

'EYES OF THE ARMY' AND HOW THEY ARE TRAINED

Air Photographers Make Maps of German Lines, From Which All Military Movements Are Decided.

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(Passed by U. S. Censor).

ITHACA, N. Y., Oct. 13.—Training the "Eyes of the Army" is one of the most technical and important branches of war work.

Aerial photography is a new science, and the one in which the allies have the biggest jump on the Huns. The French and British have developed the science until marvelous feats are performed.

Here at Ithaca, where Cornell university has turned over to the government its photographic laboratories, the finishing touches are being put on the men whose wizardry of photographic interpretation will furnish Pershing information about what the Huns are doing. With a French liaison officer, Lieut. Andre Carlier, at his elbow, Lieutenant William D. Wheeler and a corps of 50 instructors are teaching advanced students.

Aerial photography differs radically from ordinary photography. The men do not go up in airplanes. The real work is done on the ground, and so thoroughly that the commanding officer of a sector each morning has before him a big photographic map of his entire front, showing to the last ammunition dump and battery what the Hun has done on the day before. This is a "mosaic" composed of hundreds of separate photographs, taken from many airplanes, the overlapping portions cut away and all carefully fitted together.

Photos Aid Every Move. Beside it hangs the "battle map," with which the mosaic is kept to scale. On the map is placed every bit of military information obtained from the photographic map. This is checked with information obtained from prisoners. No military move is made now without consultation of the latest photographs.

Recruits are sent to Madison barracks, at Sacketts Harbor, N. Y., where they receive three weeks of military training. From there they go to the preliminary training school at Rochester. Here their training is merely the technique of the darkroom. They are taught to work for different results than in commercial photography. An aerial photograph must show every possible detail; shadows are of the utmost importance—the "aerial eye" is hunting always for what the enemy wants to conceal. To develop original colors in the ground and to detect camouflages, photographs are taken through color screens; also different plates are used to bring out ground color.

To determine elevations and contours, stereoscopic pictures are taken;

that is, the observer in the plane takes two pictures of the same piece of ground at intervals. The two photographs are mounted side by side, and observed through a stereoscope. Magnified, this has the effect of placing the intelligence officer directly above the German military works, and enables him to look as closely at what Fritz is doing as if he were suspended in a balloon.

Interpretation Is Important.

The work at Rochester is merely to develop photographic mechanics, but from these certain men are selected for their ability to be sent to Cornell for a nine weeks' advanced training course, from which they are graduated into various responsible positions, while some become photographic intelligence officers.

The real work is devoted to "interpretation," the most important branch of aerial photography. Interpretation means picking out every military object; telling what every line, dot, speck, light, shadow and black and white in it means. It means distinguishing woods, railroads, trenches, machine gun nests, etc.

Nowadays very few pictures are taken below 10,000 feet and many at 20,000. Aerial cameras must have the best lenses obtainable of long focus—anywhere from 15 centimeters to 120 cm. Both plates and films are used—films for mapping when hundreds of photographs must be taken. A sector may take 500 or more pictures a day, and from each negative the photographic section might have to make 50 to 100 prints. This means 10,000 to 20,000 prints a night. The only rest the "eyes of the army" have is on rainy or stormy days.

The value of this information depends on the speed of its production. A photographic print is turned out from a plate in 20 minutes from the time the machine lands with it. A map drawn from the photographs is handed to the officers in the trenches or the battery commander within two hours after the plate goes to the darkroom.

Learning how to do this work in three weeks means constant application to the job. Lectures are followed by practical work in the drafting room, and the men have few spare moments. The French government is constantly sending over thousands of aerial photographs taken on the front for use by the classes. In addition, aerial photographs are being taken over the country lying between Thaxa and Rochester for interpretation. At the end of the course the men are distributed to Langley field, at Hampton, Va., and other fields, from where they are sent overseas, as needed.