

Columbian Printing Press

By Michael Yates

Welcome and Topic (Slide 1)

Hello everyone, welcome to my video documentary describing a pre- digital communication technology (One of the first Iron Manual Printing Presses, the Columbian). This video was created using PowerPoint 2016 (licensed through my company, CFBT) and the Camtasia Add-on (licensed for use via the University of British Columbia IT department). Most of the images and video used were taken by me at the Bradford Industrial Museum (<https://www.bradfordmuseums.org/venues/bradford-industrial-museum>), so if you happen to be in Bradford, United Kingdom please give them a visit, it would definitely be worth your time! All other images were taken from google images using the “Labelled for non-commercial reuse” filter. References will be given at the end of the document.

Outline (Slide 2)

Today I am going to talk about the Background and Operation of the Columbian Printing Press. I will then continue into the implications for literacy and education and finally give you my final thoughts and reflections on the creation of this video and the pre-digital technology described.

Background (Slide 3)

The Columbian press was invented in 1813 by George Clymer (1754-1834), a Philadelphia mechanic. Clymer had begun building wooden presses in 1800, then later, versions of the new iron presses from Europe. His Columbian was original, not only for its extravagant design but also for its levers and counterweights. It was well received, although its cost, at \$400, was more than twice the price of a wooden press. Clymer was not satisfied with the market he found in the United States, perhaps because printers were not yet ready to give up their old wooden presses, so in 1818 he took his business to England and found much greater success. His first English presses carried his own name, and in 1825 William Dixon joined the company, and the presses showed both names. From the 1840s, they were manufactured by several dozen companies all over Europe. (Harris, 1996)

Operation (Slide 3)

The Columbian press was a mechanical marvel of its time, but it was still a manual piece of equipment and all aspects of the printing process were done by hand. This means a typesetter started with thousands of characters and painstakingly arranged them to form the published work. That work was then put on the printing platform and the printer used a roller to put ink on it. Then the pressman used a series of levers and counterbalances to drop the “platen” (giant metal plate) on to the paper to make an impression. The published work was then taken to a line to dry. If the work required print on both sides, the paper was flipped over and the procedure repeated.

Video of the machine in use (Slide 4)

Now we see a volunteer at the Bradford Industrial Museum demonstrating how the machine works. It is interesting to note this gentleman is in his 80's and apprenticed on this type of Printing Press in the 1950's. Which means this type of press lasted was still in use over one hundred years after it was invented. In fact, there were a few of these machines in use for proofing well into the 1970s. This gentleman had many interesting observations about how printing was back then, versus how it is now which I will touch on in my thoughts and reflections.

Significance to Education and Literacy (Slide 5)

Before we get into the significance of the Columbian Printing Press it is important to understand the history of the printing press itself. The modern printing press was invented by Johannes Gutenberg in the 1400's. This printing press was made of wood and other than a few parts being swapped out for those made of metal the design did not change for four hundred years. Timeline source: ("History of", n.d) retrieved from: <https://www.timetoast.com/timelines/history-of-the-printing-press>

Now in the 1800's we saw the first printing presses made entirely of iron, one of the best was the Columbian Printing Press. As witness Kainin remarked in his book:

The Columbian so greatly overshadowed other improved presses of the period in power, durability, ease of pull, and evenness of impression, that it came to represent the ultimate triumph of the lever press. (Kainin, 1950)

With this change came some significant enhancements in the production of published works. The first being the ease at which the "pressmen" could operate the machine. As reported by Kainin again:

"Stower asserted, it was capable of ten times the power of the old wooden press at an expenditure of one-tenth the labour." (Kainin, 1950)

Just as an example, the following quote on the old Wooden Presses by Pollack show the pain and labour required for using a wooden printing press:

"The old press [the "two-pull" wooden hand- press] required great and continued muscular strength, so much so that many who worked at the press continually, as I have seen, have become deformed, the right shoulder becoming enlarged, and the wall of the chest being driven against the left shoulder depressed it, and so the body in walking became sidewise, the right arm and shoulder being in advance of the rest of the body. All pressmen, too, had a discrepancy in their feet, for the right foot, always placed on the "step" when the "pull" was made, that foot always became enlarged beyond the other, and the writer is a living example of this discrepancy" (Pollack, 1972)

What this means is the new Iron Presses caused much less physical strain on the pressman, which allowed them to work for longer and extending their careers. This would allow them to create more

published work over a longer period. As for the Columbian, in the video you saw an 80-year-old man was creating an impression with no physical strain. I also had my five-year-old son try and pull on the lever, and he made a very clear impression on the paper as well! Now, this leads us to the speed at which the Iron Presses could produce impressions versus the older wooden presses. According to Kainin:

"A skillful pressman ran off two hundred and fifty copies an hour on it [a Columbian] printed on one side only." (Kainin, 1950)

As opposed to the older Wooden Presses which Pollack reported:

Wroth states that "it is probably reasonable to regard this [a speed of 190-200 printed sides of paper per hour] as the normal rate of the wooden press throughout the entire period of its history" (Pollack, 1972)

Which means that not only did the new iron presses cause less strain on the pressman, they were more efficient in their design which allowed them to create more copies per hour. Now this is incredibly significant to education and literacy given that there was no Television, so most literature had to be printed. Pressmen working longer on a more efficient machine meant more textbooks and literature could be published.

Another improvement the Iron Presses brought with them was a larger print surface. This meant that advertisements and flyers could be printed on a larger piece of paper (which coincidentally became mass produced in the mid 1800's). This had the significance of having printed works create more of an impact on potential customers or just getting a message out quicker.

I think it is best to think of the Columbian Printing Press as the first Photocopier. It was used to replicate one piece of work, multiple times at varying paper sizes. 50 years after its advent rotary printing presses were invented, as were linotype / mimeographs machines. So to print newspapers and such it had a relatively short lifespan, but as a proofing tool / photocopier it was in active use till the 1970's, which pays homage to its quality design and durability.

Final Thoughts and Reflections (Slide 6)

Unscripted and unplugged reflections! Hence the reason I had to correct myself with the clarifications 😊.

References (Slide 7)

See Below

Goodbye (Slide 8)

No children were harmed in the making of this photograph, the reality is I have seen one crocodile in three years at this park. If you go up river though, the beasts are easy to see.

References

Kainen, J. (1950). George clymer and the columbian press. United States: Retrieved from <http://catalog.hathitrust.org/Record/001161095>

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