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How the Army Builds Bridges

The blitz in blitzkrieg is really spelled b-r-i-d-g-e-s.

Without bridges there could be no blitzkrieg. In fact, there could be but little "krieg" without modern military bridges.

Bridges are the key to mobility, and mobility is the heart and soul of the 20th century war. All the mechanization in the world is valueless if it has to stop at the first deep creek or river.

When Hitler overran France - the France that wanted to fight as she did a generation ago - his initial purely military successes were due to his bridges. France never overcame these ^{initial} ~~initial~~ ^{key} successes.

The Nazi army either had heavy bridges tailor made to replace those at the border destroyed by the retreating army, or was able to throw temporary bridges across streams so fast the French army lost almost all the value of destroying its bridges behind it.

Last winter the amazing Red Army held Leningrad because it was able to maintain communications with the beleaguered city over a bridge built across frozen Lake Ladoga.

Here in the United States we have not only kept up with the armies of the rest of the world, but we have developed techniques and styles unequalled elsewhere.

Our Army Engineers can throw a footbridge for infantry over a fast-flowing 300-foot-wide river in a shade over 10 minutes. It can span this river with a bridge that will carry 20 tons - comparable with a civilian bridge that will carry 100 tons - in less than a half hour. It has a bridge that will carry 30 tons that it can complete in less than 2 hours, a bridge that will carry all but our very heaviest tanks.

It has just recently invented ^{designed and} ~~invented~~ a perfected ~~special~~ ^{special} bridge for the

use of the armored forces. This bridge will carry 50 tons, is practically unsinkable, and is exclusive with us.

Bridgebuilding is a big operation. It is carried out jointly by the infantry and engineers.

Most important is the element of surprise. If we can get started before the enemy expects us we can save a lot of lives and have a better chance of success. For this reason the army begins the job at night. It can be done in the daytime, by use of smokescreens.

First step is to establish what is known as a "bridgehead" on the opposite shore. What this means, simply, is that we hold and control the approaches to what will be the far end of the bridge.

To do this the Army uses small, light assault boats which will carry with equipment, 11 men, or fewer men and very light equipment. Two men are always engineers, who return for nine more infantrymen as soon as they discharge a load of soldiers.

These infantrymen must drive back the defending forces before it is relatively safe to proceed with the next step.

Under actual war conditions, these operations will extend for about two miles along the river, with perhaps 100 assault boats ferrying men. The army plans it so the opposite shore is held by our forces by dawn.

When we hold the enough of the opposite shore we throw a footbridge across the river. This is a narrow bridge about two feet wide supported by unsinkable, solid floats made from scrap rubber. The bridge surface has already been prepared in eight-foot lengths which are anchored onto the floats. Sidepieces are added, the bridge is braced against the flow of the river and then the men dash across in fairly large numbers.

These men force the enemy back farther and insure our control of bridgeheads.

some of the stress to anchorages on the shore.

(The various photos show these trestles. Because these photos are of different bridges they will show as many as three trestles. Be careful in using them to use a single operation, where the trestles show. Other terminology used by the engineers to describe parts of this kind of bridge: Balk - the beams that support the flooring; chess - the flooring.)

This type of bridge is rugged and can be used for all purposes. It permits a heavy flow of men and equipment. It safely carries armored forces.

However, there is a superior type bridge for the armored forces. This bridge is an exclusive development of the U.S. Army Engineers. It is designed to meet the needs of our mechanized forces, but it can be used for general purposes.

This bridge, also a ponton bridge, is of ^{dual} steel treadways supported by coming in sections rather than continuous flooring, which must be added by hand. These treadways weigh about a ton apiece. They are so designed that a motorcycle with sidecar can cross on a single treadway, and a jeep can cross on the pair. Yet the pair of treadways is wide enough to allow passage for America's 30-ton tank.

Rubber pontons, or floats, with compartments that are inflated but separated from each other so that a hole in one or several compartments will not sink the pontons, support the treadways. A special plywood saddle fits onto the ponton, and the treadways are ~~linked~~ ^{linked} to it.

This bridge makes it possible for the armored forces to attain a maximum of mobility and speed, without which they are practically valueless. Yet it has the heaviest load carrying capacity.

Ferrying operations are facilitated by this design. The pontons and

treadways are assembled in units at the shore. They are loaded, propelled to the opposite shore, returned to the advanced point in the bridge and locked into place. These sections carry a heavier load than the wooden sections. They can be put into service faster, too.

The ideal situation for the army is to employ all three types of bridges simultaneously. The footbridge can be used even after the larger bridges are in, and when the special ~~max~~ armored-force bridge is used to supplement the standard ponton bridge a maximum flow of both men and materials is possible.

Contrary to popular opinion, the major problems in building these bridges, once the parts have been brought up, is neither the depth of the river nor the speed of its current. The approaches give most trouble. Steep banks may mean bottlenecks because all work must be done at one point. Steep banks may also make it impossible to use the bridge sections as ferries. They may also add to the danger of the initial assault by keeping the offensive force from hitting over a wide area.

But when the bridges are to be built, we have the stuff to build them with and the "know-how". Neither end of the axis exceeds us in this.

When the use of ~~both~~ ^{these} temporary bridges are replaced by ~~semi-~~ permanent wooden structures, as the ~~destroyed~~ bridges are repaired, and the portable equipment is transported to the front to be used again for ~~the~~ new advances.