



**THE SOGGY SOLDIER** above found that swimming a stream with full equipment was not easy. His buddies, trained in life-saving by the Red Cross, brought him around in no time.

Unlike persons who go to the beach or pool for an afternoon dip, the soldier, under combat conditions, does not change into a scanty bathing suit or trunks. He must be prepared to enter the water fully clothed, wearing heavy shoes and a steel helmet. His clothing may weigh as much as 17 pounds. Add to that a 60-pound pack containing equipment and the army's not-too-light Garand rifle, and you have a good idea of what is meant by an aquatic obstacle.

#### Air Pockets Help

When the Red Cross first started sending men into the water with full equipment, some would edge over to where the water was shallow—just in case. But they soon learned that air pockets formed in parts of their clothing and that air pockets made the pack something of a float. With the knowledge that they would not be dragged beneath the surface by their clothing and equipment, they lost their fear of deep water.

To make the soldiers mobile in water, a wholly functional training course was adapted from the variety of swimming and diving skills included in the Red Cross courses. Because the effort of lifting a water-soaked sleeve sapped the strength of the swimmers, strokes which brought the arms out of water were eliminated.

Other techniques suitable for ordinary

swimming, but exhausting under war conditions, were also eliminated.

There developed from this a type of swimming which required only nine advanced aquatic skills: the breaststroke or sidestroke, using the legs and one arm only; swimming on the back, using

#### AERONAUTICS

## Catapult Land Planes

➤ A PORTABLE, trailer-carried catapult, for launching land planes as similar apparatus on shipboard launches flying boats and pontoon-equipped planes, is the potentially war useful invention on which U. S. patent 2,292,374 has been granted to Paul G. Hagenbuch of Arlington, Va. It will enable army commanders to launch planes from close behind front lines, the inventor points out, for it will no longer be necessary to find and clear even a small emergency landing field for a take-off run.

Mr. Hagenbuch's invention differs very little from the long-familiar ship's catapult, except that the runway folds in hinged sections for convenience in "march order". It is intended primarily for truck towing, though there is no reason why it should not be mounted on a railroad flat car.

There is no reason, either, why it

could not be used in conjunction with a landing field. The latest aircraft carriers in our Navy have catapults as well as runway space on the top deck, so that several planes can be launched at the same time. Similarly, several of these land catapults could be ranged around the sides of a landing field, ready to pop their planes into the air on a few seconds' notice, while others are racing down the runways. It could also be mounted on top of buildings in cities, to send up interceptors.

This results in a type of swimming as functional as walking or running, and just as easy to learn, if the pupil applies himself. With this sort of training, the value of a soldier is enhanced immeasurably. Even though he may be injured or wounded, a soldier so trained should be able to navigate under most conditions, or at least remain afloat.

#### Civilians Safer

Civilians, too, would find that their swimming experience would be happier and safer if they sought to swim well rather than fast. They would find their ability in water greatly increased if, instead of attempting to begin their experience with the American crawl stroke, they would first learn the good, old-fashioned breaststroke or the sidestroke, or learn one of the other Army methods as insurance against that accidental ducking which usually happens while fully clothed. And they, like the doughboy, would have mastered a style which could be adapted to meet almost any situation or condition encountered in the water.

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The inventor sees another possibility in the launching of radio-controlled planes or radio-steered aerial torpedoes—craft as yet only in the earliest experimental stages.

He states that the United States government may manufacture and use his patent without payment of royalties.

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