



GRC 101.
INTRODUCTION TO.
GRAPHIC COMMUNICATIONS.

Information
Sheet No.

108

PHOTOGRAPHY TIMELINE

From Earliest Times -- *It may seem strange but cameras existed long before photography. It had been observed as far back as the fifth century BC that an image of the outside scene was formed by sunlight shining through a small hole into a darkened room. The phrase Camera Obscura means "Darkened Room".*

16th Century Camera Obscura was improved by utilizing a simple lens.

1666 ISAAC NEWTON Demonstrated that light is the source of color. He used a prism to split sunlight into its constituent colors and another to recombine them to make white light.

1725 JOHANN SCHULZE Discovered the darkening of silver salts by the action of light.

1758 DOLLAND Developed the Achromatic telescope lens, this improved the camera obscura image.

1801 THOMAS YOUNG He suggested that the retina at the back of the eye contains three types of color sensitive receptor, one sensitive to blue light, one to green and one to red. The brain interprets various combinations of these colors to form any other color in the visible spectrum.

1802 WEDGWOOD Produced silhouettes of opaque objects by contact printing them on silver nitrate coated paper however the images were unfixed and faded in daylight.

1826 J. NICEPHORE NIEPCE Produced the first permanent image (Heliograph) using a camera obscura and white bitumen it required 8 hours to expose.

1829 DAGUERRE Started partnership with Niepce.

1834 FOX TALBOT Experiments using Silver chloride coated paper to yield "negatives" of silhouettes.

1835 FOX TALBOT Using his small "mousetrap" cameras he photographs the inside of his library window at Lacock Abbey, creating the first negative.

1837 DAGUERRE Following experiments on his own he evolved a workable process (Daguerreotype). Silver iodide coated copper plate was exposed and developed by mercury to give a single direct positive. He removed the remaining silver iodide with a warm solution of cooking salt, they took 30 minutes to develop.

1839 DAGUERRE Daguerreotype process released for general use in return for state pensions given to Daguerre and Isidore Niepce. Patented in England. On August 19th 1839 the details were made public.

1839 FOX TALBOT Hurriedly prepared and presented papers at the Royal Institution and the Royal Society. Unlike the Daguerre process the image is recorded as a "negative" and had to be printed via a similar process to produce the final "positive". Many positive prints can be made from a single negative.

1839 SIR JOHN HERSCHEL Suggests fixing Talbot's images in sodium thiosulphate and coined the terms "photography", "negative" and "positive".

1840 FOX TALBOT Following suggestions he improved his process, using silver iodide and developing in gallic acid. The use of paper negatives meant

that the images were not as detailed as Daguerreotypes.

1841 FOX TALBOT Patented "calotype" (later "Talbotype") a negative / positive process with 5 minutes exposure time.

1841 PETZVAL Mathematically calculated compound lens of f/3.6 effectively reduces Daguerreotype exposure to 1 minute.

1844 FOX TALBOT Publishes "Pencil of Nature" the first book with photographic illustrations, glued in calotypes .

1847 NIEPCE DE ST. VICTOR Discovers the use of albumen to bind silver salts on glass base. Albumen process requires 10 minutes exposure. Talbot patents process in England.

1850 BLANQUART EVARD Proposes use of Albumen for printing paper. Albumen paper (unpatented) popularly used for 40 years.

1851 SCOTT ARCHER Proposes "Collodion" process. Collodion (a solution of nitrocellulose in a mixture of ethyl alcohol and ethyl ether) forms a binder for silver iodide on glass. Exposure and processing takes place immediately after coating plate. Scott Archer did not patent the process and died in poverty. Two versions of this process were "Ambrotype" and "Tintype" . Exposure was about 10 seconds . The Collodion process greatly expanded photography and brought everyone into contact with its results.

1861 JAMES CLARK MAXWELL Demonstrated the formation of colors by combining three light sources of red, green and blue to produce white light. All other colors are a mixture of these primary colors. The colors combine by an additive process.

1868 LOUIS DUCOS DU HAURON Published a book suggesting how a range of color photographic methods might work, but they could not yet be put into practice.

1871 DR. RICHARD LEACH MADDIX Writing in the 'British Journal Of Photography' he suggested gelatin, derived from a protein found in animal bones, as collodion substitute. Gelatin "Emulsions" and "Dry Plates" were marketed by various manufacturing companies from 1878, and gelatin is still

used today. Exposure times of 1/25th second could be achieved.

1887 HANNIBAL GOODWIN New York clergyman filled patent for roll film with a flexible plastic base.

1888 GEORGE EASTMAN Produced the first simplified camera system for the general public, The Kodak Number 1, and the first mass Developing and Processing service.

1889 GEORGE EASTMAN Produced the first transparent roll film (nitrocellulose).

1889 THOMAS EDISON Slit the 2 3/4 inch Kodak roll film down the middle making it 1 3/8 inch (35mm) and put transport perforations down each side - to become the international standard for motion picture film.

1890 HURTER & DRIFFIELD Devised the first independent system to give emulsions speed numbers, this essentially led to the current ASA/ISO numbers on film boxes today.

1890's The first halftone photographic reproductions appeared in daily papers, although it took another ten years before the process was fully adopted. Halftones were created by using a camera containing a ruled glass screen with a grid pattern to break up the image into tiny dots of different sizes.

1904 DR. H. VOGEL Research lead to panchromatic film using sensitizing dyes. This type of film is sensitive to all visible colors.

1904 AUGUSTA AND LOUIS LUMIÈRE Patented "Autochrome" the first additive color screen film material.

1912 SIEGRIST & FISCHER The two German chemists invented the action of color coupling, so dyes required for color film processing could be created by combining appropriate developer oxidation products with color former chemicals. However the process was not reliable enough to start film production.

1924 OSCAR BARNACK An employer of E. Leitz designed a camera for use with a microscope using motion picture film, this became the first precision 35mm camera.

It was called the Leica derived from Leitz camera.

1935 KODAK Mannes and Godowsky helped develop Kodachrome for home movies, the following year it was introduced in 35mm format.

1936 AGFA The German company were the first to sell a film with the color formers in the film. Towards the end of the second World War their closely guarded secrets were "liberated".

1940s Large factory size laboratories took over film processing from individual chemists. However chemists still continued to sell films.

1947 DR. EDWIN LAND Invented an "instant" picture process, first called Polaroid Land. The special camera sandwiched the exposed negative with a receiving positive paper and spread the processing chemicals between the two, after processing these were peeled apart.

1963 DR. EDWIN LAND His Polaroid Corporation's research team invented the first instant color picture material.

1976 CANON AE-1 the first 35mm camera with built in microprocessor is introduced.

1980s A system called DX coding was introduced for 35mm films. The cassettes have an auto-sensing code printed on them which enable certain cameras to automatically set the film speed, this information can also be used by processing laboratories.

1984 CANON Demonstrated the first digital still camera.

1985 MINOLTA The Minolta 7000 autofocus 35mm SLR camera introduced.

1990 MICROSOFT Windows 3.1 is released.

1990 ADOBE Adobe Photoshop 1.0 image manipulation program is introduced for Apple Macintosh computers.

1992 TIM BERNERS-LEE Develops the software and protocol for the World Wide Web (WWW).

1993 ADOBE Adobe Photoshop is made available for MS-Windows computers.

1993 NCSA Release the first World Wide Web browser.

1994 NETSCAPE Launch their WWW browser called Navigator.

1996 Advanced Photo System (APS) is introduced, a new 24mm.

film format supported by a range of cameras and photo finishing equipment.

1996 MICROSOFT Release their WWW browser called Internet Explorer.

1998 The first consumer megapixel cameras were introduced.

2001 FUJI Announces diagonal digital sensor arrangement for Red, Green and Blue sensors and claims enhanced color purity and image resolution.

2002 FOVEON Announcement of a tiered digital sensor that allows each sensor to record Red, Green and Blue, nearly tripling the number of pixels which can be placed in a typical array.

2003 KODAK, CANON Announcement of 15 and 13 Megapixel Pro and Semi-pro digital cameras based on Chemical Metal Oxide (CMOS) technologies.

2003 SIGMA First Foveon based digital camera with a 5 megapixel sensor which claims comparable resolution to approximately conventional 9 megapixels CCD or CMOS technologies.