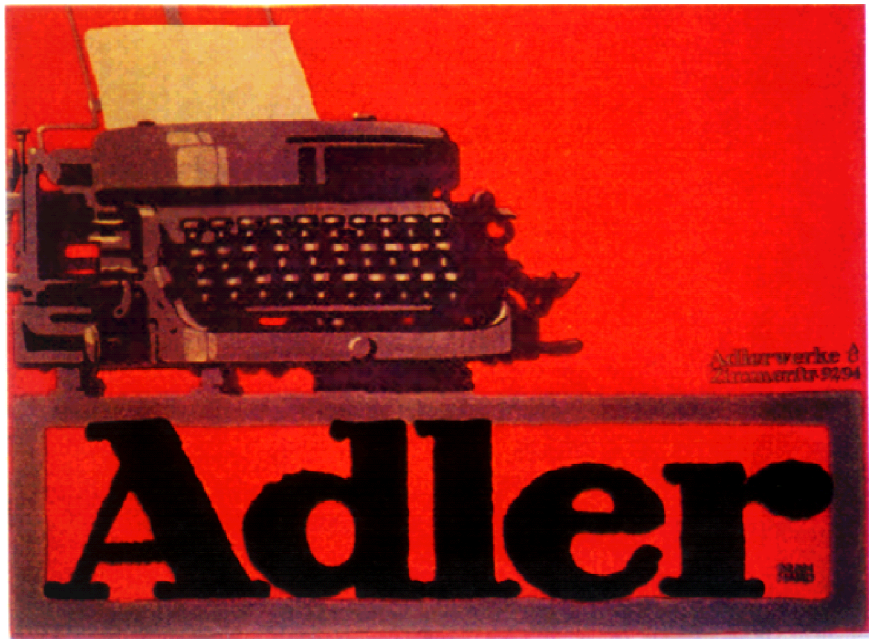


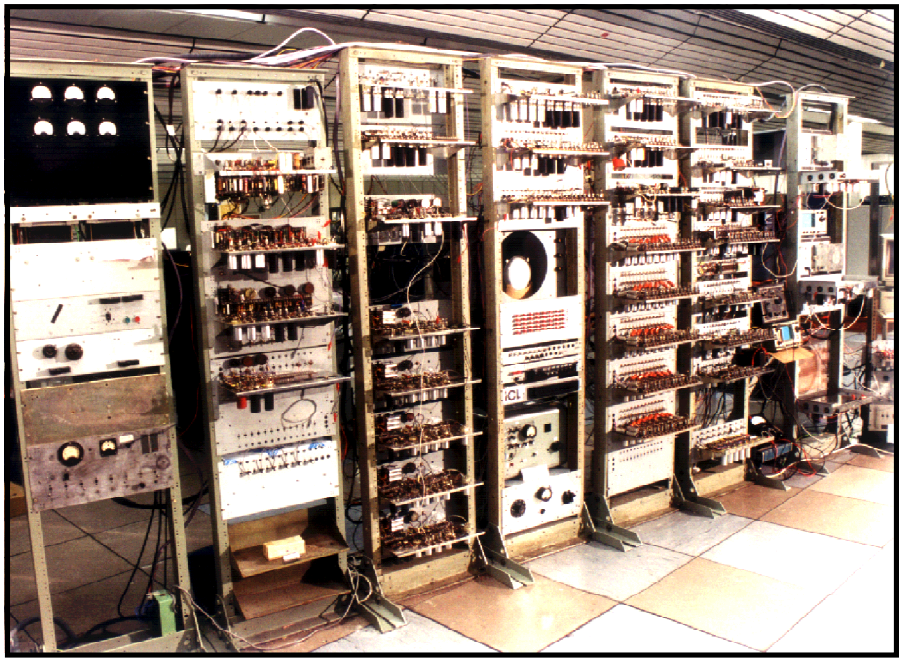
CONTENTS

ETCetera

No. 43 June 1998

Magazine of the Early Typewriter Collectors Association

"Memory" Memories



The Baby
50 Years Later

ETCetera

Magazine of the Early Typewriter Collectors Association

June 1998 --No. 43

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ON THE COVER

The re-creation of a computer known as "The Baby," first activated in Manchester, England, in 1948. It was the first computer able to electronically store a program. Photo reprinted with permission of the Department of Computer Science, University of Manchester.

BACK PAGE

Two typewriter posters. "Miss USA" was issued by the Royal Typewriter Co. during World War II. The Adler poster was designed by artist Lucian Bernhard in 1908. It is from the collection of Norwest Corporation and was recently on display at the Denver Art Museum

EDITOR'S NOTES

This year's first two issues of ETCetera have been especially gratifying for me as the editor. That's because I've had so much material from colleagues who have done serious research and have shared it with the rest of us. In March we saw the bylines of Bob Aubert on the Blickensderfer line, Bob Otnes on the Comptometer Model A and Peter Weil, who passed along a copy of the Blick Electric brochure. This month we have Marco Thorne's article on the Type-O-Writer and Frank Lindauer's find of the piece about the American Typographic Machine. Not only do we need to keep the cards and letters coming, but contributions of material as well. Freebie subscriptions go out to those who send in full articles. Discounts to those who send in photos and small items.

†††

Marco Thorne spent a lot of time and effort piecing together the story of the Type-O-Writer (see page 14). He had a lot of help along the way and wants to convey gratitude to the following: Ray Ballash (Cerritos, CA), Don K. Black (Scarborough, Ont., Canada), William J. Jorman & staff (Washington, D.C.), Nick Beck (Sherman Oaks, CA), Ed Cray (Los Angeles, CA), Don Emblen (Santa Rosa, CA), Corban Goble (Bowling Green, KY), Frank Granger (Lake Wylie, SC), Rich Hopkins (Terra Alta, WV), Roger Mays (Templeton, CA), Michael Phillips (Findlay, OH), Dennis Renault (Sacramento, CA), Gilbert Rice (San Diego, CA), Carl Schlesinger (Rutherford, NJ), Jerry Spurlock (Goodlettsville, TN), Dale Stedman (Fort Wayne, IN), Fred C. Williams (Hayward, CA) and Fred Woodworth (Tucson, AZ).

†††

How much do computers have to do with typewriters? Some of you *might* be asking that question in light of our cover story this month. Besides the fact that virtually all modern computers use the 126-year-old original typewriter keyboard, you should also remember that ETC's original goal was to encompass *all* office devices–and the computer sure is one of them. Besides, the story of The Baby Mark 1 is a pretty good yarn. Thanks to Brian Napper of the University of Manchester for helping me understand what can be, at times, pretty difficult material.

†††

Speaking of computers, let me take this opportunity to urge all collectors to *get connected* to the Internet. The availability of easy worldwide communication via e-mail, plus the highly visual medium of the World Wide Web is too good to ignore. For those who need help, I suggest contacting EarthLink Network, a company I have used for years and recently visited personally. It has super customer support. They'll guide you every step of the way and be there by phone whenever you need them (24 hours a day, 7 days a week). Call them at 1-800-395-8425. If you're already connected but aren't super happy with your current Internet Service Provider, you'd probably be very satisfied with a switch.

If you don't want to buy a computer, look into WebTV, which puts you online via your TV for about $200.

Advertisements

WANTED: $5000 plus shipping paid for (Blick) Niagara or Best. Also other unusual Blicks wanted. Full details to Bernard Williams, 80 Manor Road, Burton-on-Trent, Staffs., England. Tel 01283-565858

FOR SALE: Box of parts for Smith Premier No. 1. Make offer. Lin Lewis. 803-881-TYPE (weekdays).

FOR SALE: first class repros. of original ribbon spools for early Hammond Typewriters. Contact: John Lewis, Sr. at Business Systems Sales and Service, 4805 Menaul N.E., Albuquerque, NM 87110. Daytime Tel: 505-884-0600.

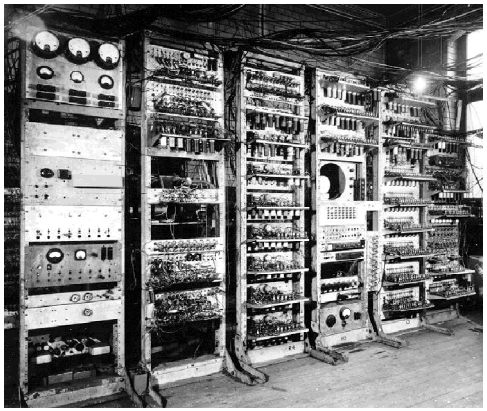
TIPS:

UNDERWOOD red-front machine used by employee of Western Union. Russell Cobb, 5 Shoreview Cir., Indialantic, FL 32903. (407)723-0543.

UNDERWOOD port. 3-bank w/case. Dixie Mayberry, 850 Westbrook Dr., Mooresville, IN 46158-1028.

CORONA folding, case, cleaning brush, oiler. Ex cond. Needs cleaning. George Aring, PO Box 11, Churchville, VA 24421.

OLIVER 3 - Paul Miller, 1638 New Abbey, Ave., Leesburg, FL 34788.



PHOTOS FROM UNIVERSITY OF MANCHESTER

"The Baby" computer at Manchester, England, 1948. Compare this to the photo of today's Baby reconstruction on this issue's cover.

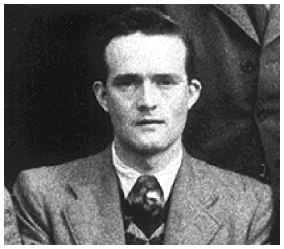
The Computer's "Baby" Boomer

by Darryl Rehr

On June 17, scientists in Manchester, England, will activate a reconstruction of an early computer known as The Baby to commemorate its birth 50 years ago. The Baby is a strong contender for the title of World's First Computer. Like the typewriter, however, "first-ness" is in the eye of the beholder.

The Baby's claim rests with its ability to electronically store any program fed into it. Today, the hardware making that possible is known as RAM, or Random Access Memory. Think about it. One of the first questions anyone might ask about a computer today is, "How much RAM does it have?" In the case of The Baby, it was not a question of how much, but whether it had any RAM at all!

Prof. Freddie Williams

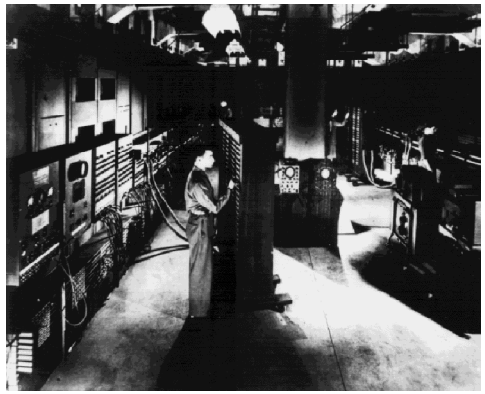


Prof. Tom Kilburn

The Baby, more officially known as the SSEM (Small Scale Experimental Machine), was built by a team led by F. C. (Freddie) Williams and Tom Kilburn, who came to the University of Manchester in 1947. At the time, scientists were competing to develop the first useful computers, and it was universally recognized that a reliable form of electronic storage (or memory) was an essential ingredient.

Williams had earlier developed a technique to store electronic information on the surface of a Cathode Ray Tube. Dots on the surface of the tube could be written by an electron beam, causing a charge and the phosphor to glow. The charge could be "read" by a metal pick-up plate placed over the front of the CRT. However, the charge would start dissipating very quickly. The solution was to continuously scan the set of dots, reading and resetting each bit. The storage CRT became known as the Williams Tube and became an essential element of The Baby.

A Williams Tube was used not only to store intermediate results of a complex calculation but also to actually store the program running on the machine. The Baby needed only the keystrokes of an operator to enter any program. It was thus the first electronic "stored-program" computer. Today, the idea of a computer that cannot store a program is absurd. It would be a computer with no RAM at all, useful only as a doorstop, bookend, or boat anchor.



The ENIAC in 1946. Photo property of the University of Pennsylvania's School of Engineering and Applied Science (originally known as The Moore School of Electrical Engineering).

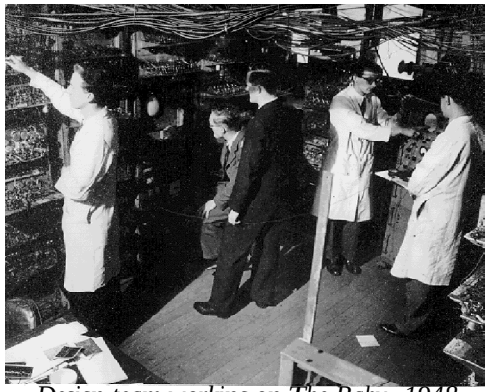
Not that it was always that way. In fact, the gigantic ENIAC (Electronic Numerical Integrator and Computer) with its 18,000 vacuum tubes grabbed scientific headlines from the moment it was first activated on Valentine's Day 1946. Hailed as the largest electronic device in the world, it occupied a 30-by-50-foot space at the University of Pennsylvania. Developed by Dr. J. W. Mauchly and J. Prosper Eckert, Jr., the machine gets many of the modern-day votes for "first computer." According to a *Newsweek* account, the first problem ENIAC tackled required only two hours of calculation. Without ENIAC, it would have taken 100 man-years of conventional figuring. However, ENIAC could not electronically store its program–it had no RAM. Changing programs took hours of effort, changing patch cords, resetting dials, etc.

Another famous computer with no RAM was the super-secret Colossus, built in England during World War II to help decipher codes generated by German cipher machines. The Colossus employed 2,500 vacuum tubes and is another of the "first computer" contenders. However, it was a special purpose machine, built to do one job, which it did very well. Ten Colossi were built for the British code-breakers, but their existence was not revealed until 1970! A rebuilt Colossus was completed a few years ago and activated in 1996.

In contrast to its large-scale cousins, The Baby was… well, a *baby*. It used only 500 vacuum tubes, although to today's eye it was still a behemoth. Photos show racks upon racks of complex equipment seven feet high and eighteen feet long, connected by miles of electronic spaghetti. Spoiled by today's micro-miniaturization of electronics, we tend to gasp when we see how it "used to be."

Still, the creators of The Baby knew they were making history when they saw their machine work for the first time. Professor Williams would later write:

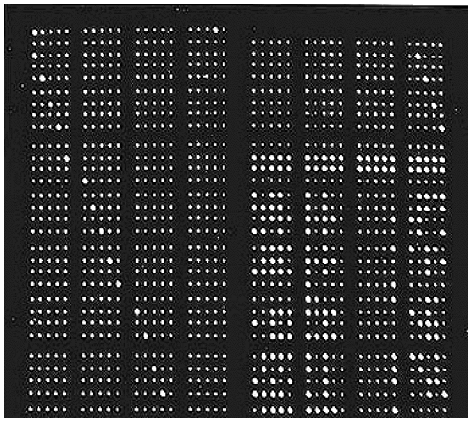
> "A program was laboriously inserted and the start switch pressed. Immediately the spots on the display tube entered a mad dance. In early trials it was a dance of death leading to no useful result, and what was even worse, without yielding any clue as to what was wrong. But one day it stopped, and there, shining brightly in the expected place, was the expected answer. It was a moment to remember. This was in June 1948, and nothing was ever the same again."



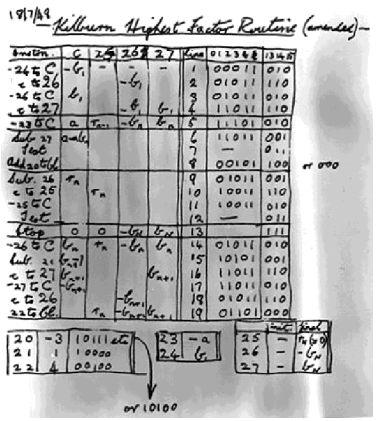
Design team working on The Baby, 1948

The shivers traveling along Williams's spine were generated by the machine's abstract ability. This computer was not used to draw a picture or send E-mail. Instead it used a modest seventeen-step program to find the highest factor of a number. Early trials, for instance, worked on the number 2^{18} (262,144). To do this, the machine doggedly tested every single number from 262,143 down to the answer 131,072, using the same sort of repeated-subtraction method of division used on old-fashioned mechanical calculators. This required 3-1/2 million separate operations, but the entire process took only 52 minutes.

Though bulky in volume, The Baby's hardware was miniscule in modern terms. Its Williams Tube "RAM" consisted of a 32 x 32 array of dots, or 1024 bits of binary information. Binary numbers, if you don't know, consist of two digits: 0 or 1. Corresponding to the electrical states of "on" and "off," binary arithmetic seems the logical choice for electronic computers. Not all used it, however. ENIAC, for instance, was a decimal computer, using the same numbers 1-through-10 familiar to most of us. Today we usually discuss RAM or computer memory in terms of "bytes," each of which is 8 "bits" of information (a "bit" is one binary digit). So, The Baby had 128 bytes of RAM. Compare that to today's typical desktop computers, which have 32 megabytes of RAM–that's 32 million bytes, or 250 thousand times as much as The Baby. We've come a long way.

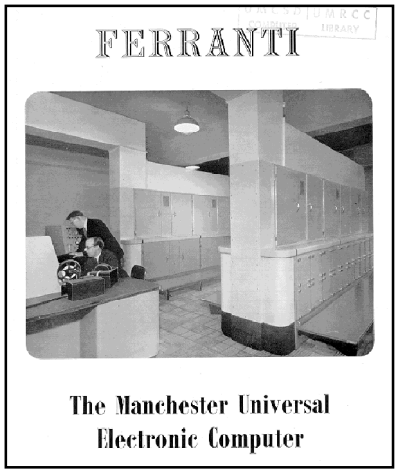


Storage array on a Williams Tube



The first program

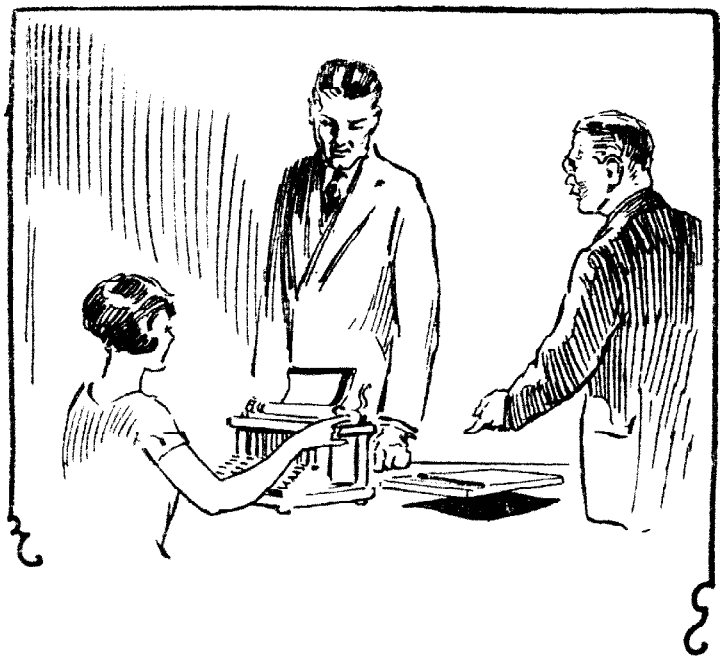
The Baby was only built to test the effectiveness of the Williams Tube and the stored-program computer. The researchers at Manchester immediately went on to design and build a more powerful and realistic computer, the Manchester Mark 1, completed in stages by the end of 1949. This had 10,000 bits of RAM (1.25 KB in today's terms and still miniscule by modern standards). It also had a magnetic drum for permanent storage, which held up to 82 KB, and it could transfer (by program) any "page" of 160 bytes on the drum to any page in RAM in less than 30 milliseconds. This was the predecessor of today's disk drives. The detailed design of the Manchester Mark 1 was passed to the Ferranti firm in Manchester, which built a commercial version, the Ferranti Mark 1, a machine that lays claim to being the world's first commercially available general purpose computer (although UNIVAC, the descendant of ENIAC, was contemporaneous). Nine Ferranti Mark 1 machines were delivered between February 1951 and 1957.



The Manchester Universal Electronic Computer

The reconstruction of The Baby will be permanently housed in the Museum of Science and Industry in Manchester. Its activation on June 17th will be the centerpiece of ten computer conferences held at the University of Manchester during that week. Naturally there is an Internet source for those wishing to explore this history in greater depth. The address is:

http://www.computer50.org/bak/mark1/mark1intro.html



THE BUSINESS GIRL AS A WIFE

After this article was mentioned in a previous issue of ETCetera, one member asked if the complete version might be printed. That sounded like a good idea, so here it is. It comes to us via "Typing Tips," a bi-monthly magazine published by ribbon-maker Miller-Bryant-Pierce in Aurora, Illiinois. The article appeared in the Aug.-Sept. 1939 issue of "Typing Tips."

The business girl really ought to make the best wife on earth. She's had the opportunities to study impersonally the workings of the male mind. She's had schooling in the ways of business and been disciplined in catering to men. Having worked, she should know the value and the elusive quality of money and therefore be able to spend wisely.

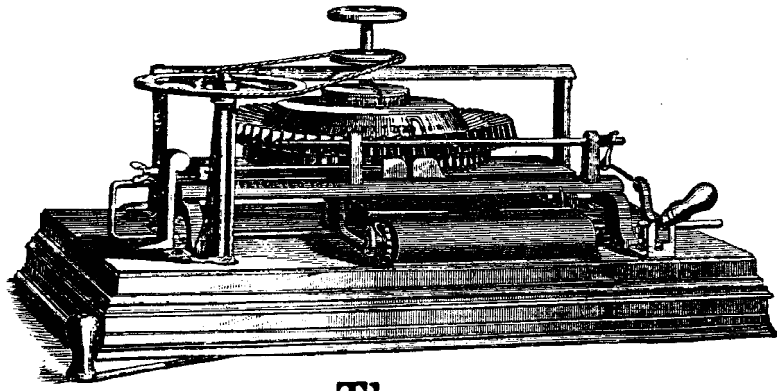
Furthermore, she comprehends the social importance of business relationships. When her husband phones at the eleventh hour and casually announces that he is bringing a guest for diner, she knows that it's someone whom, for business reasons, he thinks they should entertain. So, instead of scolding into the mouthpiece, with the man probably sitting within earshot of the phone, she rises to the emergency. If, while working, she had any kind of job, she's been in much tighter places than having only two potatoes boiling and three people coming for dinner. And she takes more pride in her husband's boast that he can bring anyone home to dinner at any time he wishes than she did in her former employer's saying, "Miss Jones never fails me in an emergency."

That famous triangle, the man, the wife, and the secretary, would reach the front page less often if home women and business women could only understand each other better. When a wife calls at the office, she usually acts as if she thought the women working there were either servants or sirens, when actually they are neither. But the business girl, too, errs in thinking: "Feather-brained idiot! What does he see in her? Pretty soft, to sit around doing nothing all day while her husband works to buy her pretty clothes and automobiles!" And so, instead of meeting on a natural basis as two human beings, they meet as natural enemies.

Sometimes wives act as if women went to work in order to ensnare other women's husbands instead of to support their own children. I shall never forget how furious such a woman made me some years ago. By appointment, I had made a train journey to discuss advertising with a manufacturer. At the end of my call, he said he would take me into the near-by town where I could get my train, but first he would have to pick up his wife, as they were taking the children to the dentist. I sat in the back seat with her while the two little boys were put up in front with the husband. Usually I can discuss children and recipes with any woman anywhere, but this woman refused to converse. It was evident she thought I had come down from the city just to vamp her husband, so all my remarks on the subject of child-rearing fell on closed ears. When we passed a pile of large, new sewer pipe, I remarked laughingly that I had come home from work a few evenings before in time to see my six-year-old son emerge from such a pipe. She looked at me with utter scorn and said, "I wouldn't leave my children." It took a good deal of charity to hope in my heart she might never have to.

The wife has all the breaks if she only knew it. The interests she has in common with her husband are fundamental because they pertain to the sentiment in his nature. The common interest of creating a home, rearing children, and getting together a group of friends are much more vital and thrilling to the man than discussing with his secretary the details of the business. But a fault-finding, unappreciative wife who thinks only of her own selfish interests and what she can get out of her husband for herself or the children, is little better than the gold-digging stenographer whom she fears. Often a man becomes so fed up with discord at home, the constant nagging and ragging, the failure to understand his inability to bring in as much money as formerly, that he naturally turns to the girl who stands by him eight hours a day with praise instead of blame. Successful business girls could give wives many pointers. You very seldom see the wife who works shoulder to shoulder with her husband, who keeps herself pretty and attractive for his sake if not for her own, losing him to his secretary, or to any other woman.

From "Manners in Business"
By Elizabeth Gregg MacGibbon
Published by the Macmillan Company, New York



The American Typographic Machine

The year is 1876. The place is Philadelphia, PA. The event is the Centennial Exhibition. While the Russian Allissoff machine is getting all the attention and the Sholes & Glidden is trying to keep up… is anyone paying attention to the American Typographic machine? Frank Lindauer contributes this item from the book The Centennial Exposition, Described and Illustrated, *published by Hubbard Bros., Philadelphia, PA 1876.*

Typographic Machine.
This was a very ingenious and valuable machine, exhibited by Dr. A. Shiland of West Troy, New York, which received a great deal of notice during the Exhibition. The main features of the American Typographic are shown in the illustration. A revolving disk carrying type arms acting vertically in slots formed in the rim or flange of the disk, is moved rapidly by a band connecting with the wheel at the left. The radiating arms vary in thickness and are beveled at the part where the type are fixed, and when forced down to make an impression, they act against the feed bar, which is moved a distance corresponding to the thickness of each type. By pressing directly down the key seen at the right of the machine, any letter brought to the index may be printed. The feed bar moves the carriage beneath at each impression, and a spring throws it back as soon as the type arm is raised. The arms are held up by a spring acting beneath the arms within the disk. By a simple arrangement not shown in the cut, the carriage is drawn back after a line is printed and at the same time moved a space, ready for another line. Spacing between the words is effected by repeating the final letter of each word, when by a slight movement of the operating key to the right, it acts against a stop, preventing the print of a letter, while the feed bar is moved sufficient space. A screw at the left end of the feed bar regulates the spacing, making wide or close work as desired. Several copies may be produced at the same time.

Gallery Notes

1) Smith Visible detail - from the collection of Ron Wild. This decal appears on the paper table of a Smith Visible typewriter, which is an old Victor remarketed and renamed by famed typewriter "recycler" Harry A. Smith.

2) Fox Postcard - The Fox "fox" appeared on this postcard to advertise the Fox Visible typewriter. A cutie to be sure. Thanks to Peter Weil for his contribution to the Gallery.

3 & 4) Edland - Not too long ago, this machine came into the collection of the editor. It required considerable restoration, since the entire machine looked more like the underside (figure 4) than the final version seen in figure 3. Referring to photos of existing machines that apparently came from the new-old-stock find of the 1960s, the color was matched by mixing different gold paints available today. The golden color on the index was the result of a coat of amber shellac. The indicator handle and its hub are reproductions, made by a skilled machinist. The underside of the machine shows the daisy-wheel configuration of the type element.

5 & 6) Universal Adding Machine - This item recently came into the collection of Bob Otnes. It seems to represent a transitional machine, placed between the original Fowler Adder of 1863 and the later version, patented in 1890. Since no patent numbers appear on this one, it may date from after 1880, when Fowler's original patents expired. It is certainly before 1890, when Fowler's "Universal" machine offered new features. Figure 6 shows the reverse, where results are read. See ETCetera No. 11 for details.

7) Bouchet Adder - This seems to be a one-of-a-kind device discovered recently by Howard Levin of Reseda, California. The Bouchet adder was patented in 1885. This well-made brass item is almost totally unknown to modern collectors. A major European museum snapped it up.

8) Gem Adder - You almost never see a Gem adder with only five columns. The editor saw one once before, being used by a seller at a flea market, who refused to sell it. Virtually undocumented, few other collectors believed that such a machine existed. Here's proof, though. This one was offered in April on the Internet's eBay auction.

9) Writing Ball - full-frontal color of Bernard Williams's fabulous acquisition. See the full story on page 20.

ETCetera Color Gallery

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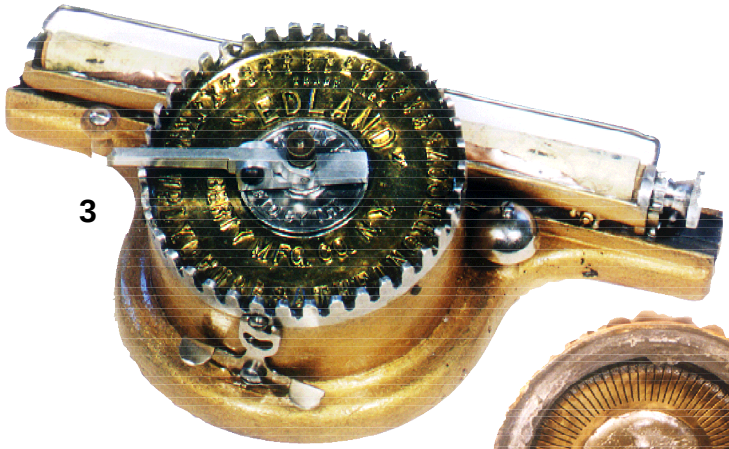

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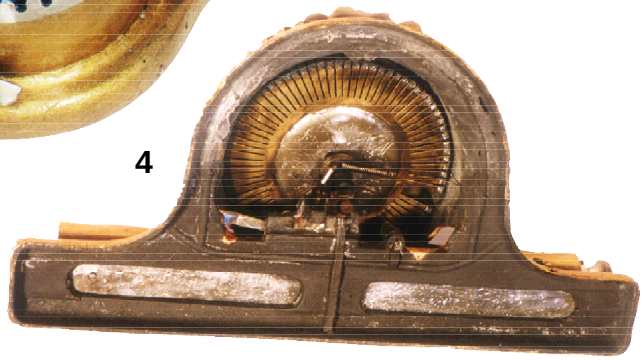

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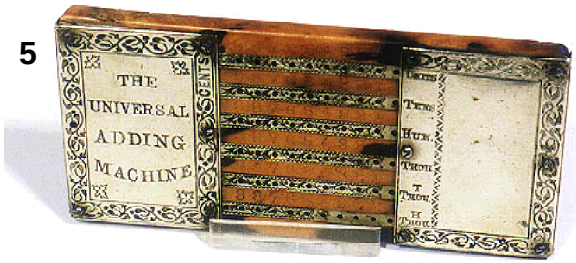

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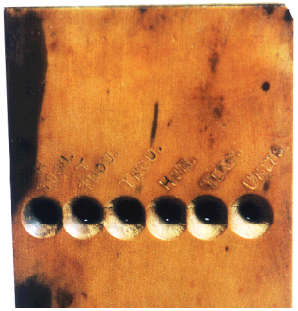

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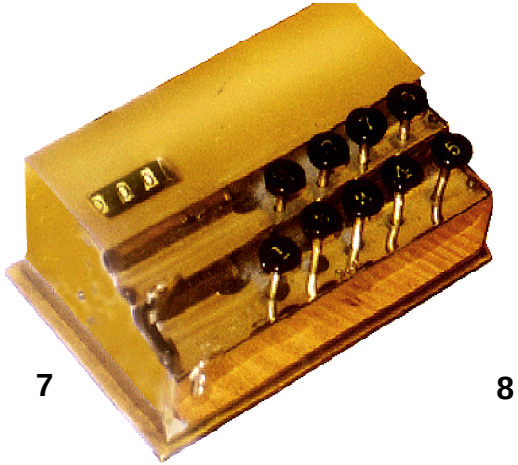

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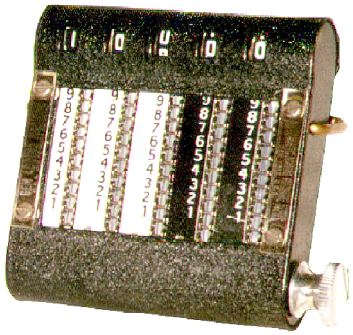

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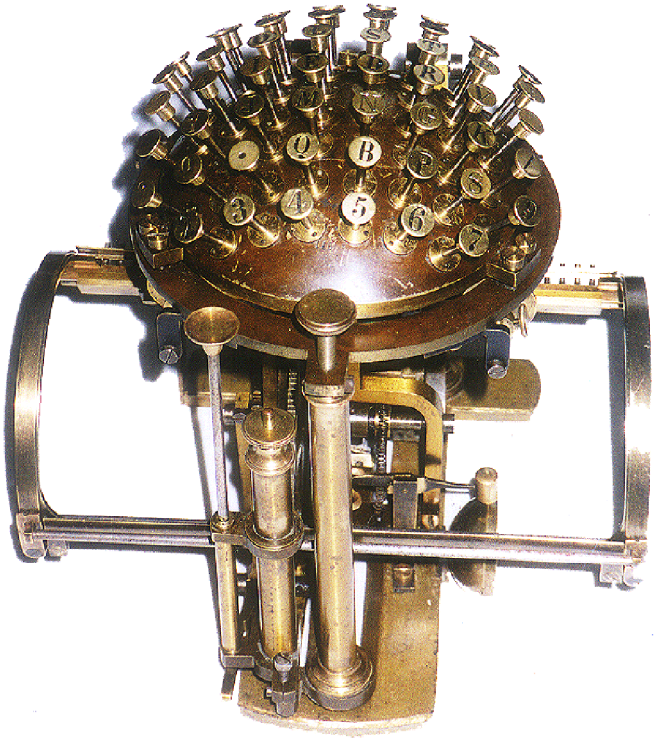


9

PHOTO: RAY BALLASH

The Type-O-Writer

A Typewriter Keyboard for the Linotype Machine

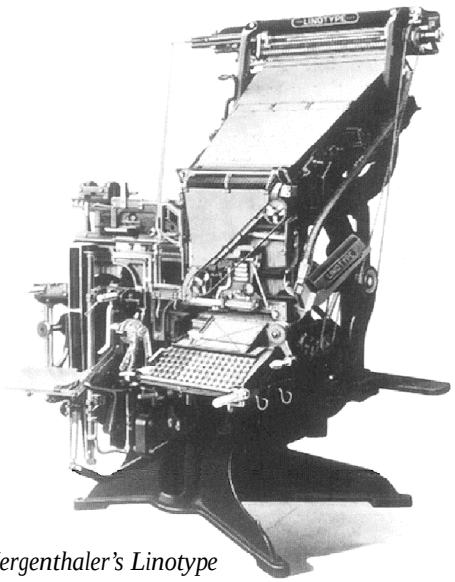
by Marco Thorne

"…many years of practice are required before a Linotype operator attains a proficient rate of speed, whereas typists on standard typewriters attain very great speed at the expenditure of a fraction of the time and nervous energy occasioned by the Linotype operator…. Instead of having to reach far out as on present makes of typesetting machines to depress desired keys, the novel [typewriter] *keyboard becomes the real keyboard of an existing typesetting machine and reduces to small compass the size of the keyboard."*

Andrew Good of Los Angeles, CA, wrote these words in his first patent for a device he called the Type-O-Writer. It was a typewriter-style keyboard attachment for the complex Mergenthaler Linotype typecasting machine.

The Linotype was invented in Baltimore, MD, by Ottmar Mergenthaler, a German immigrant watchmaker. It automated the typesetting process by casting type slugs, one complete line at a time. The Linotype was patented in 1884 and was first used commercially by the *New York Tribune* in 1886.

A Linotype keyboard had 90 keys set at a slant before the operator. Touching a key brought down a brass mold (known as a matrix) from a magazine at the top of the six-foot-high machine. The matrix moved on a belt to an assembly point. Wedge-shaped space bands were inserted between words by a space key. A fully composed, justified line of matrices and space bands were then transferred to a



Mergenthaler's Linotype

casting position and molten metal forced into the mold. Afterward, the machine dropped the slug onto a galley tray and redistributed the matrices and space bands.

Almost three-quarters of the Linotype operator's normal keyboard and other typesetting activity was with the left hand, as the lowercase letters were on the left side of the keyboard. Linotype operators used two or three fingers of each hand. The Type-O-Writer keyboard distributed the average work about evenly to both hands using all the fingers. It also covered less area than the keyboard on the Linotype.

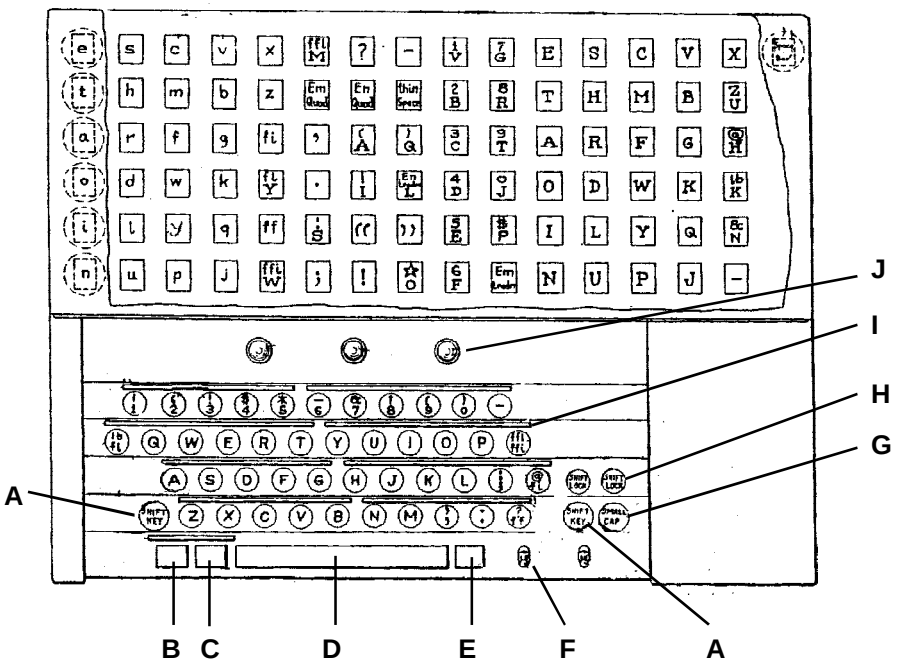
The first patent (#1,795,854) was granted in 1931 and was for the instrument described above. A review of the patent document shows the design to have been somewhat flimsy. It may not have been put into production. A second, improved model was patented in 1934 (#2,065,275).

The machine was made in San Francisco. Various sources name the manufacturer as the American Type-O-Writer Company, or simply The Type-O-Writer Company. The Type-O-Writer weighed about 25 pounds and measured approximately 13 inches high by 15 inches wide and four inches thick. Units were made for use on the Linotype as well as its competitor, the Intertype, which was introduced in 1912 and made use of the same keyboard.

The Type-O-Writer keyboard was essentially a remote control for an array of solenoids. Pressing a key or combination of keys on the typewriter keyboard actuated a solenoid, which forced a shaft downward to press the appropriate key on the Linotype keyboard. The solenoid compartment contained relays, a transformer, spark-arresting capacitors, and circuit breakers, the last to prevent pressed keys from releasing more than one matrix at a time.

The device was housed in sheet metal. A horizontal partition divided the case into a lower typewriter keyboard assembly compartment and an upper solenoid compartment with a removable cover for servicing. The unit used 110-volt AC– or DC with an inverter–through a cord attached to the bottom edge next to a toggle on-off switch.

The Type-O-Writer was installed over the 90 keys of the Linotype keyboard, the process taking about a minute after the one-time initial adjustment of two legs. It was supported in place by parts of the Linotype frame. Some Linotype and

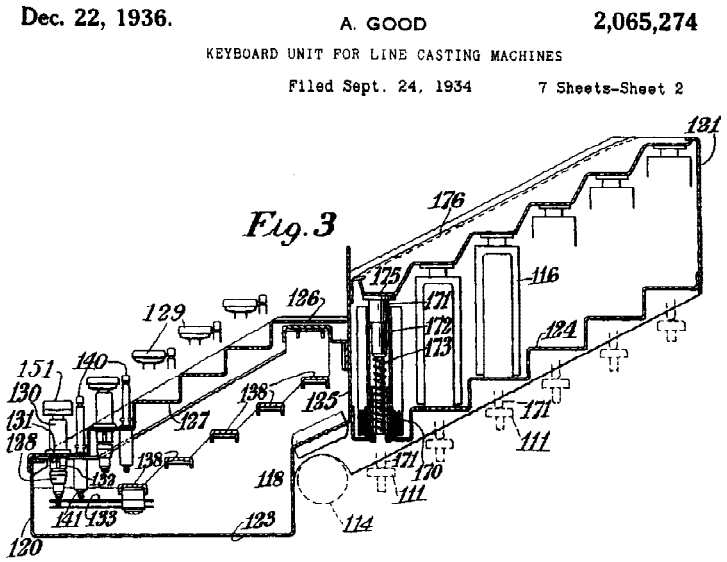


Type-O-Writer layout with cutaway of Linotype keyboard under upper solenoid compartment

A- capital shift keys	*F - circuit breaker switches*
B - em quad key	*G - small caps shift*
C - en quad key	*H - shift lock*
D - space bar	*I - capital shift bar*
E - thin space key	*J - indicator lights*

Intertype machines also had second, auxiliary keyboards and magazines, which held matrices for additional type styles. For such machines, Good designed an auxiliary solenoid unit, operated from the principal keyboard by use of a cable of wire conductors. Incidentally, none of the Type-O-Writer owners interviewed for this article has an auxiliary keyboard solenoid device.

The inclined typewriter keyboard compartment housed a fairly standard four-row typewriter keyboard...with some differences. On the earlier San Francisco models of the Type-O-Writer, each row of letter keys had thin, horizontal "shift" bars just above it. The operator, with just a slight shift of the finger, could depress the letter key *and* the shift bar simultaneously to get capitals. For those who could not get used to the shift bars, standard capital shifts were provided on each side. Linotype fonts, as with other forms of typesetting, also had "small capitals," which are the general size of lowercase letters. The Type-O-Writer had a small-capital shift key to activate appropriate solenoids.



The Type-O-Writer keyboard had additional keys for ligatures, which are letter groupings set close together to save space. The ligatures were lb, fi, ffi, fl and ffl. There were also *em quad* rigid spaces, which were square spaces matching the type size; *en quad* was half the width of an em quad, and *thin spaces* were one quarter width of the em quad. The capital bar or shift key, when used with the quad spaces, became *leaders* or series of dots of each width for use in tabulation texts. The typewriter space bar was in the usual position.

Above the typewriter keyboard was a set of three round agate indicator lights. The white lamp at the left indicated that lowercase keys were being used, the green light in the middle indicated large capitals, and the red light at the right indicated small capitals.

A third model design of the Type-O-Writer omitted the shift bars and relied on the shift keys alone. The manufacturer was Kellogg Switchboard and Supply Company of Chicago, IL, which advertised the Type-O-Writer in 1948 for $985. In 1953, a publication called *A Compositors Manual* (issued by Printing Industries of America, Inc.) listed the Type-O-Writer's maker as Linotype Parts Company, South Hackensack, NJ.

How successful was the Type-O-Writer? It is hard to tell, although it evidently got *some* use. There is no mention of the device in the usual periodical indexes. This writer, in 1934, saw a Linotype operator in Los Angeles who brought her own Type-O-Writer in a carrying case to work at a print shop. Robert Halbert of Tyler, TX, has written that the *Dallas Morning News* had three Type-O-Writers from around the late 1930s into the World War II period. He writes, "They could

take a good typist out of the front office, and in an hour or two she could turn out lots of straight matter. These keyboards were of little or no use except for this." The device did not seem to be practical for display advertising or other matter requiring several fonts.

John N. Dyment of Severn Bridge, Ontario, Canada, wrote, "When I went to work for Consolidated Press on the old *Saturday Night* magazine in 1946 in Toronto, I recall that some of the [Type-O-Writer] keyboards were still in operation....There were still some women operating these keyboards, but they were gradually phased out after World War II when men were returning from overseas."

Advertisement from "Graphic Arts Monthly," Nov. 1948. Provided by Fred Woodworth.

Win Hardesty of Greenwood, IN, is a retired typographer and proofreader who learned to type in high school on an Underwood 5. Around 1948 he worked on the Indiana newspaper *The Bloomington Herald*, which used some Kellogg Type-O-Writers because of a shortage of regular Linotype operators. "Any typist," Hardesty wrote, "could use these keyboards, and there were machinists to take care of any machine problems....They had a number of [Type-O-Writer] keyboard operators and three or four regular [Linotype] operators." About 1950 he went to work for a Gary, IN, publisher of several small newspapers, where he also used a Kellogg keyboard but later learned the regular Linotype keyboard. He continued, "I got much-needed experience on the mechanical side of the Linotype while operating the Kellogg board. It was efficient because it used the typewriter board. I found also in using it for job printing that the shift for small caps was very nice. On the regular Linotype keyboard the small caps are scattered all over the place."

Several veterans of the printing trades, in correspondence with this writer, were convinced that Type-O-Writer development was prompted by long-standing strife between typographical union members and large newspapers and other publishers. This friction dated from the early 1920s. A review of contemporary newspaper accounts supports this idea. Work-week length (44-48 hours), pay scales, and complaints about other workplace conditions encouraged a male-dominated typographer workforce to seek better conditions for their tedious, exacting jobs of typesetting, printing form preparation, and presswork. Robert Halbert observed that "Most all big shops were union, and when the union walked out was when these machines [Type-O-Writers] were used to get out the paper."

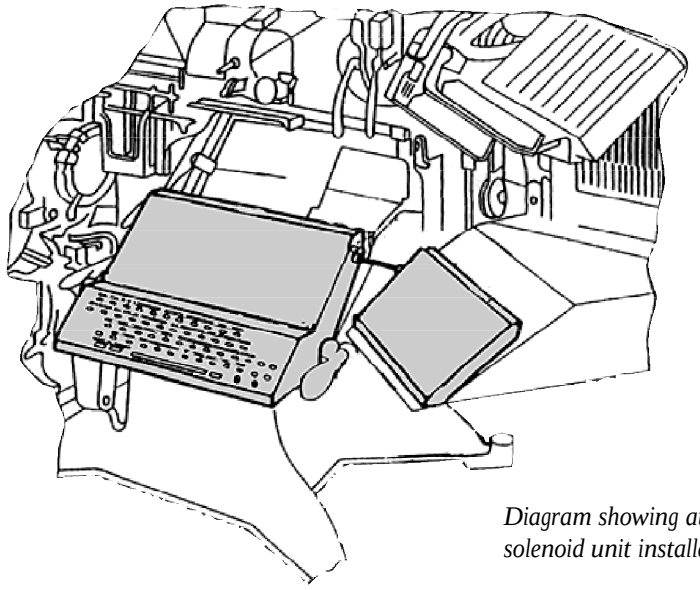
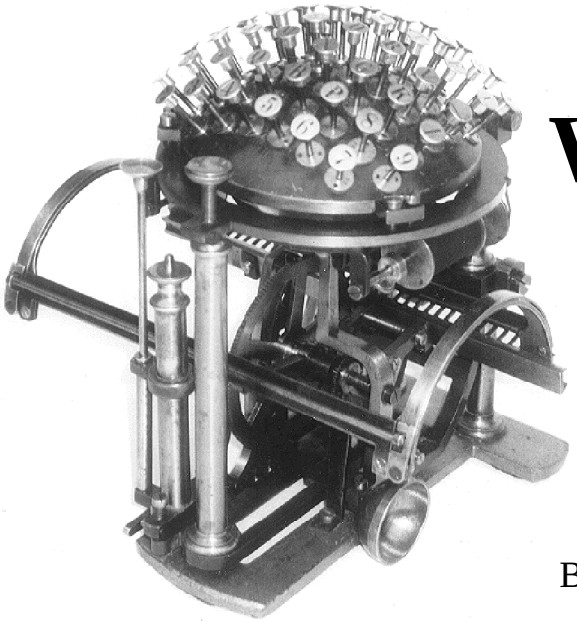


Diagram showing auxiliary solenoid unit installed at right

The Type-O-Writer was not the first or last use of a standard typewriter keyboard on a hot-metal typecasting machine. In the late 1890s, George A. Goodson perfected his Goodson Graphotype, which cast individual pieces of type into text forms. It used an adapted Jewett 10 understrike typewriter to prepare a perforated paper tape. The tape was then fed into a casting machine that used molten metal.

After World War II, a device called the Teletypesetter was successful. It applied the perforated tape idea to the Linotype keyboard. The tape was prepared on a typewriter-style device. In turn, a Brewer keyboard, arranged like that of a Linotype, was designed by a typographical union official to fit over the Teletypesetter keys. The Brewer was intended to salvage jobs for Linotype operators unfamiliar with typewriter keyboards. Harold E. Stern of Cincinnati, OH, has written about his Electronic Linecasting Keyboard (ELK), which he manufactured during the 1960s and early '70s. According to a brochure, it had a typewriter keyboard. The whole keyboard assembly of the slug-casting machine was removed and permanently replaced with the 54-pound ELK, which then typed directly into the slug-casting machine.

The typewriter keyboard is standard today in the process of setting type by electronic or photographic means for use in the prevailing lithographic printing methods. Andrew Good's Type-O-Writer was an interesting step in the change.



My Writing Ball

by
Bernard Williams

Bernard Williams, of Burton-on-Trent, England, shares the thrilling news of his latest acquisition: a Malling Hansen Writing Ball. Most of what follows is taken from Williams' letter to the editor.

The story starts with the Ian Fleming gold-plated Royal portable sale May 11, 1995. Prior to the sale *The Times* newspaper was asked by Christie's to do a "hype" article on the Fleming typewriter, his writings, and typewriter collecting. Christie's gave my name, and I had a telephone call from *The Times*. The interview was a half-hour telephone call with follow-up photographs, so it didn't come out too bad.

Last October, I had an out-of-the-blue call from Denmark from a Mr. Hansen (perhaps not such an exciting name, as I believe Hansen is quite common in Denmark) asking me to make an offer for a Writing Ball. A friend of his, not a typewriter collector, knew he had this machine and sent him a copy of the article. The friend lived in Belgium. Although he would not admit to knowing its value, it turned out he had quite a sizable value in mind (as is usually the case) It took several weeks, many telephone calls, and several letter exchanges and photographs before we were able to settle on a price acceptable to us both. He was aware of the leading auction houses, so I didn't want him to contact them. I ended up paying what I consider was a very fair price to both parties, so I'm very pleased. It's a delightful item and so beautifully made and works well after light cleaning and TLC.

Its background is interesting: The machine has been handed down in his family and was originally owned by Mr. Asger Hansen's paternal great grandfather, who worked at the Carlsberg Brewery, Copenhagen. Thirty-three years ago Mr. Hansen emigrated to the U.S.A., stayed there for thirty years, and took the machine with him when he returned to Denmark three years ago. He works in banking and hopes to be going back soon to work in the States. I asked him if the machine was shown to any typewriter collectors or typewriter trade people while in the States, and he said no, it was stored away all the time. He obviously didn't see any of the Dickerson and Peter Frei extensive advertising or any of Darryl Rehr's press activity during that time or it may not have come back to Europe.

I went over to Denmark to collect and do the deal and had a pleasant day with Mr. Hansen in Copenhagen. At my request, he took me to the Danish Technical Museum just outside Copenhagen, which was an interesting visit.

I was aware that about eight years ago three Writing Balls were stolen from the D.T.M. Two are similar to mine (serial nos. 46 and 84) and the third is a telegraph model (no serial number recorded). In the negotiations Mr. Hansen couldn't find the serial number, which is very small. However, on arrival I found it, and mine is serial no. 116. I inquired at the D.T.M. about the stolen machines, and they were all recovered. They didn't go out of Denmark, and it sounded like a local job.

Since the recovery, no Hansen Writing Balls (they have four, all different) have been put on display. They are kept permanently in storage, which is a great shame. They were very helpful and got them out to show us. Two weeks before my visit, the museum had been presented (on permanent loan) with an oil painting of Pastor Malling Hansen *[editor's note: the photographs of Pastor Hansen's portrait were not of sufficient quality to publish in ETCetera].* The owner has had it since 1930 and thinks it was painted in 1885. Martin's book lists Malling Hansen as having been born in 1835 and having died in 1890.

I asked at the D.T.M if they had any information on C. P. Jurgenson Co., Copenhagen (Adler states this company made all Hansen's Writing Balls). They gave me information on Jurgenson's and August Lyngbye of Copenhagen, who also made Writing Balls and other equipment. This was all in Danish, but Mr. Asger Hanson kindly translated it for me. The Jurgenson Co. was interesting. Their very high quality scientific instrument work and experience with early electrification reflects strongly on Hansen Writing Balls.

[Editor's note: The Jurgenson literature reveals that Jurgenson (successor to a Prof. Junger) was a highly skilled maker of scientific instruments to whom many inventors came to have their ideas executed. The Writing Ball received a gold medal at the Exhibition of Vienna in 1873.]

There is a nice Writing Ball in the Birmingham Science Museum, England, (serial No. 101) similar in style to mine, but on close inspection they are all different in some way or other. This one bears a maker's name: Softus E. Holtens (the Holtens name is mentioned in Jurgenson's literature.)

SKRIVEKUGLEN.

AUG LYNGBYE.

ABOVE: typed words (enlarged) from page attached to the the August Lyngbye price sheet seen at right. RIGHT: August Lyngbye price list possibly distributed at the Great Nordic Exhibition of 1888. Lyngbye was one of the fine instrument makers who manufactured the Malling Hansen Writing Ball ("Skrivekugel") in limited quantities. Lyngbye offered the capitals-only product for 150-170 Kroner and 230-250 for the double-case version. Other items on Lyngbye's price list include electrical bells, switches, batteries and other similar apparatus. At the bottom of the sheet the following is printed:

***The Writing Ball** has receieved:*
***First Medal** at the Nordic exhibition in Copenhagen 1872*
***Medal of Progress** at the World Exhibition in Vienna 1873*
***Gold Medal** at the World Exhibition in Paris 1878*

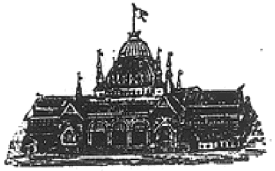
Letter from Asger Hansen to Bernard Williams:

"...With regard to history behind your Writing Ball - it is almost rather disappointing how little my mother knows about it.

"The Typewriter belonged to my mother's grandmother - my mother does not know much about her. Her first name was Anna, and my mother thinks her maiden name was Petersen, but she is not sure. Anna came from a family who lived in the southern part of Zealand - her father owned a mill, small brewery, and bakery. Anna became a housekeeper in charge of several servants for an old vicar (we do not know who that was...could it have been the Rev. Malling Hansen? Pure guesswork.) Anne later married Leonhard Axel Wagenblase - and he was not Danish but came from either Holland or Germany - Mr. Wagenblast *[Mr. Hansen's paternal great-grandfather]* became the head gartner *[sic]* for the Carlsberg Brewery (you can find a portrait painting of him in the Carlsberg portrait museum).

"...We apparently do not know when Anna got the machine - neither if it was bought nor received as a gift. So I guess we have to let our imagination give us the solution."

Specialitet:
Elektriske Ringe-apparater,



Lynafledere samt mindre Maskiner.

AUGUST LYNGBYE,

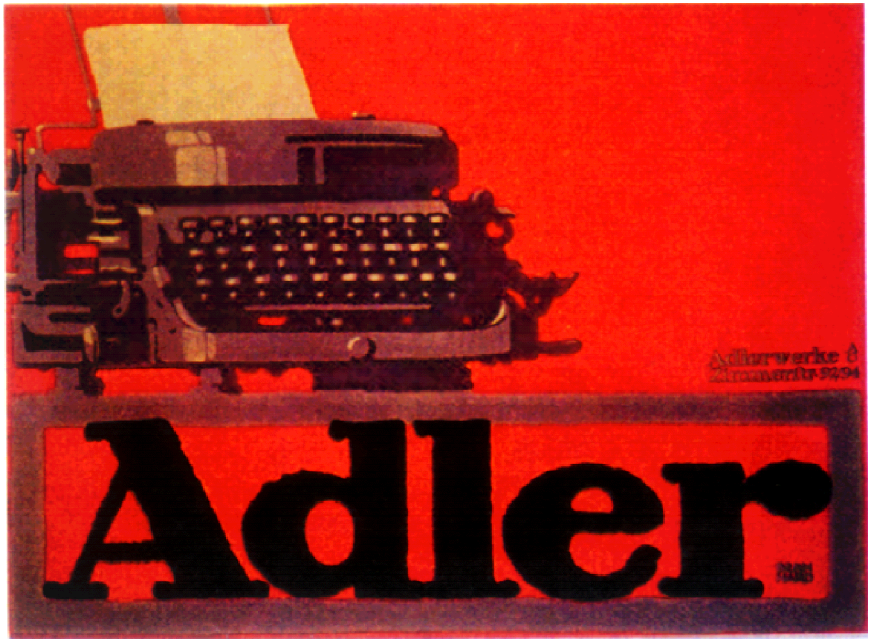
mekanisk og elektrisk Værksted.

Kjøbmagergade 26,

PRIS-KOURANT.

	Kr.	Øre	Kr.	Øre
Skrivemaskiner efter R. Malling Hansens System.	150	»	170	»
Do. indrettede med baade store og smaa Bogstaver (2 Aars Garanti).	230	»	250	»
Elektriske **Klokker**.	4	»	24	»
Trykcontakter.	»	50	5	»
Contakter til Sikring mod Indbrud i Jern-pengeskabe.	3	»	»	»
Do. til at anbringe paa Døre i Værelser samt ved Vinduer.	1	50	2	50
Brevpresser med Contakt	3	»	12	»
Strømskifter.	1	»	3	»
Strømbryder.	»	75	1	»
Contaktplader til Gadedøre og Porte, pr. Contakt.	2	50	10	»
Store Brunstens Elementer (garanteres Holdbarhed uden Tilsyn i **5 Aar** og kunne derefter mod en ganske ringe Udgift restaureres)	5	»	»	»
Flettet Kobberkabel til Lynafledninger. garanteret 95 pCt. rent Kobber, pr. Alen.	1	»	»	»

Skrivekuglen har faaet:
Første Medaille paa den nordiske Udstilling i Kjøbenhavn **1872.**
Fremskridts Medaille paa Verdensudstillingen i Wien 1873.
Guld Medaille paa Verdensudstillingen i Paris 1878.



CONTENTS

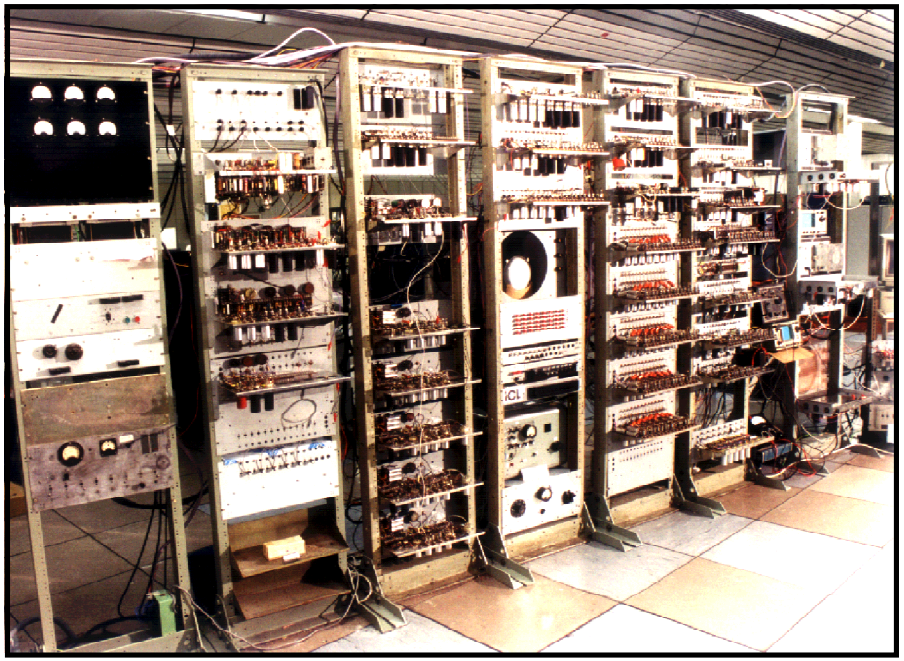
ETCetera

No. 43

June 1998

Magazine of the Early Typewriter Collectors Association

"Memory" Memories



The Baby
50 Years Later