# Preserving IBM 1401 software: An appeal for help from Van Snyder

Annals readers will be aware of efforts to preserve artifacts representing the history of computing. Various museums around the world hold collections of computer hardware, peripherals and memorabilia. Some have also tried to come to grips with the thorny issue of preserving software. There are also private collectors who have historical computer equipment.

The IBM 1401 and related computers were widely used work horses. In some sense they were early mini–computers, the 1401 processor being only slightly larger than a refrigerator. The 1401 was also used as a front–end for mainframes of that era, such as IBM's 7090. The 1401 was the first system for which I was paid to write software.

I have recently became re–interested in preserving information about the IBM 1401 and found that there exists a small group of other people with similar interests. Indeed, most of them have been working at preservation longer than I have. Both the Computer History Museum History Center and Paul Pierce have 1401 equipment. Bob Lee has several manuals. Joseph Newcomer and Jay Jaeger wrote a 1401 simulator for PC/DOS (see http://www.piercefuller.com/collect ). The Computer History Simulation Project, spear headed by Bob Supnik, has developed a framework for several simulators including a 1401 simulator (see http://simh.trailing–edge.com ).

Having a simulator is an interesting and useful step toward historical preservation, but to make it truly interesting and accurate, one needs some software. My area of interest in 1401 preservation is to find software – especially "system" software such as assemblers, compilers and utilities.

The most widely used software development tool for the 1401 was the Autocoder assembler. There were at least three versions of this assembler. One, known as "two–tape Autocoder" would run, as its name implied, using only two tapes. A later version included support for macros, but required a minimum of four tapes. The third version used disk. The community of 1401 preservers has a copy of two–tape Autocoder, complete with a source listing. It seems, however, that nobody remembers how to use it. The "listing" was found on a tape and has been transferred to modern filing systems. Within the listing are images of cards that are easy to extract to make a file equivalent to a program deck. Unfortunately, when one runs the program, the first phase immediately loads the second phase without doing anything else. The second phase writes itself on tape, and then tries to load the third phase, but that fails because things aren't properly set up to load the next phase. The listing is dated July 20, 1962, and has the initials RBR, but we don't know who that was.

We have manuals for four–tape Autocoder. These manuals include detailed installation and operation instructions. The only problem is that we can't find the software. IBM's distribution tape was labeled "1401 Autocoder– Listing and System Deck– Program #1401–AU–037". In order to run the assembler, it was necessary to prepare another tape, according to the installation instructions. We don't have a distribution tape, or one prepared from it.

IBM also provided Cobol and Fortran compilers. We have neither manuals nor software for these products. There were also sort/merge utilities, named "Sort 6" (for disk) and "Sort 7" (for tape). We a manual for Sort 6, but do not have software for either product.

Did you work with IBM 1401, 1410, 1440 or 1460 computers? Do you have equipment, manuals, software, software listings, drawings of the kind that maintenance engineers would have used, photographs, notes, or even recollections of how to use software (especially two−tape Autocoder)? Application software, even if only in the form of listings or object decks, is also of interest. Look in your garage, your basement, your attic, the bottom drawer of your desk, the top shelf of your bookcase.... If you have any of these things, or you know somebody who might have them, please contact:

Van Snyder, vsnyder@math.jpl.nasa.gov
Paul Pierce, prp@teleport.com
Bob Supnik, bsupnik@us.inter.net
or
Mike Cheponis, mac@wireless.Com

Many thanks.

*Van Snyder*
*Jet Propulsion Laboratory*