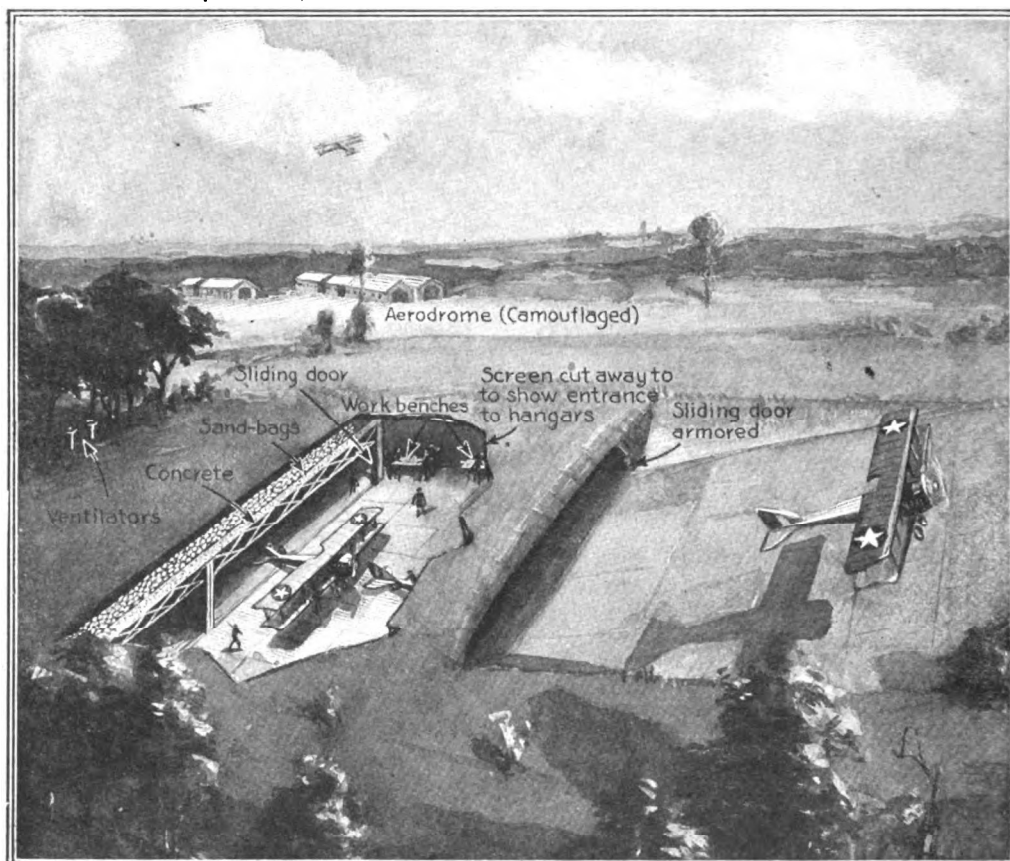


The Airplane Becomes a Mole

A single bomb can do more damage to a flying machine than a day's fighting in the air. Hence the underground hangar appears

By Carl Dienstbach



German underground hangars on the western front. The picture shows the entrance with the elaborate precautions taken to conceal and protect the machines from bombs

THE military airdromes with their hangars and repair shops near the fighting front rival railway stations in tactical importance, and, for that reason, are favorite targets for the enemy's airbombs. More airplanes are destroyed in their hangars by one successful bombing raid than in many days' fighting in the air. The destruction or damaging of repairing and "tuning up" facilities is also a serious matter. Hence it is not astonishing that the Germans are now housing their airplanes underground.

It soon became clear that hangars at the front would have to be built underground like those in a fortress within range of the enemy's shells. But hangars cannot be put underground as easily as barracks or munition magazines. Airplanes, with their enormous wings demand a great deal of space and cannot easily be stowed away in a hole in the earth.

Large, and at the same time unobstructed underground spaces would necessitate very elaborate and costly supports for the ceiling. They also would have to

be placed at a great depth to make the roof bomb-proof. This would, in turn, make it necessary to construct a deep, long inclined open ditch by means of which the airplanes get in or out. Such a ditch would be hard to dig and would be easily clogged by the enemy's bombs or shells.

The most practical and most economical form for an underground hangar is a long tunnel, just wide enough to accommodate a single file of airplanes. This form is necessary to give to the roof the greatest possible strength to resist bombs, without using too expensive a construction of girders and without going too far underneath the surface. The runway ditch, leading gradually down into the hangar, must have slanting side walls to give it strength to resist the effect of bombs. The floor and the sides of the ditch should be covered with a continuous layer of one-inch armor plates. Sliding doors armored with two-inch steel plates and running on ball-bearing rollers on tracks must be provided.

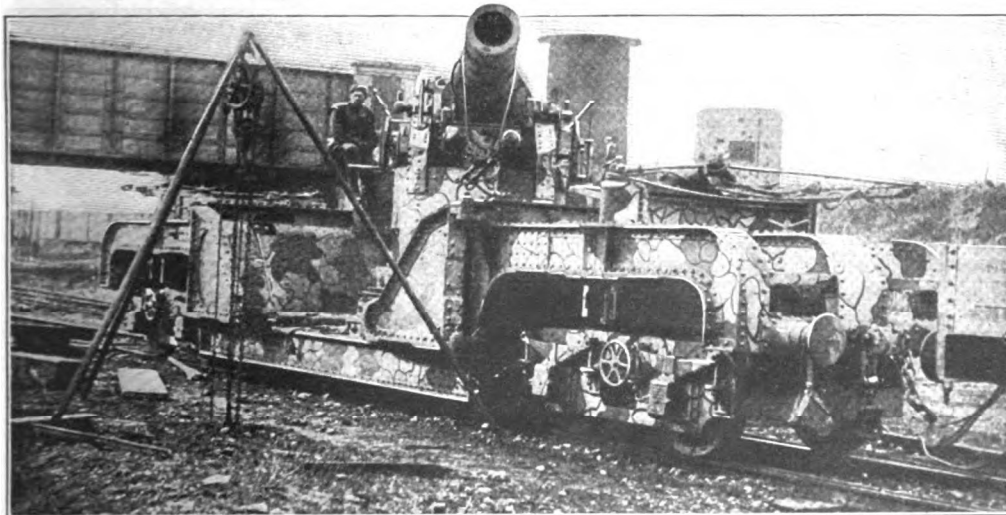
To ventilate the hangar, air shafts should be provided, leading to high chimneys some distance from the underground structure. This is necessary in view of the fact that the hangar in its side galleries gives shelter to the repair shops, forges and magazines as well as to the living quarters of the men who work in it. The interior must be supplied liberally with electric light and drinkable water.

Making Believe with Paint and Brush at the Front

THE observer in the airplane tries in vain to locate the enemy gun; his eye, looking through a telescope, fails to detect its muzzle through the foliage. So he flies away and the gun is not attacked.

This is an example of camouflage as it is practiced in the European war. And the camoufleur is so expert that his business of fooling the enemy has become an art.

An early use of camouflage by the French was the application of paint to big guns in order to make them resemble the foliage in which they were partly concealed. However, when the guns had to be placed in the open the disguise only accentuated their visibility. The protective coloration of birds and animals gave a hint to the camoufleurs who saw that it disguised the outlines of these creatures and counteracted to a considerable degree their undershadows. So the high lights along the gun barrels were darkened and their under surfaces lightened. The colors of the paint, of course, harmonized with the surrounding objects. The finishing touches to this work consisted in irregular streakings and blotches which broke the outlines and at least confused the observer if they did not serve to produce invisibility.



This big British gun is being made ready for the front with the aid of brush and paint applied by artists, who make it appear as part of the landscape