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Geac as a Source of Management Information

When Professor Lancaster called to ask if I would be willing to give a paper on management aspects of the Geac Online Circulation System,* I was both elated and apprehensive because the University of Arizona was in the unique position of just having gone from a nonstandard version of Geac software to the standard 4.0 turnkey version. At the time I accepted the invitation, no one at the University of Arizona knew much about what management data Geac could provide. I am obliged to tell you straightaway that there is still much that we at Arizona do not know about the management data Geac can provide. But in the almost two years we have been on Geac, we have learned a thing or two—some of which relates to the topic of this Clinic.

Among the more interesting things learned was that Geac came in several "flavors," at least from June 1980 through June 1981. At installation and through the first year, ours was not "vanilla"—a pure turnkey system—but rather what came to be dubbed by us as "marble fudge." We think that we are the only marble fudge system in existence, but Geac would be a better source of this information than I. What I am saying is that our Geac 8000 looked, from the outside, like a turnkey Geac; performed somewhat like a turnkey Geac; but, oh boy, it sure didn't work and look like a turnkey Geac when one got inside the guts of the thing. The upshot of being marble fudge was that we did not have many reports until installation of the version 4.0 thirteen months after coming live.

*This paper describes the Geac Online Circulation System as it existed in March 1982. Readers should be aware that there have been numerous changes and improvements during the past year.
To fully appreciate—or at least to appreciate to some degree—what I will say this afternoon is to have some understanding of my background and the environment at the University of Arizona Library. First, I am a librarian. One of those people who got turned on to libraries from having worked in one as a support staff and I know well that some of you can talk circles around me when it comes to understanding how computers really work, or sometimes do not work at all. What I will cover then first is a librarian's view of the Geac system not the computer specialist's perspective. I think this is fair since Geac promotes itself as a system for the uninitiated user. Second, note that I am not a Geac salesperson, but, on the other hand, I am not a severe Geac critic either. I suspect, though, that I will seem a little of each. Third, the University of Arizona Library does not have trained computer and systems specialists among its staff. Our current head computer operator is an English major who luckily happened to be employed in the loan department of the university at the time we considered online circulation systems. I say luckily because he (Tom Owens) had worked at Ohio State at the time they were developing their circulation system.

By way of further introduction, I think it will be interesting to note what the University of Arizona asked for (and did not ask for) in its Request for Proposal (RFP) for an online circulation system under the general heading: Management Reports/Notices/Lists. That this request took up most of what was to become page thirteen of the RFP should have given me a clue to our future, both from the standpoint of not asking for the obvious and of asking for the impossible. In quick summary, we wanted:

1. Circulation activity as follows:
   a. patron category,
   b. call number,
   c. classification number,
   d. library,
   e. call number linked to patron category;
2. lists of missing items/replacement items;
3. lists of items that circulate for more than a specified number of times as determined by the library;
4. lists of items that have not circulated in a specified period of time as determined by the library;
5. lists of patrons who are delinquent, owe fines, etc.;
6. overdue search lists;
7. lists of items with more than a specified number of holds or recalls as specified by the library;
8. a daily circulation list on microfiche; and
9. a hold shelf clearance list with cumulative statistical capabilities.
The impossible to secure was circulation information by call number linked to patron category. It was an important piece of information in that we had just gone through the exercise of trying to demonstrate what items faculty and graduate students used in order to comply with U.S. Government standards for the allocation of research overhead. Research overhead to the University of Arizona Library represents a considerable chunk of money each year.

Not asking for the obvious was specifically not requiring that Geac be able to tabulate circulation totals for a given period of time as a standard report. To my amazement, the system still cannot give total circulation counts as a standard report. Why? Because the TSTA Report does not count renewals. Our head computer operator, Tom Owens (who assisted greatly in the preparation of this paper), has written a program to get circulation totals for periods longer than one month (usually for a semester). This report does not count renewals either. The history file must be used to do this. Tom’s program requires asking for how many items have circulated more than zero times in a specific location and then cross-multiplying and adding totals for each location in the library system. I tell Tom that he is running the most expensive manual calculator in the history of humankind, but he says research may prove me wrong.

In this discussion we will look at four general areas of the Geac system: what I call circulation management, financial management, the bibliographic and patron extract modules, and finally, system management—how the Geac manages itself. I will begin with circulation.

One of the most often asked questions I hear is: How often did a particular book circulate? Geac provides such information online at the copy level of the bibliographic record. By finding a specific title and then going to the item level screen and keying a copy detail command, one can tell how often a particular item has circulated—up to a maximum of 256 circulations. Libraries having heavy circulation, such as for reserve material, are limited by the 256 count (this will come up again when I talk about reserve circulation). These counts must be zeroed out each semester so that we can obtain accurate reserve circulation counts. Other information available in the online copy detail display is the date the record has last been edited, the date the system was entered, and the number of times an item has been reshelved.

More general, but important, circulation information is available in Geac reports. One of the reports the University of Arizona has been waiting for and just recently received is the Interagency Activity Report. In essence this report gives a general profile of who is using what kind of materials. By defining item material types with some specificity, a library will be able to profile general collection use.
The report is sorted by agency, patron privilege type and material type. Patron privilege type is part of the matrix controlling the loan period. It is more general than patron statistical type which can identify users within narrow categories and is counted in TSTA. Material type is also part of the loan matrix.

In looking at the report, one can see that the privilege type is repeated for each material type on which activity appears, but we plan to change this display to show privilege type only once. Activity can include circulation (charge out) information as well as information on discharges, books placed on reserve (RRP), fines action, holds placed, and partial payments made in the financial module.

The report totals the activity areas within privilege class and material type. It also totals by specific activity and agency. For libraries using departmental codes, such as for academic departments in a college or university, the report also gives total activity. Agency totals are also shown.

After loading departmental codes, we realized that the required manual input of patron data would be too complex and time consuming. We had entered over 100 codes. Thus, all users at the University of Arizona default to one “department.” The report cumulates to the point when the file is so large that it needs to be dumped onto tape, for example. The file then zeros out and a new cumulation begins.

One of the things to remember when I discuss various reports is that local policy, database size and long hours of operation can hamper full utilization of some Geac reports. The University of Arizona's Geac database contains over 1.6 million item records represented by approximately 1.2 million titles. There are over 60,000 users in the patron database. Geac's report that lists all of the items' statistics is an example of a report that cannot be successfully run in a large library—at least not at the University of Arizona.

The report produces a list of all item statistics—item being the specific copy of a work. The report is sorted by agency, branch (terminal location), and transaction type. The transactions one might want to report on include charges/discharges, RRPs, fine information, holds, partial payments, or all of these areas.

The sample report from Geac was sorted by charges/discharges. Information reported was the call number, item type, item number, item location, terminal number, transaction date, transaction time, patron number, and patron type. As one can see, for a particular agency and specific date, a wealth of information is available. Finding time to use it all, however, is another matter.

One problem most libraries face is what to do about missing items. The management of missing books has been handled by Geac in two ways:
through the Missing Report and through the utilization of the system's local programming options using a Geac language called GLUG. I want to take a minute and talk about this powerful language with such a funny name.

GLUG is the report-writer language for the Geac system. An interpreted language, it allows the user, even one with moderate sophistication, to create reports, secure in the knowledge that it is almost impossible to make a mistake which would damage the database or affect software support maintenance from Geac. The driver program that interprets the GLUG code has been written so that no data files may be modified by a GLUG program.

Although the language has limitations, it surely would meet the needs of any but the most sophisticated computer operators. GLUG is particularly useful because it can easily overcome the limitations of the bibliographic and patron extract programs which will be presented later.

Staff at the University of Arizona were able to develop useful GLUG programs about two months after the language was made available to us. As an example, our head computer operator has had no formal training in programming and very little experience (as mentioned earlier he somewhat slid into his present position when the system was implemented). He has had no problems developing GLUG programs despite his lack of training. We believe most libraries will find the language easy to use regardless of the level of staffing. Combined with the extract programs, the GLUG language furnishes a package of programs which will allow a library the ability to create many of the reports it needs.

To get back to missing books, the areas in which the University of Arizona needed much help with was good management of what items were missing, no longer missing or still missing at the end of one year. Geac produces, by operator action, a report of missing items. It is sorted by agency, the missing status (there can be a variety of reasons why an item is missing), and by call number. We at Arizona are most interested in the status information. An item listed as missing but subsequently checked out would show as "returned from missing" on this report which modifies the online record to show that the item is no longer missing. The report was particularly useful in the transition from the old missing procedure to the one that is now automated. The zero indication in the status field of the report told us to pull the manual missing card for appropriate action.

Under new procedures, the Bibliographic Extract and a Geac/GLUG program, modified locally by the head computer operator, is used to identify those items missing in the system one year after being declared missing. One of the optional bibliographic fields is used to input the month and year the item is declared missing. One year later the Bibliographic Extract program is run, asking for all books still missing from
March 1981, for example. The report is sorted by call number—which enables staff to search for the material—and is printed by the locally produced program. Those items found are discharged, which "frees" the missing status when the Geac Missing Report is run. The Bibliographic Extract program is then run again, dropping all the discharged items. What remains are those items missing for one year or more. This information is given to the catalog department so that appropriate cards can be withdrawn from the various catalogs, and bibliographic and/or item information deleted from the Geac database.

An additional concern for many libraries, depending upon lending and other policies, is that of the user whose card has expired in the system but who still has material checked out. Geac addresses this management situation through a program that produces a list of all card expired patrons with items checked out.

The report is sorted by agency and then alphabetically by patron name. Patron information provided besides name includes: address, phone number, ID number, and expiry date in the system. Each separate item checked out is listed after the patron information. Thus, if a user had ten items checked out, ten complete patron entries as described earlier would appear. Item information includes call number, author, title, material type, due date, and status other than normal (such as billed for replacement or missing). The report could be useful for a small library which needed to keep track of such information. It could also be useful in any library whose loan policy prevented loan periods to exceed the expiry date. A library could influence when a person showed up on this report (at least in theory) by staggering patron expiry dates in the system.

At the University of Arizona this report is of little use because we do allow loan periods to exceed expiry date. One of the reasons we allow this is that library staff could not handle successfully the large end-of-term and/or academic year return or renewal of all materials. Thus, this potentially excellent report is not often run.

It would be unwise to move on to other areas without talking about hold management information and class reserve capabilities. Geac has a variety of report programs dealing with holds. A hold is defined here as that process by which a user can be notified that a specific item has been returned and is waiting on the hold shelf to be picked up.

One of the things called for in the University of Arizona's RFP was a Hold Shelf Clearance Report. My thought was to identify those items which had not been picked up so that they could be pulled from the shelf, and also to keep statistics on the number of such items. (I must tell you that I was alone in wanting such a report. Staff in the hold unit saw little use for it.)
What we received was a report that did list such items, but that also listed holds which had been terminated. (There are at least two ways a hold can be terminated in the system. One way is for it to have been "sitting" for 180 days—waiting to be acted upon when the item is returned. The other is for a staff member to go into the system and terminate the hold.) This list, then, gave us much more than we needed to do the job; so much more that it was far easier to go through the hold shelf manually looking for items that needed to be pulled. However, because the Hold Report was in the GLUG language, we were able to modify it locally without fear of losing software support for the system itself. As a point of information, Geac was unable to provide statistical cumulations in this report.

The report is not useless, it is just that we feel it cannot be used as intended—and I emphasize the we. The report could be used in libraries that need more control over, or are interested in, more detailed statistical information about holds. It does give one a good idea of items not picked up and the number of items lapsed in the system. By working with the provided information one could: (1) keep track of which patrons are not picking up holds in order to see if there are notification or other problems in the hold routine; and (2) keep track of the number of holds terminated (not satisfied) by the system.

Three other hold program reports need mentioning. One of these is a report that produces a list of items on which holds have been placed between certain dates determined by the library each time the report is run. Also identified is the patron who requested the hold. It is sorted by the pickup agency and then arranged alphabetically by patron name. When we first looked at this report, we did not quite know how it could be used. Geac, I suspect, like other turnkey vendors, does give descriptions of reports, but does not tell what it might have had in mind in designing the thing. Some reports are rather obvious in their utilization. The Returned From Missing Report needs little context beyond its description.

After talking about this particular report, it did seem that we could have used it if we had so desired. By going into the system and seeing if a recall had also been placed on the item shown, we could, through the timing of the report run, determine what items were not returned by the adjusted recall due date. (It is important to note that one should place a hold on an item when recalling it, although the system will allow a recall without identifying the person needing the material.)

One might think that this report could help measure work load. That is, by running the report daily or weekly, for example, one would know the number of holds placed. This is true, except that the moment a library places terminals for use in public areas and allows users to place holds themselves, the work load utilization is lost. Other libraries may indeed
find the report useful, but based upon policy and procedures in place at the University of Arizona, it is not used.

Geac also provides a program which lists the contents of the hold shelf. It is sorted by patron name within pickup agency and lists the patron name, phone number, item information, active and expiry dates. One could also use this list to notify patrons of available material. Arizona does not use this report, but relies instead on the availability notice that is generated when a book with a hold on it is discharged.

The most heavily used holds report at the University of Arizona is the Holds/Purchase Alert Report. It works in part within parameters set by the library in that it allows a library to set the ratio against which the system searches for hits. We use the report to alert us to the possibility of ordering additional copies of high demand material. Currently, three holds against a single copy will trigger inclusion in this report. The bibliographic information is then sent to the acquisitions department for a decision on ordering additional copies.

Since we have just begun to work with this report, it is too early to measure its utility in our particular setting. The report is sorted by location and then by call number. Information displayed includes call number, author and title, location of item, active copies, missing copies, total copies, patron name and phone number, and specific number of the copy on which the hold has been placed. Active copies are those that are displayed when looking at item information, as opposed to copies which have been deleted. Total copies include a running total of all copies that have ever been in the system.

The Data Entry Report, also known at the University of Arizona Library as the infamous accession list, comes in two standard formats: long and short. If one is familiar with the full bibliographic screen in Geac, one gets a good idea of information contained on the long list. If not, it includes: call number, title, author, note, status, entry date, last edit date, copies, accession number, price, barcode number, copy status, copy reference number, user copy number, material type, circulation information, reshelve information, last use date, and all the optional fields. The report is sorted by location and operators' initials. The short form includes call number, title, author, copies, volume, material type, location, date the record was created/updated, and operators' initials.

The Data Entry Report is an excellent source for checking the accuracy of input to the system. In trying to use the short form as an accessions list, however, it fails badly in a number of ways. I mention its use as an accessions list because this is what the Geac system said would fulfill the RFP. Some of the failures are no fault of Geac. We simply do not agree on the definition of accessions which we view as new items not retrospective
conversion items. What are the problems with the Data Entry Report? First, the call number field of the report is not large enough to take a long call number. Thus, using the list to identify new material and then to locate the item in a library is often difficult or impossible. Second, the author and title fields are often not large enough to display sufficient information. The field sizes might also be an argument against this intended use, except that we believe the full report does give complete information.

The real problem in using the short form as an accessions list is that it shows every record entered into the system from any source. Thus, it is much more than a new accessions list. Hence the name: Data Entry Report. It is so logical when one thinks about it, but it surely doesn’t work for us.

We have reworked the report through a locally written program to eliminate extraneous information and expand the call number field so that a full number is displayed. This can all be done without altering the Geac software supporting the standard report. To get around the too much information problem, we are working on a program that will hit against a combination of OCLC number or one other hook such as LCCN or ISSN numbers. Our head catalog librarian feels that the retrospective input now being done in branch collections will not often have an OCLC number, but may have other hooks. All data being entered through the OCLC/Geac Link, which was developed by our head catalog librarian working with Geac systems staff, contains the OCLC number and other identifiers such as LCCN and ISSN numbers. In this way we hope to refine output to reflect better new accessions. While on the one hand we would have wished an easier way to get at new accessions, on the other we are thankful for the flexibility of the Geac system to allow local GLUG programming.

In an academic setting, class reserves are an important component of a circulation department. One of the strong points of the Geac program when we were looking at circulation systems was its reserve system. I want to talk about two reserve-connected reports: the Weeding and Stamping List and the Reserve Use Report.

The Weeding and Stamping List is not used at the University of Arizona, but it is an interesting report. To our knowledge it was developed at the request of another Geac library which handles class reserves differently from many libraries we are familiar with. When a reserve list is entered into the system, the online operator indicates when the items are to go on reserve. This program identifies those items in the Geac database which are to go on class reserve between specified dates. After the program is run, the items are displayed automatically in the system as being on reserve with the appropriate reduced loan periods and reserve fine rules in place. The list can be printed to allow staff either to pull material to place in a special reserve location or to use as a listing of what is currently on
reserve. From the perspective of listing and automatic display of reserve status, the program is a powerful one.

However, because we place reserve material in reserve book rooms, we are reluctant to use this program for fear that there will not be sufficient human resources to pull identified material from the stacks in a timely enough manner before it shows on reserve. We prefer to pull the material first and then place them on reserve, using other Geac reserve functions.

The Weeding and Stamping List is sorted by call number, and lists typical bibliographic information such as author, title and item number. Also shown is the course name, active date and expiry date. Similarly the program will automatically remove material from reserve when the expiry date is reached.

Another component of management information for class reserve is Geac's program that produces the reserve use report. The standard report is sorted by course and then by professor's name. As one can see, the course is listed only once with the professor's name directly under. Bibliographic information is listed by material type within professor's name, and then by call number, author and title. This is followed by the item barcode number for each item, the item location (this could be different from item to item if a library did not have a centralized reserve room), material type, circulation count, and reshelve count. Through local programming, other sorts are possible such as a call number within a course.

As designed, the report is useful in giving professors information on what items placed on class reserve are used, and in many cases not used at all. Most of us know that the information will have little impact in putting together next year's class reserve list. We view this report as we do filling out income tax forms. The process probably would not go far in helping us, but we are surely damned if it is not filled out and mailed on time.

A major problem with the concept of this report is that one cannot delete material from reserve before running it. In doing so, the circulation counts for the reserve status are lost. It is not that the count disappears, but simply that since (presumably) the item is back in the regular stack location, the circulation information will only show as general circulation. Another real problem with the report, as we understand the system, is that circulation counts stop when 256 circulations are reached. We know that many photocopied items circulate more than this amount. Thus, circulation counts for reserve courses are not necessarily accurate.

Before moving into the financial areas of the Geac system, I want to talk a bit about the TSTA Report I mentioned very early in this paper. At first glance one might think that this reports total circulation counts and other statistics by hour of day. But, as I said earlier, it is not so! The value of this report is not to be found in its ability to count circulation, because renewals are not counted by any standard Geac program.
What is valuable is that one can tell circulation (minus renewals), discharges, RRP's, fine activity, and holds placed by hour of the day for each location defined within the system. Currently at the University of Arizona, statistics are shown for the Science-Engineering Library, the Main Library, Government Documents Department, the Library Science Library, the music collection, the Arizona Health Sciences Center Library (which is sharing the system with us) and for the two major reserve book room operations in the main and science-engineering libraries. The report totals each activity by hour and by the day, as well as cross tabulating each activity by location. All totals cumulate monthly when a new count begins. If this report counted renewal activity, it would give a complete picture of major circulation activity for each hour of every day the library was open. Currently, the value of this report is in demonstrating first-time circulation and other activities that are useful in planning desk coverage (for example, the assumption that renewal activity parallels circulation activity). A program is being devised to add all of these figures and graph the results by hour.

A separate area of this report gives the same activity breakdowns by patron statistical class. Remember, statistical class can define a narrow category of users. For example, by looking at the report for 14 April 1982, one can see that UAFRESH (University of Arizona freshmen) checked out 7675 items system-wide, returned 6205 items system-wide, had 145 fines issued and placed 128 hold requests for a total month-to-date activity of 14,155. The latter figure is a mixture of "apples and oranges," but it does give one a figure to compare with other statistical classes to demonstrate library use or at least circulation-related use. Except for not counting renewals—a gross omission—it is a very good report.

Before entering the turnkey circulation marketplace, Geac was heavily involved in banking systems, and still is. I say this because we are now entering into that portion of Geac's circulation system which deals with fines, bills for replacement and the like. Very detailed information is provided online for each user having a fine or replacement bill, including the ability to manually or automatically block usage of the system by a patron when financial obligations reach certain levels. Although strong in the main, the program does have quirks—at least as perceived by the staff at Arizona.

First, one has the ability to modify a billed amount downward, but there is no corresponding ability to modify it upward. As a matter of policy, all bills for replacement are issued at $35 per item. However, if a patron challenges this amount, the fines office staff will seek a price for the item with the understanding that if it is more that $35, the higher amount will be billed. To do so, and it is done very infrequently, is difficult. Either one has to discharge the item in question then manually input "fake"
charge-out-and-return information and then input the price, or one can add on the higher amount in the processing fee field.

Second, in calculating the amount owed to stop (block) users from the system, Geac as standard policy counts only fines—not bills for replacement. I mention this to give you some idea of areas in which online turnkey reality differs from local reality. The financial programs, though, both operationally and report-wise, are essentially good.

One of the benefits the University of Arizona was looking for from an online system was an interface between the system billing a user for replacement of a long overdue item and somehow notifying the fines office staff that the particular item had been returned if payment had already been received for the item. Such an interface is available in the report titled LBPATE. This program produces a list of all patrons who are eligible for refunds. It is a report we have not often used, but will do so in the future. The report can be sorted by item barcode number and by patron name. Both are valuable. The information contained in the program includes patron ID number, patron name, return date, item barcode number, and amount of refund.

One may think that such a report as LBPATE is not necessary. I say this because that was told to me by certain loan staff. The theme went something like this: No one who has paid for a book and then returns it will let the matter drop without coming in and demanding (not asking, mind you) for a refund. Not so! I am saying that some of our assumptions about how users act or react are not necessarily true. There are certain kinds of users who do not come into the library and inquire about refunds. However, the LBPATE report also serves another purpose. It provides the library the opportunity to make a refund when a book paid for by a patron simply shows up. While I do not like to admit it—especially for publication—I guess we do make mistakes from time to time, and both staff and patron do not discharge material correctly or manage to shelve it in the wrong place. This report gives us an opportunity to refund a fine when the error has been ours. We like this report very much!

When a library collects money and/or modifies fines, financial management information is of paramount importance. The Geac system does some interesting things in this area, not all of which work in a library setting such as at the University of Arizona. There is excellent online information by patron query and by bibliographic query on fines, missing status, and billing for replacement items. For example, if I were billed for the late return of the book *Old Man and the Sea*, the information would show on the Bibliography Query and also on my patron record. However, the minute I pay the fine things become a bit confusing. I say this because staff in the library fines office often have to refer back to the Geac-produced Fines Journal to document payment or other action. The journal is pro-
duced as part of overnight processing. It lists all activity of the financial module for the previous day and shows, for example, payments, modifications, cancellations, and refunds. The problem—and it is a big one—is that information is sorted (printed) by time of day. Thus, if I paid a bill two weeks ago, but didn’t quite know when or what day, the staff might have to look through all Fines Journals scanning each day for my name.

To overcome nervous breakdowns by fines office staff and to protect me from attack, our head computer operator asked Geac to report the information by patron name. One still has to look through daily journals, but it is much easier with a name sort than the time of day sort provided by the standard report program.

One of the nonstandard reports that we occasionally use is the printing of financial records for a single user. Again, we have written a GLUG program which will print all financial obligations for a library patron. This is useful when dealing with users who have a lengthy record and who want a hard copy with which to work. The report information is in no particular order, but it does include call number, title, author, item number, charge out, and due date information as well as returned date and time as applicable, and fine amount for each item returned late. The GLUG program also prints out a list of what material a person has checked out. We do not advertise these reports, but rather refer users to a public query terminal to look up their own records. I want to emphasize again that there are many reports that can be “programmed” locally without the services of a formally trained computer operator. I will discuss this in greater detail in the section on Bibliographic and Patron Extract modules.

One of the things we did not do well (in fact we didn’t do it at all) was to specify in our RFP that the Geac system have a program to transfer financial information from the system to the university business office. I mention this to point out that one cannot assume a vendor will provide what may seem obvious.

The University of Arizona has a policy of collecting fines in the library. However, according to state law all fine amounts must be transferred to the business office so that student records can be encumbered. Geac does have a program to do this, but in our opinion it is so tailored to a specific Geac site that it is of no use to us at all. The Geac-developed program dumps aggregate financial information onto the tape for transfer to a business office. In doing so, however, all library financial online records are wiped clean. This was unacceptable to the University of Arizona Library because we are more interested in getting material back through talking with users than we are in collecting money. We are now working with the Geac system and the university’s business office to develop a taped snapshot of student financial records to transfer into the university’s encumbrance system while still retaining financial information in the
Geac database. It is important to note that this capability is above the cost of the initial system.

The Geac does provide the capability to print out total financial records. In fact the library was asked to run this report in lieu of having a tape transfer program in place. We did this with humorous results—at least from our point of view. After an hour or so, we were able to begin printing. When we were 1 percent of the way through printing, we had a 40-page output and the operator made a few quick calculations. Determining that he would be there ten hours, he terminated the program. Clearly the report was possible to produce, but our estimates were that the business office would have a pile of paper over three feet high. Upon notification of this reality, they decided to overlook the fact that student library fines would once again not be part of the encumbrance system.

This report, like some others that Geac provides, can be run more reasonably in a small institution with small patron (bibliographic) databases. It would certainly be difficult to run such a report in a library the size of the University of Arizona's.

The report, I think, would work very well with the standard transfer program Geac has developed as part of the turnkey system. A library could run the patron financial report prior to running the transfer program. In doing so, staff would have a record of patron financial information, although it would mean going through each report to locate a specific patron record.

The last report I want to discuss in the financial area is Geac's standard Long Overdue Summary Report. It lists items overdue beyond a time period defined by the library. The report is sorted by call number and displays the patron name, item number, call number/author/title, due date, return date, fine amount, price, and type. The report has as its main use, we think, that of searching for overdue material. It is another report that is of little utility to the University of Arizona for a number of reasons which may not apply to other libraries. Once again our size and policy/procedures are against us. The report is cumulative and reports all items fitting the time frame profile. The potential problem with this report, as we understand it, is that over time it would become too large for a limited staff to use for searching or even notifying users in an attempt to retrieve material. Currently at the University of Arizona, there are over 1200 items represented on this report.

I would like now to discuss that portion of the Geac system with which I personally have the least familiarity because the programs are executed by computer operators only—Bibliographic and Patron Extracts. The Bibliographic Extract is a statistical tool which allows one to design reports for most bibliographic entries in the system. When looking at it, it is probably more important to explain what cannot be done rather than what can be
accomplished. Outstanding limitations of the system include: (1) bibliographic entries that do not have copy level information cannot be accessed; (2) current transaction data is not accessible, and historical transaction data is limited; and (3) the circulation counter does not count renewals. The operator can define rules using fields either at the copy (item) level of a record or at the bibliographic level (data relevant to all copies of the title). One may decide to either count the number of matches for the rules defined or else to print a list of all items that matched the rules. Geac does not sort the data to be printed, but the sort can be easily arranged.

Although, in theory, the Bibliographic Extract can combine almost any number of rules in any combination of item and title level information, we have found that, in reality, certain requests cause the program to run so slowly that it is greatly reduced in effectiveness. As an example, it runs particularly slow when asked to look for certain call number ranges—e.g., all call numbers beginning with QA. Although we had hoped to use the extract program to count collection growth, such programs take too long to run. We can ask for the number of books in a particular agency which have circulated more than N times, but we cannot ask for books that have circulated to a specific patron class more than N times, because this information is not stored in files the extract can access. We can also ask for a list of books in a specific location which have not circulated since a specified date, but may not ask for a list of books currently charged out. Despite its limitations, we find the Bibliographic Extract to be extremely useful. Data which may be defined includes, but is not limited to, the following:

At the bibliographic level, deleted titles, titles which are part of a multi-volume set, data-verified titles, reordered titles, titles added online, titles with notes, titles bound with other titles, number of pending holds on a title, call number/author/title of a work, notes added to a bibliographic record, publisher of a title, subject of a title, system accession number, date the record was created, date of last update, ISBN number, LC card number, library-defined optional fields (8), OCLC number, local accession number, the price of a book, and the number of copies.

At the item level, the data which may be defined includes the material type, whether an item is missing and the missing type, the item's normal location, whether a copy has been deleted, whether a copy belongs to the library, whether a book is missing, whether an item is on reserve and reserve type, copy is bound with, whether it is fine type, the number of times the copy was charged out, number of times copy was discharged when not previously charged, copy barcode number, transaction indicator, system reference number, date of last change, local copy specific call number, local copy number, secondary location, and library defined optional fields (4).
The Patron Extract works much like the Bibliographic Extract, with many of the same virtues and limitations. One may define a number of rules, then either list or count the number of patrons who match those rules. The Patron Extract gives more access to the transaction file, but does not allow one to print any specific items charged to any specific patron. Because reserve courses are actually pseudo-borrowers, the Patron Extract also allows some access to the reserve subsystem. Information which may be defined includes, but is not limited to, the following:

- the borrower's ID number;
- whether the borrower's privileges have been suspended and a notice sent;
- whether the borrower has recalled books and a notice has been sent;
- whether the borrower has been sent an overdue notice;
- if the borrower has overdue books;
- whether the borrower has an informative message in his record;
- if the borrower has an incomplete address (determined by the library);
- if the borrower has satisfied lapsed or terminated holds;
- whether a borrower's badge has been reported lost, missing or stolen.

An expanded list is included as an appendix to this paper. The last area of management that will be discussed are the Geac system's management capabilities.

Geac takes care of itself very well; in some ways better than it does those of us who seek more from it than it can supply. Geac provides excellent system management information which is generated in the overnight processing routines. These routines are done most nights at the University of Arizona. Very briefly I want to discuss some of the information contained in these reports, all of which to me have very strange names.

One of the most carefully watched reports is LPFCHK which, among other things, tells us the growth of various files in the system. I frequently watch the percent column of the report which states how full each file is. Major files contained in this report include text, history, item, transaction, patron, and interagency. The computer operators not only are concerned with how full files are, but the rate of a file's growth. We pay particular attention to the history file because it tends to overflow rather easily.

The TSTA report has been discussed previously. I mention it here only to point out again that it is generated in overnight processing and could be considered a systems management report. The Terminal Line Analysis Report is one that only a computer nut or a very statistically minded librarian would enjoy. It is Geac's way of telling us how hard it has worked any given day. The important information contained in this report falls into two areas: port activity and terminal activity. Each port in the system is listed with the number of sends (each time someone hits the send key and a command goes to the computer) and the total number of
characters (the nonhuman kind) represented by the sends, which are also known as GODO counts. The first portion of this report totals the number of sends and the number of characters sent. Looking further, one can find out how active each specific terminal was for the day in question by looking at the terminal detail portion of the report. Contained here is the terminal number, the number of sends for the terminal, the number of characters represented, the number of wands represented (my favorite statistic), the number of wand errors (most always zero), and the number of times the terminal had to be reset. I exaggerate somewhat when I make fun of this information, for what one has here is the ability to monitor terminal use. For example, by knowing where terminal number ten is located, one is able to see (perhaps) that it is not getting much use and should be moved elsewhere. The decision is always being made, of course, by someone other than I. As a matter of possible interest, we find that public query terminals get the most use.

The reset statistics prove valuable in two related instances: when the University of Arizona first came online and also as we brought new sites onto the system. One most often has to reset (cancel out a screen display and bring back the general menu) when one does not know what to do next. By watching reset activity, loan department training staff were able to zero in on potential problem sites. Of course we did not know what the problem was, but we could pretty well be sure one was present. In addition, this report is essential to the recovery process should the system have a fatal shutdown.

LPOVR is a rather cumbersome report which, among other things, gives the total borrower records, item records, and call number records in the database. This report also displays summary details of notices sent. However, this is not to be confused with individual pieces of paper processed (in our case, stuffed into envelopes), but rather totals for the different kinds of notices generated. We, like many libraries with Geac systems, use a multipurpose form on which a variety of different kinds of notices can be found—e.g., on the same piece of paper can appear an overdue fine, a recall and first overdue date.

Areas covered statistically for notices generated include totals for number of records output (the total of various kinds of notices); bills for replacement created; processing fees created; the number of first, second and third overdues; fines; recalls placed including reserve recalls; available notices; cancelled holds; expired holds; number of term notices sent (at Arizona this represents faculty and staff reminder notices); processing fees; replacement bills; number of items sent for collection; and finally, the number of long-overdues generated. Other useful information provided by the LPOVR Report is the total dollar amount of overdue fines payable, the total of fines owed (overdue but not yet returned, thus the fine is not yet
toted), and the total overdue fines and fines owed. By using this report, one is able to get a general idea of notice and financial activity for the day in question. Early on, I spent each morning going through all the overnight processing reports.

One report that is very useful, particularly with regard to having the Geac comply with response time mandates in our contract, is a report that lists terminal response times. It is a complicated report to understand, but Tom Owens tells me Geac personnel have been very patient in their explanations. We look at this report daily for signs of response problems.

The final Geac looks-at-itself report I want to present is one that gives what I call demographic statistical information. Displayed are the number of transactions and borrower records on file as well as transaction counts for the following: charges, discharges, fines (lumped together); holds; RRP s; financial; partial payments; current books on loan; current books on term loan; current books on reserve; and missing books on loan. Other information presented may be of interest to a computer operator, but has little value to me. Included are such things as data on the longest transaction chain, number of financial chains, and so on.

We have now completed looking at the four areas of management information one can obtain from the Geac system: circulation, financial, bibliographic and patron extract, and how the system manages itself. If I had time this afternoon to make two points only, they would be that there may not be such an animal as turnkey reality, just different local realities that have needs which may or may not be met with a system called "turnkey"; and always ask for the obvious and then always expect the unexpected when dealing with the turnkey marketplace.
APPENDIX

Data Elements for the Bibliographic and Patron Extract Module Programs

In Bibliographic Extract Module programs, data which may be defined include the following categories:

**At the Bibliographic Level:**
- deleted titles
- titles part of a multi-volume set
- data verified titles
- reordered titles
- titles added online
- titles with notes
- number of pending holds on a title
- call number, author and title of an item
- notes added to a bibliographic record
- publisher of a title (when data available)
- subject of a title (when data available)
- system accession number
- date record was created
- date of last update
- ISBN number
- LC card number
- library defined optional fields (eight available)
- OCLC number
- local accession number
- price of book
- number of book copies

**At the Item Level:**
- material type
- item is missing and missing type
- item in normal location
- copy has been deleted (CPY*DEL)
- book is missing
- item is on reserve and reserve type
- copy is a bound with
- copy has fine type
- number of times copy was charged
- number of times copy was discharged when not previously charged
- copy barcode number
- transaction indicator
- system reference number
- date of last charge
- local (copy specific) call number
- local copy number
- secondary location
- library defined optional fields (four available)

Boolean strategies within these categories can also consider the reverse meanings as well (e.g., listing all items with three or more pending holds but without a note added to the bibliographic record, if so desired).
In Patron Extract Module programs, similar boolean strategies can be programmed. Information which can be accessed by the Patron Extract includes (but is not limited to):

- borrower’s ID number
- borrower’s privileges have been suspended and a notice sent
- borrower has recalled books and a notice has been sent
- borrower has overdue books
- borrower has been sent an overdue notice
- borrower has an informative message in his record
- borrower has an incomplete address (as determined by the library)
- borrower has satisfied, lapsed or terminated holds
- borrower’s badge has been reported lost, missing or stolen
- borrower has an overdue recalled book
- borrower’s privileges have been stopped because a book is too long overdue
- borrower’s fines are over the limit set by the library
- borrower’s privilege class
- borrower’s record was created online
- borrower has transactions
- borrower surname
- borrower initials
- borrower note text
- number of books a borrower has on loan
- number of books a borrower has been billed for
- number of reserve loans for a borrower
- both borrower’s home and local address
- borrower’s phone number
- borrower’s statistical class
- date borrower was registered
- date borrower’s current validation expires
- borrower’s barcode number
- library defined optional fields (six available)
- borrower’s agency
- reserve borrower’s course name
- reserve borrower’s professor’s name
- number of borrower’s current and/or deleted transactions
- number of CDFs (charges, discharges, fine transactions) for the borrower
- number of items on reserve for reserve patrons
- number of financial transactions for the borrower
- number of hold transactions for the borrower
- number of partial payments of fines the borrower currently has
- number of unpaid fines the borrower has
- number of fines the borrower has which have relevant correspondence
- number of inactive fines a borrower has
- number of fines available for refund for a borrower
- number of overdue fines for the borrower
- number of recalls for the borrower
- number of processing fees accessed by the library
- number of refunds the library has given the patron (For example, the Patron Extract system can tell us how many patrons have more than twenty unpaid fines, but not how many patrons owe more than $30.)