

## *History of the*

# **EASTMAN KODAK COMPANY**

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### Introduction

Of all the fields open to young men in the 1870's, photography was one of the most challenging. George Eastman, founder of the Eastman Kodak Company, discovered this when he purchased a photographic outfit in 1877 and set about penetrating the mysteries of picture-making. If they were not actually held in disrepute, practitioners of the art were viewed with humorous indulgence, and the back-breaking paraphernalia which they were obliged to carry about with them did nothing to relieve their plight. The 23-year-old George Eastman shouldered his darkroom tent and cumbersome wet-plate apparatus with the rest, but unlike them he was not content to carry the burden for life. His inquiring mind, explored the possibilities for improvement, and he found the challenge a heady one. He proceeded to devour all the photographic literature of the day and applied himself in his spare time to experimentation and study. The result of his painstaking --and sometimes heartbreaking--work was the perfection of the photographic dry plate in 1880 which, in contrast to the wet plates used prior to that time in conjunction with bulky and complicated equipment, made photography a relatively simple process.

Eastman once said: "A lot of failures often lead up to success." He spoke out of his own experience; ruin threatened him more than once. His energy, application and purpose turned those failures into success --but it was his vision that built an industry and brought photography within the reach of almost everyone. Very early in his career that vision led him to devise a plan of action for the conduct of his business from which he never deviated. The wisdom of his program became more and more apparent in the ensuing years; Kodak's part in the advancement of science and the betterment of humanity through photography may be directly traced to the principles he laid down. They were followed during his life and continued after his death up to the present day:

1. Mass production at low cost
2. Intensive photographic research
3. Development of new products
4. World distribution
5. Growth of company facilities and services
6. Extensive advertising
7. Employee benefits

The history of the Eastman Kodak Company is the development of these principles.

## Founding and Organization

George Eastman's formal education stopped at the age of 14, when he went to work as an office boy in an insurance firm. His rise was so rapid that within a comparatively short time he became the sole support of his widowed mother. From office boy he advanced to clerk, and then to bookkeeper in the Rochester Savings Bank--a position which most young men of that time found enviable. Eastman kept the job at the bank until 1881, but in 1880 he rented a third-floor loft and began the manufacture of dry plates commercially. His success in the venture so impressed Henry A. Strong, a hard-headed businessman who roomed with the Eastmans, that Strong invested some money in the infant concern. On January 1, 1881 Eastman, together with Strong, formed the Eastman Dry Plate Company in Rochester, New York.

Eastman worked day and night; while actively managing all phases of the firm's activities, he continued his research in an effort to simplify photography even more. His industry paid off in new inventions and discoveries; and by 1885 he startled the trade with the announcement of film in rolls, together with a roll holder adaptable to nearly every plate camera then on the market. Meantime the company had been reorganized in 1884 as the Eastman Dry Plate and Film Company. Eastman dreamed of a "complete system of photography," and with the introduction of the first Kodak camera in 1888 the foundation was laid. A new company--named the Eastman Company--was formed in 1889. The company has been called the Eastman Kodak Company since 1892, when the Eastman Kodak Company of New York was organized. In 1901 another company--the Eastman Kodak Company of New Jersey--was formed under the laws of the State of New Jersey. The organization then consisted of both the New York and the New Jersey companies until 1936, when the Eastman Kodak Company of New York was dissolved and all its assets transferred to the New Jersey company.

Since the company's founding, five men have served Kodak as president. At the firm's beginning in 1880, George Eastman was the sole proprietor. When the Eastman Dry Plate Company was formed in 1881, Eastman and Henry A. Strong became joint proprietors. From the organization of the Eastman Dry Plate and Film Company in 1884, Henry A. Strong was president of the Eastman Kodak Company of New York until his death in 1919; during the same period George Eastman served as treasurer and general manager. Eastman was named president in 1919 and resigned in 1925 to become chairman of the board of directors. His successor as president was William G. Stuber, who became chairman of the board in 1934 when Frank W. Lovejoy was made president. Thomas J. Hargrave, now President of Kodak, was elected in 1941, Mr. Lovejoy becoming chairman of the board

then. The present chairman of the board is Perley S. Wilcox, elected in 1945 at the death of Mr. Lovejoy. Mr. W. G. Stuber became honorary chairman of the board in 1941.

### Mass Production At Low Cost

In the very early development of the company, Eastman was preoccupied with the idea of supplying photographic tools in large quantities at the lowest possible cost to the greatest number of people, and the rapid growth of the firm made large-scale production a downright necessity. As early as 1879--a year before the company was founded--Eastman had invented a plate-coating machine for the mass production of emulsion-coated glass plates. Within ten years he had devised labor-saving machinery and processes for manufacturing film which enabled the new company to turn out high-grade merchandise at a phenomenally low cost for that period. In 1896 the 100,000th Kodak camera was manufactured, and film and photographic paper were being made at the rate of about four hundred miles monthly. This was indeed "large-scale production at low cost for the world market" and the resultant savings were passed along to a public which was rapidly becoming picture-conscious. In 1895 the Pocket Kodak camera was introduced at \$5.00--the lowest price at which a camera had ever been sold. Not content with this, Eastman worked toward a camera which would operate simply and efficiently--and sell for \$1.00. Out of this came the now-famous Brownie camera in 1900. Photography was at last within the reach of nearly everyone. In 1899 a drum system was devised to make film, cutting the cost of manufacture considerably.

All of this was accomplished by the turn of the century. In the years following right up to the present day, with the newer and better methods evolved through continuing research, Kodak had adhered to the policy of sharing with the users of its products the gains achieved.

### Research

The nucleus of Kodak's present complete research facilities was George Eastman's experimentation and study prior to the perfection of his first photographic plates, and during the first years of the company's formation his own inventions were the bulwark of its progress. As Eastman himself said, the company was founded on experiments, and he was always keenly aware of the importance of research to the company's advance. He pioneered in drawing upon colleges and universities for young scientists to swell the ranks of his research staff, beginning in 1886 with the engagement of a chemist as a full-time researcher--an unusual measure at that time.

Eastman was looking toward a laboratory devoted exclusively to photographic research. In 1912 his ambition was realized with the building of the Kodak Research Laboratories at Kodak Park. Since their founding the laboratories have been under the direction of Dr. C. E. Kenneth Mees, one of the world's leading photographic authorities. The present laboratories are more than eight times the size of the original three-story building, and the staff has grown from twenty to around five hundred. Their efforts have brought forth notable contributions to photography in the medical, scientific, educational and entertainment fields: the development of color film; amateur motion pictures; x-ray and dental films; safety film for both amateur and professional. Through the medium of research, photography has become a unique and powerful factor in human progress.

#### Development of New Products

Stemming directly from Kodak's research is the wide variety of photographic products which the company has introduced from the time of its founding. Mr. Eastman's aim was the manufacture of "a complete system of photography;" to anticipate the demand if possible; or to meet it speedily as it arose.

Following the introduction of the first Eastman photographic dry plate in 1880, each successive year brought the presentation of new Kodak products.

In 1885 Eastman revolutionized photography with the introduction of a roll stripping film which used paper as a base for the emulsion. The new convenient roll film could be fitted to almost any camera then on the market by means of the camera roll holder invented by Eastman and an associate, William H. Walker. But Eastman wanted his own camera--and in 1888 the first Kodak camera was introduced. In contrast to the cameras then on the market, which required a table or tripod for support, the Kodak camera was a light, portable instrument that could be easily carried and hand-held during operation. It was priced at \$25, loaded with film; after exposure the camera and film were returned to Rochester, where the film was developed and the new film inserted at a cost of \$10. The next year the No. 2 Kodak camera, a larger model, was placed on the market.

The year 1889 saw the introduction of the first commercial transparent roll film on nitrocellulose support--the film which Thomas Edison used to make the first motion pictures. In 1896 Kodak perfected the first positive motion-picture film, a great boon to the budding motion-picture industry. New Kodak cameras, films and papers came along in rapid succession at the turn of the century and the years following. The year 1908 brought the first successful non-inflammable film, which opened heretofore untapped fields in industrial, amateur, medical and educational

photography. Then came the development of x-ray plates, plates for astronomical photography, and the experiments with color which led to color photography for amateur and professional alike.

Back in 1880 George Eastman dreamed of a "complete system" of photography. That dream was more than realized. In 1951 the Kodak line of equipment, film, paper and chemicals answers nearly every photographic purpose. And from the research which led to these products have come a variety of non-photographic items now manufactured by Kodak, its subsidiaries and divisions.

### World Distribution

From the sixteenth century on, some great photographic discoveries had come out of Europe. Niépce and Daguerre in France, Talbot in England and others laid the foundations for the techniques leading to present-day photography. By the time George Eastman launched his dry plate business in 1880, European interest in photography was keen, and there was a receptive audience for new products and methods. Eastman early realized the potentialities of these new markets, and five years after the company was established in the United States a sales office was opened in London. Within the next few years, particularly after the introduction of the Kodak camera and Eastman's simplified methods, picture-taking spread like wildfire. In 1889 the Eastman Photographic Materials Company, Ltd., was incorporated in London, England, to handle distribution of Kodak products in countries outside of the Americas. At first all goods were manufactured in the Rochester factory, but before long the foreign and domestic demand overreached the plant resources. Construction of a factory at Harrow, England--just outside of London--was completed in 1891. Today that factory employs over 5,000 people turning out cameras and allied equipment, lenses, film, paper and chemicals. By 1900 distribution outlets had been established in France, Germany and Italy and other European countries; a Japanese outlet was under consideration; and construction of a factory in Canada was under way with the organization of Canadian Kodak Co., Limited. The Rochester Export Territory, established in the early 1900's was formed for the distribution of Kodak materials to South America and the Far East. Service to the orient was improved in 1908, when the firm of Baker and Rouse in Australia became associated with Kodak to form Kodak Australasia. Kodak Pathé of France joined Kodak in 1927, and the present factory at Vincennes keeps over 2,000 people busy with the manufacture of Kodak photographic products.

All of this brought about effective distribution to world markets. At almost every point where economic and political conditions permit, Kodak is now represented.

## Growth

Business grew by leaps and bounds in the early years and outgrew the third-floor loft where George Eastman stirred his first emulsions. When Eastman and Henry Strong formed the Eastman Dry Plate Company in 1881, they moved to larger quarters farther down the street. It was soon evident that the new location could not contain the growing firm for long, and Eastman began to look around for a more permanent business home. He chose a site at 343 State Street, and Kodak's present 19-story office building stands on this first property owned by the company, expanded through the years by additional purchases. Next door to the office is Camera Works, opened in 1893 with one building which has grown to a group of eight six- and seven-story plants.

In the beginning all manufacturing was carried on at State Street. By the late 80's it was clear to Eastman that he was going to need space, and lots of it, to house the manufacturing facilities the growing business demanded. This time he chose land which was then outside the city limits of Rochester on the "Boulevard" leading to Lake Ontario. In 1890 four small buildings were erected on those few acres of land to handle the manufacture of film. In those days the plant was called simply "The Boulevard." In 1892 the impending visit of President Benjamin Harrison seemed to warrant the selection of a more impressive name for the new plant and on the spur of the moment someone suggested "Kodak Park." The name stuck, and it turned out to be a happy choice, for today the Park's 110 buildings spread out over an area of some 400 acres, and over 19,000 people handle the film, paper and chemicals manufactured there.

Hawk-Eye, Kodak's lens plant, was christened in 1911, and the lens department formerly housed at Camera Works was moved there shortly afterwards. Hawk-Eye has grown steadily in size and population, and the present streamlined plant is one of the most complete optical works in the world.

NOD stands for Navy Ordnance Division. Established as a division of the company on January 1, 1946, NOD grew out of World War II operations formerly carried on in Camera Works. Now functioning in Navy-owned property, this engineering-manufacturing plant works on Navy ordnance materiel.

Eastman wanted the photographic dealers to have the best possible service, and the turn of the century saw the opening of distribution branches in New York, Chicago and San Francisco. These branches were so effective that further distribution points were not needed for many years. Branches in Los Angeles and Rochester were established as late as 1946. Prior to 1950, the southwest was served by the Chicago and western branches. In order to provide better distribution to this territory, another



branch was considered necessary. The newest member of the family is the Dallas Branch, which was opened in May, 1950. The strategic locations of the six Kodak branches now assure Kodak dealers of fast, effective service.

In 1901 and 1902 retail photographic houses were opened in London and in this country. About this time, too, Taprell, Loomis & Company of Chicago, makers of photographic mounts, joined Kodak. In 1901 J. E. Brulatour became the distributor of Kodak film to the motion-picture industry.

In the year 1920 Kodak bought from the Government a hardwood distillation plant at Kingsport, Tennessee, for the manufacture of wood alcohol, a vital chemical in film-making which became scarce during the first World War. Eastman named the plant Tennessee Eastman Corporation. TEC was a wholly-owned subsidiary of Eastman Kodak Company until January 1, 1951, when it was dissolved as a separate corporation and became a division of Kodak. Now known as Tennessee Eastman Company, Division of Eastman Kodak Company, the plant today has become a flourishing center for the manufacture of acetate yarn and fiber, plastics, chemicals and acetate dyestuffs. Now in operation at Longview, Texas, is a plant known as Texas Eastman Company, Division of Eastman Kodak Company. Here certain basic raw materials for use at Tennessee Eastman are manufactured. The plant went into operation in 1952. A. M. Tenney Associates, Inc., in New York City, a wholly-owned subsidiary of Eastman Kodak Company, serves as sales representative for Tennessee Eastman on Kodak filament and Teca staple fiber.

In the early 1920's a bank official in New York City named George L. McCarthy became intrigued with the idea of making a permanent record of all bank transactions by a photographic method. His experiments led to the invention of an automatic micro-filming machine which would photograph bank checks continuously on 16-mm. film. Kodak became interested in the invention, and in 1928 the Recordak Corporation, a Kodak subsidiary, was formed under the guidance of Mr. McCarthy. Although the invention was originally devised for the protection of bank records, its possibilities in other fields were soon recognized. Today Recordak is used everywhere for the preservation of records: in industry, insurance, aviation, newspapers, libraries and government. In 1950, for example, the Air Force instituted a program to micro-film the pay records of all its officers and airmen.

Distillation Products Industries is a division of Eastman Kodak Company in Rochester, New York, which began as a project in Kodak's Research Laboratories in 1937. From experiments on use of high vacuum for drying of film has come a whole new industry engaged in the manufacture of high-vacuum equipment, vitamins, and distilled monoglycerides.

Gelatin is one of the vital ingredients in film manufacture. Most of the gelatin that Kodak uses is made by the Eastman Gelatine Corporation in Peabody, Massachusetts. The plant was purchased in 1930 by Kodak from the American Glue Company.

The third-floor loft and the staff of five have grown!

### Advertising

Mr. Eastman's faith in the importance of advertising, both to the company and to the public, was unbounded. The very first Kodak products were advertised in all the leading papers and periodicals of the day--with the ads written by Eastman himself. By 1892 business had increased to the extent where it was considered advisable to engage a specialist in the field, and Mr. Lewis B. Jones was chosen to head the new department. A testament to his successful direction of Kodak advertising was very recently given when he was chosen posthumously by the Advertising Federation of America as one of the great leaders in the nation's advertising field.

By 1899 Eastman was spending three-quarters of a million dollars for advertising expenditure--the largest advertising outlay of that time! In 1888 had come the famous slogan "You Press the Button, We Do the Rest," coined by Eastman with the introduction of the first Kodak camera. Magazines and newspapers, displays and billboards carried the Kodak banner; space was taken at world expositions; the "Kodak Girl," with the style of her clothes and the camera she carried changing every year, smiled engagingly at photographers the country over. In 1897 the word "Kodak" sparked from an electric sign on London's Trafalgar Square--one of the first of such signs to be used for advertising.

Today Eastman Kodak Company advertising reaches out into all corners of the world, and the provocative word "Kodak" coined by George Eastman in 1888 is familiar to nearly everyone.

### Employee Benefits

Kodak people today are enjoying the fruits of a well-rounded employee-benefit program which began very early in the history of the company. The welfare of his employees was close to George Eastman's heart, and that same consideration has developed into a major Kodak policy.

From the very first, employee health, safety and comfort set the standards for building construction. Later these same factors found further expression in the formation of a Safety Committee in 1911, a Medical Department in 1914, and a Sick Benefit in 1920. And with the establishment in 1928 of the life insurance, disability benefits and retirement annuity plans, the security of Kodak employees was further assured.



George Eastman was a man who took nothing for granted, particularly the services of his employees. He believed in concrete rewards for work well done. As early as 1899 he gave a bonus to all employees out of his personal funds, and in 1912 he brought into being the wage dividend plan which has paid to Kodak people over \$135,000,000 through 1950.

One of the oldest features of Kodak's employment program is perhaps the most notable and far-reaching. The troublesome problem of seasonal employment caused grave concern by the year 1900. Workers who were hired in the spring to make the extra film needed for the heavy summer demand had to be laid off in the fall, and an unstable and inefficient employment situation was created. The only solution was to distribute production over the year, piling up enough film during the dull periods to take care of demands during the busy season. But the risk was great.

True, the keeping qualities of film had improved, but would they be good enough to maintain its effectiveness over the longer storage periods? Eastman decided that the stakes were worth the gamble. The plan followed was conceived and developed by Frank Lovejoy, then manager of Kodak Park and later president of the company. It was enormously successful; it accomplished the purpose to a degree undreamed of in the planning, and paved the way for permanent employment stabilization in all sensitized goods departments.

Employee participation in company affairs took another form when the Suggestion System was initiated. One day in 1898 a Kodak Park man had an idea about window washing. He told his boss about it, was awarded \$2.00 for his interest--and then and there the Suggestion System was born. Since that time awards to employees for time- and money-saving ideas have amounted to over a million dollars.

The principles George Eastman lived by were apparent in all his actions. He believed in planned saving, and as a young office boy--at a salary of \$3.00 a week--had managed to save \$34 in less than a year while contributing to the support of his mother. He made it easier for his employees to follow his example if they cared to. In 1920 the Eastman Savings and Loan Association was founded where employees could make arrangements for planned savings, and borrow money for home-building.

There has always been room to climb for a Kodak employee who was willing to work and learn. Since 1916 Kodak men and women have been given a boost by the company with educational assistance benefits enabling them to take special courses at colleges and technical schools to enlarge their work horizons.

The employee benefit program is one manifestation of the outstanding employer-employee relationship that has prevailed at Kodak from the company's founding to the present day, built upon mutual understanding and confidence.

## Kodak's War Record

In two World Wars, Kodak has made its facilities for research and production available to the government. In World War I, photography was a comparatively young science--yet even then aerial photography was a potent weapon. A school for training aerial photographers was established at Kodak by the War Department, and almost all the men who served in this branch of the armed forces were trained there. Kodak designed special cameras and film, gun sights and periscopes, new x-ray film; a part of the research laboratory was turned over to the War Department for experimentation in ship camouflage; cellulose acetate for airplanes and gas masks was manufactured, as well as organic chemicals unavailable from enemy countries; a new liquid fuel for the Navy was discovered; and motion-pictures were sent to American military camps overseas. For its war accomplishment, Kodak received a special citation from the War Department.

World War II has been called a photographic war. Almost all of Kodak's vast production was devoted to the making of film and cameras and precision instruments; telescopes, gun sights and fire-control equipment; navigation instruments, range finders, and height finders; V-Mail equipment, and hundreds of others. The Tennessee Eastman Corporation operated for the Government the Y-12 plant of Clinton Engineer Works to obtain Uranium 235 for use in the atomic bomb; the proximity fuse, second in importance to the atomic bomb, was made by Kodak for use by the Army and Navy;--and RDX, the powerful explosive which is 50 per cent more effective than TNT, was manufactured at the Holston Ordnance Works after a large-scale production process was developed by Tennessee Eastman for the Government. Before the end of the war, RDX had been used on almost every battle front.

The value of aerial photography was inestimable, and again Kodak trained young men for the job. From Pearl Harbor to the atomic bomb, the war is on record, and Kodak products and Kodak people played an important role in that history-making era.

After the war, the thousands of Kodak people who had served in the armed services returned to join hands with their home-front comrades. The new skills and knowledge which both had acquired were channeled into peace-time research and production. Now, like other industries throughout the nation, Kodak is playing its part in the defense program.

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Nearly three-quarters of a century have gone by since George Eastman set out to make the world picture-conscious. In the beginning a pleasant pastime, photography has become through the years a tool of progress in peace, a powerful weapon in war, a true servant of mankind.

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