



Red BaronTM



CONTROL DOCUMENTATION

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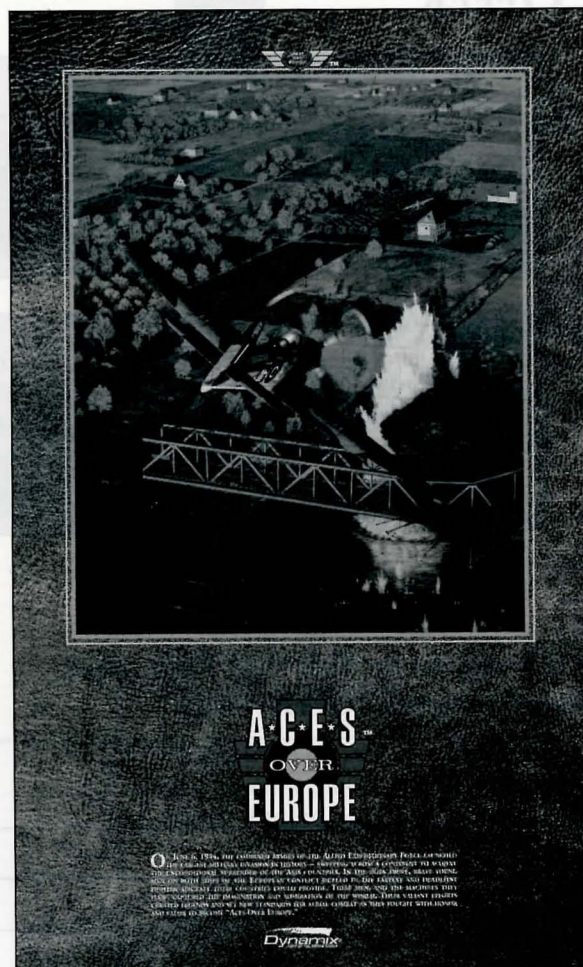
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Flight



A BRIEF HISTORY OF FLIGHT

For centuries men dreamed of one day being able to fly through the sky like the birds. Many dreamers, such as Leonardo da Vinci, attempted to conquer the mysteries of flight. Da Vinci even went so far as to draw sketches of birds in flight and proposed flying machines based on these drawings. In 1783, two Frenchmen, the Montgolfier brothers, made a balloon that carried the first men in free flight. The success of the balloon led to continued development of this craft. During the American Civil War balloons were used by the Union army for observing the battlefield.

Two legendary products of Thomas Sopwith's factory: below, the Camel; below right, the Triplane.



©Imperial War Museum, London

until 1903 that the first powered flight occurred. Two American brothers, Orville and Wilbur Wright, had experimented with various glider designs. In 1903 they added a gasoline-powered engine to



©Imperial War Museum, London

Meanwhile, other inventors turned their attention to gliders. In 1804 an English inventor, Sir George Cayley, invented the first glider. During the 1890's Otto Lilienthal of Germany continued to develop the glider.

During the late 1800's various inventors attempted to invent powered aircraft. The most common approach involved the application of a steam engine. But steam engines were much too heavy. It wasn't

bi-winged plane and flew 120 feet. Development continued throughout the first decade of this century. Alberto Santos-Dumont developed an aircraft patterned after a box kite and became the first person in Europe to fly. In 1907, Louis Blériot developed the first monoplane complete with a tail for balance at the rear.

THE PHYSICS OF FLIGHT

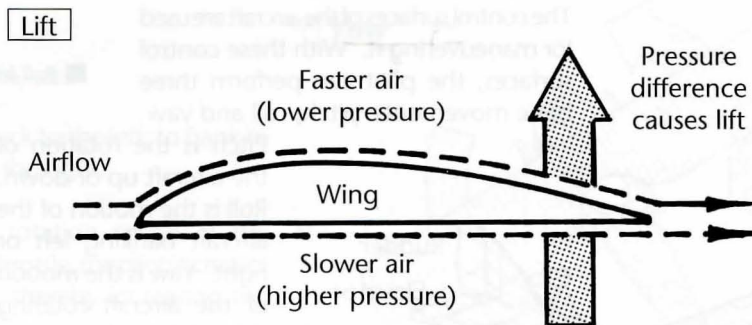
There are four basic forces acting upon an aircraft in flight: lift, thrust, gravity and drag.

Lift is achieved through the design of the wing. As an aircraft moves, air flows over the surfaces of the wing. Wings have a special shape that forces the air to move faster over the top of the wing than on the bottom. This creates more pressure on the bottom than on the top. Known as the Bernoulli effect, this air pressure difference pushes up on the bottom of the wing, and lift is generated.

The angle at which the wing meets the airflow also affects the amount of lift generated. As this angle (known as the angle of attack) increases, more lift is created. However, if the angle of attack is too great, the air flowing above the wing will be disrupted, causing a sudden decrease in lift. This condition, a stall, occurs when the aircraft is either flying too slowly, or flying at too steep of an angle. When an aircraft stalls, the sudden loss of lift will

force it into a dive. This is especially dangerous if the aircraft is at a low altitude. The aircraft will recover from a stall when it has regained sufficient airspeed.

Increasing airspeed increases lift. The more airspeed, the greater the difference between the air pressure above the wing and below, creating more lift.

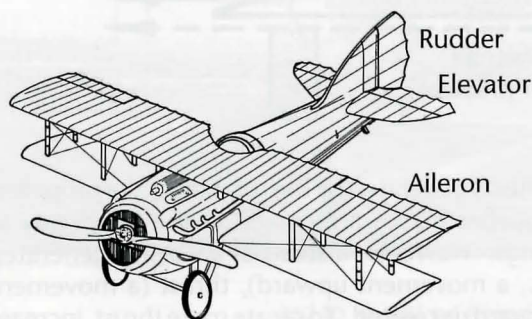


Thrust is generated by the rotation of the propeller. Propeller blades are curved in the same way as wings. However, instead of lift being generated (ie., a movement upward), thrust (a movement forward) is created. To create more thrust, increase your throttle. Generally more throttle will increase your airspeed.

Drag is the friction caused by the aircraft's surfaces moving through the air. The more streamlined an aircraft, the less drag produced.

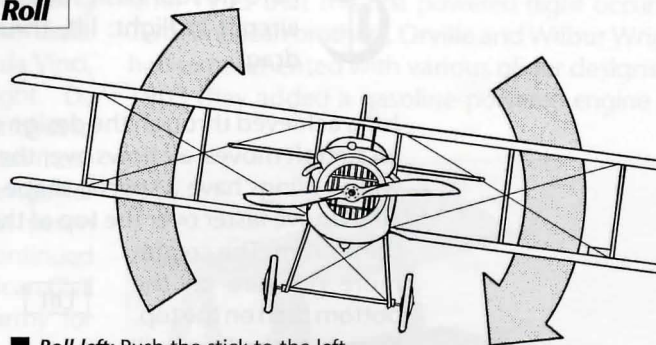
When an aircraft is in level flight at a constant airspeed, all four forces (lift, thrust, gravity, and drag) are in balance.

The control surfaces of the aircraft are used for maneuvering it. With these control surfaces, the pilot can perform three basic movements: pitch, roll and yaw.



■ Control Surfaces on an aircraft.

Roll



■ Roll left: Push the stick to the left

Pitch is the rotation of the aircraft up or down. Roll is the motion of the aircraft banking left or right. Yaw is the motion of the aircraft rotating either left or right.

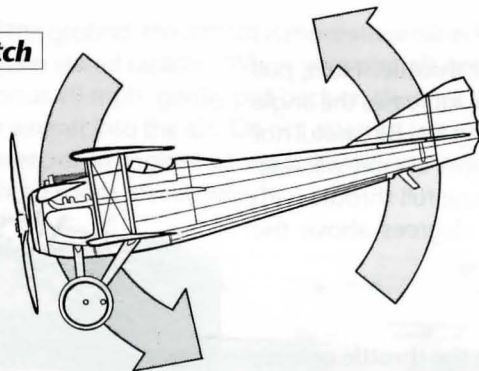
The "elevators" are located on the tail assembly, and control the aircraft's pitch. When the elevators move down, the nose will pitch down, and vice-versa.

The pilot controls the elevators with the stick. To pitch the nose of the aircraft down, push forward on the stick. Pulling back on the stick will pull the nose of the aircraft up.

The rudder is located on the tail assembly. It controls the aircraft's yaw. When you move the rudder left or right, your aircraft's nose will yaw in the corresponding direction.

The ailerons, located on the wings, control the rolling motion of the aircraft. When the left aileron is raised or lowered, the right wing aileron moves in the opposite direction. This causes the aircraft to bank. The ailerons are controlled by the stick.

Pitch



■ **Pitch down:** Push forward on the stick

bank to the left, move the stick to the left; to bank to the right move the stick to the right.

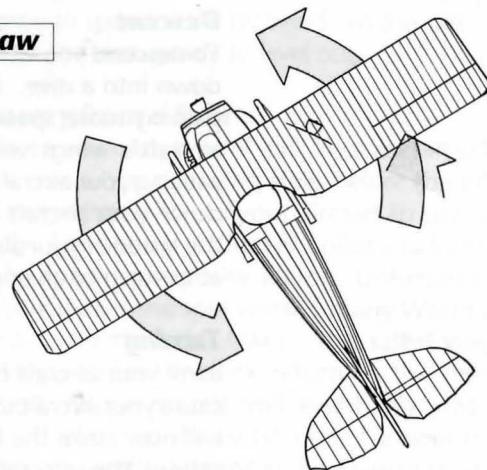
The throttle controls the rotation speed of the propeller. By increasing the throttle, the pilot increases the speed of the propeller, thereby increasing the speed of the aircraft.

The aircraft of World War One did not have flaps or brakes. Keep this in mind when you land.

Many of the WWI aircraft were equipped with rotary engines. The entire engine would spin along with the propeller. This huge spinning mass of metal caused a powerful, gyroscopic effect. This meant

that a rotary-equipped aircraft would try to nose down in a right-hand turn, and would attempt to nose up in a left-hand turn. Therefore left rudder had to be vigorously applied for both left and right-hand turns to keep the aircraft's nose level with the horizon. The Sopwith Camel had the most pronounced gyroscopic tendencies.

Yaw



■ **Yaw left:** Apply left rudder

BASIC FLIGHT SKILLS

Climbing

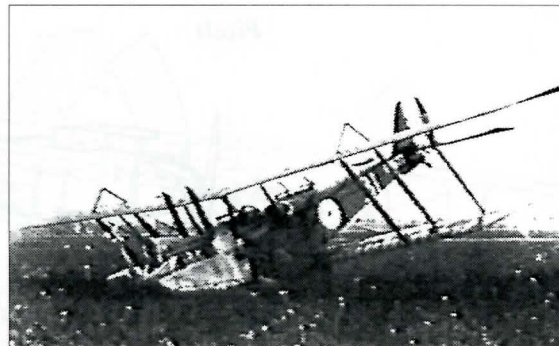
To begin climbing increase your throttle. Next, pull the nose of your aircraft up. This increases the angle of attack of your wings, increasing lift. Be careful not to bring the nose up too far or your aircraft will stall. To achieve the best climb rate use full throttle with your aircraft's nose about 20 degrees above the horizon.

Descent

To descend you either decrease the throttle or nose down into a dive. If you wish to descend without gaining more speed, decrease the throttle. Your aircraft's wings will lose lift as you slow down, causing your aircraft to gently lose altitude. Nosing down your aircraft into a dive will greatly increase the speed of your aircraft. Be careful not to descend at too steep of an angle, or your wings may break.

Turning

Bank your aircraft by using the ailerons. This will cause your aircraft to slip sideways. Since the airflow will now strike the tail on one side more than the other, the aircraft will turn. Turning is *not* accomplished with the rudder, but with the ailerons. You also need to increase the throttle, as a turn will bleed off speed. The greater the bank, the faster the turn rate. More altitude is lost during a tighter turn,



Courtesy National Air and Space Museum, Smithsonian Institution

so keep your nose above the horizon during the turn. With the standard or expert flight model selected (see pg. F-8), you have to also apply a little rudder and some backpressure (by pulling back on the stick) to maintain a good turn.

The Take-Off

The take-off procedure is performed a little differently for World War One aircraft than for modern aircraft. The aircraft of World War One were tail draggers—they were equipped with a tail skid rather than a tail wheel. First, apply full throttle. When the aircraft has picked up speed, push the stick forward. This will lift the tail off the ground. Be careful to avoid pushing the stick too far forward on the stick, or you may find your propeller plowing into the ground! Now that the t

■ An R.E.8 that has seen better days.

■ A huge Allied formation buzzing an aerodrome.

is off the ground, the aircraft is more streamlined and will gain speed rapidly. When your aircraft gets up to about 40 mph, gently pull back on the stick to lift your aircraft into the air. Do not attempt to climb at too steep of an angle or your aircraft will go into a stall (with no room for recovery!).



Courtesy National Air and Space Museum, Smithsonian Institution

Landing

When you begin the landing procedure, reduce the throttle. Approach the landing field with as little speed as possible (it is best to be slightly above stall speed). As you get close to the landing area, bring the nose of the aircraft up and reduce throttle some

more. Keep the nose of your aircraft up, which allows you to come in at a lower speed. Do not try to land with your nose below the horizon. The best landing is a three-point landing—that is, when the wheels and tail skid all meet the ground simultaneously.

Recovery from a Stall

Allow your aircraft to nose down. Don't fight the stall by pulling back on the stick. When the aircraft picks up enough speed, it *will* recover from the stall. Pull back on the stick gently to level out.

Recovery from a Spin

A spin is a very nasty type of stall. Your aircraft will go into a spin when one wing stalls before the other. This immediately forces your aircraft to spin very rapidly. The natural instinct of a pilot is to fight the spin by applying opposite aileron. Unfortunately, this only makes the spin worse (many World War One aviators died this way). The safest way to recover is to let the stick return to the neutral position. Your aircraft will eventually stabilize itself. If you wish to come out of a spin more quickly, move the ailerons as if you were trying to roll the aircraft with the spin. But be careful—it's easy to get confused when you see the ground spinning around rapidly, and, consequently, move the stick to the wrong side!

FLIGHT MODEL SETTINGS

In Red Baron, novice pilots can experience the thrill of WWI air combat and veteran flight enthusiasts can be challenged. Also, as novice pilots progress in skill, they have the opportunity to learn more about flying. Red Baron has an option that allows you to choose the level of flight realism.

On the *realism menu*, you select the level of realism of the flight model. The settings are novice, standard and expert. Novice is the easiest to use, while expert is for experienced pilots.

On the novice setting, flying is easy. Turns are straight forward. If you bank the aircraft, it will turn. Your aircraft will lose little or no altitude, and it will not nose down.

On the standard setting, turning is modeled more realistically. You will lose more altitude in a turn than on the novice setting. In order to turn properly, you will have to apply back pressure (pulling back on the stick) to keep the aircraft turning and keep the nose above the horizon. Some rudder may be needed as well. Unlike novice, if you bank the aircraft without using back pressure or rudder, your turn will quickly degenerate into a slow, spiral dive. Landing is also more difficult.

The expert setting will test your flying abilities. Not only are turns modeled realistically, but the danger of going into a spin is also present. Your aircraft will be affected by wind gusts and turbulence. In addition, the various quirks of certain aircraft are included. For instance, the gyroscopic effect of Sopwith Camel's rotary engine will make a simple turn a difficult, tricky maneuver. Too much stress on your aircraft's wings during a high speed dive and your wings may break!

Flight Maneuvers



FLIGHT MANEUVERS

Dive

Tape name: DIVE

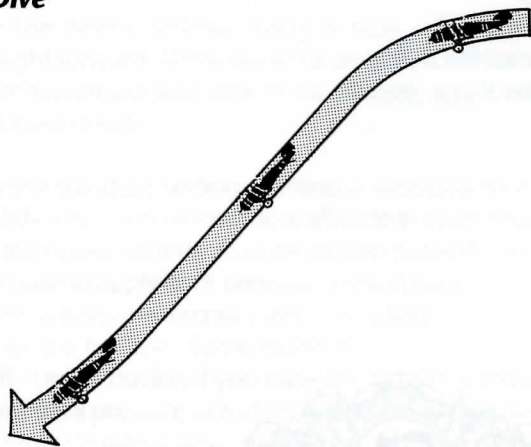
In World War I, even simple maneuvers such as steep dives and climbs were considered acrobatic—not surprising since aircraft were prone to stall and many had structural flaws.

A steep dive can be used to get out of combat quickly, especially when your aircraft can dive safely at a higher speed than your pursuer's. Keep an eye on your altimeter and, if an enemy follows

you into the dive, jink your aircraft left and right with the rudder.

Diving is simple. Point the nose toward the ground and your crate will gain speed very quickly. Be careful because some aircraft have weak wings, and a high speed dive may shear them off!

Dive

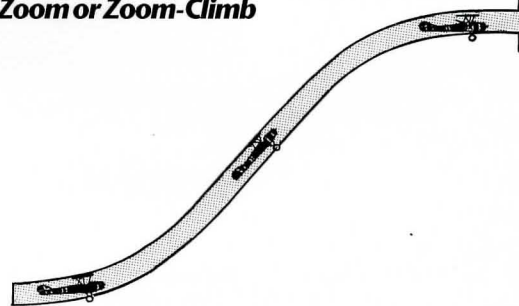


Zoom or Zoom-Climb

Tape name: ZOOM

A very steep climb at high speed, the zoom-climb is usually performed after a dive. Sacrificing speed

Zoom or Zoom-Climb



for higher altitude, it was used by the aviators of the Great War after they made a diving attack on an enemy aircraft to pull up beyond the reach of the enemy.

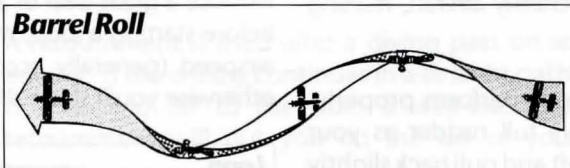
When zooming skyward, keep an eye on your airspeed. When it gets below 50 mph, level off before you stall your aircraft.

Barrel Roll

Tape name: BAR_ROLL

The barrel roll is useful for confusing an attacker on your tail.

Barrel Roll



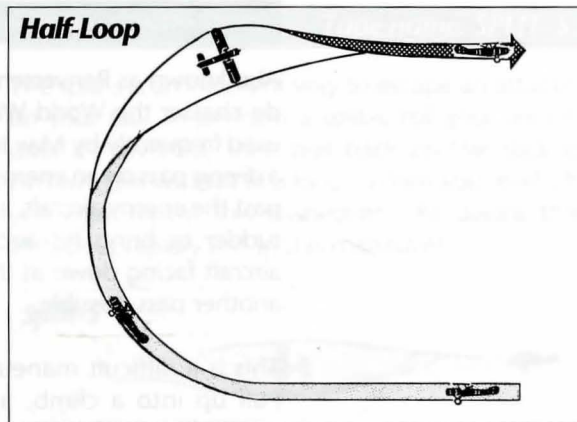
To perform a barrel roll, bank hard while pulling back on the stick slightly. Your aircraft will take a corkscrew path through the sky. Be warned—you will lose altitude.

Half-Loop

Tape name: HALFLOOP

Today this maneuver is called an Immelmann turn. However, in World War I the Immelmann turn was an entirely different maneuver (see next page).

Half-Loop



Perform a half-loop when you want to reverse direction and gain altitude. Use it when an enemy passes you going the other direction at a higher altitude.

Before starting a half-loop, make sure you have a lot of speed. Pull up as if you were going to loop, but begin rolling the aircraft before you reach the top of the loop. Level out when you reach the top.

FLIGHT MANEUVERS

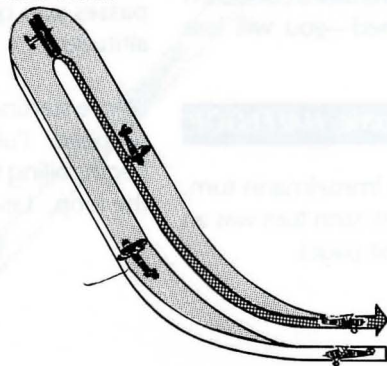
Immelmann Turn

Tape name: IMMEL

Also known as Renversement by the French pilotes de chasse, the World War I Immelmann turn was used frequently by Max Immelmann. After making a diving pass on an enemy, Immelmann zoomed up past the enemy aircraft, and before stalling used full rudder to bring his aircraft around. This put his aircraft facing down at the enemy aircraft, making another pass possible.

This is a difficult maneuver to perform properly. Pull up into a climb, apply full rudder as your speed drops, roll your aircraft and pull back slightly

Immelmann Turn



on the stick. With good timing, you will be diving back down in the opposite direction.

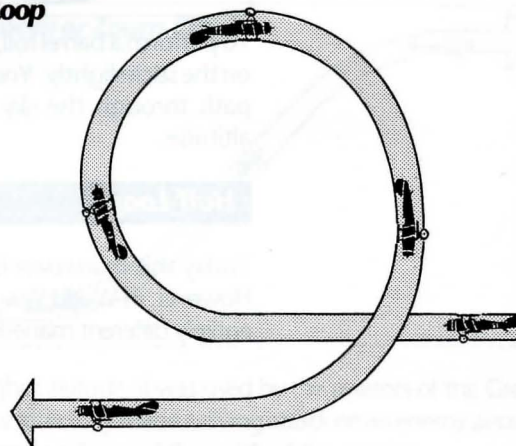
Loop

Tape name: LOOP

An impressive maneuver at an airshow, the loop is not very useful in combat. While looping, a pilot has no options until the loop is finished. In addition, you will lose a great deal of altitude.

Before starting a loop, make sure you have a lot of airspeed (generally accomplished by diving first) or otherwise you'll stall halfway through the loop!

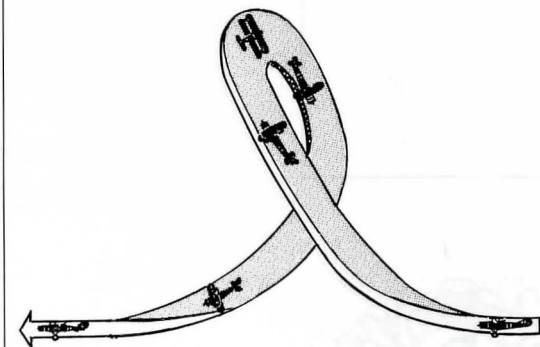
Loop



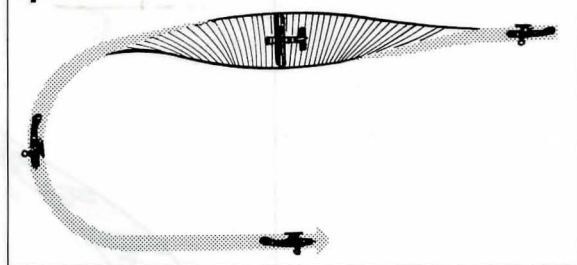
Retournment*Tape name: RETOURN*

This offensive maneuver is similar to the Immelmann. Continue to apply rudder and roll the aircraft after you have looped and come over the top. Instead of reversing direction, you'll be flying in the same direction you were going before you started climbing.

A retournment is used after a diving pass on an enemy. If the enemy continues in a straight path, not veering off to the side, a well-executed retournment will put you on the tail of your enemy.

Retournment**Split-S***Tape name: SPLIT_S*

The split-s is an excellent way to escape an attacker on your tail. To perform a split-s, roll your aircraft until it's inverted, then pull back on the stick to perform the last half of a loop. When you level off, you may repeat this maneuver. Be aware that altitude is rapidly lost in this maneuver.

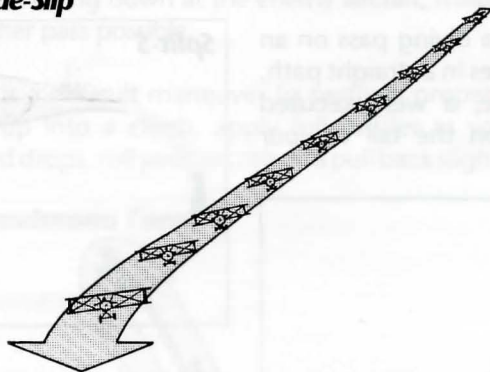
Split-S

Side-Slip

Tape name: SIDESLIP

A side-slip is used to lose altitude quickly without gaining speed. To side-slip, dip one wing down and apply enough reverse rudder to keep your aircraft from turning. You may need to push forward slightly on the stick to maintain your heading.

Side-Slip



Slip-Turn

Tape name: SLIPTURN

The slip-turn is a flat turn performed exclusively with the rudder. Unlike a normal banked turn, a slip-turn uses no ailerons.

Most aircraft cannot perform an effective slip-turn. However, the Fokker Triplane did not have a vertical stabilizer, and could yaw very quickly with hard rudder applied. Although the Triplane would slip during the turn, losing a great deal of speed, it could reverse direction in about half the time of other fighters performing a normal turn. To execute an effective slip-turn, don't bank your aircraft's wings.

Scout Tactics



BOELCKE'S DICTA

Boelcke's Dicta

1. Try to secure advantages before attacking. If possible, keep the sun behind you.
2. Always carry through an attack when you have started it.
3. Fire only at close range, and only when your opponent is properly in your sights.
4. Always keep your eye on your opponent, and never let yourself be deceived by ruses.
5. In any form of attack it is essential to assail your opponent from behind.
6. If your opponent dives on you, do not try to evade his onslaught, but fly to meet it.
7. When over the enemy's lines never forget your own line of retreat.
8. For the Staffel: Attack on principle in groups of four or six. When the fight breaks up into a series of single combats, take care that several do not go for one opponent.

The sky above the trenches was a dead place to be. During Bloody April so many British squadrons suffered 60 percent losses. During the more routine months of the war the attrition rate was still very high. Most novice pilots never lived long enough to call themselves veterans. Those who did survive month after month rarely showed any inclination to coach the new replacements.

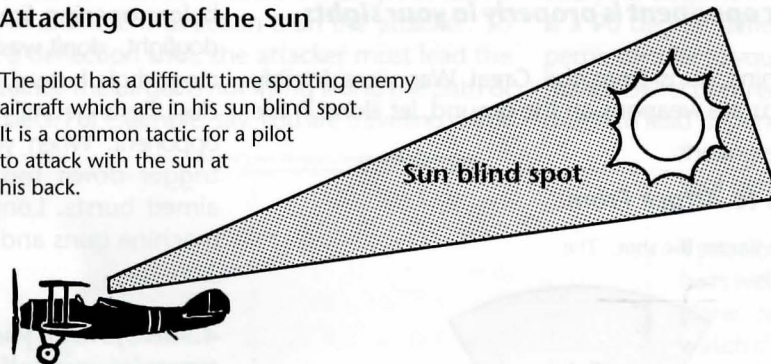
Oswald Boelcke was the exception. Boelcke possessed a rare combination of tactical brilliance and flying technique. Nothing escaped his eyes in the air, and as his experience grew, he began to teach his men how to survive in the air. Eventually, he published his advice and circulated it among the Jagdstaffeln. His advice became known as *Boelcke's Dicta*. Its principles still form the foundation of fighter combat today.

1. Try to secure advantages before attacking if possible, keep the sun behind you.

If you want to emulate the reckless fighting style of flamboyant pilots like Albert Ball or Lothar Richthofen, attack before evaluating the situation. While you may score some spectacular victories, chances are you'll be flamed before the armistice.

Attacking Out of the Sun

The pilot has a difficult time spotting enemy aircraft which are in his sun blind spot. It is a common tactic for a pilot to attack with the sun at his back.



swoop down behind the target and attack before he can react. Unless you possess all three of these advantages (surprise, altitude and having the sun behind you), it is probably wise to avoid dogfighting against superior numbers.

Exercising caution, however, will increase your odds for survival. Before you attack, try to secure as many advantages as possible. Attack out of the sun, for it is every pilot's blind spot. Try to attack from a higher altitude. This way, you'll have the initiative as well as superior speed and momentum. The pilot below can only react to your moves, so you've forced him to defend himself, and not go on the attack. Surprising your foe is the best way to minimize risks to yourself. Sneak up on your opponents by staying above them and in the sun. Be patient, and when a favorable moment arises,

2. Always carry through an attack when you have started it.

Often a green pilot, in his first engagement with an enemy aircraft, will start a firing pass on an enemy aircraft only to get cold feet and try to disengage. This presents his tail to the enemy, and, more often than not, the novice is shot down. The key is to be aggressive. When you are in the air, commit to a target. Don't break off the attack until you've completed the firing run. Your aggressiveness will often frighten your opponent into making a mistake. Many a novice pilot will freeze up when an enemy is on his tail.

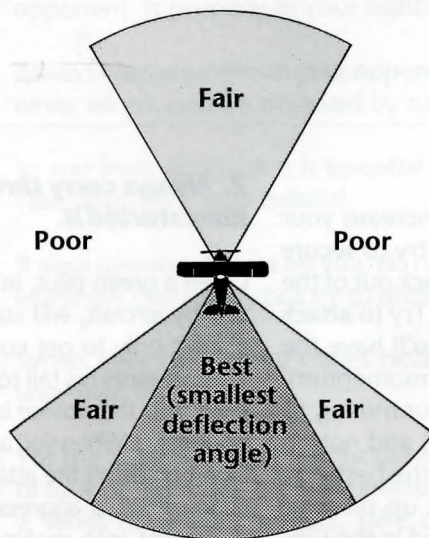
3. Fire only at close range, and only when your opponent is properly in your sights.

Machine guns from the Great War were terribly inaccurate weapons on the ground, let alone in the

air. Successful pilots closed to point-blank range before opening fire. When you find yourself in a dogfight, don't waste precious ammunition on long range shots. Instead, choose your targets carefully, close the range until you're within about 30 yards of your opponent. When you open fire, don't hold the trigger down too long. Snap out short, well-aimed bursts. Long bursts are likely to jam your machine guns and will waste ammunition.

Shot Selection—Best Areas to Attack From

The higher the deflection angle, the harder the shot. The best shot is from directly behind the target. The worst is from either side of it.



4. Always keep your eye on your opponent, never let yourself be deceived by ruses.

Occasionally, a pilot who is outmatched will find death by going into a seemingly uncontrolled spiral. At treetop level, the pilot will pull-up, level off, and head for home.

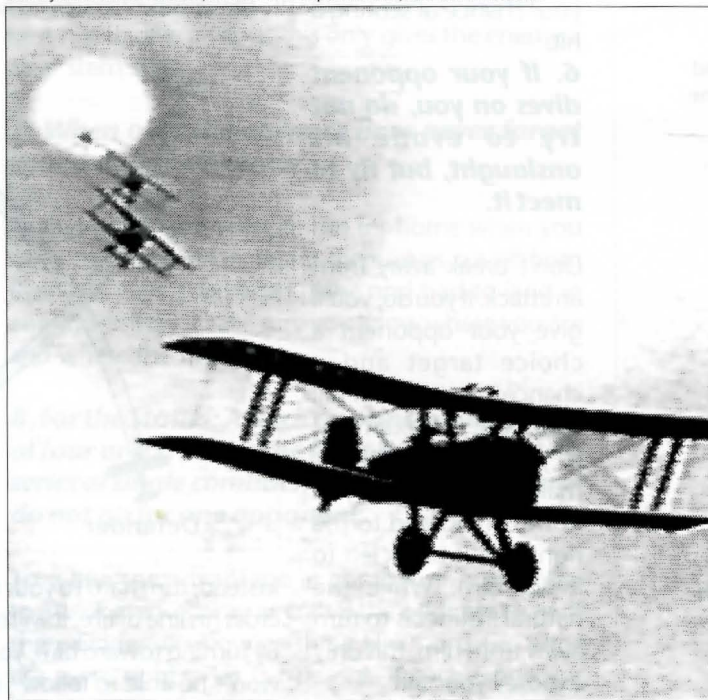
5. In any form of attack it is essential to attack your opponent from behind.

The art of deflection shooting was so difficult to master during the Great War, that many pilots did not even bother to try. A few of the great aces, notably Mannock and Fonck, successfully made deflection shots in combat.

A deflection shot is made when the target aircraft is flying in a different direction than the attacker. To make a deflection shot, the attacker must lead the target since the target is not flying along the path of the bullets. For example, say you are traveling north

and your target is in front of you heading west. This is a 90 degree deflection shot, since the target is perpendicular to you. This is the most difficult shot to make. Deflection requires leading the target; how much to lead depends on the speed of the target and the angle of the shot. A 90 degree deflection shot demands a great deal of leading.

Courtesy U.S. Air Force Collection, National Air and Space Museum, Smithsonian Institution

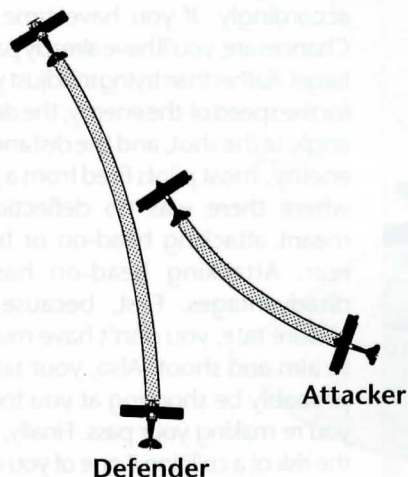


■ Hundreds of aviators were flamed when they neglected their tail. "Beware of the Hun in the sun" was a common expression.

If you do try a deflection shot, put the cross hairs well forward of the nose of the target plane. Squeeze off a short burst, and watch the tracers. Then adjust your aim accordingly. *If* you have time that is. Chances are, you'll have already passed the target. Rather than trying to adjust your aim for the speed of the enemy, the deflection angle of the shot, and the distance to the enemy, most pilots fired from a position where there was no deflection. This meant attacking head-on or from the rear. Attacking head-on has many disadvantages. First, because of the closure rate, you don't have much time to aim and shoot. Also, your target will probably be shooting at you too, while you're making your pass. Finally, you run the risk of a collision if one of you does not swerve.

Turning Away from an Attacker

The defender has chosen to go with his natural instinct—to turn away from the attacker. The end result is that the attacker ends up on the tail of the defender with a relatively easy shot.



Attacking from the rear is much better. Often your target won't see you. If you are stalking a single-seat scout, attacking from the rear denies him the ability to shoot at you. Furthermore, there is no deflection

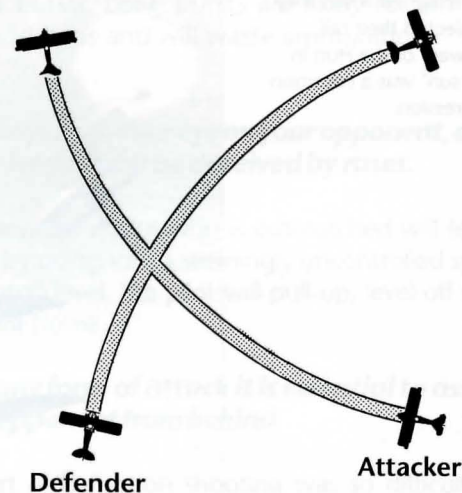
angle from a stern shot, which greatly increases your chance of scoring a hit.

6. If your opponent dives on you, do not try to evade his onslaught, but fly to meet it.

Don't break away from an attack. If you do, you'll give your opponent a choice target and a chance to get on your tail if you do. For example, if you spot a Fokker making a pass at you from behind and to the right, don't break left to avoid him. While the natural instinct is to turn away from him, this only exposes your tail.

Turning Toward an Attacker

In this situation the defender has correctly chosen to turn toward his attacker. Although he will pass through the line of fire of the attacker, it will only be for an instant. The attacker will not be able to follow the defender through his turn.



Instead, turn hard to your right. Even though you cross his line of fire, it will only be for a brief moment. By turning toward him, you cut inside his turn and won't be able to follow you.

If a Fokker dives on you from the rear, don't try to dive straight down to get away. That gives him a clear stern shot. Instead, break left or right and turn toward him.

If your aircraft is sturdier than the enemy's, you may try diving to get away. In other cases, however, it's best not to dive away as this only gives the enemy a clear stern shot.

7. When over the enemy's lines never forget your own line of retreat.

Always make sure you can run for home when you need to. Many pilots found themselves cut off from their lines with a damaged plane and had to land in enemy territory. Make sure you know where you are and where the front is.

8. For the Staffel: Attack on principle in groups of four or six. When the fight breaks up into a series of single combats, take care that several do not go for one opponent.

To retain the advantage in combat, it is essential to attack every enemy aircraft if the odds are even. If three Eindeckers bounce three Nieuports the odds are even, right? This is true *only* if each Eindecker

engages a different Nieuport. This way, all three Nieuport pilots are forced to defend themselves with evasive flying. However, if all of the Eindeckers attack a single Nieuport, it leaves the other two Nieuports free to attack the Eindeckers.

SPECIALIZED ATTACK TACTICS

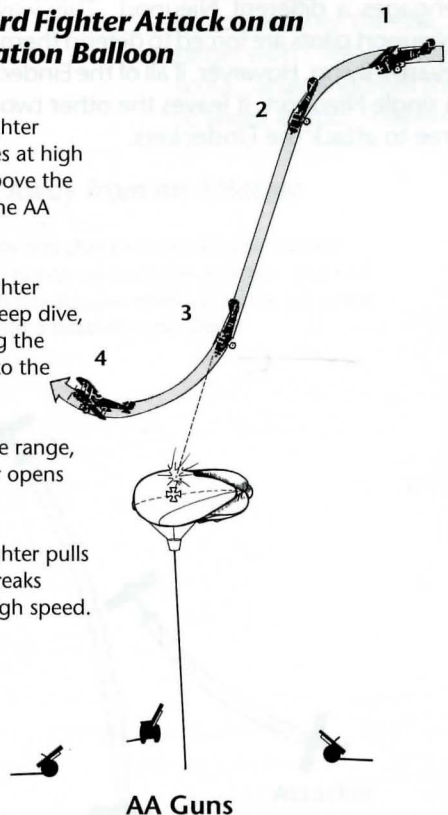
Standard Fighter Attack on an Observation Balloon

1—The fighter approaches at high altitude above the range of the AA guns.

2—The fighter enters a steep dive, minimizing the exposure to the AA guns.

3—At close range, the fighter opens fire.

4—The fighter pulls up, and breaks away at high speed.



Two-seater aircraft

Attacking two-seaters was difficult. The best strategy was to stay in the two-seater's blind spot at all times. This is behind and underneath the two-seater (see illustration). The rear-gunner's field of fire is interrupted by the tail and the fuselage, so he can't shoot at someone in this region. Albert Ball dove under his victims, and then pulled up sharply to spray the belly of his target. This tactic required extreme precision, but, if executed properly, shielded the scout pilot from the rear-gunner's machine guns. If the two-seater has no forward-firing machine gun, a descending head-on

attack can also be very successful.

Observation balloons

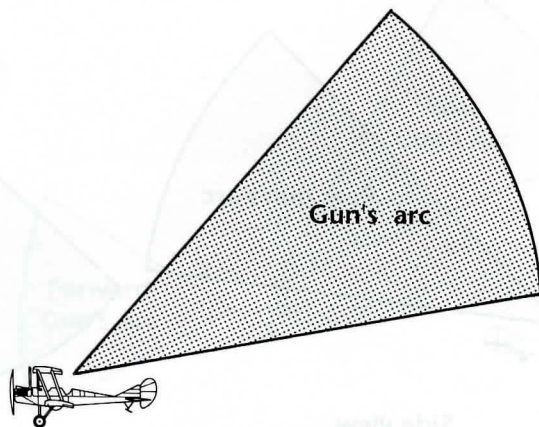
Although observation balloons were very vulnerable to air attack, most were heavily guarded by rings of anti-aircraft guns deployed on the ground. As scout fighting, surprise was essential to flaming a balloon. Usually, attacking aviators dove steeply, shot at the gas-bag, and flew out of range as quickly as possible. This minimized exposure to ground fire. Some of the more daring pilots switched their engines off just before they began their dives, so that the AA gunners could neither see nor hear their planes.

Zeppelins

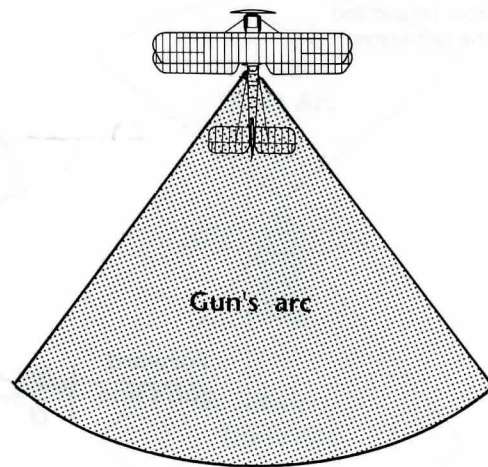
Only a few Zeppelins were actually shot down by Allied fighters. The best tactic was to fly behind a zeppelin and attack it from the rear. This shields the plane from the German gunners and their machine guns positioned above and below.

■ On these aircraft, the gunner was seated in front of the pilot. His gun, however, fired to the rear *over the head of the pilot*. This resulted in a very limited arc. These aircraft did not mount a forward-firing gun.

***Firing Arcs for Two-seater Aircraft with a Front-seat Gunner
(Includes the B.E.2c and Aviatik C.I.)***



Side view

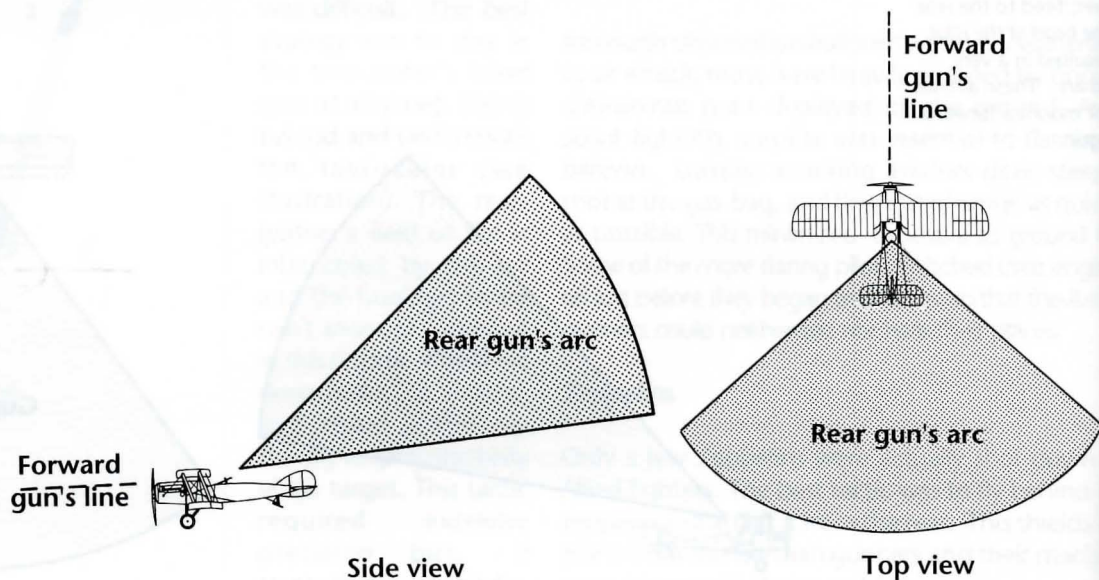


Top view

SPECIALIZED ATTACK TACTICS

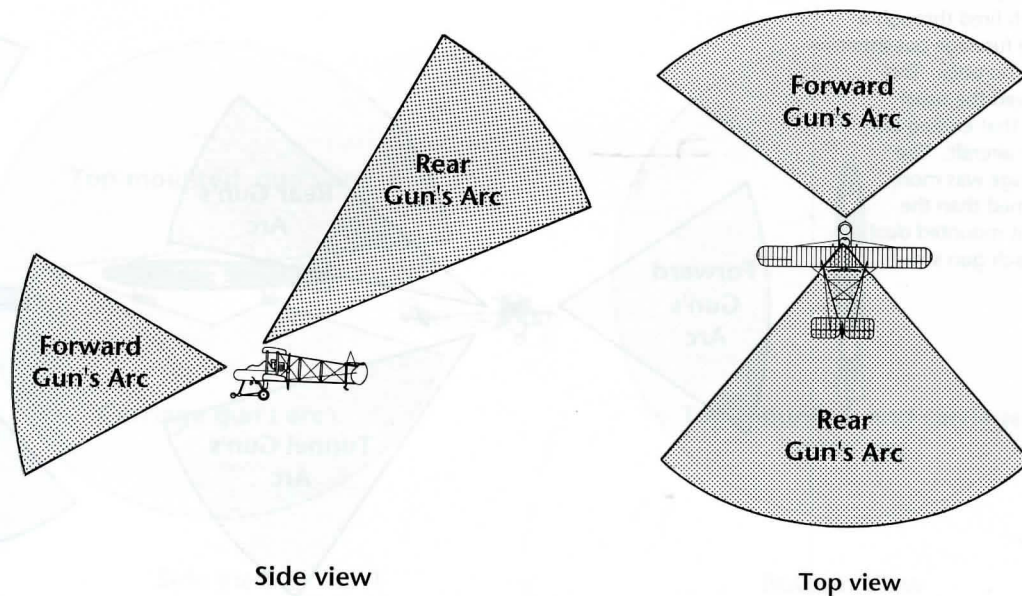
■ On these aircraft, the rear gun was mounted on a swivel, whereas the forward-firing gun was fixed. The standard attack tactic against two-seaters was to approach from its blind spot—from behind and below the two-seater.

Firing Arcs for Standard Two-seater Aircraft (Includes the R.E.8, Bristol Fighter, D.H.4, Roland C.II, Rumpler C.IV, and Junkers J.I.)



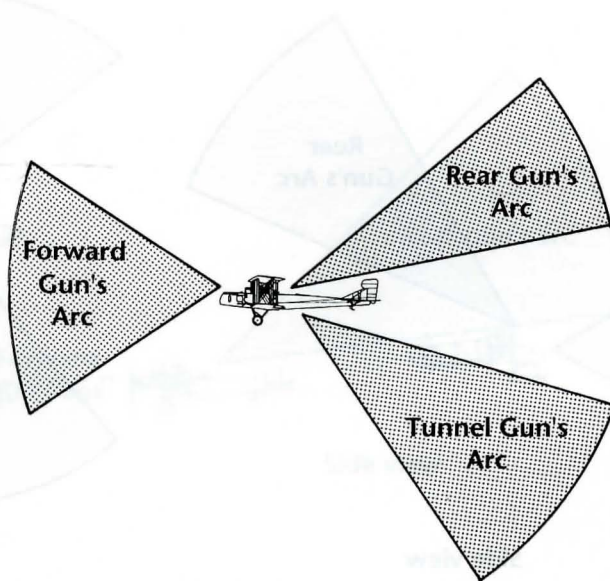
■ The F.E.2b has a unique gun configuration. The gunner can operate two separate machine guns. Both are mounted on a swivel. The rear gun has a limited arc, as its line of fire must clear the top wing of the F.E.2b. This results in a large vulnerable area directly behind the aircraft.

Firing Arcs for the F.E.2b

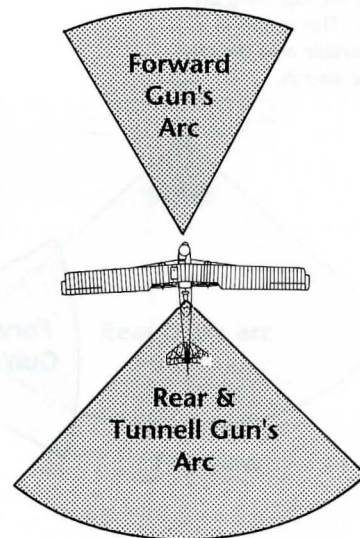


■ These large bombers were bristling with machine guns. They carried three separate gunners. The forward and rear guns were mounted on a swivel. They also included a "tunnel gun" which fired through a hole in the fuselage out the rear of the bomber. This gun removed the usual blind spot that existed on two-seater aircraft. The Handley Page was more heavily armed than the Gotha, as it mounted dual guns on each gun swivel.

Firing Arcs for Heavy Bombers
(Includes the Gotha G.IV and Handley Page O/100 and O/400)



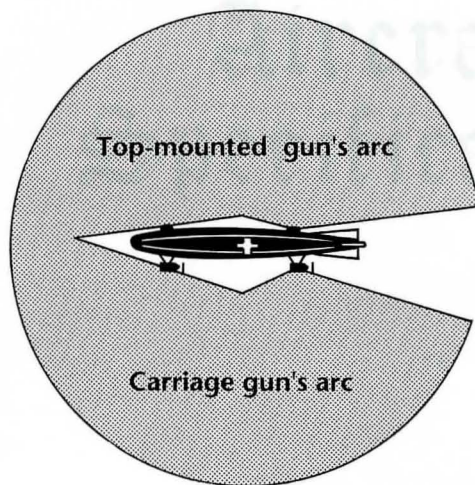
Side View



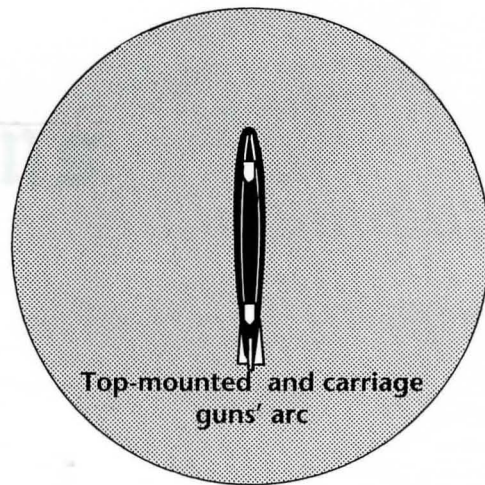
Top View

The Zeppelins were heavily armed with machine guns. There were guns mounted in each carriage and guns mounted on the top of the Zeppelin. These guns could effectively cover all regions of the sky except directly behind or directly to the side of the Zeppelin.

Firing Arcs for Zeppelins



Side View



Bottom View

Aircraft Specifications

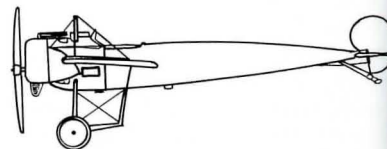
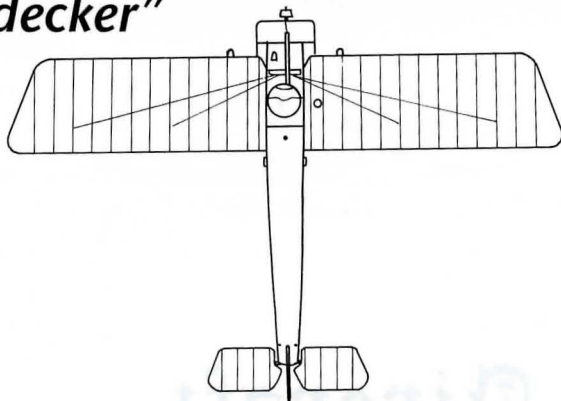
Note: Figures for total built are approximate. The introduction date given for each aircraft indicates when it was deployed in substantial quantities to the front.



GERMAN AIRCRAFT SCOUTS

Fokker E.III "Eindecker"

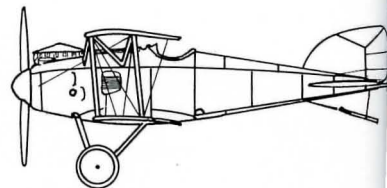
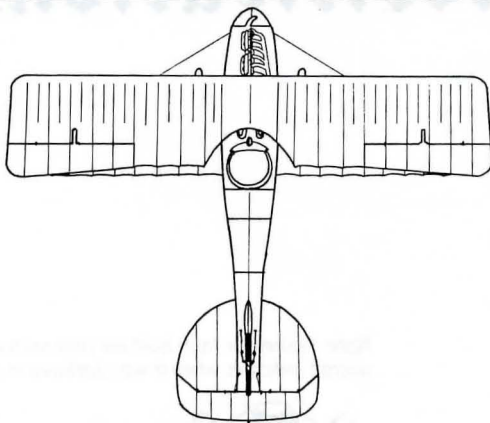
Length: 23 ft. 11 in.
Wingspan: 31 ft.
Engine: 100 hp Oberursel rotary
Armament: 1 Spandau
Climb rate: 28 min. to 9,840 ft.
Ceiling: 11,500 ft.
Max. speed: 88 mph
Total built: 150
Introduction date: August 1915



The Eindecker, which simply means "monoplane", revolutionized the air war in August of 1915, as it was the first plane to be armed with a synchronized machine gun. The Eindecker suffered from being both underpowered and difficult to fly. It had no ailerons, but used the wing-warping system invented by the Wright Brothers to control it in flight. The Eindecker was the perpetrator of the "Fokker Scourge" of 1915-16. By mid 1916 however, the Eindecker found itself hopelessly outclassed by the latest generation of Allied fighters. By the end of the year, almost all of the Fokker E.IIIs had been withdrawn from the front.

Albatros D.II

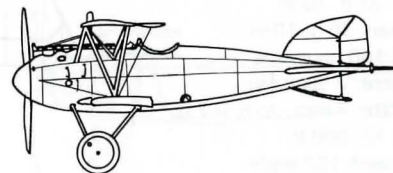
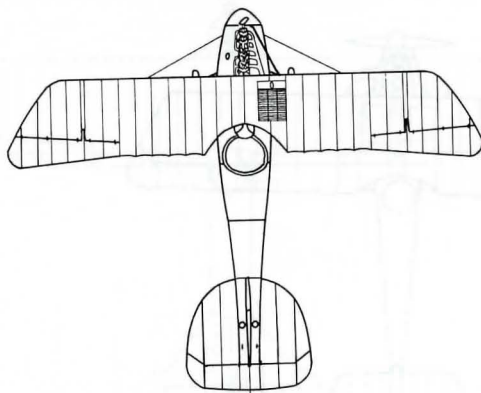
Length: 24 ft. 3 in.
Wingspan: 27 ft. 10 in.
Engine: 150 hp in-line
Armament: 2 Spandau
Climb rate: 6 min. to 3,280 ft.
Ceiling: 17,000 ft.
Max. speed: 109 mph
Total built: 275
Introduction date: September 1916



The first in one of the war's most successful design series, the Albatros D.II re-established parity in the air in late 1916. Fast, maneuverable and heavily armed with two Spandau machine guns, the D.II served as Germany's primary scout plane until the arrival of the Albatros D.III in early 1917. Oswald Boelcke, Manfred von Richthofen, and Werner Voss all flew the D.II at some point in their careers.

Albatros D.III

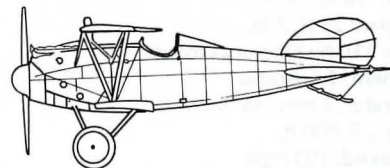
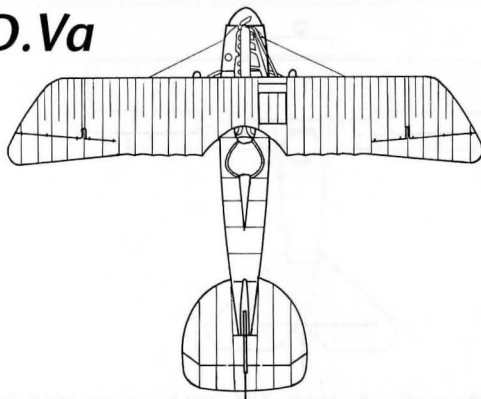
Length: 24 ft.
Wingspan: 29 ft. 8 in.
Engine: 160 hp in-line
Armament: 2 Spandau
Climb rate: 4 min. to 3,280 ft.
Ceiling: 18,000 ft.
Max. speed: 109 mph
Total built: 1,350
Introduction date: February 1917



The D.III was a major improvement on the D.II as it was much more agile. It first arrived at the Front in February and March 1917. Its performance was so superior to its Allied contemporaries that it swept them from the skies for the next several months, culminating in "Bloody April." Fast, well-armed and highly maneuverable, the Albatros was an excellent dogfighting machine. It could turn inside nearly every Allied fighter except the Sopwith Pup. However, steep dives would often tear the lower wings off.

Albatros D.V and D.Va

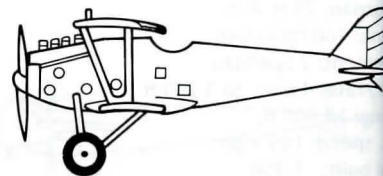
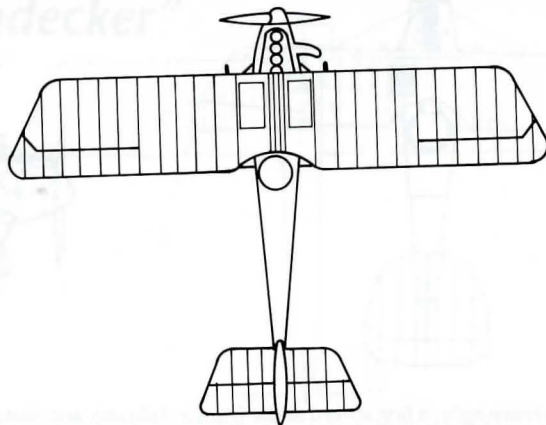
Length: 24 ft.
Wingspan: 29 ft. 9 in.
Engine: 200 hp in-line
Armament: 2 Spandau
Climb rate: 4 min. to 3,280 ft.
Ceiling: 20,000 ft.
Max. speed: 116 mph
Total built: 1,660
Introduction date: June 1917



This was the replacement for the Albatros D.III. It appeared in large numbers during the summer of 1917. Most German pilots were disappointed with it since it was not a major improvement on the Albatros D.III. In fact, the D.V was heavier and could not climb as fast as its predecessor. In combat, the Camels, Spads and S.E.5s all demonstrated their superiority over the D.V. Despite its mediocre performance, this aircraft served until the Armistice in many German units. While it wasn't an outstanding aircraft, it was very easy to fly. This was a definite advantage at a time when German pilots were coming out of training schools with less and less flight time.

Pfalz D.III

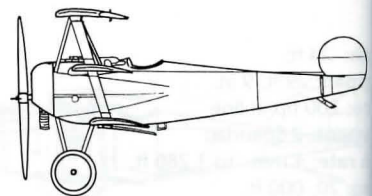
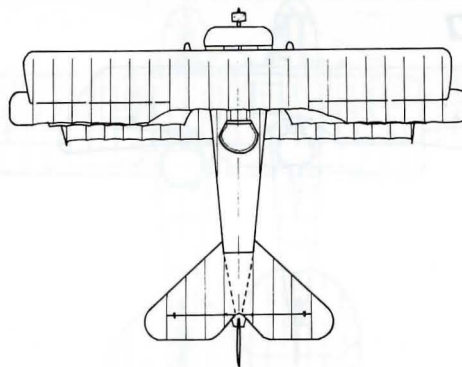
Length: 22 ft. 10 in.
Wingspan: 30 ft. 10 in.
Engine: 160 hp in-line
Armament: 2 Spandau
Climb rate: 7 min. to 6,562 ft.
Ceiling: 17,000 ft.
Max. speed: 102 mph
Total built: 600
Introduction date: July 1917



The Pfalz D. III was used by nearly a quarter of the German Air Service, yet it never gained the recognition it deserved. It was fast, sturdy, and durable — much more so than the Albatros D.III. It could not turn as tightly as the Albatros D.III or D.V. The Pfalz supplied most of the Bavarian Jagdstaffeln at one point or another from the summer 1917 until mid 1918. Aces such as Werner Voss and Rudolf Berthold preferred this aircraft over the Albatros D.V since it could dive faster and was more rugged.

Fokker Dr.I "Triplane"

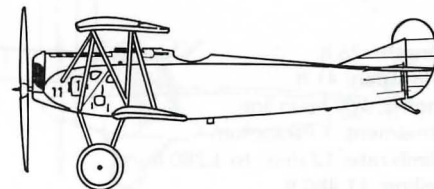
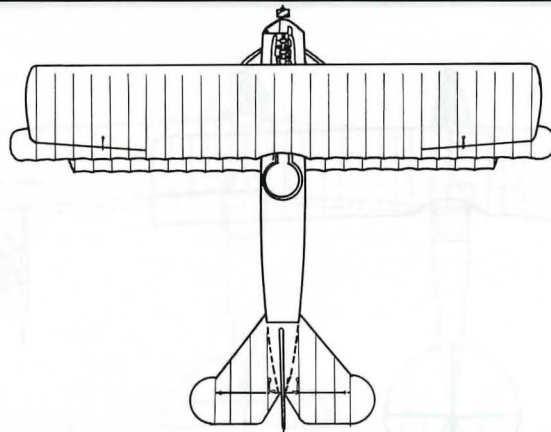
Length: 18 ft. 11 in.
Wingspan: 23 ft. 7 in.
Engine: 110 hp Oberursel rotary
Armament: 2 Spandau
Climb rate: 3 min. to 3,280 ft.
Ceiling: 20,000 ft.
Max. speed: 103 mph
Total built: 320
Introduction date: August 1917



Inspired by the Sopwith Triplane, the Dr.I was very effective in the swirling dogfights of late 1917 and early 1918. Stubby and slow, the Triplane had so much wing area that it could out-turn and out-climb all Allied aircraft. It did not, however, possess great speed or structural integrity, so the Dr.I pilots could not out-dive or out-run their opponents. Though it was incredibly maneuverable, it proved to be very difficult to fly. Only the top aviators and the best Jastas received the Triplane until spring of 1918 when they were allocated to some of the lesser units. A total of just over 300 were built. It's large rudder and lack of a vertical stabilizer allowed it to make tight turns without banking the wings, a maneuver called a slip-turn.

Fokker D.VII

Length: 23 ft.
Wingspan: 29 ft. 10 in.
Engine: 185 hp in-line
Armament: 2 Spandau
Climb rate: 4 min. to 3,280 ft.
Ceiling: 22,900 ft.
Max. speed: 114 mph
Total built: 1,000
Introduction date: May 1918

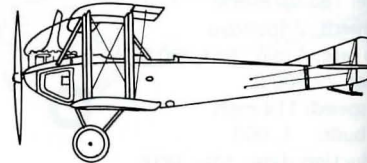
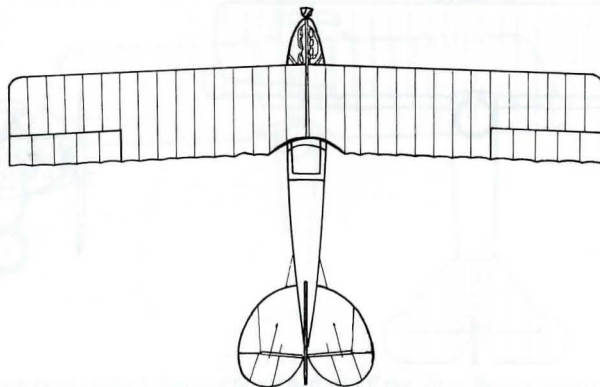


Without a doubt, this was the best scout of the war. It was an easy aircraft to fly, yet it was quick and rugged. A pilot could dive a D.VII without fear of losing a wing. Its high compression BMW and Mercedes engines gave it unrivaled high-altitude capabilities. Fokker pilots routinely stood their D.VIIs on their tails and climbed vertically in combat. For short periods, the Fokkers could maintain this attitude and fire the twin Spandaus without fear of stalling. It served in dozens of Jagdstaffeln by the end of the war after first arriving at the Front in April 1918. The Fokker D.VII was so respected by the Allies that they specifically demanded the destruction of all of them in the Treaty of Versailles.

GERMAN RECONNAISSANCE AND BOMBER AIRCRAFT

Aviatik C.I

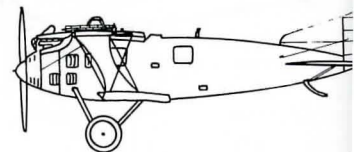
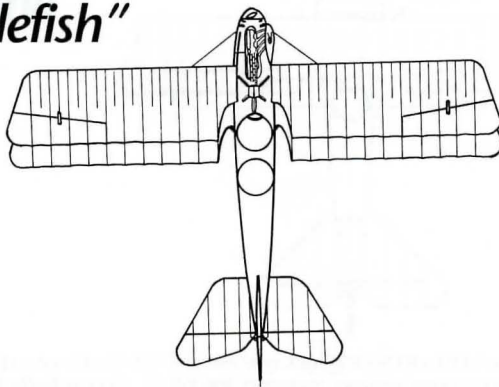
Length: 26 ft.
Wingspan: 41 ft.
Engine: 160 hp in-line
Armament: 1 Parabellum
Climb rate: 12 min. to 3,280 ft.
Ceiling: 11,480 ft.
Max. speed: 89 mph
Total built: n/a
Introduction Date: Early 1915



Appearing in early 1915, the Aviatik C.I served as a two-seat observation and artillery spotting aircraft. Like the B.E.2c, the gunner sat in front of the pilot, an arrangement restricted the arc of the gunners machine gun, since the struts blocked his vision in certain directions. Slow and awkward in the air, it revealed to be highly vulnerable to fighter attacks. In 1916, an upgraded version appeared at the Front and was designated the C.III. It was only modestly successful.

Roland C.II "Whalefish"

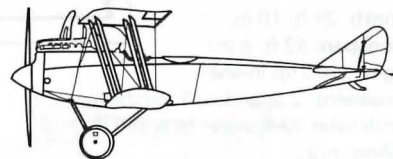
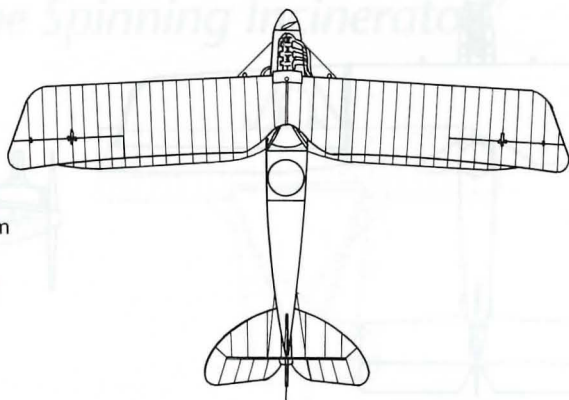
Length: 25 ft. 3 in.
Wingspan: 33 ft. 9 in.
Engine: 160 hp in-line
Armament: 1 Parabellum, 1 Spandau
Climb rate: 6 min. to 3,280 ft.
Ceiling: n/a
Max. speed: 103 mph
Total built: 350
Introduction date: April 1916



The Roland was a very tough opponent since it was one of the first two-seaters to be armed with both a rear-firing and a forward-firing machine gun. While fairly maneuverable, it was very tricky to fly. For its time, it was one of the fastest two-seaters in service. Its speed made the Roland a perfect long-range reconnaissance aircraft. It was not an exceptionally maneuverable plane, and it had a tendency to spin in tight turns. It remained in front-line service from April 1916 until early

Rumpler C.IV

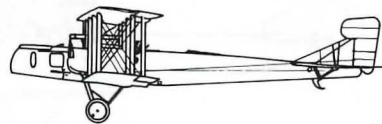
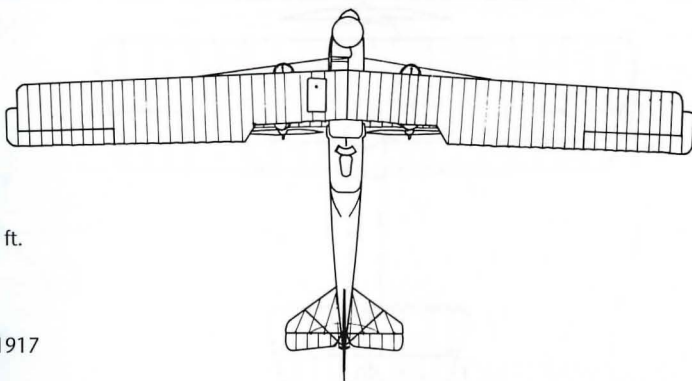
Length: 27 ft. 7 in.
Wingspan: 41 ft. 6 in.
Engine: 260 hp in-line
Armament: 1 Spandau, 1 Parabellum
Climb rate: 4 min. to 3,280 ft.
Ceiling: 21,000 ft.
Max. speed: 106 mph
Total built: 1,000
Introduction date: March 1917



One of the mainstays of the German long-range photographic reconnaissance units, the Rumpler was a fast two-seater armed with two machine guns. It first appeared at the Front in March 1917 and served until the end of the war. Average pilots had a difficult time with the C.IV since it was a quirky, tough machine to fly. Its high altitude performance, including its climb rate, was exceptional.

Gotha G.IV

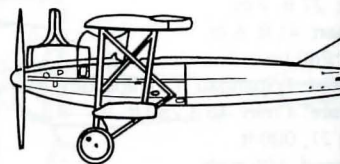
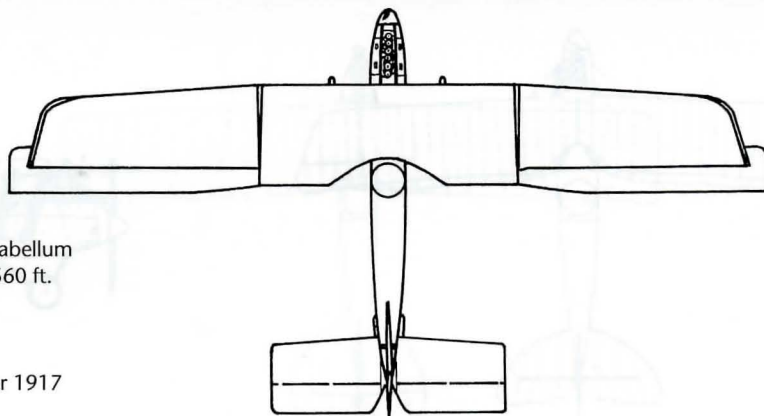
Length: 38 ft. 11 in.
Wingspan: 77 ft. 9 in.
Engines: 2 x 260 hp in-lines
Armament: 3 Parabellums
Climb rate: 28 min. to 9,840 ft.
Ceiling: 21,320 ft.
Max. speed: 87 mph
Total built: 230
Introduction date: February 1917



The Gotha G.IV was Germany's principle strategic bomber during the Great War. It was used extensively in raids over England and France. Its long range allowed it to bomb London from bases in Belgium, a feat that few other German aircraft could undertake until late 1918. The first Gotha raid on London occurred on May 25, 1917 in broad daylight. Through the course of the war, only eight Gotha G.IVs were lost to British fighters, twelve were lost to ground fire, and thirty-six were destroyed in accidents. An extremely difficult plane to fly, Gotha pilots often crashed on landing since the plane was so unstable. A total of three machine guns were carried during daylight raids. One was located in the nose, one in the upper rear fuselage, and one in a tunnel facing down to the rear.

Junkers J.I

Length: 29 ft. 10 in.
Wingspan: 52 ft. 6 in.
Engine: 200 hp in-line
Armament: 2 Spandau, 1 Parabellum
Climb rate: 32 ft. min. to 6,560 ft.
Ceiling: n/a
Max. speed: 97 mph
Total built: 227
Introduction date: November 1917

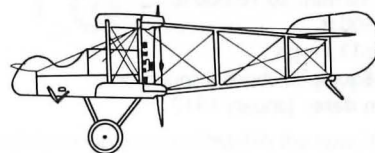
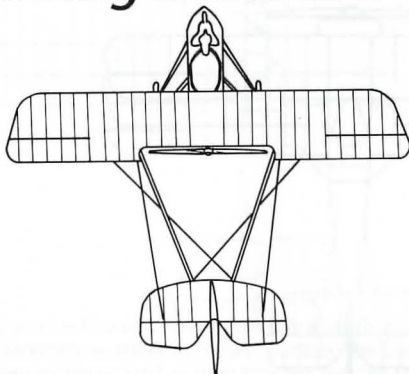


The Junkers J.I was a two-seat attack bomber used by the Schlachtstaffeln (ground attack squadrons) throughout 1918. The vital areas of the plane were with armor plating, making it a very difficult aircraft to shoot down. It carried two forward-firing Spandau's and one Parabellum for the gunner as its main armament. Unfortunately, it was an extremely heavy aircraft. This greatly impaired its maneuverability and general handling characteristics.

BRITISH AIRCRAFT

Airco D.H.2 "The Spinning Incinerator"

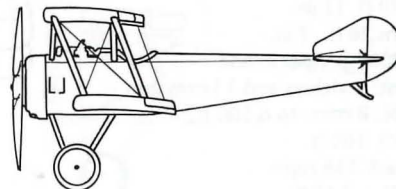
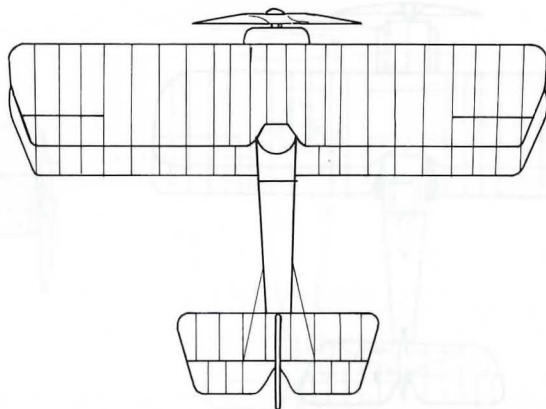
Length: 25 ft. 2 in.
Wingspan: 28 ft. 3 in.
Engine: 100 hp Gnome rotary
Armament: 1 Lewis gun
Climb rate: 12 min. to 6,500 ft.
Ceiling: 14,500 ft.
Max. speed: 93 mph
Total built: 400
Introduction date: February 1916



The D.H.2 was a nimble, highly maneuverable bi-plane that helped end the Fokker Scourge in 1916. It was one of the earliest fighters to have an engine mounted behind the pilot in a pusher-type design. Unfortunately, the engine was totally unreliable, and often several D.H.2s out of each patrol would have to abort because of engine trouble. Nevertheless, it served well into 1917. By this time, however, the D.H.2 was hopelessly outclassed by the newer German aircraft.

Sopwith Pup

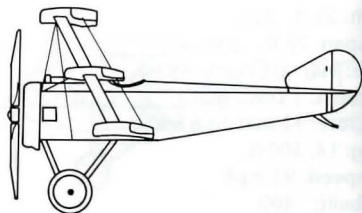
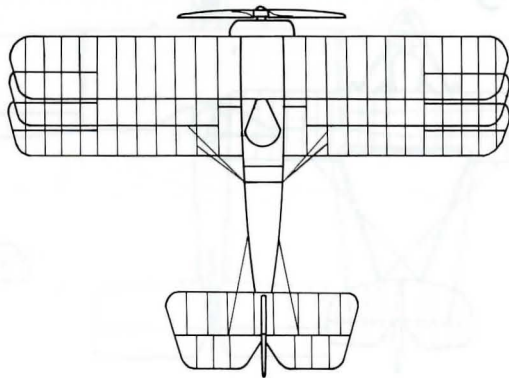
Length: 19 ft. 4 in.
Wingspan: 26 ft. 6 in.
Engine: 80 hp Le Rhone rotary
Armament: 1 Vickers
Climb rate: 7 min. to 5,000 ft.
Ceiling: 17,500 ft.
Max. speed: 99 mph
Total built: 1,770
Introduction date: April 1916



The Pup was a lightweight, graceful biplane whose docile flight characteristics earned the affection of its pilots. Though it was underpowered, it could outmaneuver many German aircraft it faced in 1916-17 above 10,000 feet. It was so nimble that it could loop dozens of times in a row, a feat not many of its contemporaries could achieve. Unfortunately, it carried only one machine gun. This was a great disadvantage by mid 1917. The Pup served with primarily R.N.A.S. and Home Defense units until they were replaced by the Sopwith Triplane and Camel.

Sopwith Triplane "Tripehound"

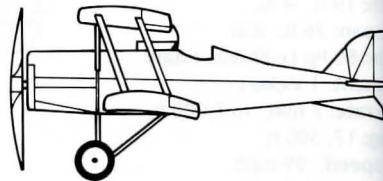
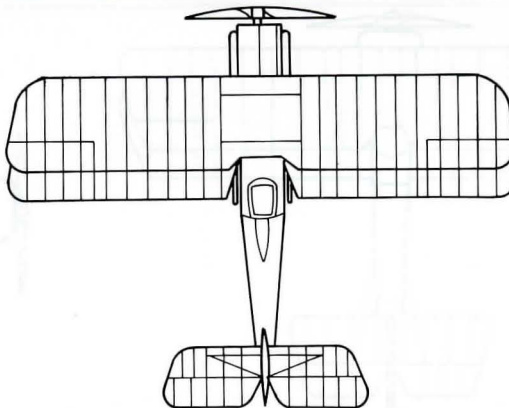
Length: 18 ft. 10 in.
Wingspan: 26 ft. 6 in.
Engine: 130 hp Clerget rotary
Armament: 1 Vickers
Climb rate: 10 min. to 10,000 ft.
Ceiling: 20,500 ft.
Max. speed: 113 mph
Total built: Equipped about 5 squadrons
Introduction date: January 1917



The inspiration behind the Fokker Dr.I, the Sopwith Triplane served only with Royal Navy squadrons for just a few months in 1917. It's maneuverability phenomenal, especially its rate of climb. Like the Pup, it was both under-powered and under-armed, so it was replaced by the Camel by November of 1917. The Black of Naval 10 Squadron, led by Raymond Collishaw, flew the Triplane and gained tremendous success with it until they converted over to the Camel in the summer of

S.E.5a

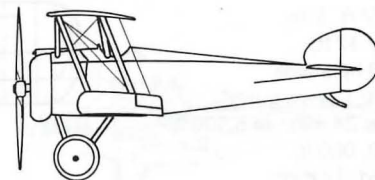
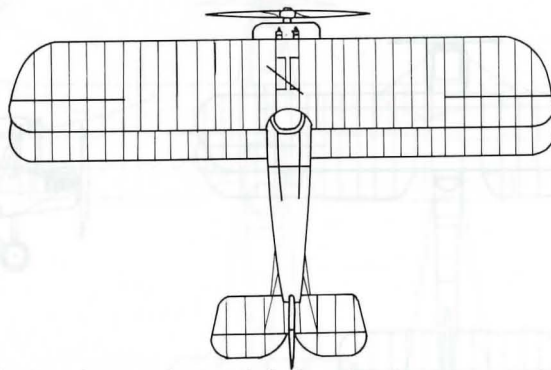
Length: 20 ft. 11 in.
Wingspan: 26 ft. 7 in.
Engine: 200 hp Viper in-line
Armament: 1 Vickers and 1 Lewis gun
Climb rate: 8 min. to 6,500 ft.
Ceiling: 19,500 ft.
Max. speed: 138 mph
Total built: 5,100
Introduction date: May 1917



S.E.5a was probably the best British scout of the war. Easy to fly, stable and very effective at high altitude, the S.E.5a made even a mediocre pilot look good. Its stability made it an excellent gun platform, and three of the top four British aces flew the S.E.5a for at least part of their careers. Though it was not as maneuverable as the Camel or the Fokker Triplane, it could outdive anything the Germans flew. It could also climb better than most other aircraft. The S.E.5a carried one Vickers on the cowl and one Lewis gun on the wing as armament. It served with both the British and American air services. It ranks as one of the fastest scouts of the

Sopwith Camel

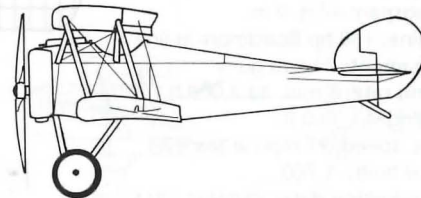
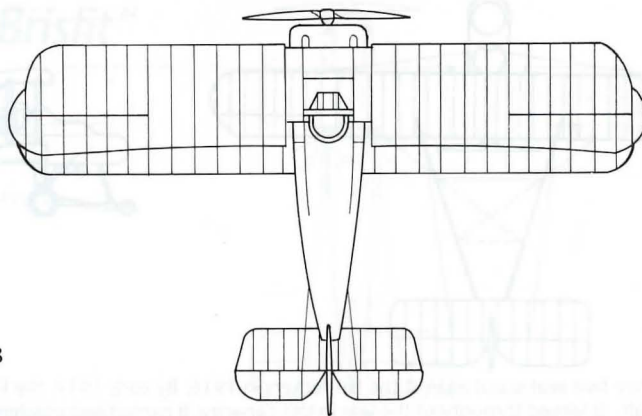
Length: 18 ft. 9 in.
Wingspan: 28 ft.
Engine: 130 hp Clerget rotary
Armament: 2 Vickers
Climb rate: 16 min. to 15,000 ft.
Ceiling: 19,000 ft.
Max. speed: 115 mph
Total built: 5,400
Introduction date: June 1917



One of the better Allied scouts of the war, the Camel was used primarily for low-altitude missions. With most of its weight concentrated in the nose, the center of gravity was well forward. This made the plane extremely unstable in the air. Further, the Camel was extremely light, while its engine was very powerful. As a result, the engine's torque was brutal. Many inexperienced pilots died as their mounts twisted to the right and then fell into a spin. Yet this seemingly damning flight characteristic was exactly what made the Camel so deadly in combat. In the hands of a veteran pilot, the Camel could turn more sharply to the right than any other aircraft (except perhaps the Fokker Dr.I). To the left, the plane had a tendency to climb. The Camel served as both a fighter and a ground attack aircraft in both the R.F.C. and the American Air Service until the end of the war.

Sopwith Snipe

Length: 19 ft. 10 in.
Wingspan: 31 ft. 6 in.
Engine: 230 hp. Bentley rotary
Armament: 2 Vickers
Climb rate: 16 min. to 16,500 ft.
Ceiling: 20,500 ft.
Max. speed: 121 mph
Total built: 1,500
Introduction date: September 1918

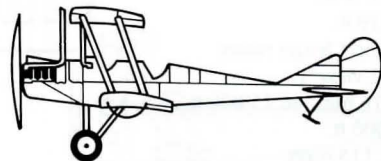
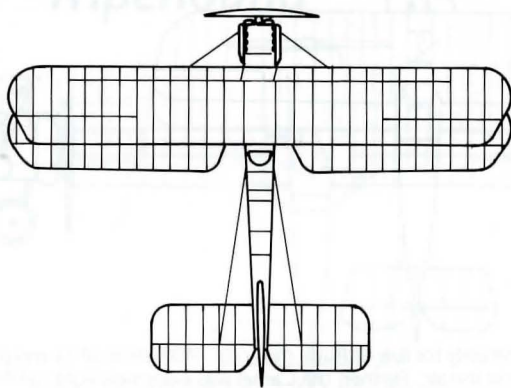


The Snipe was essentially an improved Camel. Fast, highly maneuverable and durable, the Snipe represented the peak of World War One fighter development. It arrived at the front in September and October 1918, and then in only small numbers.

BOMBERS AND RECONNAISSANCE AIRCRAFT

B.E.2 "Quirk"

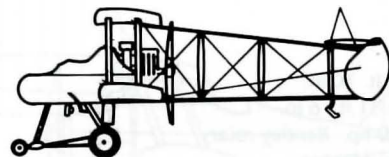
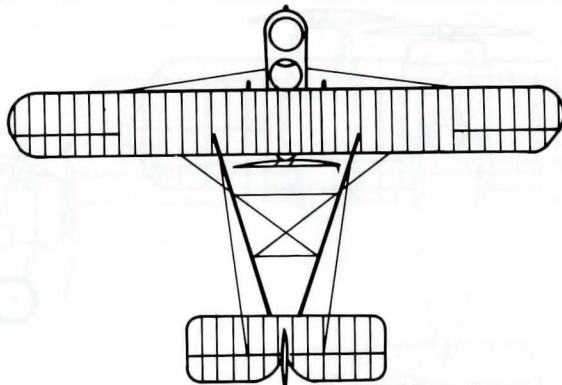
Length: 27 ft. 3 1 n.
Wingspan: 37 ft.
Engine: 90 hp in-line
Armament: 1 Lewis gun
Climb rate: 24 min. to 6,500 ft.
Ceiling: 10,000 ft.
Max. speed: 72 mph
Total built: 1,801
Introduction date: August 1914



The Quirk was the standard British observation and light bombing plane through a large portion of the Great War. Although it was very stable in the air, it was terribly unmaneuverable and virtually defenseless. The gunner actually sat in front of the pilot under the top wing. This severely restricted his field of fire. It was in service long after it became hopelessly obsolete, which resulted in crippling losses in the units flying this aircraft type.

F.E.2b "Fee"

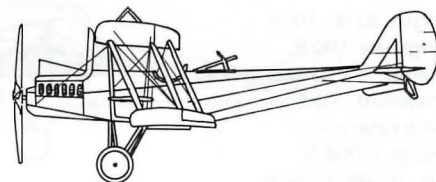
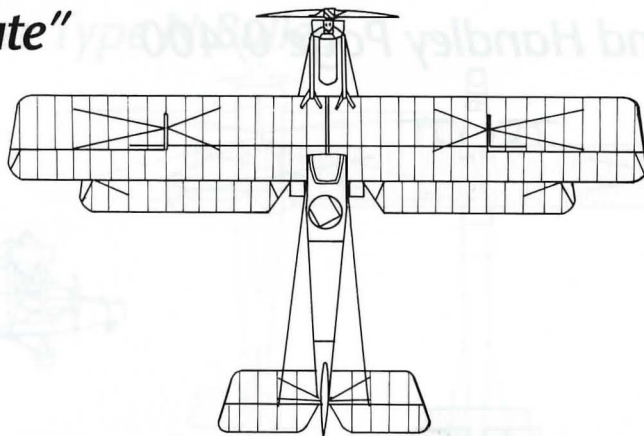
Length: 32 ft. 3 in.
Wingspan: 47 ft. 9 in.
Engine: 160 hp Beardmore in-line
Armament: 2 Lewis guns
Climb rate: 8 min. to 3,000 ft.
Ceiling: 11,000 ft.
Max. speed: 91 mph at sea level
Total built: 1,700
Introduction date: October 1915



Known as the Fee by its pilots, the F.E.2b was an effective two-seat scout against the Eindeckers in 1916. By early 1917, the Fee was obsolete as a fighter, so it was employed as a night bomber and reconnaissance aircraft. It served throughout the war in this capacity. It carried two machine guns, both of which were operated by the gunner. One fired forward on a flexible mount, and the other was mounted between the gunner and the pilot firing rear-ward over the top wing. In order to fire the rear-facing gun, the gunner had to stand on a small platform facing the pilot with his back to the nose of the aircraft. More than one F.E.2b gunner died to his death while trying to repulse an attack.

R.E.8 "Harry Tate"

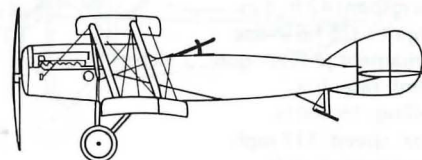
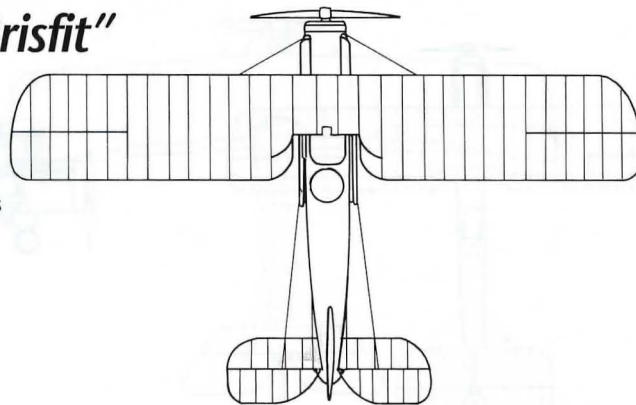
Length: 27 ft. 10 in.
Wingspan: 42 ft. 7 in.
Engine: 150 hp in-line
Armament: 1 Lewis gun, 1 Vickers
Climb rate: n/a
Ceiling: 13, 500 ft.
Max. speed: 103 mph
Total built: 4,000
Introduction date: October 1916



The R.E.8 was another reconnaissance aeroplane used by the Royal Flying Corps that entered operational service in 1916. It remained active at the Front until the Armistice. It was a lumbering, unmaneuverable beast that had a nasty habit of falling into spins quite suddenly. Structurally, the R.E.8 was weak, as its upper wing extensions were not terribly strong. As if this weren't enough, the early versions possessed a power plant prone to failures.

Bristol Fighter "Brisfit"

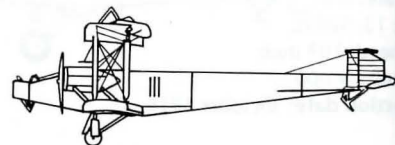
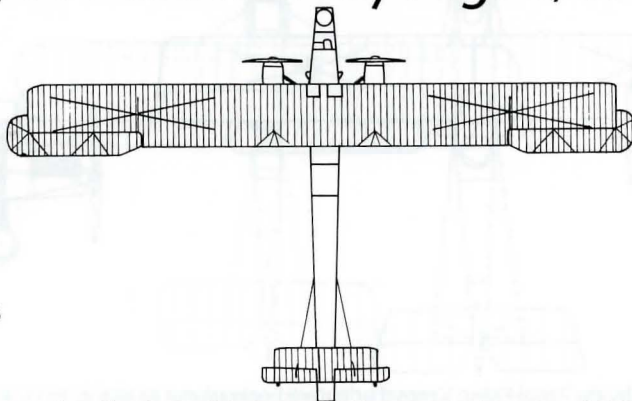
Length: 25 ft. 10 in.
Wingspan: 39 ft. 3 in.
Engine: 275 hp Rolls-Royce in-line
Armament: 1 Vickers and 2 Lewis guns
Climb rate: n/a
Ceiling: 20, 000 ft.
Max. speed: 125 mph
Total built: 3,101
Introduction date: April 1917



Known as the "Brisfit" to its pilots, the two-seat Bristol F.2B Fighter proved to be an incredibly tough opponent in the air. Sturdy, stable and maneuverable for a two-seater, it saw service from April 1917 through the Armistice and all the way through the 1920's. They were finally retired from active duty in 1932. Armed with one forward-firing Vickers and twin Lewis guns in the rear, the Brisfit could be more than a match for any German scout if handled well.

Handley Page 0/100 and Handley Page 0/400

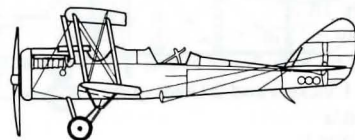
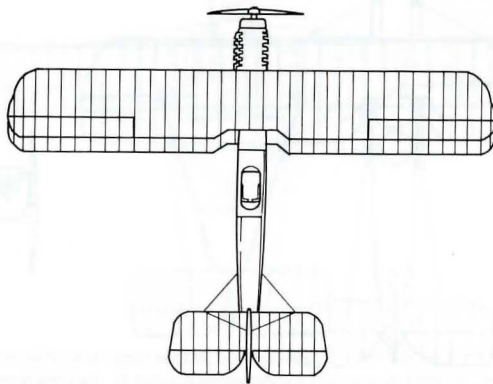
Length: 62 ft. 10 in.
Wingspan: 100 ft.
Engines: 2 X 250 hp in-lines
Armament: 3-5 Lewis guns
Climb rate: n/a
Ceiling: 7,000 ft.
Max. speed: 85 mph
Total built: 500
Introduction date: November 1916



This was the first true strategic bomber produced by the English. It appeared in France in the spring of 1917 and began raiding deep within German-held territory. Originally conceived as a daylight bomber, the 0/100 was reassigned to night raiding a few months after reaching the combat zone. They were eventually supplanted by the larger and more powerful 0/400s.

Airco D.H.4

Length: 30 ft. 8 in.
Wingspan: 42 ft. 4 in.
Engine: 375 hp in-line
Armament: 2 Lewis guns, 2 Vickers
Climb rate: n/a
Ceiling: 16,000 ft.
Max. speed: 117 mph
Total built: 1,449
Introduction date: May 1917

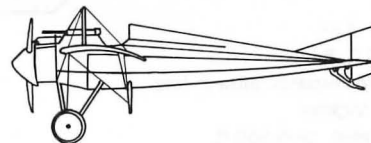
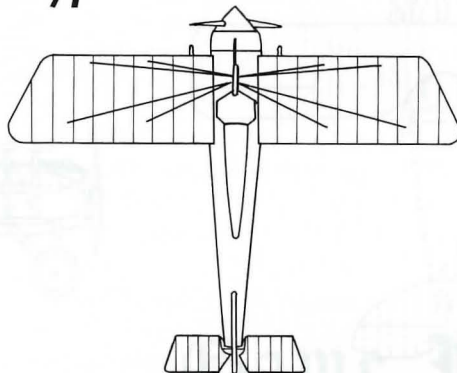


The D.H.4 was a two-seat bomber used by the British and American air services in the latter portion of the war. It was an excellent aircraft for its time, and it served on all major fronts during the war. For a bomber, the D.H.4 was a comparatively fast, achieving a maximum speed of 117 mph. By the end of the war, over 1,400 had been built in the United States and Great Britain. Some D.H.4s remained in service with American units until 1932.

FRENCH SCOUTS

Morane-Saulnier Type N Bullet

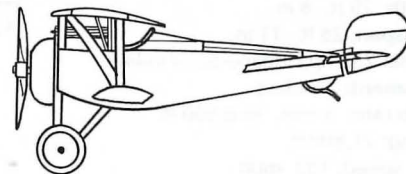
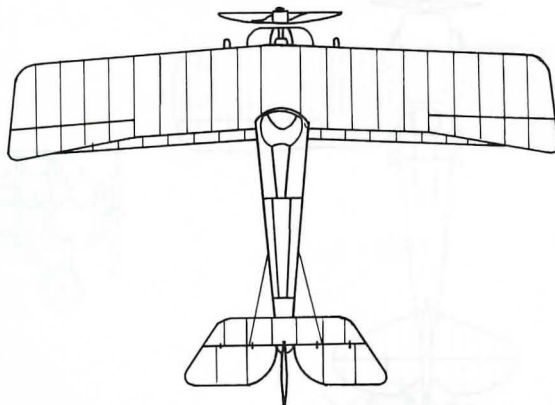
Length: 19 ft. 1 in.
Wingspan: 26 ft. 8 in.
Engine: 80 hp Le Rhone rotary
Armament: 1 Vickers or Hotchkiss
Climb rate: n/a
Ceiling: 13,123 ft.
Max. speed: 90 mph
Total built: 50
Introduction date: April 1915



A modified version of a pre-war race monoplane, the Morane Bullet saw limited action with both the French and British throughout 1915 and early 1916. While it was extremely fast for its time, the controls were very stiff since it used wing-warping instead of ailerons for movement. Its small wing area made a rather unmaneuverable aircraft as well. Nevertheless, it was one of the first single-seaters to mount a forward-firing machine gun. By the end of the summer of 1916 almost all had been withdrawn from frontline units. Roland Garros flew this as well as a Morane Parasol during his brief career.

Nieuport 17

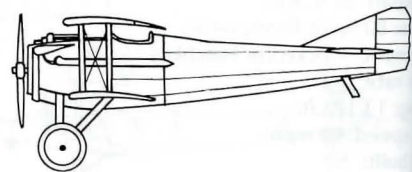
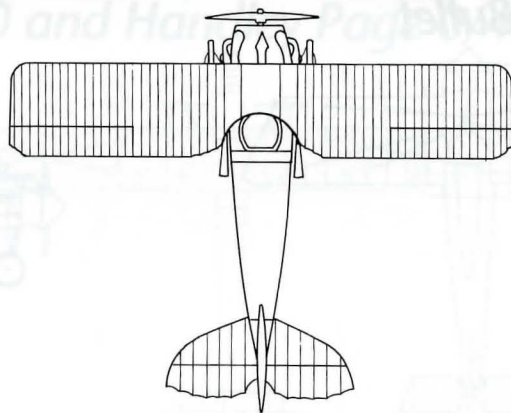
Length: 18 ft. 10 in.
Wingspan: 27 ft.
Engine: 110 hp Le Rhone
Armament: 1 Vickers or Lewis guns
Climb rate: 7 min. to 6,500 ft.
Ceiling: 17,400 ft.
Max. speed: 110 mph
Total built: several thousand
Introduction date: April 1916



The Nieuport was one of the classic designs to emerge from the Great War. Light, powerful, and incredibly nimble, this aeroplane had no equal in the sky until the advent of the Albatros D.III. first arriving in the spring and summer of 1916, the Nieuport 17 equipped most French units and many British ones also until mid 1917. Unfortunately, this type had a nasty habit of shedding its lower wings after violent maneuvers or steep dives. Nevertheless, it was one of the best Allied fighters of 1916-17.

Spad 7

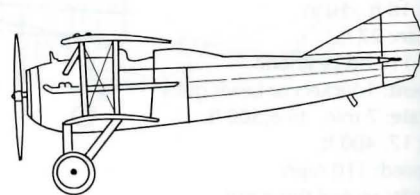
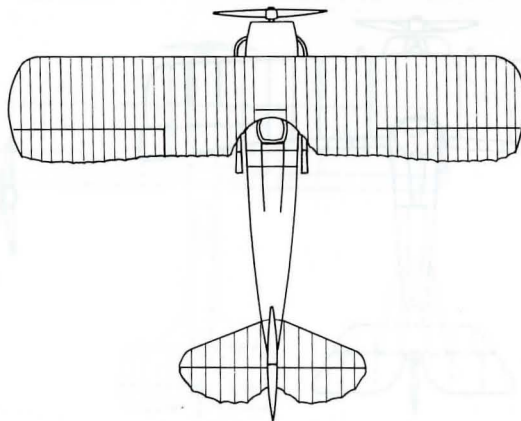
Length: 20 ft. 3 in.
Wingspan: 26 ft. 8 in.
Engine: 175 hp Hispano-Suiza in-line
Armament: 1 Vickers
Climb rate: 6 min. to 6,560 ft.
Ceiling: 18,000 ft.
Max. speed: 119 mph
Total built: 6,000
Introduction date: July 1916



First appearing in the summer of 1916, the Spad 7 combined speed and strength into a business-like airframe. Though it couldn't out-turn the Nieuport 17 or of the German aircraft, it could handle very steep dives without losing a wing. It's solid construction made it a durable and reliable aeroplane. The early engines they equipped with, however, suffered originally from all kinds of teething troubles. Eventually, these were ironed out and the Spad became a deadly adversary in the air.

Spad 13

Length: 20 ft. 8 in.
Wingspan: 26 ft. 11 in.
Engine: 235 hp Hispano-Suiza in-line
Armament: 2 Vickers
Climb rate: 5 min. to 6,560 ft.
Ceiling: 21,800 ft
Max. speed: 133 mph
Total built: 8,400
Introduction date: September 1917



This was simply an improved Spad 7. It mounted a more powerful engine, and two Vickers machine guns instead of just one. The Spad 13 became one of the designs of World War One. Nearly every Allied nation flew this type at some point in the war. Most American units used the Spad toward the end of the war, the Belgians and some British and Italian units. Fast, sleek, and robust, Spads were capable of dives exceeding two hundred miles per hour.

Game Play



INTRODUCTION

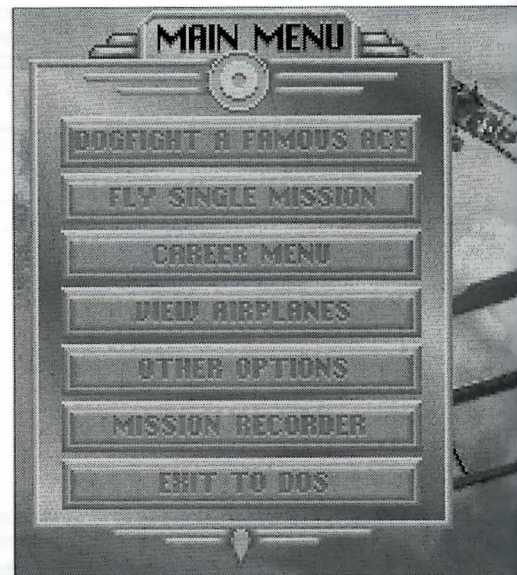
Red Baron is a historically accurate and detailed recreation of flight during the era that launched aerial combat, World War I. The controls available to the great Aces were few and primitive. However, as a computerized simulation Red Baron is capable of offering you controls unlike anything the Aces would have ever dreamed. This portion of the Red Baron manual outlines and describes these controls. It does not describe the elements of flight such as take-off and landing, maneuvers, or tactics. These elements are discussed in detail in previous chapters. Please refer to the table of contents for specific page references.

■ For installation instructions, see the Smart Start™ section on the Quick Reference card.

Following are the sections described in this chapter:

- Flight Controls
- View Commands
- Machine Gun Controls
- Time Compression
- Game Play Preferences
- Realism Panel
- Weather
- Your Flight Group
- Simulation Overview
- Fly Single Mission
- Fly Single Mission Conditions

- The Mission Assignment Screen
- The Flight Assignments Screen
- Navigation
- Ending the Mission
- Career Play
- Career Menu
- Aerodrome Menu
- Career Sequences
- The Mission Recorder




FLIGHT CONTROLS

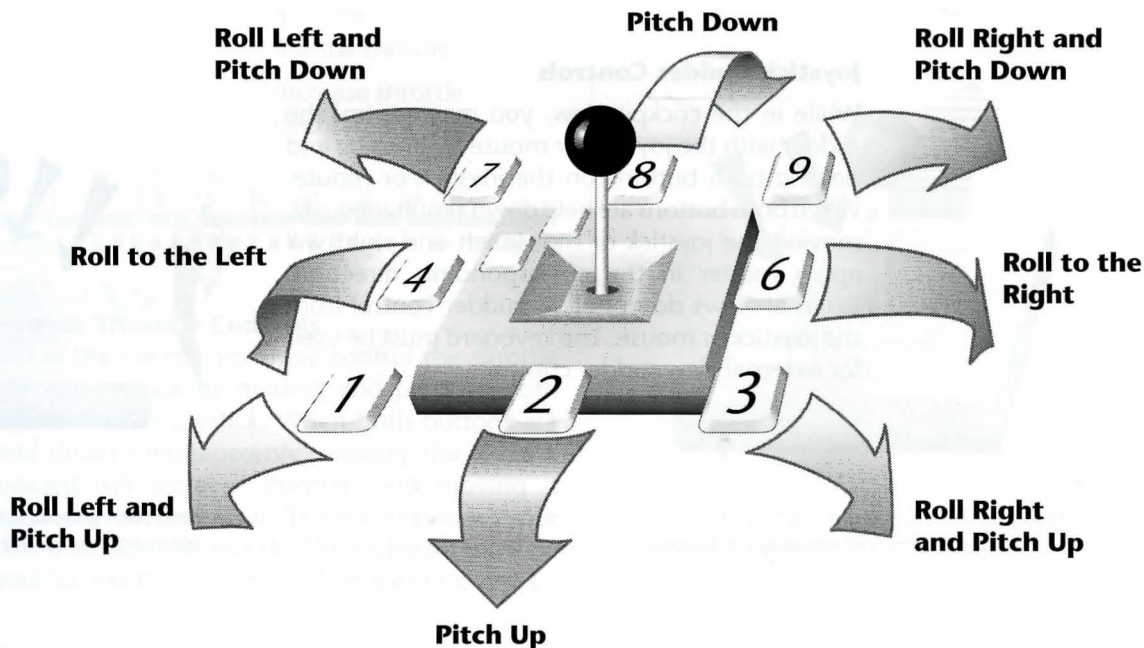
Movement

You use the control surfaces and the throttle to maneuver your aircraft (for more detail see the Flight Section). These include the ailerons, the elevators, the rudder, and the throttle.

From the Preferences Panel (activated from the simulation by pressing **F10**), you may select which peripherals you have attached. You may select: keyboard, joystick and mouse control.



The mouse controls are identical to those of the joystick. For movement controls, the mouse is self-centering. This means that it will automatically recenter itself after each movement command.



FLIGHT CONTROLS

Rudder

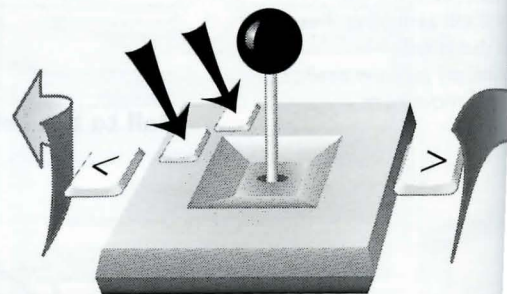
The rudders can be controlled from the keyboard at any time. They can also be controlled from joystick or mouse *while in the cockpit view*.

Keyboard Rudder Controls

< left rudder
> right rudder

Joystick Rudder Controls

While in the cockpit view, you may control the rudder with the joystick or mouse by *pressing* and *holding* both buttons on the joystick or mouse. When both buttons are held down simultaneously, moving the joystick or mouse left and right will apply rudder in the corresponding direction. External views do not allow rudder control from the joystick or mouse. The keyboard must be used for external view rudder control.



Hold both buttons & move joystick or mouse left or right to control rudder.

Throttle

The throttle can be controlled by mouse, joystick or keyboard.

Keyboard Throttle Controls

1..9

controls throttle.

1 = idle

9 = full throttle

+

increase throttle

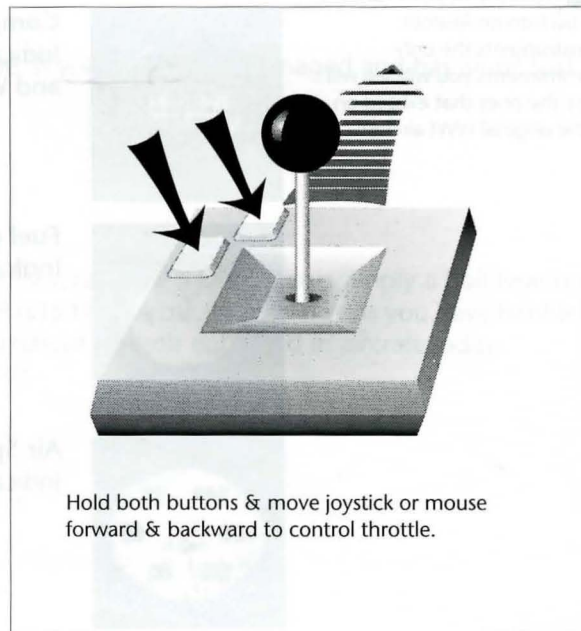
-

decrease throttle



Joystick Throttle Controls

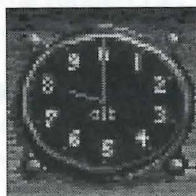
Within the cockpit you may control the throttle with the joystick by holding and pressing both buttons on the joystick. When both buttons are held down simultaneously, moving the joystick forward will increase throttle, and moving it backward will decrease it. This will not work if your view is outside the aircraft. The keyboard must be used for throttle control while in external views.



Hold both buttons & move joystick or mouse forward & backward to control throttle.

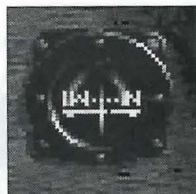
FLIGHT CONTROLS

Instruments



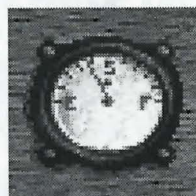
Altimeter

Indicates the altitude in feet. The large needle indicates 100s of feet, and the small needle indicates 1,000s of feet. It is set to 0 at ground level.



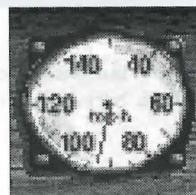
Compass

Indicates your current heading. The readings are N for North, S for South, E for East, and W for West. Also included are NW, NE, SW, and SE.



Fuel gauge

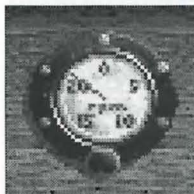
Indicates how much fuel you have left.



Air Speed Indicator

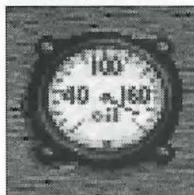
Indicates your current air speed in miles per hour (m.p.h.).

■ From the Realism Panel, if you turn on Realistic Instruments the only instruments you will see will be the ones that existed on the original WWI aircraft.



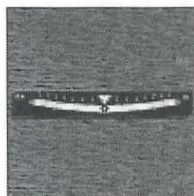
Tachometer

Indicates how many revolutions per minute the engine is making. The needle indicates $\text{r.p.m.s} \times 100$. Generally, this corresponds to your current throttle setting.



Oil pressure gauge

Indicates your current oil pressure. If your airplane is damaged and has an oil leak, the needle will drop.



Inclinometer

Indicates the current bank of your aircraft. The instrument is simply a ball bearing inside a curved groove. If the ball is to the left of center, it means you have banked left. It's a crude ancestor of the artificial horizon equipped in aircraft today.

VIEW COMMANDS

While patrolling the front, you'll find it necessary to look around often to avoid being surprised. The pilots of WWI were always looking around for enemy fighters.

Controlling View Commands with the Keyboard

Switching between cockpit and external view

Press the **Return** key.

From within your aircraft (cockpit views)

- F1 Look forward (your instrument panel will be visible)
- F2 Look back
- F3 Look left
- F4 Look right
- F5 Look up
- F6 Look down (lean out and look straight down)

From outside your aircraft (external views)

- F1 View the Front of your aircraft
- F2 View the Rear of your aircraft
- F3 View the Left Side of your aircraft
- F4 View the Right Side of your aircraft
- F5 View the Bottom of your aircraft (Look up at your plane from a lower altitude).
- F6 View the Top of your aircraft (Looks directly down at your plane from a higher altitude).
- F7 View from a Chase Plane (the view follows your aircraft in a chase plane). F7 works from within the cockpit and outside your aircraft.

Mouse controls for view commands are identical to those of the joystick.

Joystick	Mouse
Button #1	= Left Button
Button #2	= Right Button

Controlling View Commands with the Joystick

You may control the current view without touching the keyboard.

From within the Cockpit

Holding down **button #2** and moving the joystick forward will switch to Look Forward (**F1**), to the left will switch to Look Left (**F3**), etc. Pressing and releasing **button #2** with the joystick centered will switch from the cockpit to the outside rear view.

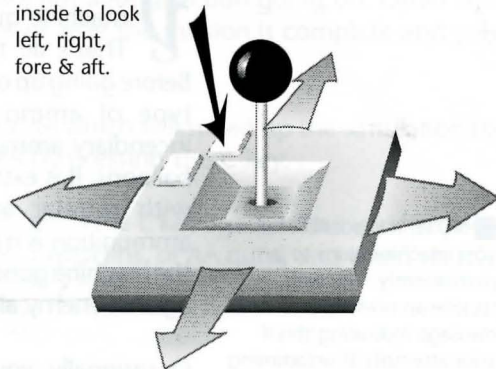
From outside the Aircraft

Holding down **button #2** while moving the joystick will pan the view smoothly around the aircraft: moving the joystick to the left will pan the view clockwise around your aircraft, moving the joystick forward will pan the view up around the aircraft, etc. Holding down both buttons while moving the joystick forward/backwards will move the camera closer to/away from the aircraft. Pressing and releasing **button #2** with no joystick movement will switch to the front cockpit view.

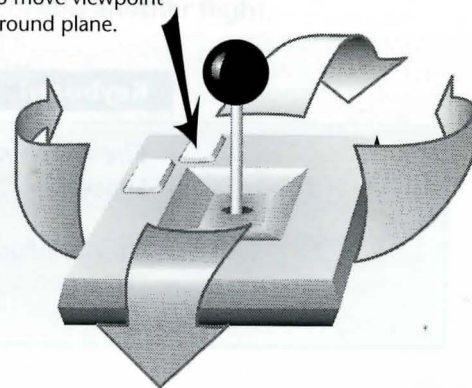
These commands may be duplicated without a joystick. The keypad will function like the joystick, the **Space Bar** will function like **button #1**, and the **Enter** key will function like **button #2**.

From any outside view, press **Ctrl-F1.. F10** to save off the current view. To switch to any of these saved views, use **Alt-F1.. F10**.

Press & hold button #2 while inside to look left, right, fore & aft.



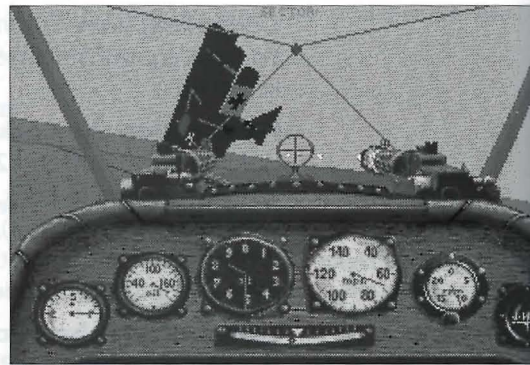
Press & hold button #2 while outside to move viewpoint around plane.



MACHINE GUN CONTROLS

You are armed with one or two forward-firing machine guns (depending upon the plane). That's all the WWI combat pilots needed. Before going up on the mission, you may select what type of ammo to use: *incendiary* or *regular*. Incendiary ammo is used to attack Zeppelins and balloons. It is extremely difficult to ignite a dirigible with regular ammunition. However, regular ammunition is more accurate and less likely to jam the machine guns. Regular ammunition is also better against enemy airplanes than incendiary.

■ NOTE: it is possible for your machine guns to jam permanently. You will receive an on-screen message indicating this if your attempts at unjamming are unsuccessful.



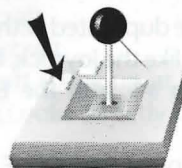
Occasionally, your machine guns will jam. Firing a long burst from your machine gun has a greater chance of jamming your guns than a short burst. This is why the good pilots would fire short bursts in their attacks. If your guns are jammed, you may try to unjam them by **repeatedly** pressing the **U** key. This won't always work, but keep trying.

Keyboard

Fire Machine Gun:
Spacebar

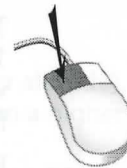
Unjam Machine Gun:
"U" key

Joystick



Button #1 = fire machine gun

Mouse



Left Button = fire machine

TIME COMPRESSION

There may be periods of simulation play where there's not a lot of action going on. Often this is after taking off as you make your way to the front or after the mission is complete and you are making your way back to your aerodrome.

As a convenience, Red Baron contains a time compression mode which will speed up the simulation to many times it's normal speed. Time compression is activated by pressing the **C** key.

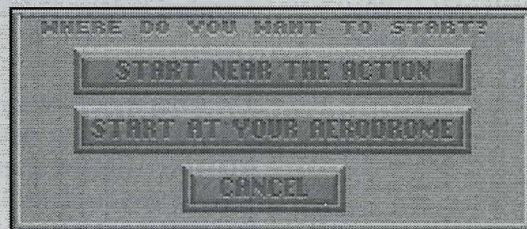
Time compression will be automatically deactivated when you press the **C** key again, when you fire your machine guns, when you come near enemy aircraft, balloons, Zeppelins, or AA guns, and when you fly near the ground.

IMPORTANT!

It's very difficult to stay in formation when time compression is active. Because of this, Red Baron will automatically enter Auto-Formation when time compression is activated. This will control your aircraft and keep it locked into formation until time compression is deactivated. **Auto-Formation will NOT activate when you are the flight leader unless you are escorting another flight.**

STARTING LOCATION

On some missions a menu will appear, giving you a choice of where you start your flight. You may chose **Start Near the Action** or **Start at Your Aerodrome**. For most missions, it is recommended that you start near the action. The missions will be shorter and more exciting. However, if you want to try your hand at navigating as the WWI pilots did, begin the mission near your aerodrome.



PREFERENCES

There are two main panels that allow you to control game play preferences, the PREFERENCES panel and the REALISM panel. The displayed PREFERENCES panel is available *only* from within simulation. OPTIONS from the Main Menu will bring up an abbreviated version which does contain detail level controls.

PREFERENCES PANEL

Press **F10** from the simulation to activate.

Press ACCEPT or the **ESC** key to exit.

NOTE: Settings and adjustments made to either the PREFERENCES or REALISM panels are automatically saved to disk. The new settings remain even if you quit and restart Red Baron later.

PREFERENCES:

F10 Key from simulation.
Allows the customizing of elements such as active controls, sounds, music, detail levels and game speed.

With the Preferences panel you may tailor some of the technical aspects of Red Baron to your own tastes and computer configuration. You may customize the following game controls:

Joystick ON/OFF

Sound ON/OFF

Mouse ON/OFF

Time Scale Adjustment LOW-HIGH

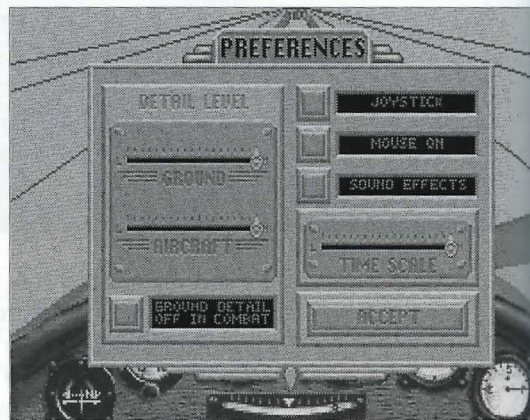
Ground Detail Level Adjustment LOW-HIGH

Aircraft Detail Level Adjustment LOW-HIGH

Combat Button REGULAR/OFF

Detail Levels

The smoothness of simulation play is dependent upon two things: the speed of your computer and amount of graphic detail displayed. The first of the two, the speed of your computer, cannot be changed. However, with the graphic detail controls, you can reduce the amount of graphic detail displayed. The detail sliders give you control over the amount of graphic detail that your computer is required to display. You trade off detail for smoother animation according to your tastes. When you first install Red Baron, it will set the detail slider's positions based upon the speed of your computer.



Detail Levels (cont.)

There are three controls that allow you to select the amount of graphic detail in the simulation. Depending on the speed of your computer, you may want to increase or decrease the amount of graphic detail to control the smoothness of the simulation play.

Aircraft Detail controls how detailed the aircraft displayed will be.

Ground Detail controls how many terrain features (trees, mountains, etc.) are displayed at once.

Combat Button controls the amount of ground detail displayed during combat sequences. When set to *normal ground detail*, the ground detail will remain the same when you enter aerial combat. When set to *no ground detail*, the ground detail will be cut back during combat. This will increase the smoothness of animation during combat.

Time Scale

Time Scale control is provided to help in customizing the pace of simulation play to best fit your tastes. If battles are moving too fast for you, move the Time Scale slider towards LOW. This will slow the action down. If you're playing on a machine that runs slow *even with the Detail Levels turned down*, try moving the Time Scale slider towards HIGH. This will speed up the action.

Time Scale slider settings
LOW = Slower & easier to control.

HIGH = Faster & more difficult to control. Best for slower computers.

REALISM PANEL

Press **Alt-R** to access

Press **ACCEPT** or the **ESC** key to exit

Press **RESTORE** to cancel

REALISM

Alt-R from simulation.

Allows the customizing of elements that control gameplay such as difficulty levels, flight model, instrumentation display and pilot/world realism.

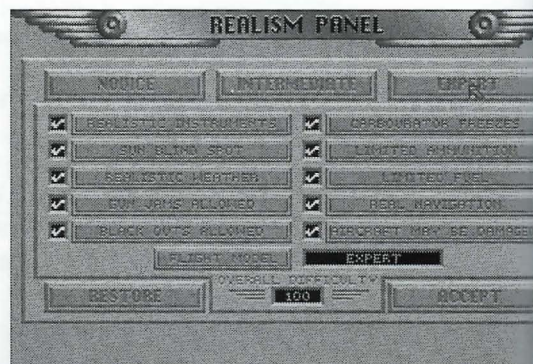
You may change any of the realism settings from either the Mission Assignment screen or from within the simulation itself. The settings allow you to customize certain features of the game to your own tastes. In most cases, each setting gives you a choice between ease of use, and realism.

There are 11 settings you may switch from *realistic* to *nonrealistic*. When a setting is set to *realistic*, a red check mark appears beside it. Pressing the button for the setting will switch it between its available states (in the case of the Flight Model, there are 3 possible settings). For convenience, we've included three buttons at the top of the **REALISM** panel to allow you to change all the settings at once. Each has default settings for different skill levels including **Novice**, **Intermediate**, and **Expert**. Following are descriptions of the REALISM settings available.

Realistic Instruments. When **turned on**, the only instruments seen from the cockpit will be the ones that existed on the original WWI aircraft. When **turned off**, all possible instruments will be displayed.

Sun Blind Spot. When **turned on**, the Sun Blind Spot will cause a glare whenever your view is placed directly at the sun. Enemy aircraft which are in the sun will not be visible until they are very close.

Realistic Weather. If **turned on**, the weather conditions will vary from mission to mission. If **turned off**, the weather will always be perfect: the sky will be clear with no clouds, and there will be a light w



Gun Jams Allowed. The machine guns of WWI were very unreliable and would jam frequently. The longer the gun was fired, the greater the chance it would jam. Pilots would often carry a hammer or mallet with which to hit their machine guns in case of jamming. When **Gun Jams Allowed** is **turned on**, your guns will periodically jam when fired too frequently. When **Gun Jams Allowed** is **turned off**, your machine guns will operate perfectly, never jamming.

Blackouts Allowed. The pilots of WWI didn't have oxygen masks, and consequently a pilot who flew above 20,000 feet for too long would get dizzy and occasionally even blackout from lack of oxygen. Hopefully, when the pilot's aircraft went into a dive, the pilot would wake up before hitting the ground. When **Blackouts** is **turned on**, blackouts are possible. When **turned off**, blackouts will never occur.

Carburetor Freezes. At high altitudes, it gets very cold. The carburetors would often freeze, especially during winter months. This would cause a complete loss of power until the carburetor would thaw out, which could only come about if the aircraft was brought to a much lower altitude. When **Carburetor Freezing** is **turned on**, your plane's carburetor will freeze at higher altitudes. When **turned off**, the carburetor will never freeze.

Limited Ammunition. The great pilots would fire their guns sparingly, closing to within 30 yards and firing a short, decisive burst. This takes skill, but it can be mastered. If **Limited Ammunition** is **turned on**, your ammo supply will be limited. If **turned off**, you can spray the sky with bullets for as long as you like, assuming your guns don't jam.

Limited Fuel. Most of the aircraft had enough fuel to fly for two and a half hours. When **Limited Fuel** is **turned on**, your air time will be limited to your plane's fuel capacity. When **Limited Fuel** is **turned off**, your fuel supply will be indefinite.

REALISM PANEL

Real Navigation. When **Real Navigation** is **turned on**, you will fly as the WWI pilots did... without sector coordinates displayed. You will have to navigate with the map, and by viewing natural landmarks on the ground below. When **turned off**, your sector coordinates will be displayed on the screen. This is useful when you are acquainting yourself with navigation.

Aircraft May Be Damaged. When **Aircraft May Be Damaged** is **turned on**, your aircraft will be susceptible to damage. When **turned off**, your aircraft will become invulnerable. We recommend the **off** setting for beginning Red Baron players only. Your score will be very low if this is turned off.

Flight Model. **Flight Model** allows you to select the level of realism your airplane can handle. The settings are: **Novice**, **Intermediate**, and **Expert**. Novice is the easiest to use, while expert is for experienced pilots.

Novice setting: flying is easy, turns are straight forward. If you bank the aircraft, it will turn. Your aircraft will not nose down in a turn.

Intermediate setting: turning is modelled more realistically. In order to turn properly, you will have to apply back pressure (pulling back on the stick) to keep the aircraft turning and keep the nose above the horizon. Some rudder may be needed as well. Unlike novice, if you bank the aircraft without using back pressure, your turn will quickly degenerate into a slow spiral dive. Landing is also more difficult.

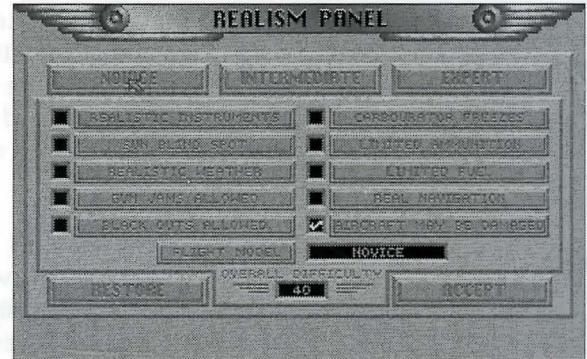
Expert setting: this will test all of your flying abilities. Not only are turns modelled realistically, but the danger of going into a spin is present. The various quirks of certain aircraft are also included. For instance, the gyroscopic effect of the Sopwith Camel's rotary engine will make a simple turn a difficult, tricky maneuver. And, if too much stress is put upon your aircraft's wings during a high speed dive, your wings may break!

Score Factor:

Mission success, promotions and your placement on the high score listing are all based upon your scoring, or point total, at the end of a mission. There are two main factors in determining your score after a mission; **your performance** and the **score factor**. Scoring for mission performance is based upon how well you achieved the goals of the mission, how valiant your moves were and whether you survived the mission intact. Your overall score for the mission is derived by multiplying your **mission score** by the **score factor**. The **score factor** is displayed at the bottom, center of the

REALISM panel under the OVERALL DIFFICULTY heading. It reflects the difficulty of the current REALISM settings. Increasing the number of *realistic* settings on the REALISM panel will increase your **score factor**.

IMPORTANT! Once you enter the simulation, a 30 second 'grace' period begins. Any changes to the REALISM settings must be made before this period is up in order for the changes to be reflected in the **score factor**. Settings turned on after the first 30 seconds of simulation play will be displayed in lightened text to reflect that they were changed after the 'grace' period and have no bearing on the **score factor**.

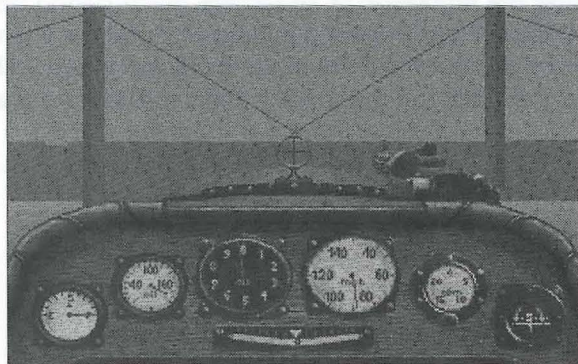
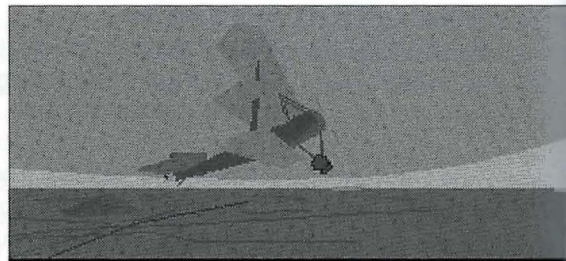


WEATHER

From the Realism panel you may turn on and off realistic weather. With it turned off, there will be no clouds in the sky and there will be a light wind blowing eastward. If you turn it on, the weather conditions will vary from mission to mission.

The wind will play an important part in your missions. Generally the wind gives German pilots an advantage as it usually blows toward the German side. This makes it difficult for Allied pilots to fly home when they are over German territory. The stronger the wind, the more advantage German pilots will have.

Clouds will add to the complexity of the combat tactics. Diving into a cloud is a good way to lose a pursuer. On the other hand, clouds may be hiding enemy aircraft waiting to strike. Clouds may also obstruct the sun, thus taking away the ability to dive out of the sun on an enemy.



Top: heading for cloud cover.

Bottom: Losing visibility in the cloud bank.

YOUR FLIGHT GROUP

The group of 1 to 4 aircraft that you fly with is called a *flight*. Your *flight* will travel together and protect one other.

Formations

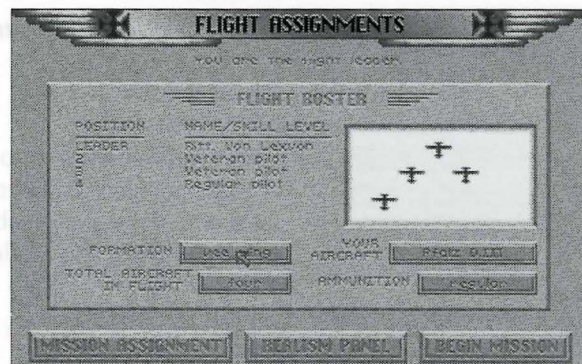
When a *flight* goes on a mission, it will fly in formation. If you are the *flight* leader, the rest of your *flight* will fall into formation. The types of formations that you may fly include: solo, line abreast, line astern, vee, box, echelon and diamond.

If you are not the *flight* leader, fly with the rest of the formation. Do not stray from the rest of your *flight*.

Flight Leader Commands

Once airborne, WWI pilots would communicate with arm gestures. As a member of a formation, you will be given orders by your *flight* leader during the mission. These will be indicated as a text message that appears on your screen.

If you are the *flight* leader, you will have the opportunity to give orders to the members of your *flight*. However, keep in mind that once you enter combat your commands will go unnoticed — the rest of the *flight* will be busy keeping their eyes on the enemy. If there are three or more aircraft in your *flight*, some aircraft will make up the 'minor wing'. The *flight* leader may give orders to the minor wing separately from the rest of the *flight*. With three aircraft, the third aircraft in the formation makes up the minor wing. With four aircraft, the third and fourth aircraft make up the minor wing.



YOUR FLIGHT GROUP

Flight Leader Commands

DROP BELOW

Key Command: **D**

Order the minor wing to drop about 500 feet below the rest of the flight. This tactic can be used to flush out enemy aircraft. Enemy aircraft will often attack the seemingly helpless aircraft of the minor wing, unaware of the aircraft above them. When they do so, the aircraft above may swoop down on the enemy. Be warned that this tactic leaves the minor wing exposed. This order will be ignored if the flight is at low altitude.

JOIN

Key Command: **J**

Order the minor wing to rejoin the rest of the flight. If the flight descends to a low altitude, then the minor wing will automatically rejoin the rest of the flight.

ATTACK!

Key Command: **A**

Order the entire flight to attack the enemy.

MINOR WING ATTACK!

Key Command: **M**

Order the aircraft in the minor wing to attack the enemy.

WARNING!

Key Command: **W**

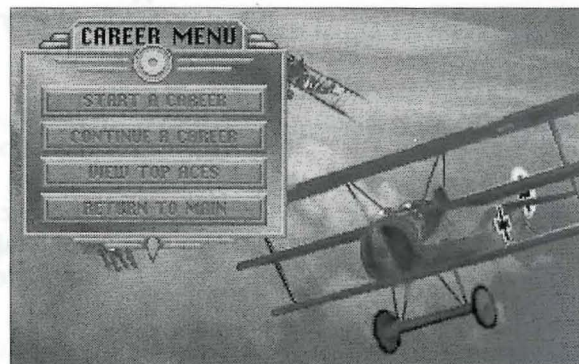
Alert the rest of the flight that enemy aircraft have been spotted. If you issue this warning when there are no enemy aircraft around, then the rest of the flight will ignore your warnings for the rest of the mission. You may issue a Warning even when you are not the flight leader.

SIMULATION OVERVIEW

Red Baron has two play options, Fly Single Mission and Career. Single Mission offers you the choice of ten randomly generated mission types and allows you to custom tailor your squadron and the conditions of simulation play. Career allows you to enlist as an officer of either the German Air Service or the Royal Flying Corps. You will fly multiple missions, progressing through the war until you are either killed, grounded or the war ends. In Career play, you are given much less control over the mission conditions. You must earn the right to command, transfer and change plane types.

Missions in both Fly Single Mission and Career can be recorded and saved to disk. These saved missions, or tapes, can then be replayed with the Mission Recorder. You can record, save, playback and manipulate any of your missions. You can even *re-enter* a saved mission, completely altering the mission's outcome. Altered missions can then be saved to disk for later viewing or manipulation.

On the following pages, you will find in depth descriptions of Single Mission, Career and Mission Record.



FLY SINGLE MISSION

The first of the two options of simulation play is Fly Single Mission. Single mission play allows you to tailor many elements of your mission: the type of mission you'll go on, on who's side you'll fly, the conditions you'll encounter, who you fly with (and against) and the type of planes used. Fly Single Mission is the quickest way to get into the simulation. You simply select the type of mission you want to fly, set the conditions and play! After your custom mission is completed, you'll receive an evaluation of your performance and a score based upon the REALISM settings, goals achieved and number of kills.



Mission Types

When Fly Single Mission is chosen from the Main Menu, a new menu will pop-up displaying the type of missions available.

Fly a Historic Mission

Relive the great aerial battles of the war.

Dogfight a Famous Ace

Have you got what it takes to go head-to-head with the mighty Red Baron himself? Find out as you go up against the war's greatest pilots.

Dogfight a Squadron

Engage an enemy flight of fighters and try to clear them out of the sky. Just remember that they're trying to do the same to your flight.

Patrol the Front

Patrol the front and engage any enemy recon or fighter airplanes you come across.

Escort a Bombing Raid

Your bombers are about to penetrate deep into enemy territory to bomb strategic targets like RR yards, factories, and supply dumps. It's your mission to see that they succeed.

Stop a Bombing Raid

Intercept enemy bombers who are trying to bomb your side.

Hunt a Zeppelin

Locate one of these high flying dirigibles and send it down in flames. It's best to use incendiary ammo.

Escort Reconnaissance

Protect a recon plane on its mission to take aerial photographs. Enemy fighters will be gunning for both the recon plane and you.

Balloon Defense

Protect your observation balloons from the enemy!

Balloon Busting

Take out the eyes of the enemy. These large gasbags of hydrogen burn easily. It's best to use incendiary ammo.

FLY SINGLE MISSION CONDITIONS

Once a mission type has been chosen, you will be able to tailor the conditions of the mission. The number and type of conditions available for change vary from mission to mission. Following is a breakdown of mission types and their available options.

Dogfight A Famous Ace

Dogfight a Famous Ace is the quickest way to enter dogfighting. Because of this it is also available as an option from the Main Menu.

After selecting DOGFIGHT A FAMOUS ACE, you will be asked to select the ace you wish to dogfight. Pressing the Up and Down arrows will scroll through the selection window. As each ace is highlighted, a description will be displayed showing the ace's name, alliance, total credited victories in the war and a description of their known tactics. Pressing the SELECT button will accept the currently highlighted ace.

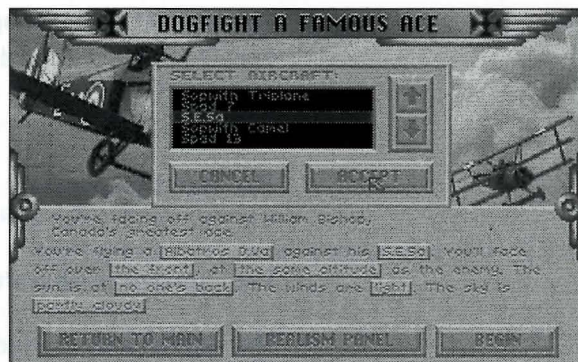
Once an ace has been selected, the Mission Setup screen will be displayed. The Mission Setup screen will display the name of the mission type and a text area in which you may set up your mission. In the text area, changeable options are displayed as a button in the text. Clicking on one will bring up a menu with your possible options. Select the option you want. All buttons except those on the pop up menu will be inactive when a pop up menu is displayed.



The following options are available under Dogfight A Famous Ace. Press the ACCEPT button when you've set the conditions to the desired settings.

Your Aircraft Type: you may select any aircraft from either side of the war.

The Ace's Aircraft Type: the selected ace will default to his preferred aircraft, including any historical markings and insignias. You may choose any type for the selected ace. If you want, you can put the Red Baron into a Sopwith Camel and see how he handles it!



Where You Will Battle: you can choose from *over the front*, *over German territory*, and *over Allied territory*. It is an advantage to meet over your own territory as it's easier to land.

Altitude: it's an advantage to start higher than your opponent. This allows you to decide when combat begins. If you want more of a challenge, start at a lower altitude than your opponent.

Sun: you may choose the positioning of the sun at the start of combat. Your choices are *at no one's back*, *at your back*, *at his back*. The pilot who starts with the sun at his back has an advantage, being able to "hide" in the sun's glare.

Wind And Sky: you may set the weather conditions.

Wind: *still*, *light*, *strong*.

Sky: *clear*, *partly cloudy*, *cloudy*, *overcast*.

FLY SINGLE MISSION CONDITIONS

DOGFIGHT A SQUADRON

The Dogfight a Squadron mission is similar to DOGFIGHT A FAMOUS ACE, except you may also select:

The side that you will fight for: you may select German Air Service or Royal Flying Corps.

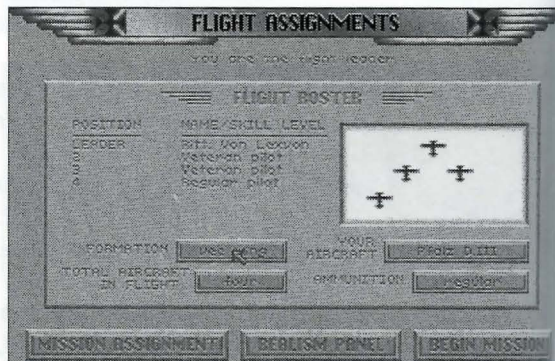
The number of aircraft in your flight group.

The type of ammo used: you may select between Regular and Incendiary. In a Dogfight it is assumed that Regular ammo will be used. This may be changed in the Flight Assignments screen.

The type of aircraft your flight group will use: you will only be able to select aircraft available to your selected alliance.

The formation your flight group will fly in: depending upon the number of aircraft in your flight group, you may choose between *line abreast*, *line astern*, *echelon*, *vee wing*, *diamond* and *box* formation.

The number of aircraft in your opponent's flight group.



The type of aircraft your enemy's flight group will use: you will only be able to select aircraft available to the enemy's alliance.

The quality of your pilots: Novice, Regular or Veteran (see below).

The quality of the enemy pilots: Novice, Regular or Veteran (see below).

The leader of the enemy pilots: This may be any of the famous aces or an anonymous pilot of any quality.

Pilot Quality:

Novice—Just out of flight training. They are the poorest pilots, prone to be paralyzed in combat. They often take impossible shots. A novice will never use a maneuver in combat. They are the guys with a one in ten chance of surviving their first dogfight.

Regular—Pilot with some combat experience. He doesn't make stupid mistakes in combat, but does nothing brilliant either. Will occasionally do some of the simpler maneuvers: Zoom climbs, Wing-Overs, and Barrel Rolls.

Veteran—A good pilot that flies and fights intelligently. He is skilled at many maneuvers and will pose a serious challenge to even the best of opponents.

FLY SINGLE MISSION CONDITIONS

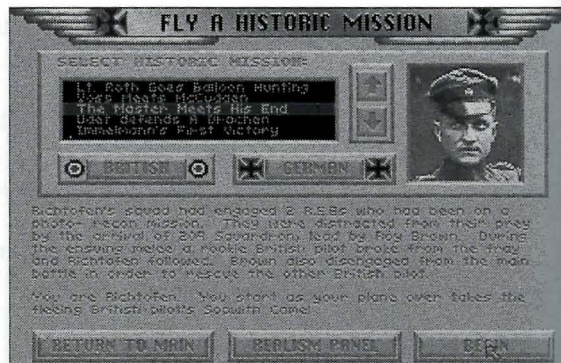
FLY A HISTORIC MISSION

From Fly a Historic Mission, you can choose to fly a famous, historical air battle. All conditions of this single mission are preset to match the actual historic event.

Once selecting Fly Historic Mission, you will be asked to select the historic mission you wish to participate in. Pressing the Up and Down arrows will scroll through the selection window. As each Historical Mission is highlighted, text will be displayed describing the mission. In the upper right corner of the screen a picture of the famous ace featured in the mission will be shown.

Below the selection window are buttons marked *British* and *German*. These allow you to decide which side you wish to fly for in the mission. If you choose the side that the featured ace flew on, you will take his place in the mission. Choosing the other side will pit you against the featured ace. The text description of the mission will change to reflect your mission, depending upon which side you choose to fly on.

Pressing *Begin* will start the mission.



ALL OTHER MISSION TYPES

This section describes the conditions available for all missions other than Dogfight a Famous Ace and Dogfight a Squadron.

The side that you will fight for: you may select German Air Service or Royal Flying Corps.

The number of aircraft in your flight group: you may select up to four aircraft.

The type of aircraft your flight group will use: you will only be able to select aircraft available to your selected alliance.

The type of ammo used: you may select between Regular and Incendiary.

The formation your flight group will fly in: depending upon the number of aircraft in your flight group, you may choose between *line abreast*, *line astern*, *echelon*, *vee wing*, *diamond* and *box* formation.

Time: you may select between *daytime*, *dawn*, *dusk* and *night*.

Wind And Sky: you may set the weather conditions.

Wind: *still*, *light*, *strong*.

Sky: *clear*, *partly cloudy*, *cloudy*, *overcast*.

Pressing *Accept* will take you to the Mission Assignment screen.

THE MISSION ASSIGNMENT SCREEN



For all missions except Dogfight a Famous Ace, you will receive all data regarding your upcoming mission from the Mission Assignment Screen. From the Mission Assignment screen you will receive the following information:

The Date: The date that the current mission takes place on.

Map Reference: There are 5 off-line maps used for navigation in Red Baron. Each mission will require you to use a specific map. The name of the map needed for the current mission is listed below the date.

Situation: Supplies you with any information available on your current mission. This will include your orders and the specific goals that you are to achieve.

Mission Plan: The Mission Plan lists the recommended sequence to carry out your mission. This includes necessary map coordinates of your starting point, your flight path, and where to engage enemies.

If you are following a flight leader, he will follow the Mission Plan exactly as specified. However, if you are not following the flight leader, you may come up with your own mission plan.

Weather: Gives you a description of the weather conditions in the area where your mission will be carried out. This includes descriptions of wind conditions and visibility.

Time: Describes the time of day when the mission begins.

Buttons: FLIGHT ASSIGNMENTS goes to the FLIGHT ASSIGNMENTS screen. BEGIN MISSION will start your mission. CANCEL returns you to the Main Menu.

To carry out your mission, you'll first refer to the Mission Assignment screen. In the below example, it indicates where the enemy fighter squadron has been spotted, sector E-6. Refer to the map of the Verdun Region to locate this position.

You are starting at Voursiers aerodrome. Look at the map of the Verdun Region. You will find Voursiers aerodrome in sector C-3. According to the flight plan you will be flying 35 miles SE to reach your destination, sector E-6. Once there, you are to locate the enemy flight and dogfight it. After you've destroyed or chased off all the enemy fighters, you are to return to your aerodrome, Voursiers.

The Date


Map Reference

Situation


Mission Plan

Weather

Time



MISSION ASSIGNMENT



OCT, 1918

REFER TO THE MAP OF THE THE VERDUN REGION

SITUATION:

A British fighter squadron has been operating in sector E-6. It's been wreaking havoc on our reconnaissance flights. Your orders are to fly to the area, and flame that enemy flight!

MISSION PLAN:

You will start at Voursiers aerodrome (C-3). Proceed to sector E-6 (heading SE, distance 35 miles). Find the enemy flight and shoot it down. Return to Voursiers aerodrome.

WEATHER: The winds are strong. The sky is overcast.

TIME: Daytime.

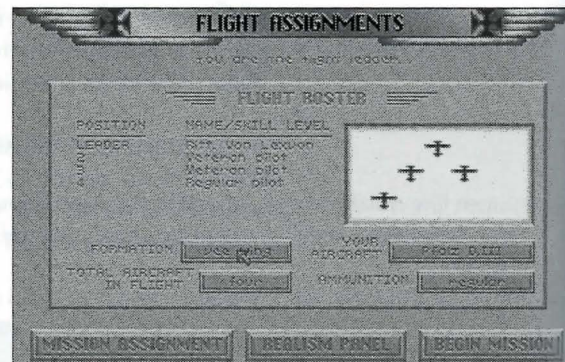
CANCEL

FLIGHT ASSIGNMENTS

BEGIN MISSION

THE FLIGHT ASSIGNMENTS SCREEN

Available from within the Mission Assignment screen, the Flight Assignments screen gives you a complete breakdown of the settings for your flight group. You can change settings for *Formation*, *Total Aircraft in Flight*, *Your Aircraft* and *Ammunition*. Along with a graphical representation of your currently selected formation, you will receive a listing of the position for all pilots in your flight. This will indicate the flight leader (this will always be you in Fly Single Mission) as well as the skill levels of all other pilots. The pilots, and their skill levels, that are assigned to fly with you are based upon the historical context and random generation of the mission you are flying. This will change with each mission you fly. You may also find that you are sometimes assigned an ace to fly as part of your flight group. This is dependent upon the mission type, the time that it occurs and the known location of individual aces at the time.



Pressing *Begin Mission* will enter the simulation.

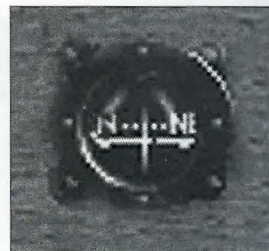
Pressing *Realism Panel* will bring up the Realism panel.

Pressing *Mission Assignment* will take you back to the Mission Assignment screen.

NAVIGATION



Once you have your orders, you'll be required to navigate your way through the world. You will be required to find the enemy on many missions, and to find your way back to your own aerodrome. To navigate, you will use one of the 5 maps supplied with Red Baron. Use the compass to fly on your desired heading. To locate yourself on the map, watch the natural landmarks below.



On the REALISM panel you may turn Realistic Navigation off. When off, the current sector you are in will be displayed on the screen. This will make navigation much simpler because you will always know where you are.

How to Fly to a desired location

On some missions you will start in the air near the enemy. On these missions, you will not be required to navigate to find the enemy aircraft. They will be within visual range. On escort missions you will not need to navigate (unless the aircraft you are escorting are shot down, and you must find your way back to your home aerodrome). You will only need to follow the aircraft you're escorting.

However, on some missions you will start out on the ground at your aerodrome and will be required to fly to a specified sector to find the enemy. On these missions, the Mission Assignment screen will tell you on what heading you must fly to reach the sector. It will also tell you how far away your destination is. The standard direction abbreviations (as displayed on left) are used. The abbreviations N, NE, E, SE, S, SW, W, and NW correspond directly to the compass in your aircraft. Flying in these directions is easy. For example, to fly NE (northeast), line up your aircraft so that the compass reads NE.

Directional Abbreviations

N north
NNE north-northeast
NE northeast

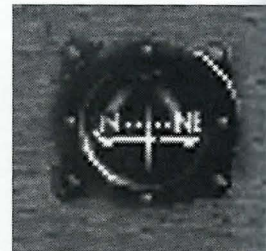
SE southeast
SSE south-southeast
S south
SSW south-southwest
SW southwest

ENE east-northeast
E east
ESE east-southeast

WSW west-southwest
W west
WNW west-northwest
NW northwest
NNW north-northwest

The other abbreviations, NNE, ENE, ESE, SSE, SSW, WSW, WNW, and NNW do not appear on your compass. You may still fly in these directions. For example, if your mission plan instructs you to fly NNE (north-northeast), then line up your aircraft so that the compass reading is halfway between N and NE.

As you make your way to the sector, you should keep an eye on the map and watch natural landmarks below. These serve as checkpoints to let you know you're going in the right direction and are not off course. For example, to fly from Toul aerodrome to sector D-5, you may follow the Meuse until you cross the front. Once across the front you'll be in sector D-5.



You need not always fly just by compass. Sometimes it's easier (as in the above example) to fly by following a river, road, or rail-line. For example: if you are flying in the Verdun region and your mission requires you to fly from Toul aerodrome to the city of Metz, then you will only need to follow the Moselle river North until you find Metz.

Flying from Toul to the city of Tellancourt is a little more difficult. You may fly North until you come to the front. You should find the city of St. Mihiel. Once there, you may follow the northern-running road until you reach Tellancourt.

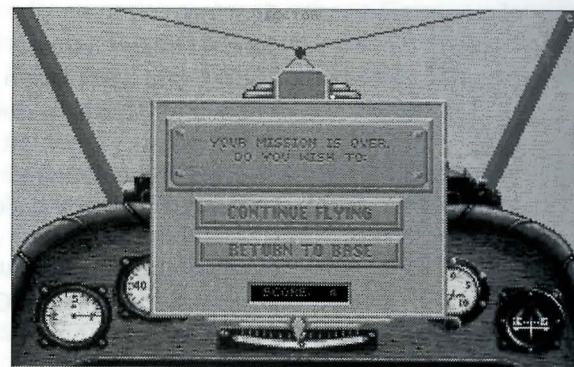
If you get lost, the first thing you should do is try to determine your present location by looking at the ground below and matching up the landmarks against the map. Large, obvious bends in rivers, bends in the front, as well as landmarks like cities and aerodromes can be used to place your location on the map.

If you still can't determine your location, find the front (which is generally easy), and fly to your side of the lines. Land at the first friendly aerodrome you find. As a last resort, you may land in a field on your side of the lines.

ENDING THE MISSION

Quitting

You may quit at anytime during your mission as long as your aircraft is not fatally damaged and you are not near an enemy. However, you will receive more points for landing at your aerodrome. When your mission is complete, a message will be displayed asking if you want to quit. You may quit now without penalty, however, **if you quit before the mission is complete, you'll leave any friendly aircraft and balloons at risk!**



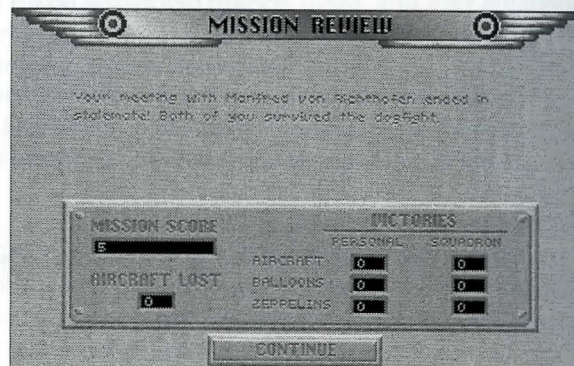
Endings

If you crash, you may either walk away with no injuries, end up in a hospital or be killed, depending upon the severity of the crash. If you are hospitalized, you will remain there until you recover from your injuries. If you land or crash (and survive) in enemy territory, you may end up in an enemy prisoner of war camp.

Mission Review

Following every mission will be the Mission Review screen. On it you will see:

- A text description with the results of your mission.
- Your mission score.
- How many aircraft from your flight were lost.
- How many victories (aircraft, balloons, Zeppelins) that you shot down personally, and how many your squadron shot down.



■ If you do well in your mission review, you may have a chance to enter your name in the Best Missions top 10 listing.

ENDING THE MISSION

Scoring

Scoring in Red Baron is based upon a number of different factors:

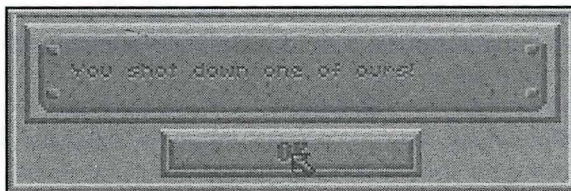
- Successful completion of your mission.
- Points for shooting down enemy aircraft and balloons. Zeppelins are worth a lot of points.
- Lose points for aircraft in your flight being shot down.
- Bonus points for landing at your own aerodrome upon completion of your mission.
- Your score is multiplied by the score factor, specified in the Realism panel.

In any of the missions available under Fly Single Mission, your score will determine your standing in the Best Missions listing. In Career mode, your score has a great impact upon your ability to advance in rank.

Board of Inquiry

If you screw up and shoot down a friendly aircraft during your mission, you'll come before the board of inquiry.

Going before the Board of Inquiry during Fly Single Mission mode of play will be reflected in your score. In Career mode, the penalties are much more severe. While playing a career, the third visit to the Board will result in stripping of your wings and permanent grounding.



CAREER PLAY

The most challenging game play option is to fly an entire career as either a German pilot or a British pilot. You will enlist in either the Royal Flying Corps or the German Air Service as a fighter pilot. Your career will start in December, 1915, carry you through the Fokker Scourge when Eindeckers ruled the skies, and through to the end of the war on November 10, 1918.

As your career progresses, you'll see the advantage swing back and forth between the German and the Allied pilots as new aircraft are introduced. You will have a chance to fly during Bloody April of 1917 when the Albatros D.III swept the allies from the air, and, in the summer of 1917, to see the allies regain the advantage with the S.E.5a and the Sopwith Camel.

As a fighter pilot you will fly many different missions, including attacks against balloons, Zeppelins and reconnaissance aircraft. You'll also escort missions of bombers and recon planes and dogfight against enemy fighters. Your total victories will increase when you shoot down enemy balloons, Zeppelins, and airplanes.

Of course, your greatest challenges will come when you face off against the famous aces like Mick Mannock, Rene Fonck, and Rittmeister Richthofen. These aces are extremely good, and they are trying to add you to their total victories.

As your victories mount, you will receive promotions in rank. As a British pilot you will start out as a Second Lieutenant, and may be promoted to First Lieutenant and finally Captain. As a German flyer, you will start with the rank of Leutnant, and may be promoted to Oberleutnant, and finally Rittmeister. With greater rank comes more privileges.

As a First Lieutenant (Oberleutnant if playing the German side), you will become a flight leader. When you start your career, you will not be the flight leader and will have to obey your flight leader's orders and follow him in formation. As a flight leader, your flight will follow you and your orders. However, your flight size will be small: only you and one other fighter.

CAREER PLAY

When you are promoted to Captain, you will be given command of flights of up to four aircraft. You will also be given a personal aircraft of your own choice, which you may paint.

As your reputation as a flyer increases, you will have a chance to fly with better squadrons. If you are extremely successful, you'll receive invitations from the most elite squadrons of the war, including the "Storks", the R.F.C's No. 56 Squadron, the legendary "Black Flight", and the most elite squadron of the German Air Service, Jagdgeschwader 1 (J.G.1).

You will be awarded medals in recognition of your bravery and gallantry. As an Allied pilot, the most prestigious award to try for is the Victoria Cross. As a German, you will try to attain the Order for Merit, or "Blue Max." Even more difficult to obtain is the Red Eagle Order. Only one German pilot was awarded it, Rittmeister Manfred von Richthofen.

When you finish your career by surviving to the end of the war, your final standing will be displayed. You could end up as a respected ace, or as a crop duster. The ultimate challenge is to end the war with more victories than the historic totals of the famous aces. If you do this, you'll be the war's "Ace of Aces." The highest scoring Allied ace was the Frenchman Rene Fonck with 75 victories. The highest scoring German ace was none other than the Red Baron with 80 victories.

CAREER MENU

START A CAREER

You will be asked to select your alliance and to enter the name of your pilot. The career roster will track 15 pilot careers at once. If it is full, you will be asked to delete another pilot from the roster or cancel.

Once you've chosen your alliance and typed in your name, you'll be presented with a synopsis. You may change at what time during the war you will start. Options: early in the war, middle of the war and late in the war. You may also change your alliance or your name. Press ACCEPT to begin your career. Good luck!

CONTINUE A CAREER

Select which pilot you wish to continue with. Pressing View while a pilot is selected will display the Pilot's Record.

VIEW TOP ACES

Displays the top ten career performances to date, ordered by number of victories. Pressing View while a top ace is selected will display their Pilot Record.

RETURN TO MAIN

Cancels the Career menu, returning to the Main Menu.



AERODROME MENU

All career play is based from the Aerodrome menu. Between missions you will return to the Aerodrome menu. From this point you will make the decisions that will direct your career.

Fly Next Mission

Pressing *Fly Next Mission*, you will be given your next assignment and will fly the mission. These activities are described in the FLY SINGLE MISSION section. If you end up in the hospital or in prison, time that could be used to score victories will be lost. You can lose up to six months if you are hospitalized or jailed.

Career mode has a few options that are not available in Fly Single Mission. The first is that you may receive medals for your performance. See the Medals and Awards section of this manual for a full description of the medals and awards available. Along with honors, you will also be held responsible for your errors. You may come before the Board of Inquiry after a mission if you've committed some error. The first time you come before the board, you'll be given a mild reprimand. If you commit the same offense a second time, you'll be reprimanded strongly. And if you commit the same offense three times, the board will strip you of your wings and you'll be grounded permanently!

Squadron Info

Pressing *Squadron Info* will show your current station, the date and any famous Aces flying with the squadron.



Map of the Front

Shows the Western Front and the location of the primary aerodromes. You may highlight each aerodrome by pressing the left or right arrows located on the center, right hand side of the screen. Highlighting an aerodrome will display its name and list any squadrons or aces stationed there at the current time.

Request Transfer

You may transfer to squadrons stationed at other aerodromes. This will give you an opportunity to fly with other aces in different regions of the Front.

You'll also face off against different enemy aces on your missions depending on which region you're in. As you progress in rank you'll have the opportunity to transfer to better squadrons. If you're doing very well on the British side, you may have the chance to fly with No. 56 Squadron of the R.F.C. and fly with some of the great British aces including Mick Mannock and James McCudden. As a German pilot, you may attain enough clout to fly with J.G.1, home to many of Germany's greatest aces, including Ernst Udet and Manfred von Richthofen.

When you transfer, the map of the Western Front will be displayed, and it will show you where your new squadron is stationed. Once transferred, you'll have to remain at your new aerodrome for at least four months before transferring again. The R.F.C. and the German Air Service won't let their pilots transfer willy-nilly all over the front.

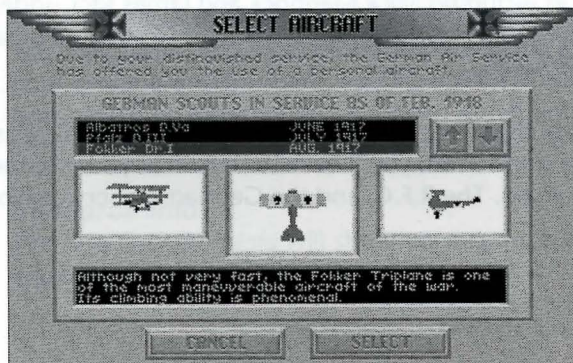


AERODROME MENU

Personal Aircraft

After reaching the rank of Captain or Rittmeister, you will be given the use of a personal aircraft. On the Personal Aircraft screen you may view your plane, request a new aircraft and paint your plane. The arrow keys on the bottom left of the screen allow you to change the view of your aircraft. You can zoom the camera in/out and rotate it left/right.

Pressing *Paint Aircraft* will bring up the painting menu. You may paint two sections of your aircraft: Wings and Fuselage. Select which part of your plane you wish to paint and then the color you wish to paint it.



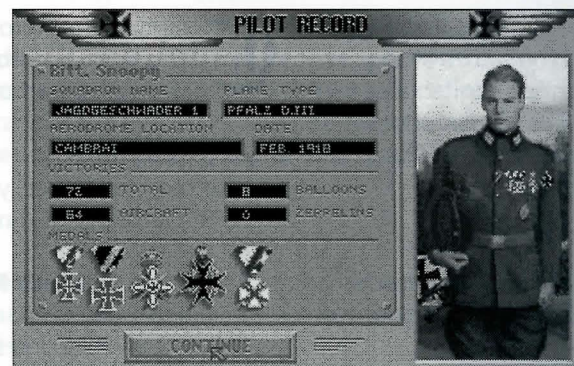
Pressing *Request New Aircraft* will bring up the Select Aircraft screen. Your choices of aircraft will be dependent upon the side you are flying on and the progression of the war. As time progresses and airplane design improves, you will be allowed to choose more sophisticated aircraft.

NOTE: you must use your current aircraft for at least three months before requesting another aircraft!

Press *Continue* to go back to the Aerodrome menu.

View Pilot Record

Pressing *View Pilot Record* will display the current record for your pilot. It will display the name and rank of the pilot, what squadron he is assigned to, which aerodrome he's stationed at and which aircraft he's flying. In addition, it will display his total victories against other aircraft, balloons, Zeppelins, and his total victories (the sum of the aircraft, Balloon, and Zep victories). Also displayed is the career score, which is the accumulation of all mission scores, and all medals that have been received.



Backup Career

If you have a pilot who is doing very well, you may want to backup his status just in case he's shot down. After pressing *Backup Career*, enter the name under which you wish to backup the career. If the career roster is full, you will be prompted to delete another pilot or to cancel. This backup career may be restored from the Continue A Career option in the Career Menu.

NOTE: A pilot's most current career progress is automatically saved upon exiting the Aerodrome menu. Backup Career is used to save a separate version of the current career for later restoring. This is useful for undoing a mistake you've made in a mission. If you die or perform an act that damages your career, you will have the option of *restoring* the backup career and replaying the mission until you are satisfied with the outcome.

Return to Main

Pressing *Return to Main* will save your current pilot status and return you to the Main Menu. You may later restore this career by pressing *Continue A Career* from the Career Menu and selecting the pilot on the Career Roster.

CAREER SEQUENCES



There are numerous sequences that can occur between missions while playing in Career Mode. You may be promoted, alerted to new aircraft, moved to new aerodromes, transferred to another squadron or challenged by a famous ace.

Rank promotions

As your score increases, you will be promoted in rank. You'll start out as a Second Lieutenant (Leutnant if you're German), and may work your way up to Captain (Rittmeister).

British Rank

Second Lieutenant
First Lieutenant
Captain

Equivalent German Rank

Leutnant
Oberleutnant
Rittmeister or Hauptmann.

With the rank of First Lieutenant (Oberleutnant), you will be a flight leader and may lead the missions you go on. With the rank of Captain, you will be given the use of your own personal aircraft.

New aircraft introductions

As new aircraft are introduced, you will be notified. If you have a rank of Captain (Rittmeister), you will be given a chance to exchange your present aircraft for the new aircraft.

Moving to new aerodromes

From time to time, your squadron may be ordered to move to a different part of the Front. You will be informed of your new station and aerodrome.

Squadron transfers

In addition to being able to transfer from the Aerodrome menu, you may receive special invitations to transfer. Some of the invitations will be for a temporary transfer and some will be for an indefinite period. Manfred von Richthofen's career started when he caught the eye of Oswald Boelcke who requested he transfer to Boelcke's elite Jasta 4. If you are transferred for a temporary tour of duty, you'll be transferred to your official squadron when the tour is up.

Challenges by Famous Aces

Occasionally, famous aces would issue challenges to enemy aces. If you're doing exceptionally well you may receive a challenge by a famous ace to meet at a certain place, at a specified time and altitude to dogfight. You may choose to ignore or answer these challenges.

End of Career

Your career will end with either your pilot being killed in action or surviving to the end of the war (Nov. 10, 1918). If your pilot survives to the end of the war, his final standing in history will be displayed.

MISSION RECORD



Perhaps one of the most exciting elements of Red Baron is the Mission Record feature. With the mission recorder, you can record an entire mission, save it to disk and then replay the saved mission. However, the ability to save and replay a mission isn't what makes this feature so unique. Mission Record will also allow you to *change* the saved mission. You can alter the views, watch the action from nearly any angle (including from behind other planes) and *enter* the simulation again from any point in playback. The changes you make can then be saved, played back and modified even further. You essentially become actor, producer and director of your own WWI aerial dogfights. To help spread the news of your talent, you can copy the recorded missions to floppy disk or transfer them by modem to your friends who have Red Baron. They can then load the files and admire your handiwork first hand.

Lights, Camera, Action!

The first step in using the Mission Record feature is to tell the game to record your missions as you play them. Each time you enter the simulation, Red Baron will ask you if you wish to record the mission. Saying yes will automatically start the Mission Record feature. It operates silently and patiently in the background while you storm the skies. When your mission is over, you will be asked to name and save the recorded mission.

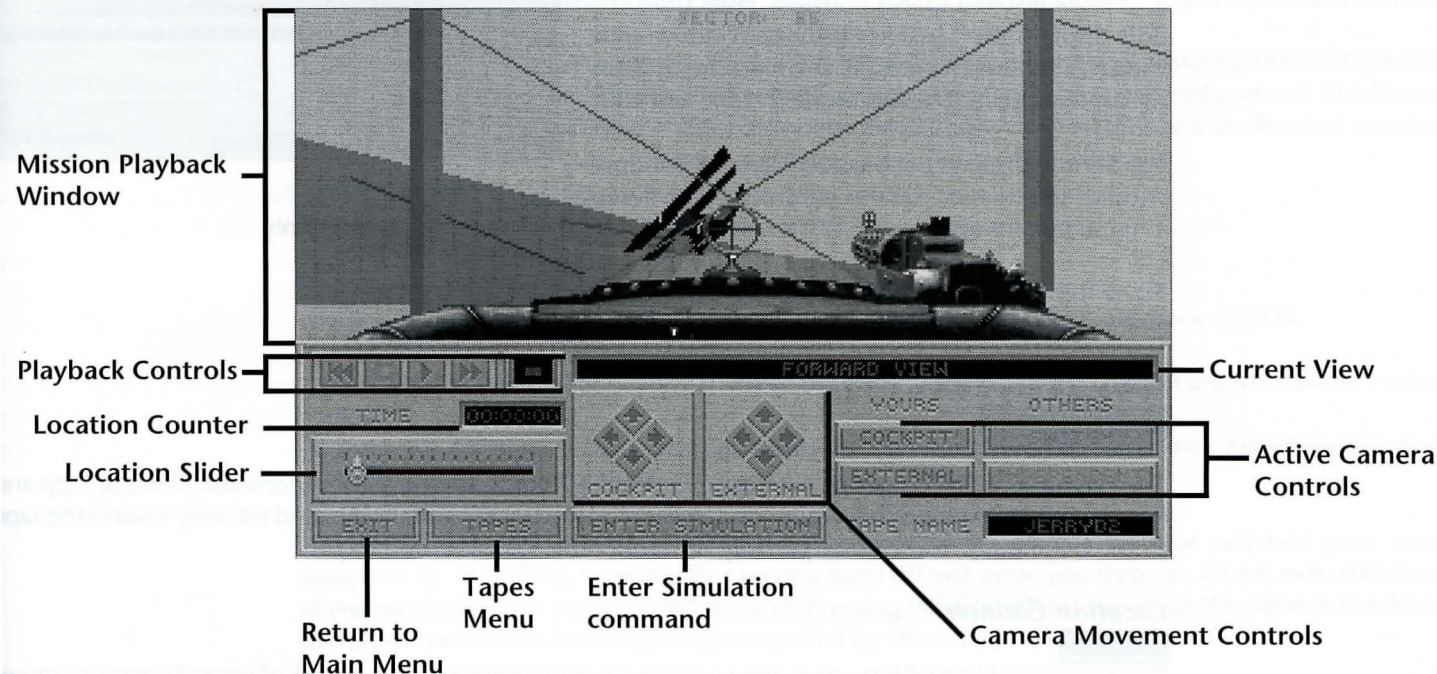
- Naming the file and pressing *Save* will automatically save the mission in a sub-directory called **TAPES**.
- Pressing *Cancel* will abort the mission save, erasing the recorded mission and exiting the simulation.

IMPORTANT! the mission name that you choose can be no longer than 8 characters long.

If you type a name longer than 8 characters, the computer will cut off the additional characters, saving only the first 8.

Into the Editing Room

Once you have recorded and saved a mission, select Mission Recorder from the Main menu. This will activate the playback mode of Red Baron. You will be shown a menu of all saved missions. Select the mission tape you wish to playback and press *Load*. The tape will load and the Mission Record control panel will be displayed.



MISSION RECORD

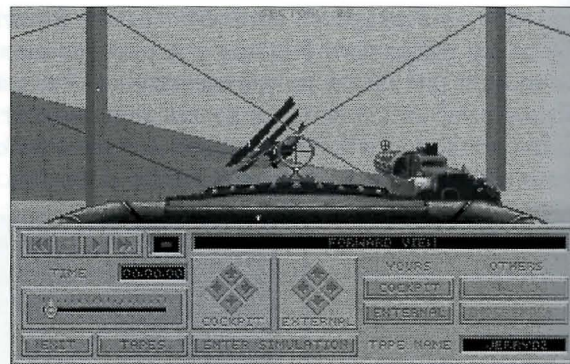
Mission Playback Window

The Mission Playback Window is where playback of your loaded missions is displayed. It will playback the loaded mission exactly as you originally played it. The playback window has two modes of display, **Edit** and **Full Screen**.

Edit displays the Mission Playback Window with the Mission Record controls covering the bottom half of the screen. Use this mode to view and edit.

Full Screen displays the Mission Playback Window without the Mission Record controls. You will see a full screen image of your mission as it plays. Use this mode for viewing only.

To switch between **Edit** and **Full Screen** modes, press the **ESC** key.



Playback Controls



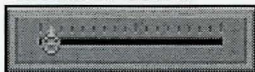
The Playback Controls operate like your everyday VCR controls. You can Fast-forward, Rewind, Stop and Play. It should be noted that while you can Fast-forward incrementally, Rewind will only rewind the tape to the beginning. You cannot partially rewind a tape. It's all or nothing.

Location Counter



Operating just like a VCR counter, the Location Counter keeps a running mark of your playback position.

Location Slider



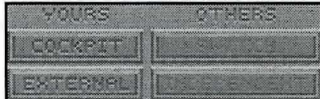
The location Slider operates in two ways.

It will act as a visual marker to display movement through the playing tape.

It will act as a visual Fast-forward slider, allowing you to pick the location you wish to Fast-forward to.

To use the Location Slider to Fast-forward, move the slider bar to the desired distance into the tape. When you release the slider bar, the Mission Recorder will display an on-screen countdown as it Fast-forwards to the specified point. NOTE: the slider cannot be move backward. You must use the Rewind command.

Active Camera Controls



The Active Camera Controls allow you to change the location of the playback camera.

Under the **YOURS** section, you can move the camera between your cockpit and your plane's external view.

Under the **OTHERS** section, you can move the camera between other plane's external views and an independent world camera.

The options of *SWITCH* and *INDEPENDENT* become active when you have switched your camera viewpoint to *EXTERNAL*. Continually pressing *SWITCH* will cycle you through all the external views of all enemy airplanes in the recorded mission. Pressing *INDEPENDENT* will place the camera free from all aircraft movement to be completely controlled by the Movement Controls.

MISSION RECORD

Camera Movement Controls

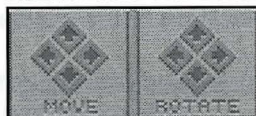
Once the Active Camera has been chosen, the viewpoint can be fine tuned by using the Camera Movement Controls. The two arrow pads operate slightly differently depending upon where your Active Camera is positioned.

Active Camera Inside Your Cockpit



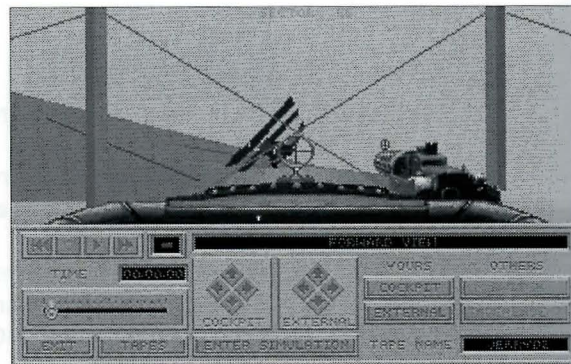
COCKPIT allows you to look out the forward, left, right and back cockpit views.
EXTERNAL allows you to switch to forward, left, right and back outside views of your plane.

Active Camera Outside Your Cockpit



MOVE allows you to zoom the camera in/out. In INDEPENDENT mode, it also shifts the camera left and right.

ROTATE allows you to rotate the camera over, under and around.



Tapes

Pressing the Tapes button will bring up the Tapes control panel.

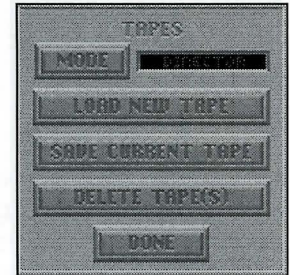
MODE: Switches between *Director* and *View-Only* modes (see below).

LOAD NEW TAPE: Brings up the tape menu for loading tapes.

SAVE CURRENT TAPE: Brings up the tape menu for saving tapes.

DELETE TAPE(S): Brings up the tape menu, allowing you to delete recorded missions. Selecting a mission and pressing *Delete* will delete the mission from the VCR subdirectory.

DONE: Closes the Tapes control panel.



Mode

The Mission Recorder has two modes of operation, *Director* and *View-Only*.

Director mode enables the "save changes" option of playback. While in *Director* mode, all changes made during playback will be stored in memory. Upon Rewinding, Loading a new tape or Quitting, the Mission Recorder will display a prompt asking if you wish to save the changes made to the original tape.

View-Only mode disables the "save changes" option. Changes made during playback will not be saved.

Enter Simulation

Pressing the *Enter Simulation* button at any point during playback will place you back into the simulation. You can replay the mission, making whatever changes you desire. When the mission is over, you will be presented with the options of seeing a Mission Review based upon the changes made or returning to the Mission Recorder. IMPORTANT: Changes made after entering the simulation will not be saved if you are operating in *View-Only* mode!

Exit

Quits the Mission Recorder, returning you to the Main Menu. If you are operating in *Director* mode and have made changes that haven't been saved, you will be asked to Save or Discard your modifications.

DESIGNER NOTES



Damon Slye

The key to dogfighting in WWI was to get on the tail of the enemy plane and make a successful shot. Shots from other locations were very difficult because they required the pilot to lead the enemy plane too much. Occasionally, a good pilot could make a head-on shot. However, over 90% of all aerial victories were made by a shot from behind the enemy. Therefore, the challenge was to position one's plane behind the enemy plane.

To get on the tail of the enemy, pilots employed a variety of tactics. The easiest method was to sneak-up unobserved on the enemy pilot and shoot him down before he knew he was in danger. However, when both enemy pilots were aware of each other, a dogfight would develop, with each pilot trying to get on the tail of the other. At this point the battle became a test of flying skill and tactics.

This was the essence of what we wanted to capture with Red Baron. The hard part was getting the computer controlled enemy pilots to choose the proper tactics at the right times. A lot of effort went in to having them pick and perform appropriate maneuvers (for example doing a Split-S when an enemy is on your tail). We also modelled different skill levels of pilots. The novice pilots in Red Baron will often 'freeze-up' when an enemy is on their tail and fly straight, as many of the novice pilots in the war did.

The historic aces deserved special attention. We researched each to find out his strengths, weaknesses, and preferred maneuvers in combat. In Red Baron, each of the famous aces is unique from the others. Some have great flying skill but only average marksmanship; some are great marksman and average pilots; and of course some are great at both. Moreover, we modelled the styles of the famous aces. You will never see Manfred von Richthofen do a loop in this product. He believed loops had no place in combat. On the other hand, Werner Voss, who was a very acrobatic pilot, has a wide variety of maneuvers he'll use in combat.

In addition, we strove for as much historical accuracy as possible. For the most part, the locations of the significant historical Squadrons and Jastas are correct. Jagdgeschwader 1 will move around the front as it did. Also, the aces in Red Baron are stationed in their historic squadrons. We have included

many of the insignias and historic colors the aces painted on their aircraft.

In some instances, we had a choice to make between realism and playability. Wherever possible, we left this choice to the player by making it a preference on the Realism Panel.

There were some areas in which we chose to stray from history. The most significant of these is the number of aircraft we allow in a dogfight. Toward the end of the war, the dogfights included as many as eighty aircraft at a time. Of course, given the speeds of today's computers, we can't model this. However, we did include flights of up to four aircraft which the player can command. Perhaps in ten years, Red Baron 4.0 will include dogfights with eighty planes instead of eight.

In addition, the front in Red Baron does not move. For most of WWI it was static. It was not until very late in the war that it changed. We decided that moving the front didn't add anything to the experience of being a WWI pilot. The action was in the air.

Finally, we allow the player to paint his aircraft as a British pilot. While it was the custom of the German pilots to do so, the R.F.C would never allow their pilots to indulge in such a flamboyant act. We allow it because it's fun.

Researching Red Baron was much more work than we had anticipated. While information on WWII is abundant, information on WWI is more difficult to come by. We had to locate knowledgeable individuals to fill in the blanks that were unavailable through traditional means of research.

First, I would like to thank Ed Usinowicz, a pilot for Old Rhinebeck aerodrome. It is impossible to get any figures on the maneuverability of the WWI aircraft through normal research. Ed was kind enough to take his Albatros D.V up for us and time some important maneuvers for us. Without his help we would have been guessing about how long it took the planes to roll and turn.



DESIGNER NOTES

I would also like to thank Patrick Henry, a modern-day Fokker Triplane pilot. He graciously allowed us to photograph his red Triplane from the cockpit. This enabled us to get the cockpit perspectives correct.

I am also grateful to Neal O'Connor for his excellent work on the Medals and Awards section. He also supplied us with the names of many other WWI aviation historians.

Peter Grosz, who is one of the World's leading experts on German WWI aircraft, supplied us with the technical data and information on the German fighters.

I would also like to thank the people at Sierra. With their assistance, we were able to add the people we needed to do justice to this topic. As you can see from the list of credits, Red Baron had a large team indeed.

Finally, I would personally like to thank the people on the Red Baron team. They are certainly the most talented group of people I have worked with. The design goals for Red Baron were very ambitious. The team rose to the challenge, and came through with flying colors.

Damon Slye

Movies

The Blue Max, directed by John Guillermin. Twentieth Century Fox, 1966. Color. Stars George Peppard and James Mason. (A very entertaining, visually rich film. It is about one man's quest to receive the highest military honor Germany can bestow).

Hell's Angels, directed by Howard Hughes. Black and White. (This is a great film. The cinematography is incredible. It has the best air combat footage of the movies listed here. The stunts are all real, done with the actual aircraft of the war.)

Paths of Glory, directed by Stanley Kubrick. Harris Kubrick Pictures, 1957. Black and White. Stars Kirk Douglas. (An excellent, powerful movie. Studies the politics of command in the French Army.)

The Red Baron, produced by Halbgebauer Productions. Questar/Travel Network, 1988. Documentary.

Wings, directed by William Wellman. Paramount, 1927. Black and White, silent. Stars Clara Bow. (The first movie to win an Academy Award for Best Picture. This is the movie that others copied for a decade. Film footage from *Wings* crops-up in dozens of World War One movies made during the 1930's and early 1940's.)

GLOSSARY

Ace An aviator with at least 5 victories.

Aerodrome An airfield, generally makeshift or temporary.

Ailerons The movable surfaces on an aircraft's wings that control its roll.

Alley-man Derived from the French word for German, this was a British and American term for a German.

Allies The French, British, American, Russian and Italian coalition which was allied against the Central Powers.

Archie Pilot's slang for anti-aircraft fire.

As des As French term for the top ace. It literally means ace of aces.

Bloody April A name given to April of 1917 when the German Albatros D.III inflicted huge casualties on the Allied aircraft.

Blue Max Common English term for Germany's highest military honor, the Pour Le Merite award.

Bosche French slang for a German.

Bounce A slang term meaning to surprise an enemy aircraft.

Brisfit Nickname of the Bristol Fighter.

Central Powers The German and Austro-Hungarian Alliance which was allied against the Allies.

Crate Slang for aircraft.

Deflection angle The angle a target is in relation to the aircraft shooting at it.

Deflector gear Invented by Roland Garros as a means to allow a machine gun to fire through the arc of a propeller. Deflector gear was nothing more than a steel wedge mounted on the propeller blades to deflect any bullets that would have otherwise torn the blades off.

Dirigible A gas-filled airship with an internal framework or skeleton.

Dogfight Multiple aircraft involved in a melee. Sometimes more than 50 were involved in such battles.

Doppledecker German for biplane.

Dreidecker German for triplane, as in "Fokker Dreidecker I" or "Fokker Dr.I" for short.

Eagle of the Lille Nickname of Max Immelmann.

Eindecker German for monoplane. It is used to describe the Fokker E series.

Elevators The movable surfaces on an aircraft's tail assembly that control pitch.

Escadrille French term for squadron. Usually composed of 12 planes.

Fee Nickname for the F.E.2b. A British two-seat pusher biplane first used as a fighter, then later as night bomber.

Flak Antiaircraft fire.

Flamed A verb used to describe a downed plane.

Flying Circus Nickname applied to Richthofen's Jagdgeschwader because the unit lived out of tents, moved around a lot, and painted their planes in extravagant colors.

Fokker Scourge Took place between 1915-16 when the Fokker Eindeckers cleared the skies of Allied aircraft. Ended by summer of 1916.

Frog, Froggies British term for their French allies.

Geschwader Short for Jagdgeschwader.

Grid British expression for an aircraft.

Hate, Morning and Evening British expression for German artillery bombardments and anti-aircraft fire.

Hun Slang for a German.

Hunland German-held territory.

Jagdgeschwader It literally means "hunting wing." It is a large German unit of about 50 scouts composed of 3 to 4 Jagdstaffeln.

Jagdstaffel Literally "hunting group," it is the German equivalent of the British Squadron. Each Jagdstaffel was equipped with a maximum of 12 scouts.

Jasta Short for Jagdstaffel.

J.G. Short for Jagdgeschwader.

Kill A downed aircraft credited to a pilot.

Lead Placing a machine gun's crosshairs in front of a target in order to compensate for the speed of the target and the angle it is at in relation to the gun.

Luftstreitkräfte Official German name for the German Imperial Air Service.

No-Man's Land The space between the German and Allied front line trenches. It was pocked and scarred and destroyed by the fighting.

Observer The gunner in all two-seaters.

Piste French for landing field, used by American pilots.

Pitch The up or down rotation of an aircraft controlled by the elevators.

Quirk Nickname of the B.E.2c British observation aircraft.

GLOSSARY

R.A.F. Abbreviation for the British Royal Air Force. Founded on April 1, 1918 from the combined R.F.C. and R.N.A.S.

Reconnaissance Scouting the enemy's strength, location and if possible, his intentions.

Red Baron Nickname of Manfred von Richthofen.

Red Devil/ Le Diable Rouge Allied nickname for Manfred von Richthofen.

Roll The rotation of an aircraft about the axis running from nose to tail. It is controlled by the ailerons.

R.F.C. Abbreviation for the British Royal Flying Corps. It later became the Royal Air Force.

R.N.A.S. Abbreviation for the British Royal Navy Air Service. It was incorporated into the R.A.F. on April 1, 1918.

Rudder The fin on the tail of an aircraft that controls its yaw.

Sardine Can Nickname of the Fokker Eindecker.

Schlachtstaffel German ground attack squadron. It literally means "battle group."

Usually a single-seat aircraft. Designed specifically to fight other aircraft. Called fighters or interceptors today.

Sortie A mission flown by an airplane.

Spad Acronym for the French Societe Pour l'Aviation et ses Derives. A French aviation company responsible for building the Spad VII and XIII among other aircraft.

Spinning Incinerator Slang for the Airco D.H. 2. Named this since its engines were so unreliable as well as the plane's habit of falling into spins suddenly.

Squadron Standard British and American tactical aircraft unit. Composed of between 12 and 18 planes.

Staffel Short for Jagdstaffel.

Strafe To shoot at ground targets with airborne machine guns.

Stick The control column in an aircraft's cockpit used to operate the ailerons and elevators.

Stunt Merchant 60 Squadron's nickname for Billy Bishop.

Synchroniser gear A timing device which allowed the machine gun to fire between moving propeller blades without ever hitting them. Invented by Anthony Fokker, it revolutionized aerial warfare.

Tripehound Nickname for the Sopwith Triplane.

Triple Entente The French, British and Russian pre-war Alliance.

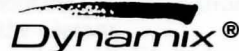
Two-Seater Generic term applied to aircraft with a crew of two, which were generally observation aircraft.

Victory The shooting down of an enemy aircraft.

Yaw The rotation of the aircraft in the horizontal plane. It is controlled by the rudder.

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