# KODAK

A MAGAZINE FOR EASTMAN EMPLOYEES

OCTOBER 1941


*THE OLD ERIE CANAL aqueduct crossed the Genesee River where the Broad Street Bridge now stands. This section was abandoned in 1919 and its bed converted into a subway by the city. Picture by Al Stone, from the Rochester Democrat and Chronicle (see story on page 6)*

## IN THIS ISSUE

KODAK

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# Night Courses Attract Hundreds

## Record of a Year Shows Wide Participation in Company Plan

KODAK EMPLOYEES in Rochester, taking advantage of the Company's plan under which half of the tuition paid for approved educational courses is refunded, piled up an impressive record during the 1940–41 school year.

By plant, the attendance at one or other of the schools and colleges in the city was as follows:

Kodak Park, 775; Camera Works, 225; Hawk-Eye, 101; and the Kodak Office, 100. Several hundred employees attended Edison Technical and Industrial High School, where there is no tuition.

### Many Subjects

The courses attended under the tuition-refund program covered a wide variety of subjects:

For those engaged in mechanical work, Mechanics Institute and the Edison Technical and Industrial High School held courses in shop mathematics, blueprint-reading, tool- and diemaking, instrument-making, and advanced shop trigonometry, among many others.

Courses in electricity ranged from the elementary to a course at Mechanics Institute that included instruction in electronic devices, photoelectric cells, and the study of power-factor correction.

To those working in sheet metal, Edison Technical and Industrial High School offered both instruction in elementary sheet-metal work and in advanced work in sheet-metal layout. With the use of welding being continually widened in industrial processes, this school held courses in both the arc and acetylene methods, and there was a complete course in automatic screw-machine operation.

*Chemistry minded? Well-planned courses, with complete laboratory facilities, are taken by many Kodak employees*

Accounting, business administration, stenography, and office practice were among the subjects taught at the Rochester Business Institute, Niagara University, and the School of Commerce.

Both Mechanics Institute and the University of Rochester gave courses

*Photography is naturally well out front when Kodak employees "go to school." Here: a lesson in portraiture*

*Employees with special interest in mechanics can pick their courses knowing that a well-equipped machine shop with trained instructors is at their disposal*

in chemistry. At the university, a course in metallurgy, of particular interest to draftsmen, designers, and engineers, was offered.

Employees engaged in the handling of sensitized materials learned many of the "reasons why" at the classes, lectures, and demonstrations of the Kodak Camera Club.

Noteworthy in the record of Kodak's impressive student body is the number of students taking courses that extend over a several-year period. Two outstanding examples come from Kodak Park, with one employee climaxing eleven years of study with the degree of bachelor of chemistry from the University of Rochester and another receiving the degree of bachelor of business administration after seven years' study, four of them at the university. Among the women employees of Camera Works taking outside courses, one has completed a three-year drafting course in two years, with honors, and is now taking a course in machine-shop practice.

Kodak employees are to be found on the instructing end, too, in many an outside course. Last year, 46 employees from Kodak Park and 23 from Camera Works conducted courses. And there were several each from the Kodak Office and Hawk-Eye.

Eligibility for a tuition refund under the Company plan is determined on the following basis:

The course must be of reasonably direct benefit to the employee in his work. It must be given by a school or agency approved by the Company. The employee must have received a passing grade according to the standards of the school; and he must have attended at least 80 per cent of the meetings of the class.

The importance of a well-planned course of study—as opposed to haphazard selection of subjects—cannot be overemphasized. In this, the employment departments of the Company—with information on educational opportunities accumulated through the years—can be of much service to employees.

Maximum refund in a scholastic year is $50, and the employee should,

(*Continued on page 11*)

*From electricity to the study of power-factor correction run the many courses that are available*

# Tenite Remains in the Headlines


**Eastman's Plastic Appears In New Forms—and Scores a Hit In the Field of Home Design**

OUR LONG LIST of the uses of Tenite is getting completely out of hand. All over the country, manufacturers, novelty makers, sporting-goods houses, automobile designers, and many others are finding new applications for this adaptable plastic.

To the architect and the home decorator, Tenite is now available in several forms of molding, for trimming the edges of tables, counters, and cabinets. In the lower left-hand picture, a modern kitchen installation is shown with Tenite replacing the usual metal strips for sink and shelf edgings.

This plastic molding, which can be worked as easily as wood without chipping or cracking, is shaped in the form of a T with an arrowhead tip at the base. When this flanged barb-like tip is forced into a prepared groove in the wood, the Tenite strip is held securely in place. Being available in a wide range of colors, Tenite molding offers the architect or decorator a variegated assortment from which to choose—with full assurance that the colors will never chip or fade since they are an integral part of the plastic.

Other interesting uses of Tenite are illustrated above. The automobile emblem, despite its delicate design, is proof against shattering and rust. Equally ready for rough wear are the garden tools with Tenite handles as gaily colored as the flowers they tend.

The world of style weaves strands of Tenite into glamorous patterns. The slipper, fit for the dainty foot of a modern Cinderella, features clear and tinted strands of Tenite woven with Kodapak metallic thread. Braided strands of crystal-clear Tenite dramatize milady's black felt hat, while her kid gloves are trimmed with soilproof cuffs of the same material.

Seems as though almost anything can be made with Tenite. It has, in fact, replaced metal, glass, and wood for a thousand and one products.

# PANORAMA

## Appeal

ALL THE WAY from Cooper's Landing, Alaska, comes the following letter:

"I understand perfectly about the extra footage that you have on each end of your films as leaders and trailers, but if it is humanly possible I want to ask you to develop this enclosed film separately by hand so as to save the extra footage where the film has been turned over to run it through a second time. . . .

"I will tell you how this happened. I am an Alaskan Guide's wife and prowl the mountains alone quite a bit. I came suddenly upon a cow moose with new-born calf. I pulled out my movie camera but never got a chance to use it. She charged me right now and I ducked behind an alder clump of trees. She reared up on her hind legs, striking at me with her front hoofs. She came against that alder bush kerplunk, then came around my side of it, after me. I shinned up that tree in nothing flat, still with the camera in one hand, and, hung around me, to catch on the brush, a packsack, binoculars, camera case on belt, and a high-power rifle slung on my shoulder. If someone could only have got a little footage of *that!*

"The alder was not high enough and bent with my weight. The moose kept rearing up and striking at me. I had to hang on with one hand, and duck way over to the other side as far as I could, to dodge her. She finally went back to her calf and tried to get it away but it was too little. So she kept me up there for two hours and every time I made a move she came back to strike at me. She was a mean one.

"Worst luck of all, I was so near the end of the film that the best of the pictures I took of her with the calf was on the strip between the zero and empty marks on the footage indicator. I thought it was the end of the film, but when I opened it, hanged if it wasn't just ready to be turned over. I exposed as little of it to the light as possible when I turned it. If I'd had my wits about me, I would not have turned it at all but sent it in that way. But I was doing it under stress, hanging onto that tree.

"When the calf got hungry, she succeeded in coaxing it away on wobbly legs. But this is an experience that comes perhaps only once in a lifetime, and an opportunity that I may never have again to get such close-ups of a cow and calf; so if you think that I did not fog too much footage in turning the film over, will you please try to develop it so that those extra strips with the moose pictures on will be saved?"

## Maneuvers

AMONG THOSE PRESENT at maneuvers held some months ago was a Kodak office employee bent on getting a few pictures, with permission of the authorities, of course. Along with some other photographers, he was standing on a spot over which bombers roared at very low altitudes, while at the same time tanks came dashing up from various directions. The din, he assures us, was terrific.

At the very height of the man-made inferno, the general shouted above the roar of battle: "Gentlemen, it may interest you to know that the objective of this attack is the very point of ground on which you now stand."

"It was a most disturbing bit of information," our informant assures us, with a shudder—and refuses to say any more of the matter.

It might be noted in passing that the general struck a stylish note in his smart helmet molded of Tenite. For more prosaic uses of that very adaptable material, see page 3.

## Statue Finish

HOW A GLOSSY FINISH that was the pride and joy of Persian craftsmen 2,500 years ago has been supplied to a plaster cast of an ancient lion's head sculpture by a few minutes of photographic developing at the University of Chicago has been described by *Science News Letter*. The process was used by Herbert P. Burtch, of the university's famous Oriental Institute.

"The institute received from its Persepolis expedition fragmentary stone scraps of lions' heads. Pieced together, the fragments formed a magnificent snarling head in a plaster cast, the archeologists found; but the cast was a dull, light color, instead of the original shining black of the effigy in ancient Persia. Confronted with the problem of restoring the original gleam to the head, Mr. Burtch, after some experiments, hit upon the photographic process.

"The plaster cast was treated with silver nitrate, applied with a brush. Then it was 'exposed' like a photographic plate or film, under a strong, even light. . . . Application of a developer with a brush was a final step, and the result was a hard, glossy black, as pleasing as the stone original seen by the Persians two and one-half millenniums ago."

## Documents Revived

IMPORTANT hand-written documents blackened in fires started by the "Blitz" in London and other British cities are being deciphered by means of a photographic method described in the magazine *Nature* and reviewed by *Science* as follows:

"The method, which takes advantage of differences in reflecting power between blank spaces and the lines of writing, was worked out by G. A. Jones, of the research laboratories of Kodak Limited, at Wealdstone in Middlesex. As seen by the human eye, the sheets are uniformly black. However, under intense lighting with a narrow beam from a small arc lamp, the once-white surfaces become mirrors, photographing white, while the traces of the ink lines have little reflecting power and photograph black. It is necessary to press the blackened documents absolutely flat. Plates used in the camera had a special blue-sensitive emulsion, because of the high proportion of blue rays in the light from the arc. Mr. Jones's method is of particular value in England, where many documents of legal importance, such as title deeds, wills, etc., are still hand-written."

# The War—And Your Pocketbook

## The Price Administrator In Washington Looks Ahead And Gives Us a Word of Warning

*In the October issue of "The American Magazine," Leon Henderson, head of the Office of Price Administration and Civilian Supply, tells of some of the causes of inflation, shows how each one of us can help to avoid them. His recommendations, appearing here in excerpt by courtesy of "The American Magazine," may prove valuable to those of us who heed his warning. While expressing confidence in America's ability to handle the gigantic task ahead, Mr. Henderson warns:*

"BUT WE MUST BE AWARE. We must ask for plain talk and take it. We must know that there are pitfalls and how to avoid them.

"First, let's take a look at defense buying. This past year we spent $7,000,000,000 for defense, and the spending will soon be around $1,000,000,000 a month.

"What does this mean?

"Well, for one thing it means that out of 8 hours of the production day, 1 hour is being spent on building defense. In Germany they spend 5 out of 8 hours building military goods.

"In this next year we'll spend somewhere between 20 and 25 billions. That means that next spring we shall be spending 2 of our 8 hours on military production. And before we're really going strong we shall have to be spending 3 or 3½ hours out of 8. We've got to outproduce Hitler, and 1 hour a day won't do it.

"Now, our growing production schedule—production of military goods—means that we'll be spending more than a third of our time making things you can't eat, wear, or live in.

"Your pocketbook and mine will be buying defense. We'll buy it through taxes, and those taxes are going to seem very high when we compare them with the taxes we paid last year.

"There'll be two kinds of taxes: income and excise taxes, that is, taxes on particular products like radios, cosmetics, movies, and automobiles.

"You're going to have to save more money. If you don't decide to, most likely the time will come soon when your own congressmen will decide for you, and then we'll have forced savings.

"I have a little boy who is three years old. Sometimes he says, 'Don't say that—it's a bad word.' He doesn't mean that it's profane. He means that the picture it paints for him is disagreeable or frightening.

"For me, his father, there is a big, bad word. It is 'inflation.'

"Inflation is disaster. Bankruptcy. Depression. Ruin. Idleness. Revolt. It can lose both the war and the peace for us. It can sink our standards of living below the misery level.

"What, actually, is this thing that I dread so? It all comes down to this: Inflation is rapidly rising prices—crazy, careening prices.

"The primary cause of inflation is a lack of goods. Do you remember I mentioned those 3 out of 8 hours that must go to making defense goods which neither you nor I can buy? But with 8 hours' pay we bid for the 5 hours of things we want that won't go around. If we all allow ourselves to continue bidding, then prices run away. Every time you go to the market place you touch a jumpy economic nerve. And your co-operation is that 'priceless ingredient' out of which we can fashion a cure.

"Here are some of the things that you can do:

"First and foremost, you can turn that backward art of spending money into a front-line defense against waste. When you save money by spending wisely instead of foolishly, you're helping out. Not only do you protect that threatened pocketbook of yours, but you help to save the resources we need to build a mighty defense. Each waste of your money wastes the materials, management skill, labor skill, space on trains and ships, time in warehouses and stores, credit needed in defense production.

"The wastes of inflation, of spiraling prices, you can prevent in part. For one thing, if you own an automobile, a refrigerator, or a washing machine you can take good care of them, to make them last longer. Then you won't be bidding up prices in the market by buying a new one. Give the chance to a fellow who has just landed a job and hasn't got a refrigerator.

"You can cut down your electric bill by not wasting electric power. You can cut down your food bill by buying intelligently and with discipline. You can learn again how much fun it is to hike with your kids and play with them in the back yard instead of driving to town or just driving. And you can put the pennies and dimes you save into Defense Bonds.

"Most important, you—all of you consumers—can be 130,000,000 Paul Reveres in this inner war we're waging against inflation. And remember that it isn't only this year or the next that is concerned in this inflation disease.

"The fabric of our traditions of a free America is no stronger than our daily economic life. Inflation must not rot its pattern."

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## Did You Know?

THAT plywood, made by an industry only active for about ten years in the United States, today has about two thousand uses? They include radio cabinets, airplanes, luggage, and piano cases.

• • •

That a method of making oil paintings on cobwebs has been developed? The paintings are preserved between sheets of glass.

• • •

That bacteria found 25 feet below the floor of the ocean have been revived? Scientists believe they lived in a state of suspended animation for more than a million years.

• • •

That the concrete used recently in a super highway built in one single American state would have been enough to build four pyramids equal in size to the famous Cheops pyramid in the land of the Nile? At least, that's the result of one man's figuring.

• • •

That if all the railroad tracks in the United States were so laid out, they would form 133 parallel tracks between New York and San Francisco?

# Along a Towpath to Prosperity

**One Hundred and Sixteen Years Ago this Month, the Waters Of The Erie Canal Flowed Through**

AMERICA WAS STRUGGLING to expand. In those eventful years following the Revolutionary War, the youthful nation pressed against the natural barriers to the west, seeking to burst through into the rich lands beyond the Appalachians.

But the success of the early pioneers in penetrating to the valley of the Ohio and beyond was creating a grave national problem. Lack of roads and lines of communication prevented the development of trade between these isolated groups of colonists and the centers of population on the eastern seaboard. Political as well as economic bonds were thinly stretched across the mountains, and the parent states were threatened with complete separation from these frontier groups.

The need for efficient lines of communication between East and West was indeed great, and the most favorable conditions for joining the interior and the seaboard had been supplied by nature in New York.

Until the beginning of the 19th century, settlers and travelers in western New York had relied largely on the natural waterways to carry them from place to place. Roads were few and poor at best. But farsighted leaders foresaw the possibility of a great artificial waterway to link the state from end to end and to tap the resources of the West. Thrusting through the coast range of mountains, the Hudson offered a navigable channel for many miles into the interior. The Mohawk Valley, lying just north of the Alleghenies, offered an entrance to comparatively level lands that stretched westward to Lake Erie. "Why not build a great canal to serve as a waterway through this country?" some asked.

## Plans, Surveys

In 1784, Christopher Colles, an Irish engineer, had proposed a plan for inland navigation on the Mohawk. In 1791, Governor George Clinton recommended steps for improving inland navigation. Several private canal companies were formed in the ensuing years, extensive surveys were made, and minor canals put into operation. But nothing of enduring worth was accomplished until 1810 when, at the instigation of DeWitt Clinton, a commission was appointed by the State Assembly and Senate to study the feasibility of various canal routes from the Hudson to Lake Erie and Lake Ontario.

Lacking Federal aid and opposed by New York City politicians, the project languished until 1815 when a document, written by DeWitt Clinton and known as the "New York Memorial," aroused state-wide enthusiasm for the proposed canal. In response to popular demand, the State Assembly and Senate passed a bill calling for its commencement.

The route to be followed by the canal was the subject of considerable uncertainty and bitter disagreement. But by the time actual construction was started at Rome on July 4th, 1817, a route up the Mohawk to Utica and Rome, thence to Cayuga Lake, and on to Buffalo had been agreed upon.

In spite of the indescribable difficulties of piercing through an all but uninhabited wilderness, the work went forward with astonishing speed. On October 2nd, 1819, the first boat floated over the section from Rome to Utica. By May of the following year, 96 miles of the middle section was completed to Syracuse. In October, 1823, a celebration marked completion of the canal from the Hudson to the Genesee River. Finally, on October 26th, 1825, a fleet of boats bearing many distinguished figures of that day entered the canal at Buffalo and traveled through the canal to Troy and down the Hudson to New York City.

From the beginning, this mighty man-made waterway was a triumphant success beyond the fondest dreams of its builders. Westward it car-


*As work progressed westward on the canal, completed sections were opened to traffic. Map dates opening of each section. Courtesy, Rochester Historical Society*

ried thousands of eager settlers on their way to open the West. Eastward the agricultural and natural products of the frontier were carried to the populous seaboard. Traffic jammed the canal in two unbroken lines that floated slowly past one another day and night. Tolls were collected in such amounts as to pay for the canal's construction within five or six years, and for long afterward the entire cost of running the state government was paid from this source. When tolls were abolished in 1882, the Erie Canal had earned a clear profit of more than 42 million dollars.

*Old dobbin furnished the horsepower on the canal for many years. When darkness fell and traffic was halted, he was often stabled aboard for the night. Picture, from the Al Stone files of Rochester Museum*

### Economic Benefits

The influence of the canal upon the growth and prosperity of the state can scarcely be computed. It lifted New York City to a position of unrivaled dominance as the commercial metropolis of the nation. As a historian of Philadelphia wrote many years ago, ". . . the fact stands out prominent that from the completion of the Erie Canal, New York became what Philadelphia had previously been—the commercial emporium of the United States."

But the canal scattered its benefits over the entire nation. The products of the newly opened lands in the West flowed over this short route to market rather than down the long stretches of the Ohio and Mississippi to New Orleans and thence up the east coast. Indeed, Senator William Windom reported in 1874 that New York possessed the key to the national commercial situation, and that the Erie Canal had done more to advance the wealth, population, and enterprise of the Western States than had all other causes combined.

### And Political

Equally important, the canal served to bind great sections of the infant nation together in sympathetic intercourse and interdependence. Long before, Washington had expressed a fear of the gradual detachment of the Western States because "they had no other means of coming to us but by land transportation and unimproved roads." The Erie Canal eliminated this threat to national solidarity at a stroke. To us, it is interesting to note the effect exerted by the canal upon Rochester. In 1816, the year before construction was started, Rochester was a crude hamlet of 331 people. By 1838, it had become the shipping point for all of the Genesee country and a huge manufacturer of flour. The population had soared to 20,000. One commentator of the time wrote that Rochester "has the most sudden growth of any town in America."

Rochester's growth was in part attributable to the building of the Genesee Valley Canal which ran southward to Olean, with a branch extending to Dansville. Over this canal came much of the wheat which was milled in the booming town and shipped over the Erie Canal to the cities in the East.

By the middle of the 19th century, the Erie Canal had lost much of its commercial importance to the railroads which, by then, were binding the country together in a network of iron. But its falling traffic and dwindling revenues could not weaken the fact that the canal had served a mighty purpose. DeWitt Clinton's "ditch" had already made its immeasurable contribution to the growth and prosperity of a mighty nation.

*An artist's conception of a canal scene in 1840. In those days of horse-drawn barges, the locks were operated by hand. Travel was slow, but comfortable. Reproduced by courtesy of Rochester Museum of Arts and Sciences*

# Hawk-Eye Delivers First Finder

**Ten Months Ahead of Schedule Vital Antiaircraft Fire-Control Instrument Is Handed to Army**

KODAK'S first military height-finder was delivered to the U.S. Army on September 24th, 10 months ahead of schedule. The event was marked by brief ceremonies at Hawk-Eye, when Frank W. Lovejoy, chairman of the board of directors, presented the vital antiaircraft instrument to Brigadier General Walter P. Boatwright, commanding general of the Frankford Arsenal in Philadelphia. Mr. Lovejoy's presentation remarks and General Boatwright's acceptance on behalf of the War Department appear on the next page.

Resembling in general appearance a long cannon on a tripod, the height-finder is "the most difficult item of ordnance to procure," according to General Boatwright, who is an internationally recognized gunnery expert. It is so complicated an instrument that few industrial organizations are equipped to manufacture it to Ordnance Department standards; and only a handful of companies in the world have been able to produce a military height-finder commercially.

A stereoscopic height-finder, reduced to its essence, consists of two eyes—spaced the width of a comfortable room apart—that not only "judge" distances, as we do, but also record them precisely. In use, the height-finder operator has under his control a black, diamond-shaped mark, which appears in the field of view as he looks into the instrument. With reference to the target, this mark can be moved from a near to a far-distant position.

### Reading the Distance

Then, as he can control the distance of his diamond mark, he can compare the distance of the aerial target with the distance of his diamond mark. If the diamond mark appears on the near side of the target, he can move it until both the diamond and the target appear to be the same distance away. Then, the distance of the target is the same as the distance of the diamond mark, and can be read on a graduated scale on the height-finder. The shells of the antiaircraft guns that are dependent on the height-finder are set to explode at the distance it indicates.

The old-fashioned parlor stereoscope comes into its own again as an object of comparison in explaining the height-finder.

*Brig. Gen. Walter P. Boatwright received the height-finder on behalf of the War Department*

The special picture cards used in the stereoscopes had one view of the subject on the left side of the card and then what looked like exactly the same view on the right side of the card. Actually, the two pictures were made from points of view a few

*At delivery of height-finder were: Edgar M. Hawkins, assistant superintendent of Hawk-Eye in charge of Government work; Thomas J. Hargrave, president of the Company; Albert K. Chapman, vice-president; Albert F. Sulzer, general manager; Col. Gordon B. Welch, of Frankford Arsenal; Eric Wehr, civilian Army inspector at Hawk-Eye; Brig. Gen. Boatwright; Maj. Franklin Mitchell, of Frankford Arsenal; E. R. Davenport, chief, and Col. R. L. Bowlin, executive officer in charge, Rochester ordnance district; Frank W. Lovejoy, chairman of the board; W. T. Roach, manager of Hawk-Eye; Dr. C. E. K. Mees, vice-president and director of research*

inches apart and were, therefore, somewhat different. Similarly, your eyes, being a few inches apart, get a slightly different view of any object. When these two-picture cards were placed in the stereoscope, the right eye saw only the picture on the right (giving that eye the view it would have normally), and the left eye saw only the picture on the left (its normal view). The result was a sensation of depth.

It is because our eyes see from points of view a few inches apart that we can judge distances with even greater accuracy. This same principle of optics makes it possible for a height-finder to do its work.

## Mr. Lovejoy

"General Boatwright, as a representative of our Government, we feel honored that you have taken the time from your absorbing duties to come to Rochester to receive this instrument—this height-finder. We are gratified, too, that we are able to assume the task of making these very necessary instruments. We are proud of the fact that we have an organization to cope with this task, and we wish that everyone who works on these instruments were here to do honor to you and to this occasion, but that is impossible.

"Twenty-five years ago at the time of World War I, we were absolutely unable to assume any such task as this, and only through the development which we have been able to make in optics and the skilled workmen who developed along with us, have we been able to do it now. We hope that in completing this instrument well ahead of schedule, that we shall be able to meet the same success in the rest of those which we have contracted to deliver to the Government in the given time.

"I understand that the instrument has been inspected and approved, and I hope that in use the approval will be confirmed."

*Caught by our cameraman: Max A. Zill, Arthur B. Simmons, and Wayne G. Norton were among Hawk-Eye employees who worked on the height-finder. Letter below was posted on plant bulletin boards*

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

HAWK-EYE WORKS

September 24, 1941

To Hawk Eye Works Employees:-

It was with genuine satisfaction that Mr. F. W. Lovejoy and Mr. T. J. Hargrave released to the United States Government on this day an instrument that embodies the most complex optical and mechanical systems that we have ever built. The completed unit is an outstanding example of the type of high precision work that our organization produces.

We are mindful of the fact that the construction of this, our first Height Finder, involved many personal sacrifices including the deferment of vacations in certain departments, but it is gratifying to all of us to know that this accomplishment marks the beginning of a real and important contribution to the Defense Effort of the Nation. With the "Know How" our task is considerably simplified.

W. T. Roach

W. T. Roach, Manager

WTRoach/mw

## Brigadier General Boatwright

"Everyone knows in these times the urgent necessity for ample defense against bombing planes. One means of defense is the antiaircraft gun. One of the two essential elements required for fire control against aircraft is the height-finder.

"With all due respect to Mr. Roach [manager of Hawk-Eye Works], we still think the height-finder is the most difficult optical instrument to make. When we announced the contract for these instruments, you accepted the responsibility to make delivery to fit our requirements. This delivery seemed to me, at that time, to be impossible. I take great pleasure in congratulating you and your organization that you are ahead of schedule, and we have every reason to believe that you will maintain the rate set.

"In accepting this instrument on the part of the War Department, I want to express to you and to all your employees the keen pleasure we have experienced in working with you and your organization."

# THE EDITOR'S PAGE

## Kodak and Defense

*With approximately half of the items the Company has undertaken to manufacture under the national-defense program already in production at Kodak Park, the Camera Works, and Hawk-Eye, the following information is disclosed with Government consent:*

ALTHOUGH DELIVERY of the first height-finder to the Army is materially ahead of schedule (see pages 8 and 9), Kodak's peak of new defense output will not be attained until 1942, according to the production schedule. Our maximum production of special instruments and materials for defense will be reached when actual manufacturing begins under the largest contracts undertaken by the Company. The important job of "tooling up" is being pushed rapidly under these contracts, which call for initial shipments next year.

Defense production undertaken by the Company for the Government will, over the next few years, provide special military equipment—of types never manufactured before at Kodak—valued at more than $44,000,000. This is inclusive of work being done on subcontracts for other defense manufacturers, but it does not include cameras and other products regularly manufactured by the Company and used for military purposes.

The production of x-ray film and film for aerial photography is considered very important for military purposes, along with such products as roll film, sheet film, film packs, and color film; photographic paper and chemicals; Recordak film and Photostat paper for administrative and record use; dental x-ray film and electrocardiographic materials; and motion-picture film for training and entertainment of soldiers and sailors. Many defense industries use x-ray film and metallographic plates for testing metals and parts; Eastman Matte Transfer Film and lacquer for patternmaking in aircraft production; and numerous other photographic products.

The stereoscopic height-finder is outstanding among the various highly precise fire-control instruments—various devices for aiming guns of diverse types, involving actual sighting in some instances and calculation in others—that the Company has undertaken to produce under the defense program. These instruments are being produced for antiaircraft, antitank guns, coast artillery, and field artillery; and deliveries on certain of them, in addition to the height-finder, are already being made.

Sample aerial lenses containing the new Eastman rare-element glass have already been tested by the Government. The Company is one of the largest American manufacturers of aerial lenses, their production having been continued since the last war.

Other Kodak undertakings cover large orders for mechanical components of artillery ammunition, now in the tooling-up stage, and the fabrication of certain heavy defense equipment, of which initial deliveries have been made.

The Company is even making special machine tools and shipping to other manufacturers such of them as are not needed for the Company's own defense manufacturing. In addition, the Company is subcontracting parts and subassemblies for makers of machine tools, and is thereby giving assistance in removing the scarcity in that vital field.

It should be a matter of considerable pride for all employees that the Company's defense schedule has been so successfully maintained in face of the fact that, except for aerial lenses, the military implements being manufactured or prepared for manufacture are products of types never before made by the Company.

## FOR DEFENSE

### BUY UNITED STATES SAVINGS BONDS

(On sale now at the Eastman Savings and Loan office; or through the Cashier's office, Kodak Park; and the Employment offices, Camera Works and Hawk-Eye.)

# A New Method for Color Correction

**Kodak's Fluorescence Process Offers a Better Way to Produce That True-to-Life Illustration**

FROM THE TIME when color printing was first introduced, engravers and lithographers have had to resort to some method or other for "color correcting" their half-tone plates. Their problem has resulted from the lack of subtractive printing inks possessed of ideal spectral absorption. The cyan dyes used in the "blue" printer, which should properly absorb only red light, actually absorb considerable green and blue-violet light. Likewise, the magenta dyes used in the "red" printer should ideally absorb only green light, but in practice they absorb some blue-violet and red light. Only the yellow dyes approach an ideal performance in that they are practically free from green and red absorption.

Because of these deficiencies in printing inks, the greens and blues of a print appear gray or too dark unless some method is employed to correct their colors. Engravers and lithographers have generally either "color etched" their 4-color separations or printing plates—a costly and time-consuming procedure, at best—or they have employed Kodak's Modern Masking Method of Correct Color Reproduction in making their color-separation negatives.

With the announcement of the Kodak Fluorescence Process, the Company offers the photomechanical industry a new and better means of color correction.

### What It Does

This process utilizes an 18-color set of Kodak Fluorescent Water Colors, invisible in ordinary light, but strikingly displayed when the colors are examined in a darkened place under ultraviolet rays.

When an illustration is treated with these fluorescent colors, the fluorescence improves the "red" and yellow printers to such an extent that virtually complete color correction is achieved in the color-separation negatives.

To round out the process, Kodak offers equipment for supplying correct copyboard illumination for the exposure of the negatives. A large Kodagraph Copyboard Hood, equipped with Kodagraph Copyboard Filter Holders, excludes extraneous light while providing a means for filtering the light from single or double-decker arc lights.

To obtain a proper balance of the ultraviolet, blue-violet, and green light required for the exposures, an adjustable slit holding compensating filters can be quickly adjusted by the operator. A single adjustment of this slit takes care of both the "red" and yellow printers. The "blue" and black printers are made with white light falling on the copy.

*The Kodagraph Copyboard Hood, with its Kodagraph Filter Holders, enables the engraver or the lithographer to obtain proper balance of light when exposing his copy for making separation negatives*

All art work produced in water colors for photomechanical reproduction can now be made with the Kodak Fluorescent Water Colors. In the immediate future, the application will probably be in the making of sketches for greeting cards, calendars, post cards, and illustrations for children's books, schoolbooks, and mail-order catalogs.

The Kodak Fluorescence Process has proved its value in extensive trials. Already, operators, familiar with its use, have achieved excellent color correction in less time than is required by other methods. The process will unquestionably find wide use in the photomechanical reproduction of all color illustrations which lend themselves to the use of water colors.

*Kodak Fluorescent Water Colors are the very heart of the Kodak Fluorescence Process. They are applied in the same manner as regular water colors, fluorescing strongly when exposed to the action of ultraviolet light*

## Night Courses Attract

*(Continued from page 2)*

before enrolling for a course, fill out the special form that has been drawn up for that purpose. This form and full particulars of the tuition-refund plan are obtainable at the employment offices of the Company. Employees outside of Rochester may obtain the form from their manager.

# Reading, Writing, and 'Rithmetic

### The Board of Education Is Elected by the People to Run Rochester's Public Schools

LAST YEAR, an army of 44,358 boys and girls attended Rochester's public schools. To each of them was furnished an additional year of the education so vital to their future as useful citizens of America.

In itself, this education is valuable beyond all reckoning in dollars and cents. But the cost to Rochester of providing this education can be expressed in clear figures—figures that show what a tremendous business we are dealing with when we consider Rochester's public-school system. The budget for this year, as the most apt example, calls for an expenditure of $8,082,000—this amount covering both current expenditures and payments of principal and interest on the school debt.

### Instruction, Administration

Clearly, then, the education of our children resolves itself into two parts—the instruction of the children, and the administration of the physical properties and finances of the school system. This dual job is handled by the commissioners of education, elected by the people to serve for four years on the five-man Board of Education.

These five men pass the laws and lay down the general policies that regulate our educational system. Their decisions are put into effect and carried out by a superintendent of schools whom they appoint.

The superintendent of schools is the active full-time head of the school system. Appointed for six years, he has complete charge of the supervisory, administrative, and teaching personnel. He enforces the laws and regulations relating to management of the schools, and he administers all other activities that fall under the jurisdiction of the Board of Education. He has the power to suspend any employee, but the power of dismissal rests with the Board of Education.

### Appointments

All appointments to teaching positions are made by the Board of Education upon the recommendation of the superintendent. His recommendations, in turn, are usually made upon the advice of assistant superintendents, principals, and department heads. All aspirants for teaching posts must take examinations prepared by a local board of examiners. A three-year period of probation must be served before appointment to a regular teaching position is made.

On every school day, Rochester's children file into more than fifty schools with a combined value of almost 18 million dollars. The operation and maintenance of this vast plant is a costly business. To keep it cleaned, heated, and lighted this year will cost about $800,000. Maintaining these buildings in good repair will cost another $215,000. Expenditures for new educational equipment, furniture, and other items of capital outlay will amount to about $125,000.

*Part of the administration of Rochester's public schools deals with such auxiliary services as the lunchrooms, maintained in eleven of the schools. Self-liquidating, they run on a nonprofit basis*

### Biggest Item

But the cost of instruction, which includes the salaries of the teachers, is, quite naturally, the biggest item of expense—amounting, this year, to just under 5 million dollars. This, together with administrative expenses and the cost of such auxiliary services as busses and lunchrooms, rounds out the current expenditure ledger.

Debt service—payment of principal and interest on the school debt—amounts this year to $1,347,118.23.

All of these expenditures are estimated for the year in advance and submitted by the Board of Education to the City Council, which then approves it or makes such changes as seem desirable. For the past seven years, Rochester's school budget has been published in the form of an illustrated booklet in a praiseworthy attempt to offer the public an understandable report on school finances.


*The school busses see service all day long. Used primarily to carry crippled children to and from school, they also serve to transport students to the Museum, the Dental Dispensary, and on many educational tours*

The responsibility for preparing the annual budget rests with the assistant superintendent of finance, who heads the Finance Department. This department, throughout the year, conducts a constant accounting and auditing of all expenditures in all the schools, keeping account of student funds as well as those belonging to the Board of Education.

### Pay Roll, Etc.

Within the Finance Department is a pay-roll office which prepares and checks the pay rolls for all employees of the educational system. This office must make periodic reports to the state retirement systems for both the teachers and the civil service staff.

Supervision of transportation, school offices, lunchrooms, and communication systems is also handled by the Finance Department. It is custodian of all attendance and scholastic records of the students.

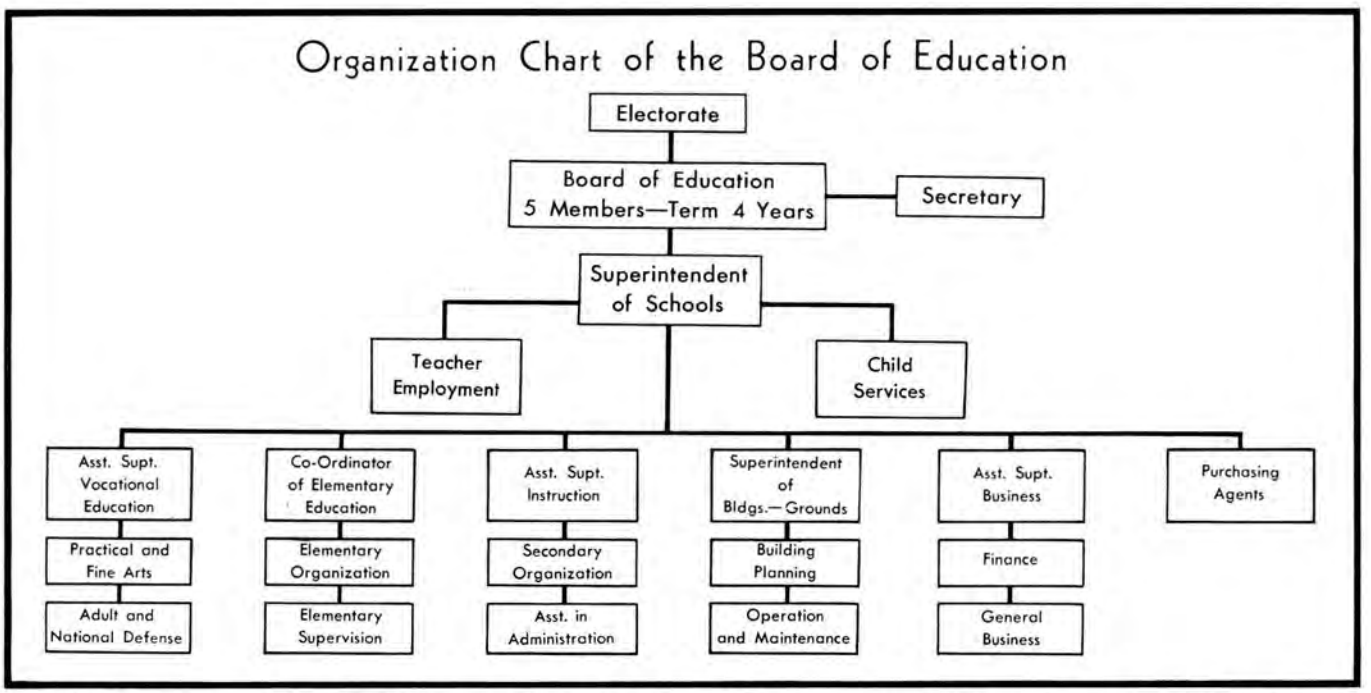
A Department of Buildings and Grounds has general charge of the physical plant of the Board of Education. It operates and maintains the various school buildings under the direction of a superintendent of school buildings.

About 70 per cent of all the money needed to run our schools this year is provided for by a City of Rochester tax on real estate. Almost all of the remaining 30 per cent is received by the schools in the form of state aid.

*Rochester's public-school system has a physical plant valued at almost eighteen million dollars. The Board of Education operates and maintains more than fifty elementary, secondary, and vocational-education schools*

Because the amount of money received from the state depends upon the attendance of the children, it is important for parents to realize that regular attendance saves money for the taxpayers of Rochester. State aid amounts to about 30 cents a day per student in the elementary schools and half a dollar in the secondary schools, according to recent figures.

The responsibility for training Young America in the democratic way of life rests, in large part, with our schools. A second article on our public-school system, appearing next month, will show how Rochester's school children are instructed so that they may adequately fulfill their obligations of American citizenship in later life.




*This, in chart form, is the organization that administers our public schools. The Board of Education is composed of five commissioners elected by Rochester's voters*

# OUT OF THE HAT

## The Philippines

*Charles Perry: he takes along a camera*

DISCOVERED by Magellan in 1521, conquered by Spain in 1565, and ceded to the United States in 1898, the Philippine Islands became a commonwealth in 1934.

With an estimated population exceeding sixteen million, the islands are the largest group in the Malay Archipelago. All told, there are 7,083 islands, ranging in size from Luzon with its 40,814 square miles to some that are but a few square yards in area. Only 2,441 of the islands have been named.

On a visit to Rochester after ten years with Kodak Philippines, Limited, Charles Perry gives an enthusiastic description of life on these historic islands where eight different languages and more than eighty dialects are spoken.

"Manila, capital of the Philippines, is a fascinating city," Mr. Perry relates. "A couple of blocks from the pier—which is said to be the longest in the world—is the old Walled City, construction of which was begun back in 1590. There used to be a moat surrounding the walls, but it has been converted into a golf course.

"In the old city, the streets are narrow and each house is built around a patio, Spanish style. The modern Manila, lying along the bay, has many magnificent buildings. Filipinos, you know, have the highest standard of living in the Orient, with excellent hospitals and schools, even in the small provincial towns, and splendid roads."

Headquarters of Kodak Philippines is in Manila, with a staff of more than sixty, including four Americans. The company services dealers in Manila, Cebu, Zamboanga, Iloilo, Davao, and Baguio. There are some eight hundred professional photographers on the islands, Mr. Perry estimates; and a full line of Kodak goods, both professional and amateur, is carried at the headquarters.

On business trips and in his spare time, Mr. Perry has traveled extensively in the islands.

"I invariably take along a camera," he reveals with a smile—"a habit I've cultivated since I was fifteen years old. In Luzon alone, there are hundreds of miles of good roads and railroads linking up the cities and towns, and I've been in most parts of the island. The scenery is varied and picturesque—and the people are friendly and easy to get along with."

Most historic place in the Philippines is Cebu, on the island of the same name. It was here that Magellan landed in 1521. Here also the first government of Spain was established. On the near-by island of Maetan is a monument marking the spot where Magellan died.

The principal exports of the islands are sugar, gold, coconut products, hemp, tobacco, and fine timbers.

## Panama

A LINE drawn directly south from Niagara Falls would cut through the city of Panama, Pacific gateway to the greatest man-made water passage in the world. Colón, the Atlantic gateway, is north of, and 27 miles farther west than, Panama.

"The most cosmopolitan cities you could imagine in your wildest pipe dreams," is how Gerald C. Bailey, of the Kodak Office, describes them. Mr. Bailey had a close-up view of both during a several months' stay at the "crossroads of the world." He likes to remember that, whereas it took Balboa 26 days to cross the Isthmus of Panama, he has made the entire journey from Miami to Panama in some six hours, via stratoliner—cruising along at about two hundred miles per hour.

Panama has a population of eighty thousand; Colón, nearly half that number.

"Wonderful cities for the shopper, or the window-shopper for that matter," says Mr. Bailey. "And the nationalities of the store owners are almost as varied as their goods. I believe that is a carry-over from the canal-building days, when up to fifty different nationalities were represented in the construction.

"Most colorful sight I can recall was the Carnival at Panama, preceding Lent. Even the smallest towns in the interior participated in the event, which ran for four days. The women wore the Pollera costume, a long white embroidered gown; and the men wore the Montuna, a smock-like garment that reaches about knee length. Everybody danced the Tamborita, the native dance of Panama, and confetti fell like snow all day."

One of the wonders of the New World is to be found in Panama: the

*Gerald C. Bailey: cruised at two hundred per*

Flat Arch, which stands in the ruins of the Convent of San Domingo. A tribute to the skill of the early Spanish builders, it is constructed of bricks, has neither keystone nor steel reinforcements. It was erected in 1673.

"When the constructors of the canal saw this arch, they knew there was little danger of earthquakes on the isthmus," Mr. Bailey relates. "Were the locality subject to them, the arch could hardly have come through unscathed."

Catering to the tourist trade is the chief business in Panama. "You'll find everything there from Panama hats to exquisite carvings," Mr. Bailey reports. "Incidentally, Panama hats come from Ecuador. And, speaking of tourists, a very famous one named a place that is only twenty miles or thereabouts by sea from Colón. The place is Porto Bello. The tourist was Christopher Columbus."

Mr. Bailey is a "rail fan," which means that he likes to watch the trains go by; and he also interested in model-railroad building.

"I took it up about fifteen years ago, and I find it a swell hobby," he says. Week ends, he's likely as not to be found perched near a curve, waiting for some crack train to come through. He also likes to read up on the history of railroading.

## Activities Calendar

October 11—Hawk-Eye Camera Club clambake, at Point Pleasant Hotel

October 13—Camera Club closing date for entries in pictorial section

October 14—Kodak Park Foremen's Club monthly dinner meeting

October 16—Camera Club pictorial section, for black-and-white prints

October 17—Kodak Office trip to New York, sponsored by the Recreation Club

October 19—Hawk-Eye Camera Club hike, Letchworth Park

October 23—Camera Club ciné section monthly meeting

November 7—Kodak Office Recreation Club annual fall party, at Oak Hill Country Club

November 10–20—Hawk-Eye Camera Club salon-print exhibition

November 11—Kodak Park Foremen's Club monthly dinner meeting

November 13—Camera Club regular monthly meeting

# The Cold "Bug" Is Back

CONFIDENTIALLY, your best bet for avoiding colds is a long trip into the frigid lands beyond the Arctic Circle. The cold "bug," it seems, rarely finds its way into those northern latitudes.

But to most of us cold sufferers, such a trip doesn't offer a very practical way of avoiding the danger. So the best we can do is to observe such tried and proved precautions as reduce the danger of catching a cold —or, once we have one, to follow such tried and proved treatments as lessen the seriousness of a cold.

Colds are an infection spread from person to person. Colds capture new victims most easily when their bodily resistance is low. And colds generally respond to proper treatment.

With these three facts in mind, and with the use of a little common sense, the average person can tame the cold menace and have it eating right out of his hand.

The prevention (an ounce is worth a pound) of colds involves two precautions: the first, avoiding sources of infection; and the second, keeping one's physical resistance up.

The first of these hardly needs discussion. Theaters, crowded places, and sneezing friends are fine things to avoid when the cold bug is out looking for new victims.

Building up resistance to colds requires more thoughtful efforts. To keep your general physical condition above par, get at least eight hours' sleep *every* night, eat simple wholesome food in reasonable amounts, drink plenty of cold water, and protect your body from sudden temperature changes by dressing properly. Keep clean both inside and out, and wash the hands with soap and water before each meal. If, despite all these precautions, you still find yourself susceptible to colds, see your doctor.

The treatment of colds, once the bug has found a foothold, should be both prompt and thorough.

Go right to bed after dinner and sleep the clock around. It won't hurt to drink a hot lemonade and add more covers to induce perspiration. Don't blow the nose too hard, for it may cause sinusitis, ear infection, or mastoid infection. Use medicines only on the advice of a doctor, for many of the common remedies can affect the heart or blood. And don't neglect a cough or you may get pneumonia.

# At Home of Kodak Philippines

*Manila Harbor: along this great bay lies the modern city that Charles Perry tells of on opposite page*

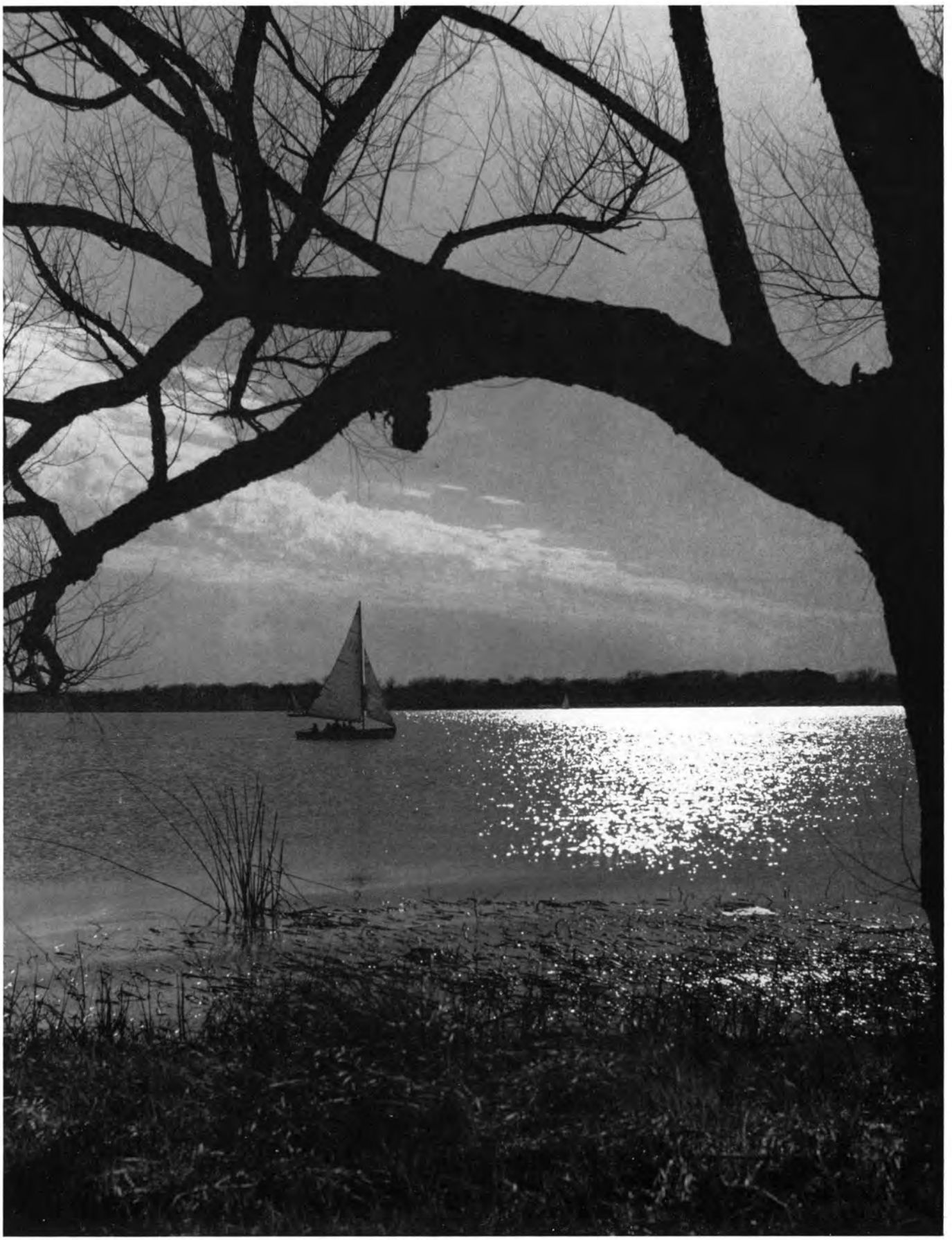
# ACTIVITIES

KODAK PARK HIGHLIGHTS: When firing had ceased in the third of the men's golf tournaments, held at Lake Shore on August 26th, Carl Gath was in possession of low-gross honors with a 75. Pat Harrington took low net with a 67. . . . Gladys Seely captured low gross at the Girls' Golf Tournament, September 13th, with a 59 (only nine holes played if you're amazed) and Dorothy Hart won low net with a 33. . . . The K.P.A.A. champions were to defend their crown in the Interplant Golf Championship Tournament to be held at Midvale on September 28th. . . . Paul Glasoe ended the tennis season as Singles Champion while John Schilling and Gerald Mayer were capturing the doubles crown. . . . Softball was running out the season. At Ridge Field, the Browns took second-half honors in the Noon-Hour League and won the play-offs against the Indians, first-half winners. Ridge Construction finished first in the Noon-Hour League at the Lake Avenue Field. Ridge Construction won the Twilight League laurels at Ridge Field, while Film Developing and Building 48 were playing off a tie for the championship on the Lake Avenue Field. In the Trickworkers' League, Buildings 5 and 30 were playing off a tie for the second half. . . . Bowling was well under way with several K.P.A.A. leagues in action. "A" League, headed by Fred Brizee, honorary president, and James Culhane, president, is rolling on the Ridge Bowling Hall alleys every Thursday night. A team from this league, competing in the Culver League, is composed of James Weigand, George Stoldt, Frank Wagner, Edward Copenhagen, and Frank Falzone, captain. The Tuesday "B" 8 League, with Clifford Haskell as president, are also rolling on the Ridge Hall alleys. The Thursday "B" 16 League is headed by James McKenna, president. The Trickworkers' League is meeting Friday afternoons at 4:30. Marie Seitz is president of the Girls' 16-Team League, bowling on Monday at 5:45. Lillian Newell heads the Girls' 12-Team League, bowling at the same time.

HAWK-EYE HAPPENINGS: The bowling "bug" has grown so strong that a new 8-team league was organized in addition to the regular 16-team league. Both leagues are bowling on Wednesday nights at Ridge Hall. The Girls' League is bowling on Monday nights at Genesee Hall. . . . The Basketball Team enters upon another quest of Industrial League honors with Walter Burgess as manager. . . . The first fall supper meeting of the Camera Club was held on September 15th. Harris Tuttle, of the Sales Department, presented an illustrated talk on "Seeing Colors." . . . The second annual clambake of the Camera Club was scheduled for October 11th at the Point Pleasant Hotel. . . . Autumn plans still in the fire included a Halloween party, a pinochle party, a Thanksgiving turkey sheet, and a Camera Club hike.

KODAK OFFICE ITEMS: The three bowling leagues opened play on Tuesday, September 23rd. The men are fielding two 8-team leagues which roll at Franklin Hall. The National League is headed by Paul Yanke, president, with Allen Worbois, secretary, and Andrew Almy, treasurer. Carl Mattern is president of the American League; Stan Bissell is secretary; and Ed Kendrick, treasurer. The Girls' 8-Team League is headed by Katherine Skelly, president; Clara Pringle, secretary; and Lois Augustine, treasurer. The fair pin crashers are rolling on the Knights of Columbus alleys. . . . The Bridge Club began its season's play the first Monday of this month. Twelve weekly lessons are being given each Monday night at 7 o'clock sharp. K.O.R.C. members may join for 50 cents. Husbands and wives are invited to join, dues for nonmembers being $1.50. Harris Tuttle again heads the group as president. Applications for membership should be sent to Harry Irwin. . . . The last of the K.O.R.C. Men's Golf Tournaments was held on September 20th.

*Left: a tense moment in the K.O.R.C. final golf tournament, September 20th; right: checking it over during the interplant golf tournament, September 28th*



*"SCINTILLATING RIPPLES"*

*By J. H. Wilbourn of the Eastman Kodak Stores, Dallas, Texas*

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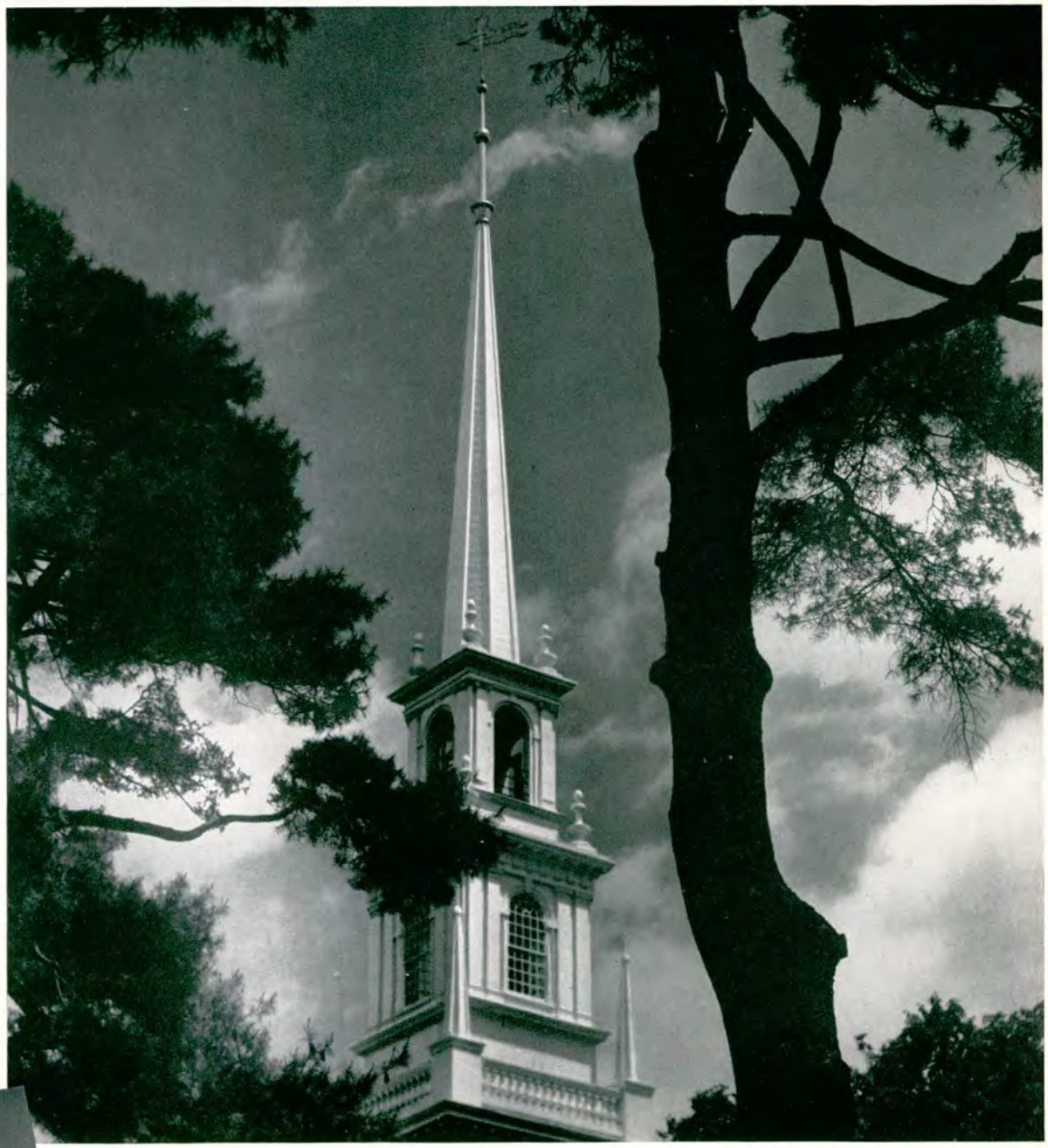

*"An unusually wide range of tones faithfully recorded by Portrait Pan. Its great latitude, plus complete dependability, makes this my favorite film when a single emulsion is to be used under a wide variety of conditions. The church is the Harvard Memorial. Exposure, 1/50 second, at f/16; Wratten K-2 filter."* RICHARD CARVER WOOD

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**EASTMAN PORTRAIT PANCHROMATIC FILM,** with which Mr. Wood made his picture, is ideal for portraiture by daylight or tungsten; landscapes, marine scenes; accurate monochrome renderings of colored objects. Supplied in sheets.

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*This advertisement appears in the November issue of "Popular Photography"*