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## Papa Abel Remembers — The Tale of A Band of Booksellers, Fasicle 11: Corporate Bibliographic Control Systems

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[Authorial Emendations and Redactions: Endeavoring to write a detailed and informative history of any institution that relies solely on the faulty and failing memories of a declining body of survivors can lead to a significant number of errors, oversights, and omissions. Subsequent conversations and exchanges have revealed some of these problems and, unhappily, not always before they have reached the permanence of print. Therefore, this author has decided to resort to this form of emendation to correct errors that appeared subsequent to submittal to Katina. Such will be offered in this space as discovered, together with the author's apologies for any embarrassments, other than the author's, that may have been committed. The first such corrections are: Aaron Saady joined the Argonauts in 1964. Tom Martin recruited him from the Marboro store he was running in Westwood Village, a suburb of Los Angeles. He was brought aboard to open and manage the Denver office. While Aaron was training in the San Francisco office with Fred Gullette, Jim Cameron appeared and plans were changed. Jim opened and managed the Denver office, and Fred Gullette agreed to leave San Francisco and open a new regional office in the Chicago area. In late 1965, Aaron took over the management of the San Francisco office. By 1966, rents in the city had risen, so Aaron relocated to new, cheaper quarters across the Bay in Sausalito, which was still a sleepy fishing village with readily available warehouse space.] — RA

The last few months of 1965 and early 1966 began the opening chapter of a then dimly perceived sea change in the operations of the firm. For the past couple of years, Ralph Shoffner had served as a consultant to the firm on computers and their integration into our firm's operations. We also had a helpful library account with the Boeing Scientific Research Laboratories, which had a remarkably competent staff of analysts, programmers, and operators that had been assembled to master the many quirks and subtleties of bibliographic control on their computer system.

(Many readers who were not about in the early days of bibliographic control computer applications on those stupid machines may well

be wondering why such a point is being made of this matter. The fact is, millions of dol-

lars and end-

less hours of book peoples' time were spent over a number of years to master bibliographic control on devices originally developed to solve involved mathematical equations in engineering and science. It took substantial inventiveness to even visualize that such an application might be devised using these huge, cumbersome, primitive devices that ran on radio tubes and that had only a few programming geeks stumbling about to bring them to heel. The actual accomplishment was a genuine achievement. Hence, I was full of admiration at what the staff at Boeing Scientific Research Laboratories and Hillis Griffith, who worked out in the wilds of Idaho at the Nuclear Reactor Testing Station, had accomplished. Moreover, I was equally impressed by the vision of **Ralph** Shoffner and what he was bent upon for the University of California. All this achievement is too easily forgotten in these days of PCs, Microsoft, etc., and the off-the-shelf, well-debugged software.)

With Ralph's assistance, we finally decided to install an IBM 360/30, now referred to as "Big Iron." The IBM 360/30 ran on punched cards, and its data was stored on huge rotating disks. IBM 360s consumed jillions of kilowatts of electricity, so much so that the room in which they were housed required a false floor to run all the cables, an independent electrical breaker and feed, and a substantial air-conditioning system to maintain ambient temperatures within the machine's operating range. A maintenance agreement costing several thousand dollars a month was required to keep an IBM crew of technicians on duty for eight hours of weekly maintenance. Fortunately, we found a building that had been remodeled to accommodate such a computer that was located about half a mile from our new warehouse in Portland.

At about the same time, Boeing discontinued its Scientific Research Laboratories, folding it back into other sections of the organization. Gary Olson, one of the young hotshots on the Boeing systems staff came aboard to manage our computer operations. He brought a significant number of other **Boeing** people to man his staff. So, in a sense, we had a running start on bringing up a bibliographic control system because the staff had some experience at that kind of systems work. The higher level programming languages, e.g., COBOL, etc., were just coming into some general use, but the IBM 360s worked most efficiently on machine languages. Thus, most of our programs were written in machine language - an esoteric kind of thing requiring a systems programmer to keep things straight. These programs required continual attention to keep them running correctly, and we wound up with a staff of 24 systems analysts, programmers, and operators, the latter working 24/7, except for an 8-hour weekly break for the IBM technicians to do routine maintenance. In addition to these ongoing operations costs, we signed

for a machine that cost something in/over the million-dollar range.

While I suppose there is some sort of approbation intrinsic in being a small bookselling firm that rolled the dice on the future of bibliographic control on a primitive computer and thus owning one of the first computers in Portland, this kind of investment and ongoing cost genuinely put the firm's future in jeopardy. Why then did we make this gamble? In its simplest terms, we did it to keep the firm in step with, or slightly ahead of, the apparent direction of the most forward-looking academic and research libraries in the country. We had an added incentive in the singular growth in the number of libraries employing the Approval Plan as a significant tool in their acquisitions armamentarium. The mechanical Flexowriters could no longer keep up with the form output required by the Approval Plans, and the operation of driving them had become very complex and cumbersome. Computer control seemed a good initial answer to this problem. One other matter of interest in this connection was that we wanted to deal with the substance of the business — the intelligent control of books - not the internal financial and accounting practices of the firm. The limited number of competitors that had computers used them for financial and accounting purposes. But we were a band of booksellers for whom bibliographic control was conceived of as central to what we were doing.

In taking this new direction. I want to pause here and make a crucial observation about the implied and assumed make-or-break magnitude of the risk. It must be recalled, however, that this was simply the latest and most imposing risk we had thus far undertaken. From its beginnings, the history of the firm was littered with comparable magnitudes of risk relative to the successive size and resources of the firm. Some readers may have taken my repeated use of the word "Argonauts" to identify the staff of the firm as some sort of egocentric conceit. On the contrary, it is the best literary descriptor I have been able to find to describe that band of people. Virtually all had left safe jobs with well-established organizations to take the ride in this entrepreneurial, highly specialized venture. The firm had no alternative business niches - no wholesaling of mass popular titles, no nonbook products, no customers alternative to academic and research libraries, and no focus on objectives other than the control and distribution of scholarly books. Further, the firm refused to indulge the old wholesalers' dodge of "out-of-print" or "not available to the trade" claims to avoid orders from publishers with whom they did not work, orders with incorrect bibliographic information, or orders of long out-of-stock titles. We refused to resort to this fudge. In fact, maintaining a bibliographic research facility enabled us to meet our objeccontinued on page 77

### **Papa Abel Remembers** from page 76

tive of supplying any publication a library might choose to order. On the part of those joining the band, it took an appetite for creating a new thing and for wagering all the risks inherent therein.

As my readers know, the buyers of serious and scholarly books are widely scattered and very thin on the ground. In those days, however, these buyers were in the forefront of the development of computer applications. Apart from sectors devoted to mathematics and science, the academic and research libraries sought and successfully achieved a worthy place on the leading edge of such developments. Any firm genuinely committed to serving this highly specialized and unique profession in its natural lair was well advised to associate itself with the new and novel developments being put into place by the pacemakers in developing these applications. Therefore, this band of Argonauts shouldered yet another new and substantial risk in order to serve the knowledge needs of the institutions and individuals it had identified as those with which it wished to work.

In developing our bibliographic control operational software, we pioneered several new approaches to the problems inherent in using devices originally designed to deal with numbers rather than sophisticated alphabetical text. The fundamental key to these innovations was to reprogram the software to ignore the usually fixed and predefined number of characters assigned to a record field, which had been a quite satisfactory gambit for dealing with fields filled with numbers only. To solve the problem of dealing with alphabetically-based fields of varying lengths, we insisted from the beginning that delimiters define the beginning and end of each field in the record. The IT staff initially resisted, as they were comfortable with fixed, predefined field lengths, but soon they appreciated the wisdom of using field delimiters. One reason for this resistance was the amount of code required to format records this way. We appropriated the dollar sign (\$) to indicate a field followed by an alpha character to define the content of that field, and we maintained a strict order of the sequence of delimited fields in the record format. To the best of my knowledge, we were the first to develop this code, and it became a common method in bibliographic record formatting within a short time of our use and the subsequent circulation of our records to libraries. Such a flexible field record led, in turn, to a much more flexible method of database searching. The ability to search our bibliographic databases quickly and efficiently in terms of machine time and cost-effective logical operations was of paramount importance in the development of our bibliographic control software. And this became increasingly important when we undertook the construction of utilizable catalog collections in academic libraries.

Building these systems and writing the code took terrifying lengths of time to accomplish in contrast to the relatively short period it had taken to write the code needed to run the **Flexowriters**. It takes many years to develop systems of any sophistication and, unhappily, bibliographic control systems of any great utility demand substantial sophistication. To build a searchable, bibliographic database based on the code driving the **Flexowriters** took several programmers months of time. This was an extended, nail-biting affair. The payroll continued to mount but produced no revenue for months. Some of the bookselling staff routinely questioned the wisdom of such an undertaking, and it took a strong control of management impatience to endure the lengthy intervals required in systems development.



A major element in expediting such development work was the need for an accurate and clear set of instructions to the IT staff on the required outputs. Absent such elaborate instructions, the programmers built in all manner of options, as they were unsure of all the outcomes needed and took the frequently ruinous and counterproductive precautionary principle to include unnecessary or deferrable outcomes, much like most off-the-shelf software. I quickly learned that it was desirable to design a flowchart of the new systems we needed and thus supply a clear picture of the desired outcomes.

Some readers may wonder why this installment of the history of the firm is almost exclusively devoted to the internal development of corporate bibliographic control systems. This was a conscious decision, for I opine that most of my readers are using one of the off-the-shelf bibliographic systems that have long been in existence. So, they are not familiar with the thought, the sometimes futile efforts, the wild array of difficulties, and the sheer exercise of will implicit in the first assays in the development of systems that use primitive devices not originally designed for such applications. Today, it looks like a piece of cake, but it was a harrowing experience for those of us connected with the first few organizations that endeavored to bring these stupid devices to heel and to provide the kind of inestimable service that is now widely available in bibliographic control systems. I apologize to all who think this is "more about penguins than they ever wished to know."

#### Acquisitions Archaeology from page 75

from one definite, finite strategy to another, obviously, but a shift that creates possibilities in November 2009 that are multiple, multidimentional, and far more uncertain. **Remo** is all about *what* (items) we manage — **eSource Manager** and similar systems are all about *how* we manage whatever (content) we need to.

And, of course, the ad for eSource Manager doesn't direct you to a toll-free hotline. It gives you a URL.  $\mathfrak{P}$ 

#### Endnotes

- 1. Jesse Holden. "Acquisitions Archaeology: Valuing Anxiety" *Against the Grain*, v.21#6 (Dec. 2009-Jan. 2010), p. 77.
- 2. Michel Foucault. 1972, The Archaeology of Knowledge and the Discourse on
- Language. Trans. by A. M. Sheridan Smith. New York: Pantheon Books, p 31. 3. Readmore. "Reduce Your Serials Management Problems." *Against the Grain*,
- v.2#1 (Feb. 1990), p. 24. 4. My thanks to **Bruce Strauch** and **Laura Gasaway**, for their expert opinions on copyright.
- 5. Swets. "Master Your Electronic Resources." *Against the Grain*, v.21#5 (Nov. 2009), p. 34.