

## The Air Fleets

In a recent issue of the Saturday Evening Post of Philadelphia, an article appeared under the above title by Glen H. Curtiss, the famous aviator. The following are some interesting extracts from the article:

Miles high in the air, invisible to the struggling hosts on the terrestrial battle-fields of Europe, mere needle-points in an immensity of space, thousands of aeroplanes are fighting a dream battle for the supremacy of the air. On the outcome of this unseen, and by the masses, little-headed battle may possibly depend the fate of all Europe. For this fight to the death may result in the unleashing of those mysterious dogs of war, the Zeppelins, the stupendous possibilities of which are almost beyond the bounds of the imagination.

The awfulness of this combat can be imagined by those only who thru personal experience in the upper air have come to realize the insignificance of objects or individuals in this practically limitless space. Away up there, in machines speeding at the rate of nearly two miles a minute, men need in the clearest weather be but three or four minutes apart to be hopelessly lost from sight of one another; in hazy or cloudy weather an enemy may be within easy striking distance before he is either seen or heard.

### Eyes of the Army

The work of the aeroplanes will probably not appear in one decisive conflict, but bit by bit the cumulative effect of their work is unquestionably having a great effect upon military strategy and tactics. To question the value of aeroplanes in warfare is to question the value of foreknowledge. To Europe's struggling hosts the aeroplanes are far-seeing eyes, that look alike beyond fortifications, hills and woodland, and reveal to the opposing commanders every move of large bodies of troops. Just as long as both sides are well equipped with aeroplanes unlooked-for coups on a large scale will be practically impossible, unless perhaps thru the help of the automobile vast numbers of men are carried swiftly under cover of darkness across many miles of territory.

Back of the aeroplane forces are the great dirigible balloons. Their turn may come when they can be used without let or hindrance. For the moment they may occasionally work under cover of darkness, but they seem too vulnerable to aeroplane attack to be risked in the open warfare of broad daylight. First,

then, unless I am greatly mistaken, it will be aeroplanes against aeroplanes until the path is clear for the warships of the air. But if either side can clear the air of its opponent's heavier-than-air craft, then the dirigibles and other lighter-than-air machines will have to be classed with the major forces, such as lightning, cloudbursts, tornadoes and earthquakes.

First, however, there remain the thous-

which have two superposed surfaces. Either of these classes may be of the tractor variety, which is drawn thru the air by a propeller projecting in front of the machine, or a pusher, which is impelled by a propeller or propellers at the rear of the main surfaces. The advantages claimed for the tractor type are, first, that the heavy motor is in front of the aviator and consequently cannot fall on him in case of a tumble; second, that the propeller in front of the machine is more efficient because it is biting steadily into new undisturbed air. For the pusher type is claimed first, a wider range of vision and action for the aviator, who can see or shoot directly ahead without interference from the

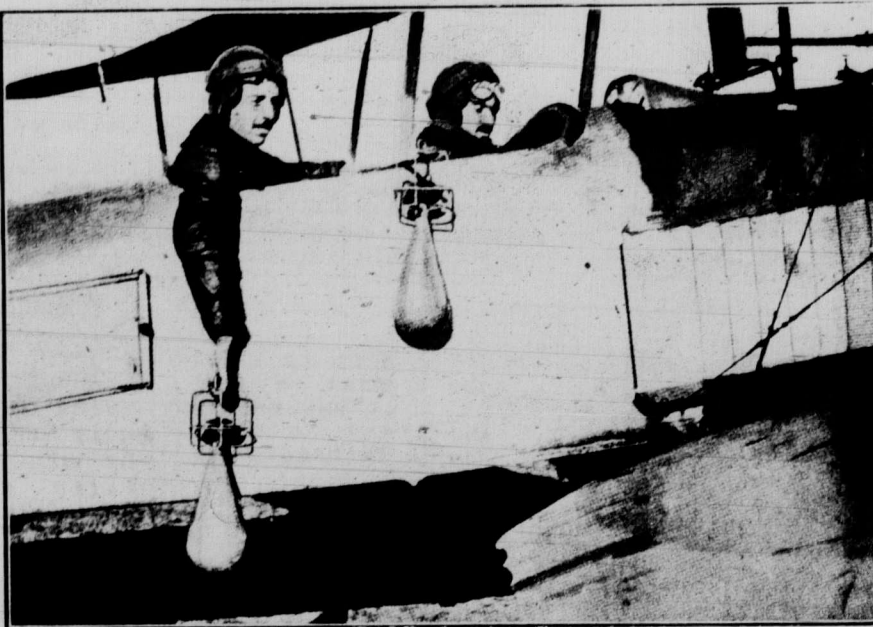
monoplane. But these are moot points, and in the aerial fleets of Germany, France, Russia, Austria and England tractors and pushers, biplanes and monoplanes, all find their places among the different minor types of the aeroplane species.

### The Mosquito Fleet of the Air

The British War Office classifies three distinct types of military aeroplanes, with two supplementary divisions, and designates the main classes as light scouts, reconnaissance aeroplanes and fighting aeroplanes. Practically the same classes are recognized in all the other countries. The light scouts may be either monoplanes or biplanes, but the fastest of them today are the tiny French monoplanes, capable of a maximum speed of not far from a hundred and fifty miles an hour, tho almost any machine capable of more than a hundred miles an hour may be said to belong to the speed scout class. They are the mosquito fleet of the air. They are designed to carry only a pilot and as a rule fuel enough for but two to three hours. With their very small surfaces and relatively great power they are able to climb into the air at amazing angles, sometimes faster than a thousand feet a minute, their horizontal speed being from a hundred to a hundred and fifty miles an hour, or faster than anything else in the world but an explosive-propelled projectile. In them everything is sacrificed to speed. Their range of action is very limited, their offensive ability practically nil, and they are so light and delicate that they can be used only from specially prepared bases, with large expanses of absolutely level ground to rise from and alight upon. Because of their speed they are practically immune from attack in limited areas, and can dart out to secure special information or carry special dispatches and dart back to headquarters again with small chance of being struck by rifle bullets either from the ground or the air.

Almost all of these very fast little fellows are French monoplanes of the tractor type, and they are owned by France, England and Russia. England has another and far more useful type of fast speed scout in her tiny single-seater biplanes. These have a maximum speed, with their hundred horse-power motors, of considerably more than a hundred miles an hour, and they possess the very great advantage of being able to slow down to less than forty miles an hour for landing. On an ordinary field a machine can be landed safely at forty

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Method of Dropping Bombs on the Enemy

ands of aeroplanes to be dealt with. Each of the countries involved in this war uses more or less characteristic types of aeroplanes, and only the war can prove beyond question which type is the most effective for military purposes, or if, as seems likely, as many kinds of airships are needed to complete an offensive and defensive aerial force as there are kinds of vessels in a modern navy.

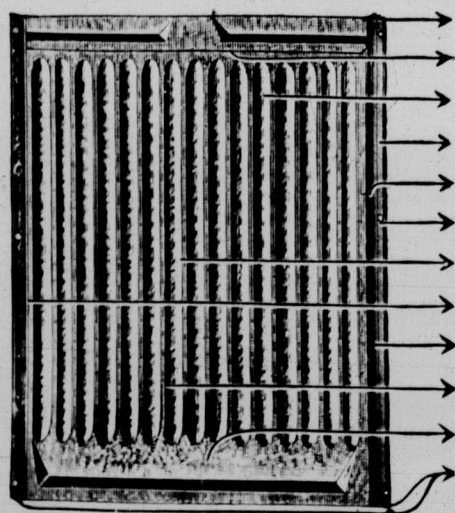
There are two great general classes of aeroplanes—the monoplanes, which have but a single surface, and the biplanes,

propeller whirling directly in front of him; second, greater comfort and increased efficiency for the aviator, who is free from the hundred-and-fifty-miles-an-hour wind blown into his face by the tractor screw. As to the relative merits of monoplane and biplane, it used to be quite generally admitted that the monoplane had the greater speed, while the biplane had greater weight-carrying ability. During the past two years, however, the biplane has made remarkable advances in the matter of speed range, and it is now in more general demand than the

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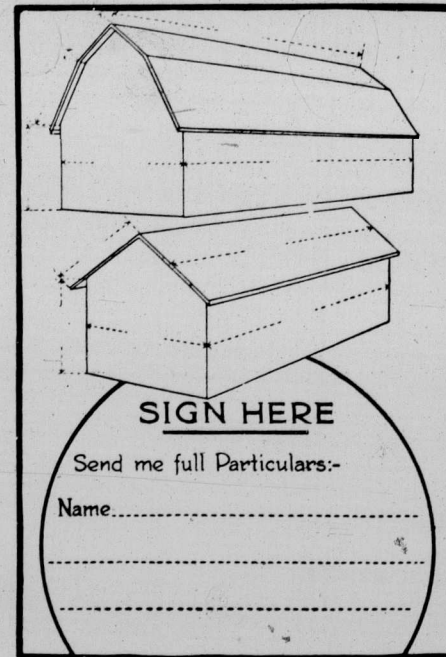
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