

Evaluation of Personal Computer-Based Acquisitions Systems

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INTRODUCTION

The United States Information Agency (USIA) plans to acquire Personal Computer-based library acquisitions systems and install these software packages in their libraries throughout the world. The purpose of this report is to summarize a technical evaluation that was conducted of four acquisitions systems: The Assistant from Library Automation Products, Inc.; Card Datalog Library Automation System from Data Trek, Inc.; Ocelot Library System from Aball Software, Inc.; and Sydney from Sydney Development Corporation. The four systems were selected for comprehensive evaluation based on responses to a Request for Proposal issued by the USIA on December 5, 1986.

This report is organized as a summary report and several technical appendices. The report summarizes the evaluation of the four systems and discusses the strengths and weaknesses of each system. Appendix A contains sample menus, data entry screens, and reports produced by each system. Appendix B consists of detailed evaluative notes about each system, and Appendix C contains scripts used for comparative evaluation of each system's operation.

Throughout this evaluation the features of the systems are illustrated with sample screens and reports from each system. The data used in these sample sessions is almost completely fictitious. For example, the names and addresses of vendors, patrons, libraries, billing addresses, shipping addresses, etc. are fabricated to test each system's ability to store a variety of forms of information. In no case should the reader consider the sample data factual. It is simply illustrative.

The evaluative notes presented in Appendix B are not balanced. The reader may find considerably more negative than positive comments in this section. The purpose of including the technical comments as part of the evaluation report is to point out items that would not ordinarily come to light. A balanced evaluation will be found in this summary.

Appendix C contains scripts used for comparative evaluation of each system. These scripts were prepared to illustrate the procedures used to install the systems on a personal computer, and to demonstrate to the project monitor the features of each system in a controlled and comparative manner. The scripts are relatively cryptic and cannot be truly understood without using them as 'scripts', i.e. while sitting at a personal computer and using the acquisitions software packages. When this procedure is followed, they become very useful.

This report is organized according to the issues raised in the Request For Proposal. In the RFP, there were fifteen points of evaluation. The report discusses each point and evaluates the systems within this framework. According to the RFP, the Agency requires a monographs acquisitions system software package that will:

1. Run on IBM-PC-XT microcomputers and, if possible, IBM-compatible Wang PC's.

2. Simplify and speed routine library acquisitions processing in an easy-to-comprehend manner that increases the productivity of Agency library staff.
3. Retrieve records and data from files on as many key fields as necessary and through use of Boolean operators.
4. Produce standard reports such as books on order, status of orders by vendor, status of accounts and sub-accounts, and also produce special reports as requested.
5. Provide flexibility in the number, length, and characteristics of data fields.
6. Print orders formatted to fit the Agency's standard form and/or other forms specified by the operator.
7. Maintain comprehensive accounting records, with separate accounts for branch libraries and multiple sub-accounts for each, including funds allocated, funds encumbered, and funds expended.
8. Provide on-line order processing to major book jobbers, bookstores, and publishers equipped to handle this method.
9. Allow on-line retrieval and manipulation of MARC-format bibliographic records.
10. Be able to maintain files of information which include approximately 33 data fields as specified in the RFP.

The RFP specifies several other criteria to be evaluated:

11. The stability and experience of the bidder.
12. Other users' experience with the system.
13. The ease with which the software can be installed at a site.
14. The quality of the documentation.
15. The quality of support offered by the bidder.

This report is based on a comprehensive evaluation of each software package. The evaluation involved detailed study and analysis of the documentation, installation of the systems on an IBM Personal Computer, and testing of the operation of the systems by loading data into the various files, analyzing user interaction patterns, and producing reports from the system. The evaluation of points 11, 12, and 15 above was not part of this contract.

The evaluation conducted was as objective as possible. Nevertheless, evaluation itself is a

subjective process. Given this situation, the comments and evaluation presented here are the opinions of the author and **NOT** those of the United States Information Agency.

IBM PC-XT Compatibility

All four of the systems evaluated run on IBM PC-XT computers. They all require hard disks on which to store their programs and data files. The systems consume from one to two megabytes of disk storage excluding data files.

The documentation supplied by Ocelot indicates that nonstandard versions of the system can be supplied to run on Wang microcomputers that use the MS-DOS system. One USIS post uses the Data Trek system on a Wang PC. No information was available as to the compatibility of The Assistant or Sydney with Wang equipment.

Both The Assistant and Data Trek produce printed reports that are wider than 8 inches. There is provision in Data Trek to use a printer that can only accommodate 8 inch wide paper to print reports that are 14 inches wide but in order to do this the printer must have a 'compressed print' feature. No such feature is available in The Assistant.

The Assistant is the only system which is very specific about its printer requirements. There are four printers that can be used with it. All the other systems make no special demands on the types of printers needed to run the software, except as noted above.

Simplify and Speed Acquisitions Processing

The most important criterion to use in evaluating the acquisitions packages is whether they simplify and speed the process of acquiring library materials. This section compares the four systems using this criterion.

The Ocelot System

The four systems are vastly different in their capabilities and in the way functions are performed. By far the worst of the systems is Ocelot, and it cannot simplify the acquisitions process. Ocelot has no 'shell'. A shell is a program that manages the tasks to be performed. To perform an operation with Ocelot, it is necessary to type the name of the module to be executed while at the DOS prompt.

The lack of a shell is particularly awkward in the ordering process. To place an order with Ocelot, it is necessary to type PURCHASE at the DOS prompt. The next step is to fill in the order screen and supply information to encumber funds for the order. These tasks are hard to complete because the screens are unaesthetic to view, are almost incomprehensible in the brevity of their prompts, and offer little guidance when a mistake is made or an invalid value is entered.

After an order is placed, the PURCHASE module returns to the DOS prompt. There are two more steps to complete the printing of a purchase order, and each one requires that a program be executed from the DOS prompt. Each module is separate, and to print a purchase order, the user must remember the P.O. number from the previous module and supply it to the next.

This discussion of Ocelot is indicative of its problems. Following sections of the report will enumerate more Ocelot problems. Suffice it to say that Ocelot does not simplify or speed acquisitions processing.

The Assistant

The Assistant has a number of excellent characteristics that make it a viable candidate as an acquisitions system. It has the best screen design, and its approach to retrieving materials from its files is intuitive and pleasant to use. The Assistant makes extensive use of windows. If a piece of information is needed to complete an order, the system opens a window and lets you search the appropriate file to find it. As far as human factors are concerned, The Assistant is very good.

Unfortunately, the accounting module is so complex that it detracts from the quality of the entire system. If one were to speculate about the origins of The Assistant, it would seem very likely

that the system began as a General Ledger accounting system. Then the vendor realized that a significant portion of library acquisitions involves accounting and decided to add acquisitions to it. When the accounting procedures supplied with the Assistant are compared to Data Trek, it is apparent that there is a large structure present in the Assistant that gets in the way of library acquisitions accounting. There are many examples of this. The Assistant has provision for preparing 1099 forms, balance sheets, and income statements. These are not relevant or useful to USIS.

The system has a number of bugs and deficiencies: (1) The documentation is particularly uninformative, although quite bulky. (2) There are no examples in the text and there is no index. (3) The system allows multiple ship-to addresses for orders, but they can not be reviewed. (4) If a new address is entered for an order, the system accumulates the old and new ones and prints them all on the order. (5) It is not possible to cancel part of an order, nor can cancellation notices be printed. (6) Once an order is cancelled, no record is kept of it in the acquisitions files. (7) Cancellation of the order does not unencumber previously encumbered funds.

In summary, The Assistant is not a satisfactory system for USIS libraries. For all its complexity, the accounting module gets in the way of efficient acquisitions and bugs in the code prevent it from working well.

Sydney

The Sydney system requires two major components to perform acquisitions processing: the Catalog/Inquiry module and the Acquisitions module. The Catalog module is an online cataloging system. It happens that Sydney packages its system so that one has to have the cataloging module to run the acquisitions system. But USIS is interested in acquiring an acquisitions system, and for that reason only the acquisitions function was evaluated.

The Sydney system is a competitive choice for Post libraries. This is in contrast to Ocelot and The Assistant which have serious flaws that eliminate them from the competition. The flaws in Sydney are more subtle, but they make the system an undesirable choice.

Sydney is deficient because of the complexity of installation, peculiarities in its fund accounting procedures, its overall interaction pattern, and its use of patron files in acquisitions processing.

The section on installation procedures later in this report discusses the details of installing each system. There is one aspect of the installation procedure for the Sydney system that is so powerful as to be almost overwhelming. It is possible to limit access to each program of the system by specifying what functions each user can and cannot perform. Establishing these access paths is complex and, without training, USIS users might be baffled by it.

Sydney's fund accounting may seem logical to the designers, but in comparison to the best of the four acquisitions systems reviewed here, it is awkward. Lack of documentation prevents all but the most knowledgeable accounting-oriented user to discern Sydney's accounting structure.

Accounts are composed of two parts and comprise a two-level hierarchy. Double entry bookkeeping is used and the acquisitions librarian may find it difficult to understand the necessity of what Sydney calls control accounts to maintain this structure.

One is tempted to speculate that the Sydney system had its origins as a minicomputer system. When the system was moved to an IBM Personal Computer, much of the friendliness that is associated with a PC was not incorporated. For example, Sydney makes little or no use of the specialized keys on the IBM keyboard. The arrow, insert, and delete keys are not used. To edit a line of text it may be necessary to re-enter the line again. This is a major failing of the system and makes it awkward to use.

The Sydney system may have a wide appeal to special libraries where books are often ordered for individual patrons. When an item is ordered, a number of pieces of information are needed, one of which is the name of the patron for whom the item is being ordered. The information about the patron is used as part of the ship-to address in the order. If the library orders materials for 'libraries' as opposed to 'patrons' it is necessary to create a 'patron' record for the library address. Fund accounts are associated with patron records. This approach may be useful for a special library, but it is not for a USIS library where it would simply confuse matters.

In summary, Sydney is not a bad system, but it is not particularly good. Its ordering, receiving, claiming, and cancelling procedures are well thought out. A great deal of customization of letter text is possible, and a number of reports can be produced to manage the acquisitions process. But the system is not as impressive as Data Trek.

Data Trek

The Data Trek system offers the best compromise to the USIS for accomplishing its goal of simplifying and speeding acquisitions processing. The best feature of the Data Trek system is that it is intuitive. The design of the system is consistent. One's mental model of the acquisitions process seems to be represented in the model that the Data Trek developers used to implement the system. This is an important asset because the system will be installed in areas that are many time zones away from technical support personnel. Since the way the system works is intuitive, it is likely that it will meet little resistance from its users who will quickly understand its payoff.

In addition to its consistent user interface, the positive features of Data Trek are an understandable accounting system, an easy-to-use ordering procedure, and clear and well-formatted reports.

The Data Trek accounting system is the easiest to understand of all four micro systems. When the system is installed, an account hierarchy is established, and the system automatically

accumulates financial transactions within that hierarchy. Statistics about the performance of vendors and transactions processed with vendors are accumulated automatically. Provision is made for adding or transferring funds between accounts, and for resetting account balances. Unfortunately, there is no password control in the system, so unauthorized use is possible.

The ordering procedure is straightforward. The user is asked for the title of the item to be ordered. The system searches its files to determine if the title is present. If it is, the information is transferred to the order screen, otherwise the user completes the bibliographic information on the order screen. The next step is to specify which funds will be charged for the purchase. When a batch of orders has been accumulated, order letters can be produced for them. Receiving orders is accomplished in a manner similar to placing an order. Thus, the intellectual burden on the user to learn a new procedure is minimized. When a number of orders have been received, receiving notices and other forms are generated by the program.

In general, the Data Trek system does not do anything more than Sydney or The Assistant. It has almost the same functionality, but it does do everything better. There are some features that need improvement and some bugs in the system, but they are minor. Data Trek is the system of choice for USIS Posts.

Retrieve Records and Data

A typical acquisitions system maintains files of vendors, addresses to which the library wants materials shipped, financial accounts against which to charge orders, orders placed, and historical orders. An efficient acquisitions system must allow for rapid retrieval of records from these files as well as efficient methods to add, change, or delete records in them.

Ocelot

The Ocelot system has one of the most confusing designs of the four systems for searching files. A data entry screen is presented to the user with one line on it. There are three fields to fill in on this line: The first two are menu choices and the third is the search key. There are no spaces between data entry fields and no clue is given as to the form of the search key. When the system finds matches, it does a good job of displaying them. Records are selected for modification by number, and once selected appear on a data entry screen. To change fields one tabs between them and carefully erases all remnants of previous contents. There is no provision for performing Boolean searching.

The Assistant

The best feature of The Assistant is its searching. All files are searched in the same way: the system prompts for a search key and then displays brief listings of records that nearly or exactly match the key. Arrow keys are used to highlight the record of interest and the system then displays full details. To modify the record, one moves between fields and changes the record. The process is simple and easy to learn.

Sydney

Sydney and Data Trek have one thing in common: they have excellent search subsystems, but these systems are not integrated into the normal file maintenance functions.

Sydney's searching system is called 'INQUIRY' and it performs Boolean searching of bibliographic data. It does not search order, vendor, or patron records. The INQUIRY system is an online catalog. Before it can be used, the fields that each category of user can search must be specified using a system maintenance option.

Unfortunately, the INQUIRY system cannot be used to search most of the acquisitions files. The search procedures used to find records in acquisitions-related files are quite ordinary. The user enters a search key and the system tries to find the record. The maintenance procedures is pedestrian and cumbersome. The normal method to change a field in a selected record is to specify its line number. The system then blanks out the current contents of the field and the user must enter in new data. The logical approach would be to let the user move the cursor to the character or area to be changed and use the arrow, insert, and delete keys to accomplish the editing.

Data Trek

Parts of Data Trek's file searching and maintenance capabilities are very good and parts are very ordinary. Data Trek has a good system for searching, but as was the case with Sydney, it is not fully integrated into the system. When the FIND option is selected on the main menu, the order files and fund file can be searched with either truncated terms or Boolean search expressions. Once a record has been retrieved it can only be displayed, not modified.

When it is necessary to maintain the acquisitions files, less sophisticated techniques are available. There is no browsing facility for searching the vendor or fund files. When searching for an order, a truncated search key can be entered and the system will display a list of orders with that search key.

Once a record has been located, it can be edited using the normal PC editing keys (arrow, insert,

delete). New data can, of course, be typed over the existing contents of a field.

Produce Reports

Management control over the acquisitions process requires that comprehensive and timely reports be available to the staff. Most of the systems that were evaluated did a good job in preparing reports but there were notable exceptions.

Ocelot

The Ocelot system has a very convoluted procedure for producing orders. Three separate DOS programs must be executed and each time a new one is initiated, the user must enter his/her logon name and password. There is no documentation within each step explaining what to do next to produce an order. The system does have the ability to specify the layout of orders. Through a series of parameters it is possible to decide which fields will print on a purchase order and in what sequence and layout they will appear. This feature still does not redeem the Ocelot order printing procedures, which are terrible.

The system produces a number of standard reports in addition to purchase orders. They include lists of vendors, bibliographic records, and funds. It produces a cancellation letter when required, but does not produce a claim letter. It does, however, produce a 'claims alert list' which indicates the dates items were ordered.

The Ocelot reports are adequate, but in comparison to the other systems, are not exceptional.

The Assistant

The strong feature of the report production features of The Assistant are those reports dealing with accounting. The accounting reports are comprehensive and numerous. Information on the status of all aspects of acquisitions accounting are available through online inquiry or through printed reports. The system has a sophisticated report writing facility which allows financial reports to be customized.

Unfortunately, the flexibility present in preparing financial reports does not extend to the preparation of other acquisitions reports. These reports can be printed only in one way.

The Assistant can produce lists of vendor names, shipping addresses, outstanding orders, standing orders, payments to vendors, and materials received from vendors. Unlike the Ocelot system, printing purchase orders is straightforward. The system does not produce claim letters nor does it produce cancellation letters.

The reports are adequate but there are gaps in what is provided. They do not compare in quality to those produced by the Data Trek system.

Sydney

The designers of the Sydney system have given considerable thought to the kinds of information that an acquisitions librarian needs. The system produces lists of vendors, patrons, and shipping addresses. Its fund accounting report is easy to understand and well organized. It prints the amounts encumbered, spent, and budgeted for each account.

When the Sydney system is installed, it is possible to change the text that appears on a number of printed letters. This includes messages on the arrival notice, the order confirmation notice, the cancellation letter, and the claim letter. The ability to customize these letters is a particularly nice feature of the system. The letters themselves are well formatted and easy to understand.

The procedure for printing orders with Sydney is simple and logical. Orders can be produced in a batch or singly, on the printer immediately, or sent to a file for printing later. The system prints a test pattern to allow pre-printed order forms to be aligned correctly.

The system produces a number of management reports. The order activity report lists the number and value of orders placed against each fund account, the outstanding orders report summarizes the status of orders not yet received, and the supplier analysis report tells the volume of transactions and speed of delivery of materials from each vendor.

Data Trek

The reports produced by the Data Trek system are generally excellent. They are well formatted, contain relevant information, and can be produced on the display screen of the PC or on a printer.

The system produces a list of vendors. Included in the listing is information on the quantity and amount of purchases made. It also produces a list of shipping addresses. The listing of fund account balances is organized hierarchically and gives the amount of money encumbered, expended, budgeted, and remaining for each account. The fund account report is simple to use and more than adequate for Post libraries.

Data Trek also provides the capability of customizing the text inserted in standard forms that it generates. Customization is possible for text that is printed at the bottom of receiving notices, order letters, claim letters, check requisition letters, and letters authorizing the continuation of a serial title.

The process of producing an order is simple and logical. Order information is entered, and then a system function is performed which changes an order's status from 'consideration' to 'on order'. Once the item is on order, an order letter can be produced, either in batches or singly. The order letter is not particularly attractive but is adequate.

Flexibility and Availability of Data Fields

An ideal acquisitions system should have the flexibility of a database management system. It should allow new fields to be defined, new reports to be produced, new types of computations to be performed, and still operate within the framework of an acquisitions system. The system selected for Post libraries should be able to store and maintain a number of pieces of information about the acquisitions process. Table 1 lists the fields that are desired and indicates whether the field is stored in each system.

None of the systems offers any flexibility in the length of the data fields. This is not unreasonable, since designing a system to accommodate variable length character strings is quite complex. Only the Data Trek system offers flexibility in naming fields and screen layout.

When orders are placed with Data Trek, the type of material to be ordered is specified. Examples of materials might include monographs, serials, presentation books, English language teaching books, or books for bi-national centers. During the installation process, it is possible to specify the data fields that will be used for each type of material. For example, an order for a monograph might not require that a volume or issue number be supplied.

In addition to allowing the screen to be customized for each type of material, Data Trek allows the name of the field to be changed. If it were important that the order screen capture the Books and Documents number of an item, one field could be renamed to say: 'B&D Number'. This process must be done carefully in order not to conflict with other parts of the system. It offers a limited ability to customize the system and surpasses the capabilities of the other three systems.

Print Formatted Orders

The absolute minimum task that an acquisition system should do is print an order. The USIS would like the system to print orders to fit the Agency standard Purchase Order form.

All the systems print purchase orders, but some do it much better than others. Ocelot, as usual, presents anomalies. The process of printing an order with Ocelot has been described in a previous section, and is laborious. Ocelot does have flexibility in formatting orders. It appears that the layout of forms can be changed and customized, so that the system could produce Purchase Orders that would meet the USIS standard. It is not worth selecting Ocelot on this basis, even though none of the other systems allows customized orders to be printed.

Data Trek offers the greatest potential to produce a customized order with the least additional programming effort. The Data Trek system is written in DBASEIII+. It is possible to write a DBASE program that would take selected information from the Data Trek 'order' database and

reformat it onto a USIS purchase order. It is also relatively straightforward to write an add-on program that would compose a telex to E/CP in Washington with information on the Books and Documents items required by the Posts.

Comprehensive Accounting Records

The USIS requires an acquisitions system that will maintain comprehensive accounting records. At a minimum, the system should allow control over funds for a Post that has branch libraries and allocates funds between five or six categories of materials at that branch library.

In order to analyze the accounting capabilities of each of the four systems, a HYPOTHETICAL ACCOUNTING STRUCTURE was developed. The structure is as follows: The Rabat American Library has two sources of funds, those that it keeps locally (called GOE funds) and those it keeps on deposit in Washington (called RMS funds). There are two branch libraries in Morocco, one in Fez and one in Casablanca. Each branch library and the main library order a number of different kinds of materials including monographs, serials, presentation books, staff use books, and books for bi-national centers. The accounting system of each of the four acquisitions packages was analyzed to see how it would handle this structure.

Ocelot

The Ocelot system allows two levels of accounts to be established, not the three that were required in the example. The process of setting up accounts is complex and almost unintelligible. The documentation does not help the user and the screens almost detract from the ability to establish a fund structure. In all the experimentation performed with the system we were UNABLE to allocate any money to funds we had established. The system used the accounts that were established, but no budget could be set. This is a serious defect in the Ocelot system.

The Assistant

The accounting system provided with The Assistant dominates the entire acquisitions package. The system does not allow an account hierarchy to be entered per se but does let a chart of accounts be established similar to one for profit and loss, and balance sheet accounting. The Report Writing system allows accounts to be grouped together for reporting purposes, but this must be customized.

The accounting structure provided by The Assistant is too complex for USIS library needs. It does everything that is required but is does too much more and is not effective.

Sydney

The Sydney system has a good accounting package but it has three problems. It only allows two levels of account hierarchy, it is poorly documented, and it requires the use of a 'control account'. The first step in setting up accounts in the Sydney system is to establish parent, or 'charge code' accounts. Once this first level of account has been entered, 'fund accounts' or 'job accounts' can be established as children accounts under the parent. Only job accounts have funds allocated to them. The system automatically produces reports based on these two levels of hierarchy.

Sydney does a poor job of explaining its accounting system. The manuals are very brief and only describe the functions available without giving examples. One area of documentation is particularly deficient and that is the explanation of the requirement that a 'control account' be established. Without direct experience placing orders it would be impossible to realize the necessity of establishing this account.

The reports produced by Sydney's accounting system are good and the system provides all the functions necessary to operate an acquisitions department. The system is unnecessarily complex for USIS needs.

Data Trek

Data Trek's accounting system is easy to learn and easy to manipulate. When the system is first installed, the number of levels of an account hierarchy is specified. A maximum of seven is possible. The number of levels determines the structure of the account code itself. For example, an account developed for the hypothetical Rabat Post might have the following structure: GOE-FZ-LIBB. This account is for money allocated by the Rabat Post (implicit) from its GOE funds for purchases made by the Fez branch library for library books.

It is a simple process to enter an account structure into the system, and easy to allocate and transfer money to the accounts. The system produces intelligible reports on the status of the funds. It requires little in the way of accounting expertise from the user, yet it provides all the reports and functions necessary to manage the acquisitions process.

Online Ordering

One of the purposes of acquiring an acquisitions system is to encourage Post libraries to order materials directly from vendors instead of relying on services provided by Washington. Once libraries begin to place direct paper orders with vendors, it is reasonable for them to want to place direct electronic orders.

The Ocelot system documentation indicates that it is capable of online ordering through Brodart. This feature was not evaluated. None of the other systems provides an online ordering function.

Retrieve MARC Records

The ordering process can be simplified if bibliographic information about the item does not have to be manually entered into the acquisitions system. The ideal approach is for the user to search an existing bibliographic database and transfer the record into the acquisitions system.

Both Sydney and Data Trek offer the option of loading MARC records into their acquisitions system. Neither Ocelot, nor The Assistant has this feature. Tests of Sydney and Data Trek were conducted to determine the ease with which these system loaded MARC records. To equalize the tests, records from the OCLC system were captured to a floppy disk using the Smartcom communication package. The captured records were edited to remove garbage characters generated by data transmission errors, and other extraneous messages generated by the searcher and OCLC. Finally these records were loaded into the Sydney and Data Trek systems.

Sydney

The Sydney program that loads MARC records into its online catalog is called the MARC Record Interface. It is sophisticated and operates smoothly. The system has the capability of capturing records directly from within Sydney rather than requiring the user to leave Sydney to capture the records, and return to it to load them into the bibliographic database. This is a convenience, but was not tested. Sydney captures records from the same sources as Data Trek (OCLC, LCMARC, MARC), and in addition will load RLIN records.

The process of loading records is straightforward provided no changes are desired in the mapping the system makes between a MARC tag and the field in which the tag will be stored. If changes are required, the user needs to be knowledgeable about MARC tags and subfield codes, as well as about the fields available in Sydney.

When Sydney processes MARC records, it creates a useful exception report that indicates what problems it encountered in loading them. Once the records have been loaded into the database, they are available for editing or for use in the ordering process.

Sydney's MARC Record Interface program is the better of the two alternatives because of its sophistication and ease of use.

Data Trek

The Data Trek program that loads MARC records into the historical order file is called Databridge. Databridge operates in a manner similar to that of Sydney's MARC Record Interface program except that records cannot be captured from a bibliographic utility while still within Data Trek. You must leave the Data Trek system, capture the records, return to Data Trek, and then load the records.

There is nothing deficient in Databridge. It does all that the Agency needs, but it is not as good as Sydney's MARC Record Interface.

Ease of Installation

The microcomputer-based acquisitions systems will be installed in Posts around the world. While training will be provided during the initial installation phase, at some point the libraries will have to become self-reliant in their knowledge of the system. The ease with which the systems can be installed and maintained is an important criterion to use in evaluation.

Ocelot

Ocelot is the most difficult of the four systems to install. The procedures used are poorly documented and the online messages presented during installation are almost useless.

To begin installation you insert a disk labeled 'DB COPY' into the A drive of the system and type 'a:install'. You are prompted to insert the 'MANUALS' disk next and to retype the command 'a:install'. The procedure is repeated for the 'PASSWORD' disk, but in the middle of copying files from this disk to the hard disk, the system stops and asks for a logon name and password. When these have been supplied, the system returns to the DOS prompt.

There are four more disks to load into the system, but at this stage Ocelot has not given any indication of what to do next. The next step is to insert the first of four 'PURCHASE' disks into the A drive and type 'a:install' again. This process is repeated for 'PURCHASE' disk two of four. In the middle of copying files from disk two to the hard disk, the system begins asking questions about system set-up. The library address must be filled in on what is normally a vendor screen, a ship-to address filled in on another vendor screen, and a 'bill-to' address on still another vendor input screen.

While disk two is still being installed, the system asks for the security levels that are to be set to limit access to each Ocelot function, the default vendor code for purchase orders, and various codes having to do with printing purchase orders.

It is almost impossible to install this system and very little in the documentation facilitates the process.

The Assistant

Installing The Assistant is straightforward. The system guides you through the entire process.

Part of the setup procedure is to establish fund accounts, vendor names and addresses, and ship-to locations. This is all done in a uniform and intuitive manner.

Sydney

The Sydney system that was tested for this project comes on seven disks: an installation disk, two cataloging/inquiry disks, two acquisitions disks, and two MARC Record Interface program disks.

The installation begins with the user inserting the installation disk in the A drive and typing 'a:install'. The system guides the user through a relatively complex process which results in the installation of three separate modules.

Copy protection is achieved in the Sydney system by the use of a 'key disk'. In order to run the system, the key disk must be in the A drive.

One of the problems with the use of Sydney by USIS Posts is the complexity of setting authorization levels. During the installation process these levels must be established. Such a password protection system is a good idea, but the process of setting access permissions should be simplified.

Other parts of the installation process are simple to perform. Library ship-to addresses are entered, as are supplier names, and patron names. The 'Accounting' section of this report

discussed problems with Sydney's two-part account structure. During installation these accounts must be established.

Sydney's installation procedure is well thought-out but somewhat difficult to do.

Data Trek

Data Trek and The Assistant are the easiest to install. The DOS COPY command is used to put Data Trek files onto the hard disk.

The installation procedure uses three menus. The primary setup menu lets the skeleton of a purchase order number be established, establishes which disk drive will contain data files, which drive will be used for making backups of data files, and which colors will be used for data display.

Data Trek performs different functions depending on the type of material being ordered. The secondary setup menu establishes these material types, which reports will be produced when a specific type of material arrives, and the text that will appear on each type of form that the system produces. The structure of the acquisitions accounts, the vendor to be used when no vendor is specified on an order, and the default shipping address are also specified here.

Documentation

Major emphasis must be given to the quality of the system documentation. Only Data Trek has good documentation, the rest range from adequate to terrible.

Ocelot

The Ocelot manuals do not come in printed form. They are stored on a disk and must be printed by the user. They are not paged, and addenda are inserted in the middle of the text without integrating the comments into the narrative. The manuals are divided into small files and there is no unified structure to them. There are no illustrations of screen layout or menu choices in the manuals nor are there any examples of the use of the system for acquisitions processing.

The Assistant

The manual that comes with The Assistant is printed on 8.5 x 11 inch paper and has a table of contents, no page numbers, and no index. The manual shows all of the menus in the system and discusses appropriate actions to be taken with each one. There are a few illustrations of what to enter in various data fields but there are no examples of the use of the system for library acquisitions. Approximately half of the pages in the manual are devoted to explaining the accounting system. In all those pages there is no suggestion of how to set up a chart of accounts for an acquisitions system. Only 33 pages out of perhaps 150 explain the acquisitions system.

Sydney

The Sydney manuals are attractive in their four 'standard' 7.5 x 9 inch personal computer binders. The manuals are relatively good at explaining how to perform the key acquisitions processes. Their major failing is a lack of examples. The acquisitions manual does not, for example, lead the user through the process of placing an order by having the user enter data.

Data Trek

Data Trek's manual comes in the same size binders as Sydney's but from there the comparison ends. The manual is organized as both a tutorial and a reference source. There is a series of exercises that the user is encouraged to perform and these progress through all the parts of the system. The user enters vendor information, fund accounts, and orders. Reports are printed, and by the time the user finishes with the exercises, she or he has a good feeling for how the system works. The Data Trek manuals are the best of the four.

SUMMARY AND CONCLUSIONS

Four acquisitions systems were evaluated on twelve different criteria to judge their suitability for installation in USIS Post libraries throughout the world. The systems were installed on an IBM Personal Computer and almost all the functions that the systems could perform were tested. One system emerged from the evaluation as the best, and that is Data Trek. There were a few categories of evaluation in which other systems were better. For example, The Assistant's user-interface was judged to be the best of the group, and Sydney's capability to process MARC records and produce readable order forms was judged high. Ocelot was judged to be the worst of the four systems, mainly on its poor documentation, difficulty of installation, and poor screen design.

Appendix A

Sample Menu's, Data Entry Screens, and Reports

This information has been excluded from this version of the report because it is completely character-oriented and lacks any graphic interest.

Appendix B

Detailed Evaluation Notes

TECHNICAL EVALUATION OF OCELOT

1. Equipment

The System must run on IBM-PC-XT microcomputers and if possible, run on IBM-compatible Wang PCs.

- a. It runs on an XT and AT.
- b. Documentation says "non-standard versions of the Ocelot Library System Software can be supplied for Wang micros with MS-DOS". This statement could not be verified.

1.1 LAN

Multiple-user version available? What kind of hardware and software is needed for LAN?

Multiple users can operate the system in two ways: (1) Through software on one CPU that allows multiple terminals to be connected to it (Multilink), and (2) Local area networks (of multiple CPU's connected together (Novel).

2. Simplify and Speed Acquisitions Processing

System must simplify and speed routine library acquisitions processing in an easy-to-comprehend manner that increases the productivity of Agency library staff.

- a. Forget the easy to comprehend part. This system could only be figured out by experienced PC users.
- b. System relies heavily on DOS. The various parts are not integrated. For instance, to add or change vendors, the user must type VEND and go through the password protection to get at the vendor file. Then, to place an order, he must get out of the vendor module, go back into DOS, type PURCHASE and

go back through the password protection again. There are many parts of the system--Dealing with funds, dealing with vendors, inputting orders, doing reports, processing orders, etc. are all separate modules which are not controlled by a single shell. The documentation doesn't even tell the user what command to use to begin most of these modules: the user must figure it out by reading through the directory and looking for appropriate EXE files.

- c. An example of reliance on DOS is this quote from the documentation:

"Reports can be viewed online or directed to a print file. All print files are ASCII text and may be edited with a word processor to produce more formal reports or directed to the printer with the PRINT command (DOS 2.0) or the TYPE command."

Thus the system produces rudimentary reports, but doesn't really give the user much help in printing them, and if the user wants to tailor them in any way, he has to ship an ASCII file to his word processor and do the work himself.

- d. There is no flexibility. Everything must be done in the right order. Once you are entering an order, you can't input vendors, input ship-to addresses, or add accounts.
- e. Data entry is extremely awkward since the system forces you to fill fields completely, put in decimal places, and clear previous data from input fields.

2.1 Orders

System should print orders formatted to fit the Agency's standard form and/or other forms specified by the operator.

- a. Batching of orders is possible.
- b. Individual title ordering is possible.
- c. Canceling orders is possible but you can only cancel an order if it is a certain status: prin, part, rece, comp, canc
- d. You must run reports before printing orders. The documentation doesn't make this clear.
- e. The documentation says there is a program called POPRINT.BAT which prepares orders for printing. THERE'S NO POPRINT.BAT!! You have to go into the Reports Program and do this yourself, then run POPRINT.EXE to make orders print.

- f. When you do reports processing you have to fill in a screen of choices to tell the System what to do when it's processing the orders, but the choices are mostly unintelligible and there's no documentation--choices like BACKORD, LANG, SHIPINST...and many less memorable ones (You can guess the words, but not what the system might do with them, or even what kinds of answers are wanted--y/n?, numbers?, prose???)
- g. Some modification to orders is possible--you can eliminate fields, change their labeling, change their length, choose new line or not for a field, change heading. But there is no provision for including your own standard part of an order--only as a note in an individual order.

2.2 Accounting Records

System should maintain comprehensive accounting records including separate accounts for branch libraries and multiple sub-accounts for each branch.

Two levels of accounts are allowed.

Funds allocated, encumbered, and expended.

We could never get the system to let us add funds to an existing account. In fact we never managed to allocate any funds to any account!

Functions/Characteristics of accounting system:

Account numbers:	Yes
Names:	Yes
Descriptions:	Yes
Allocation:	Yes
Encumbrance:	Yes
Expenditure:	Yes
Balance:	Yes
Add & subtract funds	Add, but it is not possible to cancel a whole fund once put in until end of year.
Transfer funds:	Yes, can transfer a whole fund from one parent to another. Not sure if the \$ would follow. Could transfer \$ from one fund to another by subtracting from one and

adding to another.

**Allow negative balances
with warning:** Yes

Password control: Yes--serious attention has been paid to security

2.3 Online Order Processing

System should be able to handle on-line order processing to major book jobbers, bookstores, etc.

System seems to be able to make an ISBN file designed for ordering from Brodart.

System should be able to cancel orders.

Cancellation Functions:

- a. User can direct the cancellation of an order.
- b. You can create a new order from a title which has been cancelled.
- c. You can only cancel orders with status part, prin, rece, comp, creq. Cancel Request doesn't let you cancel titles with a status of request.
- d. You can cancel order only on titles with status of part, prin, rece, comp, canc.
- e. You can produce a cancel alert list.
- f. The system produces cancellation notices at the time that you print orders with POPRINT.

2.4 Maintain & Search Files

- a. The system has an extremely primitive search capability. It does let you search the various files but its capabilities are inferior to all other systems evaluated.
- b. Truncated search keys are possible.

2.5 MARC Records

System should be able to accommodate MARC-format bibliographic records including download them from outside systems and manipulate them.

If it has this, it's hidden in the documentation in some place so obscure that we haven't found it after a week evaluating the System.

2.6 Claiming

System should do claiming including automatic batching of claims, review of claims, and producing claim form with user defined text.

- a. There is a 'Claims' choice on the Maintenance Menu. We could not get claims to work at all. There is lots of information on claims in the documentation, but it all seems to be fantasy. Nothing they describe happens!!
- b. The System puts claim alerts in a file called CLAIMS.PUR (which the documentation calls CLAIM.PUR). This file contains a list of things you might want to do claims on. You must use DOS to print out this Claims Alert List. The List gives the: title, P.O.#, date ordered, but NOT vendor.

2.7 Receiving

System should do Receiving including modifying the order for titles, and modifying the accounting data.

- a. You select the Invoice option from the Main Menu to perform 'Receiving Invoices'.
- b. Invoice Receiving must be done before Item Receiving. If you get items without invoice, you must create a bogus invoice. After the invoice data is input, you are prompted to list items received. The System helps you with some of the math.
- c. After inputting the invoice number, you start adding the titles you received. The System lets you search for titles. It responds with all titles that match-- even those with inappropriate status (like requests). It will not let you receive those, but you have to wade through them to get to the one you want to receive.
- d. Two times in a row after doing receiving, we encountered errors that bumped us out to DOS. As far as we know there was nothing really wrong, but at the point we hit <CR> to finish the transaction, the system blew up. The status of the order we were trying to receive at the point the System failed wasn't changed.

3. Fields

The System must retrieve records and data from records on as many key fields as necessary and through use of Boolean operators.

See Table in Summary Report for a list of fields.

4. Reports

System Must produce standard reports (such as books on order, status of orders, etc.), and special reports as requested.

Books on order	Yes
Status of orders by vendor	No
Status of accounts and sub-accounts including encumbrances and expenditures by account & subaccount and totals for time.	Yes
Number of orders issued to specific vendor	Yes
Number of cancellations for specific vendor	No
Number of claims sent to specific vendor	No
Amount of orders sent to particular vendor	Yes
Timelines of arrival from specific vendor	Yes

5. System User-Friendliness

Consistent user interface

- a. Not very consistent: Sometimes "y", sometimes "n" when you tell the system that a screen is correct.
- b. The menu choices to tell the system to terminate a function vary considerably. They include choices like: 'stop', 'quit', 'close CUSTOM.DBO file', 'Back to Main menu', etc. Sometimes you hit a <CR> on a blank record.
- c. In Receiving, the first question asked is "Are these correct y/n?" Then, if you say "n", the System asks "Are you sure these are incorrect y/n". Consistency is BY FAR WORST OF THE FOUR SYSTEMS!!!

Screen layout

It is Awful. They do not even put spaces between field names and values. It is BY FAR WORST OF THE FOUR SYSTEMS.

Error messages

Almost unintelligible.

System documentation

There is no strong enough term to emphasize how bad the documentation is!

Validity checking

Incorrect vendor codes and fund codes that are input into an order are not caught by the system.

Elegance

- a. Documentation is completely inadequate. You need some knowledge of DOS even to get at it. The documentation is all on diskette. Most of it is not paged.
- b. The title page of the main file (Purchase Manual) says prepared July 22, 1984, update June 28, 1985--which is identical with title page of this file in demo system. But there are actually significant differences between the two. No one bothered to go in and change the date. This is typical of the problems with the documentation. Often the Manual will describe how a process will work, but when you do it it is different.
- c. Updates to the documentation are sometimes stuck into the text between lines of asterisks, with date (like "April 1986 update"). They aren't necessarily at the right place in the documentation, but can come after a whole section which you might not read to the end. The least Aball could do would be to integrate the updates into the text and redate the whole document!
- d. No overall shell within which the System works. You don't get into "The System". You use one command to get into normal ordering activities. You must leave and get into another system for fund maintenance, etc. The only way to find out how to get into the various modules is to browse the DIR and look for .EXE files.

- e. The assumption is that the user is quite fluent with DOS. For instance, in working with funds, when you begin the System asks you for the name of the Report file. Later, if you want a report, the System asks you if you want it output to a file (The only other choice seems to be not to get the report at all). You have to remember the name of the file you gave the System, then get out of the System and either use DOS TYPE command to see it on screen or PRINT command to print it. The documentation doesn't really explain this to you--either that you have to do this, or how to do it.
- f. The documentation doesn't explain what various fields are for--or even what they are. The various templates are filled with inscrutable abbreviations and the user is expected to know what they stand for and how the System will use them.
- g. The System appears to be something developed piece by piece for in-house use and then, as an afterthought, sold with quickly patched together documentation.

6. System flexibility vs. rigidity

There is a rigid sequence in which things must be done.

7. Problems

- a) In producing an order, you can put in a bad vendor code. The System will take it, and will not tell you. Then it will not print your order. The documentation points this out as if it were a good feature!
- b) See the section on Receiving for problem that makes the System blow up.
- c) POPRINT - There's a menu choice that makes all orders, notices, etc. print. This is the only way to get printed forms out for mailing to vendors (though there are various lists that get written to DOS files that you can print out, like Cancel Alerts). We have several times tried printing out these reports. The System prints one then blows up.
- d) The System makes ASCII files every time you turn around--even if you do not ask for them. It never gets rid of them. Each one has today's date, so, for better or worse, they don't overwrite each other (except the two you define yourself: vendor file and fund file). You could end up filling your whole hard disk with these useless files before you even figure out what is happening.
- e) This whole system is a PROBLEM.

TECHNICAL EVALUATION OF THE ASSISTANT

1. Equipment

The System must run on IBM-PC-XT microcomputers, and if possible run on IBM-compatible Wang PCs.

- a. It runs on IBM PC/XT/AT and requires a hard disk.
- b. We have no information on whether it will run on a Wang.

1.1 LAN

Multiple-user version available? What kind of hardware and software is needed for LAN?

- a. Multiple user versions of the System are not described in the manual.
- b. The documentation does not indicate there is a networked version of the System.

2. Simplify and Speed Acquisitions Processing

System must simplify and speed routine library acquisitions processing in an easy-to-comprehend manner that increases the productivity of Agency library staff.

- a. When building an order, system has very nice feature of opening windows for vendor scan and ship-to scan. But orders are organized from the point of entry by Vendor--bibliographic information is prompted then hidden until order printing.
- b. "Purchase Order #" is user assigned for each order and is not incremented by the system.
- c. "Ship-to" file entries do not allow for an "ATTN:" field.
- d. When changing an existing order, the System does not allow user to view or change any of the bibliographic data for a title.
- e. If an order is entered as a "standing order" and is then "received", the System forces the user to choose whether to "close the transaction" (wipe the record from the order file) or keep the record as an "open order". The concept of 'Standing Order' apparently doesn't mean anything.

Technical Evaluation of THE ASSISTANT - page 4

2.1 Orders

System should print orders formatted to fit the Agency's standard form and/or other forms specified by the operator

- a. Batching of orders: The entire system is designed for the user to batch titles on input, thus constructing a P.O. for a particular vendor.
- b. Individual title ordering is possible.
- c. Canceling orders does not produce any written (printed) letters or notices.
- d. The documentation is **very very poor** about order printing.
- e. There is no user control over printing format.
- f. There is no warning that order printing requires wide paper.
- g. Since P.O.#'s are user assigned, the user must be able to cite the range of P.O.#'s to print, and terminology "bracketed orders" may not make sense (no documentation) enough to generate a complete printing.
- h. **FATAL FLAW:** When an order is printed in some reports, the chosen vendor is replaced by a default vendor that changes without any warning to the user.
- i. When orders are moved past the input stage, the system prompts for encumbrance but uses a new screen and user must remember information from the order screen to enter onto the fund allocation screen.

2.2 Accounting Records

System should maintain comprehensive accounting records including separate accounts for branch libraries and multiple sub-accounts for each branch.

One level of accounts is possible but reporting programs allow complex summarizations.

Funds allocated, encumbered, and expended:

- a. The System allows split encumbrances, but the user must decide the split.
- b. An account is associated with a vendor. The user can change the allocation at the "Encumber" screen.

Functions/characteristics of accounting system

- a. The accounting structure is very elaborate and provides in-depth reporting potential BUT the accounting structure bears little relevance to a library acquisitions environment:
 - 1) It supposes a sophisticated knowledge of accounting principles.
 - 2) It supposes Balance Sheet Accounts and Operating Accounts.
 - 3) It forces a double entry accounting system on libraries.
 - 4) Vendors are assigned to accounts, so managing "book funds" would be very 'round-about.
 - 5) The documentation makes no linkage between accounting theory and a library application.
- b. Account numbering is very restrictive. e.g.--once entered, the account number itself can never be edited. This is rational, except if the account has no transactions in it.
- c. There is an account number extension of 3 characters that shows up in certain contexts, BUT ISN'T DOCUMENTED.

2.3 Online Order Processing

System should be able to handle on-line order processing to major book jobbers, bookstores, etc.

There is no indication this is possible.

System should be able to cancel orders.

- a. The user can control which title to cancel.
- b. You cannot transfer titles from one order to another.

- c. Cancellation letters cannot be produced.

2.4 Maintain & Search Files

- a. The System has a very good search facility. Windows open for searching and you can easily find records in the files. This is a strong feature of The Assistant.
- b. The fields included in a bibliographic/order record are spotty.
- c. Editing a record after it is entered is clumsy.
- d. Scanning Open Orders can be done via various fields, P.O.#, Vendor Name, Vendor I.D., Title, ISBN, Author.
- e. There appears to be a problem when searching by Author--it will not accept legal Author names.
- f. The vendor file is not well designed for international addresses.

2.5 MARC Records

The System should be able to accommodate MARC-format bibliographic records including download them from outside systems and manipulate them.

- a. There does not seem to be any facility for handling MARC or any other bibliographic records, except that the Assistant can download into Acquisitions from its own catalog module.
- b. The documentation gives no indication that any downloading is possible from outside sources.
- c. While the user can pull a title from some vague historical file (which may be the catalog, although we don't have documentation to be sure), the user cannot view or edit the bibliographic fields.
- d. There seem to be no direct communication abilities with bibliographic utilities.

2.6 Claiming

System should do claiming including automatic batching of claims, review of claims, and producing claim forms with user defined text.

- a. The System does not appear to do claiming.

- b. There is a "Backorder" status that is automatically adjusted when receiving a title, but the user can do nothing with this information.

2.7 Receiving

The System should do Receiving, including modifying the order for titles, and modifying the accounting data.

- a. The System does do receiving.
- b. Once an item is received, the order record is removed from the "Open Order" file and is no longer available. This means you can not review orders that have been received to see, for example, if payment was sent.

3. Fields

System must retrieve records and data from records on as many key fields as necessary and through use of Boolean operators.

See Table in Summary Report for a list of fields.

4. Reports

System must produce standard reports (such as books on order, status of orders) and special reports as requested.

Books on order

It will produce a report by title or by P.O.#.

Status of orders by vendor

It will do "open orders by vendor".

Status of accounts and sub-accounts including encumbrances and expenditures by account & subaccount and totals for time periods

- a. Owing to the fact that this was designed to be an accounting system with some library function overlays, the accounting reports features are extensive. However, they are overly complex for simple library book fund management.
- b. The reports sometimes carry fractions of field values which make the reports nearly unintelligible.

Number of orders issued to specific vendor NO

Number of cancellations for specific vendor NO

Number of claims sent to specific vendor NO

Amount of orders sent to particular vendor

Will do vendor invoice/payments

Timelines of arrival from specific vendor NO

General comment: There is no option to have reports display to console or to the printer. All reports go to the printer.

5. **System User-Friendliness**

Consistent user interface

- a. The System has a consistent user interface and is well designed.
- b. The ESC key always lets you back out of a process.

Screen layout

- a. The screen layout is sharp and uncluttered and is the best screen design of the four systems.
- b. There is a fantastic method of setting colors. Too bad this isn't enough to redeem the System.

Error messages

- a. The error messages are fairly clear.
- b. There are no help screens.

System documentation

- a. The documentation is extremely unfriendly to the user. There is no index! There are no page numbers! NOTE: SYSTEM SHOULD BE ELIMINATED ON THIS ALONE !!!

- b. The table of contents is an outline, but finding specific sections in the document is a chore.
- c. The writing style is such that this user is tempted to believe the entire manual is a translation by a non-English speaker.

Validity checking

Validity checking is uneven. In some situations it checks things and in others it does not.

5. System User-Friendliness (cont'd)

Elegance

The System may be elegant in general, but not at all for a library application; and any elegance on-screen is more than offset by the bad documentation.

6. System flexibility vs. rigidity

- a. There is little flexibility in the System's basic structure.
- b. The accounting reports process offers many user control features.
- c. There is a "set up" phase, which user can execute anytime after installing. This allows configuration to a printer type, but there are only 4 choices, none of which we possess, and it is not possible to "set up" without specifying a printer
- d. There is no user-defined text on the P.O. other than a "notes" field.
- e. The user can decide the color of screen displays.

Technical Evaluation of SYDNEY

1. Equipment

The System must run on IBM-PC-XT microcomputers and, if possible, run on IBM-compatible Wang PCs.

- a. It runs on an XT and AT and requires a hard disk.
- b. We have no information on whether it will run on a Wang.

1.1 LAN

Multiple-user version available? What kind of hardware and software is needed for LAN?

The documentation describes the procedure for setting the system up for multiple users on a network but does not describe the network hardware or software it will run under.

2. Simplify and Speed Acquisitions Processing

System must simplify and speed routine library acquisitions processing in an easy-to-comprehend manner that increases the productivity of Agency library staff.

- a. When viewed by itself, Sydney appears to simplify the process. But its design is cumbersome and inefficient.
- b. The System is greedy of clerical time. For example, almost everything that should take one keystroke takes two. When verifying the correctness of an order after input, a field selected for change must be re-entered in its entirety, rather than being able to replace one character. There is an overall bad use of editing keys on the PC keyboard.
- c. During the building of a purchase orders there are many fields which could be defaulted to some pre-set values (e.g. expected claim period) but which are not.
- d. The "check requisitions" program prints a separate check requisition for each title being processed (or maybe each order) but does NO batching by vendor.
- e. The System uses a master key disk as a copy protection method.
- f. Every time you print orders, you must go through a series of questions that

would usually have the same answers--Rush orders only? Prepays only? Spool this report? There does not seem to be any way to set up a profile to bypass these questions. You always go through a test to see if the paper is aligned.

2.1 Orders

System should print orders formatted to fit the Agency's standard form and/or other forms specified by the operator.

a. Batching of orders

The operator has control over the precise purchase order #'s to print (by P.O. # only). But orders are not consolidated by vendor.

b. Individual title ordering is possible.

c. Canceling orders produces a cancellation letter.

d. We are unable to find a way to get a multi-copy order to ship to multiple locations. The code structure implies the ability to load various ship-to addresses into the system, BUT no provision is made for entering ship-to addresses in the ordering process.

e. The System, unlike the others, does print an initial test line and then prompts the user: "Are the forms properly aligned?" before proceeding. This is a nice feature.

f. The purchase order's printed format is the nicest of the four: clean presentation of information.

g. There is a user defined note field that will print on orders, cancellations, and claims. There is also a note field for display online only.

2.2 Accounting Records

System should maintain comprehensive accounting records including separate accounts for branch libraries and multiple sub-accounts for each branch.

1. The System has a two level account structure. There is a control account at the highest level and a fund account at the second level. There is also a control account which totals control-fund account allocations.

2. On order input the user must supply both the account for encumbering and a

control account number. The user can't browse the legal choices but must know the account numbers. The System will validate the input.

Funds allocated, encumbered and expended.

1. Automatic encumbering and unencumbering takes place.
2. A sophisticated security system prevents unauthorized tampering with accounts. It is the best of the four systems. Menus are tailored to what a specific user has permission to do!

2.3 Online Order Processing

System should be able to handle on-line order processing to major book jobbers, bookstores, etc.

The system can put order records in a file. It does not seem to have ability to format order records for specific vendors, nor to transmit them electronically.

The System should be able to cancel orders.

You can cancel orders from the 'Browse Overdue Orders' function in Claims/Cancellations, but the cancellation letter has "**** CLAIM LETTER ***" printed as a sub-heading on it.

2.4 Maintain & Search Files

- a. The INQUIRY module which is not part of the acquisitions system but which has been bid, is quite sophisticated in its searching capabilities. It has keyword and Boolean capabilities. You can use it to search bibliographic, not order records.
- b. There is no Browse capability within the acquisition module. It does do a truncated search, but NOT keyword search in the "Modify Orders" function. The user gets no edit access to the Bibliographic data in acquisitions.
- c. The System is upper and lower case sensitive when searching files.
- e. Certain key fields are not available (phone #, contact name) in the vendor file.
- f. The address field in the vendor record is four lines, free form, which is excellent for international orders.

2.5 MARC Records

The system should be able to accommodate MARC-format bibliographic records download them from outside systems and manipulate them

- a. The System has a sophisticated program that lets you capture MARC records from four sources.
- b. The program uses SMARTCOM or CROSSTALK and efficiently captures records from bibliographic utilities.
- c. The process of loading captured records into SYDNEY is easy to use.

2.6 Claiming

The System should do claiming including automatic batching of claims, review of claims, and producing claim forms with user defined text.

- a. Claiming is pretty powerful, offering the user options to print claims or not, and a chance to modify some fields.
- b. Claiming is cumbersome because of the wide variety of keystrokes needed to process--efficiency in a big acquisitions environment would be a major question.
- c. During claiming the user is given the chance to change comment lines that print on the order! It is a nice opportunity to customize the claim.
- d. Headings like "Cancellation of Order" or "Claim Letter" appear at the head of notices depending on where you are in the System when you decide to print the letter. This can lead to conflicting information on the notice the vendor receives.
- e. Claim dates are entered into orders. Claims can be issued "manually" regardless of expected date for title, or automatically, based on claim date.

2.7 Receiving

The System should do Receiving including modifying the order for titles and modifying the accounting data.

- a. The System does do receiving.
- b. When receiving a partial order and answering "y" to prompt for backorder, the System reports that the "inventory record is locked out" i.e. IT BLOWS UP. Maybe it can't do partial receipts, even though it is documented??
- c. When we receive an item the system always gives a warning bell that the title

is not cataloged because we don't use that module.

3. Fields

The System must retrieve records and data from records on as many key fields as necessary and through use of Boolean operators.

See table in Summary Report for a list of fields.

4. Reports

The System must produce standard reports (such as books on order, status of orders, etc.), and special reports as requested.

Books on order

It will produce an order action and outstanding order report and order activity report.

Status of orders by vendor Yes

Status of accounts and sub-accounts including encumbrances and expenditures by account and subaccount and totals for time periods.

Number of orders issued to specific vendor Yes

Number of cancellations for specific vendor Yes

Number of claims sent to specific vendor Yes

Amount of orders sent to particular vendor Yes

Timelines of arrival from specific vendor Yes

General comment: We find the format of the reports cluttered and not pleasant to read in comparison with other systems.

5. System User-Friendliness

Consistent user interface

If one were to speculate, it would be our guess that this system grew up as a mainframe product. It does not take advantage of the current state of the art of user-

interface design at all. It is very ordinary and outdated.

Screen layout

- a. The screen layout is pretty pedestrian.
- b. The order screen layout is downright BAD.

Error messages

When the System blows up, it handles it well. It tells you what has happened, what information to write down, and to call your representative. Then it takes you back to the beginning of the system. It does not return you back to DOS.

System documentation

The documentation is presented well, but on close examination, there are almost no examples or illustrations.

Validity checking

There is extensive validity checking throughout the System.

Elegance

- a. The System is sophisticated, but not particularly elegant.
- b. Help screens are truly helpful and can be summoned from nearly every prompt location or data entry point, and the statement will be helpful.

5. System User-Friendliness

General comments:

- a. The system uses function keys instead of the IBM-PC keyboard keys. For example, it makes you press a function key to move to a previous field instead of letting you use the up-arrow key. One TERRIBLE instance of this is where the left arrow key mimics the ENTER key.
- b. When ordering, the interaction is broken up so that the user deals with input in blocks, e.g. the vendor information, the bibliographic information, the requestor information--without having all fields on the screen simultaneously. This is not nice.

- c. Unfortunately the screen design overall is bad--no highlighting, no emphasis on fields or data or anything that helps the user read the screen quickly and comfortably.
- d. The System always distinguished between upper and lower case--this is a definite problem in searching.
- e. When searching in the acquisition module, truncation is possible but keyword searching is not, unless the keyword happens to be the first word.
- f. In various editing activities the System asks you which line you want to edit. When you tell it, it clears the whole line and leaves the cursor at the beginning of it so you can input the WHOLE THING again. Not nice.
- g. In a number of ordering situations, you can't have default values for things like currency. You have to choose between US, Canadian, English when it would be reasonable for the System to have a default.

6. System flexibility vs. rigidity

There is little flexibility in the System's basic structure.

TECHNICAL EVALUATION OF DATATREK

1. Equipment

The System must run on IBM-PC-XT microcomputers and, if possible, run on IBM-compatible Wang PCs.

- a. It runs on an XT and AT and requires a hard disk.
- b. Experience from one USIS Post indicates the system will run on an Wang PC.
- c. Some reports produced by the system require a wide printer carriage (14") or the compressed-print feature on printers.

1.1 LAN

Multiple-user version available? What kind of hardware and software is needed for LAN?

- a. The system is written in dBASE III+ and uses Clipper. It is designed as a multiuser system to run on a LAN.
- b. There is no indication in the manual of which LAN software or hardware the system supports, but because it is written in dBASE III+, we can assume that it will run on any LAN that is supported by dBASE III+.

2. Simplify and Speed Acquisitions Processing

System must simplify and speed routine library acquisitions processing in an easy-to-comprehend manner that increases the productivity of Agency library staff.

- a. Of all the four systems, this one comes the closest to offering considerable potential for speeding and simplifying acquisitions processing.
- b. The system design is very good.
- c. The system approach to the acquisitions process is intuitive and follows manual processes closely.

- d. Little jargon is used and this helps the user considerably.

2.1 Orders

System should print orders formatted to fit the Agency's standard form and/or other forms specified by the operator.

The system cannot now print orders to match the agency's standard form. Since the data files are stored in a standard dBASE format, it would be straightforward to write programs to do so.

Batching of orders

The System can process batches of orders.

Individual title ordering

Individual titles can be ordered.

Billing addresses

Only one bill-to address is possible: "Your Library". To have more than one you would have to go in and change Library Name & Address (Option 6 in Primary Setup) each time you processed orders. You would have to batch all Washington Bill-To's then all Post Bill-To's. There is the danger of having the wrong Library name on cancellation letter.

User modifiable text

There is no flexibility in the order format but the System does allow user modifiable text for letters and notices.

Order date

The date ordered on the order screen doesn't default to anything--today's date as a default would be useful. In the tutorial it tells you in one of the examples to do a carriage return, implying that it will supply the date, but it doesn't supply anything

Canceling orders

- a. It is possible to mark an order as cancelled. When this is done the cancellation date and a cancellation note appear in the Order Letter Instructions field of the order record.
- b. When an order is cancelled, funds are unencumbered and the status of the order becomes 'historical cancel'.

- c. When you Process Orders an order letter is produced with text "Cancelled [date]" associated with the title.
- d. When you Process Received Batch (Main Menu #7), the cancelled order is moved to the History File.
- e. There is no specific menu option nor any System text letter available for cancelling an order.
- f. Partial receipts followed by cancellation of the order is not handled.
- g. Cancellation list: A Boolean search of Status HC and DF (follow-up date) [date of last cancellation list] sent to printer in short format would get you a cancellation list. You would always have to remember to put date cancelled into follow-up date field.

2.2 Accounting Records

The System should maintain comprehensive accounting records including separate accounts for branch libraries and multiple sub-accounts for each branch.

- a. In contrast to the other three systems, accounting processes in DATATREK are a dream.
- b. You can define up to seven levels in an account hierarchy. The structure is intuitive. Funds are allocated at the lowest level and migrate up to the highest level.

Funds allocated, encumbered, and expended

- a. The System automatically encumbers and unencumbers funds.
- b. If you order 2 copies of 1 title and want to charge each one against a separate account, the system lets you update the fund accounts but assumes all charges are against the first account. You have to do the calculations yourself if you want to split the charges between the 2 accounts.
- c. Transfer of funds is possible through subtraction from one account and addition to another.

General comments:

- a. There is no password control. There is some semblance of security from only allowing certain set up functions to be accessed from the Main Menu by a choice ("*") that isn't displayed on the screen. The documentation describes how to do it. But purging all references from the documentation would be difficult since it is referred to in many places. Thus ACCOUNTING ACTIVITIES ARE NOT PROTECTED.
- b. Report preparation for user specified levels of the accounts hierarchy works clearly.
- c. If you zero fund account balances, it zero's them but doesn't zero free balance.
- d. Use of a menu option to zero balances does not allow selection of specific accounts, but rather does the zeroing on all accounts.

2.3 Online Order Processing

System Should be able to handle on-line order processing to major book jobbers, bookstores, etc.

There is no indication in the manuals that the System can order materials online from vendors or jobbers.

2.4 Maintain & Search Files

- a. The System allows searching and maintenance of all files.
- b. The order file can only be searched via title or order number.
- c. Sophisticated Boolean searching is available, but there is no direct link from the Boolean searching function to the updating function. To open files for updating the user must exit the searching menu, losing the screen and necessitating the manual noting of record values for input to the update function.
- d. Truncated search keys can be used in most situations.

2.5 MARC Records

The System should be able to accommodate MARC-format bibliographic records including downloading them from outside systems and manipulating them.

- a. MARC records may be downloaded via a Datatrek utility program called "Databridge". The user has control of many parameters that govern the disposition of certain MARC fields. MARC records must be resident in a particular named DOS disk file, so are only processed in a batch. Databridge puts the translated MARC records into the Historical Order file of the Acquisition system. The user must then reactivate that title in the prescribed way to use it for a current order.
- b. The process of converting the DOS file to Datatrek records is simple to use.
- c. Datatrek processes MARC, OCLC-MARC, and MARCIVE records but not RLIN records.
- d. You must download and capture the MARC records as a separate activity outside of DATATREK. This is in contrast to the SYDNEY system.

2.6 Claiming

The System should do claiming including automatic batching of claims, review of claims, and processing claim forms with user defined text.

- a. There is no automatic claiming procedure.
- b. It is not possible to record claiming history, only the date of the most recent claim letter.
- c. To initiate claiming you select the option to print follow-up letters from the Print Menu. The filtering operation takes place on the basis of a user specified order date. Claiming can be done for a single vendor or all vendors.
- d. User defined text can be inserted in the claiming letter.

2.7 Receiving

System Should do Receiving Including modifying the order for titles, and modifying the accounting data.

The System does do receiving.

3. Fields

The system must retrieve records and data from records on as many key fields as necessary and through use of Boolean operators.

See Table in Summary Report for a list of fields.

4. Reports

The system must produce standard reports (such as books on order, status of orders, and special reports as requested).

Books on order

- a. It will give a report of what is being ordered in a particular batch.
- b. As part of processing an order the system produces an Order Summary Report.

Status of orders by vendor

Status of accounts and sub-accounts, including Encumbrances and expenditures by account and subaccount and totals for time periods

The System provides very good fund accounting reports.

Number of orders issued to specific vendor	Yes
Number of cancellations for specific vendor	Yes
Number of claims sent to specific vendor	Yes
Dollar amount of orders sent to particular vendor	Yes
Timelines of arrival from specific vendor	No

5. System User-Friendliness

Consistent user interface

There is a high level of consistency in the System and in the documentation.

Screen layout

- a. Clear, but not inspired.

- b. There is some user control over which fields are active on the order screen, but the field names will still display even if the user has eliminated them.

Error messages

- a. System error messages are good for the most part. But when the System blows up, messages are very cryptic. They do not give the average user a clue of how to get out of the situation.
- b. In most cases the only logical choice when a system message occurs is to exit the acquisitions module, which might damage certain open files.
- c. The HELP facility is NOT too helpful! There is about one very general screen of help information for each activity. When you really need help (i.e. with an error message of (Q/A/I), you don't get any.

System documentation

- a. Typography is not good, but the content of documentation is excellent. Explanations include what to do and why. Consequences of setup choices are explained well, for instance.
- b. The organization of the tutorial good, with references to relevant information in other parts of manual where appropriate. The tutorial is well done and quite extensive.
- c. The documentation on the hierarchical accounting system is not detailed enough.
- d. The documentation for a novice user is very complete and well written, including the precise text of the commands necessary to move the files from floppy to hard disk. Quote of the day: "Instructions are so well done that they would give a nincompoop a good idea of how to begin."
- e. The documentation for bringing the module up is clear and one gets to the main menu screen without problem.

Validity checking

Authority files are maintained for vendor i.d., fund accounts, and ship-to addresses.

Elegance

- a. The interaction with the user is quite elegant. Windows allow the user to step out of one function into another where appropriate (adding a new vendor to the vendor i.d. authority list during an order transaction, for instance).
- b. The use of windows for this sort of activity is handled consistently through the system, so if you have done it in one situation, you will be able to do it in another.
- c. The cursor moves to fields that the system computes on the order screen, making you think you need to fill them in.
- d. Installing the System is exceptionally easy and fast.
- e. The procedures that back up the System require one floppy disk for each data file (seven total).
- f. The Follow-up Date and Action (P/W) look like they would alert you on the date you need to follow up, but they are just a record of the last action taken--the date you followed up and whether you phoned or wrote.

6. System flexibility vs. rigidity

Data Trek offers the most flexibility of the four systems. You can rename fields and modify which fields are prompted for on data entry screens.

Appendix C

Scripts for Evaluating Acquisitions Systems

The scripts have been omitted from this version of the report because their use is highly dependent on having the software available.