KODAK

MILESTONES

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The "milestones" listed here give some highlights of the history of the Eastman Kodak Company. They have been selected on the basis of their possible usefulness to students and others interested in the company's growth and development. If more information on these entries is desired, please write the Public Relations Department, Eastman Kodak Company, 343 State Street, Rochester 4, New York.

1878 George Eastman, a 24-year-old amateur photographer, began making photographic emulsions for his own use with materials and information imported from England, then the world center of photography. He was one of the first persons to make gelatin dry plates in the U. S.

1879 Eastman invented an emulsion coating machine for mass-producing photographic dry plates. He then went to England with the coating machine drawings and obtained his first patent.

1880 Eastman began a dry-plate business in a rented loft of a factory building in Rochester, New York.

1881 On January 1, Eastman and Henry A. Strong, a family friend and local buggy whip manufacturer, formed a partnership, the Eastman Dry Plate Co., with Strong as president and Eastman as treasurer. By March, there were six employees on the payroll. Eastman left his position with a local bank to devote full time to the new business in September.

1882 Photographers complained that the Eastman plates had lost their sensitivity. Eastman recalled the stock and promised to replace all plates that did not measure up to his promises. However, Eastman found that he was unable to make a good emulsion from formulas that had previously been reliable. He closed the factory, and after some 450 unsuccessful experiments, sailed with Strong for England hoping to find a solution to his problem. They returned with the answer, reopened the factory, resumed plate manufacturing, and replaced the defective plates.

1883 The Eastman Dry Plate Company, Strong and Eastman, Proprietors, moved into a 4-story building at what is now 343 State Street, the company's administrative headquarters.

1884 The Eastman Dry Plate and Film Company was formed with a capital of $200,000, and the organization of the business was changed from a partnership to a corporation. Initially there were 14 shareholders.

1885 Eastman Negative Paper was introduced to replace glass plates. This negative paper consisted of a photographic emulsion on paper which, after development, was made transparent enough for printing by treatment with hot castor oil. Eastman and William H. Walker, as associate, developed a roll holder that used negative paper in rolls. It could be fitted onto standard plate cameras.

Later that year, Eastman American Film was announced. In contrast to negative paper, this was a stripping film which used paper only as a temporary support for the emulsion. The paper was stripped off after development, leaving a thin, transparent "film" from which prints were made.

Walker opened a wholesale office for the company in London, England. This marked the start of world-wide sales.

1886 Eastman hired a chemist to do full-time research on the development of a flexible, transparent film base.

1888 In searching for a distinctive trademark, George Eastman wanted a word that was short, and easily spelled and pronounced in any language. The letter "K" was a favorite of his. After trying out a great number of letter combinations that made words starting and ending with "K," Eastman chose "Kodak."

The No. 1 Kodak Camera was placed on the market. It sold for $25 loaded with enough American Film for 100 exposures. Camera and exposed film were returned to Rochester to have the film developed, prints made, and the camera reloaded--all for $10. This was the beginning of a complete system of photography. "You press the button--we do the rest" was the slogan coined by Eastman for his new system and publicized in national magazines. At this time the camera department employed about 60 people.

1889 The first commercial transparent roll film on cellulose nitrate base, developed by Eastman and the company's research chemist, was put on the market. Thomas

Edison ordered some of the film for motion picture experiments and produced the first motion pictures on 35mm film.

A new corporation, the Eastman Company, was formed. Capitalized at $1,000,000 it took over the assets and business of the Eastman Dry Plate and Film Company.

The Eastman Photographic Materials Company, Ltd., was formed in London, England, to handle sales outside the Western Hemisphere.

Early Kodak film was coated on glass-topped tables 200 feet long.

1890 The first folding Kodak camera was introduced.

Eastman hired Alice K. Whitney, later Alice Whitney Hutchison, as his secretary. She held this position for 42 years and served as assistant secretary of the company from 1900 to 1934.

1891 Construction of four buildings, begun in 1890 on the new 16½-acre Kodak Park site in Rochester was completed, and film and photographic paper manufacturing were transferred there.

A plant at Harrow, England, the company's first factory outside the United States, began making film and photographic paper.

The company marketed its first daylight-loading camera and roll film.

1892 The company became the Eastman Kodak Company of New York, and capital was enlarged to $5,000,000.

Solio Printing-Out Paper, which was printed by exposure to sunlight, was introduced.

1893 A six-story Camera Works was built on State Street, Rochester, to make room for the growing line of box and folding roll-film cameras.

1894 William G. Stuber, a professional photographer and dry plate maker, was hired by Eastman to direct emulsion making.

1895 The Pocket Kodak Camera was announced. Forerunner of the modern roll-film camera, it was simple, inexpensive, and featured a daylight-loading film spool.

With the discovery of x-rays by Wilhelm Conrad Roentgen, Kodak's dry plates were used for x-ray work.

1896 Kodak marketed the first film especially coated for motion picture positive prints. Previously, the film used for both motion picture negatives and positives had been the same as that used in Kodak still cameras.

Kodak established a sales office in Germany.

1897 A sales organization was established in France.

1898 The Folding Pocket Kodak Camera, the first compact bellows-type roll-film camera, made its appearance. It was the first Kodak camera with an all metal case.

The company's employee suggestion system was begun.

The American and British companies were consolidated at Kodak Ltd., with £ 1,600,000 capitalization.

1899 Frank Lovejoy, a young chemical engineer hired in 1897, directed the development of a continuous wheel process for manufacturing transparent film base. The great wheels replaced glass tables.

A machine for coating emulsion on film in continuous rolls was designed at Kodak Park and placed in use in the company factories.

Eastman gave his employees a bonus from his personal funds for "extraordinarily good work."

Canadian Kodak Company Ltd., was established, and a sales outlet was opened in Australia.

1900 The first Brownie Camera was marketed. It was priced at $1 and used film which sold for 15¢ a roll.

1901 The Eastman Kodak Company of New Jersey, the present parent company, was formed with an initial capital of $25,000,000. Kodak Ltd. became a wholly owned subsidiary of the Eastman Kodak Company.

1902 Kodak introduced equipment for developing roll film in daylight.

1903 At Frank Lovejoy's suggestion, the company began an employment stabilization program to overcome the effect of seasonal variations in the demand for Kodak products. Over the years the company has achieved marked employment stability through careful planning of production.

1908 The company manufactured its first film on safety (cellulose acetate) base. With continued research, this base was improved to suit a variety of film products. It gradually replaced the highly inflammable cellulose nitrate type.

Kodak (Australasia) Pty., Ltd., was formed. The majority of its shares owned by the Eastman Kodak Company.

1911 The company's Blair Camera factory on St. Paul Street, Rochester, was renamed Hawk-Eye Works, and in 1913, a department for the study and design of optics was established there.

Mr. Eastman created a benefit, accident, and pension fund for his employees.

The company's first safety committee was organized to study accident prevention.

At this time, the company employed about 8,200 people throughout the world.

1912 Dr. C. E. Kenneth Mees, a British scientist prominent in the photographic field, was hired by Eastman to organize and head a research laboratory in Rochester.

Kodak employees received their first wage dividend. It has been paid every year except one since its inauguration.

1913 Eastman Portrait Film, a special sheet film to replace cumbersome glass plates then used by photographers, was announced.

A specially wrapped dental x-ray film was put on the market by Kodak.

1914 To fill the needs of the Allied forces during World War I, Eastman Kodak manufactured a single-coated x-ray film with a flexible cellulose nitrate base and an emulsion of greater sensitivity.

The first autographic cameras and films were introduced. They allowed the photographer to write identifying information on the film at the time a picture was taken.

On the recommendation of the safety committee, the company's medical services were expanded into a full medical department.

A 16-story office building was completed at 343 State Street, the company's administrative headquarters. Three more stories were added in 1930.

1916 The company marketed the first camera equipped with a coupled range finder, the 3A Autographic Kodak Special Camera.

1917 During World War I, Kodak developed and produced aerial cameras and trained aerial photographers for the Signal Corps.

1918 When World War I stopped trade with Germany, American scientists were cut off from their supply of synthetic organic chemicals. With the help of the University of Illinois, Kodak established a synthetic organic chemical laboratory, with Dr. H. T. Clarke as superintendent, to make organic chemicals for research in the United States. Today some 3700 different chemicals are available.

Continued research to improve x-ray film resulted in a "duplitized" (double-coated) film which required materially less exposure time than previous x-ray films.

1919 Construction was begun on a gelatin plant, paper mill, power plant, and other facilities at Kodak Park.

1920 Tennessee Eastman Corporation was organized in Kingsport, Tennessee, when Eastman Kodak bought an idle World War I plant to manufacture wood alcohol for film base and other wood distillation products. Under the direction of Perley S. Wilcox, who later became chairman of Kodak's board of directors, Tennessee Eastman grew into a major division of the company, producing fibers, plastics, dyes, and chemicals.

1921 The Eastman Savings and Loan Association was organized to aid employee saving and finance home purchases.

1923 The company made amateur motion pictures practical with the announcement of 16mm reversal film on cellulose acetate (safety) base, a method of processing this film, and the first 16mm motion picture camera (Cine-Kodak) and projector (Kodascope).

1924 Eastman Kodak introduced the first x-ray film with a noninflammable cellulose acetate base.

1925 William G. Stuber became president of the company when Eastman became chairman of the board of directors.

1926 A film specifically designed for duplicating professional motion picture negatives was developed and manufactured by Kodak.

George Eastman (left) and Thomas Edison at the first showing of Kodak color motion picture process in 1928.

1927 Kodak's European facilities were extended to include a new factory in Copenick, Germany, that manufactured sensitized goods. The Copenick plant was part of Kodak's new German organization, Kodak A. G.

A merger of Pathe and Eastman interests in France resulted in the formation of Kodak-Pathé.

1928 With the introduction of 16mm Kodacolor Film (a lenticular reversal film entirely different from the present Kodacolor roll film for still cameras), motion pictures in color became a reality for amateur cinematographers. This was not Kodak's first color process--a two-color subtractive process for portraiture had been marketed briefly in 1914.

Kodak established retirement annuity, life insurance, and disability benefit programs for its employees.

Recordak microfilming equipment, developed by George L. McCarthy and manufactured at Kodak, was introduced by the Recordak Corporation, a newly formed subsidiary. Recordak microfilming equipment, first developed for use in banks, is widely used today by department stores, insurance companies, libraries, government agencies, the armed forces, industry, and others.

The company's world-wide employment was about 22,000.

1929 With the end of the silent movie era, Kodak introduced its first motion picture film designed especially for making the new sound films.

1930 Kodak purchased a gelatine manufacturing plant in Peabody, Massachusetts, and formed the Eastman Gelatine Corporation. This company unit provides an additional supply of gelatine, one of the most important raw materials in the manufacture of photographic film and plates.

Kodak transferred its hydroquinone manufacturing facilities to Tennessee Eastman. Hydroquinone is one of the principal ingredients of photographic developing solutions. It is also important in the manufacture of synthetic rubber, in additives for animal and poultry feeds, in weathering agents for paints and plastics, and in a variety of other uses.

The production of cellulose acetate for safety film base was transferred from Kodak Park to Tennessee Eastman.

Tennessee Eastman produced its first cellulose acetate yarn, and began marketing this new product for the textile field in 1931.

Development of new sensitizers for photographic plates resulted in the introduction of a panchromatic plate, with increased speed and sensitivity, for commercial use.

1931 Kodak introduced Kodalith Film for the graphic arts, the first of a number of photographic materials developed by the company to reduce printing costs and increase the quality of photomechanical reproduction. Kodalith Film replaced the cumbersome collodion wet plates used up to this time.

Cameras and photographic apparatus were added to the Kodak products made by Kodak A. G. in Germany with the purchase of a camera factory in Stuttgart, Germany. Its former owner, Dr. August Nagel, joined Kodak as manager of the factory.

Acetate and other fibers are produced by the Tennessee Eastman Company division at Kingsport, Tenn.

1932 George Eastman died. In 1949, his former Rochester home was opened as an independent public museum of photography, the George Eastman House.

Tennessee Eastman began production of its first plastic, Tenite Acetate, a cellulose acetate molding composition. Tenite Butyrate, a cellulose acetate butyrate molding composition, was introduced in 1938.

The first amateur motion picture film, cameras, and projectors in the 8mm size were introduced.

1933 Kodak marketed its first panchromatic roll films, Kodak Super Sensitive Panchromatic Film and Kodak Panatomic Film. Continuing emulsion research resulted in panchromatic films with increased speed and finer grain for both amateur and professional uses in 1938.

The Cine-Kodak Special (16mm) Camera, designed for advanced amateur and professional cinematography, was announced.

Eastman Kodak and the Western Electric Company announced a high-speed camera synchronized with a Western Electric timer. The camera simultaneously recorded rapid motion and time intervals to 1/1000 of a second. Developed as an industrial tool, the camera and timer made it possible for engineers to analyze and improve high-speed mechanical operations.

1934 Eastman Kodak and General Mills began a joint research and development program on molecular distillation. This led to the formation in 1938 of Distillation Products, Incorporated, a manufacturer of vitamin concentrates, synthetic vitamins, and vacuum distillation equipment.

Frank Lovejoy succeeded William G. Stuber as president of the Eastman Kodak Company, and Stuber became chairman of the board.

The company employed about 26,500 people throughout the world.

1935 Kodachrome Film, a subtractive color material invented by Leopold Mannes and Leopold Godowsky, and perfected by them in cooperation with the Kodak Research Laboratories, was announced in the 16mm size for motion pictures.

The Kodak Bantam Camera was introduced. While having the advantages of a miniature camera, it used roll film.

Tennessee Eastman marketed Tenemine I, an antioxidant and gum inhibitor for gasoline. Other fuel antioxidants and gum inhibitors have since been added to this line.

1936 Kodachrome Film for 35mm still cameras and 8mm motion picture cameras was announced.

The 16mm Magazine Cine-Kodak Camera was announced. It used film in magazines instead of rolls. In 1940, an 8mm Magazine Cine-Kodak Camera and film were marketed.

1937 Kodak introduced its first 16mm sound-on-film projector, the Sound Kodascope Special Projector.

1938 Kodak introduced "Lumenized" lenses--lenses coated with magnesium fluoride to reduce surface reflection.

Tennessee Eastman began to manufacture a new line of superior dyes for acetate yarns.

The Kodak Super 620, the first camera with built-in automatic exposure control, was announced.

1939 The company began a program of annual fellowship grants to various colleges and universities throughout the country.

Kodak employees numbered about 40,400 throughout the world.

The already growing popularity of miniature cameras was given an important boost when Kodak began mounting color transparencies from these cameras in Readymounts for projection viewing as part of the processing service.

1940 With the growing interest in 35mm still photography, Kodak marketed the Kodak Ektra Camera. This precision still camera had a speed range from 1 to 1/1000 second. Its interchangeable magazine back allowed any of 8 different Kodak films to be used in the camera. Six different lenses could be used interchangeably.

The first Kodak Flasholder (for the Brownie 620 Flash Camera) was announced.

1941 Production of Kodak rare-element glass was announced. This new type of glass, made from rare elements rather

than sand, has greater lightbending power and less dispersion than the standard glasses used for lenses.

Airgraph or "V-Mail," developed by Kodak Limited and the Eastman Kodak Company, was a system of microfilming letters to conserve shipping space. It was adopted for overseas communication by the British in this year, and by the U. S. armed forces in 1942.

Color prints and enlargements from amateur and professional Kodachrome transparencies became available for the first time. They were made on a white-pigmented cellulose acetate base which was smooth, strong, and resilient, and were known as Kodachrome Prints.

Thomas J. Hargrave became president of the company when Lovejoy was elected chairman of the board of directors. Hargrave, a lawyer, had previously been head of the company's legal department, and vice-president and secretary of the company.

Customers' Kodacolor prints roll off a processing machine at the Kodak Park Works, Rochester, N. Y.

1942 Kodacolor film, a color negative film, was announced. This easy-to-use color film and a new paper for the color prints were developed especially for taking color snapshots with simple, low-priced cameras. An improved dual-purpose film for either indoor or outdoor use was marketed in 1956.

Eastman Kodak's Rochester plants were awarded the Army-Navy "E" for high achievement in the production

of military equipment. Kodak war production in Rochester included proximity fuses, range finders, aerial photographic film and equipment, and millions of feet of film and photographic paper for the armed forces. Tennessee Eastman Company produced RDX, a powerful explosive, at the government's Holston Ordnance Works in Kingsport, Tennessee. Personnel of Tennessee Eastman and Kodak in Rochester operated the Y-12 atomic-bomb-material manufacturing plant at Oak Ridge, Tennessee.

Tennessee Eastman began the manufacture of oxidized cellulose, developed by the Kodak Research Laboratories, for surgical dressings. Surgeons can leave these dressings in a wound to be absorbed by the body liquids.

1945 The Kodak Dye Transfer Process, introduced in this year, provided a method of making three-color prints on paper from color-separation negatives.

1946 Kodak introduced Ektachrome sheet film, the company's first color film which could be processed to color transparencies by the photographer. Additional research and development resulted in the 1947 introduction of this film in roll-film sizes. An improved Ektachrome Film with increased speed was introduced in 1955.

The government-owned plants in Rochester where Kodak produced military products for the Navy during the war were organized as the Navy Ordnance Division. Kodak continues to operate these plants for the government as a company division.

1947 The world's first commercial production of synthetic vitamin A began at Distillation Products, Incorporated.

Kodak introduced Kodagraph Autopositive Film, the first of a series of autopositive materials used to speed up engineering drawing and photomechanical reproduction.

Kodak introduced the Eastman Television Recording Camera, culminating experiments in cooperation with the Allan B. Du Mont Laboratories and the National Broadcasting Company.

The company introduced Kodak Ektacolor sheet film, a color negative film that can be processed by the user, along with Kodak Pan Matrix Film for making color prints from the negatives.

1948 Kodak announced tri-acetate safety base film for professional motion pictures. The introduction of this base culminated a long search for a suitable safety base to replace the inflammable 35mm cellulose nitrate base used up to this time throughout the industry. In 1950, the company was awarded an "Oscar" by the Motion Picture Academy of Arts and Sciences for developing this non-inflammable safety base motion picture film.

Eastman Kodak purchased General Mills' interest in Distillation Products, Incorporated, and in 1949 the company became a division of Kodak as Distillation Products Industries.

Fully automatic processing of snapshots was made possible for the first time by the Kodak Continuous Paper Processor. The machine produced 2,400 finished snapshots an hour.

1949 The Kodak Flexichrome Process, a method of making color prints and transparencies from black-and-white or color originals, was placed on the market.

1950 The Kodak 16mm Sound Projector, Model 25, was introduced. This heavy duty machine was designed to meet the needs of industry, theaters, laboratories, and others.

1951 The simplicity and economy of the Brownie line of photographic equipment was extended into the movie field with the introduction of the Brownie 8mm Movie Camera. The Brownie Movie Projector was added in 1952, and the Brownie Turret Camera with telephoto and wide-angle converters, in addition to the standard lens, was introduced in 1955.

1952 Kodak received an Oscar award for scientific and technical achievement from the Motion Picture Academy of Arts and Sciences for the Eastman Color Negative and Color Print films introduced in this year.

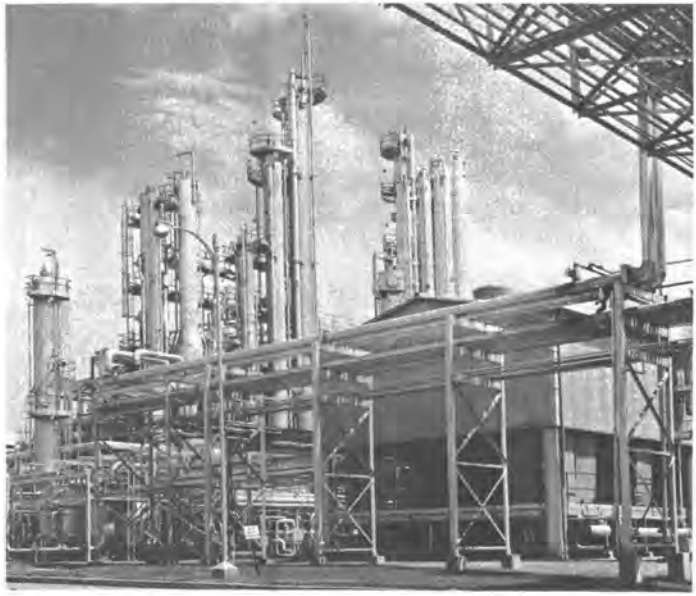
Chromspun, Tennessee Eastman's dyed-in-solution acetate textile fiber, went into large-scale production.

Tennessee Eastman produced acetate tow for cigarette filters.

The Kodak Ektagraph Process was announced. It enables silk screen printers to reproduce delicate gradations of tone with stencils made by a photographic process. (Silk

screen printing is a low-cost, flexible method of reproducing signs, banners, book covers, etc., on a variety of surfaces.)

Texas Eastman Company, a new division of the Eastman Kodak Company, began operations. The original plant, located on a 2,400-acre site in Longview, Texas, cost more than $20,000,000 to build. Its first products were alcohols and anhydrides for other divisions of the company and the chemical trade. The division now produces a variety of chemical products.



Tenite Polyethylene plastic and industrial chemicals are manufactured at the Texas Eastman Company division, Longview, Texas.

Dr. Albert K. Chapman succeeded Thomas J. Hargrave as president of the company when Hargrave became chairman of the board of directors. Dr. Chapman, a Ph.D. in physics, joined the company in 1919, and prior to his election as president, was the company's general manager.

1953 The Verifax Office Copier, an office machine for producing copies of typed, written, or printed originals rapidly and easily, was put on the market.

A new subsidiary, Eastman Chemical Products, Inc., was formed to market the chemical products manufactured by Tennessee Eastman and Texas Eastman. In 1954, Eastman Chemical Products, Inc., also became sales representative for Tennessee Eastman's acetate yarn and staple.

1954 Kodak's high-speed Tri-X Panchromatic Negative Film for motion pictures, Tri-X roll films, and Royal Pan sheet film were introduced. The greatly increased speed and low graininess of these black-and-white films make it possible to take pictures under difficult light conditions.

Tenite Polyethylene plastic, manufactured in a newly constructed plant at Texas Eastman, was introduced. In 1957, the company announced a new medium-density polyethylene, and an increase in over-all polyethylene production capacity to 85 million pounds annually. This was the second increase from the original capacity of 20 million pounds per year.

The Kodak Stereo Camera and Kodak Stereo Viewer were introduced. Stereo photography has been intermittently popular for many years. The company also marketed stereo cameras in 1901, 1905 and 1917.

1955 The company announced a new aid-to-education plan which provides grants to privately supported U. S. colleges and universities whose graduates are employed by the company. This plan is in addition to the program of fellowship grants begun in 1939.

The sale of Kodacolor and Kodachrome films without the cost of processing included in the selling price was announced. New papers for making color prints from color negatives and positive transparencies were introduced. The methods for processing the films and papers and the necessary processing chemicals were made available to those wishing to engage in such operations.

An improved Panatomic-X film with extremely fine grain and high definition was introduced.

The company purchased land which increased the area of Kodak Park Works to about 1,000 acres.

Kodak's world employment totalled 73,100.

1956 The company formed the Apparatus and Optical Division which includes Camera Works and Hawk-Eye Works, and has its own sales, financial, accounting, and related departments. The new division was created to unify the company's apparatus and optical operations.

Verel, a modified acrylic fiber, was added to the company's textile fiber line. Like other Eastman textile products, it is manufactured at Tennessee Eastman and marketed by Eastman Chemical Products, Inc.

A new black-and-white film, Kodak Verichrome Pan Film, was introduced to replace Verichrome Film, a favorite of snapshooters since its introduction in 1931. The new film has the brilliance and sensitivity of Verichrome Film with the added advantage of being panchromatic.

As a result of research on photographic emulsions to reduce exposure time for full-mouth dental x-ray examinations, two of the four Kodak dental x-ray films were doubled in speed. A new medical x-ray film with increased speed, Kodak Royal Blue Medical X-ray Film, was introduced the following year.

1957 The Brownie Starflash, Starflex, and Starlet Cameras were introduced. These low-priced cameras take color slides as well as color and black-and-white snapshots. More than 1,000,000 Star cameras were sold in the first six months following their introduction to Kodak dealers.

Royal-X Pan sheet and roll films were introduced. These films are three to four times faster than Tri-X and Royal Pan films.

The introduction of the Kodak X-Omat Processor made possible the rapid processing of x-ray films (radiographs) in hospitals, clinics, and radiologists' offices. Complete processing, which formerly took about one hour, is done automatically in only six minutes by this machine.

For further information, or for additional copies of this booklet, write to:

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