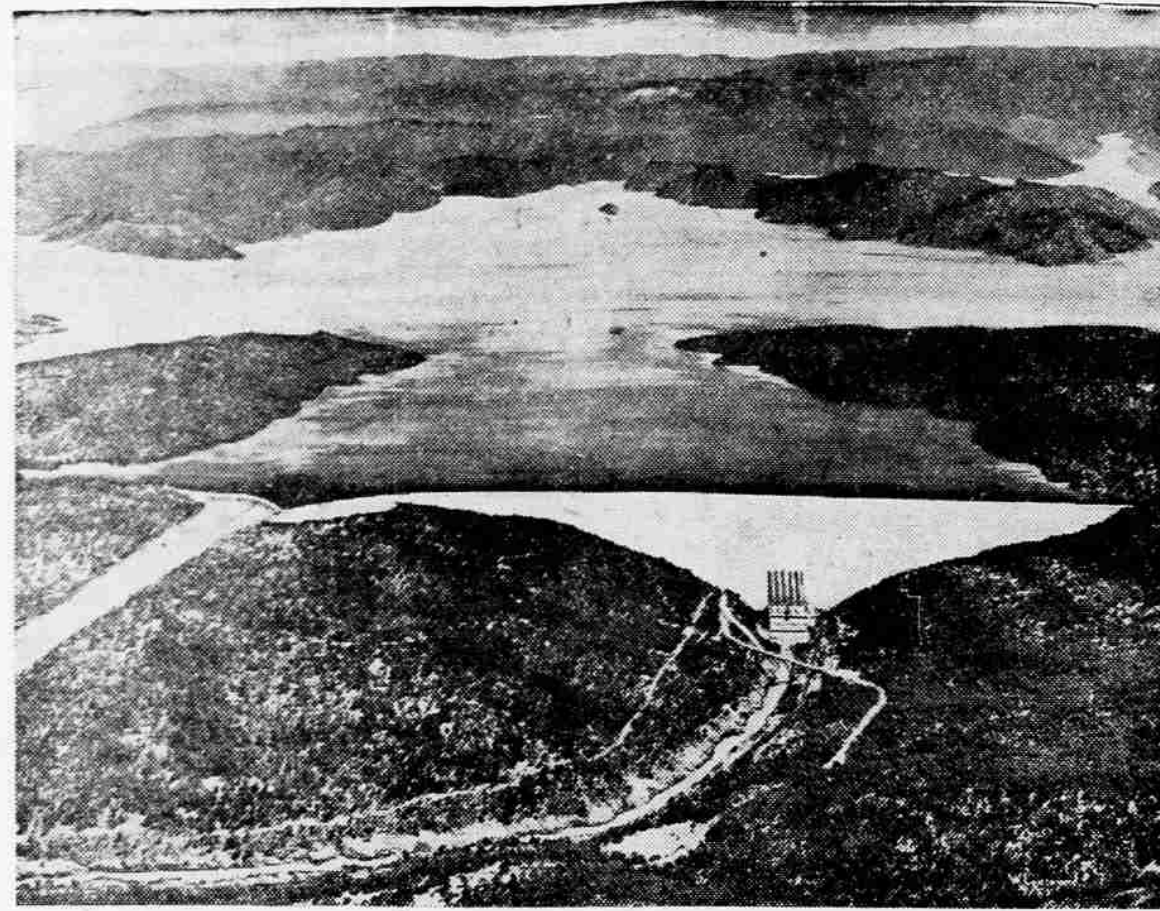




FILMS THE RESULT—The Army's Combat Development and Experimentation Center of Fort Ord are revolutionizing warfare tactics at Hunter Liggett, Calif. Operation Textbook will carry on mock warfare for a number of years in attempting to find out just what sort of tactics and weapons it will take to fight an atomic war. Above, S/Sgt. Shelman Angain of Fayetteville, Ark. uses an M-3 submachine gun with a sunsight movie camera with a three-inch lens. The camera accurately records effectiveness of ground fire against low flying aircraft.



IT WILL BE THE WORLD'S HIGHEST—Superimposed on this aerial photo is an artist's conception of the proposed Oroville Dam, key part of the Feather River project near Oroville, Calif. The dam will be 730-feet high, 680-feet thick and 1 1/4 miles long. It will be the world's highest and most massive dam. Concrete in it would make a 10-foot-wide roadway around the earth's equator.

Aerial Photographs Key To Interstate Highway Program

Salt Lake City — Aerial photographs and technicians who translate them into maps may be the key to successful completion of the 13-year, multi-billion dollar interstate highway program.

This program is America's most ambitious construction undertaking, and one of the bottlenecks already facing its sponsors is the lack of engineers to prepare maps by conventional methods.

Proponents claim that the system of making maps from aerial photos is about five times as fast and can be done at one-third the cost of old-style map making from ground studies alone.

The aerial-based system, known as photogrammetry, is a generation old. It was used extensively in planning and construction of the Pennsylvania Turnpike, among other major projects, and is widely applied in preparing maps for mineral development and pipeline routings.

From 6,000 Feet
One of the largest photogrammetry enterprises in the nation is that operated by the Aero Service Corp., with its main office in Philadelphia and field offices in Tulsa, Duluth and Salt Lake City. This firm has a staff of more than 750 men and a fleet of 35 airplanes.

How the process operates was explained by Norman Rubin, chief photogrammetrist for Aero Service Corp. (Western) in their offices here. For illustration, he used a survey recently made for Salt Lake City of a proposed highway along the eastern face of the Wasatch mountains.

Engineers first took an old, conventional map and decided the flight lines the photo planes were to use on the actual survey. When the actual flights were made, the pilot held his plane—flying at an altitude of 6,000 feet over the terrain—precisely on the flight line.

Photographs are taken only in the heart of the day, to minimize shadows, and at a time when tree foliage is absent to permit maximum visibility.

Overlapping Photos
The photographer-navigator in the nose of the plane aids the pilot in keeping a true course as he operates his aerial camera—taking nine-by-nine-inch exposures on long rolls of film—at precisely timed intervals.

The pictures are made so that each exposure overlaps the previous one by 60 per cent in a forward direction and 30 per cent on the sides.

Level flight is necessary to hold the camera in a true plane. The films are carefully developed and contact prints made that, when put together shingle fashion, form a mosaic of the entire area being studied. This mosaic alone, Rubin explained, is of tremendous help for preliminary routing studies since such features as drain and ridge structures are readily visible.

But for the major task of map making, the films are changed to a glass platform that can be projected through a device called a stereoplotter—one being projected in red, the other in green.

Technicians using glasses with red and green lenses then study the platen of their instrument where the two beams converge. The effect is identical with that of a stereoscopic camera, or the human eye, producing a three-dimensional image.

Elastic Scale
A key facet of the plotter is a white dot that can be moved around with the platen, tracing terrain features, and making a rough map on the paper mounted below by means of a tracing pencil directly under the dot.

Key features on the map—a prominent rock, a road bed, or a stream-bank—have already

Military Housing Shortage Causes Big Morale Problem

Heidelberg — The military housing shortage, which the U.S. Army promised to have licked two years ago, is still separating G.I. families for as much as a year and is causing a sizable morale problem.

More than half of the officers and non-coms assigned to Europe individually must wait from five months to a year before their families can join them. Two years ago, 67 per cent of the families were traveling concurrently. Three years ago, an Army press release promised that "concurrent travel for the great majority of personnel ordered to Germany is anticipated by mid-1955."

The picture is much brighter for members of combat divisions and regiments that transfer from the U.S. as a unit and trade bases with a similar group in Germany. In these "operation gyroscope" rotations, 95 per cent of the families can come with the men.

But for the married soldier assigned individually, a 12-month wait means one-third of his three-year overseas duty in a barracks without his family. His alternative is to try for space-available transport on a troopship for the wife and kids and find them an expensive apartment in housing-short Germany or France.

Property Returned
Although officer and troop morale cannot be measured in figures, Army officials admit that this waiting period is always a source of grumbling and discontent.

The entire expensive program of building housing and transporting dependents and household goods overseas is based on the idea of keeping up morale. In the words of Lt. Gen. Bruce C. Clarke, Seventh Army commander, "the presence of dependents does a great deal for morale . . . an important element of combat readiness."

Officials concede privately that the concurrent travel program fell victim to another Army program—German-American relations. They say the Army gave back requisitioned German housing too fast and that the substitute building program could not keep pace.

With the return of German sovereignty in May, 1955 the return of private property began to accelerate. More than 7,000 properties were given back in 1955. A further 4,500 went out of Army control in the first half of 1956.

In June, 1956, Army families were living in 3,444 German-

BIG BUTTERNUT

West Bridgewater, Mass. — Manuel Travers reported a 13-pound butternut squash from his garden. The average weight of a butternut squash is one to four pounds.

Some Odd Delays

The de-requisitioning schedule includes a further reduction to 708 German homes by September, if "completion of housing now under construction is not unduly delayed" and leasing arrangements can be made for other properties. Many of the places leased will be villas for high-ranking officers and others will be offices.

The Army is the landlord of 39,700 new apartment units throughout Germany and is building several hundred more. They range from two, three, and four-bedroom apartments for non-commissioned and junior officers and their families to duplex houses for majors and lieutenant colonels and single houses for colonels and generals. Civilian employees by the govern-

ment get housing scaled to their pay grades.

In any housing project of this scale—estimated cost is 400 million dollars, paid by the German government as defense support costs—there are bound to be snags, and these add to the waiting time.

A bird in the chimney kept one building in Stuttgart from being occupied for six weeks. The Army refused to accept an entire block of apartments in the Stuttgart area because of giant cracks in the walls and poor workmanship. The buildings were set to rights but there were months of delays. Near Frankfurt, several apartments stood empty for weeks while the Army and a German electric company argued over ownership of transformers.

Poland's Economic Crisis Felt Most in Coal Mines

Katowice — The economic crisis that threatens Poland today is probably felt most of all in the coal mines, once the stronghold of Communism but now an industry that needs help from the capitalist west.

The General Direction of Mines at Katowice, 200 miles south of Warsaw, controls 13 mines. Among them is the medium-sized Myslowice mine which produces between 4,000 and 5,000 tons of coal a day.

The director of the mine, Kazimierz Tyminski, a man in his middle 40s, an accomplished Chopin pianist, with two years each in Buchenwald and Auschwitz concentration camps behind him, spelled out the problems.

Although the stick has been removed from behind the miners, there are no carrots to dangle in front of them. And Poland's lack of hard currency and credits means no replacements for the machinery to work the mines.

Much of it came from Czechoslovakia in recent years but now supplies have dropped. Although there is a small amount from West Germany and Britain, it is not enough.

Soldier Miners
Tyminski has 4,000 workers in the mine. Of them 200 are women and 400 soldiers.

No women now work underground, but they did up until two years ago. The troops—all young recruits—enjoy mine work, for instead of a soldier's pay of 10 zloty (45 cents) per week, they get miners' pay.

Coal miners are the highest paid workers in Poland. They average about 3,500 zloty (\$145) a month. For this they work six days a week and about one Sunday in four.

A 39-year-old miner questioned in the main gallery 1,500 feet below the surface was bit-

POLICE CHIEF DIES

New Rochelle, N.Y. — Police Chief Alfred Bruecker of New Rochelle died Monday night at a dinner during which he was to receive an Elks club award for his 31 years of police duty. Bruecker's wife, son and father were present as he collapsed shortly before the award ceremony.

it was not specific. Just a general attributing of their bad time to the Russians. All of them agreed that help from the West was their only hope.

"We need new machines and equipment, from the mechanical coal-cutters to non-inflammable conveyor belts," one of the engineers said. "We have a lot of fire in this mine. The fire brigade works 24 hours a day. And it will go on until we get non-inflammable belting and equipment."

He proudly showed some new British belting, "non-inflammable and the first we have had."

But he anxiously wondered if there would be any more—whether Britain would grant credits for more or whether there would be more help from America.

It is the same in most industries. It is difficult to imagine the extent to which Polish workers are looking to the West for help.

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