KODAK

A Magazine for Eastman Employees

OCTOBER ★ 1943

Maps for Mars . . . another use for Kodak photographic papers (story on page 6)

IN THIS ISSUE

Keep on Backing the Attack!

KODAK

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Army Combat Cameramen in War

Colonel Kirke B. Lawton, Chief of the Army Pictorial Service, tells of that branch's work

AN AMERICAN SOLDIER crawls stealthily toward the brow of the hill. Below he sees an olive grove, verdant in the low rolling country. He snuggles closer into the underbrush and waits.

Suddenly the cough of motors starting comes to him. From the grove come clanking the iron monsters of the Nazi Panzers. And from behind him come shells that land and crash among the enemy tanks.

Cautiously raising himself, the soldier sights the instrument he holds in his hands and squeezes the trigger.

Twenty-four hours later, on the front pages of American newspapers is a picture of German tanks being routed. "Yank Guns Blast Panzers," the headline screams.

The trigger the American soldier squeezed was that of a camera.

The speed with which the American public saw pictures of the fighting in Sicily was due in large measure to the combat photographers of the Signal Corps of the U.S. Army Service Forces. These soldiers, members of the Army Pictorial Service of the Signal Corps, have been in the thick of the fighting in the hills and plains of inland Sicily.

Colonel Melvin E. Gillette, until recently Commanding Officer of the Signal Corps Photographic Center at Long Island City, N.Y., is the Army Pictorial Service representative on General Eisenhower's Allied Headquarters Staff in North Africa. In charge of the picture unit covering the Sicilian campaign was Lieutenant Colonel Robert Shaw, Colonel Gillette's assistant at Long Island City.

From the moment the American assault troops hit the beach, each combat unit was accompanied by two photographers who did their shooting with cameras. One took "still" pictures. The other was a motion-picture cameraman. These men were equipped with the best of American photographic instruments.

Official U.S. Signal Corps Photo

Aerial photographers and camera: photographed in Alaska while toting a 90-pound aerial camera, Private Jimmy Polis is flanked by two heftier colleagues, just in case

The Weapons

The still-picture photographer has two cameras—a speed job that uses a 4 by 5 film pack, and a small candid camera, loaded with 35-mm. film. The motion-picture man uses a hand-held 35-mm. camera. Supplementing this he has a hand-held 16-mm. camera and, for detail and fast-action shots, a pocket-size 16-mm. camera. On the mainland of North Africa is a still photographic "desk." As soon as pictures are received back across the Sicilian strait, photographic technicians develop and print the film.

After being checked through censorship, the pictures are rushed to the Signal Corps radio-telephoto transmitter. Within seven minutes, copies of these pictures come off the Signal Center's telephoto receiver in Washington and minutes later are on view in the War Department's Bureau of Public Relations. There the major photographic news services may take their pick.

A special production crew for handling motion-picture films also is in operation on the mainland of North Africa. Members of this crew are a director, a writer, a cameraman, and other assistants. This staff lays out the continuity, identifies the film, and puts background material on film to be used in conjunction with the battle shots.

Acting as still-photo editor in the same units is Captain John J. Smith,

Official U.S. Air Forces Photo

Their darkroom a tent in the Libyan Desert, these two Air Forces men acquire some developing know-how from Field Director Ray L. Goodridge, of the American Red Cross. Hailing from Rochester, Director Goodridge undoubtedly felt quite at home with the Kodak Portable Miniature Enlarger (left background) and Kodak Bromide Papers

former Philadelphia *Ledger* and Detroit *Times* photo editor.

Crack news photographers who recently were "shooting" for Wide-World, Acme, and Pathé News at home are among the other still- and motion-picture cameramen now covering the biggest story of their lives. The pictures they get are used for intelligence purposes, training, and as historical records of the war. Pictures which may be released to the American public flow from North Africa to the United States and are released immediately to the American press.

The Army's radio-telephoto service, which made it possible to see newspaper pictures of the assault on Sicily on the same day that the invasion was launched, will soon be in operation in the South Pacific theater of war. Personnel of the U.S. Army Signal Corps, with their equipment, are now in Australia finishing preparations for the new service.

Unbroken Link

Constant contact is maintained by the Army Communication Service of the Signal Corps between strategic control points at home and the battle fronts around the world.

In the initial phases of the assault on North Africa, communications with the United States increased the burden on facilities available by way of London. A direct tie-up with Algiers was indicated, and the Signal Corps commenced work on a "fixed" communications station, that is, a broadcasting station beamed to a specific destination and powerful enough to carry military messages back and forth between that point and the United States. Specially built equipment went to Africa on the heels of the initial landing parties.

This system of radio communication, composed of numerous channels, is capable of carrying many messages of various types at one time. Shortly after the system was placed in operation, technicians of the Signal Corps here started work on methods of using the system for telephoto transmission of pictures and printed matter, simultaneously with the movement of teletype messages.

This has great military advantages. For instance, the results of aerial photo reconnaissance can be flashed back for study with no delay, while a true copy of a requisition for equipment or other military order can be transmitted without need for the added delay of proofreading when the message is received.

The Signal Corps ordered from a private company specially made equipment for this task. Through the month of February they experimented. An experimental picture was sent back and forth between the United States and Africa 200 times, while the radio engineers of the Signal Corps sought greater clarity in the finished print by shuffling their intricate equipment. And now . . .

A Signal Corps photographer shoots an action photograph. He sends it back in a returning plane, landing barge, or a boat, where it is relayed to the transmitting station.

Here it goes on a drum that looks something like a dictaphone record. As the drum revolves, a speck of light moves across the picture, picking up the variations among the shades of light and dark. It reflects these shade variations into radio impulses of different volume—amplitude modulation, the experts call it. The impulses are processed through another machine which converts them to frequency modulation—the variations thus being cast in terms of the rapidity of the electrical impulses. Flashed back to the United States in this form, they are retranslated to amplitude modulation and thrown against another revolving drum. The impulses print thin lines across the paper, 100 to an inch; and faithfully recording the light and shadow, these tiny lines, almost overlapping, reproduce the original picture. This same system of photographic transmission is used by the Army domestically to forward charts and maps.

Official U.S. Army Photo

Many and hazardous are the difficulties encountered by the field photographer, but he takes them in stride. Here, a photographer keeps on shooting while wearing gas mask during a training session at Napier Field, Alabama

The "PX"

Px" is the fighting man's abbreviation for Post Exchange, Army-operated store where he buys such personal necessities and minor luxuries as toilet articles, cigarettes, candy, and magazines. Most often it's a store in a fixed location, but as our armies have spread to the four corners of the globe, the PX has followed them and been adapted to the locality it serves, being just as much appreciated in a grass hut in the Southwest Pacific as in a railway car in Alaska.

The importance of the PX to the soldier cannot be overestimated . . . nor its power to affect morale and influence opinion. The average soldier overseas has little outlet for his normal interests—and the PX looms large in his eyes as a haven of relaxation, a provider of comforts. An efficient, well-stocked PX can keep soldiers reasonably contented, however far from home they may be.

Soldiers assigned to duty along 500 miles of track on the Alaska Railroad, where they lay ties, repair bridges, and keep the road in good shape for important shipments of supplies to Uncle Sam's forces in Alaska, have a unique PX. They are visited about every two weeks by the railroad PX pictured here. It is a motor truck, mounted on rails, drawing a trailer which contains the counter for the retail business. The PX usually rolls up to wherever the men happen to be working; they knock off, buy their supplies, and go right back to their tasks. On the occasion when this photograph was taken, at a stop near a gravel pit, approximately 70 men bought over $300 worth of supplies in less than an hour.

Signal Corps Photo

The PX (Post Exchange) is found wherever American soldiers are stationed, but this Alaskan railway PX is unique. It is a motor truck, mounted on rails, drawing a trailer which contains the counter over which goods are sold

On the islands of the South Pacific, the PX is now dealing in such items as kangaroo rugs, grass skirts, and native-made jewelry, in addition to their staple line of cigarettes, candy, soft drinks, and other home commodities. So many of the soldiers wanted to buy grass skirts to send home to their gal friends that the Exchange Service entered as intermediary between them and the native manufacturers. Under ordinary circumstances, a first-class grass skirt should cost no more than $1.50. However, for no apparent reason, since they have little use for American money, more often than not, the natives have jacked up the price. The Exchange Service now buys the skirts at a reasonable price and resells to the soldiers. Similarly, American girls get from the islands as gifts from their boy friends, silver and shell jewelry of native manufacture.

The exchanges are conducted in all manner of structures—native huts hastily constructed wood shacks, tents, and, in cities, modern store buildings. Officers who are beyond the age for combat duty, and who have been specially trained at the Army Exchange School at Princeton, are in charge. Where possible, natives are employed as clerks. In some areas, where facilities do not permit air, rail, or water transportation, natives carry in the supplies. They receive pay in cash and tobacco, and in consequence, have developed a tremendous liking for American cigarettes.

Some exchanges have installed ice-cream-making machines, providing a most welcome treat in the tropics. At the headquarters of a certain coast artillery battalion located on a large tropical island, the exchange was making ice cream and sending out a supply each day to one of the anti-aircraft batteries stationed twenty to thirty miles away.

Soldier Author

Official U.S. Army Photo

Colonel Kirke B. Lawton, Chief of the Army Pictorial Service of the Signal Corps, is author of the article beginning on page 1

Feeding the Goats

Camera clubs must all be alike. Newcomers in the clubs in St. Paul, Minnesota, used to be sent out to buy a bottle of parallax, a pound of fine grain, or sharpeen, the developer for out-of-focus negatives. But now the story is conservation—so the beginners are asked to stop in at the camera store and get some emulsion peelers for using film over again.

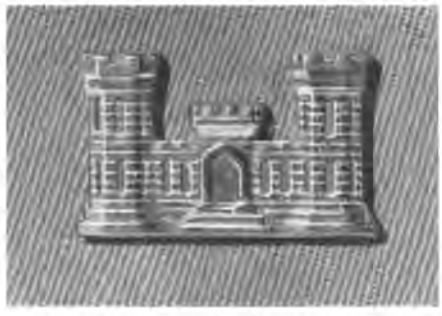
—*Popular Photography.*

Panorama

OTHER OCTOBERS

On October 26th, 1682, William Penn, founder of the province of Pennsylvania ("Penn's Woods"), landed in America. Penn chartered Philadelphia ("The city of brotherly love"), in October, 1701. In that city, the Articles of Confederation were adopted; there was drawn up and signed the Declaration of Independence; the treaty that ended the Revolutionary War was ratified there; and there was born the Constitution of the United States. . . . On October 4th, 1777, Lord William Howe's army defeated the army of General Washington at Germantown, Pennsylvania. . . . With fitting ceremony, the cornerstone of the White House—the first public building to be erected in Washington—was laid on October 13th, 1792. First occupant of the White House was President Adams. . . . On October 2nd, 1819, the first boat floated over the first section—Rome to Utica—of the Erie Canal. In October, 1823, completion of the Canal from the Hudson to the Genesee was celebrated. And in October, 1825, a fleet bearing many notables entered the canal at Buffalo, New York bound. . . . On October 10th, 1845, the U.S. Naval Academy, founded by Secretary of the Navy George Bancroft, was opened. . . . On October 25th, 1854, at Balaklava in the Crimea, England's famed Light Brigade charged "into the valley of death.". . . From Mrs. O'Leary's barn in Chicago's de Koven Street issued, on October 8th, 1871, the flames that consumed 18,000 buildings. . . . Eight years later, on October 21st, 1879, Thomas Alva Edison, whose purchase of a strip of Eastman film resulted in the movies, perfected the incandescent lamp. . . . On October 22nd, 1915, went the first radio broadcast across the Atlantic—from the Naval Station at Arlington, Virginia, to the Eiffel Tower, Paris. . . . And on October 30th, 1922, Mussolini became a dictator.

Service Symbols



Corps of Engineers

The castle was adopted by the Engineers over a hundred years ago—in 1840. As with other service insignia, officers wear it in cutout form on both lapels of service coats, and on the left end of collars of shirts when worn without coats. Grade insignia is worn on the right.

Enlisted men wear the same insignia, with a disk backing, on the left end of collars of coats. The letters "U.S.," also on a disk, are worn on the right.

About Rope

Speaking of ropemaking (see page 12), the war has given this ancient and honored industry a few new twists, and the greatest production stimulus in history. Every ship, for instance, even the most modern, needs rope. It is an indispensable item, with a hundred different uses on shipboard—hawsers, towlines, boat falls, deck lines, rigging, cargo nets, slings, sounding lines, signal halyards, lashings. It is vital in landing operations, abandon ship operations, and fueling at sea. A ship like the 45,000-ton *Iowa* requires approximately 15 miles of Manila and wire rope.

Rope is as closely woven into the activities and traditions of the U.S. Navy as it is in the fouled anchors on the crest that identifies its officers. A complete segment of naval training—designated by the salty name of "marlinspike seamanship"—deals with all kinds of rope and cable and methods of working them.

Back in 1834, in the days of full-rigged men-of-war like the *Constitution*, the Navy centered its rope manufacture at the Boston Navy Yard. In normal years, the ropewalk (the term derives from the walking back and forth of the spinners and ropemakers in the days when cordage was made by hand) provided some three or four million pounds of cordage. Today, it is turning out about two million pounds of rope a month—still far short of the Navy's needs.

Yankee Wit

A tourist stopped at a New Hampshire farmhouse to ask for a drink of water. "Fine corn," he said politely, pointing to a hillside bearing scant stalks.

"Best in New Hampshire," replied the farmer.

"But how do you plow such a steep hill?" the tourist asked.

"Don't plow it. The spring thaws bring down stones that harrow it neat's can be."

The tourist gulped at that one. "Well, then how do you plant it?"

"Don't really plant it. I stand in the back door and shoot in the seed with a shotgun."

"Is that the truth!" exclaimed the tourist.

"Of course not," explained the farmer. "That's conversation."

Feeding the Soldier in the Field

Eastman-made Kodapak helps to protect certain units of the U.S. Army's standard Ration K

THE ARMY FIELD KITCHEN—that much-abused food dispenser of World War I—did an adequate job in those days of static trench warfare. But today's mechanized armies, often advancing many miles in a single day of combat, are likely to leave cook and quartermaster far behind.

So today's soldier frequently has to carry his own food into the field, and carry enough to provide himself with proper nourishment for as long as a week or ten days. To meet his needs, the food industry, co-operating with the Quartermaster Corps, has achieved wonders in packaging a whale of a lot of nourishment within a tiny space—and packaging it to withstand moisture, extremes of temperature, and rough handling.

Ration K

Standard with the American soldier is Field Ration K, a three-unit package containing breakfast, dinner, and supper. Altogether it weighs only about two pounds, each one-meal unit measuring 7 inches long, 3½ inches wide, and 1⅝ inches deep.

The breakfast unit contains two packages of biscuits, a can of chopped ham or other meat and eggs, a fruit bar, an envelope of quickly dissolving coffee, three tablets of sugar, a stick of chewing gum, and four cigarettes.

For his noon meal, the soldier opens a unit containing two packages of biscuits, a can of cheese or cheese products, a confection, an envelope of lemon-juice powder fortified with Vitamin C, three lumps of sugar, gum, cigarettes, and matches.

The soldier's Ration K supper holds a package of bouillon powder, a can of meat, two packages of biscuits, a bar of chocolate, chewing gum, and cigarettes.

The powdered coffee, fruit juices, and bouillon are designed to dissolve in either hot or cold water held in the soldier's canteen cup. Since these powders will not dissolve properly if they have become moist and lumpy, a moistureproof package must be used.

Metal foil offers the best protection against moisture, but the aluminum foil used for the job is likely to break or tear when roughly handled. Moreover, its smooth metallic surface sharply reflects sunlight. Such reflections in the field might aid enemy observers.

To overcome these disadvantages, the metal foil is laminated with Kodapak. The laminating cement is colored to kill reflection, while the tough cellulose-acetate lamination strengthens the foil so that it readily withstands rough treatment.

Before the Kodapak is laminated to the foil, it is printed with full information concerning the contents of the package, directions for using the powder, and the name of the packaging firm.

So successful has Kodapak proved for packaging the Army's field rations that its use after the war for protecting dehydrated foods is highly promising. Perhaps, in the future, much of the food we buy at the store will be as securely protected by Kodapak as are the coffee, fruit juice, and bouillon now being carried by our soldiers into the combat zones.

Included in the army field rations are coffee, fruit juices, and bouillon—all in powdered form and soluble in water. Kodapak is laminated to the metal-foil containers as added protection

A Composite Picture *of America at War*

Wartime uses of Kodak photographic papers are described briefly in this quick close-up

HAVE YOU EVER SEEN a photograph of a loud noise? Or photographs of an airplane that hasn't yet been built? One might be pretty skeptical, and understandably so, if told that such photographs are being made almost every day to help win the war.

Yet, it's true that they are—and unusual examples of wartime photography such as these dramatically show the endless ways in which Kodak photographic papers are contributing to the war effort.

In darkrooms, both at home and abroad, the images that "build up" on our sensitized papers are providing a composite picture of America at War. But before we look at some of these images and consider the way in which they contribute to our war effort, it may prove interesting to take a quick glance at Kodak Park's paper-manufacturing departments.

From the time that highly purified alpha-cellulose, in the Paper Mill, is run through the "beaters" which prepare it for the papermaking machines until the finished photographic paper is packed and shipped, every manufacturing step is controlled with infinite care so that the final product will conform to very high standards. A great many types of photographic paper are produced.

Many Applications

War has greatly expanded the use for many of these papers. They have been needed to speed up war production, to help maintain morale, to provide information at the fighting fronts. Wherever they are used, and for whatever purpose, painstaking production at Kodak Park has made them well suited for their vital work.

Some of the images that eventually appear on these photographic papers may strike us as being very strange photographs indeed. One may appear as an involved engineering drawing; another, as a jagged line running irregularly along a narrow strip of paper. But strange and mysterious as some of these images may seem to be, they are doing a very important job.

Official U.S. Navy Photograph
Sailor plus V-Mail from home plus kindly London Bobby add up to "Directions, please," in this appealing snapshot with famed Big Ben in background

The images that build up on Kodak Aero Paper help to win battles.

In a portable darkroom behind the battle lines, an operator works rapidly. Time is precious. From negatives exposed by reconnaissance fliers over enemy territory, he hastily makes prints on Kodak Aero Paper—prints that hold the key to establishing a bridgehead, to the success of a bombing mission, to the minimizing of casualties in a coming attack.

This darkroom operator's work is speeded by the very nature of the paper he is printing. A special coating protects the paper from processing chemicals, making it unnecessary to spend precious time in washing the processed print. The emulsion of this paper produces sharp detail so that it will provide all possible information to the officers who scan it.

Here, is an excellent example of a photographic paper produced at Kodak Park to do a special war job. Millions of square feet of Kodak Aero Paper have been supplied to the fighting forces of the United Nations.

The images that build up on Kodak Linagraph Transfer Paper help to speed vital war production.

When America swung into its tremendous program of airplane production, many bottlenecks had to be broken. One, the making of metal templates or patterns, was eliminated by photography.

Until recently, the detailed engineering drawings for plane parts were laboriously copied onto metal by hand. This time-consuming method was replaced when it was found that the original drawings could be photographed onto a glass plate and then projected onto a sheet of metal which had been sensitized.

To do this successfully, Kodak developed Linagraph Transfer Paper for sensitizing the metal. This paper is laminated, emulsion side down, on the metal sheet. Before the exposure is made, the Transfer Paper base is stripped off, leaving the sensitive emulsion smoothly coated over the surface of the metal sheet. After exposure, the sheets of metal, measuring as large as 5 by 10 feet, are processed in about the same way as a photographic print on paper.

Less Time, Money

This method of making metal templates has shortened by months the time required to bring a new plane model into production, and the cost of building Uncle Sam's warplanes has been considerably reduced. Many of the experimental planes that are test-flown today actually go into the air with the photographic images of original engineering drawings clearly visible on their wings and fuselage.

Linagraph Transfer Paper is hastening the production of other war materials in the same way that it has speeded up the production of planes.

The images that build up on Kodak Direct Positive Paper help to safeguard America's war plants.

To guard against sabotage by enemy agents, Government regulations require that employees in war plants wear badges bearing their photographic likeness. In some cases, even temporary visitors must be photographed and must wear a photographic badge during their stay within the plant.

Most of these photographs are made on Eastman Direct Positive Paper, which has a special quick-processing emulsion that produces a direct positive print. With it, identification pictures can be made more quickly and inexpensively than would be possible were the normal procedure followed wherein a positive print is made from a photographic negative. Equipment is now available which automatically exposes and processes Direct Positive Paper, producing a finished print within three or four minutes.

The images that build up on Kodak Recording Papers reveal vital wartime information.

In recent years, the uses of photographic recording papers for presenting certain kinds of information have expanded to a notable degree. In many cases, delicate instruments record mechanical or electrical disturbances so accurately that the source or frequency of these disturbances can be recorded for subsequent study and interpretation.

In wartime, the readings from these instruments can be triangulated to disclose the location of enemy artillery. Seismographic data on Recording Paper is used to discover subsurface formations likely to contain oil deposits—information that is particularly valuable in wartime. Cardiograms on Kodak Recording Paper reveal the heart condition of men about to enter service or beginning employment in war plants. The muzzle velocity of cannon and the degree of vibration in mechanisms operating at high speeds can be determined from the line images that appear on these versatile papers.

In fact, these are but few of the many ways in which Kodak Recording Papers are being used to help the war effort.

Photograph by U.S. Army Air Forces

Reconnaissance photos coming up—fast—in pneumatic tent. Kodak manufactures a special quick-processing photographic paper that saves many minutes in this vital military task

The images that build up on V-Mail Letter Paper help to keep high the morale of our fighting men.

Recognizing the value of news from home for sustaining the morale of her soldiers, England, early in the war, looked for a method of speeding letters between the home and fighting fronts. With the aid of Kodak technicians, the Airgraph service was instituted.

Since American soldiers have been sent abroad to aid in crushing the Axis, this same method—known over here as V-Mail—of transcribing letters onto microfilm has been adopted to keep our boys in ready contact with family and friends. The microfilm, flown swiftly to and from foreign military bases, is projected onto a paper produced at Kodak Park specifically for this purpose. Thus, the photographic images of letters crossing the seas are delivered in far less time and with the use of far less

(Continued on page 12)

Air Ministry Photograph. Crown Copyright Reserved

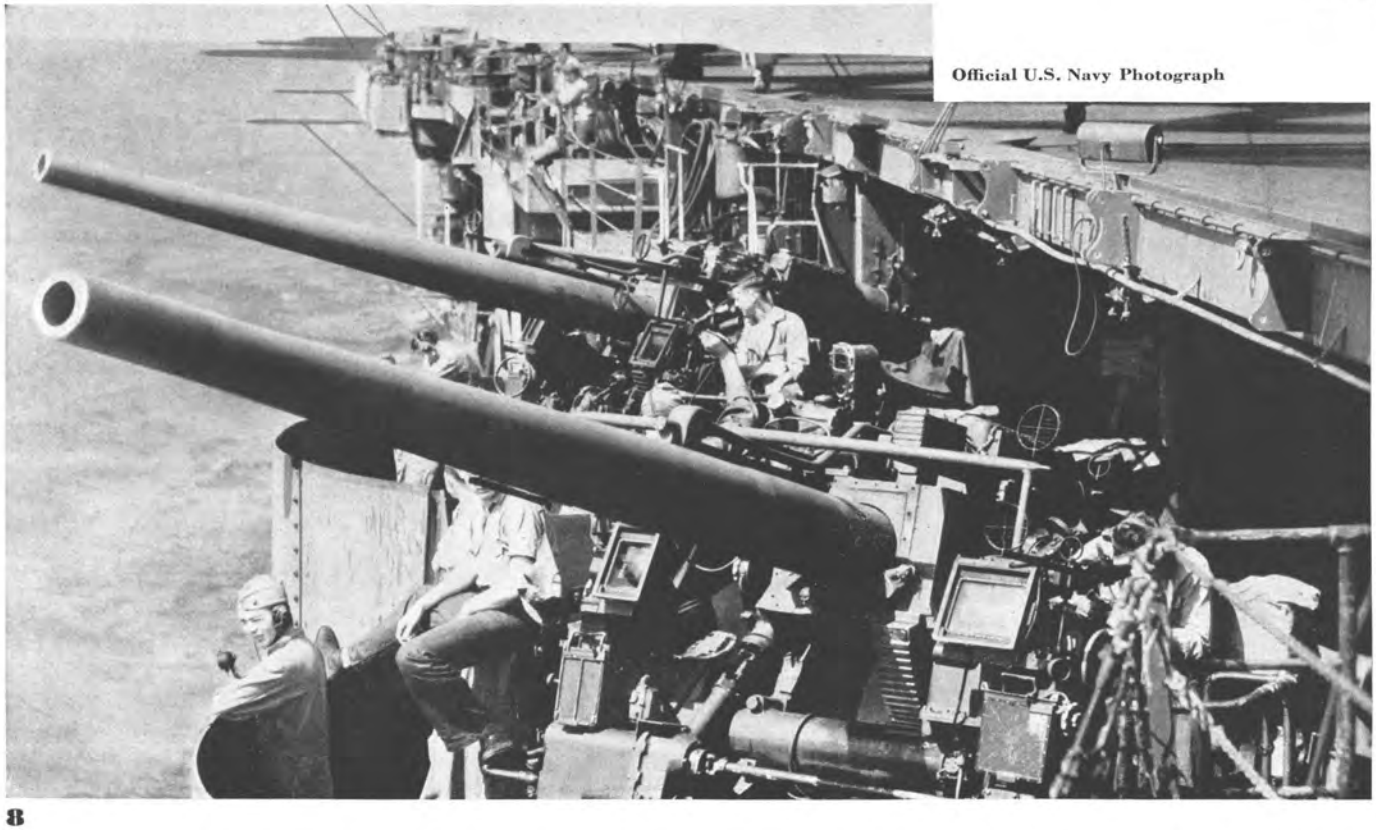
Drying finished prints in a Royal Air Force mobile darkroom. Note Velox Glazing Machine

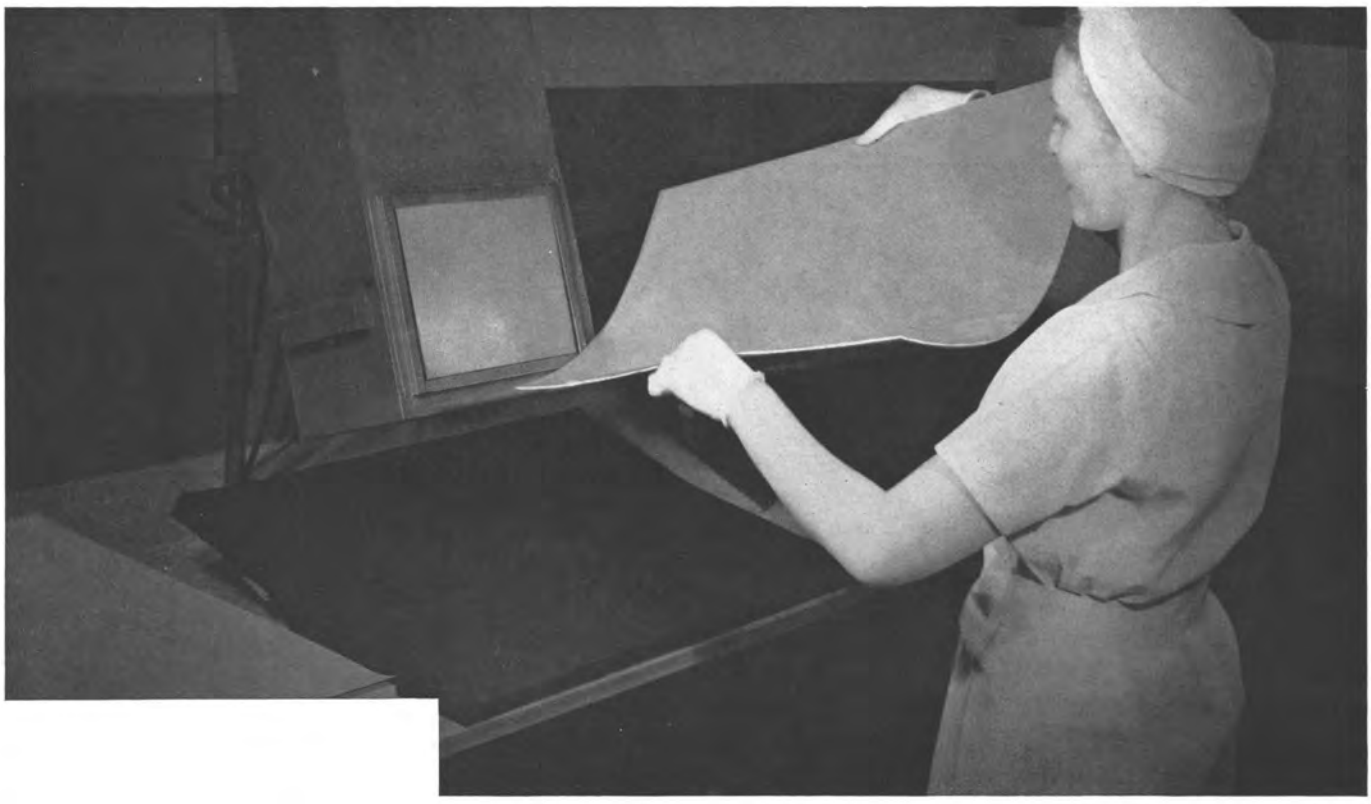
Kodak-made fire-control equipment has made an enviable record for accuracy both in the Army and the Navy. Offering an example of precision optical work, these Kodak employees are carefully assembling gun sights of the same type as those shown in action on . . .

KODAK P
in a

. . . this American aircraft carrier. Of the two square sights showing on the near gun, one is used for training the gun while the other points and checks it in the grim game of blasting enemy planes. Kodak produces both, as well as other fire-control equipment used on American warships

Official U.S. Navy Photograph





RODUCTS
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Some of the wartime uses of Kodak's photographic products receive less attention than their great value fully warrants. Kodalith Film, such as that being examined under a safelight by this Kodak Park employee, is widely used for the rapid production of vital war maps, such as the one . . .

. . . appearing here in the hands of Lieutenant General McNair. This picture, taken during the North African operations and before General McNair was wounded, could be readily duplicated on every front where our men are seeing action. Map making is only one vital war job speeded by photography

Photo by U.S. Army Signal Corps

The Editor's Page

DRIVE APPEAL

WAR Production Board Chairman Donald M. Nelson, urging a greatly intensified nation-wide drive to provide 400,000,000 used tin cans monthly for war production, has called upon America's housewives to salvage at least twice the number of cans currently being collected.

Pointing out that although constant improvement has been made in the collection of tin cans since the beginning of the program on June 1, 1942, Mr. Nelson stated that the cold, hard fact remains that two out of every three tin cans are still being wasted.

He issued the following statement:

"Tin cans have become a vitally important factor in the production of three of our most urgently needed metals. They provide not only pure tin, but large quantities of high-grade steel scrap; while in the Far West tin cans are used to recover copper from mine waters.

"The applications of these metals to our war production program, of course, are almost innumerable. Tin is essential to the services and efficiency of the Medical Corps. It protects the food and health of our fighting forces and our civilian population at home, as well as that of our allies. Tin is also a fighting metal, since almost every weapon, conveyance, engine, and equipment used at the front and behind the lines contains sizeable quantities of tin.

"America's steel mills are depending upon detinned cans to supply a steady source of high-grade steel scrap. Ninety-nine per cent of every tin can is steel, and under point rationing, American kitchens will use in one year enough steel in tin cans to make 22,900 medium tanks or 900 destroyers.

"The copper mines in the Far West use shredded tin cans to precipitate copper from impregnated mine waters. Almost 10 per cent of our copper comes from this special process. We will never in this war have too much copper, for it enters into every piece of electrical equipment, every warship, every airplane, every vehicle, all artillery, shell cases, and cartridges.

"These and many other war-vital goods come from salvaged tin cans. The American people have been providing about 200,000,000 used tin cans each month. We are asking for 400,000,000 per month. This goal is obtainable. In fact, two out of every three tin cans are today being wasted in spite of the general improvement that has been made over the past year in this salvage program."

Kodak Park's Record of Softball Championships

1934
East Side League
City Champions
Industrial League

1935
Industrial League
City Champions
State Champions
Runners-Up at Nationals—
Won 5, Lost 1

1936
Major League
State Champions
National Champions
Won 6, Lost 0

1937
Major League
At Nationals—Won 2, Lost 1

1938
Major League

1939
Major League
City Champions
State Champions
At Nationals—Won 1, Lost 1

1940
Major League
Did not compete for City Title
State Champions
National Champions—Won 6, Lost 0

1941
Major League
Did not compete in City or State
At Nationals—Won 1, Lost 1

1942
Major League
City Champions
State Champions
Mid-Atlantic States Regional
At Nationals—Won 2, Lost 2

1943
State Champions
Mid-Atlantic States Regional
At Nationals—Won 2, Lost 2

Frederick W. Gregory

We note with regret the death of Frederick W. Gregory, veteran employee of Kodak Limited, at Harpenden, Hertfordshire.

Mr. Gregory entered the service of the Eastman Photographic Materials Company on January 29th, 1890, as head salesman of the Oxford Street shop. The shop, which had been opened two years previously, was then the registered office of the Company. Mr. Gregory became manager at Oxford Street, and later he was named manager of the retail branch in Cheapside.

In February, 1899, when a branch of Kodak Limited was established in Brussels, Mr. Gregory was appointed manager. A year later, he took charge of the Kodak business in Germany, with headquarters in Berlin.

Mr. Gregory was recalled to England in 1908 and placed in charge of the London retail shops, later becoming house manager. During most of the ensuing years up to his retirement in 1931, he was closely associated with matters of general management.

Mr. Gregory had moved to the Hertfordshire address following damage to his home in Golders Green, London, during the blitz.

Situation Reversed

Probably every office boy entering the Army thinks, "Boy, would I like to be a sergeant and have my boss under me as a private."

Maybe he gets his wish now and then for we're told that among the sergeants in the Army are:

A taxicab driver from Brooklyn who has under him a policeman who gave him six tickets for parking violations.

A young lad who flunked chemistry and now has his former chemistry teacher under him.

A wrestler who was barred and is now giving orders to *that* referee.

The Chemical Lab *Helps to Prepare the Way to Victory*

GUNS, planes, tanks, bombs, and shells are the headline weapons of this war but behind them all lies the magic of chemistry. Not a single soldier or a single fighting weapon could survive upon a modern battlefield without the equipment that chemical workers and technicians have furnished. War, like peace, is fundamentally the history of chemistry in action.

More than six million American soldiers are now fighting in every climate of the world, in every altitude to which men have ever penetrated, and chemistry gets them there better equipped and more surely able to strike at the enemy. Too often, people think of chemistry in warfare only as of use for combat warfare with poisonous gases and the employment of such obvious chemical processes as the creation of smoke screens. Important as these are, and great as is the attention which our Army has given to them, they are but a drop in the test tube compared to all that chemistry is contributing to our fighting men.

The moment a soldier is inducted into the Army he is introduced to the chemical products upon which he and his fighting force depend. Before he has left his first Army station, he has been inoculated against disease; he has been clothed in materials made stronger or safer by chemical processes; and he has been sheltered in tents or buildings fireproofed and otherwise safeguarded by chemicals.

★ **The camera** introduces us to the interior of a "Flying Fortress," and reveals some of the many hundreds of feet of Kodapak-insulated electrical wiring which is standard equipment on these dreadnoughts of the skies. Thus do the products of peacetime research figure prominently in the war—on land, on sea, in the air
Official Photograph, U.S. Army Air Forces

In the theater of operations the soldier's dependence upon chemistry is even greater. No matter with what arm he may fight or in what climate he may be stationed, the performance of his duties rests on his equipment, and that means it relies on chemistry.

As a soldier in the Ground Forces, he must be fully equipped with ammunition, whose smokeless powder and TNT came to him from the laboratory. He must be protected by his helmet, whose lining, like the grip of his machine gun is a plastic product. In a combat area he may be fed on special compact rations into which chemistry has packed three square meals, or he may enjoy such diet delicacies as "meltless" butter and dehydrated vegetables. Chemistry protects him against the foes of nature and the opposing army, for whether it be atebrin or another synthetic medicine, or sulfa drugs to cure his wounds, his very life depends upon the discoveries that were made in chemical laboratories.

If the Army service has taken a soldier into the Air Forces, the products of chemistry surround him in the air as on the ground. Every part of his plane, from the bombardier's "greenhouse" to its giant rubber tires, is the result of industrial chemistry. The engines of his plane are in part made of magnesium, the bantamweight of America's fighting metals; and magnesium is used not only for the plane itself, but also for the bombs it carries, the tracer bullets it shoots, and the brilliant white flares it drops. The planes must have high-test gasoline to take to the air and camouflage paint for concealment on their perilous missions. These, too, are products of the science of chemistry. The bonded plywood planes in which he trained, the parachutes in which he drops weapons and equipment, the oxygen he breathes in rarified altitudes, the asphalt field from which he takes off, the gas tank which automatically seals the holes made by enemy bullets, the flameproof flying suit he wears—these are but a few more of the countless debts the Army flier owes to chemistry.

On the battle lines of land and sea and sky, our Army is ever employing matériel born in the test tube or under the microscope. In modern war, courage and patriotism are not, by themselves, enough to win victories.

Films for Farmers ★

The Department of Agriculture has important uses for motion pictures

YEARS AGO, hemp for rope-making was grown by American farmers. But with the introduction of Manila hemp from the Philippines, which proved more satisfactory, the growing of domestic hemp abruptly ceased and the American hemp grower turned to other agricultural products as a source of livelihood.

Thus, with the fall of the Philippines to Japanese forces came an immediate and critical shortage of hemp. It was vital that domestic hemp be brought back into production. Unfortunately, the farmers no longer knew how to plant, harvest, and mill this difficult crop. What to do?

The problem was quickly solved by the Department of Agriculture through the medium of the motion picture. A film showing every step in the all-but-lost art of producing hemp fiber was released in the former hemp-growing areas, mills were set up, seed distributed, and the hemp-growing industry successfully revived.

In the same way, the Department of Agriculture promoted an increase in the peanut crop by producing a motion picture, *Farm Battle Lines,* to show farmers how the loss of Asiatic sources of vegetable oils and fats had made it imperative that domestic sources be expanded. The dramatic film presentation, showing how badly peanut oil was needed for the manufacture of war armaments and supplies, played an important part in persuading farmers to increase their acreage of peanuts.

When the Department of Agriculture declared war against the cattle tick, it enlisted the motion picture to show farmers the need for dipping their herds. Here, the movie in Florida

These wartime uses of the motion picture are but a single episode in the long story of photography's contributions to American agriculture. "The Department of Agriculture, with a vast wartime—and peacetime—job of education to do, values highly visualization and especially motion pictures," writes Claude R. Wickard, Secretary of Agriculture. "Visual education has helped enormously to do many important jobs in agriculture. It will help to do many more."

The department's use of motion pictures started back in 1908—when the movie industry was itself just beginning its phenomenal growth. The first movie-making facilities of the department consisted of a single camera and two or three pin racks for tray development.

Strangely enough, the first assignment given the Motion Picture Service of the Department of Agriculture was a military one. When the Wright brothers brought their pioneer biplane to Fort Myer for a demonstration, W. S. Clime, perhaps the first photographer in government service, made a film record of the demonstration which is still preserved in the National Archives.

This interesting start was not, however, typical of the work of Motion Picture Service. As the work developed, three primary purposes came to be served.

First, the Department of Agriculture used motion pictures to show the farmer *why* certain things had to be done. For instance, a motion picture

A Composite Picture

(Continued from page 7)

air-transport space than would otherwise be possible.

Many of the V-Mail stations both in this country and abroad are being managed by Kodak employees now in service.

The images that appear on Kodak photographic papers make up a composite picture of America at War.

The wartime uses of Kodak photographic papers outlined above are not a complete list by any means. But they do indicate in a general way the vital importance of the work being carried on in the paper-manufacturing departments at Kodak Park. The morale value of snapshots sent to the soldiers; the historical value of the battle scenes taken by the Signal Corps; the use of still pictures for training and instructional purposes; the rapid and errorless duplication of letters, orders, and other data contributing to smooth business operation—these add up to still other wartime uses of our photographic papers.

Photography has provided the solution to many wartime production problems. It has helped greatly to speed industrial output. The uses of photography developed during this period, and particularly its industrial applications, give promise of a further contribution, in solving the production problems and promoting the prosperity of postwar America.

demonstrated to southwestern farmers the need for dipping cattle to destroy the fever-bearing tick. Until the film proved to the farmer the need for this program, strong and even violent opposition was encountered by the Government's campaign against the cattle tick. Now the fever is virtually stamped out.

The second purpose of movies produced by the department is to show *how* to do things. Methods for growing hemp, as related above, afford an example of how informational films can be used to teach the farmer how to do his job better and more profitably.

And, finally, the department, in reporting its progress and accomplishments to the public, has used films to show *what* has been and is being done.

The visual-education program progressed rather slowly in the early days. Since the art of the motion picture was then in a relatively primitive stage, it proved difficult to "sell" the importance of the medium to various Government officials. Nevertheless, within five years, the department's motion-picture service had started serious work, and since that time, the service has produced more than a thousand pictures.

The Routine

These agricultural pictures are produced with all the care of a Hollywood feature. When the need for a certain film has been established, a script is carefully prepared, subject matter approved by specialists, and a director assigned. During the war, new films are subject to approval of the Office of War Information.

Clearly, the care and effort which go into the making of these U.S.D.A. films would be fruitless if they were not subsequently brought to a large and suitable audience. Distribution is handled through several channels.

The most important of these are 44 State U.S.D.A. War Boards, 50 Co-operating Depositories at universities and colleges, 7 Soil Conservation Service Regional Information Offices, 10 Forest Service Regional Offices, and 48 Agricultural Adjustment Administration offices.

With minor exceptions, no prints are released directly to exhibitors from Washington but must be obtained from these "field depositories."

"Still" from a forest-fire reel. Small-town theaters in rural sections frequently show the latest short subjects released by the Motion Picture Service of the Department of Agriculture

Farm Bureau agents and other qualified applicants obtain the films for showing to farm audiences from the nearest depository.

The introduction of visual education to America's rural areas has been a romantic and many-sided story. To many people, in outlying and sparsely settled regions, the U.S.D.A. films are often the first and only motion pictures they see. The men who exhibit these films to rural groups meet and conquer many technical difficulties. Often it has been necessary for the exhibitor to jack up a rear wheel of his car to turn the generator used for supplying current to the projector.

But despite all the problems of producing and showing agricultural films, the work of the Motion Picture Service of the Department of Agriculture has been carried on through the years with great success. Its achievements add a notable chapter to the history of the motion picture.

Sound farming practices can be "put over" by motion pictures more effectively than in any other way. This "still" is from a movie which shows how strip farming prevents erosion

✪ ✪ ✪ *Kodak Employees in*

Lt. Walter C. Geith, Kodak Park

Cadet George H. Baist, Kodak Park

Ross P. Myhers, Camera Works

Lt. Robert Baumer, Kodak Office

S 2/c Calvin K. Brauer, Hawk-Eye

Sgt. Hull H. Wilder, Kodak Park

Pvt. Edward J. Klusek, Kodak Park

Capt. Fred J. Newberg, Kodak Park

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Pvt. William J. Wren, Kodak Park

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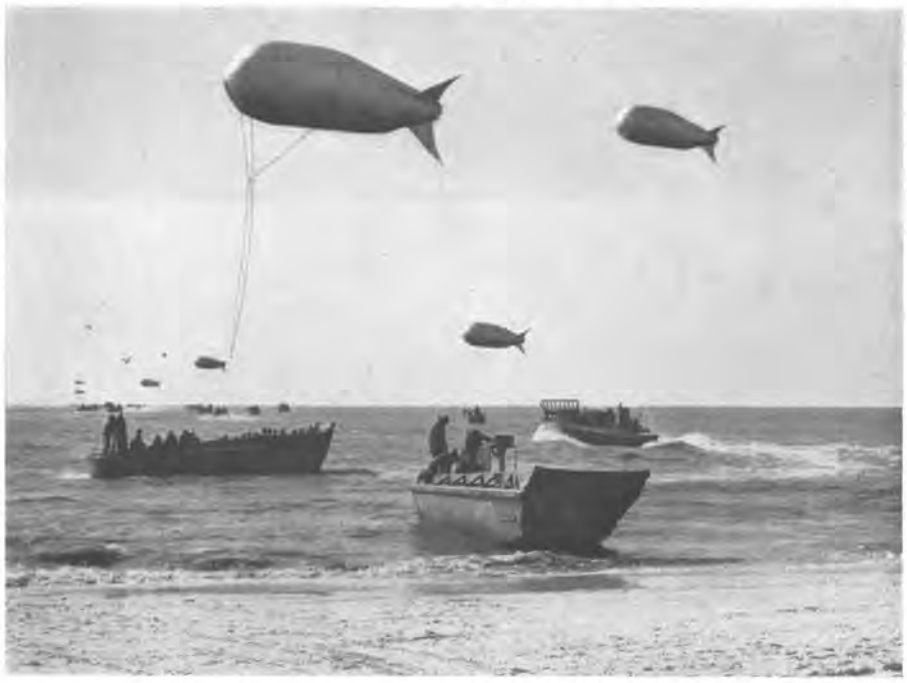
Flying Elephants



U.S. Army Signal Corps Photo

"Sky fish," smaller counterparts of "flying elephants," protect landing craft of the Engineer Amphibian Command, shown during recent rehearsals off the Florida coast

HUGE BARRAGE BALLOONS—"flying elephants"—and their smaller counterparts, called "sky fish" by Barrage Balloon troops, have proved one of our best weapons against enemy air attacks. Originally designed to protect home war factories and military installations, the balloons now are being used successfully to protect convoys, trains, landing operations, such as in North Africa, infantry and field artillery troops moving up to the front, truck supply lines, etc.

U.S. Army Signal Corps Photo

A "flying elephant" is sent aloft at Camp Tyson, Tennessee, the barrage-balloon training center. Steel cables of balloon spell swift disaster for unwary enemy airmen

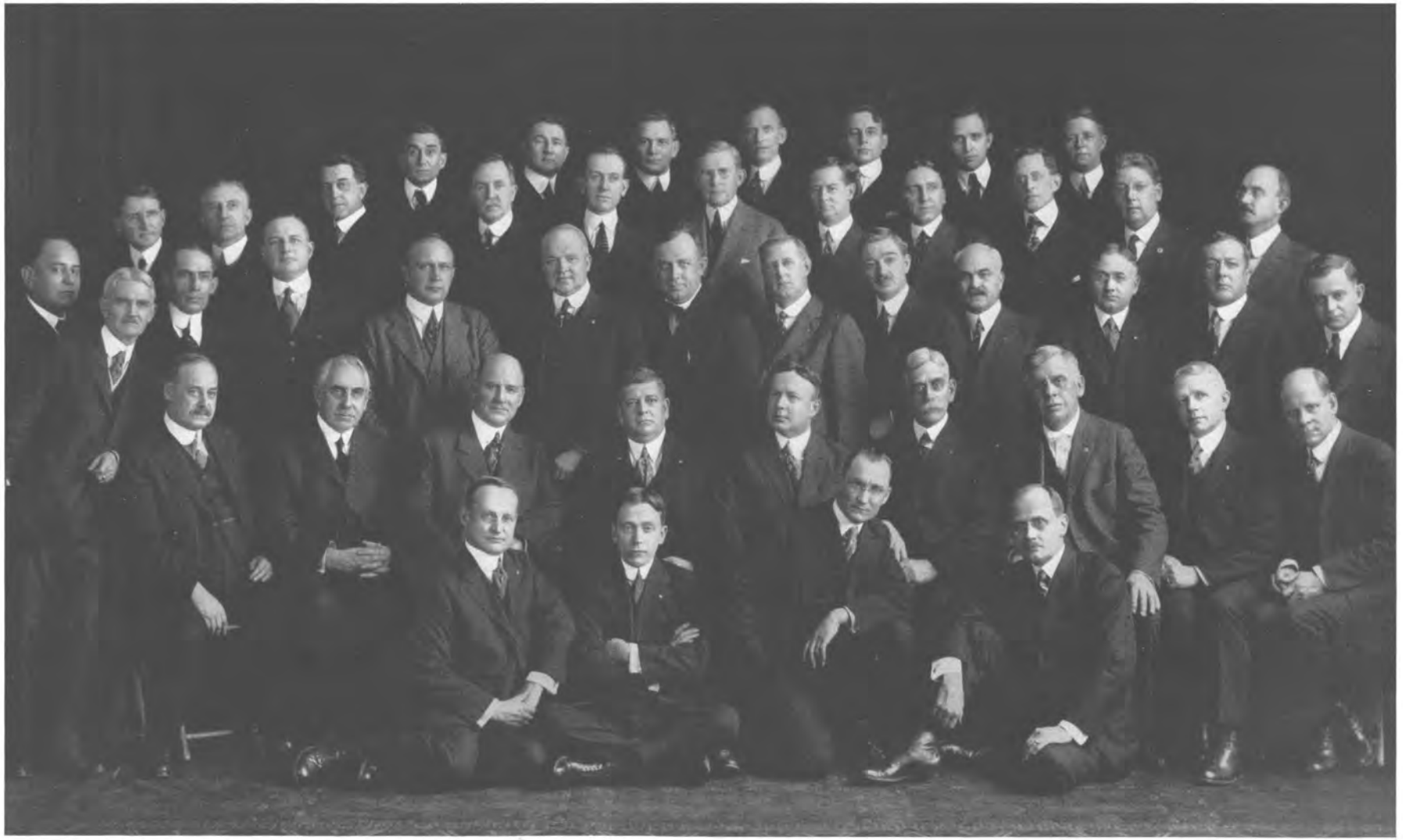
The balloons, with their spider webs of death-dealing steel cables, are more than adequate protection against most types of aerial attack. Enemy pilots must fly high to avoid crashing into them and thus their aim is spoiled. They have learned to have a healthy respect for the innocent-looking balloon, and the Axis has good reason to curse the imaginative Englishman who first realized its possibilities as a defensive weapon—for it helped save England during the height of the blitz.

During the last war, balloons were used for observation with a crew that went aloft, but today the barrage balloon does not carry anyone aloft and is itself only a means to an end—that of planting a taut steel cable securely in the skyways above and around the installation to be defended. It is this cable which is such a menace to enemy aircraft and which keeps them at a respectful distance from the target.

Balloons are not hardy perennials and are often damaged in severe rainstorms. The taut steel cables have a great attraction for lightning and excessively violent winds tear the balloons loose from their moorings. However, since enemy airplanes take no more kindly to these violent commotions in the upper air than do the barrage balloons, this vulnerability is no great liability.

The Germans, early in the war, found by experience that it was too costly to try shooting down the barrage balloons. In attacking the balloons, they lost too many of their planes from antiaircraft fire or by entanglement with the steel cables. The balloons cost comparatively little in exchange for a plane, and they are fairly easily repaired and back in the sky in no time, or there are others to take their place. Other factors protect the balloons—they are frequently invisible due to conditions of fog, haze, and darkness and thus are an added menace to enemy pilots who do not like the idea of prowling around in an unknown element where they may encounter a "clothesline."

As the war pushes farther and farther away from our shores and closer to our objectives, Berlin and Tokyo, barrage balloons are playing a much more active part, both as potential defense for our cities and as protection for our fighting men.



The Plate Demonstrators—1918

Back Row

R. F. Coulson, J. C. Neely, O. J. Smith, A. Arnold, E. H. McNamara, F. H. Commander, F. M. Johnson

Third Row

W. F. Baker, E. A. Howland, H. F. Martin, F. W. Swan, W. C. Stewart, B. L. Jones, H. E. Cornish, E. J. Winiker, C. A. Nelson, E. B. Campbell, L. V. Tournier, E. J. Tierney, C. A. Hansbrough

Fourth Row

E. H. Shelley, A. H. Dunn, R. C. Smith, J. W. Oldfield, H. C. Koonce, J. C. Whitney, R. E. Clark, A. K. Harmount, D. Curtiss, C. W. Eutsler, F. W. Dickerson

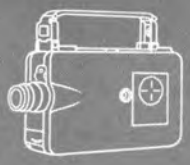
Second Row

E. H. Newell, F. B. Hickok, S. G. Lofft, D. Goff, H. B. Wills, J. J. Montgomery, H. A. Collings, DeF. Stamp, N. P. Richardson

Front Row

C. L. Bouton, J. A. Gunderson, H. J. Devine, A. B. Cornish

From MIDWAY ON...



16-MM. KODACHROME, ACTUAL SIZE

These war movies in full color were made with a "home movie" CINÉ-KODAK

CINÉ-KODAK—designed for peacetime globe-trotting or tranquil home scenes—was turned loose in the hell of the Japanese attack . . .

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CINÉ-KODAK "CAME THROUGH"...

simply because it was designed and machined and fitted to the closest tolerances known to camera making. The concussions and banging around of battle were not anticipated. Getting excellent movies under *all* conditions was the purpose. After Pearl Harbor, this meant battle.

Literally thousands of Ciné-Kodaks are in Army, Navy, and Air Force hands, contributing to the most complete war record ever attempted in movies.

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Ciné-Kodak proved to be the camera which can do the job. Its precision-made governor and other working parts continue to run smoothly in the drag of "9-G"... 9 times the force of gravity.

Prize your Ciné-Kodak—it's a blood brother of these cameras which went to war . . . Eastman Kodak Company, Rochester, N. Y.

Serving human progress through Photography

MIDWAY INCIDENT—A Ciné-Kodak was blown out of the operator's hands . . . hit the ground right side up. . . went ahead making the movie "on its own."

EAGLES OF THE NAVY—In breath-taking maneuvers—even a 9-G pull-out dive—Ciné-Kodak Special proved its reliability.

ALEUTIAN EMPLACEMENT—The Army's saga of reconquest, "The Aleutians," was largely filmed with Ciné-Kodak Specials.

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