

AN ADMINISTRATOR'S APPROACH TO AUTOMATION AT THE PRINCE GEORGE'S COUNTY (MARYLAND) MEMORIAL LIBRARY

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Prince George's County Memorial Library has been bitten hard by the automation bug, and it is one bug we are eager to cultivate. We began some two years ago, but I do not want to give the false impression that this paper will be full of technical information. I know little about this binary business. However, the planners of this clinic were kind enough to say that what they were interested in having was the approach to automation of just such a technically ignorant library administrator.

Perhaps first of all, some background information about Prince George's County may be of interest. Before World War II, Prince George's County was a pleasant rural county whose chief product was tobacco raised for the landed gentry by sharecroppers and day laborers, many of whose ancestors had probably worked the same land as slaves. However, the Federal government owns a large tract of land where the Department of Agriculture carries on experiments in many areas of its responsibility—the Beltsville turkeys, which are widely known, come from here. The new National Agriculture Library is being built on some of this land. Furthermore, the University of Maryland is located in the county. The Census Bureau, Goddard Space Agency, and Andrews Air Force Base are among other large installations in the county. It hardly needs to be pointed out that all these operations bring in ever-increasing numbers of people. The county seat, Upper Marlboro, was formerly a sleepy little rural community whose greatest activity took place at the tobacco warehouses in the spring when the auctions were—and still are—held. The town is still small, but its greatest activity now is at the court house, daily and all year round. The natives are beginning, it appears, to realize what has hit them since the war; for since then Prince George's County has become a bedroom county for the District of Columbia and one of the most rapidly growing counties in the country—a part of the eastern

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seaboard megalopolis. People are moving in at the rate of a thousand a week. This is not said with any sense of bragging or pride, but rather as an item of information to indicate what has happened to our sleepy, pleasant, rural county. This rate of growth has been going on now for over two years; previously it was not quite so fast.

We at the library who are trying to cope with this growth from a service point of view feel as though we were on a treadmill—and at times, even, as though we were caught in a squirrel cage, or as though like Alice we must keep running and running just to stand still. But the picture is not all dark, for many of these people who have moved into the county come from areas where they enjoyed good library service. They have made their demands loud enough to be heard in the court house, and three years ago we opened the first county-owned library building in the county. It is a building of about 38,000 square feet, and in the first year it was open, half a million books were circulated. Previously the highest total circulation of twelve branches and three bookmobiles had only been about 600,000. A second building has now opened—a much smaller one, too small in fact for our county—and later this year another branch the size of the first will be opening. A third large one is under construction, a fourth about to go out for bid, and architects have submitted plans for two more. Our ten-year projection includes more, but these are all that are presently under way.

This expansion is mentioned to afford a better understanding of why we were so interested in the possibilities of automated processes when they began to appear feasible. The library, of course, has not been the only area of expansion and progress in the county, and some of the better pieces of it have been at the court house where the commissioners have realized what is happening, and that drastic steps—drastic to the antiquated thinking of post-war days, but certainly not in relation to requirements—needed to be taken to provide improvement in the mechanics of running the total operation. Two new positions were created, administrative assistant to the commissioners and a budget director. To fill the new positions, two highly qualified young men were hired. They came aboard at about the same time, and very soon began visiting the various departments and agencies of the county. The library was pretty far down the line on the visiting list—just as we had been, for many years, on the budget appropriations. One of our most lasting memories will surely be of that visit; for it was during that conversation that a computer, or computerized operations, was first mentioned among us. Few if any of us had supposed we could live long enough to have Prince George's County Memorial Library operations automated; we certainly were not large enough to warrant the cost of a computer for ourselves, and we were not at all enthusiastic about automating bits and pieces of the business—when we went, it should be the whole hog! Our visitors agreed that it would

certainly be an interesting approach; but it is doubtful whether any of us really knew what we were talking about at that time. The budget director did a study of our accounting system during the next several days and reported to the commissioners and the Library Board that we knew what we were doing in the accounting and bookkeeping area and were doing it well.

About a year later, the administrative assistant called to say that the county was having a study done by a consultant to determine if it would be practical to shift from a tab operation to a computer. What the commissioners were interested in, primarily, were the departments right in the court house, but they would like the consultant to "touch base" with the other agencies of the county that were located outside the court house. That conversation with the consultant was the next milestone in the library's growth and development, for at the end of it, we asked if he would submit a proposal for doing a feasibility study, in depth, of the library alone. He did, and the Board accepted the proposal. It cost us \$5,000.

Between the time of the signing of the contract for the study and when it actually began, we asked two young men on our staff who had previously indicated some interest in automation and data processing if they would be interested in taking IBM's aptitude test with the possibility of one of them being selected to come into headquarters (both were branch librarians) to work with the consultant during the study. Both took the tests, and both did well, but one a little better than the other. Since he had also expressed keener interest in the project when we first talked about it, he was selected to work with the consultant. This still appears to have been a good arrangement. The study was completed, we think, more quickly than it would have been without the librarian member of the team; and we are all convinced that it was completed with less pain and distraction for the departments studied because a librarian who was thoroughly familiar with the library system was working right along with the consultant. And, of course, we profited further in that our librarian began to learn a great deal about automation during the course of study. The consultant seemed to like the arrangement, too.

Before going any further, we should say that when the Library Board had accepted the proposal for the study, we began bringing the staff into the picture immediately. First, the administrative staff held animated, even excited, discussions of what this might mean for us. Next, we announced at what we call our branch meetings (a weekly meeting at administrative offices attended by branch librarians and/or librarians responsible for book selection for the branches) that the Library Board had hired a firm of consultants to do this study. At this time, with the branch librarians, it really was more of an announcement than a discussion, although any questions anyone had at the time we tried, at least, to answer. Even at that early date,

however, we made it quite clear that if the study indicated that the library could "go computer," and if the county said we might have the money for it, there would be no library personnel without a job if the conversion were made. Of course such a statement was comparatively easy for us to make, for we were growing at such a rapid rate, that we always seemed to have vacancies. In our statements (or reassurances) we were careful to say, nevertheless, that there might well be some retraining needed, and different positions to be filled, and some positions eliminated, but no one was going to find himself without a job if he wanted one.

To return now to the report of the study done for the commissioners. That report recommended that the county should convert from the tab system being used in the treasurer's office to a computerized system which would take care of all county departments which could use automation. If this major premise were accepted, the consultant's next recommendation was that a data processing manager should be hired immediately so that specifications for the computer could be written and conversion work be started.

With those two recommendations in mind, let us consider the report made to the Library Board by the consultants. They said our operation alone was too small to warrant the cost of a computer. However, if the county government accepted the recommendations made in the feasibility study done for them, it was recommended that the county get a computer capable of handling all phases of the library's automated systems and include the library as one of the departments needing the computer.

By the time the report on the library study was turned in, the county had already hired a data processing manager, so it was apparent that if the county would accept the concept proposed for the library, we were in business. I might here insert a plea for departmental cooperation. There are not many public libraries in the country large enough to support a computer by themselves.

At this point, we ourselves ran into our first difference of opinion with the county. We believed that the consultants who had made the study should be retained to implement it, because we had already invested \$5,000.00 and about five months of time in indoctrination and training of the consultants in library procedures, and it was obvious to us that they had learned a lot. None of us was enthusiastic about going through it all again if it were not necessary—and we did not think it was. It was already evident that the county's data processing manager had more than he could handle with the help he had been able to hire. We were able to convince him of the soundness of our arguments, and he helped to justify it to the commissioners. So, once again, the Library Board entered into an agreement with the consulting firm, this time to implement their own study.

Their first effort was to write the computer specifications which

would be needed to handle all the library's systems. With this assurance that our automation was on the way, we formalized the position of our librarian specialist in this area as chief of the library's data processing efforts, and he thereafter continued working closely with the consultants, while also learning more on the job. It took some months to prepare the specifications for bidding. During that time, and until a bid was accepted, there were untold hours of consultation with various computer vendors in an attempt to determine the computer which would do all the jobs needed for all the county departments and agencies. Our consultants were very deeply involved in this activity because our planned uses for the computer were far more sophisticated than those of any other department or agency at that time. The library also had a real "sticky wicket" in circulation control for the bookmobiles. This one problem alone may well have taken as much time in consultation as the rest of the operations put together—and it has not been solved to our complete satisfaction yet. The specifications for the library's total needs were written for on-line real-time response techniques. An alternate was given as using the off-line, punched paper-tape batch processing method. We all kept our fingers crossed during the bidding for the on-line method to be within the county's price range. We uncrossed them with relief when the county accepted the bid for the on-line feature. (Our bookmobiles, of course, cannot be on-line. And we are still grappling with this problem because of the space needed for the paper-tape punch machinery.)

After acceptance of the bid, including the on-line equipment, made going ahead with automated systems a sure thing, we once again talked with staff, telling them more and more about the wonders of this business and reassuring them again about their jobs. At this time, too, several key punch machines were delivered, and an aptitude test was given the typists in technical services. We started with technical services typists because these were the people who would be most deeply involved first, and were more likely than any others on the staff to have to be retrained. Several of them were started on initial training on the key punches.

Knowing what we know now, we might well lack the courage to start out again; for it has not been all beer and skittles! All the foregoing was undertaken over a year ahead of computer delivery time. We began with all the faith and exuberance of the ignorant. The terms of the county's contract with the vendor allowed for a period of testing and debugging programs prior to computer delivery. Mighty fine sounding phrases; but unless the software for operating the hardware is ready, you might as well turn over and take another nap, which is a lot easier on your constitution than trying to work with untried software. We were dealing with a third generation computer, and apparently it was so young that even the parents did not know the cor-

rect diet to make it operate properly. Our plans for having all our systems "go" when the computer was delivered in Upper Marlboro in June, 1967, became so riddled with frustrations that ultimately the consultants withdrew from the project.

But before this time we did have some successes. One of the things the consultants suggested that they might do for us was to hold a series of seminars in the evening so that any interested staff members could attend and learn some of the details of the projected programs. This seemed a fine idea. Since there would be some expense for materials used, we asked the State Division of Library Extension if they would fund the series from the LSCA money. We were not asking for much; they liked the idea and gave us the money. They requested, however, that we open the seminars to anyone from any library in the state who might care to attend. This we did, gladly, and for an eight-week period about thirty people (most of them from our own staff, but eight or ten from other libraries) learned about and discussed the miracles of automated library management. Further, before the consultants left the project, they held a day-long discussion program with our branch librarians and administrative staff. We hope to have more of these conducted by the county's data processing staff or the sales representatives.

The account so far might well give the impression that we have been left high and dry, half automated and half pencil-pushing. This is not the case, however. A systems designer from the vendor's offices and a programmer from the county's data processing staff have since arrived to carry on with the work begun by our consultants.

So far, I have not stressed that we plan for total library management by computer. It is perhaps time to describe further what all the systems being designed will provide (with apologies for repetition to those who may have read the account in the December 1966, issue of the Wilson Library Bulletin.*)

First of all, we will have our book catalog. We have an adult book catalog now, but it is done outside the library (by Science Press). With the computer, however, we will do our own—both adult and juvenile. Actually, of course, most of the other pieces of management depend on the information required for the book catalog. Previously I mentioned key punch machines and retraining some of our typists to do the job. With the departure of the consultants and the arrival of the vendor's representative, a new approach to the mechanics of conversion is being made. Since we began our conversion plans, something new has been added. An IBM Selectomatic typewriter, with paper-tape punch, reader, and editor is being manufactured by Dura Business Machines. We propose to use this instead of key punches for all input except book cards and borrowers' cards. The plan now

*Hage, Elizabeth B. "Computer Potential in Maryland," Wilson Library Bulletin, 41:401-403, Dec. 1966.

is to farm out the conversion project, although we have not yet received a firm proposal on cost. Our own typists, then, will carry on with current cataloging. This method has several distinct advantages over keypunching, it seems to us, the chief one being the fact that typists are already familiar with the machine. The tape, of course, can be batch-processed by the computer at night. At that time, too, labels for book pockets and spines will be printed by the computer.

Since this book information is in computer-processable form and is also an integral part of circulation control, the next operation to implement, it seems to us, is circulation control. For this, an on-line data collection device, linked, together with a teletype machine, to the computer, is needed at each charge-out area. A key-punched book card for each book will be in the pocket of the book. This card, and the borrower's punched identification card, are simultaneously put into separate slots of the data collection device (called an EDGE unit), and the machine is triggered for the computer in Upper Marlboro to make the charge. If anything unusual relative to that book charge is detected by the computer, a message comes back in a matter of seconds on the teletype. Of course, we have to think first of all the possible unusual things that might occur, so that we can program for them. We can then question the borrower about the problem, or look to our own records, depending on which unusual item is disclosed. Our reserves will also be flagged by computer, thus eliminating the bulk of personal searching. That is to say, when a borrower places a reserve for a book, the appropriate message will be sent to the computer via teletype, and the proper title will then be automatically flagged so that when it later comes up for discharge upon return, a message comes back via teletype telling the desk attendant that there is a reserve on the book. The desk attendant then consults the reserve file, holds the book, and mails the reserve card.

Overdues will be printed out automatically, during the night, after prime time, and we will also be able to prevent a delinquent borrower from borrowing more books until his record is clear. This will work for any branch in the system from any other branch in the system.

Periodical check-in will be another item for the computer, as will withdrawals from the shelf-list and catalog, and just think of the amount of time to be saved in filing and "un-filing" in the catalog and shelf-list! Our supplies-ordering and inventory will be done by computer; our personnel records and payroll will go on, too, since it is possible to lock certain information in the computer so that only authorized personnel may retrieve it.

The capability for "conversation" between us and the computer through the use of on-line equipment and programming seems to us most promising and immeasurably useful. Technical services, including acquisitions, will be able to do checking of all kinds more rapidly

than is now possible. Administration can acquire information about practically anything in almost no time. If this sounds unduly enthusiastic about the program upon which we are launched (with the help of the county government) I apologize, but we are all excited about it—the staff, the Library Board, the county government. We do not expect these wondrous things to happen without our share of traumatic incidents, and we have had a few already. As a matter of fact, we feel, like others, that we should operate two parallel circulation control systems for some months in order to be sure that we are not asking some member of our borrowing public either to return or pay for the Hope Diamond which is long overdue; or that we are not charging out the atomic submarine fleet to a county commissioner, or something equally impossible—yet which may indeed happen according to what one reads about conversion to the machine. We anticipate fewer of these kinds of problems with our book catalog because we have been involved in this kind of production up to a point (although not actually processed in our library) for about three years now. But maybe we are overly optimistic there, too. We do know that we are going to get cooperation and help from the county government, because at this point without our systems they do not need anything like the expensive equipment which they have contracted for.