

# KODAK

*A Magazine  
for  
Eastman Employees*



**"Portents in the Sky"**

**APRIL \* 1943**



“Dogwood”

**IN  
THIS  
ISSUE**

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\*Top award winner in a *Pictures* (Company publication) contest went to Miss Dorothy N. Davis, of Pasadena, California, for this dramatic star picture. Three 20-second exposures at 4-minute intervals and one 12-minute exposure is Miss Davis’s recipe for the victory dots and dashes, respectively. “Portents in the Sky” was reproduced in March 26th *Kodakery*

# KODAK

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## We Are Producing for Victory!

That was our job in 1942, as it is for the duration. . . . Presenting some active-service "close-ups"

"Kodak is synonymous with photography—and photography has many vital military and industrial applications in wartime. Yet . . . Kodak production is not limited to photographic materials and equipment. For Kodak is making all resources count. Kodak production is highly diversified, and this Rochester industry is an outstanding example of what we in the armed services mean when we refer to conversion. Your skills and manufacturing techniques now are devoted to the production of many items completely foreign to you in peacetime. This is the fruit of co-operation with your Army and Navy begun more than two years ago."

—Brigadier General Herman W. Schull, Ordnance Department, U.S. Army, in his presentation address at the Army-Navy Production Award ceremonies, August 17th, 1942.

### Kodak Helps America to Produce "Enough and On Time"

FIRST POLAND, then Norway and Denmark, then Holland and Belgium, then France.

One after the other they shuddered beneath the roar of the Nazi dive bomber. One after the other they broke under Germany's relentless mechanized might.

And their fall sounded a warning that echoed the world over:

There is no time to lose!

America's war production—the planes, the ships, the tanks, the guns, the myriad weapons of combat—yields many an inspiring answer to that warning.

"Beat the schedule" is the slogan at Kodak as in other war industries.



**Photography** as an implement of aircraft-manufacture: the Eastman Matte Transfer process. At the top, a machine laminating the photosensitive material to metal sheets. At the right, inspecting master templates made by the photographic process that has expedited the pattern stage in producing planes. Below, the finished product: in this case a North American B-25 bomber, the type that raided Tokyo





**This intricate** computing mechanism receives data from the height-finder and other sources . . . and directs the aim of anti-aircraft guns. It contains 25 high-precision subassemblies made by the Company. Eastman optical departments also provide "optics" for telescopes like those shown on the director Press Association

More, Kodak products—developed for peacetime purposes, potent in war—help other war industries in the race against time. Four of many possible examples:

*Kodak's Matte Transfer process* slices by two to four months the production-time of a new airplane;

*Kodak's X-Ray Films* speed the inspection of raw materials and finished parts—while allowing for more rigid, sure inspection;

*Kodak's Spectroscopic Plates* lop hours off testing time for the metallurgist;

And *Kodak's many types of film*, both still and movie, find a diversity of timesaving uses in the nation's war plants.

### **Kodak Helps to Smash Enemy Bombers Out of the Skies**

DEADLY ACCURACY of anti-aircraft fire is due to the use of elaborate height-finding and aiming devices. The anti-aircraft batteries must detect and hit targets that fly several hundred miles an hour. Two highly complicated instruments take the guesswork out of this all-important task, enable, for instance, a battery of four guns to fire a hundred aimed shots in one minute. The instruments: the stereoscopic height-finder, and the director, or "mechanical brain."

Brigadier General Walter P. Boatwright, internationally recognized

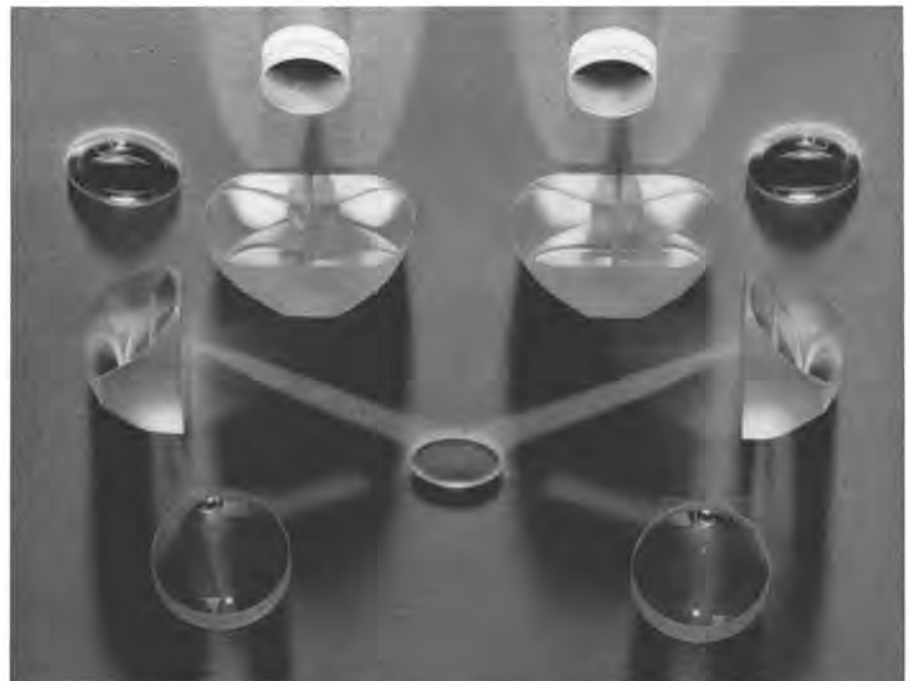
gunnery expert, terms the height-finder, "the most difficult optical instrument to make." *Kodak is among the few companies in the world that are equipped to produce a military height-finder, delivered its first one to the U.S. Army on September 24th, 1941, ten months ahead of schedule. A Kodak height-finder is shown "on the job" on pages 8 and 9.*

The director, or mechanical brain, automatically computes, from data received from the height-finder and other sources, the right direction for pointing the guns; and it transmits this data electrically to dials on each gun. To point the gun in the proper direction, it is only necessary for members of the gun crew to move the gun until two indicators on each dial coincide. *The mechanical brain has 25 high-precision subassemblies made by Kodak on subcontract.*

### **Kodak Helps Our Fighting Forces to See Farther, Better**

A PICTURE doomed the German battleship *Bismarck*. From his reconnaissance plane high over Dobia Fiord, Norway, an RAF observer trained his camera on the waters below, released the shutter. All in the day's work for the cameraman—but the beginning of the end for the 35,000-ton *Bismarck*. For, the resulting picture revealed her to be about to weigh anchor. Shadowed from her hide-out by British reconnaissance planes, a few days later the pride of the German Navy was sent to the bottom—with no tears of regret forthcoming from the men who man our precious convoy vessels.

In this fast-paced, far-spread war, aerial reconnaissance is of primary importance. *Without Kodak aerial film, Kodak photographic papers,*



**These** are the optical elements of a pair of Army binoculars. The Company's diversified optical products for war range from complex and complete fire-control instruments to precision parts and sets of parts. See also pages 8 and 9

*Kodak chemicals, Kodak aerial lenses, the "eyes" of our fighting forces would be handicapped indeed.*

*Aerial lenses of Kodak's rare-element optical glass, giving greater speed without loss of definition and covering power, have stepped up considerably the effectiveness of our aerial photography. Thanks to this, the first basic discovery in optical-glass field for more than half a century, our aerial cameramen can do their jobs from a safer height, at the same time obtain better pictures.*

*Among the highly interesting and most important wartime uses of Kodak Infrared Film is detecting camouflage. Natural vegetation shows up almost white in a photograph by infrared. Imitations of nature can, and do, fool the human eye and the camera using ordinary film—but in infrared photos these imitations show up dark, all but screaming for the bombardier's attention!*

*Not in the air only, but on land and on sea, wherever America's might moves, photography's "out front." In firing line, in proving ground and training camp, in medical laboratory, in the all-important factories that make the materials of war, photography—the products that the men and women of Kodak make—is serving, night and day.*

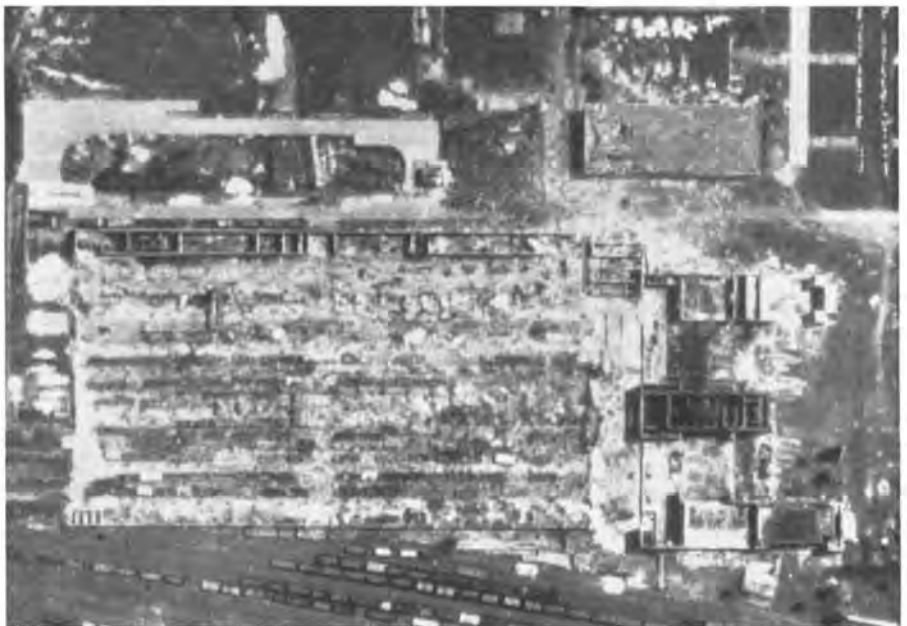
### **Kodak Helps Americans to See Our Boys in Action**

FROM ALGIERS to Washington in seven minutes—that's getting the news of Africa's sandy battle front while it's "piping hot." News, too, that's told as only pictures can tell it.

To Washington in seven minutes, and thence, at the flick of a switch, to newspapers in scores of American cities speed the vivid combat photos, at the rate of an inch a minute, by electrical impulses traveling 186,000 miles a second!

Linking in this modern miracle the cameraman on the battle front and your daily newspaper is the Associated Press Wirephoto method of sending pictures by radio and wire. Evolved in peacetime, with Kodak's help, the system is now at such a high pitch of perfection that the transmitted picture can scarcely be distinguished from the original print.

*Now in wartime, a rapid-processing Kodak film, Kodak photographic paper, and a special Kodak lens are*



**Before and after** with the RAF. A Cologne rubber factory, shown in these British pictures made on reconnaissance flights, was one objective of the thousand-plane raid. . . . Photography keeps the record Press Association

*playing a vital part in Wirephoto's job of keeping America abreast of the news as it's being made, overseas and at home.*

### **Kodak Helps to Train Our Eagles for Combat**

SECONDS, and fractions of seconds, count when meteor-fast fighter planes roar into to-the-death combat. Keen must be the eyes of the pilots—keen and sure. No time now for anything less than the know-how.

Thanks in part to that ingenious device, the gun camera—first made by Kodak for World War I aviators—our fighter pilots have that all-

important know-how long before they confront Messerschmitt or Zero. In mock dogfights, planes are tested against each other for speed and maneuverability, triggers of gun cameras pulled whenever the opposing plane offers a target. The resulting photographs show where hits would have been made if "live" ammunition had been used. And a time-recording device shows on the film the exact time when the first vital shot was fired.

*Kodak gun-camera film is helping equip America's eagles with the all-*

*(Continued on page 11)*

## The First Eastman Factory



The first Eastman factory was a rented room on the third floor of the building shown on this page. Here, at 73 State Street, in early 1880, George Eastman launched a photographic-dry-plate business—with one assistant, who did the routine work during the day. Mr. Eastman worked at night—often through the night—after a full day's work at his regular job as bookkeeper in the Rochester Savings Bank. Sometimes, he would catch a brief nap while the chemicals were “cooking.”

Such was the modest beginning of the Eastman Kodak Company. Such was the first Eastman factory, in the rented room (X) over the Martin Music Shop, at 73 State Street, in the year 1880.

Ten years later, Kodak Park was born, as a 4-building, 10-acre plant, on land known as the Boulevard Farms.

Only three of the Park's first buildings—it was called the Boulevard Plant in these early days—appear in the 1892 picture at the top of the opposite page. At the left in the picture is Building 3, the first Emulsion Department; at center is Building 1, the first Powerhouse, and the home, too, of the drafting room, carpenter shop, machine shop, electrical shop, stockroom, and office; at right is Building 2, the first Film Coating and Packing Dept. Building 4, the first laboratory (and now the Camera Club headquarters), is hidden behind Building 3. The name, Kodak Park, was painted on the fence a few days before the Memorial Day visit of Benjamin Harrison.

In center picture, taken in 1891, a whole day's fuel supply for the Park is about to jog down the avenue, from the lumberyard that fronted the first Eastman building on State Street (see also *MARCH KODAK*).

In bottom picture, taken about 1895, Kodak Park is beginning to “spruce up” considerably. In that year, employees of the Company at Kodak Park numbered about eighty.





# KODAK PARK

*In the  
Early Days*



# Panorama

## COPPER PRECIOUS

**I**N A SINGLE MINUTE OF COMBAT, a flight of fifty fighter planes shoots away seven tons of copper. A 37-mm. antiaircraft gun uses up a ton of copper every twenty minutes it is in operation. Six hundred pounds of copper go into every medium tank and a ton into the engines and air frame of a Flying Fortress. The Signal Corps alone needs 5,000 tons of copper every month for radio and telegraphic equipment. An Army without copper would be an Army without speed, maneuverability, communications, or fire power. It would not last a day in battle.

For success in battle we are equally dependent on all the other basic metals.

### Think First!

The worker in a war plant has much information that the enemy would like to have, the Office of War Information pointed out recently, in urging: *Think Before You Talk!*

As a way of deciding what information about the war can and what cannot be discussed, the OWI suggested that every person apply the following test:

1. If you *heard* it from someone—don't repeat it!
2. If you *saw* it yourself—don't tell about it!
3. But if you *read* it in a newspaper or magazine, or heard it over the radio, then it is public property—and you can talk about it as much as you want.

The last provision, of course, does not apply to what we read in letters, particularly letters from soldiers.

There obviously is not a spy behind every fence or post, but the arrests that have already been made by the Federal Bureau of Investigation leave no doubt that spies are operating in this country. And what do these spies want to find out?

They want to learn where our soldiers are stationed; how many

of them there are; and what their equipment is.

They want to find out where our antiaircraft defenses are, what plants are camouflaged, what our gun emplacements and harbor defense are like.

They want to know where our important war plants are located, what they are making, whom they supply, and how production is faring.

They want to know how good our tanks and planes and other munitions are—"let's make them find out on the battle fronts," suggests the OWI.

They want to know when ships are leaving.

They want to know what you and your friends—the war workers, the soldiers, and the sailors—are doing.

If you say that your brother is a soldier and has been transferred from an inland camp to an Eastern port, that casual remark might very easily be the cause of his and his comrades' going down with their transport at sea.

If you discuss the war equipment you are making, it may be sabotaged before it reaches the men who need it.

The OWI upholds our right to discuss the war, but reminds that the security of the nation—of each worker and his friends and relatives—depends upon our being careful of what we say. Let the spies work for their information. Why help them?

**THINK BEFORE YOU TALK!**



**They've got more important places to go than you!...**

**Save Rubber**

**CHECK YOUR TIRES NOW**

SALTER  
STIMMER

# Fifty Years' Service *Is His Record*



Fifty years at Kodak and some fifty-three years in the photographic industry is the proud record of Frank J. Meyering, of the Paper Service Department, Kodak Park. Mr. Meyering marked his half century at Kodak on the eighth of this month. He is the fourth member of the Company in the United States to serve for that length of time. The other holders of this notable record have been: George Eastman, founder of the Company; Fitz Henry Boyer, who worked at Kodak Park; and Irving F. Hoyt, who worked at the Kodak Office.

**H**ALF A CENTURY AT KODAK was rounded out by Frank J. Meyering, of the Paper Service Department, Kodak Park, on the eighth of this month. He is the fourth member of the Kodak organization in the United States to achieve that remarkable service record.

"There were just four or five buildings on the Park when I got my job testing Solio paper, which was put on the market in the previous year, 1892," Mr. Meyering recalls, "and there was plenty of farm land all around. Why there even was a fine stable close by, just where Building 36 is today as I remember. Yes, the Upton Stables were well known in their day. Vitello, the famous trotter, was raised there. His picture was on display at the Chicago World's Fair the year I came with the Company. Well, I've seen the farm lands broken up for new buildings, and I've seen the stables go—and I've seen the Park pay roll shoot up from about seventy employees when I started to thousands today. And I've loved every minute of it!"

This tall, broad-shouldered Kodak veteran was born in Rochester and attended school here. His first job was running errands for a merchant tailor. Then he went to work for the Yawman & Erbe Company, on the brasswork for the old No. 1 and No. 2 Kodaks. In early '92, he got a job with another photographic firm, remained there until he came to Kodak Park. "So, you see, I've put in about fifty-three years all told in the photography business," he emphasizes, with a smile.

## Well Represented

"The Meyerings have been fairly well represented at Kodak down through the years," he relates proudly. "My oldest brother, Reinhard, was one of the first regular photographers that Mr. Eastman employed. Another brother, Henry, worked at State Street; and my brother Bernard retired in 1928 after 42 years' service. He had charge of film spooling. My sister, Elizabeth, worked at State Street. Then there's Fred Meyering of Building 48. He's my nephew."

Mr. Meyering likes to remind you

that he was a ladder-and-hoseman in the Park Fire Department for 39 years—from 1893 to 1932. "All hand-drawn equipment in the early days, of course," he adds, with evident regret for the bustling practice sessions that took their full measure of speed and brawn. And he chuckles as he remembers the New Year's Eve when he dashed to Kodak Park in answer to an alarm. "When I got there, I discovered that it was a 'false'—just something gone haywire with the circuit." The chuckles come faster and deeper as he assures you that he answered five alarms in all on that festive night, "every one of them false," and ended up as jaded as any reveler.

Flower raising and traveling have always been Mr. Meyering's favorite leisure-time pursuits, "although back in the early days we didn't have quite as much spare time as now, working as we did from seven to six daily except Sunday." He doesn't do nearly as much gardening as he used to, guesses that "it will be vegetables instead of flowers for the duration." But he has raised 96 different species of rose—his favorite flower. "Whenever a new rose came out, I never rested until I had it," he confesses.

## In World War I

Up to 1905, Mr. Meyering was the only tester of photographic papers at the Park. In that year, the department expanded and he had charge of testing, under James H. Evanoff, up to 1938. In World War I days, he was responsible for final tests on photographic papers for Army uses. Since 1938, his department has been located in Building 57.

Mr. Meyering has received the third gold medal to be presented at Kodak for half a century of service. Previous recipients have been: Fitz Henry Boyer, who entered the Company's service in 1889, spent most of his working years at Kodak Park; Irving F. Hoyt, who came to the Eastman office in September of 1889, was credit manager of the Company for many years. Mr. Eastman was the first member of the Kodak organization to attain the 50-year-service mark.



Press Association

**An M-12 panoramic telescope**, used to sight this modern beach-defense gun in Hawaii, is seen mounted on the gun, and also in close-up. The Company manufactures the M-12 in large numbers

# "ON THE



**Eastman Acetate Sheet**, a product akin to the celluloid, forms eyepieces of tank goggles and civilian gas masks; and here it is seen on field service as a map



Press Association

**The Army Signal Corps** is a producer of motion pictures on a large scale. Training films are the product of its cinematographic activities. The soldiers in this picture are editing film, Hollywood fashion

8

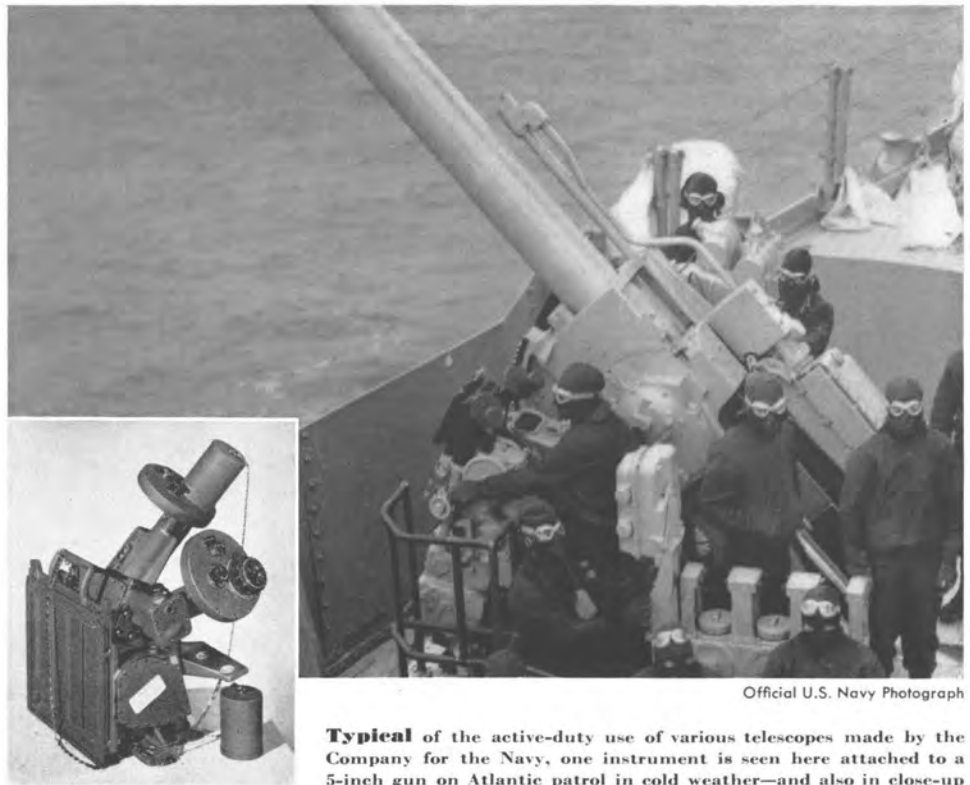


**An Eastman height-finder** on guard against air attacks, the height-finder determines for a near-by air

# E JOB"



...e base of photographic film, finds various war uses. It  
...ks; it is employed in the process of drawing military  
...ap-covering upon which plans can be sketched



Official U.S. Navy Photograph

**Typical** of the active-duty use of various telescopes made by the Company for the Navy, one instrument is seen here attached to a 5-inch gun on Atlantic patrol in cold weather—and also in close-up



Photograph by U.S. Army Signal Corps

...raiding enemy. Most complex of military optical instru-  
...tiaircraft battery the precise position of hostile planes



Photograph by U.S. Army Signal Corps

**A 37-millimeter** antitank gun, mounting an M-6 telescope for aim, on guard in an Alaskan mountain pass, ready for any contingency. The M-6 is another telescope made in quantity by the Company

# The Editor's Page

## SOME KODAK POLICIES

*A talk by Craig P. Cochrane, industrial-relations manager of the Company, on "Musical Pictures," March 12th*

**T**ODAY, Kodak men and women throughout the Western Hemisphere received their wage dividend checks. This payment has been made every year since the plan was established in 1912, except for one year during the depression. The total amount involved in today's payment was nearly 2½ million dollars.

There is no particular point about today's payment. There is no special significance about its being the 31st of its kind.

It is of interest because of what has happened in the period of more than 30 years since that July 1st date in 1912 when the first wage dividend was paid.

In these years the country has passed through one world war and is in the throes of another. It has passed through three periods of depression—one the most severe of modern history. The last ten years has been a period of increasing interest in measures dealing with economic and social matters.

But it is not always realized to what extent industry, in many instances prior to ten years ago, has pointed the way by constructive action in measures for employees' interests.

I am choosing Kodak as an example because this is a Kodak broadcast and because I know Kodak. But the Eastman Company is not unique in this respect and many other companies have similar plans.

While Company management has been the "spark plug" for action, progress would have been impossible without the effective help of those in supervisory jobs and of the men and women who make up the working forces of our plants and offices. No unsuccessful business can do very

much for its employees. No business can be successful very long without effective personnel.

Kodak was making its plans more than 30 years ago. Its accident-prevention program started in 1911, followed in 1912 by the wage dividend, and two years later by a full-time

medical department. It had recognized the value of the ideas of men and women on the job by the organization of a suggestion system in one of its plants as early as 1898. Its plan for allowances to those absent because of illness is more than 20 years old. It started a group-life-insurance, retirement annuity, and disability benefit plan in 1929. Approximately 1500 people have received payments under the retirement and disability benefit provisions.

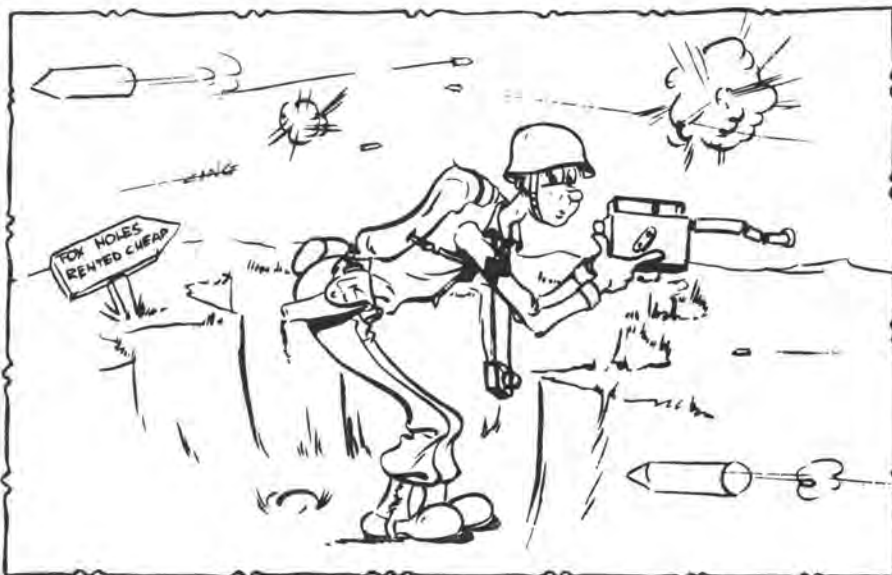
The Company thus entered the depression period of the early 1930's with all these plans in operation. They were continued through the depression and they are still in effect.

In the last ten years the Company has continued its close attention to the planning of schedules to reduce irregular work caused by seasonal conditions. Steady employment is one of the most important needs of everyone who works for a living. Together with a number of other Rochester companies, a voluntary plan for unemployment benefits was established. This, however, has now been supplanted by the State Unemployment Insurance Law. Group-life-insurance coverage has been increased and the paid-vacation plan extended to all those with a year's service.

The Company's conversion to war work has not changed this program.

Behind all these tangible examples is a less tangible one, but perhaps an even more important one—one that can be brought about only by the spirit within a company itself, that is, the realization that every person in its employ is entitled to fair and considerate treatment.

I can think of no better way of closing than to quote a paragraph appearing over the signature of Mr. Lovejoy, chairman of the Board, in the booklet given to all of us in Kodak. It reads: "We expect that all those in the Company's employ who exercise supervision over the work of others shall endeavor at all times to treat those under their direction as they themselves, under the same circumstances, would rightfully expect to be treated if the positions were reversed."



**Real are the perils** of the war photographer—and here's how Corporal Max Osborne, now "Somewhere in Africa," and formerly of the Salt Lake City Store, presents them for KODAK

## Producing for Victory!

(Continued from page 5)

important know-how that is chalking up victories on every front.

### Kodak Helps Our Bombers to Find Their Targets in the Night

IT IS GROWING DUSK. All round the borders of the field motors are starting up. Propellers turn over, catch and throw back the last rays of the sun. The turning discs look like waving corn, red exhaust flames glow behind them—the air is filled with a grumbling throb.

At first ungainly, then with a sudden grace as it leaves the ground, the heavily loaded bomber clears the trees as its undercarriage retracts and it disappears into the darkening sky.

Regularly every minute a machine takes off. In half an hour they are all gone. After the roar of the past hour, the station seems uncannily quiet.

The ground crews move away to the canteen. Only in the operations room is activity still intense. The course of the raid is followed on the plotting table in a silence broken only by the voices on the telephone.

Five hours pass and then far in the distance there is the faint drone of motors. . . .

In the darkness of the night, they've made it. In the darkness of the night, they've bombed it—hard and true. In the darkness of the night, unerringly, they're home.

Among the incredibly efficient instruments that enable the aerial navigator, flying in dead of night, to tell the pilot at any given moment the exact position of his plane is the astrograph. *First designed and produced by Kodak Limited, for the British Government, and now in quantity production at Kodak in Rochester,* the astrograph reduces to ABC simplicity the determining of position throughout the flight. However thorough the enemy's blackout, however dense the clouds between plane and ground, with this high-precision Kodak instrument our bombers can unerringly locate their objective.

Then there's the drift meter, also in production at Kodak, which tells the navigator the "drift" of his plane—the degree to which the wind

### KODAK WAR HEADLINERS\*

**Photographic**

Aerial Camera	Aerial Lenses	Aerial Film	
Stereoscopic Trainer	Photolithographic Aids	Recordak	
V-Mail Equipment and Supplies	Equipment for Mobile Darkrooms		
Cameras	Lenses	Other Optical Equipment	Films
X-Ray Films	Photographic Paper	Chemicals	Etc.

**Non-Photographic**

Height-Finder	Aiming Circles	Other Fire-Control Instruments
Astrograph	Drift Meter	Interplane Communication Subassemblies
Gun Sights of Various Types and Sizes	Gunnery Training Apparatus	
Special Large-Size Military Fabrications	Various Precision Devices	
Eastman Acetate Sheet	Kodapak	
Special Research for Military Purposes		

*\*In addition to the products listed, there are many others in production at Kodak, the nature of which forbids our naming them at this time.*

**Note: Substantially all of the Company's total output in Rochester is now produced for military and naval uses, or for industrial, commercial, and civilian uses recognized by the Government as essential.**

affects the direction of flight. This instrument is also used to establish the plane's ground speed as compared with its air speed—highly important information on a bombing mission.

### Kodak Is a Fighting Force, Each Employee a Soldier

" . . . I SPENT LAST WINTER in Europe, noting the use to which airplane photographs were being put. I was astonished at the wide use of airplane photography in comparison with that in the last war. To contrast with every one-half dozen pictures used in the last war, they are using perhaps a thousand today, photographing enemy army and navy installations, troop movements, fortifications, and results of bombing operations.

"Wars are fought nowadays on very elaborate plans, and these plans, in most cases, are made from airplane photographs. You can't run to a filling station to get maps suitable for war use. Every bombing mission operates using photographs to show the pilot the bombing objective. . . .

"The Army Air Forces thoroughly appreciate the research and production by the Eastman Kodak Company

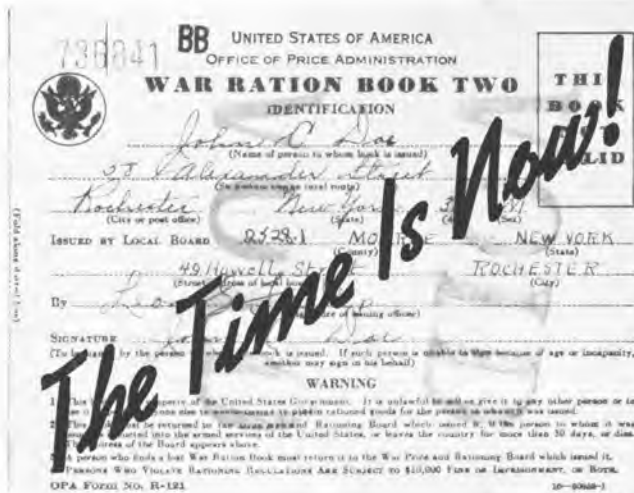
that make possible the production of aerial cameras, lenses, photographic film of all types, photographic papers, and photographic chemicals. As an example, your waterproof paper is another useful thing. We used to spend hours drying prints; but the new waterproof paper doesn't have to be dried. This can save a great many minutes, and minutes can save many lives.

" . . . Standing before you people who are supplying these things that we need is no different from standing before a regiment of infantry troops. . . . You are no different from troops right on the firing line. Your efforts are every bit as important."

—Colonel George W. Goddard, U.S. Army Air Forces, speaking at the Army-Navy Production Award ceremonies, August 17th, 1942.



The illustrations for these "close-ups" are from the 1942 annual report (reviewed in March 26th *Kodakery*). A limited number of copies of the report is available to employees, on request, at the Industrial Relations Department, Kodak Office.



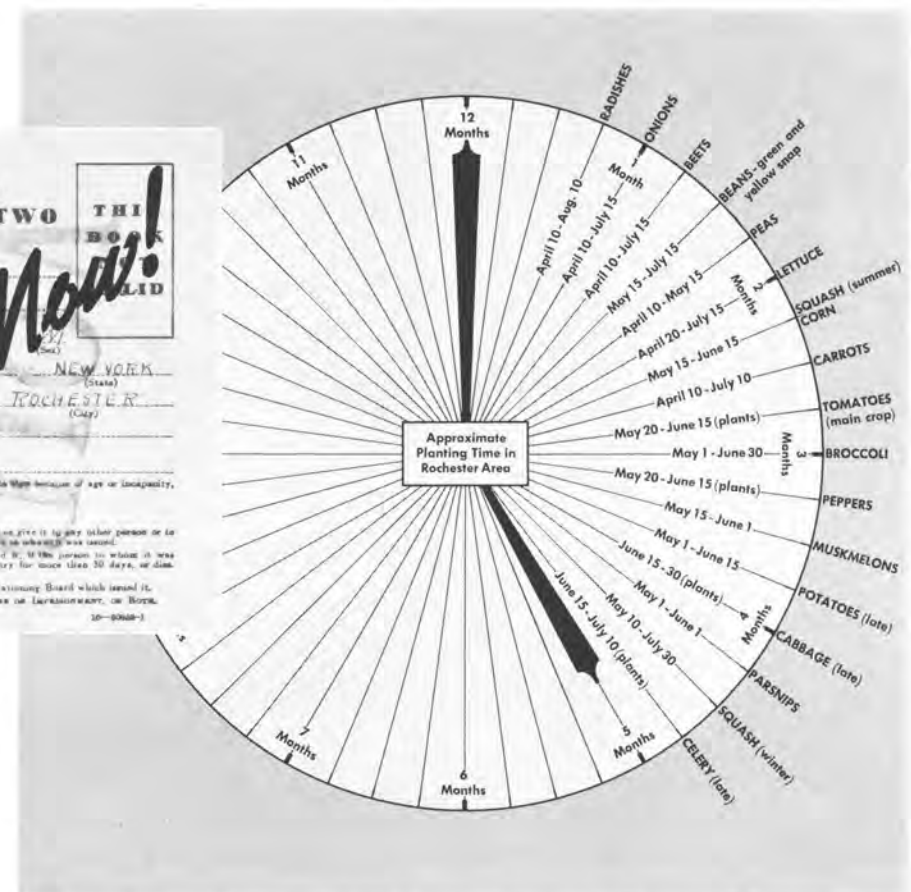
Your ration coupons will buy only 33 pounds of canned fruit and vegetables for 1943. How much more do you need?

**T**O DIG, OR NOT TO DIG?"—Is that your question? Before you tear up the front lawn, the tennis court (or even the driveway), remember that *victory gardens* must be *efficient* gardens.

At least five hours of direct sunlight a day are prerequisite to successful results. Eight are better. On the average city lot, better check shadows thrown by the house, the garage, and that nice little tree you planted midway down the yard five years ago. Remember? Good drainage and reasonably good soil are also



"Do I plant each seed on end, or lay it on its tummy?" © King Features



**Clocking.** approximately, the number of weeks and months that must elapse between planting and eating times

essentials. A little preliminary thought will pay big garden dividends. Don't waste seed, fertilizer, spray materials, or time on an area unless it is suitable for a vegetable garden.

The area you've selected is suitable? Good!

It is possible that the size of your garden is definitely limited by various factors over which you haven't much control. But if it is not, and if you're fairly new at this victory gardening—as who indeed isn't?—it is suggested that you don't try to use a space larger than can be dug and prepared in the equivalent of a two-day week end. (A 30 by 50-foot plot, with careful planning and the use of successive crops, will supply a family of four with sufficient daily vegetables, as well as with a limited winter surplus.) With a space this size you will be able to fertilize, plant, cultivate, spray, harvest, and conserve the results of your labor by working faithfully an average of one hour a day. Only in the degree to which you carry your project through, of course, can you measure your success as a victory gardener.

Charts, graphs, and garden layouts for plots of various sizes seem to pop up everywhere. We'll not go into those here. Pick out the general size and plan that most nearly fills your needs, tailor it to fit, and start in.

**Soil Right?**

You will need to consider your type of soil—whether it is heavy clay or sandy loam. If it seems to go too far in either direction, a good application of organic matter—well-rotted manure, leaf mold, or other decomposed plant material—will be a decided help.

Organic matter tends to break up clay soil, making it lighter and more friable or workable, and to prevent heavy soil from baking and cracking during dry weather. It improves drainage. It also helps to prevent sandy soil from drying out unduly. This wonder-worker only supplements—it does not take the place of—commercial fertilizer or lime.

Most of us connect the use of lime with acid soil—perhaps we've even given a light top-dressing of it to our lawns when greenish, mossy patches



**Spraying** with nicotine sulphate or a four per cent nicotine dust controls aphids and plant lice and is part of the gardener's routine. In the vegetable garden, tomatoes may be staked up or allowed to wander at will. Staked plants, requiring less space and producing somewhat larger, cleaner fruit, although in slightly smaller quantity, may be an ornament in the garden. We're even going to stake a few among our flowers this year—but not near the petunia bed, since we've learned that petunias are host of a mosaic disease that attacks tomatoes

began to appear. It should be used in the vegetable garden, however, only when it is definitely needed—an actual soil test to find out is best. We're told that here, in Monroe County, we don't need to worry too much about either acid or alkaline soil. If beets grow well and quickly, it's a pretty fair indication no lime is needed.

The chances are that in and around Rochester you *will* need fertilizer on your vegetable garden. You may not be able to get the more familiar 5-10-5 combination of nitrogen, phosphoric acid, and potash this year, but you can undoubtedly get the Victory-Garden Special 3-8-7 fertilizer. This should be worked in at the rate of three to five pounds per 100 sq. ft.

Your choice of vegetables will be guided by your family's preferences;

but, in any limited space, you will want mainly vegetables that are rich in vitamins and minerals, and that are rather easy to grow. Leave the tall, shade-throwing corn and the sprawly, space-consuming vine plants to those gardeners who cultivate larger areas—and who, we hope, will know enough to keep the corn on the north or west side of the garden, and the vine crops and those requiring all season to grow at one end, by themselves.

#### Plan Ahead

While the digging is going on—or even before would be better—get or make a piece of graph paper and lay out your garden on it, keeping in mind second or succession plantings or crops, so that you will have a continuous supply of fresh vegetables

from early spring to fall. You might also plan to use rows of quick-growing vegetables between rows of slower-growing crops. The former can be harvested and out of the way by the time the latter need the additional growing space. Remember, too, to run your rows north and south if possible—to give all crops the maximum amount of light. If your garden slopes, however, or is somewhat hilly, you can make better use of the natural rainfall by running the rows across the slope and by “following the contour” of the hills.

Don't plant your seeds too deeply. About four times the seed's smallest dimension is deep enough—a tiny seed should go about an eighth of an inch deep; a bean, about one to two inches deep, and so on. Also, don't

*(Continued on page 16)*

A GUIDE FOR FOOD PRESERVATION FOR 1943—FOR ONE PERSON			
<b>TO STORE</b>			
<i>Root Vegetables</i>		<i>Leafy Greens</i>	
Carrots	30-40 lbs.	Cabbage,	
Onions	10-20 lbs.	Chinese Cabbage,	
Parsnips, Turnips,		Endive, Swiss Chard,	
Rutabagas, Beets,		Kale, Beet and	
and Others	50 lbs.	Turnip Greens,	
		Wild Greens	30 lbs.
		<i>Legumes</i>	
		Dried Peas and Beans	
		(Also Lima, Soy,	
		Snap, and Pea	
		Beans)	7-15 lbs.
		(Dry)	
		<i>Fruits</i>	
		Apples	2-4 bu.
		<i>Other Vegetables</i>	
		Potatoes	2-4 bu.
		Winter Squash	25 lbs.
<b>TO CAN OR BRINE</b>			
Tomatoes (or Citrus		Sauerkraut	6 qts.
Fruit)	18-30 qts.	Other Leafy	
Corn	5 qts.	Vegetables	4 qts.
		Peas, Shelled	
		Beans	5 qts.
		Snap Beans	5 qts.
		Peaches, Pears, Cherries,	
		Plums, Rhubarb,	
		Berries, Grapes	
		(Fruit or Juice)	35 qts.

**These figures**, from N.Y. State College of Home Economics, are based on one or more servings daily of fruits, leafy green or yellow vegetables, and potatoes; one or more servings weekly of dried peas or beans; and five to seven servings weekly of tomatoes or citrus fruits

# PLASTICS *in the War*

**They find a multiplicity of uses in the march to Victory!**

**I**N WAR AS IN PEACE, necessity is the mother of invention. Wartime needs have so stimulated the development of plastics that peacetime users will reap a tremendous benefit when the war is over. The new battleships, for instance, have more than 1,000 different plastic parts; while in the Army, plastics are being used for everything from portable ponton boats to drilling jigs.

The aluminum canteen, in use since 1910, is being replaced by a stream-

lined plastic canteen. Plastics are replacing rubber in such lowly articles as "G.I." shaving brushes and combs. Soldiers now awaken to a pleasant "Good Morning" blown on new plastic trumpets made of cellulose acetate, which save 20 ounces of brass for each trumpet and have a much better tone.

Plastic fuzes are now being used instead of aluminum in firing trench mortars. Plastic components are now used on shells and bombs, and provide false windshields on 37-millimeter armor-piercing shells. Plastics go into the manufacture of Army

truck parts, knife handles, mess kits, inkwells, and billions of buttons. Plastic liners for steel helmets add to the soldier's comfort and protection.

The plastic articles are given rigid tests and have to withstand temperatures ranging from 40 degrees below zero to 180 above. They must stand up against steam, heat, cold, and perspiration. More than 28 ounces of crude rubber are saved in the manufacture of raincoats through the use of plastics, with similar savings in hospital-sheeting and gas-protective fabrics. Cellulose acetate plastic is used in making lenses for gas masks.

Resin-bonded plywood is used to make ponton boats which are light enough to be hauled overland by Army engineers. Plastics have replaced aluminum in the manufacture of the pilot seats in many planes. A sort of "flour" made from walnut shells is mixed with oil resin and baked into drilling jigs, forming dies that will take up to 8,000 pounds' pressure per square inch under the hydropress.

## **Other Applications**

Resin pine stumps are used in some of the various plastic pipes which have been developed, while plastics also give us laminated boards, ethyl rubber, and crackproof and shatterproof materials. A shortage of rubber and aluminum led to the use of plastics in Navy binoculars. They are also used on range finders, indicators, and light reflectors.

The Army is pacing the current rapid expansion of the commercial plastics industry in adapting plastics to national defense. The Ordnance Department and the Quartermaster Corps, the two largest procurement agencies in the Army, are both cooperating with civilian research experts; and the Quartermaster Corps has recently added a Plastic Technical Unit to its Supply Division.

Chief interest of the Ordnance Department in plastics is for use as components of ammunitions. Plastic caps on certain armor-piercing shells must be accelerated, in their short four-foot trip through a gun barrel, from a velocity of 0 to 2800 feet per



**Fine fogs for fire fighters:** that's a recent application of Tenite. Nozzle jets molded of this shatterproof plastic may be used on any standard pipe or shutoff nozzle, are said to produce the finest of artificial fogs at average pressures. Tenite fog jets possess no metal or movable parts, may be attached or detached, cannot rust or tarnish, are easy to keep clean. The jets are particularly effective in fighting fires where inflammable liquids, intense smoke, and dangerous gases are present; and they have been adopted for use by large industrial plants and fire departments

second, and must at the same time acquire a spin of more than 10,000 revolutions per minute.

The terrific speed and rapid maneuverability of modern airplanes have banished the old open-cockpit days and developed instead a transparent shatterproof plastic, for windows, noses, hatch covers, empennages, landing-light covers, and rear gunners' turrets. This plastic becomes flexible at high temperatures and can be sawed or molded into three-dimensional shapes. The Air Corps is now conducting experiments which promise to make even greater use of plastics, already indispensable to its present high efficiency.

The Signal Corps, which provides the Army's extensive system of communications, has found plastics extremely useful for parts of telephones, switchboards, dynamotors, radio compasses, microphones, and other complicated instruments.

The Chemical Warfare Service uses plastic face-piece lenses made of cellulose acetate in the gas masks furnished to troops, which are said to protect wearer against any known type of war gas. Plastics are particularly useful in the diaphragm gas masks, now available for use by officers and others who must talk while wearing them. First use of plastics for lenses in masks came in 1939. Now, even the horses which carry the cavalry into battle wear them when gas threatens.



**This new Tenite** scabbard is issued to U.S. troops throughout the world, supplementing a type constructed principally of wood and leather. The Tenite scabbard is exceptionally light, yet very strong and durable, is said to be the most efficient scabbard yet developed for service in all climates

## *This Picture Was Taken When Kodak Park Was Fifteen*

On page 5 are two pictures of Kodak Park in the early days. This picture, taken in 1905, a bare fifteen years after the Park's first buildings were commenced, includes most of the Kodak Park executives of that year. In the front row, left to right, are: J. E. Cummings, F. W. Lovejoy, J. H. Haste, and P. S. Wilcox. Second row: C. Major, F. Fifield, C. F. Hutchison, E. N. Brewer, F. S. Cole, an unidentified man, A. F. Sulzer, J. Payne, W. G. Bent, and P. Favour. Rear: W. G. Stuber, B. Meyering, H. H. Tozier, A. T. Welles. Mr. Lovejoy, plant manager then, is now chairman of the board of directors. Mr. Stuber, then head of emulsion making, is honorary chairman. Mr. Sulzer, who was in charge of Powder and Solutions at that time, is the general manager of the Company. Mr. Wilcox is president of Tennessee Eastman Corporation. Mr. Bent, who joined Kodak on June 12th of that year, is general manager of European Companies. Mr. Hutchison is controller, film and plate emulsions



## **“That Confidence Has Been Justified”**

*These are the concluding paragraphs of the annual report submitted by Mr. Lovejoy and Mr. Hargrave to the stockholders of the Company*

THE PRESENTATION of a report covering the financial operations of the Company does not, and in a sense can not, give an adequate picture of how the results were achieved. The Company is now operating at the peak of its enhanced production capacity. Its war-time commitments were very greatly increased during 1942. At the beginning of the war we pledged our unreserved efforts to the service of waging total war and winning total victory. Such pledge could not have been honorably given had it not been founded upon complete confidence that the individual members of our organization would exert every effort to see to it that the pledge was fulfilled. That confidence has been justified.

The war-production results of last year were due, not to a few, but to the thousands of Kodak people, both here and abroad, who worked cheerfully and diligently, who sacrificed more, and who thereby gave their individual answers to the enemy. Their accomplishments record their patriotism and loyalty. The efforts that they have made attest their support of those who are enrolled in the armed services. All of us in Kodak are particularly proud of the 7,000 of our associates from the United States and Canada who are now serving their country in uniform, and of the many others who have entered the services from our associate companies in other allied nations. To all these service men and women, we on the home front send best wishes and good luck.

## **Artillery on Wings**

Bombers, the backbone of the Army Air Forces, are heavy artillery on wings, designed to carry destruction to the enemy's industrial areas, to transportation, lines of communication, and other vital points.

Aerial bombing as an organized weapon of offensive warfare was born in World War I. In the first year of the war, the few planes in action were used almost exclusively for observation purposes, and were not even armed. Pilots of opposing sides often would wave to each other in passing. As bitterness increased, the fliers took to shooting at each other with pistols. Then came machine guns. The military plane had become a fighting machine; and the next logical step was for the pilot to take along a load of bombs on every mission and heave them out when over likely enemy objectives.

The first bombs were ineffective, and bombsights, when used at all,

were crude, so that the results were pretty much on a hit-or-miss basis—more noise than damage. Before the end of the war, however, the bomber, a heavy and sturdy plane, designed solely for the bombing of enemy objectives had made its appearance, and it was decidedly an important factor. The United States Army entered on a program of mass production of bombers, principally the USD-9A De Havillands. On October 2, 1918, the Army Air Corps ordered 6,000 of these day bombers. The order was never filled, however, and only one finished plane of this model was shipped to France before the Armistice was signed.

After World War I, the Army Air Corps continued building and experimenting with bigger and better, harder-hitting bombing planes. In 1921, a Martin Bomber, in a test off the Virginia capes, dropped a ton of bombs on the obsolete battleship, *Alabama*, and sank it. Each succeeding year, Army Air Corps pilots

were at the controls of bombers that flew faster, higher, farther, and with a greater bomb load. The uncannily accurate American bombsight was an accompanying development.

The program of the Army Air Forces was to a great extent centered around the improvement of heavy bombers, with the result that America today is able to carry the air war to its enemies across both oceans.

## **The Time Is Now**

*(Continued from page 13)*

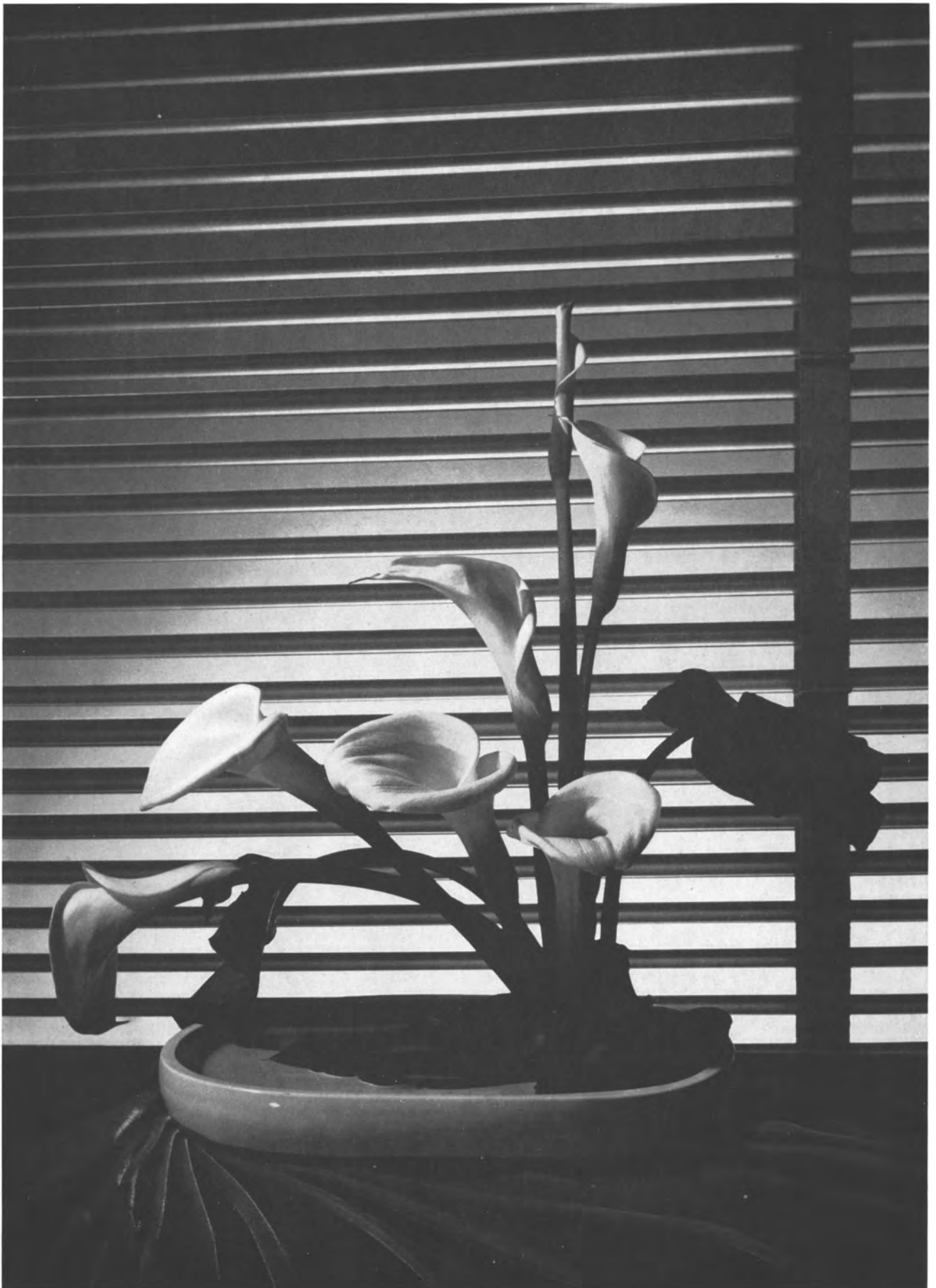
waste future time and labor by planting seeds too thickly. Poor growth and quality result from too thick plantings, unless they are carefully thinned out and transplanted later.

But if and when you do transplant, choose a cloudy day or do it near sundown. Protect the roots from sun and air, and set the plants in place quickly. Fill in each hole about half way, water well, then finish filling with earth. If the weather is very warm, shade the new plantings for the first few days with old berry boxes, cones of newspaper, or any light screen. Tomato plants should be protected against cutworms by winding a two-inch collar of tough paper around each stem—planting the paper one inch deep and letting the other inch extend above ground. Don't, by the way, pick off any lower leaves that may appear withered or wilted, for they help feed the tomato while it is becoming adjusted to its new home.

## **A Final Don't**

This begins to sound like the gardener's "ten don't's"; but one final one: Don't sprinkle your beloved garden too frequently or too lightly. That helps keep the roots near the surface, where they'll dry out quickly if you happen to skip a hot day or two. Better one good thorough soaking once a week than three or four light sprinklings. Cultivate to conserve moisture and control weeds. Spray to control insects. And good luck to you!

Your plant and office bulletin boards and future issues of *Kodakery* will carry further gardening plans and helps; and your victory gardening committees will be glad to furnish any detailed information you may need.



**"Easter Lilies"**



THE BRITISH CALL THIS VULTEE DIVE BOMBER THE "VENGEANCE". . . In the U. S. Army Air Force it's known as the A-31 . . . Each ship gets its first bomb load months earlier, due to the time originally saved by Kodak's Matte Transfer method.



## Kodak's new photographic method gets planes into production 60 days sooner

THE human hand may err, or the mind may wander. But a photograph allows no mistakes. The hand, in transferring a tedious, detailed mechanical drawing, is slow—while a photograph is quickly made.

These two facts are the key to another "industrial revolution" which has come within the last year—lopping from two to four months from the time necessary to put an airplane, of a new design, into production.

*Kodak perfected Matte Transfer Paper*—a means of applying a photographic emulsion to other surfaces. At the aircraft factory, under "safe" red light, the transfer paper is cemented to a sheet of metal—then the paper base is stripped away, leaving the emulsion on the metal.

If desired, this metal may be a sheet of structural aluminum which is used in constructing an

airplane. The metal is a "printing surface"—capable of becoming a photographic print.

In the meantime, the draughtsmen are at work on another sheet of metal, making their mechanical drawing of an airplane part. The sheet on which they work has a coating of Kodak's fluorescent lacquer. This glows, with a blue light, in the presence of X-rays—except where the pencil lines black it out.

The finished drawing sheet is exposed to X-rays, and placed in contact with the sensitized aluminum. The result is a life-size photograph of the drawing on the metal . . . Another method widely employed is conventional photographic copying and enlarging—using Matte Transfer Paper to produce a printing surface on metal.

With either method, Matte Transfer Paper brings the speed of photography—and no

IN SCORES OF OUR AIRCRAFT FACTORIES the designers make their original drawings on metal coated with Kodak's fluorescent lacquer. These are then transferred, photographically, to structural metal "sensitized" by the Matte Transfer process—metal which may be used to build a full-scale test model plane.

mistakes in transfer. Multiply the saving by the number of parts in an airplane and you have the total saving, in time and money.

For test flight, experimental models have been made from the first photographic copy and flown with fragments of the mechanical drawings showing on the airplane parts. Normally, pattern plates—templates—are made from the photographic pattern; from them on parts are duplicated mechanically.

But in any case, from two to four precious months are saved—and the planes so vital to our victory roll that much more quickly off the production line . . . Eastman Kodak Company, Rochester, N. Y.

### Serving human progress through Photography