

ENGINEERING

American Armored Force Is a Fast-Growing Infant

In Six Months, It Increased in Size 350 Per Cent; Will Have Grown 1200 Per Cent Before Full Development

ALTHOUGH America's armored force is only an infant, as compared with the giant that crunched through the armies of Britain and France last spring, it is none the less a very fast-growing infant.

In the six months that have elapsed since it was officially born, on July 10 of last year, it has increased in size by 350% over its initial 7,411 officers and men and 1,800 vehicles, Maj. Gen. Charles L. Scott, U. S. A., its acting chief, reported to the Society of Automotive Engineers meeting in Detroit. By the time it reaches the full growth now planned for it there will be about 84,000 officers and men and 20,000 vehicles, or an expansion of approximately 1200%.

The armored force is a new and distinct weapon, a creature of the new World War, Gen. Scott pointed out. It is intended for deep-slashing forays far into the enemy's rear, disrupting his communications, destroying supplies and supports, and breaking morale. Working usually in close collaboration with the air force, it acts as a spearhead to open up a wound through which other arms—infantry, artillery and mechanized cavalry—can then pour themselves, to expand and exploit the initial advantage.

Characteristic of the armored force is its extreme concentration of machine-gun fire power, the speaker pointed out. For example, the streamlined infantry division brings into action about 250 machine guns of the usual .30 caliber type; the armored division carries 4,000 of these weapons—about 16 times as many.

Despite its terrific hitting power, the armored division was not held up as master of all weapons in the field by Gen. Scott. The armored division, he said, "is sensitive to terrain, cannot work in mountainous country and marshes, and is slowed down in terrain cut up by numerous stream lines. It is a powerful striking force but is weak in manpower for holding missions. It must be employed skillfully and forcefully at the appropriate time and place and be fol-

lowed up promptly by other arms, in order to attain the greatest success in extensive operations."

There is some confusion, in the public mind, between a motorized unit and an armored unit, Gen. Scott stated. To clear this up, he defined motorized troops as those that ride into action in motor vehicles, but then dismount and operate on foot in more or less time-honored fashion. The armored unit rides into action in armored vehicles most of which are themselves weapons for its peculiar type of combat. It can fight mounted, dismounted, at a halt or in motion—usually by a combination of all these methods.

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Wider Rims for Tires

WHEN you buy a new car next year, or the year after that, the wheels may have wider rims than those on the '41 models. Results of a cooperative study

by the tire and automobile industries have revealed a number of advantages—and some disadvantages—to larger rims, members of the Society of Automotive Engineers heard.

The proposal is to use existing tire sizes, but on rims 1 to 1½ inches wider than at present. This would make the ratio of rim width to tire width 75% to 82%; instead of 62% to 68% as they are now.

E. A. Roberts, of the Firestone Tire and Rubber Company, declared tests had revealed that with wide rim tires:

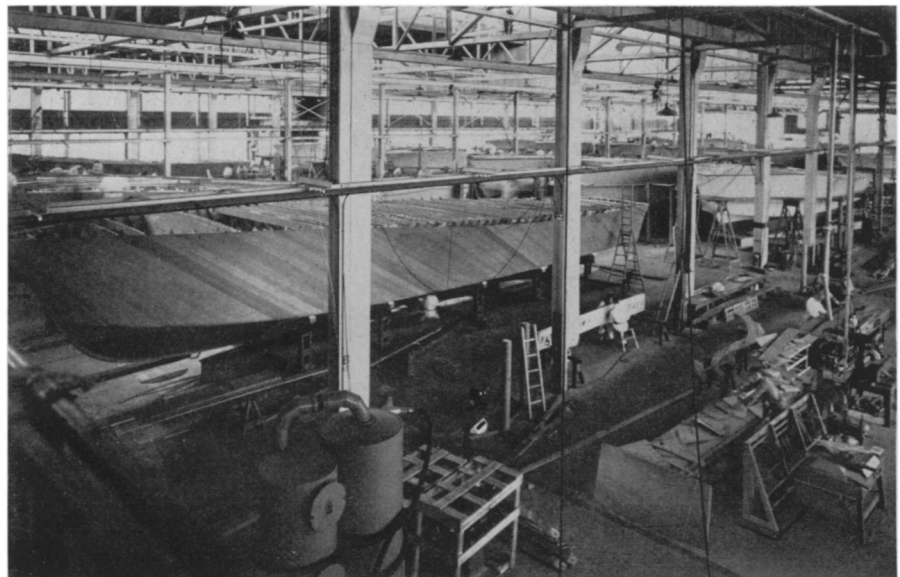
"1. There is an average improvement of 20% in non-skid tread mileage, the increase ranging from 5% for easy driving conditions to 80% for tests at maximum speed under hard driving conditions.

"2. Stability and cornering power increase with rim width—approximately in the same proportion.

"3. The effect of increased stability is very evident in improved cross-wind handling, especially at high speed.

"4. From 2 to 4 lbs. per sq. in. reduction in tire pressure was found necessary with wide-rim tires to produce equivalent ride, equal harshness, thump, and so on."

R. D. Evans, manager of the Tire Research Development Department of the Goodyear Tire and Rubber Company, pointed out that engineers had long recognized that wider rims increased a car's lateral stability and cornering



ON PRODUCTION LINE

Seventy-foot sub-chasers and motor torpedo boats are among the craft going through a production line designed and built by the Austin Co. in 75 days to speed defense. The photograph was made at the Elco Naval Works in Bayonne, N. J.