce from the BIF file:

1. Produce the BIF list itself. The user would give the system a command and it would select records to be used to produce the BIF list. (Give it a BIF list number). The system would then format the records in the BIF List 'style', number the pages of the list, produce indexes to the records, and store the result in a disk file ready for printing on the laser printer.
2. Produce catalog cards. The user would issue a command to have a set of catalog cards printed on the laser printer. One set of cards could be produced for each title on a particular BIF List, or the user could select a BIF record for which cards are to be produced. An option could allow the user to print a certain quantity of catalog cards for each title in a list of titles.
3. Produce spine labels, labels for book pockets, and labels for check-out cards. This would work similarly to production of catalog cards. One difference between this method and the current method is that the bibliographic data would be printed on a label rather than directly on a pocket or card. The label would then be affixed to the pocket and card. Labels can be obtained that are permanently adhesive and cannot be peeled off.
4. Produce lists of bibliographic records. There is always a need for specialized lists of bibliographic records. The system would have the ability to print a BIF record in a number of formats, and a number of records could be selected for printing at the same time to form one consolidated list.
5. Produce a list of subject headings assigned to BIF records. This would be useful for authority control purposes.
6. Produce a list of author names assigned to BIF records.
7. Produce a list of titles in the BIF file.

IBM Personal Computer to Manage Ordering Process

The second part of the ARS system is ordering. One option for the redesign of the system is to move the production of the BIF List to an IBM Personal Computer, and leave the ordering process the way it is. This option will not work because the ordering process is not strictly manual. It uses the BIF file and extracts certain reports from the BIF file for ordering. Thus if ARS is going to move the BIF List preparation from the Wang to an IBM PC, the automated procedures for ordering will have to be revised as well.

There are two options available for revising the automated ordering procedures. One is for ARS to contract to have the existing Wang automated procedures rewritten to run on an IBM PC. The other is to revise the procedures and purchase a new system or contract to have a new system written.

Option 1: Contract to Have Existing System Rewritten

There may be some benefit to simply having the existing system rewritten but there are also some negative aspects. The existing procedures work satisfactorily and there is nothing wrong with them. With small extra effort they could be changed to provide additional functionality. On the other hand, the existing procedures lack several functions normally found in commercially available automated book ordering systems. These functions include computer assistance in cancellation of existing orders, computer aided claiming of orders that have been placed with a jobber but have not arrived, management statistics, and financial control over the book ordering process.

In discussions with ARS staff, it is my conclusion that some of the normal functions performed by an acquisitions system may not currently be needed by ARS. For example, it appears that ARS never cancels orders. However, the present lack of use of a function should not preclude considering it for inclusion in a new system.

Design for a Simplified Ordering System

It is possible for ARS to contract for the design and implementation of an acquisitions system specifically tailored to its needs. Such a system could be designed so that it could be expanded as time and money become available. A minimal system would also be advantageous as a holding action. ARS could invest a modest amount of money today to improve its ordering procedures. Then, it could continue to watch for a commercial system that would meet its needs or expand the minimal system if it finds that there is no viable commercial alternative.

A 'minimal' ordering system might perform the following functions (and no more):

1. Allow an order to be entered into the system indicating the number of copies of a BIF title that a particular Post wants to order. The system would record the date the order was entered.
2. Allow order records to be edited until such time as they were issued as a firm order to a jobber. Once they had been sent out as orders, they would not be able to be changed. Manual procedures would be developed to allow changes to orders to be made once they had been sent to the jobber.
3. Allow an order to be generated to a particular jobber. The order would list the titles that are to be ordered, the quantity of each title to be supplied, and the total cost of the purchase order.
4. Allow the full receipt of an order to be recorded in the system. This would be done by indicating the date the order was received. No partial receipts of orders would be allowed. Manual procedures would be developed to deal with partial receipt of orders.
5. Allow a status code to be entered against an order indicating whether the item was out of print, etc.
6. Produce selected management reports on the quantity of books ordered by Posts and quantity of books ordered from jobbers.
7. Produce a shipping list to be sent with the order to the Posts indicating which items are being sent, and which are not.
8. All cancellation of orders, claiming of missing orders, partial receipt of orders, and accounting would be performed manually.

Option 2: Commercial Acquisition System

There are a number of acquisitions system on the market. A summary of vendors supplying them is included in Appendix G.

In a study performed for E/CL to automate E/CP acquisitions activities, it was determined that the INNOVACQ acquisitions system was the best for E/CP's purpose. Unfortunately, INNOVACQ is not available for sale in France at this time because the vendor has indicated that they cannot provide the level of support in France they feel is appropriate for the product. They have indicated that they may be willing to sell the system in France one year from now. There is one other problem with the INNOVACQ system, and that is that it does not support diacritics. This is a serious problem for ARS.

Another option available to ARS is the DATATREK system. In 1986 E/CL performed a competitive procurement in which it selected the DATATREK book ordering ('acquisitions') system as the one to be used in USIS Posts wishing to automate.

The DATATREK system is relatively inexpensive under the E/CL contract (about \$1600), but it lacks a number of features that ARS needs, and it has many others that ARS does not need. The main problem with the system for ARS is that it does not store many of the fields of the bibliographic record that ARS wants. ARS could use the DATATREK 'catalog' module to store many of the fields it requires, and use the records in the DATATREK catalog module as a basis for the acquisitions process. The problem with this approach is that there are still fields that ARS cannot store in the DATATREK catalog module; so even if some data can be stored in the catalog and the catalog records can be linked to the acquisitions records, the system will not work satisfactorily.

One possible solution is to purchase the DATATREK acquisitions module and maintain a separate DBASE file of data which is linked to the DATATREK acquisitions records. This would allow ARS to keep the specialized data that it needs, as well as allow the DATATREK system to manage the acquisitions processing. This link, however, is not simple to maintain, and it would be necessary to contract with DATATREK to do the programming to support it. The link must be maintained so that if one record in one file is in some way modified, the record in the other file is correspondingly modified. In summary, the DATATREK link is a possible solution, but not ideal.

Hardware Configuration

The proposed hardware solution to ARS's BIF List management and book ordering needs is to acquire a single IBM PC for production of the BIF List and use the same machine for management of the book ordering process. This solution requires coordination between the three individuals currently doing the BIF List preparation and the ordering. Given the volume of transactions that ARS processes; the number of bibliographic citations that have to be entered into the Personal Computer; and even the number of catalog cards, spine labels, book pocket labels, and checkout card labels that have to be produced; this is not a severe load on the machine. If ARS feels that it is not possible to have all processing done on one machine, two machines could be purchased, but the programming and manual procedures to support such a configuration would be more complicated.

ARS should contract for the development of software necessary to run its two applications on the machine. The proposed applications are not large but in order to be able to perform the tasks with ease and with computing capacity for expansion, an IBM PS/2 Model 80 is recommended. The suggested configuration for the machine is as follows:

IBM Part Number	Description	List Price
8580111	IBM PS/2 Model 80 (20 MHz speed) with 2 MB Main Memory, 115 MB Hard Disk, 1.44 MB 3.5" disk drive.	\$10,995
4869001	External 360KB 5.25" Diskette Drive.	245
6450245	Adapter card for External Diskette Drive.	60
8512001	IBM Color Display 8512595	
1501215	IBM Tilt and Swivel Stand for Color Display	35

The following non-IBM items should be acquired:

Description	Estimated List Price
One Hewlett Packard LaserJet Series II Printer	2500
Cable to connect HP Printer to IBM PS/	250
One copy of DOS 3.3 Operating System	120
One copy of DBASE III+ Database Management Software System	700

There is a small possibility that the HP LaserJet printer cannot print catalog cards. If this turns out to be the case, an additional printer at an estimated price of \$2000 would need to be purchased.

To make the machines more versatile, ARS should acquire the following pieces of software:

Description	Estimated List Price
One copy of WordPerfect 5.0 word processing system	500
One copy of Lotus 1-2-3 Spreadsheet program	600

The total hardware and software cost above is \$16,320. This total is a list price and ARS can expect at least a 30 percent discount by ordering from the GSA Schedule. That would make the price about \$11,500. In addition, ARS would have to contract for the development of the software to perform the BIF List management and ordering. This would be an additional cost.

SUMMARY AND CONCLUSIONS

The computer system that ARS currently uses to produce its BIF list and manage its ordering is overloaded and lacks many of the functions ARS needs. No automated system is available now to perform all the tasks nor store all the data that ARS needs. The best solution is for ARS to extract itself from its current Wang system, move to an IBM Personal Computer, and contract to have software written using Dbase III+ or Dbase IV to perform functions similar that were done on the Wang. The result will be a system that operates much more smoothly and places less of a burden on the staff. With the reduced burden, staff should be able to manually perform many of the control functions that ARS correctly assumes are missing from the present operation.

After the new system is installed, ARS will have at least a couple of years to evaluate its performance before deciding either to expand it or purchase a turnkey system that does more.

APPENDICES

Appendix A

Sample Pages from a BIF List

Appendix B

Sample Purchase Order

Appendix C

Item list attached to Purchase Order

Appendix D

Sample Order Summary Report

Appendix E

Catalog Cards produced by System

Appendix F

Sample Spine Label, Book Pocket, and Checkout Card

Appendix G

Sample Shipping List

Appendix H

Vendors Supplying Acquisitions Systems

1. OCLC ACQ350 Acquisitions System.

Sandra Ebersold
Marketing Representative
OCLC Local Systems
6565 Frantz Road
Dublin, Ohio 43017
(614) 746-6000

The system cannot handle multiple ship-to addresses. It may be possible to have OCLC modify the system for USIA use, but on the face of it, the system appears awkward to use.

2. Data Research ATLAS System

Data Research Associates, Inc
1276 North Wilson Rd.
P.O. Box 8495
St. Louis, MO 63132
(314) 432-1100
(800) 325-0888

The acquisitions system is part of an integrated package. It runs on a Digital Equipment VAX machine. A superficial analysis of it showed the acquisitions module to be difficult to use.

3. NOTIS System.

Notis Systems, Inc.
1007 Church St. 2nd Floor
Evanston, IL 60201
(312) 866-0150

The NOTIS system is a large scale bibliographic system, and it is doubtful that we could purchase the acquisitions module as a separate piece. It runs on an IBM mainframe.

4. VTLS

Virginia Tech Library Systems
1800 Kraft Drive
Blacksburg, VA 24060
(703) 953-3605

This is a PC-based system that has an acquisitions module. When E/CL evaluated PC acquisitions previously, VTLS did not have an operational system.

5. The Assistant

Library Automation Products
875 Avenue of the Americas
New York, NY 10001
(212) 967-7440

This system is PC based. It was evaluated during the USIS E/CL procurement and was judged not competitive. There is no reason to believe it is any different now.

6. GEAC

GEAC Computers, Inc.
515 North Washington Street, 2nd Floor
Alexandria, VA 22314
(703) 836-0225

This is an integrated system. They said that the price of the system for just the acquisitions module would be too high. They were unable to demonstrate the multiple ship-to feature of the system, although they claimed they had it. They suggested that the system to select was INNOVAC.

7. DYNIX

Dynix, Inc.
151 East 1700 South
Provo, Utah 84601
(801) 375-2770

They provide an integrated system that will run on a VAX, IBM mini or mainframe, or their own hardware. They can handle multiple ship-to addresses by using a different order template in which each template has a different shipping address in it in the comment field. This is not an ideal solution, but could work.

8. INNOVAC

Jerald M. Kline
Innovative Interfaces, Inc.
2344 Sixth Street
Berkeley, CA 94710
(415) 644-3600

INNOVAC has the best reputation and the most features of any acquisitions system in the field. It has been operating the longest and has the best interface. It runs on the vendor's own hardware and is sold as a package. Kline informed me that the Internal Revenue Service currently performs 'drop shipments' where central ordering takes place and the materials are distributed to libraries around the country.

Some of the major providers of bibliographic services such as UTLAS and WLN have an acquisitions system as part of their integrated package, but it is doubtful if they can be used separately, and are likely to be very expensive. I have no information on CLSI, but believe they have an acquisitions system.