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NOTES ON IDENTIFICATION OF AEROPLANES.

DEFINITIONS.

Monoplane.—An aeroplane with one wing on each side of the body.

Biplane.—An aeroplane with two wings on each side of the body.

Triplane.—An aeroplane with three wings on each side of the body.

Tractor machines.—Machines having the air screw in front of the wings.

Pusher machines.—Machines having the air screw behind the wings.

Nacelle.—The term used in pusher machines for the body which carries the engine, controls, observer, and pilot. The *Caudron*, although it is a tractor, is constructed after the pusher type. In "pusher" machines, the nacelle projects well in front of the wings.

Under carriage.—The part of the structure connecting the wheels to the nacelle.

Fuselage.—The body of a tractor machine, which carries the pilot, observer, and engine, and extends back as far as the tail. All fuselages now are covered with canvas or three-ply wood.

Tail.—The small horizontal plane at the end of the fuselage.

Rudder.—The small vertical plane or planes attached to the tail.

Fin.—A small vertical fixed plane on the top of the fuselage and tail. The rudder is usually attached to the near end of the fin.

Dihedral.—An aeroplane is said to have dihedral when the wings, as seen from the front, are set at angle to each other on either side of the body.

Stagger.—An aeroplane is said to have stagger when the lower wings are not set vertically below the upper wings.

Leading edge.—The front edge of the wings of an aeroplane.

Trailing edge.—The rear edge of the wings of an aeroplane.

Ailerons.—Flaps fitted to the trailing edge of the main plane in order to give lateral control. Ailerons are sometimes very conspicuous.

Overhang or extensions.—An aeroplane is said to have overhang when the upper wings are longer than the lower wings.

Sweep back.—An aeroplane is said to be swept back when the wings, as seen from above or below, are not set in a straight line. Sometimes the leading edge is swept back while the trailing edge is straight.

Cut back.—When the trailing edge is longer than the leading edge.

Wedge shape.—When the leading edge is longer than the trailing edge.

Struts.—The wooden supports joining the upper wings to the lower wings.

These notes should be studied in conjunction with the latest edition of "Silhouettes of Aeroplanes."

BRITISH.

F. E. 2b and 2d.—There are a considerable number of machines of this type. They are easily distinguished by their large size, open-tail booms, and marked dihedral. The engine also has a loud purr, which is readily distinguishable after a time.

BRITISH.

B. E. 2e. and R. E. 8.

BRITISH.

B. E. 2e and R. E. 8.—These machines, except for a difference in the rudders, are difficult to distinguish. Their characteristics are marked stagger, dihedral, and overhang and the particularly blunt cut-back tips to their wings. The engine is fairly silent.

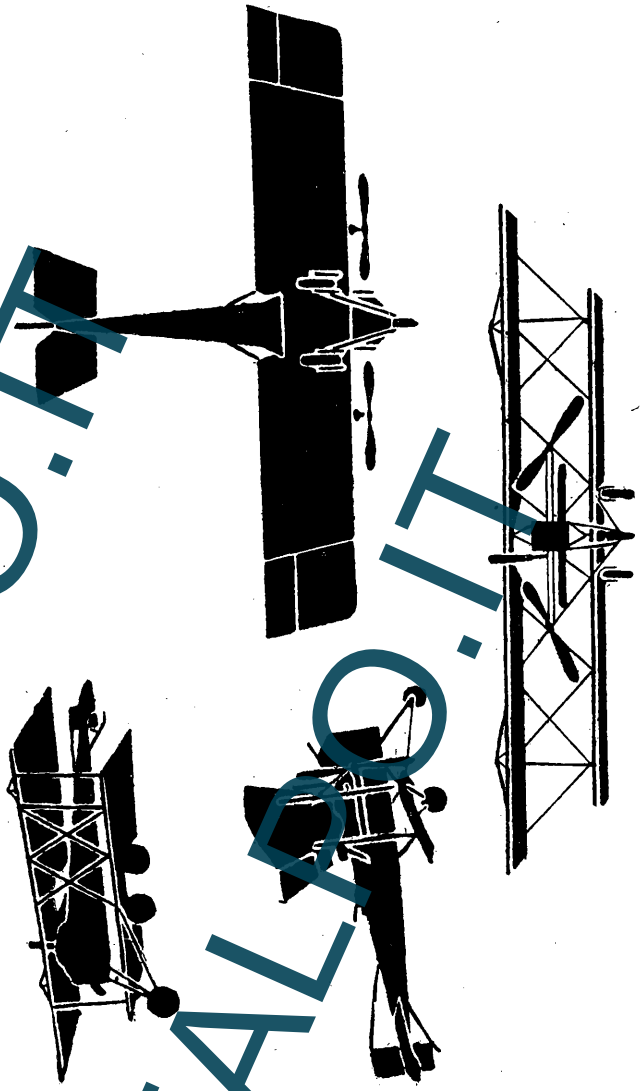
The rudder of the *R. E. 8* joins the fuselage almost at right angles, while that of the *B. E. 2e* has a fin in front of it which slopes away to the fuselage.

BRITISH.

Morane Parasol.—The *Morane Parasol* is a large two-seater monoplane with the fuselage suspended well below the wings, giving it the form of a cross when approaching and receding.

FRENCH.

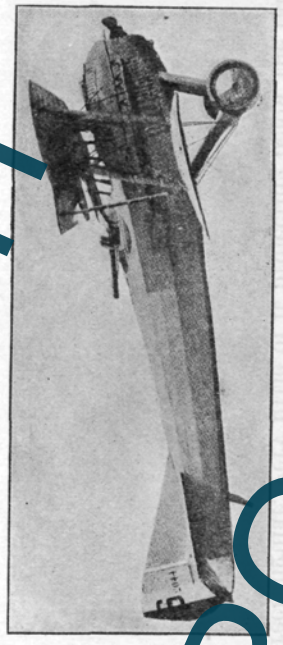
The French Morane is a very large, three-seater, twin-engine biplane. It has slight overhang, no dihedral, and no stagger. The wing tips are cut back and there are five pairs of struts (including the engines) on each side of the fuselage. The fuselage, tail, and rudder are of the ordinary *Morane* type.



FRENCH.
Moineau.

FRENCH.

The Moineau is a three-seater reconnaissance machine. It has overhang, but neither stagger nor dihedral. The wing tips are square cut; it has one pair of struts on each side of the fuselage, which is closed, and the bracing wires are very conspicuous. It has two tractor propellers geared to one engine. The tail is of type D; the fin is triangular, and the rudder is rectangular, very little of it projecting below the tail.



FRENCH SPAD (2-seater tractor biplane).

FRENCH.

The Morane Monocoque is a single-seater monoplane flown by the French. It is not a parasol. The wing tips are cut back, and there is no piece of the planes cut away near the fuselage. The tail is of type Y, the rudder projecting considerably beyond it.

24997°—13——4

GERMAN
Albatros

GERMAN.

Albatros.—The *Albatros* is the commonest of all German machines, and is a fast reconnaissance type. It can be picked up by its overhang, squarish wing tips, and very large fish tail, type B (par. 12). It has a large fin and rudder above the tail, and flies, as many German machines do, with its tail well cocked up in the air.

The latest type *Albatros* has no overhang, and the tail is of a blunter, more rounded fish type.

GERMAN.
Aviatic.

GERMAN.

Aviatik.—The *Aviatik* is also very similar to the *Albatros*, the main difference being the tail, which is kidney-shaped. (Type C, par. 12.) The wings are slightly swept back.

These three German reconnaissance machines are all very similar, and close observation is needed to differentiate one from the other. However, by reason of their overhang, coupled with the closed fuselage, their large and easily distinguished tails, and their habits of flying with the latter cocked up, they are not difficult to recognize as hostile machines.

GERMAN.

D. F. W. Aviatik.

GERMAN.

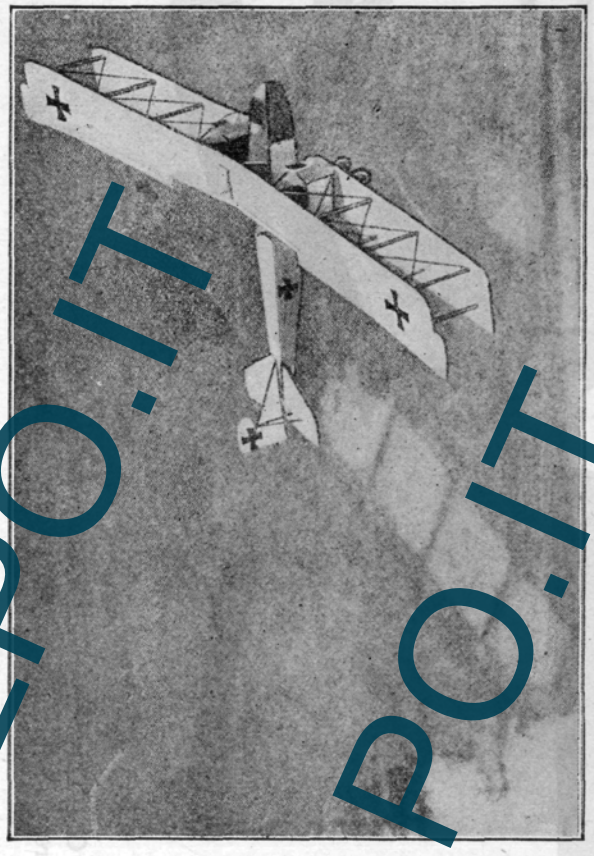
The D. F. W. Aviatik is a machine with planes of equal length, no stagger, and no dihedral. The tips of the upper plane are cut back, and those of the lower plane wedge-shaped. The tail is of a rounded fishlike appearance—a cross between the *Albatros* and *Aviatik* types.

GERMAN.

The Rumpler is a two-seater tractor machine with slight overhang; the upper plane is cut back and the lower plane nearly square. The tail is of the fish type.

GERMAN.

L. V. G.—The *L. V. G.* is similar to the *Albatros* except that it is somewhat larger, with a more pronounced overhang. The leading edges of the wings are markedly swept back.



GERMAN.

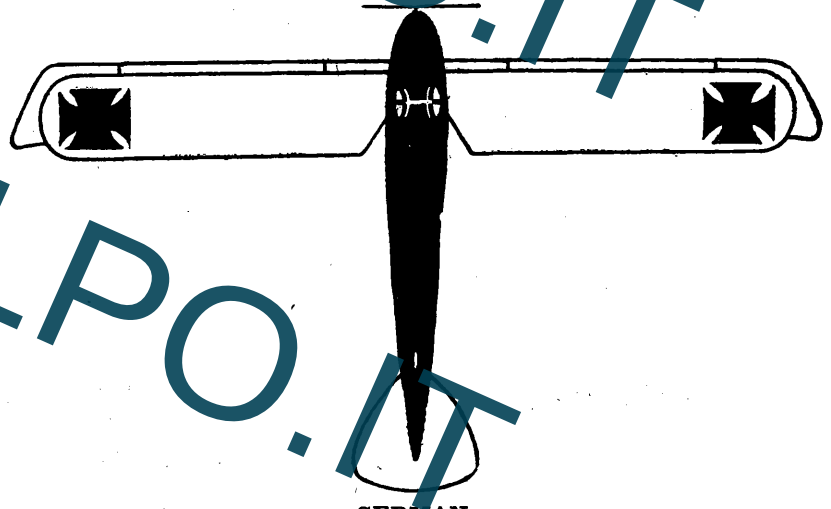
Gotha.

GERMAN.

The Gotha is a very large twin-engine machine. The wings are markedly swept back and have a slight overhang. The fuselage is closed and the tail and rudder are very distinctive, as under.

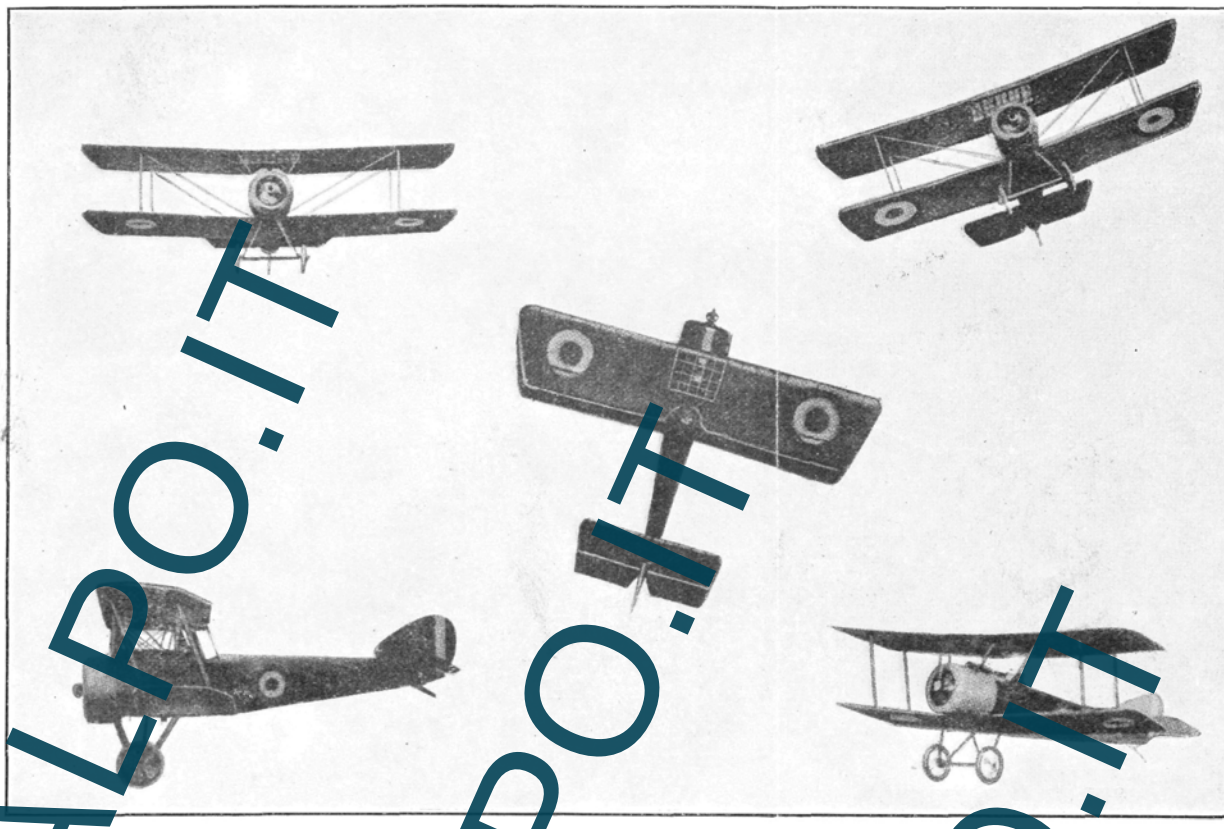
Tail.

Rudder and fin.



GERMAN.

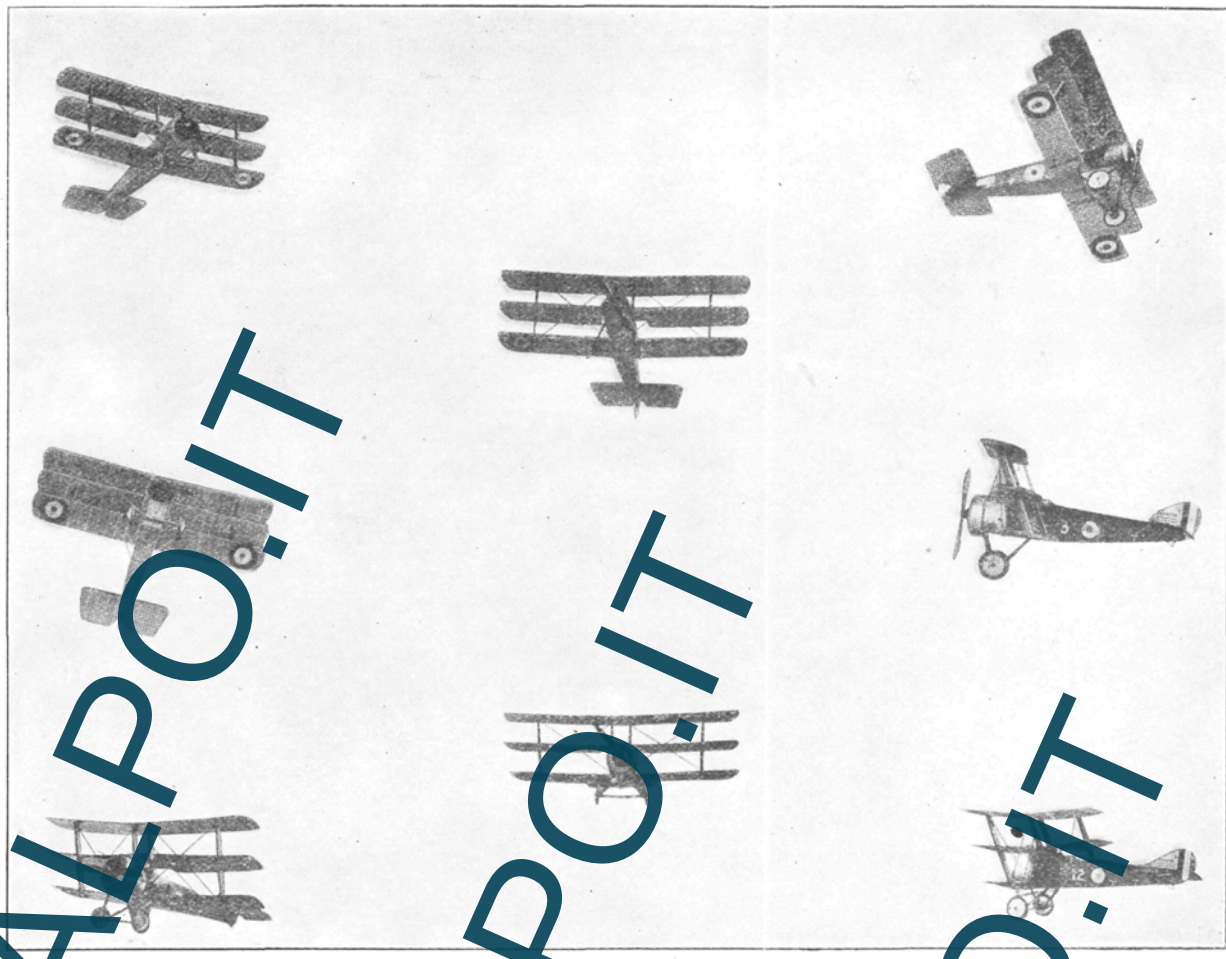
New Type (probably *Albatros*).—This machine has slight overhang and no dihedral or stagger. The upper plane is cut back, the lower plane rounded. The tail is of the *Albatros Scout* type and the rudder of the ordinary *Albatros* type.



BRITISH.

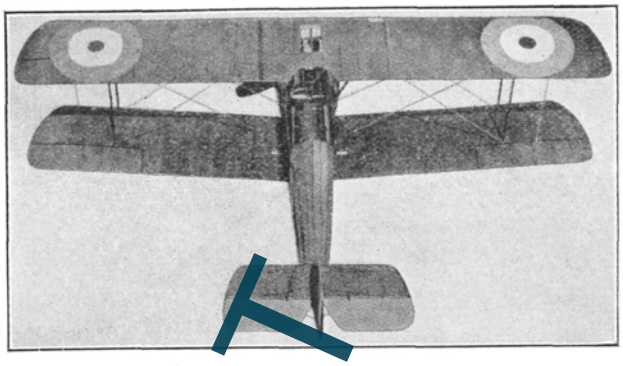
Sopwith Scout.—The *Sopwirth Scout* is a fast one-seater machine. The wing tips and tai
wedge shaped. It has stagger, dihedral, and closed fuselage.

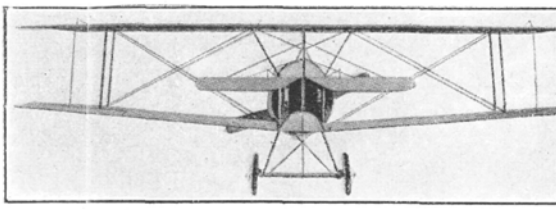
24997°—18. (To face page 60.) No. 1

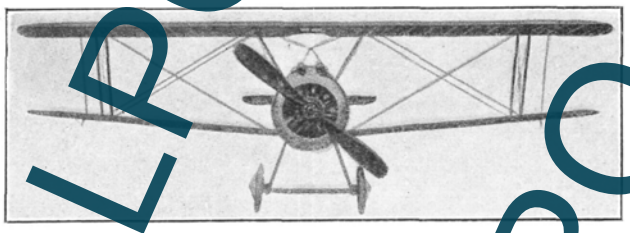


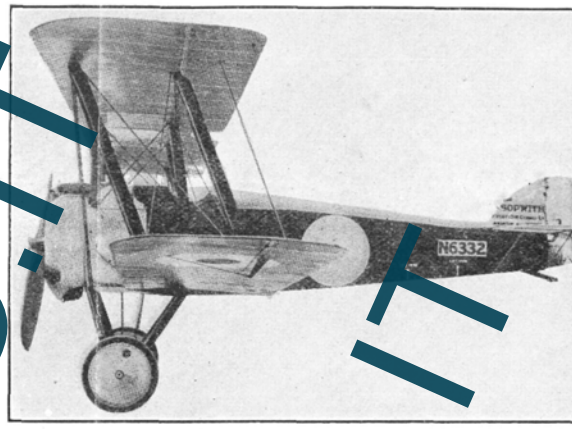
BRITISH.

Sopwith Triplane.—The *Sopwith Triplane* has three planes, and the wing tips are cut as in the *Scout*, except that the corners are very slightly rounded. The tail and rudder are similar to those of the *Sopworth Scout*.









BRITISH.

The Sopworth Camel is a small single seater machine. It has stagger, but no overhang. The upper plane is straight, but the lower has a marked dihedral, the tips of both being cut back. The rudder is of type X, and the rudder is similar to that of the *Sopworth Scout.*

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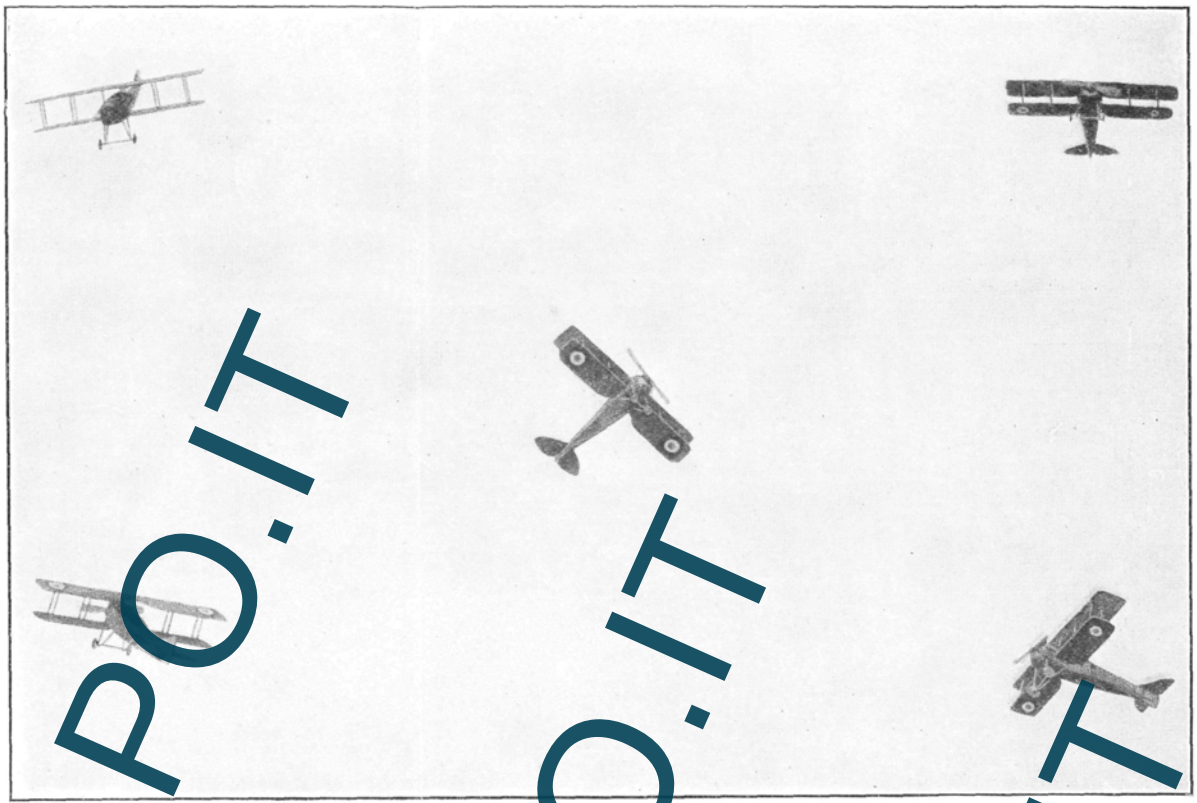
BRITISH.

De Havilland 5.—The *De Havilland 5* is a unique British type in that it has a reversed stagger. It also has a closed fuselage.

BRITISH.

Sopwith Biplane.—The *Sopwith Biplane* is a small and fast two-seater machine. It may be distinguished by closed fuselage, slight dihedral, stagger, and kidney-shaped rudder. It is also the only machine with a tail of type Z (par. 12). The engine has a loud and distinctive ringing note.



BRITISH.

S. P. A. D.—The *S. P. A. D.* is a tractor biplane with closed fuselage and is perhaps the most difficult of all allied planes to distinguish.

The wings are square cut; there are two pairs of struts on either side of the nacelle, which appear to be of equal length, but in reality there is a slight overhang.

The tail (see sketch) is the safest guide to the identity of this machine.

The *S. P. A. D.* is liable to be mistaken for a hostile plane by untrained observers, and the greatest care must therefore be exercised in establishing its identity.

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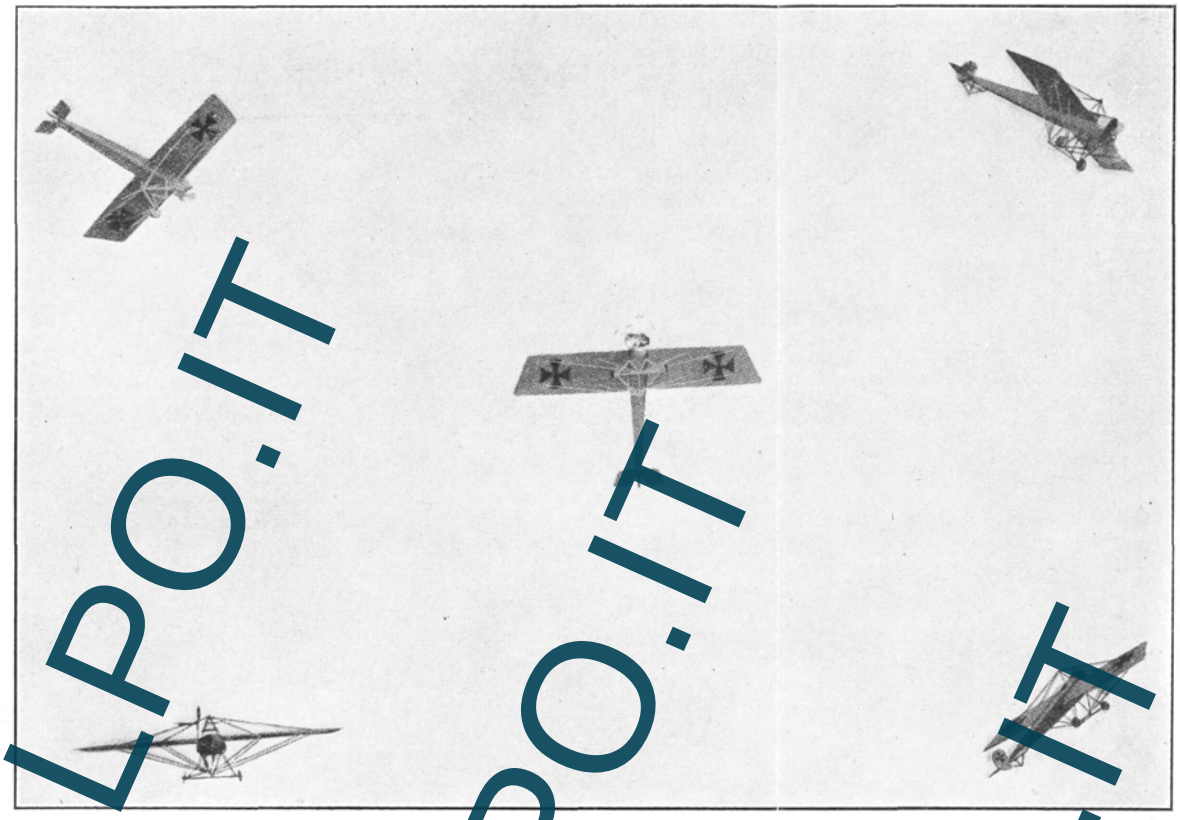
BRITISH.

The S. E. 5 is a single-seater tractor biplane. It has a marked dihedral and stagger; the tips of the wings almost square cut, no overhang, and one pair of struts on either side.

The tail is the same as the *R. E. 8*, but the rudder is large and triangular with the top point cut off. Care must be taken not to mistake the machine for the *Halberstadter*.

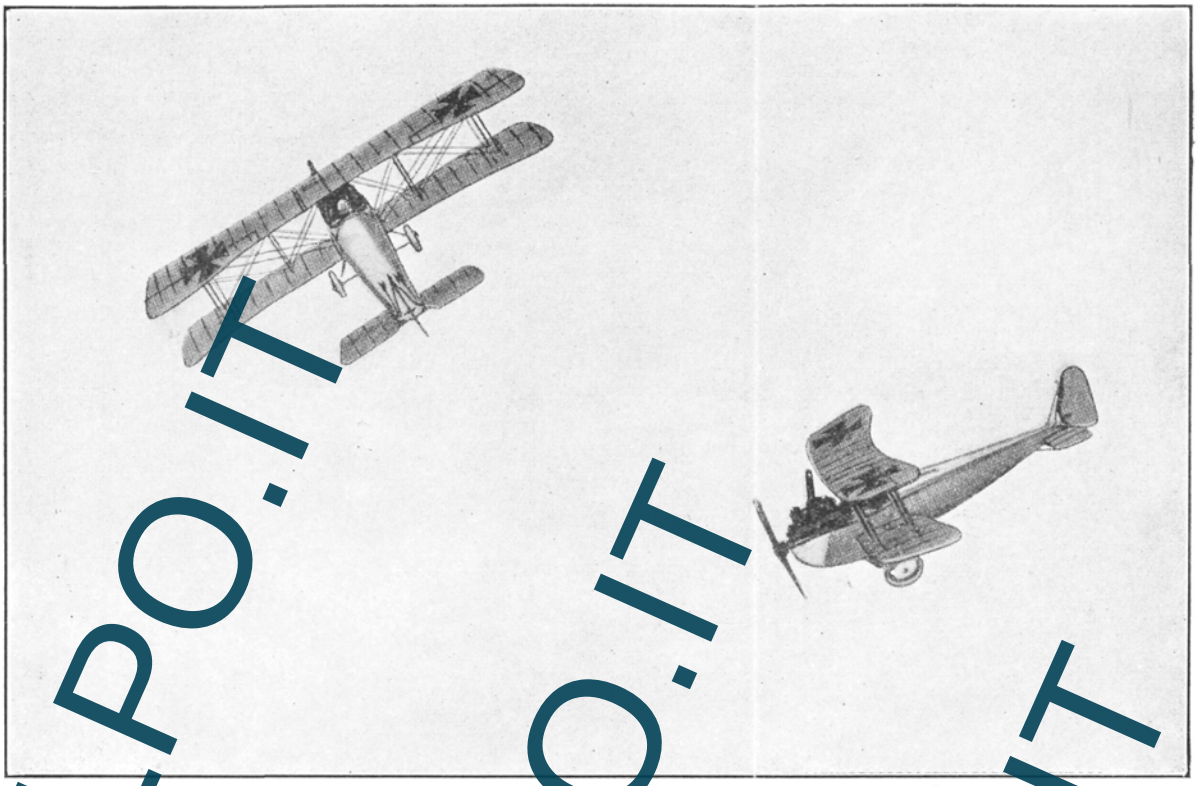
BRITISH.
Nieuport.



GERMAN.

Fokker.—The *Fokker* is a fast monoplane scout, having cut back wings and rectangular tail, type Y (par. 12). The round rudder locked up above the tail is its chief characteristic.

24997°—18. (To face page 64.) No. 1



GERMAN.

Halberstadter.—The *Halberstadter* is a difficult machine to identify unless seen sideways, and then its high, triangular rudder is extremely prominent. Some uncertainty exists as to the exact structure, but most observers agree as to the slight dihedral and stagger, while the tail is certainly of type Y (par. 12), this having been a common cause of confusion when the machine first appeared. As soon, however, as the rudder can be seen no further doubt is possible.

BRITISH.

Nieuport.—The *Nieuport* is a fast, single-seater scout, very difficult to identify at certain angles.

Its most marked peculiarity is the very narrow under plane, which is shorter than the upper plane, and has dihedral. Once this is picked up doubt is at an end, but when coming straight in, the overhang and dihedral of the under plane give it an extremely Hun-like appearance.

The tail is of type D (par. 12) and must be carefully watched, but the rudder, which is on top of the tail and projects well in rear of it, is easily distinguishable. The wings are slightly swept back and the narrow under plane necessitates a distinctive placing of the struts, thus—

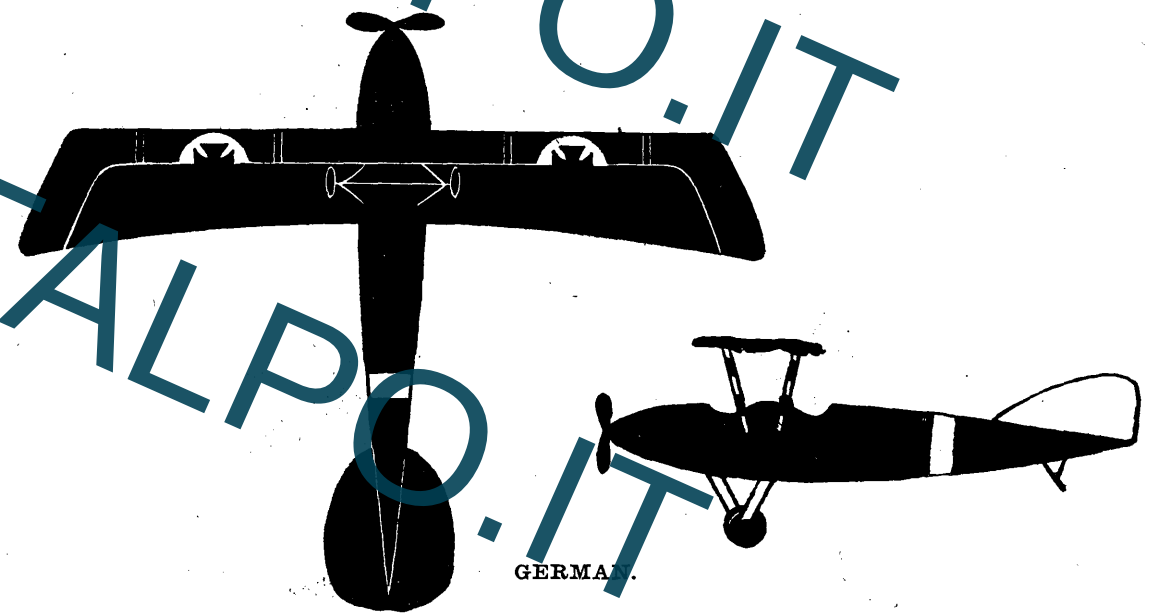
Despite these numerous peculiarities, the *Nieuport* has many times been mistaken for a German machine, and should always be carefully watched.

GERMAN.

Roland.—The *Roland Scout* is a fast machine. Its peculiarity is that it has one large strut on each side of the fuselage in place of the usual pair. The rudder is triangular, and the rather large tail is similar to type D (par. 12) with the rear edges rounded. This plane does not fly much nowadays.

GERMAN.

Albatros Scout.—The *Albatros Scout* is a small and very fast machine. It has a slight overhang, but is most easily distinguished by its pear tail, similar to type C (par. 12), although with a blunt end, there being no notch cut out in the middle for the rudder. It is very easy to mistake the *S. P. A. D.* for this machine if the tail is not visible, the chief point of difference being that the *S. P. A. D.* has two pairs of struts on each side of the fuselage, and the *Albatros Scout* only one.



GERMAN.

The Albatros Scout No. 2 resembles in many points the *Nieuport Scout.* It has overhang and a narrow under plane, necessitating the same arrangement of struts as on the *Nieuport.* The planes are not swept back; the tips are markedly cut back. The rudder is a cross between the usual *Albatros* type and the *Albatros Scout No. 1* type, while the tail is similar to that of the latter machine.

GERMAN.

The S. S. W. (Siemens Schuckert Werke) is almost an exact copy of the French *Nieuport*.