

MILITARY SCIENCE

# German Artillery Has Few Surprises, Says U.S. Expert

## Limited Resources, Technology No Better Than Ours, And Army to Supply Make New Developments Unlikely

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*Prof. Miller, Colonel of Ordnance Reserve, was chief engineer of heavy artillery in the A. E. F., and had charge of the collecting of captured German heavy guns brought to this country. He is the author of The Paris Gun, standard book in England and Germany on the long-range gun that shelled Paris in the spring of 1918.*

**D**ON'T expect artillery miracles of the Germans, when their heavy guns begin to pound at the Maginot Line.

It is highly unlikely that the Fuehrer's ordnance officers have any great surprises up their sleeves. With limited fiscal and material resources, technology no better than our own (and in many respects not as good), and a tremendous new army to supply with imperatively necessary rifles, machine guns and small-caliber artillery, they have had little opportunity to develop any overwhelming "trick stuff."

There is a real tendency in the press of today to overestimate the quality of German artillery. In the main they have simply put into production World War designs, with some few obvious improvements for transportation. I am referring particularly to rubber-tired wheels, which have become a necessity for armies in rapid movement.

However, even here the Germans seem to be lagging. They have not adopted the balloon tires now common in other armies. Their guns have solid rubber tires, like old-fashioned trucks, and some of them are apparently still

rolling on steel-tired wooden wheels of the old World War types. This indicates very clearly a limit in their supplies of materials and a limit on their production capacity for new transportation devices.

How prone we are to imagine that other peoples can accomplish industrial miracles which even the greatest industrial nation on earth finds itself unable to achieve! I found throughout the World War that we were crediting Germany with the ability to accomplish things and produce miraculous devices that we knew ourselves unable to develop. Now we are once more crediting a potential adversary with the same ability.

We all realize how long it takes to put on a major armament program. With all of the manufacturing establishments for heavy equipment in this great nation, it is rather absurd to imagine that a nation of much inferior industrial capacity can perform so much more than we can.

It seems to me quite safe to assume that the Germans have a very limited supply of the heaviest artillery. They were compelled first of all to equip themselves with 37-millimeter guns, machine guns, semi-automatic guns for as much of their infantry as possible, 77-millimeter field guns, anti-aircraft guns—and only then could they begin on some of the heavier artillery.

I feel sure that the pictures which I have seen of four railway carriages carrying guns of either 170 or 210 millimeters are always pictures of the same

## ● RADIO

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four guns. There is some little evidence that they may have constructed at least one of the large carriages for the 381-millimeter (15-inch) naval gun. Several of these would be of real value in the bombardment of gun and supply positions in the rear of the Maginot Line. But one must not imagine that they can be made overnight. It requires a long time and unusual facilities to manufacture them.

All of this constitutes a very important reason why Mr. Chamberlain and M. Daladier cannot give Hitler any more time to build more of this equipment. He has the full facilities of the Skoda plant, now that Czechoslovakia does not exist, and if he has enough skilled workmen to operate it he can of course step up his production of this kind of equipment.

One more year of enforced slave labor might enable him to produce an amount of equipment that would be more than the French and the British could cope with.

*Science News Letter, February 3, 1940*

AGRICULTURE

## Tear Gas Effective As Killer of Insect Pests

**C**HLOROPICRIN, the poison gas that makes strong men weep on the battlefield, does worse than that to the hordes of insect enemies that ruin grain in storage. It kills them outright. Kenneth L. Knight, University of Illinois entomologist, reported on the results of 135 large-scale experiments with chloropicrin fumigation.

Grain in loose-woven sacks was simply placed in a tight vault and mass fumigation methods used. When the grain was in tighter, lined sacks the gas had to be injected into each sack separately. This was slower and more expensive, but because of the better protection, reinfection with the pests was less likely to occur.

*Science News Letter, February 3, 1940*

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