KODAK

A MAGAZINE FOR EASTMAN EMPLOYEES



SEPTEMBER 1939



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"START OF THE RACE"

KODAK

Volume 18 SEPTEMBER 1939 Number 9

They Ferret Facts from Invoices

The Tabulating Department Keeps a Sensitive Finger On the Pulse of Kodak Sales

How many Kodak Specials were sold to dealers during the last business period? How much Verichrome Film was sold in Florida last week? What products of ours did the Quality Camera Shop of Lititz, Pennsylvania, buy last month? What were our sales in Brazil during August? How much do we sell of the products of our different factories?

It might not seem likely that the answers to such questions could be kept "on tap." But they are—they have to be. Our management, the Comptroller's Office, the Sales Department, and other departments must have them to guide them in their work. If all facts relating to our sales were not readily available, the sales program would have to be planned more or less haphazardly.

But such facts as these don't assemble themselves automatically.

Where do they come from? How are they tabulated?

Here's How

From the purchase orders that come to our branches from Kodak dealers, we prepare invoices that are the source of all sales information. Thousands of these invoices are made out every week by Rochester and the other branches. Together, they tell a very important story about the trend of Kodak's business. From them we should be able to determine the daily, weekly, and monthly sales to each of the branches—the sales in a particular city or state—the total sales of a particular Kodak product—the sales made to a particular Kodak dealer.

Offhand, however, the assembling of all these facts would seem a super-



The sorting machines can separate a stack of cards into any one of various classifications for sales analysis. The cards of a certain dealer, or those recording sales of a specific product, are deftly sorted for tabulating

human job. To break down every one of thousands of invoices each week and search through them for all the facts we want would surely require a tremendous amount of time and effort. It would, if we didn't have a department—the Tabulating Department at the Kodak Office—to ferret out those facts unerringly, efficiently, and quickly.

How does this department distill its valuable information from the daily stack of invoices?

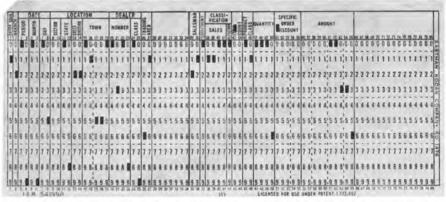
When an order is received from the dealer, invoice copies are made out by the Order Department. After shipment and billing of the order, a copy of the invoice is sent to the Tabulating Department for sales analysis.

Now, any information from these invoices must be selective if it is to be of any value. We must know the total amount of sales for a day, a week, or a month, . . . we must know how those sales are distributed throughout the sales districts and the

states, . . . we must know to what dealers we made the sales, . . . we must even know the exact amount of the sales of any particular item. All this information is spread through



Sales information from an invoice is punched onto a tabulating card. Punches are later "read" by machines



You might find Chinese writing as easy to read as these punched cards. This particular card informs an automatic machine that on September 5, salesman No. 21 sold a New York dealer an order for six Brownies

thousands of invoices. It's up to the Tabulating Department to dig it out.

The first step in this hunt for facts is the transposing of information from the invoices onto 3½ by 7½-inch cards. This is done by punching the eard full of holes. In this form, our information probably wouldn't make very clear reading for the average person—but it can be "read" and analyzed by automatic tabulating machines. And here, we shall find, is the secret of our ability to get surprisingly thorough sales information from dealers' invoices.

Before the invoice is sent to the punching machines, a dealer master card is attached to it. This dealer information is transposed to the card automatically, while the operator records the specific sales information by depressing a set of keys. A separate card is punched for each class of product appearing on the invoice. Some invoices will require a dozen or more cards; others can be transposed to a card or two. The punching of the cards calls for nimble fingers, alert minds, and a good memory, for many of the items are reduced to code numbers on the card.

The cards are now checked on a verifying punch, for it is important that any mistakes be detected and removed at once. They are then run through a gang punch, which records the date and any other information that may be common to all the cards.

We now have all our sales information from the invoices punched on the tabulating cards. This includes dealer identification, the sales territory in which he falls, the branch that serves him, a classification of all the items ordered and the plants in which they were made, the amount of each item, the wholesale price, discount information, and so on.

Now to break down this information into general facts.

Speedy Digestion

First the cards are sorted to desired classifications, such as by states, by dealers, by branches, or by product. Ingenious sorting machines handle this work at the rate of 400 cards a minute. The sorted cards are then run, 150 a minute, through a tabulating machine that adds the information desired and records it automatically. In short, a sorting machine and a tabulating machine have digested a stack of cards containing many kinds of sales information and selected just that part of it which the operator is asking for. In a matter of a few hours, the voluminous facts recorded on thousands of invoices are thus broken down and grouped in statistical form.

Fundamentally, all such information is gained in this way—the cards sorted according to a desired classification and then run through machines for tabulating and accounting.

The bulk of this work is devoted to basic reports. The sales from each branch, for instance, are tabulated daily. These daily reports are summarized into a weekly report which, in turn, is entered in period and monthly reports. Various summaries may be made according to any of several classifications—by sales divisions, by salesmen, by dealer rating, by states, and by individual dealers. In each case, the final report shows some phase of the sales picture in accurate and unmistakable terms.

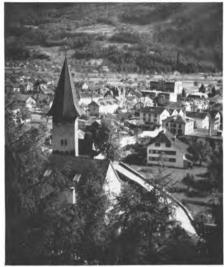
They're Guideposts

While the work of the Tabulating Department is valuable chiefly as an aid to sales management, it is also of great importance in determining profits from specific products in the Kodak line. These reports thus serve as guideposts in charting the sales movement of our goods. In this way, the flow of products from Kodak factories into the hands of our many dealers is accurately recorded.



The tabulating machine digests a stack of sorted cards, adds up the information sought by the operator, and records it on an accounting form. Here is the source of our sales information, gleaned from invoices

Swiss Scenes from a Kodak Album



Meiringen, a typical Swiss town near the Grimsel Pass. The church tower was originally the valley's watchtower



A smile for the photographer: the costumes, which are more than a hundred years old, are those worn in the district of Oberhasli



The Grossmunster at Zurich, founded by Charlemagne and reconstructed in the 11th to 13th centuries



Wasserwendi: this tiny village nestles on the slopes of the Hasliberg in the Oberhasli Valley. The valley is 28 miles long, from the Grimsel to Lake Briez



The Boulder Dam of Switzerland: trapping torrents from melting glaciers, it provides hydroelectric power. The famous Grimsel Hospice is at the upper left



Sixteenth-century costumes of the district of Oberhasli adorn these smiling maids, ready to take part in a Reformation play



The Hasli Valley: the terrace-like formations beyond the pleasant meadows were hewn thousands of years ago by the repeated advances and retreats of prehistoric glaciers



Traveler

WHEN WILLIAM H. WESTPHALStopped by to say hello the other day, we detained him briefly for a barrage of questions. For, back in Rochester on his first visit since he went to Europe as auditor for the Company, he makes a splendid target for the inquiring

reporter.

Mr. Westphal's first headquarters were in Berlin. He later transferred to Vienna, becoming manager of the Kodak establishment there in 1936. Last year, he was transferred to Paris, from where he now handles motion-picture film sales in western and eastern Europe for Kodak Limited.

It's a job that calls for extensive travel. Mr. Westphal visits most of the European countries twice a year, and he's by way of being a walking Baedeker on each. He gets along very nicely in German, French, and, of course, his native English; but on one occasion a few years ago he fervently wished he knew Croatian, too.

En route from Vienna to Zagreb, he was awakened by an excited sleeping-car porter who poured out a torrent of Croatian and hurried along to the next compartment. Mr. Westphal went right back to sleep, only to be roused again by the porter a few moments later. He looked out the window and saw a great sheet of flames reaching into the air.

In a twinkling, he was out with his fellow passengers, pajama-clad and barefoot, in the snow and biting wind of a wintry morning. One of the two coaches was ablaze. The porter was the only member of the train's crew present, the others having gone for help. A passenger uncoupled the second coach and they pushed it along the rails to safety.

The cause of the fire, Mr. Westphal discovered upon reaching Zagreb, was a time-bomb. "It went off prematurely," he explains. "It was timed to explode in the Zagreb station, but I'm just as glad that it didn't because I mightn't be telling you this now."

Europe's motion-picture studios are go-ahead places, he reports. The largest studio is Ciné Citta, just outside Rome. "As modern as Hollywood," he describes it.

American movies have always been very popular "over there." They are shown either with subtitles or with a complete translation dubbed in instead of the English sound track.

Tug-of-War

Kodak parties are invariably merry events, and the Kodak Office men's party down on the bay was a rousing success. The evening's program ran off with nary a hitch-if we can ignore those unscheduled incidents that add spice to any party. One of them, indeed, bears mention even at this late date.

Early on the program was a series of interdepartmental tugs-of-war. Several had been run off amid great excitement when it came time for the Advertising Department to match grunts and tugs with a formidable team of heavyweights.

The members of the regular Advertising team, however, were so widely scattered that all efforts at mobilization failed. Accordingly, a makeshift team, largely composed of underweight worthies, was hastily drafted. Greatly outweighed by their opponents, the substitutes hadn't a chance—and well they knew it. But if they were to be denied the sweet taste of victory, they were at least determined to have a good laugh.

The umpire gave the starting signal. The rope snapped taut. Sixteen heaving athletes threw their full weight into the contest. Instantly, at a prearranged signal, the Advertising team dropped the rope.

The anchor man on the opposing team toppled over like a stricken gladiator. Hurled back by the force of their unopposed exertions, his comrades tumbled and somersaulted over his prostrate form. If some giant, rolling a Brobdingnagian bowling ball, had scored a ten-strike on that hapless crew, they could scarcely have been flattened more ignominously.

Technically, of course, the fallen heroes won the contest. But their triumph, we feel, was tarnished.

England, Canada

KODAK SPORTS AT HARROW-PICTURES PAGE 18, headlined the Daily Sketch, one of England's great pictorial newspapers, on July 24th.

Pictures and text gave highlights of the sports gala: "A keenly contested one-mile open handicap, for which there were 82 entries. . . . A close finish in the 150 yards ladies' open handicap (the ladies also shone in the treasure hunt). . . . The Irish Guards provided one of the teams competing in the tug-of-war. . . . Sydney Wooderson, the famous miler, ran in the 1,000 yards special invitation race. . . ."

At Kodak Heights, Toronto, a dashing bowling rink-the on-thegreen variety is extremely popular in Canada, as you know-garnered the much-prized Sir Henry Drayton Trophy by a margin of one shot. In the plant's softball league, with eight teams slogging away since June 5th, the Office is out front as we set these notes down.

Bird Noises

NOT THE BRONX VARIETY, but those of eight thousand rare warblers at the Catalina Island bird farms were recorded on fifteen thousand feet of film for use in "The Wizard of Oz."

For several tracks, every one of the birds was in song at the same time. Other tracks were made of various groups and of soloists. The sound men who handled the job. which took about a week to do, had interesting tales to tell on their return to the mainland.

The bird noises ranged from those of the anvil bird, which duplicates the sound an anvil gives when struck, to those of birds which prattle and whistle even as we do. The meow of the cat, the growl of the lioness, the beat of the tom-tom, measured, intoxicating—these were among the many unusual sounds offered by the songsters.

And don't think that the bird kingdom hasn't its "stars." Among the soloists was a rhinoceros bird, valued at several thousand dollars.

Poona: Cork and Feathers in Flight



From Far-Off India, by Way Of England, Badminton Has Invaded Our Sports World

The people of India call it "poona" and they should know its proper name, for they invented the game many, many years ago. But British army officers, carrying the game back to England, changed poona to "badminton"—and so it's known to us.

The first poona club was formed in Bath, England, in 1873. Chief activity in the newly introduced sport, however, centered around Badminton, a village in Gloucestershire. Hence, the modern name. In those Victorian days, contestants dressed in choker collars, Prince Albert coats, and high hats. Every contest assumed the nature of a social function with much pouring and sipping of tea.

From this stiffly formal setting, the game soon burst loose into popular favor, crossed the Atlantic to Canada, and staged a peaceful invasion of our country. It's now played everywhere.

The popularity of this net-andracket sport is not difficult to understand. It can be played indoors or out. Unlike tennis, it doesn't require a well conditioned playing surface, for the shuttlecock, or "bird," is struck before it can bound from the floor or ground. The court is considerably smaller than that used for tennis, and little space beyond court boundaries is needed for complete playing freedom. And then, the good behavior of the "bird" recommends itself to most of us. for players don't have to spend most of their time under chairs, hedges, and in mudholes even, retrieving an elusive ball.

Badminton is no effeminate game allowing listless lackadaisical play. A championship game calls for greater stamina and physical exertion than a game of tennis. Still, the player doesn't have to tax himself unreasonably to enjoy an exciting match. Perhaps no other game calls for more experience and training before it can be really well played. Yet, a novice can play a personally satisfying game almost from the start.

Early next month, the Kodak Office Badminton Club will begin its third season. During its brief existence it has acquired a large membership and grown extremely active. Teams have been entered in recent tournaments of the Genesee Valley Sports Club and in the city championships. Outside teams are frequently engaged in match play on the office courts.

Membership in the Badminton Club costs only fifty cents a year for members of the K. O. R. C. Others pay a dollar and a half. Courts, nets, lights, and elevator service are provided by the Kodak Office Recreation Club, players having only to furnish their own rackets and "birds." The courts are open to Kodak Office men on Monday evenings and Saturday mornings. The girls play on Wednesday and Friday evenings. Members from the Hawk-Eye Works have the use of the courts on Monday nights. Classes are held for beginners.

Don't let lack of experience keep you from enjoying this fine indoor game. When icy winds are howling round the corner this winter, you'll find badminton a great game for unknotting tired muscles and restoring summer-time pep. Call Harry Irwin—the phone is 79—for your membership.



Scene of Kodak Badminton Club activities, four courts in the office auditorium will be available for members' use this season. Compare this action shot with the upper illustration showing the game being played in India

Waste Control Protects Profits

We Must Take Extreme Care To Prevent Production And Sale of Defective Goods

"THE INVISIBLE TERROR," you might call me, for you'd never spot me with your naked eyes. But what a menace I can be. Yes, sir!

They fight me day in and day out at Kodak—and I get the worst of it. If I didn't-well, let me daydream aloud for a moment:

Hollywood, . . . a harassed director, . . . a leg-weary cast, . . . a perspiring camera crew. "All right, let's shoot it again!"

The gaffers and juicers switch on the floodlights and spotlights, the mixers readjust the sound equipment, the cameras begin to roll, the actors go through their business. And it's O. K. this time. A whole day's shooting has captured a few minutes for the screen. . . .

Now to view the rush print. "Swell!" says the director. But suddenly his approving beam is replaced by a look of horror. That blemish on the beautiful heroine's nose, isn't it-

Yes, it's me, the enemy of film. Just a tiny particle of dust, but see what I can do under the magnification of a projection lens. The scene is ruined.

"Shucks and double shucks," explodes the director. "We'll try it again tomorrow."

A whole day's shooting wasted is a costly loss. It might have been worse, though. A motion-picture company will sometimes travel the globe to secure the scene they want-only to find me in it when they bring it back!

I can play the deuce with sound, too: sharp crackles and ugly plops in the midst of a touching love scene, to give you an example. . . .

Scientific photographers don't like me one bit either. Think, for instance, how an astronomer would feel if that new star his picture revealed turned out to be little me. . . .

A Kodak or a Ciné-Kodak is the recorder of the moment, and some moments never come again. What if I show up there? The Invisible Enemy-that's me all right. But, as I said, I get the worst of it at Kodak Park.

There is a very close relationship between the Company's reputation for high quality on the one hand and the control of waste in our manufacturing departments on the other. The reputation for high quality, uniformity, and dependability that Eastman products enjoy has resulted from our efforts to market goods that are free from defects and capable of ful-

Works. To prevent scratches in the glass and later





Under an inspection safelight, the success of our waste-control methods is put to the test. If production methods have resulted in flaws or dirt that spoil the product, this sensitized paper must be rejected

filling every claim that the Company makes for them.

Thus, we weed out any goods that might fail to meet our standards or to fulfill the customer's expectations. A speck in an emulsion will require that otherwise perfect film be thrown out; a scratch on the glass will lead to the rejection of a lens; a flaw in a shutter may keep a camera out of the customer's hands.

Defects Are Costly

Now, it costs just as much to produce a defective roll of film as a flawless one. Not merely do we lose the profit which we would have had from its sale but, more important still, the money that it cost to make that film. Several rolls of film would have to be sold to balance the loss that production of one defective roll involves.

Elementary as these facts may seem, they are important to each one of us. For the success of the Company and the security of our jobs depend to a considerable degree on the control of waste in Kodak's manufacturing departments. Maintenance of high production standards without excessive waste has contributed to profitable operation, steady employment.

How do we manage to keep up the quality of our products and to control

In the first place, we must design good products. The Development and Engineering Departments, in co-operation with the Research Laboratories, spend their time experimenting, designing, constructing, and testing new and improved products. They may speed up the emulsion of a film, improve the color correction of a lens, or increase the operating convenience of a camera.

When new products go into production we must see that the finished job meets specifications. This, broadly speaking, is accomplished in two ways: first, by advanced and painstaking methods of manufacture; and secondly, by tests and inspections.

Here's an Example

Film production furnishes an example of the need for strict and frequent inspections all down the line. Remember that a customer cannot inspect his film to see that it is satisfactory. He must wait until it has been exposed and developed before he can know how it has performed. Therefore, he buys that film on faith—faith in Kodak and in Kodak's reputation for supplying dependable goods. We must, in turn, keep faith with him.

Thus, from the time the raw materials used in the production of cellulose acetate and nitrocellulose for film support are purchased, every step in the manufacturing process is subject to tests and inspections. The acetate plant at Kingsport, as well as the Nitrating, Dope, Roll Coating, Emulsion Coating, and Spooling Departments at Kodak Park, follow out special testing procedures to insure that the finished film will be free from defects.

Control Groups

Assisting the film-making departments and correlating their work is the Film Quality and Waste Control Department. This unit aids in the inspection of the film support, checks conditions that might result in preventable waste, and tracks down the sources of defects in the finished film. It operates closely with the Testing Department.

In addition to these is the Film Waste Committee, composed of members from each film-manufacturing department, the Research Laboratories, and the Control Department. This group meets biweekly to discuss current problems relating to film quality and waste control.

Such efforts to reduce manufacturing defects are characteristic of the waste-control methods used in every Kodak plant. At the Camera Works, where cameras are assembled from many parts, each part must be made to exact specifications to insure accuracy in camera construction. To prevent waste that poorly fitting parts would cause, production samples are taken from all the tools and dies after each production run and checked. In this way, uniformity and accurate fitting of parts is assured.

At Hawk-Eye, many costly optical glasses of widely varying characteristics are used in making precision lenses. To prevent rejection of lenses made from these glasses, one step is the close control exercised over the abrasives used in grinding them. All abrasives are ordered to precise specifications and, after delivery, inspected in the laboratory. Thus, waste due to impure abrasives is prevented.

And so it goes with each manufacturing process at Kodak: constant inspection prevents waste of time as well as waste of materials. Removal of an article from production as soon as a defect is noticed may save many hours on a job that would eventually be rejected.

As far as possible, the Company salvages waste materials. The silver in scrap and rejected film and paper, for example, is recovered and used



In the chemical laboratory at the Camera Works, materials are tested before use to see that they meet specifications. Thus, by controlling the quality of materials, waste can be forestalled at its source

over again. But recovery extends only to the materials themselves. All the labor and time that has gone into the making of a defective product is irretrievably lost.

This article has outlined briefly some of the ways in which our testing, inspection, and control departments attempt to eliminate waste. But, in the final analysis, they merely aid in this work by keeping the men on the job informed of the causes underlying defective products. The successful operation of Kodak's wastecontrol system is a matter of individual responsibility at every stage.



Defects in motion-picture film can prove very costly to the customer. The very first operation in the Ciné Film Department—slitting rolls into 35 mm. widths—includes an inspection of the film under a safelight

Page 8 K O D A K

Kodak's Building Features Fashions





Fall Spells New Modes and New Fabrics, And Stunning Styles in Acetate Rayon Are Shown In the Tennessee Eastman Exhibit at the Fair

A fashion show in a building devoted to photography? Visitors at the Kodak Building are taken by surprise, as they emerge from the Hall of Color, to discover a group of mannequins parading fall fashions across a stage. A young lady models a street dress of acetate jersey beneath a coat of crimped acetate rayon. Another appears in a Molyneux creation cut from a crepe of Eastman Acetate Rayon. Sports clothes, dance frocks, tailored suits, travel wear—one by one, up-to-theminute fashions are displayed and every one is made of acetate material.

Having described some of these materials to her audience, an announcer remarks, "Perhaps some of you are wondering what Eastman has to do with fashions. We should like to explain that cellulose acetate—the basic ingredient of safety film—also makes other things, among them beautiful fabrics."

Cellulose Acetate's Versatility Demonstrated

Now an hourglass-shaped receptacle of colored liquid is shown. As one of the models allows the liquid to flow back and forth between the two bulbs, the announcer explains, "Here is cellulose acetate—a syrupy liquid, crystal clear. Rolled out in sheets, it becomes film . . . rolled a little thinner, it becomes transparent wrapping material—the modern airtight packaging for everything from cigarettes to perishable foods.

Mlle. Eve Curie (upper left), daughter of the discoverer of radium, wears a suit of Eastman Acetate Rayon featuring World's Fair symbols. A model (lower left) displays an evening gown in Waltzlite, an acetate taffeta. The young lady below addresses our visitors through a telephone of Tenite, an acetate product



"When this material is forced through fine holes, it makes yarn. Imagine this crystal liquid drawn out into strands as fine as rays of light, then twisted into thread. That's how shiny acetate yarn is made. Add a little pigment to this spinning solution . . . then we have a dull chalky yarn. Both dull and shiny yarns are spun in unbroken lengths, mile after mile.

"Both of these yarns can be chopped into short lengths and given a lively crimp, or permanent wave. Then we have Teca. Teca is respun into yarn by the same method used for spinning wool. The result is wool-like warmth and crush-resistance in the fabric."

Tenite Is in the Style Parade

The luster, richness, and vivid coloring, the softness and resilience of these Tennessee Eastman fabrics appeal strongly to our fashion-minded visitors at the World's Fair. They see these beautiful fabrics in the very latest styles, fresh from Paris. As mannequins slowly pace the stage, an announcer describes the various models through a public address system. She speaks into a telephone of Tenite—another acetate product from the Tennessee plant. The cellulose acetate used in the manufacture of Tenite is of the same high degree of excellence as that used in making safety film and Eastman Acetate Rayon. Tenite is distinguished for its hornlike toughness, uniform texture, high luster, and wide range of colors. Throughout the fashion show, Tenite is introduced in the form of slide fasteners, sunglasses, compacts, combs, and other articles. From the style show, visitors can turn to examine displays of acetate fabrics and Tenite articles arranged about the hall. Invariably they are astonished at the wide applications of cellulose acetate.

The fashion show in progress (below) on a stage flanked by displays of acetate rayon and Tenite products. A sports ensemble of Koat-a-Kool is shown at the right. The sunglasses are Tenite, too. Above, right, a model shows a skein of acetate yarn made from the same material that forms the base of our safety films

BRICS OF EASTMAN ACETATE





THE EDUTORUS PAGE

A Noteworthy Display

The extremes in photographic development during the past hundred years were to be seen in the Kodak Building at the New York World's Fair from August 18th to August 27th.

Marking the 100th anniversary of the announcement of the daguerreotype process on August 19th, 1839, the finest display of daguerreotypes, pioneer photographic equipment, and early photography ever assembled in the United States was presented in the Hall of Light.

Among the historic pieces of equipment and examples of early photography included in the show were two of the first daguerreotype cameras made in America; the first daguerreotype of Niagara Falls—a five-picture panorama; the first daguerreotype of an eclipse of the sun; Fox Talbot's camera; an original daguerreotype of Daguerre; one of the first photographic advertisements; and a copy of the first photographic journal ever published in America.

A salon of 48 pictures showed examples of early photography and copies of French cartoons published in the early days of the daguerreotype.

Co-operators with the Company in the display included the Smithsonian Institution, the Museum of



They laughed when he sat down to pose: a "natural" for the caricaturist was the early daguerreotype studio. This caricature is by the famous Daumier

Modern Art, Franklin Institute, the Edison Museum, the Yonkers Museum of Science and Art, the Rochester Historical Society, the Rochester Museum of Arts and Sciences, C. W. Briggs Company, Walter Scott Shinn, and William H. Jackson.

Harry L. Stearns

The sudden and unexpected passing of Harry L. Stearns, assistant comptroller of the Company, cut short a noteworthy career.

Only 48 years old, Mr. Stearns had worked for Kodak since 1918. He was appointed head of the Tax Department on October 26th, 1922, and he was named assistant comptroller on January 1st, 1930. In charge of general accounting for the Company and its subsidiaries, Mr. Stearns was widely known as an authority on corporate taxes. In 1927, he visited the offices of Kodak companies in Paris, London, and Berlin.

Born in Melrose, New York, Mr. Steams completed his education at the Troy Business School. He was an auditor for Morris & Company, in Chicago, for six years before he came to Rochester.

Mr. Stearns is survived by his wife, Bessie Atwood Stearns, and their son, Merle C. Stearns.

The Annual Safety Drive

The fifteenth annual state-wide accident prevention campaign of Associated Industries of New York State, Incorporated, will begin on October 1st. The campaign will continue for thirteen weeks, closing December 30th.

This annual drive is a practical attack against a preventable waste. Lives, limbs, and money are at stake when safety regulations are not observed.

Kodak Park has six entries in the campaign: Engineering and Maintenance, Sundries, Chemical, Paper, Film Manufacturing, and all other manufacturing departments as a single unit.

The Camera Works, Hawk-Eye, and departments classified as "manufacturing" at the Kodak Office are also entered in the campaign.

The total number of employees who participated in last year's campaign—among them were employees of nine departments at Kodak—was 220,000; and their total hours of exposure exceeded 100,000,000.

Worth of the annual state-wide safety drive is well demonstrated by the fact that the 1938 campaign showed an accident frequency of only 7.53 per million working hours, as compared with 21.5 in the 1926 campaign.

K O D A K Page 11

Half a Century of Service

A Long-Time Employee of The Company Reviews Some of The Pioneer Days in Our History

FIFTY YEARS IN KODAK'S SERVICE will be rounded out by Irving F. Hoyt, credit manager of the Com-

pany, on September 28.

Recalling for Kodak his early years with the Company, Mr. Hoyt smilingly told how he started in back in 1889. "I had been working as billing clerk in a Rochester department store for about a year," he explained, "but I thought the concern was too big and I wanted a job with a small outfit. So when the Eastman Dry Plate and Film Company—a small concern on State Street—advertised for a billing clerk, I answered right away and was chosen from about twenty applicants. Mr. Eastman interviewed us I remember."

Mr. Hoyt, together with the nine other persons who comprised the company's entire office staff, worked

Did You Know?

That the National Resources Committee has estimated that the proportion of United States population over 65 years of age will have increased from 5.4 per cent (6,600,000) in 1930 to 11.9 per cent (18,000,000) by 1970?

That the Government of Victoria, Australia, is branching out on a large scale in the use of educational films? "Eighteen quarter-hour sessions for three school terms are to be included in the customary curriculum," says the *Photographic Dealer*.

That a recent study of 30 metropolitan daily newspapers reveals a 40 per cent increase in the use of photographs since 1931?

That a one-time bank clerk with a Baby Brownie as a hobby has found a totally unanticipated good future? "He worked on a cataloguing project in a museum," relates the Survey Graphic, "He took a few pictures which were used in a museum report. Now he is an assistant curator...."

on the first floor of the four-story building. "We worked from eight to six, and six days a week," he recalled, "and most week nights, too. The office work was done by hand for the most part. It was a laborious job."

Soon Mr. Hoyt was transferred to bookkeeping, and, shortly after that, placed in charge of both the books and the billing. Next, the collection of accounts was added to his duties, and in 1903 he was appointed manager of that department. He has been in charge of credit and accounts ever since, heading a department of some fifty employees.

There have been many changes at Kodak since the days when Mr. Hoyt bicycled to his job in the original Eastman building. "There was a lumber yard that sold kindling wood in front of the building" he recalled. "And a group of small houses occupied the site of the Camera Works. The first office building was erected in 1913, and my department was moved to the 12th floor."

Even though the Company did not remain the "small outfit" that attracted Mr. Hoyt as a lad of eighteen, he has never regretted coming here. "I knew Mr. Eastman well," he says.



Irying F. Hoyt, credit manager of the Company, who has worked for Kodak since September, 1889

"And I am proud to have worked under him and for Kodak during many eventful years."

A graduate of the Rochester Business Institute, Mr. Hoyt is a member of the Rochester Association of Credit Men and a past director of the National Association.

Quiet spoken, but possessor of a good sense of humor, he classes himself as "a poor golf player." He likes cards, but he warns: "I only play at bridge. Poker is a much better game."

Kodak Plate Records Royal Return



This photograph showing King George and Queen Elizabeth, with the two young princesses, driving through London's East End on their way to Buckingham Palace after their visit to Canada and the United States, was taken on a P.1200 plate, manufactured by Kodak Limited. The sky was overcast and rain threatened. The picture, published in the "Daily Mirror" and other newspapers, is copyrighted by Keystone Press Agency

Let's Ride a Hobbyhorse to Happiness

Worthwhile Use of Leisure Hours Can Bring Unlimited Pleasure and Contentment

Our forefathers had very little time for hobbies. Work monopolized every waking hour.

If an ancestor collected coins, he evidenced a talent for thrift rather than numismatics. If he fashioned pottery, his mind was on porridge rather than artistic beauty. He couldn't even dally over a bed of pansies and petunias for the good of his soul—he must needs hoe the spuds and maize for the good of his stomach.

Life today is far less severe. We have time now to entertain ourselves. Out of the hours of each week, there is a liberal slice of free time offering opportunity for the development of hobbies and leisurely pastimes. Not all of us, unfortunately, enjoy the benefits and lively pleasures that lie hidden in these carefree hours. The wise choice of a hobby may help.

Just what is a hobby? Without consulting a dictionary, we propose to define a hobby as any activity in which we engage for the simple reason that we jolly well enjoy it. There's no question of profits—though some hobbies are profitable. There's no question of necessity—though our

interest in something may fairly demand that we tinker with it. There's only the question of spending our time in some absorbing way that fires our imagination, banishes our cares, shoos away our worries, and leads us out of the humdrum into a personally satisfying activity. Or, as Dr. John Finley, distinguished editor, expressed it, "Leisure is an opportunity to re-create energy and build up mental and physical health, both of which are essentials to happiness, whether in work or in play."

To be of greatest value, a hobby ought to be carefully chosen. If your main interest lies in literature, you probably wouldn't enjoy a hobby that develops your biceps. If there's no other thing that gives you quite the lift that you get in a game of tennis, you probably shouldn't go in for parlor magic. The point is, you can choose a hobby that will fit you like a glove, a hobby that coddles and develops your closest interests. There are four kinds of hobbies from which to choose-those in which you do things, make things, acquire things, and learn things.

The first class is made up largely of sports and games. Tennis, golf, badminton, and other sports may be taken up wholeheartedly as hobbies. The thrill of a contest, the exercise



In simplifying the technique of photography and thus making it available to all, George Eastman's labors led to one of the most popular of present-day hobbies

of unused muscles, the development of grace and form can make a sport a satisfying and worthwhile hobby.

As a hobby, making things offers a wide field for our talents. Woodworking, modelmaking, bookbinding, metalworking, printing, inventing, home decorating, and kindred activities employ both hand and mind.

The pleasure of acquiring things generally begins in childhood when we collect marbles, shells, birds' eggs, and similar things. To the adult, a new thrill may be found in collecting antiques, stamps, coins, autographs, guns, books, and chinaware. A carefully assembled collection, with all the study and searching it involves, is one of the most satisfying of hobbies. Collecting is not necessarily an expensive hobby, either.

Learning things, as a hobby, can be as adventurous and exciting as a trip to the ends of the earth. The study of history, architecture, astronomy, botany, geology, or geography can lead us into romantic realms far removed from the petty annoyances of everyday life.

Our leisure hours away from work, our week ends and vacations, and the years after retirement from active duty can be filled with unending happiness and contentment by the enthusiastic pursuit of a hobby. Lose yourself in a hobby—and you'll get more joy out of life. It's worth it.



Hobbies serve to take our minds from the cares of everyday work. But they can also be light and pleasant versions of our normal occupations. Model shipbuilding evidently fills leisure hours for these four sailors

OUT OF THE HAT

Cacao Expert



Frank B. Dugan: he likes his cup of cocoa

IT CONJURES UP MEMORIES of days in the tropical underbrush, of gleaming knives and flashing cutlasses, of snakes and jabbering monkeys—but Frank B. Dugan, of the Kodak Office, likes his cup of cocoa just the same.

Mr. Dugan worked for some time on a cacao estate in Costa Rica, where the grim-sounding knife and machete are merely useful farm implements. The knife is used to cut down the cacao pods from the trees; the machete, to slash the pods open and extract the cacao beans. (By a peculiar and unexplained transposition of vowels, when the cacao reaches our tables it has become cocoa.)

"The cacao tree grows best within twenty degrees of the equator," Mr. Dugan reveals. "It requires rich soil and a certain amount of shade. The cacao seedlings are first planted in nurseries, then transplanted to the farms, shade trees being grown beside them to protect them from the sun. The trees bear small pink flowers, and these are followed by the pods, which grow directly out of the trunk or the main branches. A pod will weigh about four pounds and contain four ounces of pulpcovered seeds. When dried and cured, that yields one and one-half ounces of cacao seeds. There are about four hundred seeds to the pound."

Snakes, some of them deadly as they come, were common sights on the farm, as were wild pigs, sloths, parrots, and monkeys of many types. Mr. Dugan captured a baby howling monkey—"they sound just like lamenting dogs" he says—and kept it as a pet for some time. So far as he knows, that was one of the few howling monkeys to have lived in captivity. "A cunning little beggar," he describes him. "He followed me about like a dog and learned to do all kinds of tricks."

The banana fields claimed Mr. Dugan next. He spent more than two years as overseer of a farm. "Bananas are no good," he warns, "if they've been allowed to ripen on the tree. They overdevelop and lose their flavor."

Photography was often called into use on the banana farm, to record progress of trees, to aid in irrigation work, and for many other duties.

After a year in Panama, where he helped to clear virgin territory for a banana farm, Mr. Dugan came back to Rochester. He joined Kodak in 1930 and has worked for the Company in Colombia.

Lifesaver

IT ALL STARTED when William A. Doran, of Hawk-Eye, reluctantly began a two-weeks' course in first-aid treatment. Much to his surprise, he found the work so interesting that he's been actively engaged in it ever since. Today, there are hundreds of people who have profited by his instruction and have themselves become competent to render first aid to injured people.

Mr. Doran has devoted a great deal of time during the past six years to giving instruction to volunteer fire departments. An honorary member of the Sea Breeze Fire Department, he has held classes there as well as in other local towns. He even taught first aid to a baseball team last year and expects to instruct other teams very soon. He gives both standard and advanced courses—the first being

covered in ten evenings, the second in five.

Concerning his pupils Mr. Doran explains, "They're pretty green when they start. But you'd be surprised at what they can do after a few lessons." One pupil saved a life by using a tourniquet only a day after he had learned how to apply it.

Putting his principles into practice, Mr. Doran always keeps his first-aid kit close at hand. He's had many occasions to use it, too. At a base-ball game, he treated a player who was badly injured when accidentally struck by a bat. Just the other day he gave first-aid treatment for injury and shock to the victim of an automobile accident. He feels that everyone should know how to do these things and do them well.

"How many people know how to apply a tourniquet or a splint, or what to do in a case of shock? You can do a great deal for an injured person pending the arrival of regular medical assistance—if you know how."

First-aid treatment has one important rule that is common to almost everything we do. As Mr. Doran expresses it, "You have to know what *not* to do just as well as what to do." It's a good idea, anywhere, any time.



William A. Doran: they're pretty green

Photographing an Echo

Eastman Recording Papers
Trace the Hidden Secrets
Of the Earth's Outer Crust

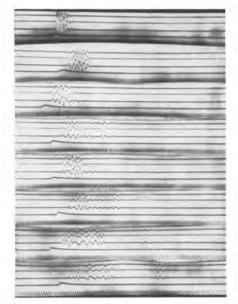
MOTHER EARTH IS OLD, and her hide is thick and tough. If you prick her skin to a depth of six thousand feet in search of oil, the drilling will cost you \$50,000 or more. It's a fine investment if you strike a gusher—it's \$50,000 down the drain if you dig a dry hole.

So oil prospectors must be reasonably sure that there is structure conducive to the production of oil right below before they begin drilling operations. But how are they to know? Granting that they are familiar with the kind of rock structures that hold

oil, how are they to locate those structures thousands of feet below the ground?

The fact is, they have an almost infallible method of surveying the earth's outer crust. It involves an almost fantastic procedure. They produce a miniature earthquake by exploding dynamite and then photograph the echo that rebounds from rock strata thousands of feet below. Perhaps this explanation is a bit brief. Let's get down to details.

The layers of rock making up the earth's surface do not lie smooth and even. Shrinkage caused by cooling has resulted in buckling and breaking of the strata. Our mountains are mostly great piles of rock that have



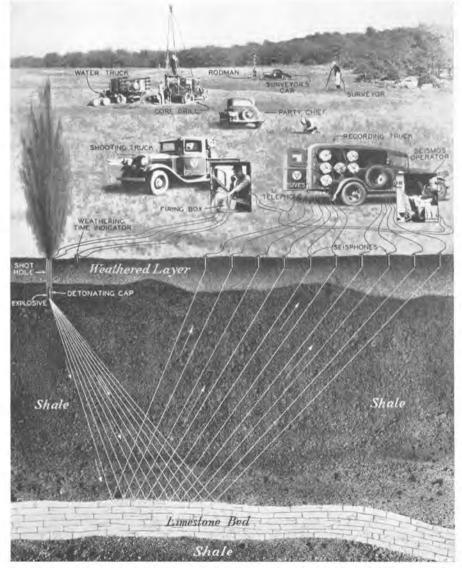
These wavy lines, traced on Eastman Recording Paper, indicate the thickness of an ice pack in Little America. Dr. George Poulter, of the second Byrd Antarctic Expedition, made extensive ice-survey records of this kind

been upended by earthquakes. Even in level country, the underlying rock is broken, irregular, overlapping, and sloping.

These irregular rock formations determine the location of oil. The precious fluid is generally found in a porous medium of limestone or sandstone where it has been "trapped" by hard rock. The trap is usually in the form of an anticline or dome into which the oil, lighter than water, has risen. So oilmen, when looking for new oil fields, search for these domes formed of sloping rocks that rise to a common peak. They find them by a sure method—seismic surveys.

Rebounding Waves

The seismic method takes advantage of the differences in speed of transmission of a sound wave through the earth. If an explosion is set off at the surface, the sound wave carries in all directions, with some of it going far down underground. These descending sound waves will be partially reflected when hard rock is encountered, and the echo waves will rebound to the surface. By calculating the time required for the sound wave to penetrate to the rock and rebound to the surface, the depth of the rock strata can be determined on sensitive instruments with great accuracy. By making such a survey at different points within a given area, the depth and relief of the reflecting



An oil-field surveying crew in action. After a surveyor has spaced out points in the area, holes are bored to hold blasting powder. An explosion is then recorded. Picture by courtesy of Continental Oil Company

rocks can be mapped. Mother Earth can't conceal a thing.

The instruments used in this work must be extremely accurate. Detectors placed in the ground convert the energy of the reflected sound wave into electrical energy which passes into an amplifier. This energy actuates a galvanometer equipped with a mirror. Light beams are reflected from the mirror onto rapidly moving sensitized paper. Several types and sizes of recording paper are supplied by Kodak specifically for this work. When developed, the paper contains a long graph of wavy lines that indicate the time between, and intensity of, the shocks. So delicate is the operation of this equipment that no one is allowed to walk on the ground while the recordings are being made.

In Little America

Such subsurface surveys are not confined to oil prospecting. Dr. Thomas C. Poulter, second in command of the last Byrd Antarctic Expedition, carried seismograph equipment and Eastman sensitized papers all the way to Little America. With this equipment he was able to determine the thickness of the ice, tell whether it was resting on rock or floating, how deep the water was, and even learn something about the rock strata below the water. Through four hundred feet of ice, he discovered and explored an island one hundred miles long and thirty-five miles wide. How old-time explorers would have gasped at such methods!

The Recording Papers

The sensitized paper used in seismometers varies in characteristics according to the type of equipment being used and the work being done. The Company furnishes various types of recording paper in rolls ranging from 35 to 300 feet in length and from 15/16 to 12 inches in width. Because a great deal of this work is done in the tropics, the paper is now supplied in hermetically sealed tins to protect it from the high humidity prevalent in these regions.

Getting under the skin of Mother Earth and exploring her epidermal secrets has become an important work. Here, as in so many other fields, photography has contributed greatly to success and to progress.

He Heads Kodak in Tokyo

HIS YOUTHFUL APPEARANCE belies it, but Richard B. DeMallie has pioneered in Kodak's export field. With F. P. Root, export sales manager, Mr. DeMallie opened the doors of Kodak Philippines for business in 1928, and those of Kodak Japan in 1930. He's been manager of Kodak Japan, Limited, ever since.

Altogether, thirteen of Mr. De Mallie's fifteen years with the Company have been spent abroad. He worked for a year in Rio de Janeiro, was manager in Cuba and in Manila, before going to Tokyo.

"Japan is a beautiful country," he says. "The scenery is mountainous and magnificent—a delight for picture-takers. While the major portion of our business there has always been professional, the amateur trade, both still and movie, expanded constantly. But now, owing to restrictions on imports, everything has fallen off. I have seen the Japanese photographic industry grow within the past few years from one small paper mill and a camera factory to large industries manufacturing about every photographic material except color film."

Besides headquarters in Tokyo, the capital, Kodak Japan also has an office in Osaka. "Splendid cities, with great modern buildings lining broad avenues," Mr. DeMallie describes



Richard B. DeMallie, manager of Kodak Japan

them. "And around the corner from almost every avenue are neat wooden houses with small gardens."

Tokyo, or "Eastern Capital" as the name means, is one of the world's largest cities. Its native shopping district, the Ginza, is known to thousands of visitors for its gaiety and extremely colorful atmosphere.

Baby Brownie Special

THE GIRL IN THE PICTURE looks happy—and with reason: she's snap-shooting with the Baby Brownie Special, most recent addition to the famous Brownie line.

An ingenious method of opening, for loading and for unloading, is one of several new features embodied in this handsome instrument. Two latches, to which the braided carrying handle is attached, slide down toward the bottom of the camera to permit removal of the front.

The Baby Brownie Special is equipped with a meniscus lens, smoothacting shutter for instantaneous exposures, and—another new feature—a spyglass type, optical eye-level finder. No focusing is necessary.

The cost? This latest of the Brownies retails at a modest \$1.25.



Smart appearance and simplicity of operation are combined in this new low-priced Eastman camera

Kodak Activities: A Rochester Review

Quick Jottings from a Sports Pad to Help Keep You Posted On the Doings in Rochester

Camera Works Sports Flash: Joseph Holzschuh, of the Press Department, aced the 4th hole—159 yards—at the Durand Eastman Park course. Four days later, Verne Leonard, of the Ciné Inspection Department, aced the same hole for his second hole-inone. Mr. Leonard had his first ace eight years ago and is one of the original members of the Rochester Hole-in-One Club.

Congratulations to Messrs. Holzschuh and Leonard, and now on with other jottings from the sports pad.

In the Rochester Industrial Softball League, Camera Works leads the National Division, with Bill "Putter" Morris and Billy Maslanka turning in first-rate performances on the mound. Eleven games won, one lost, is the Camera Works record to date. . . . In City Softball Tournament play, Camera Works won its opening round game against the Coffee Pots, score 9-4. . . . Plant Softball League goes strong, games being held every Thursday night at Charlotte High. . . . Camera Works golfers are in second place-17 points behind Kodak Office-in the Industrial Golf League and have not lost a match to date. . . . In the Interplant golf fray, Camera Works came in second. . . . Following are results of Camera Works Men's Golf Tournament, held at Midvale, with 100 participants. Low gross winners: Siplo, Bishop, Leonard, Rutan, Riley. Low net: Cole, Brennan, Townsend, Rosner, Sidoti, Milanetti, Eckert, Klier, and Burke.

KODAK PARK ACTIVITIES: Men's Handicap Golf Tournament at LeRoy won by Frank Weis with a low gross of 75. . . . Girls' Picnic at Willow Point Park was a memorable event. A top-notch program included a (paper) plate-tossing contest, baseball, a balloon race, and a pop-drinking contest. Males-banned from the picnic proper-found some four hundred outstretched arms eagerly awaiting them later for dancing. . . . Playing in the Men's Round Robin Horseshoe Tournament, Robert Otis, of the Messenger Service, had five victories out of six matches and a 39.3 ringer average. . . . With a double-header schedule every night except Sundays, the City Tournament is under way on the Kodak Park diamond. The Park lads downed the Crimsons in the second game of the elimination tournament. . . . The Third Men's Handicap Golf Tournament was held at Lake Shore, August 19th. Low gross, 72.

Kodak Office Goings On; Twentyeight club wielders participated in the Girls' Golf Tournament. Low gross: Jessie Carrell. Low net prizes were won by Mrs. Gertrude Mosher, Helen Dummer, Mary Owens, Madeline McCarrick, Madeline Coffey, Abigail Hanf, Mary Nugent, and

Jean Browne. Winners in the novice class: Jean Bloomer, Mary Louise O'Reilly, Marjorie Ellis, Mary Goy, and Ruth Kasper. Winners of Scotch foursome: Stan Bissell and Madeline McCarrick. . . . Kodak Office softball team lost to Kodak Park in the Maplewood Community League. . . . Kodak Office Gun Club shootsrifle and pistol-every Thursday at Coldwater Gun Club range. President is Bob Percy; vice-president, Fred Robinson; secretary and treasurer, Ernest Aponte; executive officer, Gerald Lenhard. . . . In the Summer Golf Tournament, at Lake Shore, the winners were as follows: Two-man best ball matches, Hill-Hardwick, Narog-Gillette, Greene-Bissell; Class A handicap: Gillette, Bissell, Harper, Schumaker, Newton; Class B, Bauman, Hill, Fisher, Raysor, McGrath; Class C, A. Robinson, Aponte, Hardwick, McCabe, Heuer, O'Connor, Behrens. The Fall Tournament will be held during the latter part of this month. . . . Kodak Office stalwarts have captured the Monroe County Industrial League golf trophy. This trophy was won by Kodak Park in 1937, and Camera Works last year.



September 13—Hawk-Eye Camera Club monthly meeting, supper at 5:30

September 14—Kodak Office Gun Club shoot, at the Coldwater Gun Club

September 16—Hawk-Eye golf tournament for men

—Hawk-Eye Camera Club hike

September 18—Kodak Park, opening of girls' 16-team bowling league, at the Ridge Road Bowling Hall

Mid-September—Camera Works golf tournament for men

—Kodak Park, opening of men's bowling leagues, at the Ridge Road Bowling Hall

September 20—Hawk-Eye Camera Club, opening of beginners' course in photography

September 25—Kodak Office Bridge Club party

September 27—Hawk-Eye Camera Club, monthly print competition

Late September—Kodak Office golf tournaments, for girls and men

October 2—Kodak Office Bridge Club

-Kodak Office Book Club

Early October—Camera Club, opening of photographic courses



With regular and guest membership the largest on record, the Camera Club cottage is enjoying its liveliest season. Beach parties and picnics are held at regular intervals and the athletic activities are varied



"THE VENETIAN BLIND": made for the Rolscreen Company and reproduced in "Kodak" with their kind permission, this example of illustrative photography is noteworthy for its effective composition and mood. A good picture—like a good story logically told—is instantly attractive and understandable





Now at a new low price-\$29.50