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A Brief History of Microfilm.

John Benjamin Dancer: The Father of Microphotography

J. B. Dancer , the celebrated Manchester optician and instrument maker, was born in London, the son of Josiah Dancer, also an optician and manufacturer of optical, philosophical and nautical instruments. At an early age he became an apprentice in his father's business and in 1835 J. B. took over his father's optical work shop. He then moved to Manchester from Liverpool in 1841 when he was aged 29.

Dancer was an orthodox optician supplying spectacles, as well as being an inventor and instrument maker of outstanding ability. At a young age he had acquired the art of grinding microscope and other types of lenses. During his lifetime he made substantial contributions to microscopy, photography and science. Dancer also began the manufacture of daguerreotype cameras and added them to his already impressive line of optical products. He was established as the first commercial practitioner of developing and printing in all England, the prototype in fact of the modern drug store's photographic department.

Active as he was with the microscope and camera, it seems only natural that Dancer should have attempted to combine the two techniques. In 1839 Dancer pioneered the making of microphotographs mounted on slides for microscope viewing, but the system he first used, the Daguerro process, was not satisfactory. The photographs were on an opaque background and consequently the quality of the enlarged microphotograph under the microscope was poor and could not be viewed with magnification exceeding x20. In 1851 Frederick Scott Archer of Manchester introduced the collodion process which involved a very fine grain image on glass with a sensitized covering of collodion. This process, by which images in very fine detail could be recorded, was used by Dancer to start producing vastly improved microphotograph slides.

So to the English scientist J.B. Dancer, belongs the credit for making the first microphotograph and for creating the microfilming process for photo- graphically preserving manuscripts, printed materials, business records and pictures.

René Dagron

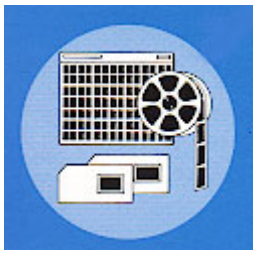
It is the summer of 1871, we are in Paris, France and the city is under siege.

There has been no word in or out of the city due to a communications blackout.

René Dagron a maker of photographics novelties had an idea. He proposed that important documents and letters could be photographically reduced and sent by carrier pigeon from Paris to Tours and back.

As many as 3,000 messages could be reduced and assembled on a single 35mm x 65mm negative. Each pigeon could carry up to 18 negatives in a quill attached to it's tail. When the bird arrived at it's destination the negative was projected onto a wall and transcribed by hand.

Despite heavy losses from gunfire, birds of prey and getting lost, thousands of pigeons got through, providing a communications line to the rest of the country, but with the armistice of 1871 the need for Dagron's microfilm ended and it sat in limbo for over fifty years.



The year is now 1925, we are in New York and George L. McCarthy (a New York City Bank Official) was troubled by a wave of fraudulent cheques. McCarthy devised a system for photographing cheques simultaneously with their listing on an adding machine, providing the bank with a permanent record of any transactions.

The Eastman Kodak Company had just introduced its 16mm Movie Camera and continuous film processor, McCarthy seeing the potential of this new equipment persuaded Kodak to redesign and produce a suitable camera.

Within ten years most banks, libraries, large stores and governments were using this new technology. The film was archival, readily acceptable as a legal document and easy to use.

The next 70 years has seen improvements in the speed and quality of image capture, along with the other major change to film technology.

The change was that the Acetate film base used had been a problem for microfilm as well as for motion pictures until the 1970's. Acetate is safe, but acetate degrades in the same manner as nitrate, and sometimes at the same rate. People were wrong when assuming that acetate was "as stable as good quality paper such as that used for records" . Things have changed in a dramatic way with the introduction of polyester. Polyester is to a little extent subject to hydrolysis, but demonstrates outstanding mechanical properties with good dimensional stability. PET pet based film has a life expectancy of several hundred years, even when stored at room temperature (20-30% RH, 70° F). Film is therefore the only truly archival medium. More stable than most papers, probably much more stable than electronic media, with no worries regarding hardware and software obsolescence. So before you rush out and

check you supplier you should be aware that to-day's film has nothing to do with microfilm used in the 1930's-late 1970's period.

We now have retrieval systems that use computers and special Reader/Printers to find and print documents. Through the use of jackets and microfiche we have updateable systems and still the numbers of users still increases

Computer Output Microform (COM) devices can produce reports at over 18,000 lines per minute and duplicate them at ten times that speed. These devices run 24 hours a day all over the world producing the information and backup that industry needs.

Digital film readers and scanners have enhanced the use of microfilm, as the data can be brought back from the archived films at a reasonable cost.

The use of microfilm is still growing as people combine the archival storage of their information with the current scanning and CD-ROM technology to create a successful working partnership.

Contact AMS for more information.