

The logo for Red Baron is centered within a decorative rectangular frame. The frame consists of two parallel lines with diamond-shaped ornaments at each corner. The text 'Red Baron' is rendered in a bold, black, three-dimensional Gothic-style font. The letter 'R' is significantly larger than the other letters. A registered trademark symbol (®) is located at the end of the word 'Baron'.

Red Baron®

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INSTALLATION

INSTALLING RED BARON II

1. Insert the *Red Baron II* CD into the CD-ROM drive. If you have Windows® Autoplay enabled, the *Red Baron II* Autoplay screen is displayed.
2. Click install and *Red Baron II* Setup will prepare the InstallShield® wizard. NOTE: If you do not have Autoplay enabled on your system, you can run the Setup program from the root directory of the *Red Baron II* CD. (Select Run from the Windows Start menu. In the Open textbox, type D:\SETUP.EXE. Click OK. Substitute the drive letter that represents your CD drive, if necessary.)
3. Read the instructions on the Welcome screen and, when you are ready to proceed, click Next.
4. The default folder for the installation is C:\Sierra\RedBaronII. Click Next if this is okay. Setup will copy the *Red Baron II*

files to your hard drive.

5. Two Windows® system components must be installed on your computer: Intel® Indeo® video interactive and Microsoft® DirectX 5™. If setup detects that you do not have these components, it will guide you through the installation process. If you wish to reinstall DirectX™ at a later time, run DXSETUP from the \DirectX directory on the *Red Baron II* CD.
6. We have provided a simple online registration form. Please fill it out and send it in so you can obtain technical support and the latest news on *Red Baron II* upgrades and enhancements.
7. If you have installed DirectX™, when you are done with the installation, make sure that **“Yes, I want to restart my computer”** is checked, and click Finish.

UNINSTALLING *RED BARON II*

There are several methods by which you may uninstall *Red Baron II*:

1. Go to Start >Sierra Utilities >Uninstall; then select *Red Baron II* from the list and click OK.
2. Click the Windows 95 Start button and go to Settings >Control Panel >Add/Remove Programs. Then choose *Red Baron II* from the listbox and click the Add/Remove button.
3. Go to Start >Programs >Sierra >RBII Uninstaller.

MANUAL NOTE

Some minor changes may have been made to this game after this manual was printed. Please check the **Read Me** file and the **Online Help** for last-minute changes, additions, and corrections to this document.

ONLINE HELP

Additional reference information and gameplay instructions are provided in an online manual which is accessible from

within any *Red Baron II* setup screens. To access it, simply press the F1 key.

You may also access the online manual by selecting Red Baron II Help from the Start >Programs >Sierra menu.

TROUBLESHOOTING

The following information should help you solve any problems you might experience with *Red Baron II*. Sierra Technical Support provides this documentation as a reference to Sierra customers using Sierra software products. Sierra Technical Support makes reasonable efforts to ensure that the information contained in this documentation is accurate. Sierra makes no warranty, either express or implied, as to the accuracy, effectiveness, or completeness of the information contained in this documentation.

Sierra On-Line, Inc. does not warranty or promise that the information herein will work with any or all computer systems. Sierra does not assume any liability, either incidental or consequential, for the use of the information herein, including any and

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Problem: "Error reading drive D"; "Not Ready Reading Drive X."; "General Failure Reading Drive X."; or "CDR 101 - Abort, Retry, Fail," when installing *Red Baron II*. The drive letter will vary depending on what drive designates your CD.

Solution: There are several factors that can cause a "read" error. The most common is a dirty or scratched CD. Check the CD to make sure that there are no smudges, fingerprints, scratches, or cracks on it. If there are any smudges on the CD, clean it off with a soft cloth and try it again. If the disk is scratched, it will need to be replaced.

If cleaning the CD doesn't help, the problem may lie with the CD ROM drivers. *Red Baron II* may not install properly unless you are using Windows 95 virtual drivers. To determine whether you are using virtual or real mode drivers, hold down the ALT key and DOUBLE-CLICK on MY COMPUTER. Click on the PERFORMANCE tab at the top of the SYSTEM PROPERTIES window. In the FILE SYSTEM field it should read 32 BIT. It should NOT read: Some drives are using MSDOS compatibility.

For information on using virtual drivers in Windows 95, please contact the computer manufacturer.

Finally, check with your system manufacturer to assure that the driver software that your CD drive uses is up to date. Outdated CD drivers can have difficulties reading newer CD's.

If you need a replacement disk or CD, Sierra will gladly do so for you. If your request is within the first 90 days of purchase, replacement is free of charge. After this warranty period, there is a \$10.00 processing charge. Send disk or CD #1, along with

PREFLIGHT

a note with your name, mailing address, daytime phone, and a copy of the sales receipt dated within the last 90 days, or a check or money order for \$10.00, to Sierra On-Line. Our address is:
Sierra On-Line Fulfillment
PO Box 485
Coarsegold, CA 93614

ADDITIONAL TROUBLESHOOTING INFORMATION

You will find a more comprehensive troubleshooting section in the online manual. If *Red Baron II* installed successfully, you can access online help from the Start >Programs >Sierra menu. If *Red Baron II* did not install successfully, you can still access online help manually. In Windows Explorer, locate your CD drive letter and click on it to display the list of files on the *Red Baron II* CD. Double-click file called RB2.HLP on the root directory of the *Red Baron II* CD to open the help file.

Still more information regarding *Red Baron II* can be found at the Sierra Web

site located at www.sierra.com. Finally, a Readme file, which is accessible from the Sierra Utilities splash screen (the View Readme icon) supplies last minute updates about *Red Baron II* that became available after the manual was printed.

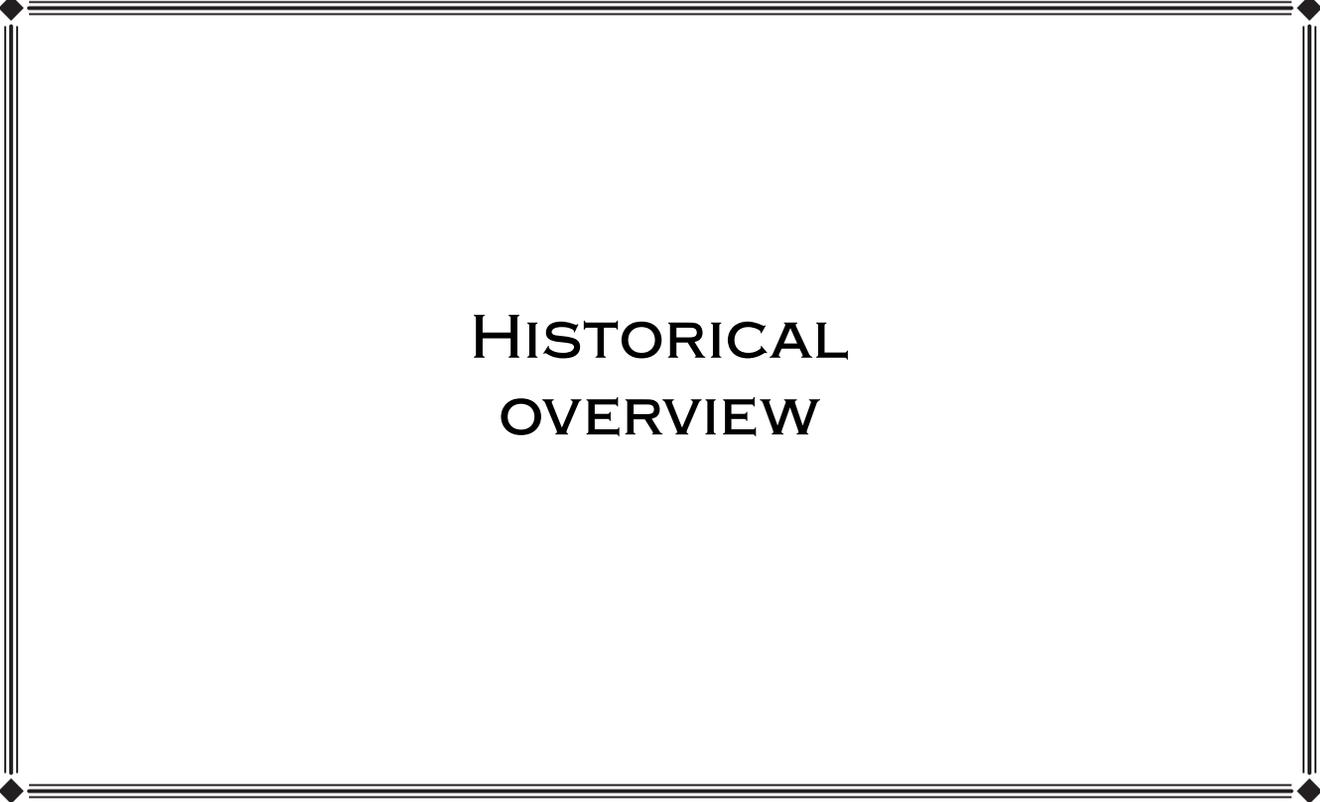
POST-INSTALLATION NOTES

When you install *Red Baron II*, a Sierra Utilities icon appears at the top of your Windows **Start** menu. This utility allows you to easily register or uninstall any Sierra programs that are detected on your computer. You may also access the Readme file for any program that this utility detects. The Support option is an online Setup Help file that provides answers to hardware questions, troubleshooting issues, and explains how to create a Windows boot disk.

If, for any reason, you would like to remove this icon, go to the **Start** menu and select **Settings > Taskbar**. Select the **Start Menu Programs** tab and click the **Remove** button. Scroll to the bottom of the programs list where you should see the Sierra Utilities

icon listed. Highlight it and click **Remove**.

Also upon installation, a NetMarket icon was placed on your desktop. This is an Internet shortcut to the online shopping and travel service offered by C. U. C. International, the parent company of Sierra Online. If you have an Internet browser and a connection, take a moment to browse the great buys, special offers, and entertaining games that this site provides. If you'd like to remove this icon, simply drag it into the Recycle bin.



HISTORICAL OVERVIEW

APRIL 21, 1918: AMIENS FRONT

When the pilots of JG-1 crawled out of their bunks in the early morning hours of April 21, 1918, they found their aerodrome at Cappy shrouded in thick, gray fog. The blanket of mist clung to the ground, making any flying impossible. Delighted by the break, the pilots gathered near their planes to await the events of the day.

They needed the break. Since March 21st, the men had been in action nearly every day, fighting with a desperation born from the knowledge that this last, great German offensive would determine the course of the war. They knew that their nation had gambled everything—resources, men, equipment, aircraft, and money—on this final effort. At first, it had succeeded. Below the wings of JG-1s Fokkers and Albatros fighters, the infantry had poured through a broken British line. German reinforcements flooded to the break-



A GERMAN MACHINE GUN CREW IN ACTION DURING THE MARCH OFFENSIVE.

throughs, pushing the Tommies back nearly 40 miles. In a war that measured success in yards, 40 miles seemed a ringing victory. But as JG-1 discovered, it proved to be a hollow success. Now, a month later, the British had turned to fight, stopping the advance cold before any real strategic success could be achieved.

All that was left to do was fight on with sheer momentum. Already, gossip around the mess tables at night told stories of friendly infantry units breaking and routing; of fighter squadrons running out of gas, rubber, and oil; of discontent in the ranks. In some cases, the red specter of Socialism seemed to play a part, boding ill for the future in light of Russia's Revolution the previous fall. Clearly, four years of stagnant, bloody, trench warfare had just plain worn out the German army, and now its men were being asked to do too much.

That was also true of the Air Service, and of JG-1 in particular. For the last month, they'd been flying four or five times a day. The men were exhausted, their lives measured in mere days as the inferno over the trenches claimed pilot after pilot.



THE ACES OF JG-1. KURT WUSTHOFF (27 KILLS), WILHELM REINHARD (20), MANFRED VON RICHTHOFEN (80), ERICH LOWENHARDT (54), AND LOTHAR VON RICHTHOFEN (40).

HISTORICAL OVERVIEW

For the ground crews, times were nearly as trying. They worked through the days and nights in a never ending battle to keep the planes airborne. With stocks of spare parts low, and replacement aircraft a wishful dream, the geschwader's fighting strength slowly drained away. Just to keep their remaining planes in fighting shape, parties of mechanics would scour the front for wrecks, from which they cannibalized all the rubber parts and brass fittings they could find.

Two things kept these men going: their love of Germany and their love for their leader, the legendary Manfred von Richthofen.

He was the type of man others instinctively followed. He led by example, by devotion to duty, and by sheer force of will. After four years of combat—first with the cavalry on the Eastern Front, then as a fighter pilot in the West—Richthofen was burned out. Nevertheless, he carried out his duty with grim determination that inspired all around him. His insistence to stay at the front endeared him to his men almost as much as it frustrated and worried the German high command. Richthofen, Gen-

eral Hindenburg once remarked, was worth at least one full division. He was the soul of the fighter force, the inspiration to all in the Air Service after three years of battling the British from the cockpit of Germany's best fighters. Alive, he was a great propaganda asset, a symbolism of everything the German fighting man stood for in this long and dreary war. To the core, he was a combat pilot, a hunter of the sky. And that is why he never let up.

Not even after he nearly died did he give much thought to taking some desk job far from the front, though his superiors urged him to do just that. Nearly a year before, in July, 1917, he had been in a wild dogfight with Naval Ten Squadron and some FE2s from a local RFC unit. During the fight, one of the Fee gunners had shot Richthofen in the head. Nearly out of his mind with pain, and practically blinded by blood gushing over his eyes, Germany's ace of aces spiraled down to the trenches below and crash-landed within friendly lines. Some soldiers pulled him from the wreckage and carried him to a field hospital, where his wounds were dressed. After a spell

at home where he was sent to recover, he returned to action once again that fall.

Despite his leave, he never really recovered from his wound. Now, months later, he looked gaunt and hollow. He suffered from terrible headaches that at times threatened to confine him to bed. Yet, he doggedly pressed on, shooting down an ever increasing number of Allied aircraft, until, by April 21st, his total stood at 80 kills.

As the sun rose over Cappy that spring morning, Richthofen appeared at the flight line to check on his pilots. He was in fine spirits, by all accounts, since the day before he had claimed his 80th victim. As he toured the scene, he tripped over a stretcher laid out on the ground. When he looked back to see what he'd fallen over, he saw Leutnant Wenzl, a young tiger who had just transferred into geschwader from Jasta 31 at the end of March. Playfully, the Rittmeister tipped over the stretcher, spilling Wenzl into the mud.

Laughing at their leader's prank, the other pilots plotted revenge. Later that morning, they kidnapped the Rittmeister's dog, Moritz, and tied a wheel chock to his

tail. Moritz had already seen much of the war, and, in fact, was missing part of an ear. Some months before, the big Great Dane was chasing Richthofen's Fokker Triplane as it began its takeoff roll. The dog got too close and collided with the propeller blades, which chopped off a good portion of his ear.

So it was on the morning of April 21st, Mortiz, the half-eared dog came whining to his master, a wheel chock dragging at his hind legs. The Rittmeister took the gag in stride, laughing at the sight as he knelt down to free Moritz from the chock.

Little did anyone know that this would be the last time the Rittmeister's laughter would ring in their ears.

With late morning came a break in the weather. A strong wind scattered the fog, and as blue skies appeared over Cappy, the mood at the aerodrome became serious and businesslike. They'd be going into battle soon, and the men knew the odds, as usual, would be heavily stacked against them.

The call came shortly after 10:30. A German observation point reported enemy aircraft heading for JG-1's patrol area. The



THE RED BARON'S FUNERAL. THE AUSTRALIANS BURIED THE LEGENDARY ACE WITH FULL MILITARY HONORS.

HISTORICAL OVERVIEW

news sent the pilots scurrying for their planes. In minutes, two ketten—flights—were airborne. Richthofen led them off in his blood-red Fokker Dr. I.

The men left behind at Cappy anxiously awaited the return of the geschwader's aircraft, going about their duty as they strained to hear the warm sounds of engines approaching the airfield.

Finally, in the early afternoon, they straggled in. The ground crews watched the Fokkers swing around the aerodrome, their quirky Oberusel engines coughing and burping as the pilots hit their "blip buttons" to slow their planes down to landing speed.

But one aircraft was missing. The blood-red Fokker that belonged to the Rittmeister was nowhere to be seen.

Through the afternoon they waited for news, despair threatening to overcome this once happy band of Germany's elite aviators. As the sun went down that afternoon, dread filled their hearts. He had fallen behind British lines, and now all they could do was hope he had been taken prisoner.

When word did come of their leader's fate, it was not what they had all feared.

Their Rittmeister, the great Manfred von Richthofen, was dead.

British guns destroyed the heart and soul of the German fighter force that April day, and with it, so died Germany's last hopes of winning the air war.

And yet, something else happened that day, something that none of those present at Cappy Aerodrome could ever have imagined. With the death of Manfred von Richthofen, a legend was born—one that would endure long after they were but dust in a soldier's grave—the legend of the Red Baron.

CHAPTER ONE

EUROPE IN FLAMES

One wrong turn changed the course of history. On June 28, 1914, Austrian Archduke Franz Ferdinand arrived in the Bosnian city of Sarajevo intent on attending army maneuvers in that recently annexed province of the Austro-Hungarian Empire. The results of that visit set in motion a chain of events that lead to the bloodiest war in world history. Long after all the players that day were dead and buried, the effects of their actions resounded for decades, affecting the course of both Europe and the United States for generations to come.

It began at the train station in Sarajevo, where the Archduke, his wife, and his entourage climbed into several open-topped touring cars to begin the short drive to City Hall, where they would meet Sarajevo's Mayor.

Unknown to them, assassins lurked along their planned route. As the Archduke's car

trundled down the street, one of the killers jumped forward to throw a bomb. By chance, the bomb missed, bouncing off the car then landing in the street. It exploded next to the car directly behind the Archduke's, wounding several of his good friends and staff members. The injured men were rushed to the hospital while Ferdinand, furious at what had just happened, continued to City Hall.

Once he arrived there, he greeted the Mayor icily. "So, you welcome your guests here with bombs?" he asked angrily. The Mayor brushed aside the remark and welcomed his Austrian dignitary to his city, assuring the Archduke that the would-be assassin had been caught. The meeting ended with Ferdinand announcing he wished to visit his two wounded officers in the hospital. This required a change in plans which almost, but not quite, saved the Austrian's life.

That day, a number of pro-Serbian assassins had staked out the Archduke's route through the city. If the first assassin failed, there were backups to him—and backups

to those backups. The Austrian's route through the city had been well known, and it was dotted with gun wielding, bomb totting fanatics. Trained by the Serbian terrorist organization known as the Black Hand, their goal was to secure Bosnian independence from Austria.

Now, though, circumstances foiled their plot. The Archduke would not be traveling on his pre-selected route to the army maneuvers. Instead, he insisted on going to the hospital. He should have missed all the other assassins waiting for him.

Enter Franz Urban, the Archduke's personal chauffeur. Urban had never driven in Sarajevo before and did not know exactly how to get to the hospital. He tried his best, though, working through the maze of narrow streets, trying to follow his maps and instructions. In the end, he got lost.

Somewhere along the way, he made a right turn into a single-lane alley that was so narrow he could not turn the car around. He went only a few dozen yards down the alley before he realized his mistake. He slowed the car down, getting ready to turn

HISTORICAL OVERVIEW

it around. Then he saw he would have to back up to the main street he had left. He touched the brakes just as a shabbily dressed young man crossed in front of the car a dozen or so feet ahead. Franz watched the man—a boy really—look up and see the car.

The boy was a 19-year-old Bosnian Serb student named Gavrilo Princip. Trained by the Black Hand, he had been posted on the Archduke's original touring route. When the Austrian had not shown up, Princip got bored and decided to head for home. Running into the Archduke on this confined back alley was a complete accident.

Princip capitalized on the chance meeting. Quickly, he pulled his revolver and stepped toward the car. Shots rang out. The Archduke and Archduchess slumped forward, bleeding from their bullet wounds. Horrified, Franz Urban jammed the car into reverse and sped to the hospital. But by the time he arrived there, both Austrians had bled to death.

Princip did not enjoy his victory. Bosnian police arrested him immediately, and he spent the next four years languishing in



THE DUAL MONARCHY'S LEADER, EMPEROR FRANZ JOSEPH (AT RIGHT). HE HATED HIS NEPHEW, FRANZ FERDINAND, AND THOUGHT GOD HAD PUNISHED HIM THROUGH THE ASSASSINATION FOR HIS LIBERAL VIEWS.

prison before dying of pneumonia in 1918. He lived long enough to see the war—to see the millions killed or maimed—that had been touched off by his single act of madness.

And still, none of it would have happened if Franz Urban had not made that wrong turn. Urban's moment in history lasted but an instant. When it passed, he disappeared from view and lived out his life as anonymously as any other average person. Still, his single mistake triggered the events that consumed Europe in a four-year war that killed millions and destroyed an entire generation. Entire nations, including Urban's own, were erased from the map and new ones took their place. In the end, when the shooting finally ceased, nobody could remember what they had been fighting for in the first place.

In the wake of the assassination, the battle lines were quickly drawn. Soon, all of Europe seemed to be sucked into the crisis. Austria blamed Serbia for the assassination and threatened war. Russia, always the "savior" of the Balkan Slavs, came to

Serbia's defense. With Russia now involved, the Germans backed their ally, Austria-Hungary, to the hilt. With Germany now enmeshed in the crisis, France came to Russia's aid. As the diplomats fussed and fumed, the armies began to mobilize. Once that happened, war was inevitable.

Austria attacked Serbia, declaring war on July 28, 1914. On August 1, Germany declared war against Russia then invaded Luxembourg and Belgium in order to get to France. Two days later, Germany declared war on France. The next day, Britain went to war against Germany after learning of that country's invasion of Belgium. On the 6th, Austria-Hungary declared war on Russia. In the days that followed, the fighting spread from Belgium to the Balkans, from the Alsace to East Prussia.

And all because of a wrong turn in Sarajevo.

At first, the war delighted Europe. There were mass rallies in support of the war, and all the old divisions within France and Germany disappeared in a ground swell of na-



THE KAISER'S PERSONAL GUARD ON PARADE JUST PRIOR TO THE WAR'S OUTBREAK IN AUGUST, 1914.

HISTORICAL OVERVIEW

tionalism. Volunteers flocked to the colors, and millions went off to battle with songs on their lips. Universally, Europe thought the war would be quick, sharp and bloodless. A few weeks of fighting, and the war would all be over.

The armies clashed in early August. Wearing brilliant colored uniforms and fighting with leftover Napoleonic tactics, Europe's legions were in for a sudden shock. The stand-up, shoulder-to-shoulder fighting their great-grandfathers had done at Austerlitz and Waterloo a hundred years before may have worked fine in the age of the muzzle-loading musket, but in the age of rapid-fire artillery, machine guns and magazine rifles, they were an invitation to slaughter. And that's precisely what happened.

France first went after its "lost territories"—the Alsace and Lorraine which it had ceded to Germany after the 1871 war. In nine days of fighting, known as the Battle of the Frontiers, the French launched massive human-wave attacks into the teeth of machine gun and artillery fire. They were



WHERE ALL TOO MANY OF EUROPE'S ENTHUSIASTIC VOLUNTEERS ENDED UP AFTER THE FIRST WEEKS OF THE WAR.

slaughtered by the thousands. By the time the commander of the French army, Marshall Joffre, abandoned the offensive, 300,000 of his men lay dead on the killing fields from Mulhouse in the south to Nancy in the north.

Modern technology, as all sides soon discovered, made obsolete their battle tactics.

With the French offensive in the east stopped cold, the German army swept down from Belgium, threatening Paris from the north. Just in time to help avert disaster, the British Expeditionary Force arrived, 100,000 strong. In its first three battles, the Germans nearly destroyed it.

By early September, the situation was desperate. The Germans were on the outskirts of Paris. The BEF had taken huge losses in the last few weeks, and the French had been bled white defending Nancy. It seemed as if nothing could stop the German army from taking Paris and fulfilling all the promises that this would be a short war.

But then, another anonymous figure stepped into the historical spotlight and changed the course of the war. For the first

time ever, that anonymous figure would be an aviator. France would be saved by the aeroplane.

CHAPTER TWO

THE RISE OF THE AEROPLANE

“...As experience has shown, a real combat in the air, such as journalists and romancers have described, should be considered a myth. The duty of the aviator is to see and not to fight.”
—German 1914 staff report.

The British knew exactly what the Germans were doing. When the BEF crossed the Channel into France in August, the troops took along 48 planes—the entire strength of the Royal Flying Corps. These primitive machines soon proved their worth as the “eyes” of the BEF. Each day, the pilots scouted out ahead of the ground troops, searching out German intentions as they lumbered overhead. At the end of August, with the situation on the ground growing increasingly desperate, the aviators brought home a bit of good news.

On the far right flank of the German thrust into France, General Alexander von



PROPELLERS OF VARIOUS TYPES LINE THE WALLS IN THIS WORKSHOP.

Kluck’s First Army suddenly shifted its line of advance. Instead of going around Paris to the west, von Kluck turned his corps

southeastward, cutting inside of Paris and putting the fortified capital on his right flank. British pilots Lieutenant A. E.



FRENCH TROOPS ON THE MOVE .

Borton, Captain D. LeG. Pitcher and Lieutenant C. G. Hosking all spotted the move, reporting back to HQ. Word of the change passed up the chain of command until it reached Marshall Joffre's desk. After studying the situation, he decided the time was

ripe for a counter-offensive against von Kluck's army.

As planning began for the great counter-attack, von Kluck made another mistake. As he moved south across the Marne River, a gap opened between his army and the Sec-

ond Army on his left flank. The gap grew wider and wider as von Kluck's men marched south.

Again, the eagle-eyed pilots and observers of the RFC spotted the mistake. Again, word of the hole in the German lines sped up the chain of command.

On September 5, 1914, the Battle of the Marne began. The French, with the help of the multi-colored Parisian taxi cabs, moved into place an entire army on von Kluck's right flank. On the 5th, they went on the attack, surprising the Germans and nearly overwhelming them. General von Kluck, more concerned with his advance to the south than any "spoiling" attack the French could launch on his flank, ignored the brewing battle for two days. Finally, though, on September 7, von Kluck awoke to the danger and moved swiftly to crush the French attack. As he did, his forward units had to re-cross the Marne and swing back north and west to get into the battle.

The hole between von Kluck and the rest of the German army had just grown bigger. Into that gap flowed the resurgent British Expeditionary Force as well as the French



**JOFFRE OF THE MARNE. THE
FRENCH COMMANDER-IN-CHIEF
WAS GIVEN MOST OF THE CREDIT
FOR THE SUCCESS AT THE BATTLE
OF THE MARNE.**

Fifth Army. The Germans, nearly enveloped now on both flanks, knew the game was up. Reluctantly, von Kluck ordered a retreat which later forced the rest of the German army to go on the defensive as well. The great push for Paris had collapsed in failure, as did any hopes that the war would be a short one.

The aeroplane had helped save France that September. Without the vital information the pilots brought back from their trips behind the lines, the Allied armies never would have been in a position to roll up von Kluck's army. Now, as the war settled into a long stalemate that would stretch from the North Sea to the Swiss border by Christmas, both sides wondered how else they could use this new weapon of war. Would the airplane just be used as the eyes of the armies, or could it be even more useful?

CHAPTER THREE

THE BIRTH OF AIR FIGHTING

*Just an old-fashioned Avro with
old-fashioned ways*

*And a kick that says 'back-fire' to you,
An old Mono engine that konks out and stays
When the toil of a long flight is through,
Tho' the pressure will drop, and it loses its prop,
And the pilot's inclined to resign,
I'll rejoice till the day—that I learnt how to fly,
In that old-fashioned Avro of mine!*

—RFC Squadron Song

The Austrian Baron Rosenthal was the first to die in air-to-air combat. His victor, Russian Captain Nesteroff, was the second. On September 8, 1914, just as the Battle of the Marne reached its climax, Nesteroff encountered the Baron's fragile craft over the Eastern Front. Without thought to his own safety, Nesteroff dove after the Austrian plane and crashed his own into it. Locked together, the two wooden machines tumbled earthward, both crews dead.

In the early days of the war, Nesteroff's suicidal battle with the Baron Rosenthal was an aberration. In those first weeks of the war, pilots shared a sort of kinship that transcended national boundaries. German pilots who stumbled across French or British planes would often toss their enemies a jaunty wave—and nothing more. For the most part, the Allies did the same.

This sort of honeymoon didn't last much past the Battle of the Marne. When both sides realized the importance of air reconnaissance, air-to-air fighting became inevitable. Pilots and observers began carrying shotguns, revolvers, carbines and even bricks and bottles. Some of the more creative thinkers hauled aloft machine guns. RFC pilot Louis A. Strange convinced his observer to bring aboard a Lewis gun on one reconnaissance flight. Unfortunately, the weight of the gun kept the plane from climbing above 3,500 feet—well below the German planes Strange had been hunting. When his commanding officer learned of his idea, he ordered Strange to remove the gun and focus on his real job—scouting for the

army.

Others continued to try. On October 5, 1914, French Sergeant-Pilot Frantz went aloft in a Voisin biplane with his mechanic, Corporal Quenault. Over the lines that morning, Frantz spotted a German Aviatik at about 3,500 feet. He closed on the unsuspecting German until Quenault, armed with a light machine gun, found the range and opened fire. The Aviatik dove away, turning northward for its own lines. Frantz would not be deterred. He followed the German while Quenault snapped out short bursts from the gun. In his haste to catch the Aviatik, Frantz accidentally overshoot it. As he passed on by, the German banked away from the Voisin and tried to run. Frantz reversed his turn, ending up behind the Aviatik. Quenault poured rounds into the ungainly German plane, even as the pilot tried to climb away from them. But Quenault's marksmanship was too good. The German plane, riddled with bullets, fell into a dive. The pilot fought the controls all the way down, pulling the nose up three times before losing it again. Finally,

HISTORICAL OVERVIEW

the Aviatik plunged into a small copse of trees, where it exploded.

Running to the scene of the crash, one observer recalled, “the motor was almost entirely buried in the ground, the fuselage was twisted, and the wings were broken into a thousand pieces. One of the aviators lay quite dead three yards away from the motor. The second, the observer, with beautiful hands exquisitely cared for and perhaps a great Prussian name, was caught under the red motor, now a wreck in flames. He seemed to us to attempt to pull himself out, but the movement was probably convulsive; he looked at us, clawed the earth with his hands, and died before our eyes.”

The honeymoon was over. The air war was about to get dirty.



GAS WARFARE WAS AMONG THE NEW HORRORS OF WWI.

CHAPTER FOUR

DEFLECTORS AND INTERRUPTERS

“A sort of mystery surrounded the Fokker... rumour credited it with the most fantastic performance! It could outclimb, outpace and outmanoeuvre anything in the R.F.C. You were as good as dead if you as much as saw one....”
—Cecil Lewis, *Sagittarius Rising*

The land war on the Western Front remained a bloody standoff throughout 1915. Both the French and the British launched offensives of their own. Always, the attacks succeeded in gaining a little ground, but no attack made the “breakthrough” all involved sought.

Poison gas, a new and deadly weapon, was tried by the Germans for the first time ever during a local attack outside the city of Ypres in April, 1915. The gas caused panic among the British and French troops, sparking a stampede to the rear. A four-mile hole opened in the lines as men threw

down their weapons while fleeing the terrible gas clouds. Seventy thousand Allied soldiers fell during the attack, but the Germans could not exploit their success. Not expecting such a reaction from the Allies, the German high command had not backstopped the attack with enough reserves to achieve a decisive victory.

The Allies responded with gas attacks of their own, though none succeeded like the German one that April. By late 1915, the Allies had lost close to a half a million men for no gain at all in a series of vain offensives. The year ended with the lines drawn as they were the previous December.

While the ground war grew increasingly bloody and futile, the air war evolved through 1915 into a battle between technology and tactics. As each side developed new planes, new refinements, and new weapons, the other side scrambled to develop tactics to counter these new threats. It was a race begun by a young French daredevil named Roland Garros, and it would not end until the Armistice in November, 1918.

Before the war, Roland Garros was a well-known figure in aviation circles. As one of France’s early air pioneers, he had entered nearly every contest and race in Europe, winning acclaim for his incredible feats. He was the first to fly across the Mediterranean Sea, a risky proposition at best in that age of fussy engines and flawed designs. He later entered and won the Paris to Rome and Paris to Madrid races, and in 1911 he won the Grand Prix d’Anjou.

When the war broke out in 1914, Garros was in Germany. Worried he that he might be arrested, he abandoned his belongings and took the first train to Switzerland. He returned to Paris as fast as he could, where he offered his services as an aviator. Along with many other pre-war daredevils, the French Air Service assigned him to M. S. 23, a squadron flying early Morane monoplanes.

During the first winter of the war, Garros began thinking up new ways to shoot down German observation planes. He concluded that the best way to do it would be to mount a machine gun on the nose of his plane so that he wouldn’t have to carry an observer

HISTORICAL OVERVIEW

to shoot the gun. If the machine gun were fixed to fire forward, Garros could aim the gun by simply pointing his nose at his target. A great idea with one huge flaw: the propeller was in the way.

For several weeks, Garros and his mechanic tinkered with one of the Morane monoplanes, trying to come up with a way to protect the prop from the machine gun. As they experimented, they discovered that only about 10% of the bullets fired ever hit the prop blades. If they could just take care of that one in ten, their idea would work.

They settled on what they called a “deflector system.” By mounting steel wedges onto the back of each propeller blade, any bullets that would normally damage it would just ricochet off. The wedges were angled so the bullets would not fly back and hit the pilot.

In the spring of 1915, after weeks of experimentation, Garros and his new weapon took to the air in search of a victim. Once aloft, he headed for his primary target, a railroad station outside of Ostend which he would bomb. Along the way, though, he came across a lone Albatros two-seater,

intent on spying behind Allied lines.

His original mission forgotten, Garros turned his Morane-Saulnier monoplane after the German. He crept up on the unsuspecting plane from behind, a tactic that confused the German observer. Then came the clatter of Garros’ Hotchkiss machine gun. The observer fought back with a carbine, but it was really no contest. The Albatros burst into flames and crashed. Garros, horrified by what had happened, later reported, “I gazed below me for a long time to convince myself that it was not a nightmare.”

Garros’ jury-rigged experiment had just given birth to the first true fighter plane in aviation history.

For eighteen days, Garros terrorized the local German units on the Belgian coast. German pilots, filled with rumors of new French superweapons, began avoiding all monoplanes to the outrage of their commanding officers, one of whom accused his aviators of having the “hallucinations of old women.”

Garros’ one man war ended almost as quickly as it had begun. After shooting

down three planes, he himself fell victim to a German bullet on April 18, 1915. With his fuel line severed, he coasted down for a crash-landing behind German lines. Before he could burn his craft, German soldiers appeared and took him prisoner. His precious machine had fallen into enemy hands.

Garros remained a prisoner until January, 1918, when he and another French pilot escaped from their captors and made their way to England. Upon returning to France, Garros rejoined the French Air Service, not realizing the tremendous changes that had taken place between his daring experiment and his return to combat. After flying only a few missions, the Germans shot him down again. A great pioneer of air combat technology had died at the hands of the weapons he helped invent.

Though Garros started the air combat revolution, it would be the Germans who refined his ideas, making them both practical and deadly. In April, 1915, when Garros went down behind the lines, the Germans captured his Morane-Saulnier. After local officials examined it, they realized Garros’ plane was an incredible intel-

ligence coup. Quickly, they packed it up and sent it to young Tony Fokker, a Dutch aircraft designer working in Germany.

The German Air Service asked Fokker if he could duplicate Garros' invention. Fokker agreed to have a look, but instead of copying the deflector gear, he improved on it. Later, Fokker claimed that his novel idea came with a flash of inspiration. More likely, however, was the fact that the German Air Service provided Fokker with the details of a synchronizing system patented in 1913 by LVG engineer Franz Schneider. In exchange for Fokker's time and effort, the Air Service apparently promised to protect him from lawsuits.

It took only a few days for Fokker to work through the kinks of the new system. Instead of protecting the propeller, Fokker built a system of gears into the machine gun and engine that would ensure no bullets were fired when the propeller blade passed in front of the barrel. Fokker called his invention the "Interrupter Gear."

Earlier in 1915, his company had been hired to build a lightweight, single-seat aircraft whose chief attribute was speed.

Fokker copied the Morane-Saulnier design and even used a license-built version of the French Gnome rotary engine—the Oberusal. Now, with his Eindecker aircraft just reaching production stages, Fokker married his interrupter gear to it and created the world's first true fighter plane.

When the first Eindeckers arrived at the front in mid-May, 1915, they were allocated in penny-packets to the existing reconnaissance units. Initially, the German pilots balked at the Eindecker's capabilities. Having learned to fly on slow, awkward biplanes, or the Austrian Erich Taube, the speedy Fokker proved to be a difficult adjustment. Compared to the Aviatiks and the early Albatros two-seaters, the Fokker was far more maneuverable, unforgiving, and quirky. Fokker realized this problem early on and helped establish a training school to teach the proper techniques needed to fly his creation.

The transition period lasted until early August, and for some time the German Air Service doubted the effectiveness of Fokker's new airplane. In some cases, the interrupter gear malfunctioned, shooting off

the propeller blades and killing the pilot in the ensuing crash. After three fatal crashes in July and August, the Air Service forbade its further use. It even disbanded Fokker's training school at Doberitz.

The Air Service very nearly killed the best weapon at its disposal by its overreaction. Two pilots, however, stepped in to save the day. They were Max Immelmann and Oswald Boelcke.

On August 1, 1915, a flight of nine British Be2 "Quirks" flew over the German airfield outside Douai. The Allied planes surprised the German pilots, who had been napping in their quarters nearby. Max Immelmann, a talented twenty-five year old pilot from Dresden, awoke to a "terrible row." When he reached his window, he spotted the British planes passing overhead, dropping bombs on the airfield. He telephoned for a car at once so he could get to his plane.

While waiting for his ride to the airfield, Oswald Boelcke, a smart Saxon with one kill already to his credit, buzzed by on his motor bike, heading for the airfield and his awaiting Fokker Eindecker.

HISTORICAL OVERVIEW

Boelcke and Immelmann were F. F. A. 62's two best pilots. When the squadron received a pair of Eindeckers earlier in July, their commanding officer assigned both of them to fly the new planes. Immelmann had only been flying the Eindecker for three days, but his raw talent as a flier would more than make up for his lack of experience on this day.

Immelmann reached the airfield ten minutes after Boelcke took off after the British Quirks. He fumed impatiently as he waited for the ground crew to roll his Fokker out of its shed, then climbed aboard once it was ready to go. Finally, well behind his comrade, Immelmann took to the skies, ready to test Fokker's fussy, but potentially deadly, interrupter gear.

Immelmann climbed to about 6,500 feet when he saw Boelcke abandon his attack on two Be2s. Boelcke dived away from the British planes and did not return to the action. Immelmann later discovered Boelcke's gun had jammed.

With the Quirks split up into at least three groups, Immelmann climbed after the two Boelcke had been stalking. Then he spot-



WHILE FOKKER WORKED ON A COPY OF THE MORANE BULLET, PFALZ PRODUCED A COPY OF THE MORANE PARASOL CALLED THE A.I. IT SAW ONLY LIMITED USE.

ted another British plane slightly below him, dropping bombs on Vitry. He turned toward it and gave chase. Diving down, he opened fire on the Be2, firing 60 rounds before his gun jammed. He broke off to clear it, noticing that the other two Quirks in the area were now closing on him. He freed up his machine gun and made for his original target. Two more times in the course of the fight his guns jammed. Yet, his marksmanship carried the day. In the end, the Quirk fell off into a long, shallow dive which Immelmann followed, firing his gun whenever he could get the jams cleared. Four hundred and fifty rounds later, the Quirk crash-landed in German territory.

Eager to meet his foe, Immelmann landed in the same field. Unarmed, he approached his two enemies cautiously, yelling, "Prisoners!" in French at them. They offered no resistance, and the pilot held out his right hand to shake Immelmann's.

"Bonjour, monsieur," Immelmann said, but was surprised when the Allied pilot responded in English.

"Ah, you are an Englishman?" he asked.

"Yes," came the reply.

"You are my prisoner," Immelmann said.

The Englishman, appearing unruffled, offered Immelmann congratulations, "My arm is broken. You shot very well."

As the German looked over his prisoner, he discovered that one of his bullets had smashed the Englishman's forearm. Indeed, he had shot very well.

The Fokker Scourge had begun.

Throughout that fall, Boelcke and Immelmann made life miserable for the British pilots in Flanders. Together or individually, they would roam the skies over the trenches, looking for Allied recon planes in their Fokker Eindeckers. On August 19, 1915, Boelcke scored his first kill in his monoplane fighter. Immelmann scored again on the 26th, and by the end of the year had seven victories. Boelcke finished the year with six. As their scores mounted, both men became heroes to the German people. Starved for good news in a war filled with seemingly purposeless slaughter on the ground, Germany embraced their young air heroes with pure adulation. When, in January, 1916, the Air Service awarded both men the Pour Le Merite—the most

prestigious Prussian award for bravery in battle—their rise to fame seemed complete.

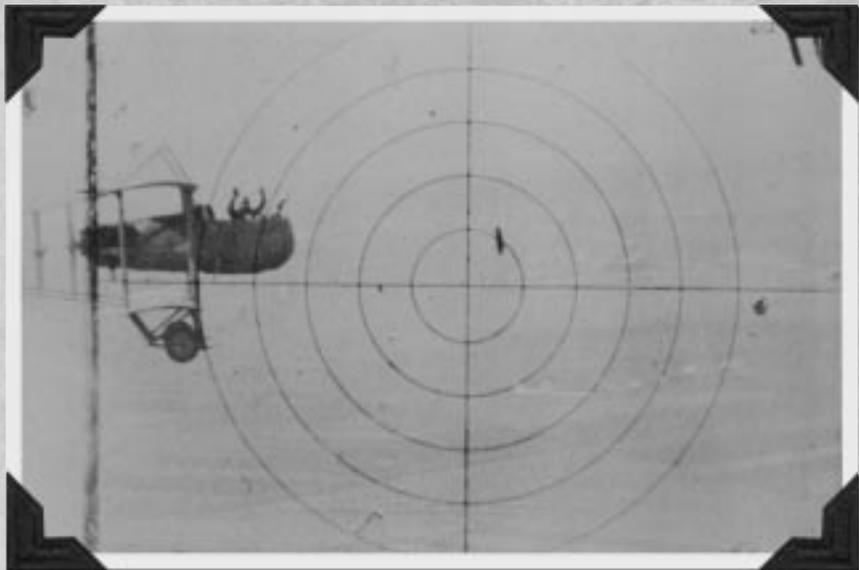
Not only did they become national figures, Immelmann and Boelcke set the tone for the next eight months in the skies over the Western Front. Following their example, other pilots began stalking Allied planes in their speedy Eindeckers. Soon, though there were fewer than sixty Fokkers at the front at any one time, the British and French Air Services fell into a panic over their losses. Other Eindecker pilots, including Ernst Udet and Kurt Wintgens, also began taking a toll on Allied planes. The French, who had been bombing Germany for months without serious losses, suddenly had nine planes shot down in one mission. Other attacks suffered the same fate, forcing them to abandon daylight bombing raids.

As the Fokkers made their presence known, Allied morale plummeted. Even the sight of a distant monoplane was enough to cause an Allied pilot to cut out for home. Missions were not being completed, and the myths surrounding the Fokker grew and grew until Allied aircrews were convinced

HISTORICAL OVERVIEW

it was an unbeatable super-weapon.

Allied leaders knew only two things could stop this German onslaught. First, new planes had to be deployed that could beat the Fokker. Second, tactics had to be developed to counter the Eindecker threat. In the meantime, the French and British pilots would have to take their losses, buying time with their lives until the next generation of aircraft arrived at the front. For nearly six months, the Allied pilots waited and bled, knowing that the Germans for the first time in the war had command of the air over the Western Front. As the war went on, the battle for that command would grow both furious and bloody.



AN OBSERVER RAISES HIS ARMS TO SURRENDER AS HE ENTERS SOME UNFRIENDLY SIGHTS.

CHAPTER FIVE

THE SWING OF THE PENDULUM

“You seem magnetically attracted to any German aeroplane you see, and never weigh the situation. I saw one of your machines take on one Fokker, then two Fokkers, then three Fokkers, before being shot down at Lille.”

—Captured German pilot Lt. Baldamus to his British interrogators.

Major Lanoe Hawker was no stranger to air combat. In early 1915, he earned the Royal Flying Corps' second Victoria Cross, England's highest award for bravery. Hawker, a small, sensitive man prone to fits of depression, mounted a Lewis gun on the side of his Bristol Scout and went hunting for targets. He found two German planes, one of which he shot down and the other he forced to land behind German lines. He did it by aiming the gun off to the side, outside the propeller's arc.

That sort of ingenuity and aggressiveness convinced the RFC to give Hawker command of the world's first true fighter squadron. It almost proved his undoing. Hawker had been flying in combat since the war began with No. Six Squadron. When the RFC ordered him to England in the fall of 1915, Hawker was the last original member of his squadron. Everyone else had been killed or wounded.

Command in England did not go well at first. With all the fighting he'd seen, Hawker sometimes appeared on the verge of a total mental breakdown. The strain of his new position pushed him even closer to that edge. Nevertheless, this tough former engineer knew his duty, and carried out his responsibility well. By December, 1915, No. 24 Squadron was ready to go to France.

Equipped with the new Airco DH-2, Hawker's men would be the spear point of the RFC's response to the Fokker Scourge. Relatively fast for its time, the DH-2 carried a single machine gun fixed to fire forward. To solve the problem of firing through the propeller, British designers gave up on

their own version of the interrupter gear and just moved the engine behind the pilot. This pusher design solved the problem admirably, but created others. As Hawker's men discovered, the DH-2 had some nasty habits. Its unreliable engine tended to catch fire, which usually meant the end for the unfortunate pilot. Worse, it spun easily, an especially bad characteristic in an age where nobody knew how to recover from a spin. With their usual grim humor, the pilots nicknamed the DH-2 the “Spinning Incinerator.”

Hawker's Squadron, as the outfit was nicknamed, went into action in early February, 1916. He taught his men to be aggressive—“Attack everything,” he once told them. After arriving in Flanders, the squadron's DH-2s sought out the dreaded Eindeckers and brought them into battle. Though the DH-2 had many problems, it was far superior to the Fokker monoplane. Soon, as other DH-2 squadrons arrived at the Front, the German Fokker menace gradually evaporated.

HISTORICAL OVERVIEW

In early 1916, the French captured an intact Fokker Eindecker. After test flying it, they discovered the plane had only limited maneuverability, especially compared to the latest Allied types arriving at the front. When these facts filtered down to the squadrons, the Fokker at last ceased to be a psychological threat.

Instead, they were hunted until the Germans were nearly driven from the skies. Resurgent Allied airpower had crushed the Fokker Scourge.



GERMAN INFANTRY MAN A MACHINE GUN.

CHAPTER SIX

VERDUN

“Victory was to be bought so dear as to be almost indistinguishable from defeat.”

—Winston Churchill

On February 20, 1916, a crushing bombardment—the biggest ever seen in human history—all but wiped out the forward French positions guarding the strategic city of Verdun. The next day, eight German divisions attacked on a narrow front, grinding their way through the remains of the French defense. By nightfall, good progress had been made on every sector.

The biggest and most important battle of the war had just begun.

As the battle raged below, a new struggle unfolded in the air. For their offensive, the Germans had amassed four observation squadrons, 14 balloons, and some 20 Fokker Eindeckers. The Eindeckers were charged with protecting the artillery-spotter as they went about their vital tasks.



THE LUNAR LANDSCAPE AROUND FORT DOUAUMONT

HISTORICAL OVERVIEW

When the battle began, the Eindeckers cleared the sky of all French machines. Outnumbered, and with their aerodromes under heavy artillery fire, the French squadron fled Verdun for safer areas. However, that retreat did not last long. At the end of February, Colonel Bares took command of the shattered units around Verdun. General Petain, head of the ground forces in the Verdun sector, ordered Bares to seize and hold air supremacy at all costs. The brutal artillery barrages had to be rendered ineffective, and the only way to do that was to shoot down the German spotter planes.

Bares immediately called for reinforcements until he had almost 120 planes under his command. By early March, he had eight reconnaissance, two artillery, and six fighter escadrilles at his disposal. To lead the fighter squadrons, he chose Major Tricornot de Rose, a pre-war aviator who was France's first military pilot. An experienced leader, whose drooping mustache had made him a well-known figure in the Air Service, de Rose set to work reorganizing the fighter escadrilles to carry out



THE DEAD AT VERDUN. THE MORTE HOMME, A VITAL HILL THAT THE GERMANS REPEATEDLY ATTACKED, BUT COULD NEVER TAKE AND HOLD.

their mission.

The first important change came on March 21. Prior to Verdun, aviation units

had always been under the control of the local army commander. Now, the French tried a new system. After de Rose collected

no fewer than fifteen fighter squadrons under his direct supervision, Marshall Joffre took his group out of the normal chain of command. Instead of reporting to the local ground commanders, de Rose reported directly to de Bares, who in turn answered only to Joffre himself. This way, the immediate needs of the army commanders would not interfere with the overall objective: air superiority over Verdun.

Major de Rose, with his chain of command secured, soon modified the very way his fighter squadrons did battle in the air. Until Verdun, Allied fighters had patrolled the front in small numbers, just as the Germans had done with their Eindeckers. Lanoe Hawker and No. 24 Squadron started to change that in Flanders when they flew missions as a squadron. At about the same time, Major de Rose ordered his squadrons to do the same thing.

No longer would there be single plane patrols over Verdun. Instead, de Rose taught his escadrilles to fly and fight in formation. He developed escort tactics and worked out effective ways to intercept incoming Ger-

man aircraft. His experiments and their applications led to the first truly homogenous fighter squadron. It did not take long for his ideas to spread all through the French Air Service, as Hawker's did in the RFC.

The new tactics, combined with new aircraft like the Nieuport 11, went a long way toward saving France that grim spring. On the ground, the Germans slowly advanced toward Verdun, taking huge losses but grinding up the French army in the process. In the air, the Germans lost their brief control of the air over Verdun as their Eindeckers, scattered through the reconnaissance units, ran afoul of superior numbers and better French airplanes.

Once the Eindeckers had been vanquished, Major de Rose instituted a daily patrol system that he felt eliminated the need for escort missions altogether. Each day, his squadrons would patrol their assigned sector in groups of five or six. Sometimes, above these patrols would be the squadron's elite aces—men like Jean Navarre and Alfred Heurtaux. By using their comrades below as bait, they racked up high scores in

the vicious fighting at Verdun.

And it was vicious. The French showed no mercy to their outnumbered German enemies.

Twenty-six year old Albert Deullin rose to acehood over the skies of Verdun, shooting down five planes between February and June, 1916. On June 4, France awarded him the Legion of Honor, its highest award for bravery. On one of his most notable missions, Deullin was full of rage at the Germans after having lost his close friend, Lieutenant Peretti, in battle over Verdun. Thirsting for revenge, he caught an Eindecker from behind and closed to less than thirty feet before opening fire. Twenty-five rounds from his machine gun struck the cockpit and, as Deullin recalled, "The fellow was so riddled that vaporized blood sprayed on my hood, windshield, cap, and goggles. Naturally, the descent from 2,600 meters was delicious to contemplate."

It got even uglier. Bernard Lafont in his candid book, *Au Ciel de Verdun*, detailed the brutal side of the air war. One time, a

HISTORICAL OVERVIEW

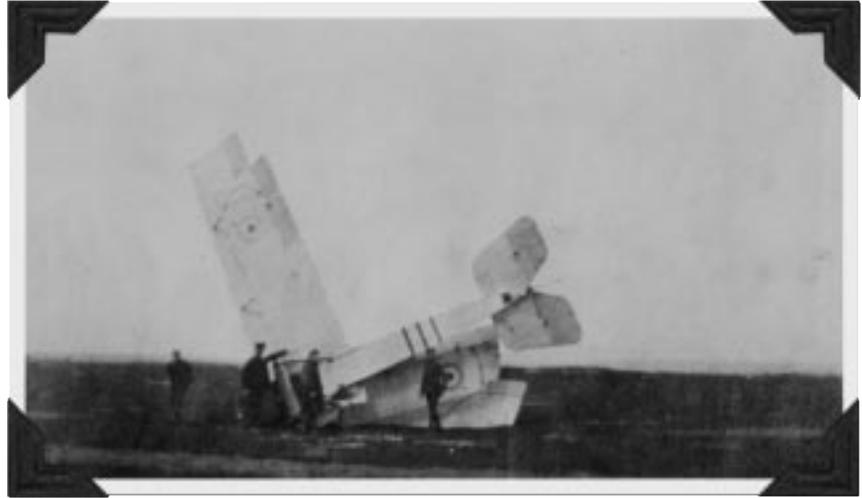
Caudron bomber force-landed at his aerodrome. When he and his friends came out to see it, they discovered that the Caudron's gunner had been shot in the head. The pilot, Lafont noted, was unhurt but quite shaken as he was "covered with blood, {his} clothes and face, for in the wind of the motors, the blood that poured out of the passenger's wound lashed him."

Another time, Lafont's squadron commander assigned him to burial detail. He spent his days recovering the mutilated bodies of his comrades. Once, after a nighttime crash, Lafont arrived at the crash site the next morning and noted:

It is Senain. He received three bullets in the head, which exploded like rotten fruit; brains and blood trickle on the face and clothes. The helmet moves on a broken skull.

Both are horribly crushed. The stretcher bearers who pick them up have only a bloody pulp in their hands.

Another time he recovered the body of a Farman crewman, who had fallen to his death from his airplane.



THE FATE OF MANY AVIATORS WHO FOUGHT FOR THE SKY OVER VERDUN.

The second fell on the roof of the house. I clearly heard the dull sound of the body when it was crushed in a heap. Flouc! . . . The body was recovered from the roof, entirely broken, shattered and shapeless and without rigidity like a heap of

ooze. . . .

Clearly, the air war over Verdun was not for the faint of heart.

CHAPTER SEVEN

GERMANY RESURGENT

*As a pilot in France I chanced over the lines
And there I met an Albatros Scout.
It seems that he saw me, or so I presumed,
His manoeuvres left small room for doubt.
He sat on my tail without further delay,
Of my subsequent actions I think I might say—*

*My turns approximated to the vertical,
I deemed it most judicious to recede.
I frequently gyrated on my axis
And obtained colossal atmospheric speed.
O descended with unparalleled momentum
My propeller's point of rupture I surpassed,
And performed the most astounding evolu-
tions—In other words—I SPLIT-ASSED!
—“In Other Words” RFC squadron song.*

By early April, the air fighting over Verdun had all but driven the German Air Service from the skies. The Nieuport escadrilles had carried out Petain's desperate February order to win command of the air. Now, the German army below was blind, its reconnaissance



NIEUPOINTS ON THE FLIGHTLINE.

and observation planes shot out of the sky. No longer would their artillery fire be nearly as effective as it was at the outset of the battle. As this happened, both sides realized the importance of the air fighting and renewed their efforts to take or maintain

air superiority. The struggle took on a desperate intensity.

As their enemies concentrated their fighters into dedicated squadrons, the Germans began to react in the same way by the spring of 1916. Separate Fokker squadrons were

HISTORICAL OVERVIEW

established, sometimes called Fokker staffels or Single-Seat-Combat Flights (KEKs). These primitive fighter squadrons helped offset the Allied advantage in aircraft design until better German planes could make their debut over the front.

At first, the Germans tried to defend every piece of sky at once. They flew “barrage patrols” where each staffel was assigned a sector to scour. No Allied planes were supposed to cross the barrage patrol barrier. But to cover every inch of sky in a given sector required the Fokker staffels to break down into flights of two or three each. Again, their tactics left them outnumbered and frequently overwhelmed by the larger formations of Allied planes.

Summer started poorly for the Germans and only got worse. In June, the great Max Immelmann, known to his countrymen as the “Eagle of Lille” died in combat with a British Fe2. Later investigation indicated that Immelmann’s interrupter gear had failed and he had shot his propeller off. Tony Fokker, always worried about negative press, went to great lengths to deny this. In any case, the British were happy to take



A NIEUPORT 17 AT THE FRONT. THE NIEUPORTS 11 AND 17 HELPED TURN THE TIDE AGAINST THE FOKKER EINDECKERS.

credit for Immelmann’s death. He had been one of the top aces of the war at the time of his death, with 15 kills to his credit.

As the summer wore on, the German Air Service continued to be rolled back by the Allied change in tactics and aircraft. When

the British launched their Somme Offensive in July, the air fighting heated up once again. Though the RFC squadrons took heavy losses, the Germans seemed on the ropes for sure. Given the disaster the ground offensive produced, the success in the air

provided a glimmer of hope to the tiring Allied home fronts.

The German Air Service knew it had to do something soon to redress the balance in the air. To do it, they called on Oswald Boelcke, their leading ace and master tactician.

Clearly, the KEKs and Fokker staffels were a step in the right direction. Just as clearly, they had not gone far enough. Starting in late summer, the Germans began organizing dedicated fighter squadrons of nine planes each. Boelcke was given a free hand to recruit for his squadron, which would be one of the first formed. Called Jagdstaffels—or hunting flights—these new units were sure to be an improvement over the earlier, ad-hoc collection of Eindeckers in the KEKs.

Jagdstaffel 2—or Jasta 2 as everyone soon called it—was given to Oswald Boelcke. He spent the end of the summer traveling all over Germany and the front lines selecting his pilots. In Russia, he found a former cavalry-officer-turned-reconnaissance-pilot named Manfred von Richthofen. Richthofen had proved time and again his



THE WRECKAGE OF MAX IMMELMANN'S FOKKER EINDECKER BEING INSPECTED BY GERMAN PERSONNEL

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aggressiveness in the air. The attribute appealed to Boelcke who invited him to join his new squadron. The young Prussian aristocrat quickly accepted.

In Werner Voss, Boelcke found another great fighter pilot. A shy, enigmatic nineteen year old, Voss impressed Boelcke with his remarkable flying abilities. He would later become one of Germany's top aces.

By mid-September, 1916, Jasta 2 was ready for combat. Assigned to the First Army, Boelcke's men would be going up against the best British squadrons in Flanders. In the weeks that followed, the squadron routinely ran up against Lanoe Hawker's No. 24 Squadron—and came out on top. After nearly six months of thrashings at the hands of the Allies, the German Air Service was slowly climbing back on top.

Boelcke himself went on a scoring frenzy unmatched so far in the war. Between September 2 and October 27, 1916, Boelcke downed no fewer than twenty British planes. His men paced his achievements. Richthofen knocked down six in the same period while Boelcke's wingman, Erwin

Boehme, claimed another five.

The string of victories continued through the fall, as Boelcke taught his elite group of pilots all that he had learned in his many prior combats. To help the entire Air Service, he set down on paper his famous "Dicta Boelcke" which spelled out the most important tenants of air combat. Those same basic principles apply today just as they did in the war-torn skies of France some eighty years ago.

But Boelcke was wearing himself out. Flying two or three missions a day throughout that fall had given him a haggard, gaunt visage. Despite his exhaustion, he continued to lead his men in battle. Nevertheless, the air fighting had long since become unforgiving, and the destruction in the skies that he helped develop and refine eventually claimed his life.

On October 28, 1916, Boelcke and his squadron were scrambled to intercept Lanoe Hawker's No. 24 Squadron. In his haste to get airborne, the great German tactician had forgotten to strap himself into the cockpit—a mistake born from exhaustion that would soon prove fatal.

With faithful Erwin Boehme on his wing, Boelcke led his Jasta up against Hawker's Squadron. Soon, a whirlwind dogfight raged, with planes zipping all over the sky. As usual, Boehme stayed close to his leader. Suddenly, though, Manfred von Richthofen cut in front of Boelcke, intent on killing a diving DH-2. Boelcke had to swerve to avoid colliding with the Prussian. As he did, his wing scuffed Boehme's Albatros D.II. It was barely a collision, Boehme recalled later, but it was enough to be Boelcke's undoing. His Albatros fell out of control toward the front lines below. The master tactician fought his plane all the way down and even managed to make a relatively soft crash landing. But since he was not strapped in, even the modest impact of the crash killed him.

Boehme, whose plane was also damaged, managed to make a successful landing and emerged from the tragedy physically unharmed. Emotionally, he was traumatized by the accident. For weeks, the brave native of Holzminden carried the guilt of Boelcke's death on his conscience. It did not help that his own comrades also blamed him for their

leader's death. Another man would have been broken by the accident, but not Boehme. He continued to fly and fight, winning back the respect of his fellow pilots with his impressive string of victories. He would continue to fly combat through 1917, despite two severe wounds including one terrible head injury that kept him out of combat for nearly five months.

Oswald Boelcke was gone, but his legacy lived in both the spirit and the organization of the German fighter force. He had taught them how to fight, and how to fight successfully despite being outnumbered. Now, though, his death created a leadership vacuum that would not be filled until early 1917.

The man who filled that vacuum was none other than Boelcke's former protégé, Manfred von Richthofen.

A cold, calculating pilot whose flying skills were not nearly as refined as some of his comrades, including Werner Voss, Richthofen nonetheless possessed all the ingredients for acehood. He had a thirst for hunting British planes, as well as a knack for picking the right fights and avoiding dis-

advantageous situations. He was a stalker, a plotter, a master of patience. All of these things paid off in spades as he continued to fly with Jasta 2.

His first big splash came on November 23, 1916, a day in which Jasta 2 met Hawker's Squadron twice. The first encounter came that morning over Le Sars. Though a whirling dogfight erupted between the two sides, no planes were shot down. After a sharp, intense action, both the British and Germans retreated to rearm and refuel.

Later that day, three DH-2s took off on another patrol. This flight, led by Major Hawker, included Captain J. O. Andrews and Lieutenant Robert Saundby, a future Air Marshal.

Over the lines, Hawker's patrol ran afoul of Jasta 2 again. This time, the British were outnumbered and soon thrown on the defensive. Early in the dogfight, an Albatros D. II slid behind Hawker's DH-2, but before it could open fire, Andrews chased it off. He paid for saving his squadron commander moments later when another German hit his engine, forcing him to disengage and return to No. 24 Squadron's aero-

drome at Bapaume.

Somehow in the fray, Hawker ended up one-on-one with an Albatros D. II. The German plane, flown by Manfred von Richthofen himself, was not as nimble as the DH-2, but was faster and could climb better.

What developed was a battle of two masters. Hawker used his DH-2's maneuverability to avoid every attack Richthofen attempted. For his own part, the Prussian ace relied on his climb rate to get him above and behind Hawker's pusher. Round and round the fight went, all the while the wind blowing the two combatants deeper into German-held territory.

It was a standoff—neither pilot could get into position for the killing shot. But time and circumstance began to tell against Hawker. The farther the fight moved behind German lines, the more anxiously the British ace looked after his fuel gauge. Finally, with no other choice, the nine-kill Victoria Cross winner had to cut out for home. He chose to dive out of the fight, building airspeed as he sped back toward his own lines.

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Richthofen gave chase, his Albatros tucked in right behind the DH-2. Hawker saw the danger and started to zig-zag, trying to throw off the German pilot's aim. At the same time, however, his sharp maneuvers killed off his airspeed, allowing Richthofen to close the range.

The Albatros' guns chattered briefly then stopped. Richthofen's guns had jammed! Hawker, now mere feet off the tree tops, was only a few hundred yards from his own lines. If he could just make that stretch, he would be okay.

Undeterred by his jammed guns, Richthofen continued the chase while banging away on his Spandaus with a tiny hammer. Working feverishly, he cleared one of the machine guns and opened fire again. This time, his bullets did their grisly work. One round struck Hawker in the back of the head, killing him instantly. His DH-2 dropped into the shell-torn landscape right in front of a German grenadier unit. The great British leader and tactician had met his match.

Of the fight, Richthofen later wrote, "[it was] the most difficult battle. . . that I



JASTA 2'S PRIMARY WEAPON OF 1916: THE ALBATROS D.II

had experienced thus far." He had emerged unharmed, a hero to his squadron mates. Word quickly spread throughout the German Air Service that Richthofen had killed the "English Boelcke," Lanoe Hawker. And

so began the rise to fame of this Prussian aristocrat. In time he would match, then eclipse the score and tactical genius of his mentor, Oswald Boelcke as he rose to become the war's most famous fighter ace.

CHAPTER EIGHT

APRIL MASSACRE

*When you soar in the air on a Sopwith Scout
And you're scrapping with a Hun and your gun
cuts out*

*Well, you stuff down your nose 'til your plugs
fall out*

Cos you haven't got a hope in the morning.

*For a batman woke me from my bed
I had a thick night and a very sore head
And I said to myself, to myself I said
'Oh! We haven't got a hope in the morning!'*

*We were escorting Twenty-Two.
Hadn't a notion what to do,
So we shot down a Hun and an FE too!
Cos they hadn't got a hope in the morning.*

*We went to Cambrai all in vain
The FE's said, 'We must explain,
Our cameras broke; we must do it again,'
Oh! we haven't got a hope in the morning!
—“We Haven't Got a Hope in the Morn-
ing” 54 Squadron, RFC.*

As the Jagdstaffeln made their presence felt all along the Western Front, Allied aviators found themselves again on the verge of losing control of the air. The German Air Service, now equipped with tough, nimble biplane fighters like the Albatros D. II and Fokker D. II, had come a long way since the blood-letting over Verdun and Flanders.

Now it was the Allies who were at a disadvantage. Their tactics and organization had been copied by their enemy, and now the German aircraft they met in the sky were at least as good as their own, and frequently better. While fighter development in France and Britain produced such excellent designs as the Spad 7, the Nieuports 11 and 17, and the Sopwith Pup in 1916, reconnaissance designs languished. The British were forced to keep using the hopelessly inadequate Be2 Quirk. German aces like Manfred von Richthofen feasted on these hapless planes, making a living by easily knocking them out of the sky. The Be2's replacement, the RE8—nicknamed the “Harry Tate” by its crews—turned out

to be a disaster. Ungainly in the air, and prone to all sorts of mechanical failures, the RE8 was, at best, a marginal improvement over the Quirk.

Then, in early 1917, the next generation of German fighters reached the front. Led by the agile and swift Albatros D. III, the new German designs caught the Allies totally unprepared. Their own replacements for the Nieuports and Spad 7s were just reaching squadron status and had not yet arrived in strength on the Western Front. These included the famed SE5 and the temperamental Sopwith Camel. While the front-line squadrons waited for these new planes, they did the best with what they had on hand, their morale soaring with the knowledge that the Germans seemed on the verge of defeat on the ground.

The year started on a high note for the French and British on the Western Front. The battle at Verdun had finally ended in December, 1916, with the French pulling a victory out of what looked like certain defeat. On the Eastern Front, the Brusilov offensive had nearly crushed the Austrian

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army before petering out when the Germans arrived to bolster their sagging partners. By the end of the year, it looked like the Germans would be finished off in 1917. Allied fortunes were finally on the rise, and all looked forward to what they thought would be the final campaign season.

April, 1917 shattered all their hopes. That month started and ended with disaster, both on the ground and in the air.

On the ground, the French launched a massive, go-for-broke offensive along the Chemin-des-Dames. Naturally, overhead, the air war heated up as the troops went over the top. The operations turned into disaster. In 48 hours, the French lost 120,000 men to the stiff German defenses. The medical corps had prepared only enough beds for 10,000 wounded, causing untold misery to the thousands of wounded who died while waiting to be examined by a doctor or an orderly. As the slaughter continued, the first cracks in the French army appeared. Some units refused to advance, others in the rear would not go back into the trenches, even when their officers

threatened them at gunpoint. The rebellion spread like wildfire from the 6th Army (the one involved in the Chemin-des-Dames offensive) into the rest of the army. By the end of April, 68 of France's 110 infantry divisions were in open mutiny. It took until June to quell the unrest, but by then the damage had been done. Morale in the French army remained low, and for the rest of the war all it could manage were mainly defensive duties and limited offensive operations.

The fighting in the air mirrored the fortunes below. With the new Albatros D. III in full service, the Jastas entered the month in better shape than ever. Tempered by the pitched air battles of the previous fall, the German pilots had both the tactics and the experience to deal the Allied air services a heavy blow. They took full advantage of it.

In Flanders, as Sir Douglas Haig's BEF flung itself at the German defenses around Arras, the Royal Flying Corps was called upon to give full support to the offensive. En masse, artillery spotting Quirks and

Harry Tates crossed the lines to lend a hand in the fighting, only to be chopped out of the sky by prowling Albatros scouts. The fighter squadrons, now flying aging 1916 designs, could offer but little support. As the losses mounted, the replacement pilots entering the fray were so poorly trained they were hardly more than cannon fodder. Morale in the observation units plummeted as the death toll mounted.

The British started the battle of Arras with total superiority in aircraft. Three hundred and sixty five RFC planes blanketed the skies over the battle, fully a third of them fighters. Against this force the Germans could muster only about a hundred fighters and a hundred other planes. By the end of the month, the British had lost 176 machines, while the Germans suffered losses of only 21 pilots and crew killed, and 15 wounded.

Nowhere was the carnage worse than around Douai, where two Nieuport squadrons, No. 60 and No. 29 were stationed. In one four-week period, both squadrons lost 100% of their pilot strength in action. Only the constant flow of inexperienced

replacements kept the Nieuports manned for the daily dawn patrols over Douai. Morale sank as losses increased, but the two squadrons fought on in part because of rising stars like Billy Bishop and Albert Ball, as well as by the false assumption that the Germans were being hit as hard as they were. Day in and day out through April, they clashed with a deadly new threat, Jagdstaffel 11, now commanded by the legendary Manfred von Richthofen.

Richthofen took over Jasta 11 earlier in 1917 at a time when the outfit had done little in the air. It took only a short time for him to whip the squadron into fighting shape. By April, it had all the trappings of an elite formation—experience, dedication, high morale, and a tremendous commanding officer. When they went into action during the Battle of Arras, they soon proved their superiority over the best the British could field. Throughout the month, Richthofen set the pace for all his pilots by shooting down no fewer than 20 British planes, most of which were elderly Quirks and slow FE2s. Other pilots in the units



DOUGLAS HAIG, COMMANDER OF THE BEF.

chalked up amazing tallies as well. Lothar von Richthofen, Manfred's younger and more reckless brother, claimed fifteen kills that month, showing in the process that air

combat ran in his family's blood. Another Jasta 11 pilot, Kurt Wulf, outshone his commander by knocking down no fewer than twenty-two RFC planes between April 6th and April 30th. Karl Allmenroder, a future 30-kill ace, got eight more that month.

By the end of the month, Jasta 11 and its cohorts killed or wounded 443 British aviators. Since the British insisted on offensive operations at all costs in the air, most of the wounded pilots and observers fell behind German lines and spent the rest of the war in POW camps.

The slaughter, known to the British as "Bloody April," had a profound effect on the air war. In the summer of 1916, the average life expectancy of an RFC pilot was 295 combat hours. After April, 1917, the number fell to 92. The war would be fought from then on by a small core of hardened veterans surrounded by neophytes who were little more than victories-in-waiting for the likes of Manfred von Richthofen.

After April, the British and French spent the rest of that spring deploying their latest

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generation of fighters and bombers. The arrival of the Camels, SE5s, RE8s, Breugets, and SPAD 13s helped redress the imbalance in the air. For almost two years now, the air war had seesawed back and forth, with one side gaining the advantage and slaughtering the other until the technological balance swung to the other side. By the summer of 1917, the latest German and Allied planes were just about evenly matched. The technological advantages enjoyed in the past—if but for fleeting moments—would never again be seen. For the rest of the war, the technological race would remain a near dead-heat, a fact that forever changed the nature of the fighting over the Western Front.

Through the summer and into the fall, the air war settled down into a strangling struggle of attrition. No longer would individual feats of bravery affect the course of the fighting as it had back in 1915 when Boelcke and Immelmann struck terror into their British opponents. Two years removed from the Eagle of Lille's heyday, the air war became a simple battle of numbers. The

Allies had them, the Germans did not. Compensating for their lack of numbers, the average German pilot was more experienced and better trained than his Allied counterpart. That fact alone helped even the odds as more and more Allied planes poured into German territory.

Losses were staggering. French and British units took 70% losses each month, but carried on anyway. Others suffered nearly 100% aircrew losses a month, and as the old veterans died, fewer and fewer of the new replacements lived long enough to be of use to their squadrons.

Despite the horrifying casualties, the Allies insisted on prosecuting an offensive air war. By maintaining the pressure on the Germans, they hoped to wear them down. As bloody as the strategy proved, the effect on the German Air Service slowly began to tell. By 1918, the strategy would finally bear fruit.

In the meantime, the killing continued.

One of the first great Allied pilots to die as the air war evolved into this battle of attrition was Albert Ball. Ball cut his teeth in

combat in the early days of air combat where he learned to be a lone-wolf style hunter. He fought with reckless abandon, throwing himself into every fight no matter what the odds or risks may have been. He emerged undaunted after every fight, sometimes through sheer audacity. In the air, he was a one-man whirling dervish, but on the ground, he was a troubling character whose odd habits sometimes made his comrades nervous. He spent much of his off-duty hours tending to his gardens, but on occasion he would build a bonfire, then dance around the flames madly playing a violin. Needless to say it was a quirk that did not endear him to his squadron mates.

Though he preferred to stalk his aerial prey alone, by 1917, circumstances forced him to fly in with other pilots from 56 Squadron. He carried out his duties with the squadron, flying the SE5—a plane he detested—in formation like the others. After he completed these routine patrols, he would frequently exchange his SE5 for the more maneuverable Nieuport 17 and fly solo missions over the front. It was an increas-



RICHTHOFEN SPEAKING WITH JASTA 10'S COMMANDING OFFICER, LT. KLEIN, A 22 KILL ACE.

ingly dangerous pastime.

On May 7, 1917, Ball led a late afternoon patrol over German lines around Lens. The squadron ran right into Richthofen's Jasta 11, and a series of confused mini-battles raged all over the front.

Toward the end of the fight, Albert Ball was seen to dive on an Albatros D. III, almost certainly flown by Lothar von Richthofen. He overshot the German fighter, which was then attacked by Ball's wingman, Lt. C. M. Crowe. As Lothar

fended off this second attack, Ball continued down into a thick cloud layer just below the brewing fight. It was the last time anyone from his squadron saw him alive.

Witnesses later reported seeing Ball's SE5 plunge out of the cloud inverted with its propeller stopped. Too close to the ground to pull up, the SE5 smashed into the ground, killing Ball instantly.

Later research has shown that Ball probably became disoriented in the cloud and accidentally entered an inverted dive which choked the carburetor and killed the engine. The doctor examining Ball's corpse concluded he had suffered a broken back but no combat injuries. Later, the Germans tried to claim that Lothar von Richthofen shot Ball down. They even went so far as to fire a revolver into his SE5's wreckage then show the bullet holes as evidence of Lothar's success.

Either way, Britain's first 40-kill ace was dead.

Four months later, Germany's greatest lone wolf ace, Werner Voss, met his end in one of the great air battles of the First



THE SPAD XIII, ONE OF THE BEST FIGHTERS OF THE WAR. THIS PARTICULAR SPAD SERVED IN THE USAS AS CAPTAIN JOHN MITCHELL'S PERSONAL PLANE. MITCHELL WAS THE COMMANDER OF THE 95TH AERO SQUADRON.

World War.

Voss, like Ball, did not have many friends on the ground. He kept to himself, eschew-

ing friendships with his fellow pilots in favor of spending time alone with his motorcycle. He spent hours tinkering with the

cycle, working away on its tiny engine while dressed in an ancient green sweater much too big for his spindly frame. He loved machines and would spend much time talking with his mechanic about his airplanes and how they could improve on them.

While on the ground he was an awkward, retiring fellow, Voss was pure pilot in the air. A gifted flier with a phenomenal grasp of aerobatics, he could quickly maneuver for a killing shot in almost any situation. Combined with his incredible flying skill were his sharpshooting abilities with his plane's machine guns. Voss was a deadeye shot who used his uncanny accuracy to spare the lives of his opponents. Having been a two-seater pilot once himself, he felt sympathy for his enemy to a degree few of his peers showed. Instead of shooting to kill, he would aim for the engine, hoping to knock it out, while leaving the crew unharmed. In Voss' mind, that at least gave his quarry a fair chance to make a crash landing—and he could claim a victory as well.

By early September, 1917, Voss had risen to command of Jasta 10. His 48 victories made him the second leading ace in the German Air Service, a fact that earned him much publicity and praise. Just 20 years old, Voss hated his new responsibilities. Command did not suit him, and whenever he could, he'd fly his favored lone-wolf patrols.

On September 23, 1917, Voss flew his last patrol. The night before, the young squadron commander had attended a party for one of his pilots who had just earned the Pour Le Merite. He awoke the next morning groggy from a hangover. As a result, he was not at his best.

Alone, he set out over the front that afternoon in his Fokker Dr. I Triplane, a new type just entering use in the German Jagdstaffeln. Near Poelcapelle, he ran across B Flight, 56 Squadron. Led by no less a figure than ace Jimmy McCudden, B Flight represented one of the most experienced formations in the entire RFC. Six-to-one odds did nothing to deter Voss, who fought McCudden and his comrades to a

standstill in an epic, 10-minute fight. He drove off one SE5, put holes in the other five until, at last, sheer numbers began to tell. Somewhere in the fight, Voss probably took a bullet that severely injured him. His flying became erratic, and when he went into a shaky, shallow dive, Arthur Rhys-Davids slipped onto the Fokker's tail and poured a long burst into the Triplane. The fusillade of bullets tore into the Dr. I, and Voss spun into the ground where his craft exploded in flames.

Perhaps the last, great lone-wolf hunter had met his end. With him, so ended the last vestiges of the earlier air war. From now on, the fight in the air would grow increasingly impersonal and bloody as the final climax of the war approached.

CHAPTER NINE

THE YEAR OF EXHAUSTION

"I can't write much these days. I'm too nervous. I can hardly hold a pen. I'm all right in the air, as calm as a cucumber, but on the ground I'm a wreck and I get panicky. Nobody in the squadron can get a glass to his mouth with one hand after of these decoy patrols except Cal, and he's got no nerve. But some nights we both have nightmares at the same time and Mac has to get up and find his teeth and quiet us. We don't sleep much at night."

—Elliot White Springs, Diary of an Unknown Aviator.

When the winter of 1917-18 hit the Western Front, the air fighting died down as the ground war lapsed into another weather-induced lull. As the rain and snow came down, the winter months became a time



GERMAN TANK IN ACTION DURING THE LAST MONTHS OF THE WAR. THE GERMANS BUILT VERY FEW TANKS, RELYING INSTEAD ON NOVEL INFANTRY TACTICS FOR THEIR FINAL OFFENSIVES IN THE SPRING AND SUMMER OF 1918.

for renewal and preparation as both sides readied themselves for the coming spring.

With Russia knocked out of the war, the Allies knew they'd soon be hit by the full weight of the German army in one last, all-or-nothing effort to win the war. They spent the time building up reserves, sending additional squadrons to the front, and bickering over how best to employ the thousands of troops America was just beginning to send to Europe. Though the U. S. entered the war in April, 1917, it had yet to make an impact on the Western Front.

The Germans did likewise. After the Russians surrendered that December, the Germans began transferring hundreds of thousands of troops west to France where they would undertake one last massive offensive designed to end the war before the Americans could get into it in any number. Called the Ludendorff Offensive, the initial plan was to drive a wedge between the French and British sectors of the front with specially trained assault troops equipped with

light machine guns, mortars, and flame throwers.

On March 21, 1918, the Germans opened the Ludendorff Offensive with stunning success. At first, the British seemed to crumple under the weight of the German attack. Ground that cost millions of casualties to gain was surrendered in the first few days of the battle. Along a 60-mile stretch of the front, the German shock troops overwhelmed and threw back the Allied defenders. As the crisis mounted, the British began retreating toward the channel ports, while the French focused on the protection of Paris. Into the growing gap between the Allied armies flowed division after division of German soldiers. For a time, it looked like the offensive would finally break the Allies, but Ferdinand Foch, the commander of all Allied forces in France, threw in his reserves. The German advance slowly lost steam as resistance stiffened and material shortages, including weapons and ammunition, began to plague

the army. By April 5th, the offensive came to a halt after gaining some 40 miles of ground.

The second part of the offensive opened on April 9th. Again aimed mainly at the British, the attack succeeded for a time, but then ground to a halt as British reserves were flung into the battle. No breakthrough had been achieved, but the assault cost the British 100,000 men in less than a month's fighting.

The next phase of the German offensive came on May 27th against the French 6th Army along the Chemin-des-Dames. Initially, this attack proved even more successful than the other two combined as the dispirited and weakened 6th Army buckled, then collapsed. The Germans poured south toward the Marne in hot pursuit of the retreating French. Then, with their advance elements almost to the Paris suburbs, the German attack was stopped cold at a little town called Chateau-Thierry. Ominously, for the Germans, their oppo-

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nent at Chateau-Thierry was the 6th U. S. Marine regiment.

The Americans had arrived in force. Germany had lost the race against time.

When the German offensive opened in March, the air war exploded with renewed intensity. Losses over the two Flanders operations were staggering as both sides fought with a desperation unsurpassed in the war. Hundreds of Allied pilots died in the ensuing weeks attempting to slow the German advance with bombing and strafing attacks.

On the German side, the Air Service cooperated with the ground troops in new ways. Using “infantry battle planes” like the Hannover CL. III and Halberstadt C. L. II, the German Air Service swept ahead of the advancing infantry to bomb and strafe Allied strongpoints and troop concentrations. It was hazardous duty at best, flying down low amidst rifle and machine gun fire. Losses in the ground attack squadrons—known as Schlastas—approached critical levels during the spring offensives. Despite



U.S. TROOPS IN ACTION, SUPPORTED BY A FRENCH TANK.

the casualties, their support proved a valuable component to the early successes in Flanders and along the Chemin-des-Dames.

Battle casualties and operational losses took a staggering toll on the German air units supporting the spring offensives. Between mid-March and mid-May, the squadrons in Flanders lost 479 planes, of which 135 were fighters. The rest were infantry support planes and reconnaissance aircraft. Later, historians calculated that the German Air Service lost at least one-seventh of its total strength each month during the spring of 1918—a figure their limited remaining resources just could not support.

Meanwhile, the Jastas continued to take a heavy toll of Allied aircraft. To compensate for the superior numbers they faced all along the front, the Germans began concentrating their Jagdstaffeln in critical areas in an effort to gain local air superiority. During the initial days of the March offen-



A HANNOVER C.L III, CAPTURED BY THE 95TH AERO SQUADRON.

sive, the Germans actually outnumbered the British on the sixty-mile stretch of front by almost 200 planes. Flying in geschwaders of up to four squadrons at a time, the Ger-

mans mowed down their opposition at an alarming rate. In one 10-day period alone, the Germans knocked down 478 British planes. By April 29th, the toll had risen to

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1, 302, the majority of which came from the reconnaissance and ground attack squadrons. Still, the British had the reserves and kept throwing raw replacements into the Western Front grinder, hoping that sheer volume would make up for experience and training.

To counter the new German tactics, the British and French began layering their patrols and overlapping their squadrons so as to provide each other with mutual support. At times, three or four squadrons would be stacked from 15,000 feet, down to three or four thousand, with different fighter types at different altitudes. Camels usually formed the low patrols, while SE5s and Spads covered their comrades below at increasingly high altitudes.

With the German squadrons now concentrated into Jagdgeschwaders, the spring campaign gave rise to some of the largest air battles of the war. At times, over a hundred fighters could be involved in these tremendous dogfights that raged from just off



EVEN BY THE MIDDLE OF 1918, THE ALBATROS D.V SERVED AS THE BACKBONE OF THE GERMAN FIGHTER CORPS.

the shell-torn landscape up to 20,000 feet and higher. It was the climax of the world's first air war that had begun just three years

before with solo patrols in unwieldy Moranes and Eindeckers.

Though the Germans were giving more than they received, the steady drain of experienced pilots began to take its toll. By early summer, the units were growing exhausted. The tactic of concentrating large numbers of Jagdstaffeln on one critical front had not succeeded in winning local air superiority, for the Allies responded in kind and could absorb the tremendous losses the Germans inflicted on them.

On April 21, 1918, the German Air Service suffered its worst loss of the war. On that day, the legendary Red Baron—Rittmeister Manfred von Richthofen—took off from Cappy Aerodrome with nine other pilots from Jasta 11. The 10 planes broke up into two flights. The lead flight of four planes was led by Jasta 11's commanding officer, Leutnant Hans Weiss. Richthofen, in his scarlet Fokker Dr. I Triplane, took the rear flight of six and set off behind Weiss in search of Allied prey.

At 10:40 that morning, Weiss spotted a pair of RE8s from No. 35 Squadron. At



PILOTS AND CREWS ALONGSIDE THEIR SE5As.

7,000 feet, the two planes were busy taking pictures when the sky around them suddenly erupted with German fighters. Mi-

raculously, the RE8s held their own, fighting back with their rearward firing machine guns with fierce desperation. One of the

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RE8 gunners actually hit Weiss' fighter, severing his rudder controls. Crippled, Weiss limped back to Cappy.

Five minutes after the first flight attacked the RE8s, Sopwith Camels from No. 209 Squadron, led by Captain A. R. Brown, appeared on the scene at 12,000 feet. Brown saw Richthofen's men far below at 5,000 feet and dove to the attack. Soon, Richthofen's men were embroiled in a swirling dogfight with the aggressive Camel pilots.

Flying with 209 Squadron that day was a young neophyte pilot named Lieutenant W. R. May. His flight leader, Captain Brown, had given him explicit orders not to stay in a fight should one develop. Instead, he was to dive for home and avoid contact with any German planes.

When the fight started, May did exactly as he was told. He dove out of the growing dogfight, running westward toward the village of Vaux-sur-Somme. Above him, the Baron saw the lone Camel disengage and



THE SPOILS OF WAR. THREE AUSTRALIAN SOLDIERS DISPLAY THE RED BARON'S MACHINE GUNS TAKEN FROM THE WRECK OF HIS DR.I.

must have figured the pilot would be easy meat. Down went his scarlet Fokker after May, the fight behind forgotten.

May saw the red Triplane and knew he was in trouble. He put his Camel right on the treetops and sped along the countryside for safety. Try as he might, May could not shake Richthofen. The Baron closed the distance quickly and began snapping out short bursts at May's Camel.

Overhead, Captain Brown saw May's trouble and dove down to help. Just east of Vaux-sur-Somme, he slipped behind the Fokker Dr. I. May led the two other planes right over the village and up over a ridge just as Brown got off a long machine gun burst at Richthofen's Fokker.

Suddenly, the Baron's plane lurched upward in a sharp right turn. Now going east, away from May, the Fokker swerved left then crashed into the ground next to the Bray-Corbie Road.



THE FOKKER D.VII WAS THE BEST ALL-AROUND FIGHTER OF THE WAR. THESE EXAMPLES ARE FROM JASTA 18.

The great Red Baron was dead. He took no fewer than 80 Allied planes with him in the course of his spectacular three-year career.

The stunned German Air Service at first refused to believe the news. After so many battles and so many close shaves with death, it seemed inconceivable that Richthofen



BY THE ALLIED SUMMER OFFENSIVE IN 1918, THE TANK HAD BECOME AN INTEGRAL PART OF THE ASSAULT FORCES.

could have finally been killed. Throughout the day and into the next, they waited for news that their leader and inspiration was not dead, but rather a prisoner of the English. When word came through that Richthofen died in the crash, all of Germany mourned his loss. As for the German fighter corps, it had suffered a brutal blow to its morale, one from which it would never quite recover.

After Richthofen, it seemed that one-by-one, the great German aces began to fall. That summer, Erich Lowenhardt was killed during a fight with 56 Squadron when he collided with a comrade's Fokker D. VII. When he died, he was the leading active ace in the German Air Service with 54 kills. The veterans that had so long helped stave off the Allied air offensive were beginning to disappear.

Even worse, material shortages began to strike at the Jagdstaffeln. Spare parts became increasingly harder to find, and rubber and brass fittings became almost unob-

tainable. Units were reduced to stripping wrecks in no-man's-land for strategic materials. By the end of the summer, though the fighter squadrons were still offering stiff resistance, the German Air Service began to run out of fuel.

At the same time, the ground war turned decisively against the German army. That summer, the British, Americans, and French launched a series of offensives that threw the Germans back all along the front. On August 8, 1918—the “Black Day” in the Germany army—the British came within a whisker of achieving a total breakthrough at Amiens. In just three days, they captured 11,000 Germans, 400 guns and 10 miles of ground.

The German gambit to end the war by the summer of 1918 had failed. With it went all hopes of winning the war. As fall approached, Germany teetered on the brink of a military collapse on the Western Front even as it faced revolution and civil war at home.



MARSHAL FOCH AND GENERAL HAIG REVIEWING TROOPS IN 1918. IN 1918, FOCH BECAME COMMANDER-IN-CHIEF OF ALL ALLIED FORCES IN FRANCE. HE WAS THE LAST FRENCH COMMANDER IN CHIEF TO EVER WIN A WAR.

CHAPTER TEN

THE AMERICANS

“You cannot guess how I hate to put these new boys into the hardest kind of fighting, while they are still so totally inexperienced that they do not know how to properly protect themselves. One knows perfectly well when one sends them out that some of them are going to be killed... it is absolutely necessary to throw the green men in, and when they don’t come back, one has to simply grin and bear it.”

—Major Charles J. Biddle, USAS

The Americans stepped into the maelstrom of fighting in strength during the summer of 1918. After a year of organizing and sending troops across the Atlantic, the United States was at last ready for war.

During the spring, the first American fighter squadrons saw action. Most notable of these was the 94th Aero, a unit that would become the closest thing to an



CAPTAIN EDDIE

elite outfit in the U. S. Air Service. Flying outdated Nieuport 28s at first, the 94th Aero Squadron went through a tough baptism of fire, but in the process, discovered it had one of the best pilots of the war in its ranks—Eddie Rickenbacker.

Captain Eddie, as Americans came to know him, was a pre-war daredevil auto racer whose love of all things mechanical naturally drew him toward aviation. Enlisting soon after the war broke out, Rickenbacker at first became the personal chauffeur to the commander of the American Expeditionary Force, General John J. “Blackjack” Pershing. Eventually, he managed to convince the general to release him for flight training, a move that proved wise indeed.

It did not take long for Eddie Rickenbacker to show his stuff in combat. On April 1, 1918, he downed a Pfalz D. III from Jasta 64 over Baussant. A month later, he claimed another Pfalz, this one flown by Lt. Sheerer of Jasta 64.



THE 94TH AERO SQUADRON, AMERICA'S MOST FAMOUS UNIT TO SEE ACTION IN WWI.

By the end of May, his score rose to six, including two more fighters and a pair of Albatros two-seat recon planes.

Just as his star began to rise, fate stepped in. He came down with an inner ear in-

fection that required hospitalization. As a result, he missed the bitter fighting of that summer. In September, during the worst month in the history of the USAS, Eddie returned to action. Flying Spad 13 fight-

HISTORICAL OVERVIEW

ers, he cut a swath through his opponents like no other American pilot. Between September 14th and October 30th, he scored 20 more kills in the vicious fighting over St. Mihiel and the Argonne Forest. When the war ended, his grateful nation later awarded him the Congressional Medal of Honor, one of only two given to fighter pilots for service in France. Rickenbacker later started an automobile company before becoming president of Eastern Airlines. He lived a long, full life, dying at age 82 in Zurich, Switzerland on July 27, 1973.

While Rickenbacker was gaining fame as America's premier ace, the rest of the USAS was taking a pounding at the hands of veteran German Jastas. In the final months of the war, the fledgling American squadrons were pitted against the best formation of the entire war—J. G. 1. Now commanded by Hermann Goring, the Richthofen geschwader was transferred south to the fighting around the Meuse-



RICKENBACKER WITH MEMBERS OF THE 94TH AERO SQUADRON. NOTE THE CAPTURED HANNOVER C.L. III IN THE BACKGROUND.

Argonne to help beat back the latest Allied offensive.

That October saw the USAS take terrible losses as it supported the Allied drive in the Meuse-Argonne area. When the offensive started, the Americans had a total of 646 planes at the front. Throughout the last two months of the war, new replacements and fresh units joined the fighting, but the service suffered such high casualties that the number of planes available actually shrank by the time of the Armistice.

From the nearly 650 planes ready at the outset of the Meuse-Argonne offensive, the USAS had only 579 by October 15th. When the war ended, 479 were left in the front-line units. During that time, the three pursuit groups in action went from a total strength of 300 Spad 13s to less than 150.

In October alone, the Americans lost 537 planes in action and 583 aviators. Additionally, training claimed the lives of



THE NEW AMERICAN FIGHTER SQUADRONS FIRST USED THE NIEUPORT 28 IN COMBAT BEFORE SWITCHING TO THE SPAD XIII. THE NIEUPORTS SEEN HERE BELONG TO THE 95TH AERO SQUADRON.

hundreds more pilots and aircrew. A 1920 evaluation of losses concluded that for every American killed in action over the front, three pilots died in training.

Yet, despite the losses, the Americans were the final element needed in the Allied equation to secure victory over the stubborn German defenders. Though losses

HISTORICAL OVERVIEW

ran high both on the ground and in the air, the influx of fresh American pilots and soldiers swelled the ranks of the advancing Allied armies and ensured the victories at St. Mihiel and the Argonne Forest. In the final days of the war, America lost nearly 100,000 men to achieve that victory.

After four years of brutal, exhausting warfare, Germany had at last reached the end of its rope. At home, its citizens were war weary and threatened with full scale starvation. Influenza outbreaks all over Germany had killed thousands and left the population weakened and dispirited. Finally, as the German army slowly collapsed on the Western Front, the navy mutinied at home, sparking a revolution and a rebellion that lasted until 1920.

Germany had no choice but to surrender. As the Kaiser fled to neutral Holland, Germany asked for an Armistice based on American President Wilson's famous Fourteen Points. On November 11,



HERMAN GORING (LEFT). FIGHTER ACE, FUTURE MORPHINE ADDICT AND NAZI, GORING COMMITTED SUICIDE AFTER BEING SENTENCED TO DEATH BY THE NUREMBURG TRIBUNAL IN 1946.

1918, at 11:00 in the morning, the fighting ceased. The worst four years in European history finally had come to an end.

The death toll was appalling. Ninety percent of all French males between the ages of 18 and 24 had been killed or wounded in action. Sixty percent of its army became casualties during the war. The British had 900,000 dead; the Germans, 1,800,000. Much of Europe lay in ruins or in hopeless poverty. Diseases ravaged the Central European nations as starvation continued to claim victims as well.

In the end, all the suffering, the misery, and death the war caused solved nothing. The peace treaty signed at Versailles in 1919 went a long way to ensuring that. Within that document lay the seeds for a second great war within a generation, a war that would surpass even the carnage of World War I. So the lull that fell across no-man's-land that November was but a stay of execution for much of



UNDERTRAINED, THE AVERAGE AMERICAN PILOT WAS NOT A MATCH FOR THE VETERAN GERMAN AIRMAN.

HISTORICAL OVERVIEW



AN AMERICAN 1ST AERO SQUADRON SALMSON TWO-SEATER IN FLIGHT.

Europe. For 20 years the uneasy peace lasted until Hitler's armored spearheads ground into Poland in September, 1939. When the panzers rolled that autumn, the

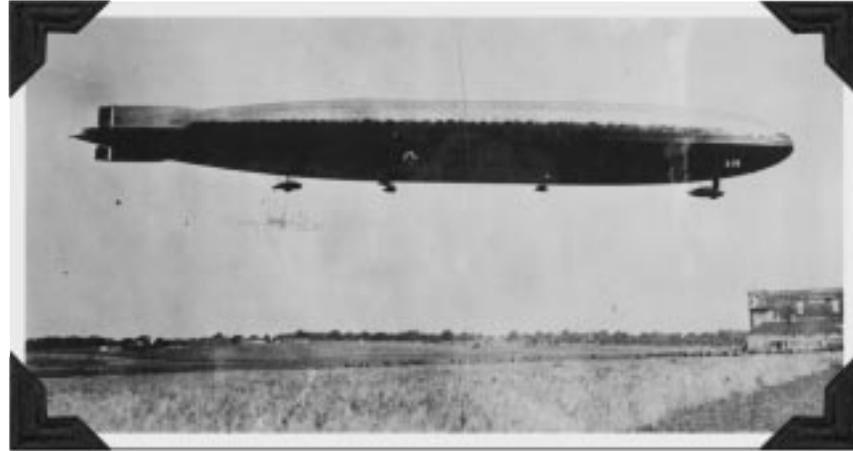
ghosts of the Great War rode with them. The great European calamity, sparked by that one wrong turn by Franz Urban in June of 1914, was at last complete.

EPILOGUE

THE AIR WAR'S LEGACY

By the time the fighting finally ended in 1918, every major element of modern air warfare had been developed and employed in action by Germany or the Allied powers. From the early days of bottles and bricks being thrown at passing aircraft, air-to-air combat had been refined to a deadly science. Bombing raids, once ineffective and almost laughable, had also become more effective, with specific targets like railroad stations or vital bridges. In the infantry attack planes used to support the ground troops in 1918, one can see the inspiration of the Stukas and Sturmoviks of the Second World War. Even the A-10 Thunderbolt II has its roots in the armored aircraft used by the Schlachtas at the end of the Great War.

The zeppelin raids of 1916-1917 on British industries represented the first strategic air campaign in history, where one side tried to destroy the other's means of waging war. The subsequent Gotha raids on London and



ZEPPELINS TERRORIZED BRITAIN DURING THE MIDDLE PART OF THE WAR.

its environs through the remainder of the war convinced the British that strategic bombing in the future could win wars by airpower alone.

The strategic air war also had one other impact on the future. The Royal Flying Corps became an independent branch of the military in Great Britain on April 1, 1918,

largely due to the constant air raids over London. Unchained from the army and navy, the new Royal Air Force set to work justifying its independence through the remainder of the war, and continued to do so in the 20s and 30s by focusing on strategic aviation. The two issues became hopelessly intertwined, leading the British to

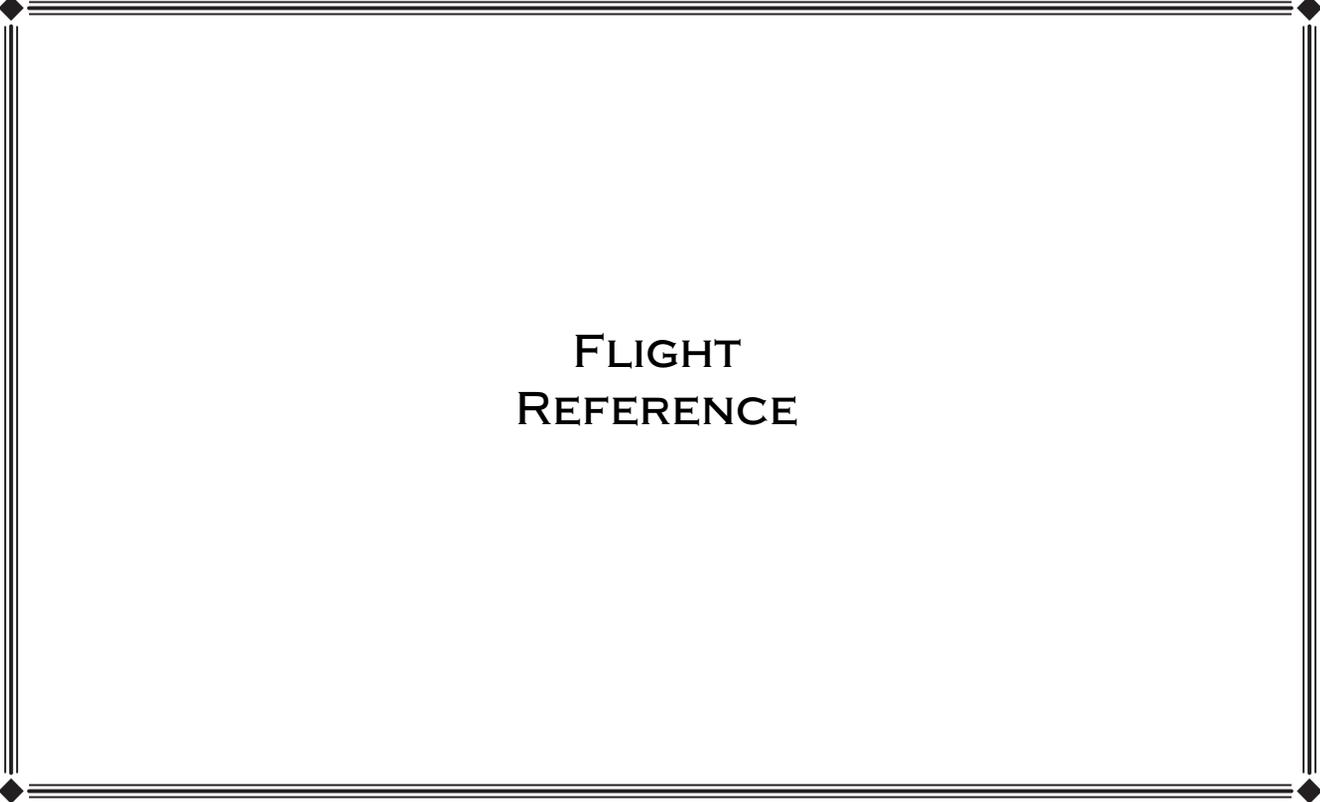
HISTORICAL OVERVIEW

make some pretty serious doctrinal mistakes in the inter-war years. Incidentally, the same thing happened to the Americans.

Today, the First World War is but a dim memory in the United States. In Europe, its horrors have been overshadowed by the misery and carnage of World War II. Still, the Great War set the tone for the first half of the 20th Century, and from its mud-filled trenches and bullet-torn skies, the future could be gleaned. In the air, the Great War saw the fastest rate of technological advances ever made in aviation history. Today, the legacy of the air war still endures in the sleek modern fighters, bombers, and ground attack aircraft used the world over. On their steel wings fly the undiminished memories of the Great War's Camels, Fokkers and Spads.



THE LAST OF A BREED: A LATE-WAR JASTA CARRIES ON TO THE END, FLYING A MIX OF FOKKER D.VIIs, ALBATROS D.Vs AND FOKKER DR.Is.



**FLIGHT
REFERENCE**

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 the craft. During the American Civil War, balloons were used by the Union army for observing the battlefield.

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 inven-



AN AIRCRAFT ASSEMBLY PLANT.

tors 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 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 a 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 Bleriot developed one of the first successful monoplanes complete with a tail for balance at the rear.



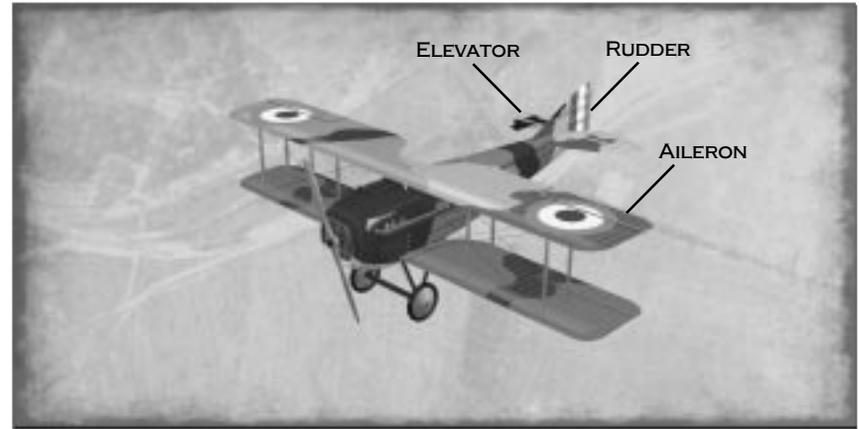
WORKERS CREATE AIRCRAFT FUSELAGE PARTS.

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



CONTROL SURFACES OF AN AIRPLANE

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 is produced.

When an aircraft is in level flight at a constant speed, 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.

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 nose 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



TO ROLL LEFT, PUSH THE STICK TO THE LEFT; TO ROLL RIGHT, PUSH THE STICK TO THE RIGHT.

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 direc-

tion. This causes the aircraft to bank. The ailerons are controlled by the stick. To 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 propel-

FLIGHT REFERENCE

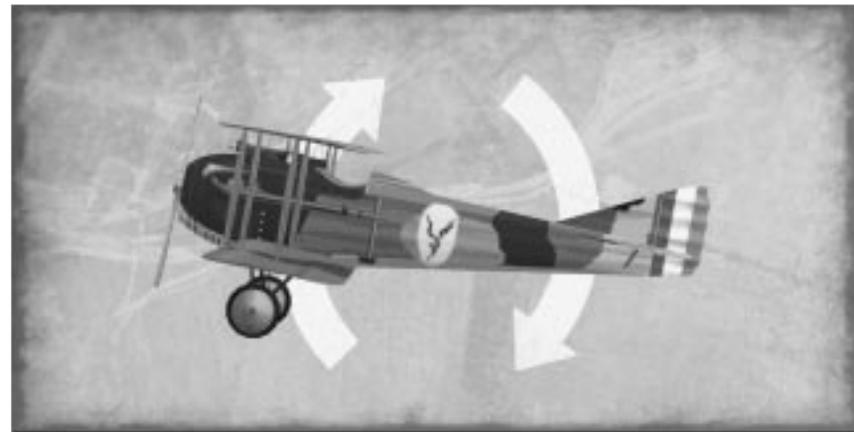
ler, thereby increasing the speed of the aircraft.

The aircraft of World War I 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 to keep the aircraft's nose level with the horizon. The Sopwith Camel had the most pronounced gyroscopic tendencies.

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



TO PITCH DOWN, PUSH FORWARD ON THE STICK; TO PITCH UP, PULL BACK ON THE STICK.

bleed off speed. The greater the bank, the faster the turn rate. Gently pulling back on the stick while banked will result in an even tighter turn. More altitude is lost during a tighter turn, so keep your nose pointed above the horizon during the turn.

THE TAKEOFF

The takeoff procedure is performed a little differently for World War I aircraft than for modern aircraft. The aircraft of WWI were tail draggers—they were equipped with a tail

skid rather than a 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 too far forward on the stick or you may find your propeller plowing into the ground! Now that the tail 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. You may damage your landing gear if you stay on the ground at too high of a speed (above 60 mph). Do not attempt to climb at too steep of an angle or your aircraft will go into a stall (with no room for recovery).

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, 40-50 mph). 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 to allow you to come in at a lower speed. Do not try to land with your nose



TO YAW LEFT, APPLY LEFT RUDDER; TO YAW RIGHT, APPLY RIGHT RUDDER.

below the horizon. When your wheels contact the ground, keep gentle pressure back on the stick so the nose of the aircraft doesn't pitch too far forward (caused by the increased drag of the wheels on the ground).

Takeoffs and landings are much easier at an aerodrome, because the area has been

specifically prepared for aircraft. It is still possible to land on the open countryside, but the ground is rougher and the chance of losing control increases. Also, be sure to avoid landing or rolling onto forests or rivers—they'll spell the end of your aircraft!

Don't worry if you don't get the hang of takeoffs and landings at first. If you want

FLIGHT REFERENCE

to, you may activate the aircraft autopilot AI to takeoff or land for you. See **Autopilot** in the *Game Play* section of the manual.

easy to get confused when you see the ground spinning around rapidly and, consequently, move the stick to the wrong side!

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 WWI 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

FLIGHT MANEUVERS

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!



ZOOM OR ZOOM-CLIMB

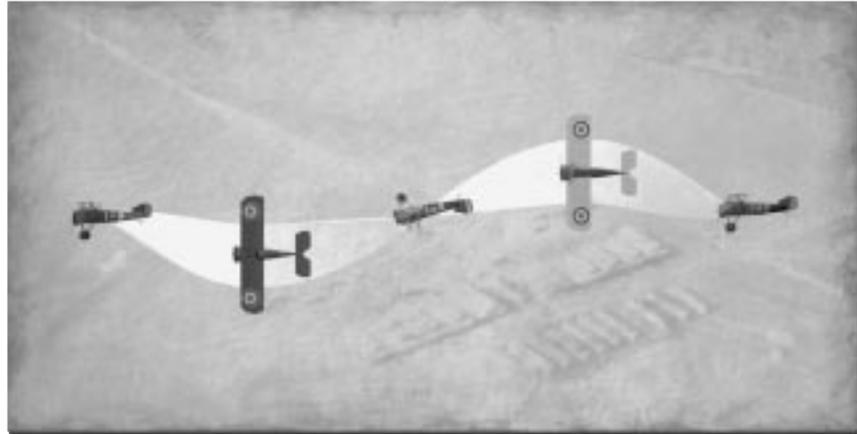
A very steep climb at high speed, the zoom-climb is usually performed after a dive. Sacrificing speed for higher altitude, it was used by the aviators of the Great War after they made a diving attack on an enemy aircraft to pull up beyond the reach of the enemy.

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



BARREL ROLL

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

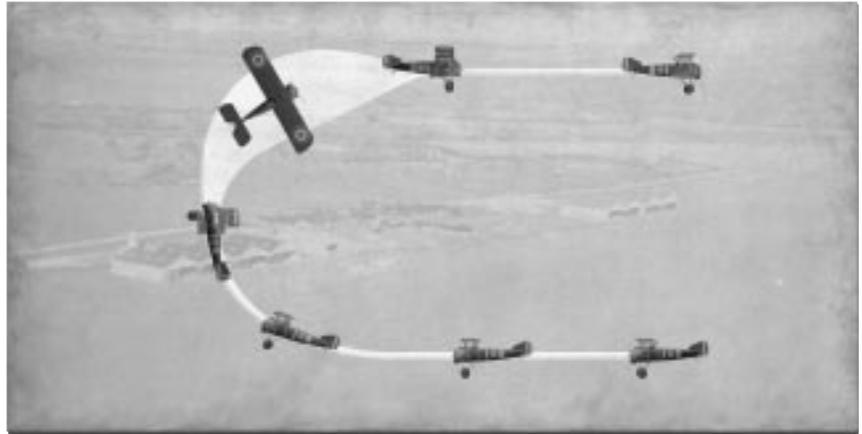


HALF-LOOP

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

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.



IMMELMANN TURN

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



FLIGHT REFERENCE

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), otherwise you'll stall halfway through the loop!



RETOURNMENT

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.



FLIGHT REFERENCE

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.



SIDE-SLIP

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.

SLIP-TURN

The slip-turn is a flat turn performed exclusively with the rudder. Unlike a normal banked turn, the 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.



FLIGHT REFERENCE



A FOKKER DVII COMES "OVER THE TOP" IN A LOOP. THIS DVII WAS USED IN SEVERAL AVIATION FILMS IN THE 1920s, INCLUDING THE HOWARD HUGHES EPIC, "HELL'S ANGELS."

BATTLE TACTICS OF THE GREAT WAR

ACE VERSUS ACE

They were down to just four scouts. For weeks, Jasta 15 fought desperately against the rising tide of Allied airpower. One by one, the pilots went to their deaths, carried to the ground below in broken, flaming birds. By the summer of 1917, the squadron had just three sergeant pilots and rising ace Ernst Udet. The squadron commander, Henrich Gontermann, had seen enough of the war. One day, he took Udet aside and led him over to a metal table. Deftly, Gontermann bent over and scooped up some pebbles and a leaf. Putting the leaf on the table, he barraged it with pebbles until his hand was again empty. Each time a pebble struck the table, it sounded like a bullet striking home.

“You see, Udet,” Gontermann lectured,

“that’s the way it is. The bullets fall from the hand of God. They come closer and closer. Sooner or later they will hit us. They will hit us for certain.”

The long war of attrition was taking its toll. Even the most stout hearted, such as Gontermann —wearer of the Blue Max and universally respected by his peers — could not take the daily losses forever. Sooner or later, a pilot’s nerves would be shot.

Udet fought on, knowing his experience and expertise could keep him alive. Then one day in June, 1917, at the height of his squadron’s crisis, he ran into a tan SPAD VII with “Vieux Charles” spelled out in black letters on the fuselage.

It started at 15,000 feet over the little French town of Liearval. Flying alone, Udet had crossed the lines in search of an Allied observation balloon. Before he found it, though, a speck appeared off to the west. As it grew closer, he could see it was a Spad. He turned toward it, and the German’s Albatros scout rushed headlong at the sturdy French biplane. They barreled past each other, mere feet apart. Both pilots now were too intent on the kill to be rattled by

such a narrow evasion of death. Udet broke hard left, trying to come around behind the Spad. As he looked back at his enemy, he could see the Spad doing the same thing. Suddenly, they were locked in another head-on pass. Again, the two planes brushed by, escaping a collision by only the narrowest margin.

The battle continued as each pilot circled the other. Every few seconds, they leveled out of their tight turns to make a quick head-on attack before quickly banking hard to come around one more time. After one such run, Udet passed so close to the Spad that he recognized the “narrow, pale face under the leather helmet.” It was France’s ace of aces, Charles Guynemer.

Convinced now he had his hands full, Udet resolved to stick it out, fighting this legendary French ace to the death. Swiftly, after another head-on attack, he pulled up into an Immelmann and tried to roll back down on the French ace. No good, Guynemer spotted the move and looped away. Udet broke into another hard turn, but as he emerged from it, Guynemer pounced. Guns rattled and Udet saw bul-

FLIGHT REFERENCE

lets tear across his wings and struts.

Desperate now, Udet threw his plane all over the sky. It did no good, for Guynemer matched every maneuver with one of his own. Always, the French ace seemed a bit faster, a bit better. Then, for an instant, the Spad appeared in his sights. It was Udet's one chance to take a shot, and he never hesitated. His finger crunched down on the gun tit on his control stick. Nothing. He pressed it again. Still nothing. His guns had jammed!

Now what would he do? Taking the stick in his left hand, Udet tried to clear the jam with his right hand. No good — he couldn't get the shell out. Briefly, he considered breaking away and diving for home, but he quickly squelched the thought. Guynemer would have jumped all over his tail in that sturdy Spad had he tried to get away. No, his only chance lay in evading Guynemer's attacks until the French ace tired of the game.

They went at it for eight more minutes, turning banking, arching up and down in half loops and split S's. By some miracle, Udet managed to keep Guynemer from get-



GUYNER'S FAMOUS SPAD VII

ting all but the most fleeting of shots in at him. As the fight continued, Udet never gave up trying to clear his guns. Finally, out of sheer frustration, he began banging

his fist against the guns. Just as he did, Guynemer soared over Udet's plane, inverted. As the Frenchman passed by, he saw Udet's gesture and realized the

German's predicament.

Guynemer finished his pass then reversed his turn, coming back straight at Udet, almost inverted again. Udet was cold meat and he knew it. But instead of a torrent of bullets, all he received from Guynemer was a jaunty wave. And then he was gone, diving for home, his Spad disappearing rapidly into the gray summer's day.

Udet returned to Jasta 15 in a state of near-shock, his plane shot full of holes. Only through Guynemer's chivalry had he survived his brush with death.

Udet's fight with Guynemer ranks as one of the all time one-on-one duels in aviation history. Two great masters fought it out, using every ounce of performance they could draw from their machines in concert with every maneuver and every tactic they had ever learned. In this one fight, the essential elements of World War I air combat can all be distilled and examined.

Engagement

When Udet first spotted Guynemer clos-



TAKEN AT KOBLENZ IN 1919, ERNST UDET AND BRUNO LOERZER CHAT WITH THEIR FORMER ENEMIES. UDET IS SEATED AT THE FAR LEFT, WHILE LOERZER IS SEATED AT THE FAR RIGHT.

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ing in on him, he reacted instinctively. While some inexperienced pilots would have attempted to dive away, or turn away from the French Spad, Udet knew he had to turn *toward* Guynemer. Had he turned away, the Spad would have been on his tail in a heartbeat. And with its superior diving abilities, the Spad would have caught even the best German plane in a long dive from 15,000 feet. Turning toward the enemy aircraft, however, as Udet did, denied Guynemer a tail-shot and initiated a head-on attack.

The manner in which pilots engaged their enemy often dictated just how the fight would turn out. Canny pilots would often stalk their prey for long periods, climbing above to get every possible advantage. The best possible position to engage an enemy was up sun, and above and behind. With the sun behind the attacker, the defending pilots would have been hard-pressed to see the attack coming. Meanwhile, diving down from above gave the attacking plane extra speed—energy—that could be used to maintain an advantageous position on the defender. And, best of all, attacking from

the rear usually meant that no return fire could be expected (unless, of course, the defender happened to be a reconnaissance plane or a bomber).

Battle

Once the battle was joined, both Udet and Guynemer did their best to protect their vulnerable tails. To do that, they ended up in a turning contest, each one seeking the other's rear while striving to cover their own. As a result, the initial part of their contest developed into a series of turns punctuated with short, violent, head-on passes. Neither pilot could get directly behind the other though, through the course of the fight, Guynemer had several split-second opportunities to take a shot. He was an excellent marksman, so those fleeting chances were all he needed to stitch Udet's plane full of holes.

As the battle progressed, Udet could see that Guynemer was not only a better pilot, but his Spad was a better plane. If he had continued to turn-fight with the Spad, Guynemer would have eventually won the fight. So, Udet chose to take what had been

a horizontal fight into the vertical plane by executing an Immelmann. Against a normal opponent, Udet's move probably would have cleared his tail and given him an opportunity for a killing shot on the Spad. Not true with Guynemer. The French ace instinctively understood what Udet was attempting to do, so he followed with vertical maneuvers of his own.

Turning Versus Hit-and-Run

In the battle phase of a World War One dogfight, there were two main sets of tactics that could be employed. Turn fighting — as Udet and Guynemer did at the outset of their duel — was probably the most common until late in the war. Here, adversaries would swirl around, using their aircraft's turning agility in an effort to get on each other's tails for a killing shot. This is the type of dogfight usually portrayed in World War One aviation films.

The other type of fighting, more commonly used by the Germans toward the end of the war, was the hit-and-run method that today's fighter pilots sometimes call energy fighting. Here, a pilot in a plane

with superior speed attributes picked a target below that he could make a diving attack upon. Having selected the target, he would swoop down, making a firing pass as he went, then climb back above his quarry. By trading altitude for speed and energy, he could always maintain the advantage over his slower — and lower — target. By racing back up above the target craft, the attacker would deny him any chance of a counter shot.

Toward the end of the war, especially in the summer of 1918, the German Air Service found itself so outnumbered in the skies over France that its pilots were forced to resort to hit-and-run attacks. Usually, the jagdstaffeln would patrol the front, picking out Allied aircraft below them to attack. They'd dive down, make a pass, maybe two, then run for home. It was all they could do in the face of overwhelming odds.

To counter these types of attacks, the British began stacking flights of fighters at different altitudes. In the final months of World War One, the RAF would sometimes patrol the front with three of four squadrons covering each other for mutual



THE FOKKER DR.I WAS ONE OF THE BEST PURE TURN FIGHTERS OF THE WAR. HOWEVER, IT WAS ILL-SUITED FOR THE HIT-AND-RUN TACTICS GERMAN PILOTS WERE FORCED TO USE BY 1918.

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protection. Usually, the Camels would cruise at medium to low altitude, while the SE5s provided high cover. Such an innovation forced the Germans to react as well. They started flying higher patrols, trying to maintain an altitude advantage even against the SE5 squadrons. In the latter stages of the war, the BMW-engined Fokker D. VII proved to be the best high-altitude fighter of the war. Some of the D. VII pilots could actually claw their way up to 20,000 feet or more. At such amazing heights, the SE5s were nearly helpless.

Make the Tactics Suit the Aircraft

Throughout World War One, and indeed throughout aviation history, the battle tactics were usually dictated by either circumstance (such as the Germans being outnumbered at the end of the war) or by the aircraft types employed. Some airplanes are better than others at turn-fighting, while others excel at hit-and-run attacks. For example, the best two pure turn-fighters of the Great War were the Sopwith Camel and



THE BEST HIGH ALTITUDE FIGHTER OF THE WAR: THE FOKKER D.VII. THESE EXAMPLES ARE FROM JASTA 72. THE FOKKER IN THE FOREGROUND BELONGED TO THE SQUADRON COMMANDER, LEUTNANT KARL MENCKHOFF.

the Fokker Triplane. Neither possessed great speed or diving ability, but both could maneuver and turn better than any other plane deployed during the war. The problem with these two fighters — especially with the Fokker Triplane — was that they were unable to disengage from a fight if the pilot felt the odds were against him. They couldn't run away, for the Fokker and Sopwith lacked the speed to do so. Nor could the Dr. I dive away from most Allied types, including the SE5 and Spad XIII. So, these two great turn-fighters could sometimes trap their pilots in bad situations from which other plane types might have been able to escape. Werner Voss's last fight against 56 Squadron was a clear example of this flaw in the Triplane. Voss fought six SE5s to a draw for 10 minutes in a classic turn-fight. But, the minute he tried to disengage, he was caught from behind and shot down. No Fokker DR. I could have out-dived an SE5.

The best hit-and-run fighters included the Spad XIII, the SE5, and the Fokker D. VII. The Spad was probably the most sturdy and dependable fighter of the war in

steep dives. While other fighters lost wings in fast dives, the Spad XIII hung together thanks to its solid construction. Though it could not turn as well as the late generation German fighters, it could hit and run with the best of them. A Spad in capable hands was more than a match for any German fighter.

The SE5's best attribute was pure speed. In fact, it was the fastest fighter of the war with a top speed close to 140 mph. Solid in a dive, and capable of limited high altitude flight, it was the Allies' best answer to the Fokker D. VII.

The D. VII was not as fast as the SE5, but the BMW-powered versions could fly higher and maintain better performance. Moreover, the D. VII was evenly balanced. Capable in a turn-fight, it could also be used as an energy fighter for hit-and-run attacks. Overall, the D. VII offered the greatest tactical flexibility to its pilots, making it probably the best fighter of the First World War.

When playing *Red Baron II*, be sure to learn what method of dogfighting best fits your aircraft. Then, when you engage an enemy formation, use your aircraft's at-



FRANK LUKE BESIDE HIS SPAD XIII. LUKE WAS NOT A TACTICAL GENIUS, BUT HIS ULTRA-AGGRESSIVENESS LED HIM TO RACK UP AN IMPRESSIVE SCORE BEFORE GETTING SHOT DOWN IN SEPTEMBER, 1918.

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tributes to your advantage. Don't, for example, try to turn-fight with a Fokker Dr. I if you're in a Spad XIII. That will just send you to an early grave. Hit and run in that situation. A good part of the fun in *Red Baron II* is learning about how the different planes fly, and how best to employ them.

Be sure your tactics also fit the strategic situation on your stretch of front. If you're hopelessly outnumbered by the enemy, getting into twisting, turn-fights might be a mistake. In such situations, you may want to get your hands on a hit-and-run fighter so that you and your men live to fight another day. Remember, in campaign games, it is important to keep your NPC pilots alive, so plan your engagements carefully and maximize your advantages.

Disengagement

Sooner or later, every pilot had to head for home after a fight. Sometimes, fuel considerations forced a pilot to cut and run for his side of the lines. Other times, it was ammunition. On occasion, pilots disengaged because they were at a disadvantage in a fight. Most pilots felt that it was better



A FOKKER D.VII CAPTURED BY THE 95TH AERO SQUADRON ON THE VERDUN SECTOR.

to survive and fight again later, then stay in a battle with the deck stacked against them. Of course, there were exceptions to that rule, but most of the exceptions lie in soldiers' graves in France.

To disengage in the middle of a fight, every pilot had to know the capabilities of his own craft compared to those of his enemy. Some World War I aircraft could climb faster than others, so climbing out of a fight

could be an effective way to disengage. Others, like the Spad XIII, could out dive anything on the Western Front. Spad pilots could usually get out of any fight they were in if they had altitude to dive away. Other planes had great level speed and in some cases could break out of a fight by just running away.

That latter tactic was always fraught with peril, however. In late 1916, Lanoe Hawker found this out when he tried to run away from Manfred von Richthofen. Down low and nearly out of gas, he had no choice but to just cut and run, jinking around as he went to throw off the Baron's aim. Of course, the DH-2 and the Albatros D. II were about equal in speed, with the D. II having a slight edge. Not surprisingly, Richthofen managed to catch Hawker from behind and shoot him down.

The fight between Guynemer and Udet demonstrated just how important disengagement options were to the pilots of the Great War. Very soon after entering the fight, Udet realized he was outmatched by his French enemy. Guynemer proved to be a superior pilot and the Spad XIII he was fly-

ing was a better overall aircraft to Udet's Albatros. Had Udet been able to run away, he probably would have taken the first opportunity to do so. However, he realized that his plane could not dive away from Guynemer's Spad, and the chance for him to climb away was negligible as well. In the end, the circumstances of the engagement forced him to fight it out knowing the cards were against him.

In *Red Baron II*, always try to have an escape route. If your fighter climbs well, be sure to keep your speed up in a fight so, if the need arises, you can head for the hills. Whenever possible, avoid fights that you won't be able to get out of after they start. It is not wise, for example, to go charging alone into a flight of SE5s while flying a Fokker Dr. I. You won't be able to get out of the fight unless you shoot all the SE5s down, or they decide to run away. Conversely, if you have an altitude advantage and want to attack a formation of Albtros D. Vs with your SE5, your superior performance and ability to disengage offsets, to an extent, their advantage of numbers. Basically, it comes down to this: try to dic-

tate the terms of the dogfight to your enemy, while always keeping an escape route open. Disengaging is sometimes seen as inglorious, but it will keep you and your pilots alive.

Ground Attacks

During the final months of the Great War, aircraft were used more and more for infantry support missions. Squadrons were sent out to strafe and bomb enemy infantry in front of friendly ground units. This required cooperation with the PBI (poor bloody infantry) so friendly troops were not strafed. Above all, the attacking pilot had to know, or at least have a reasonable idea of, where the friendlies were and where the enemy was in relation.

When strafing trenches or infantry in the open, World War I pilots tended to get right down on the deck. Sometimes, infantry officers reported being attacked by planes that were flying less than 25-50 feet off the ground!

In *Red Baron II*, try hunting infantry from about 500 feet. Once you spot your quarry, make shallow, diving passes at them, guns

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blazing. If you have bombs, use them too, but try releasing them above a few hundred feet, as you might be hit by your own bomb blast, otherwise. Once you finish your pass, climb back up to 500 feet, circle around and go back in. While making these strafing runs, be certain to keep checking the sky around you. Many World War I pilots died when they became fixated on their targets and forgot to check their tails.

When attacking other targets, such as airfields, anti-aircraft fire can get quite intense. Many Great War pilots learned it was best to make only one pass on such targets, causing as much damage as possible before zooming out of range. The single pass will usually minimize the amount of AA fire you take as you strike your target. Another option would be to try and knock out the AA guns in your first pass, freeing you up to attack the target with impunity.



A GERMAN MACHINE GUN PLATOON MOVES FORWARD ALONG A FRENCH COUNTRY LANE. SUCH DAYLIGHT MARCHES BECAME INCREASINGLY HAZARDOUS BY WAR'S END, AS MARAUDING ALLIED AIRCRAFT SEARCHED FOR JUST SUCH TARGETS.

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 deadly place to be. During Bloody April, some 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 keen 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 put to paper 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 von Richthofen, attack before

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evaluating the situation. While you may score some spectacular victories, chances are you'll be flamed before the armistice. 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, 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 dog-fighting against superior numbers.

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

Often a green pilot, in his first engage-



“BEWARE OF THE HUN IN THE SUN”: THE PILOT HAS A DIFFICULT TIME SPOTTING ENEMY AIRCRAFT THAT ARE IN HIS SUN BLIND SPOT. IT IS A COMMON TACTIC FOR A PILOT TO ATTACK WITH THE SUN AT HIS BACK.

ment 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

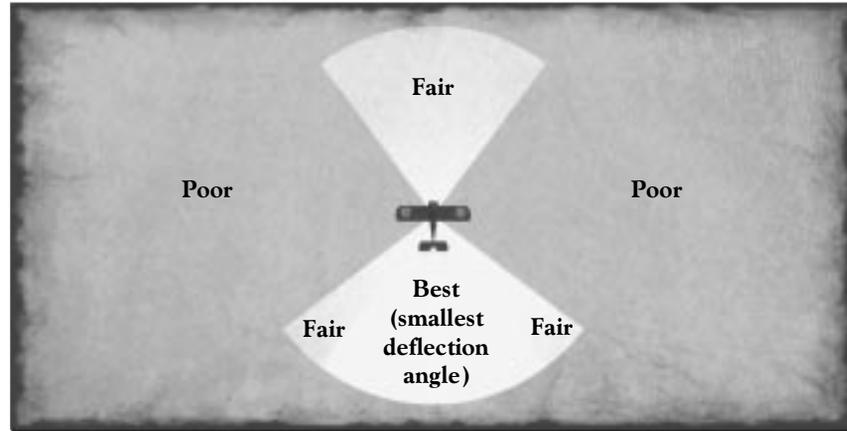
the air, commit to a target. Don't break off the attack until you've completed the firing run. Your aggressiveness will often frighten your opponent into making a mistake. Many a novice pilot will freeze up when an enemy is on his tail.

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, then 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 the machine guns and will waste ammunition.

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

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



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.

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

The art of deflection shooting was so difficult to master during the Great War that many pilots didn't even bother to try. A few of the great aces, most notably Mannock

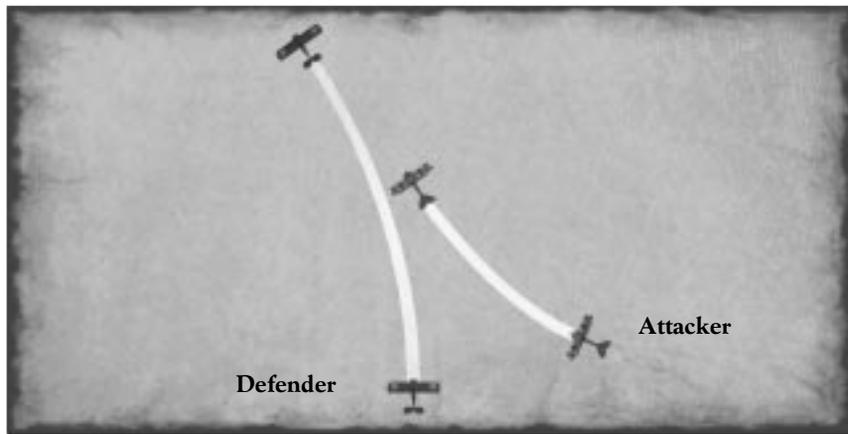
and Fonck, successfully made deflection shots in combat.

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

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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.

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



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.

too, while you're making your pass. Finally, you run the risk of a collision if one of you does not swerve.

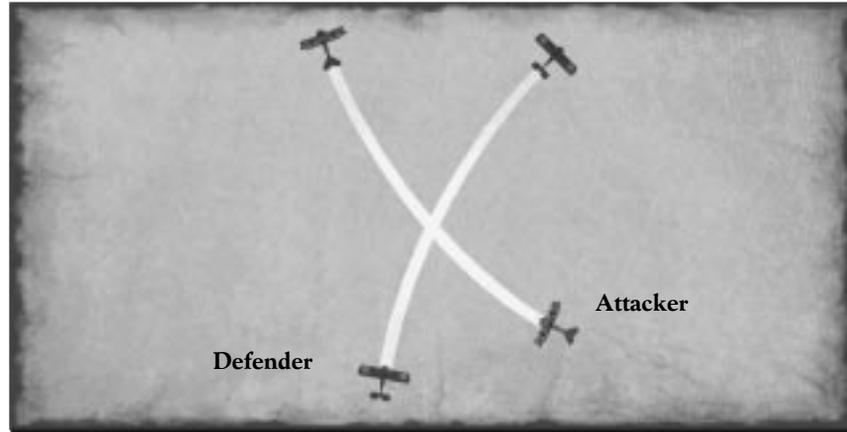
Attacking from the rear is much better. Often your target won't see you. If you are

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. Instead, turn hard to your right. Even though you will cross his line of fire, it will only be for a brief moment. By turning toward him, you cut inside his turn and he 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.



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.

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 dam-

aged plane and had to land in enemy territory. Make sure you know where you are and where the front is.

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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

Attacking Two-Seaters

Albert Ball had to be the worst air combat tactician to make ace in World War I. He threw himself headlong into fights despite being outnumbered, cornered, or at any disadvantage. He didn't care, all he wanted to do was fight.



A ROLAND C.II. WELL ARMED AND FAST, THESE WERE DANGEROUS TWO-SEATERS TO ATTACK. BALL FOUND THEIR WEAK SPOT BY ATTACKING THEM FROM BEHIND AND BELOW.

But, when it came to attacking two-seaters, even Ball approached them with care. He learned early in his career that to make a diving attack on a two-seater's tail simply courted disaster. The observer/gunner could easily draw a bead on him and plink his scout full of holes. That sort of risk even Ball refused to take. So, he looked for a blind spot that would let him get a shot in without worrying about any return fire.

One day in 1916, he discovered where that was. Patrolling the front alone, as usual, he ran across a couple of Roland C. II recon planes. The rear gunner on the C. II had an excellent field of fire due to the placement of the wings. Any attacking plane coming in from above, the sides, or dead behind were in his firing arc, and if Ball had chosen to make a head-on pass, he would have had a Spandau machine gun blazing away in his face.

Realizing this, Ball dove down behind and beneath the Whalefish and crept up on it from below. With his extra speed from the dive, he closed the distance to his target quickly. Once directly underneath, he pulled up and sprayed the Roland with long



BILLY BISHOP DEMONSTRATES HOW TO USE THE LEWIS GUN MOUNTED ATOP HIS NIEUPORT'S WING. BALL WOULD SLIDE THE LEWIS DOWN THE FOSTER MOUNT THEN AIM THE GUN UP AT HIS OPPONENT'S BELLY.

FLIGHT REFERENCE

bursts from his wing-mounted Lewis machine gun. Stricken, the Roland fell off into a spiraling dive that ended only when it impacted with the ground below. Just like that, Ball had discovered the Roland's weak spot. Moreover, it was a weak spot shared by all two-seaters.

In *Red Baron II*, two-seaters can be just as deadly as they were in the Great War. Taking on a Roland C. II or a Hannover C. III from above and behind is just going to get you killed. Copy Ball's method! Get above and behind your target — but well out of his gunner's range — then dive down below him and give him a squirt in the belly. The two-seater will probably jink and bank as he tries to give his gunner a shot, so be quick with the pass and break away if you start receiving return fire. You can always make another run.

Another, less favorable approach to attacking two-seaters was a head-on pass. Early in the war, many recon planes didn't have a forward firing machine gun. The Aviatik, the BE2, and the later RE8 all shared this blind spot. In certain cases, it may make more sense in *Red Baron II* to



ONE OF THE TOUGHEST TWO-SEATERS OF THE WAR WAS THE HANNOVER C.L. III INFANTRY ATTACK PLANE. THIS PARTICULAR PLANE WAS CAPTURED BY THE 94TH AERO SQUADRON RIGHT AT THE END OF THE WAR.

make a level, head-on pass that ends with a downward break. Breaking underneath your two-seat target will minimize the

chances of any counter-fire from the rear gunner as you pass on by.

Two-seaters can be tough, but heavy

bombers such as the Gotha and the Handley-Page can be downright dangerous. To protect its vulnerable belly, the Gotha came equipped with a ventral tunnel gun that surprised many a British pilot. Because of it, attacking from dead astern and underneath is not recommended. Basically, the Gotha has very few blind spots to exploit. The best you can do is give the gunners a poor shot at you. To that end, try making, what was called in WWII, a pursuit curve. Start above and behind the bomber, a little offset to one side. Then, as you draw up along side (remember to do this with the bomber below you and out of range), turn toward him and make a high deflection run. Best results were achieved when the attacking plane had about a 45-degree deflection shot. Such an attack forced the gunners to guess on lead, something that was quite difficult to do when the aircraft the gunners were shooting at were coming head-on and at a slight angle toward them.

Head-on attacks on Gothas and Handley-Pages can also be successful. To do them, you need to be a crack shot and have a great

sense of timing. These sorts of runs, though, can disable the crew or knock an engine out, making the big bomber a cripple and thus easy meat for you.

Attacking Observation Balloons

Well-protected with machine guns and flak, the lowly observation balloon ranked as the single-most difficult target to bring down in World War I. So important were these balloons to the artillery units on both sides that they were sometimes ringed by dozens of ground-based machine guns and cannon. Only a few fighter pilots dared such stiff defenses, others steered clear of them entirely. The few who tried generally got very good at making lightning-quick, diving attacks that would minimize their time under the balloon defense's guns. Ritter von Roth, Henrich Gontermann, and Frank Luke were probably the best balloon-busters of the war. They all took huge risks to shoot the great floating gasbags out of the sky, usually returning home with their planes full of bullet holes. It took nerves of steel to hit such dangerous targets, but the rewards were great as well. Knocking out

two or three balloons on one sector could effectively blind the enemy's artillery units. Without spotters to watch and correct their fire, the big guns were almost useless, especially if the front lines were moving as a result of an offensive or minor breakthrough.

In *Red Baron II*, balloons are extremely well defended. To attack one, first make sure you have part of your flight covering you as you make your run. The last thing you need as you're diving down on a balloon is to check your six and discover an enemy scout sitting right on your tail. So, leave a few planes up high to provide top cover while you make a diving pass at the balloon. If you fail to bring it down on the first pass, forget it. Keep running at high speed until you're out of range of the defensive guns. If you must make another pass, don't turn around while still in range of the AA guns below. Run clear, climb back up, then make another quick pass.

FLIGHT REFERENCE

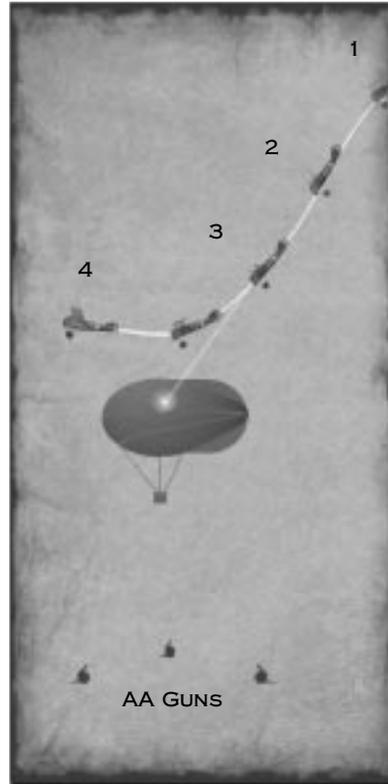
STANDARD FIGHTER ATTACK ON AN OBSERVATION BALLOON

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

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

3 — At close range, the fighter opens fire.

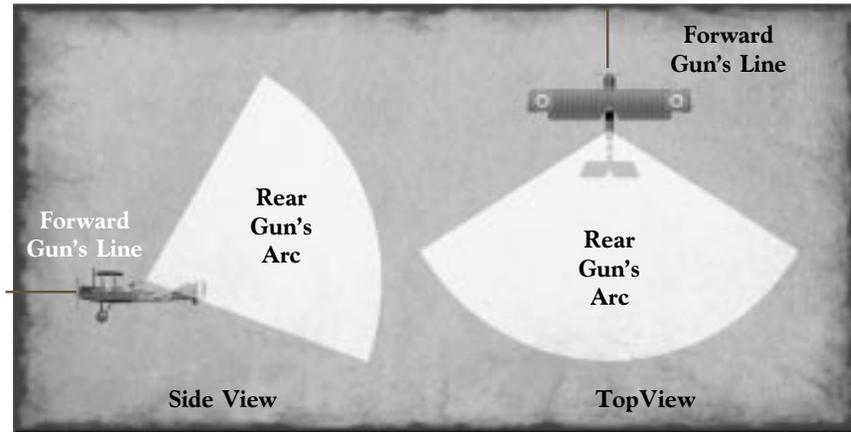
4 — The fighter pulls up and breaks away at high speed.



FIRING ARCS FOR STANDARD TWO-SEATER AIRCRAFT

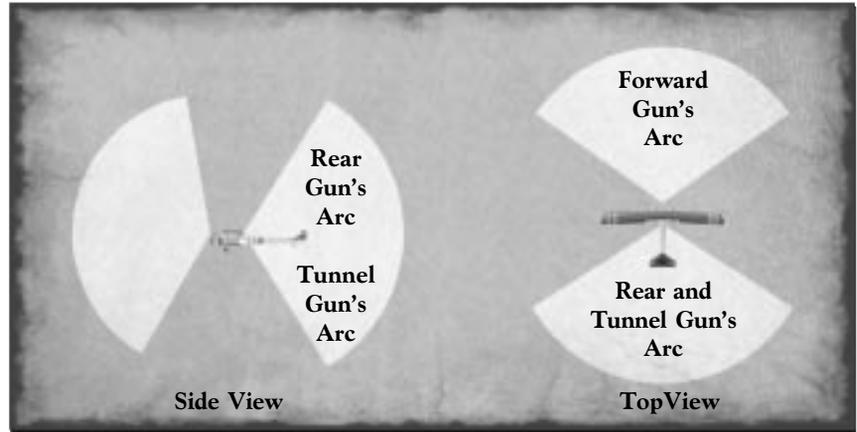
(includes the R.E.8, Bristol Fighter, D.H.4, Roland C.II, Rumpler C.IV, and Junkers J.I.)

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 HEAVY BOMBERS

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.



FINAL WORDS

Red Baron II's campaign system was constructed to mirror the historical realities on the Western Front as much as possible. While it may make headlines to be rash and daring, you'll soon discover such reckless behavior will not get you through the war. Remember that discretion is always the better part of valor, so it is better to run from a poor situation. Fighting it out every time will only get you killed. So be discreet, calculate the odds and only take risks if the rewards are worth it.

Plan your engagements carefully. If you spot a formation of enemy planes above you, run away if you can. Then, if they aren't chasing, try turning around and stalking them. Climb above them and sneak behind them if you can. Use the sun to your advantage by keeping it at your back whenever possible. Whatever you do, don't engage every flight you see no matter what the tactical situation. You may get away with it for awhile, but sooner or later, you'll go the way of the Albert Balls and Frank Lukes of the war.

Another key to Red Baron's campaign mode is keeping your pilots alive. Once you

become the squadron commander, it is your duty to preserve your pilots and help them gain experience. Being reckless and rash with their lives will only engender resentment. Morale in your unit will plummet as the tables in the mess have more and more empty place settings. Don't sell your men cheaply, for replacements are hard to come by and are usually of low quality at first. Conversely, you don't want to burn your squadron out. If you insist on selecting the same few pilots for each mission, sooner or later they will come to their emotional limit. When that happens, their nerves are shot and they'll be worse than useless in the air. Beware of this and don't drive your men to the point where they all get the Twitch!

Calculated risks, crafty tactical planning, and good decision making are what make for successful careers in *Red Baron II*. Study your aircraft carefully, learn their good and bad qualities and use the former to your advantage while minimizing the latter when you engage the enemy. Above all, remember that the most successful pilots of the war — Fonck, Richthofen, and Rickenbacker — were all plotters. Far from rash or reckless, these men were stalkers who planned each engagement with care. Learn from



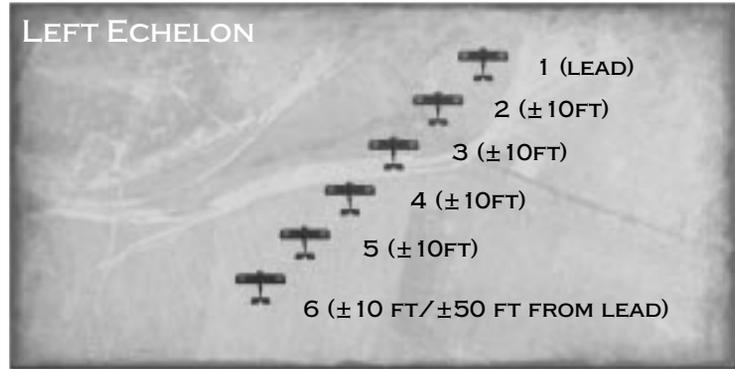
THE LAST STOP FOR MANY A RECKLESS AVIATOR.

them and apply what you've discovered to your career in *Red Baron II*. You'll find that your success will mirror theirs.

FLIGHT FORMATIONS

Formations in *Red Baron II* determine how planes are arranged in a flight. Any flight that has more than one plane in it (max. 12 planes in any flight) will need some kind of formation. The number of planes in a flight will determine what formations are available, as some formations require an exact amount (like the diamond, which requires four planes). A flight can change formations several times throughout a mission, usually with a formation for takeoff, a second one to get to the target, a third formation at the target, and a fourth one to land.

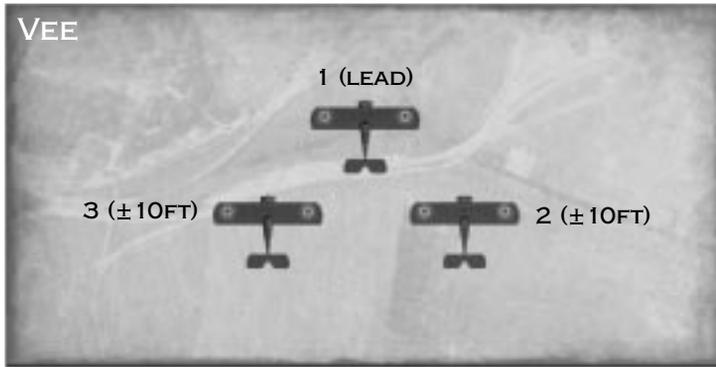
All formations are lead by they flight leader. He fills slot #1 (or lead) of the formation. All other planes fill descending slots (2, 3, 4, 5, etc). Each slot beyond the lead will read off of a slot positioned before him. In other words, slots #2 and #3 will usually read their position off of the lead, and further slots usually read off of the lead or slots 2 and 3. The following pages describe the common formations in detail.



ECHELON (LEFT & RIGHT)

This is the simplest of formations. It can hold from two to 12 planes. Planes in the formation will line up off of the lead's right or left side at a 135-degree angle. Each plane forms off of its previous slot on the same side, at the same angle (2 forms off of 1, 3 forms off of 2, etc). Each plane is 10 feet above or below the plane it follows.

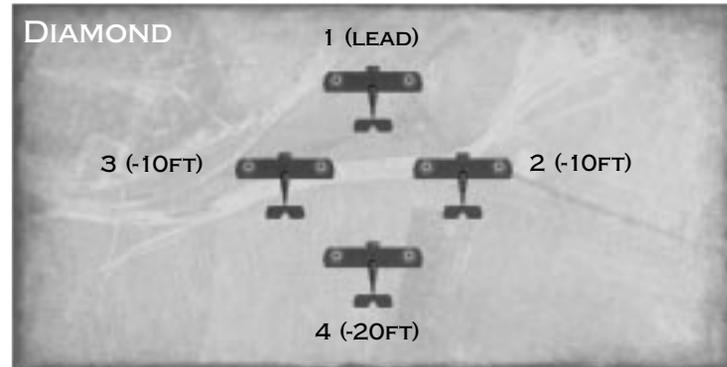
The Echelon forms the core of most other formations, and can be considered to be a generic or fallback formation. It can be used for takeoffs, landings, or patrolling the skies for enemies.

**VEE**

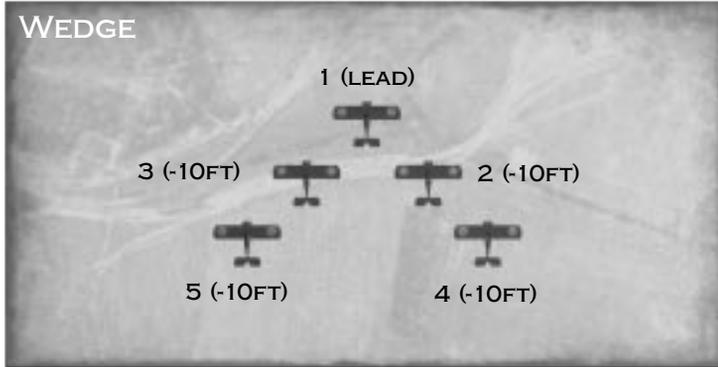
This formation requires three planes. It has a lead, one plane in left echelon, and one in right echelon. Both stack 10 feet above or below the lead.

DIAMOND

The diamond adds a plane to the Vee. The fourth plane follows directly behind the lead and at a 135-degree angle from slots 2 and 3. From the lead, slots 2 and 3 are 10 feet below, and slot 4 is 20 feet below.



FLIGHT REFERENCE



DELTA

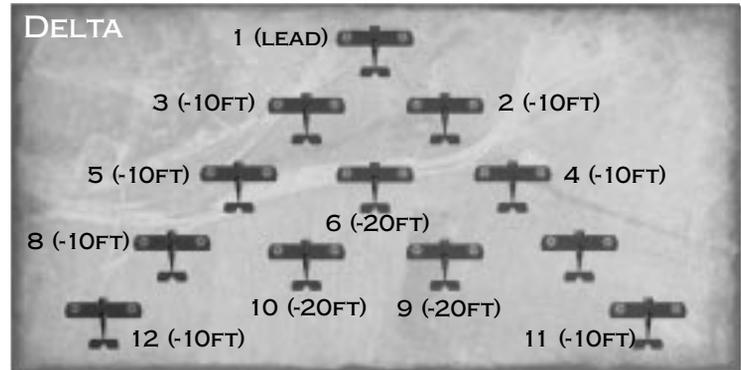
The Delta can handle anywhere from six to 12 planes. At its minimum number of planes, it looks like a combination of a diamond and a wedge.

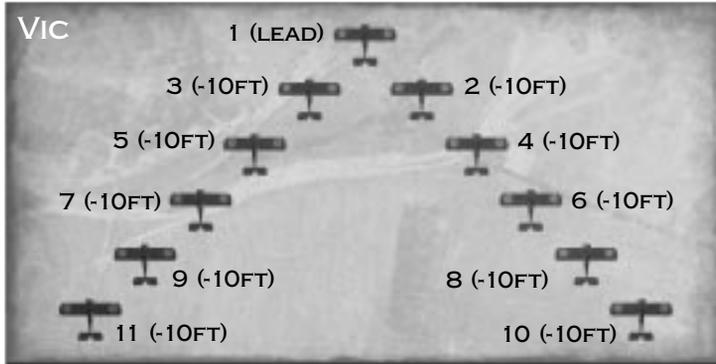
Beyond the first 6 planes in the formation, additional planes line up in echelons, aside from slots 9 and 10, that form behind 2 and 3, respectively. Planes must be added in pairs (and in slot order—7 and 8 must be filled before 9 and 10, etc), so this formation is only available to flights of six, eight, 10, or 12 planes.

All planes in echelons are stacked 10 feet below the slot they follow, and planes directly behind another plane (slots 6, 9, and 10) stack 20 feet below.

WEDGE

This formation adds two planes to the Vee. This formation puts two planes on either side of the lead in echelons. All planes form on the slot before them in the echelon (4 forms on 2, 2 forms on the lead). All planes stack 10 feet below the plane they follow.



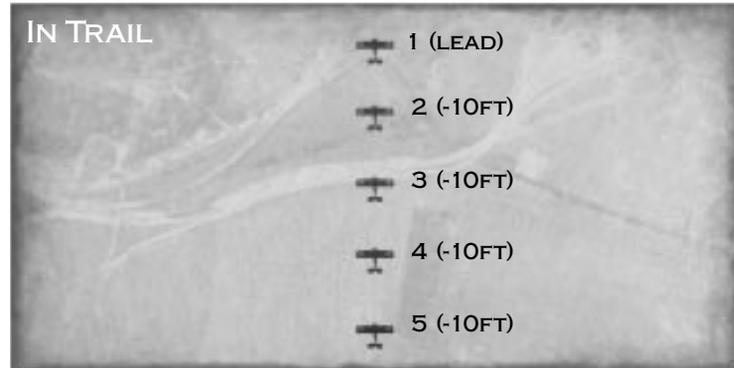


Vic

A Vic formation is basically the same as a Vee, except that pairs of planes can be added, up to a maximum of 12. This means that the Vic can have 3, 5, 7, 9, or 11 planes in the formation. All planes are in right or left echelon from the lead, stacking 10 feet down per plane.

IN TRAIL (LINE ASTERN)

The In Trail formation is simply a row of planes, each lined up behind the plane it follows. This formation can have anywhere from two to 12 planes. This is a good takeoff formation. Its tactical use is limited, however.



FLIGHT REFERENCE

JAVELIN

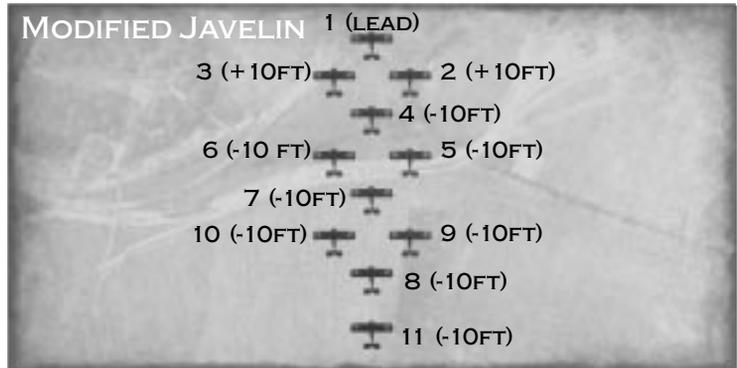
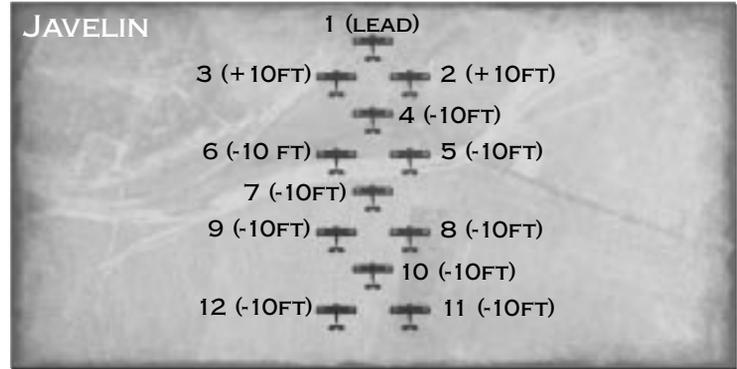
The Javelin is mainly a bomber formation, and used only when there are more than six planes in the flight. While it looks complicated, it can be deadly when used by bombers, because each plane provides cover fire to the rear of other planes in the formation.

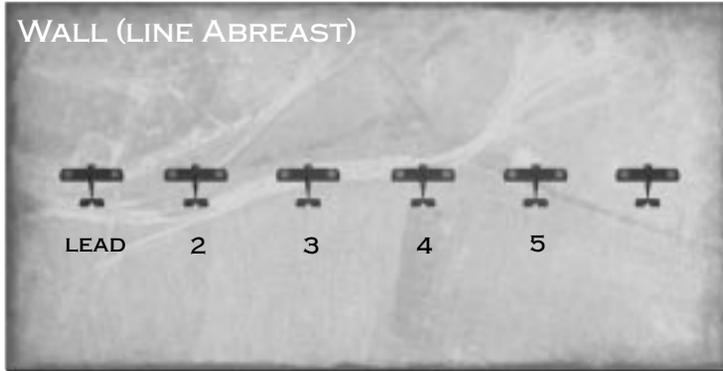
There are two variations of the Javelin, which are used for differing numbers of planes in the formation. Basically, the formation used will be the regular Javelin unless the number of planes gives the formation an asymmetrical look.

For instance, if there are six or seven planes in the formation, a regular Javelin is used. An eighth plane would unbalance the formation (as there would be an extra plane on the right), so the formation would use the Modified Javelin instead. Nine, 10, or 12 planes would use the regular Javelin, but 11 would use the Modified.

Slots 2 and 3 stack up 10 feet from the lead, and every other plane stacks down 10 feet from the plane it follows.

Don't worry if this seems a little confusing, since this is a bomber formation, you won't have to do anything but look at it in flight.

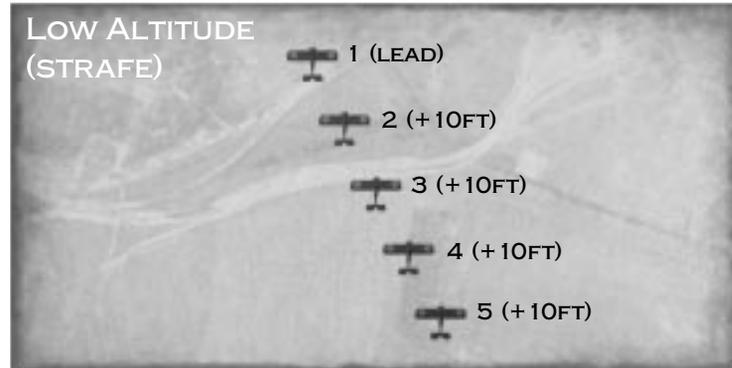


WALL (LINE ABREAST)**WALL (LINE ABREAST)**

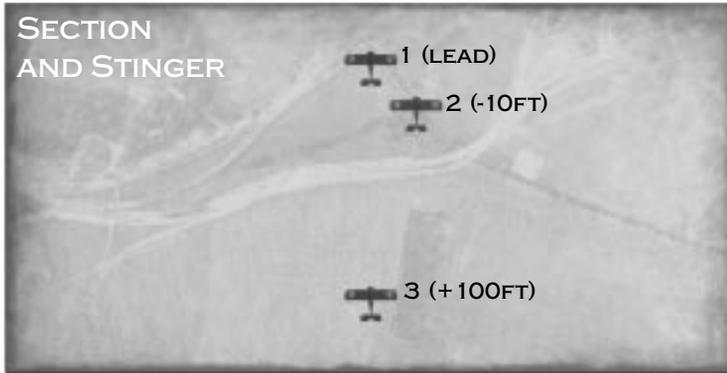
The Wall is another good takeoff formation. The lead is at the far left, and additional planes line up to the right. This formation has a zero stack, meaning that all the planes are at the same altitude. Two to 12 planes are possible.

LOW ALTITUDE (STRAFE)

This formation is generally limited to ground attack. Planes line up in a Right Echelon from the lead, but their angle to the lead is much steeper (150 degrees, instead of the usual 135 degrees). Planes always stack up from the lead, so they don't crash into the ground during the attack.

**LOW ALTITUDE
(STRAFE)**

FLIGHT REFERENCE



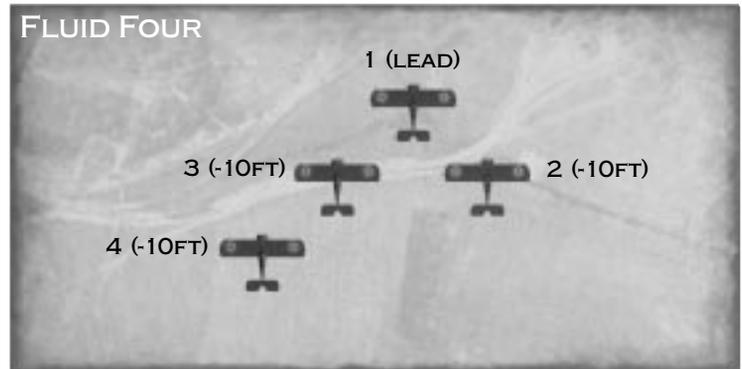
SECTION AND STINGER

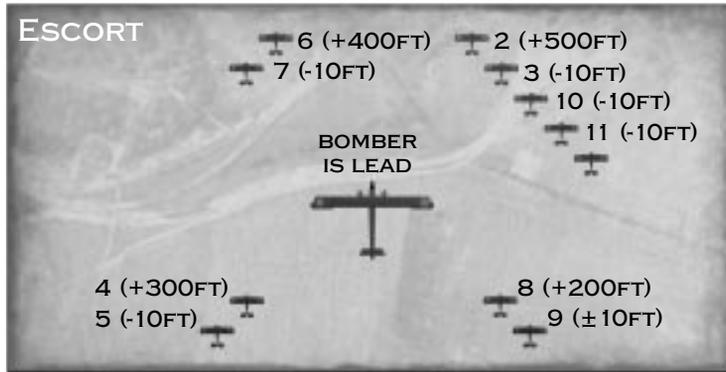
This is a formation designed to lure the enemy in to attack the two forward elements, while the third waits to drop down on the engaged enemy.

Slot 2 of the formation lines up on the lead in a normal Right Echelon, while slot 3 follows far behind and high above. If the first two slots are engaged, slot 3 is in a great position to finish off the enemy.

FLUID FOUR

This generic, four-plane formation is useful for patrols. Planes stack down.





ESCORT

The Escort formation is special in that the bomber being escorted becomes the formation lead. The flight lead before joining the bombers, becomes the slot 2 plane, and so on. Basically, the escort fighters (from two to 12 of them) take up defensive positions around the bombers in simple Echelons according to their relation to the bombers.

Slots 2, 4, 6, and 8 key off of the bomber lead (stacking high), while all other slots follow the plane before them, stacking down 10 feet.

Note that a 12-plane Escort can join with a 12-plane bomber formation (usually a Javelin). This results in quite a scary sight (although rare) for your enemies!

MODIFIED ESCORT

The Modified Escort is a combination of a normal Escort formation and a Section and Stinger formation. It can hold three to four planes. The first two slots (slot 2 and 3) are in a Right Echelon in front and to the right of the bombers. The last slots are behind and above the bombers, waiting for an enemy to engage them, so they can pounce.



MISSION TYPES

FIGHTER ATTACK MISSIONS

Attack missions are offensive—the goal is usually to severely damage or destroy a target located behind enemy lines.

Attack Target

The goal of this mission is to attack an enemy aerodrome or infantry position. The player's flight must show up at the target and wreak havoc on its priority structures without taking excessive losses. Try to destroy over a quarter of the priority structures without losing more than a third of your flight's planes.

Priority structures for aerodromes are parked aircraft (if any) and hangars - large or small. Observation towers and barracks are lower priority targets, when present.

An infantry position's priority targets are the artillery emplacements, and the small green tent there is a secondary target.

Attack Balloon

This mission's goal is to destroy an enemy observation balloon, used to spot for artillery. Try to destroy the balloon without losing too many of your men. The balloon is the only priority target. Make sure that you take incendiary bullets or Le Prier rockets (you may adjust your ordnance load after the mission briefing in the View Flight Plan area), or you'll have a tough time of it!

FIGHTER DEFENSE MISSIONS

Defense missions require you to defend a friendly target from the enemy. Get to the target, patrol the air above, and take out any enemies that get too near!

Combat Air Patrol

This is the general defense mission. Your flight may be assigned to a variety of friendly assets—anything from supply dumps to factories to railyards. Your mission is to patrol the air above the asset for a specified amount of time. Any enemy aircraft that come too

close must be destroyed. Protect the asset and try not to lose any flight members.

Balloon Defense

This is the counterpart of the Attack Balloon mission described earlier. Get to the friendly balloon you're assigned to, protect your own observation balloon for the defined duration, and lose as few planes as possible.

FIGHTER SUPPORT MISSIONS

Support missions are related to ground activity. Your job is to provide air cover for your infantry positions, or add an extra punch to an offensive. Victory conditions will weigh how much damage to the enemy you do in the target area against your flight's losses.

Support Attack

You are assigned to support an infantry offensive against enemy-held positions on the front. Shoot down any enemy fighters that get near, and help out your infantry by

taking out enemy machine gun nests and artillery. Be careful though, hostile machine gun nests can be deadly up close!

Support Defense

In this mission, you are backing up your own ground troops against an enemy charge. Protect your troops and defensive positions by driving off or destroying enemy planes and ground forces for the defined duration.

FIGHTER ESCORT MISSIONS

Escort

Your mission as an escort is to protect a flight of bombers or reconnaissance planes and ensure they get to their target and back. Your flight will start off in its own formation until it reaches a rendezvous with the bombers. From there on, the lead of the bombing formation controls both flights for waypoint navigation.

Drive off any enemies that try to engage the bombers, and keep casualties low. Stay within sight of the bombers—if you pursue

enemies too far and leave your bombers, you may fail the mission.

FIGHTER PATROL MISSIONS

Offensive Patrol

This is basically a mission to find and shoot down any enemy aircraft you come across. The flight patrols a landmark, or the area between multiple landmarks, on the enemy's side of the front and engages any planes they encounter (within reason, of course - the key is to be aggressive, not suicidal). Success depends on the number of enemy planes your flight shoots down compared to the number of your losses.

Barrage Patrol

This is the same as an Offensive Patrol, except the area patrolled is on the friendly side of the lines. Your job is to make sure that no enemy flights make it through your area of patrol. Also like the Offensive Patrol, success weighs kills against your losses.

FIGHTER “LONE WOLF” MISSIONS

A “Lone Wolf” mission is essentially a maverick flight in which the player is sent off to any location on the map looking for action. In *Campaign* mode, a Lone Wolf flight must contain *only the player pilot himself*. In the *Mission Builder*, a Lone Wolf flight may contain any number of pilots and does not have to include the player.

BOMBER/RECON MISSIONS

While the two-seater airplanes aren't flyable by the player, he may be called on to give an escort. Here's the description of the missions on which the player may be escorting. Not all bombing flights will be escorted by fighters.

Bomb Target

Usually reserved for the best two-seater squads available, bombing missions send in flights to drop bombs on important landmarks (factories, bridges, etc).

FLIGHT REFERENCE

Artillery Spotting

In this mission, two-seater planes will go to the front and act as forward observers for friendly artillery. The flight must get to the target waypoint and stay there for a time before returning to base.

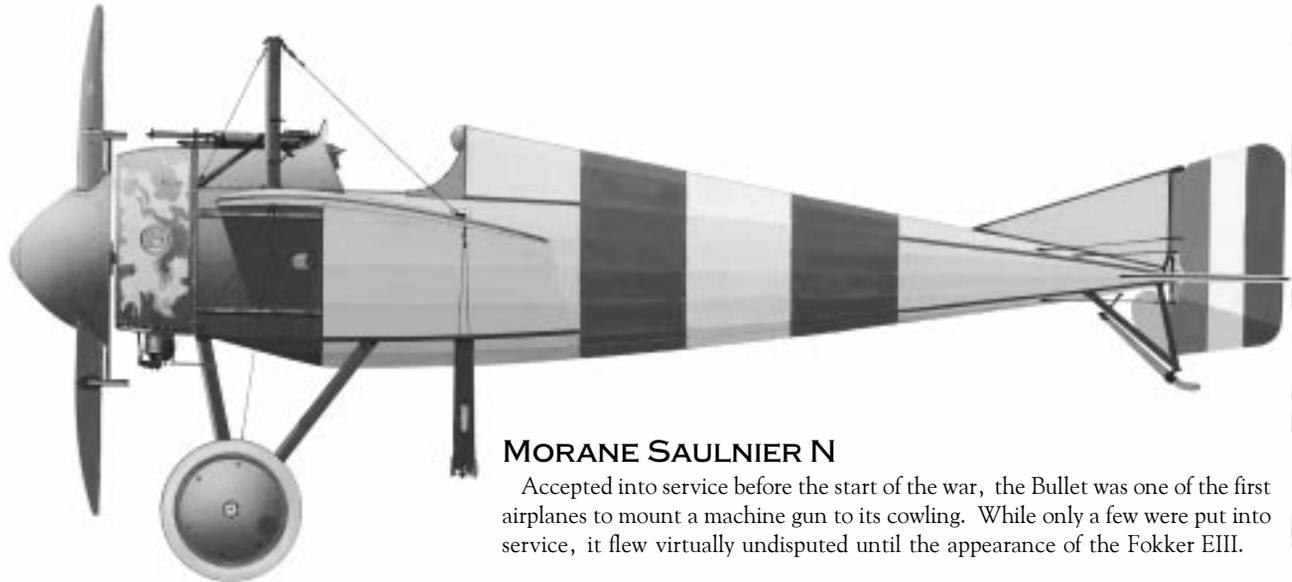
Landmark Reconnaissance

This mission usually involves older or inferior two-seaters flying to an enemy landmark at high altitude. Once there, they take some recon photos and return to base.



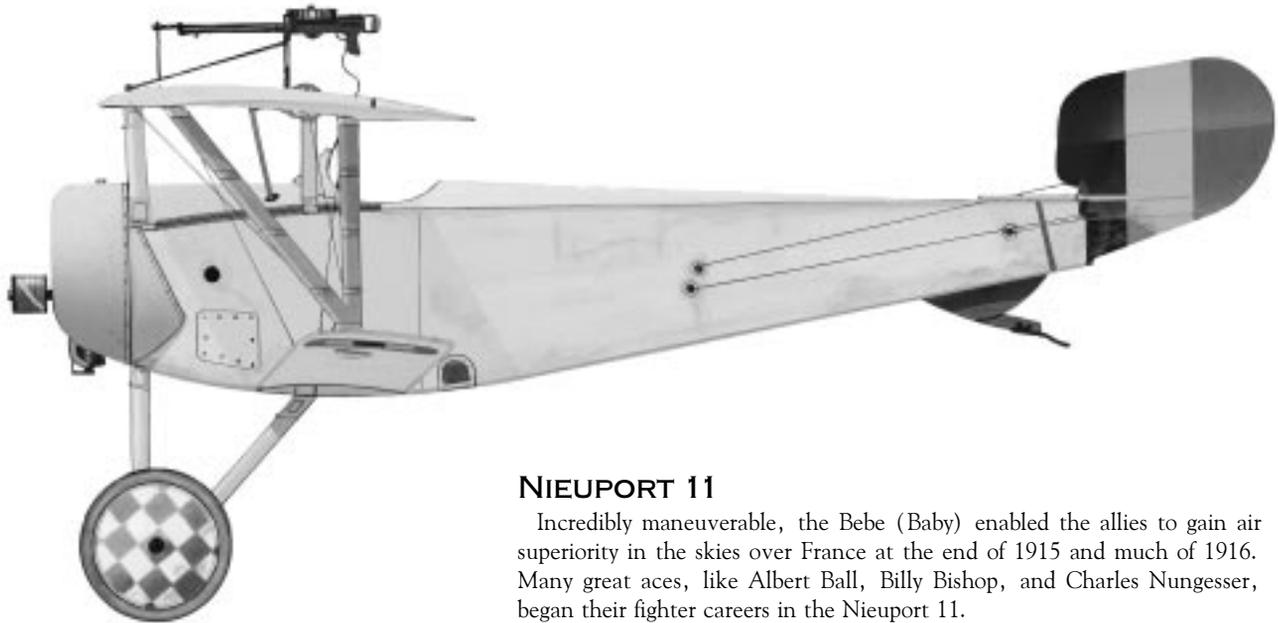
THE AIRCRAFT
OF WORLD WAR I

FRENCH AIRCRAFT



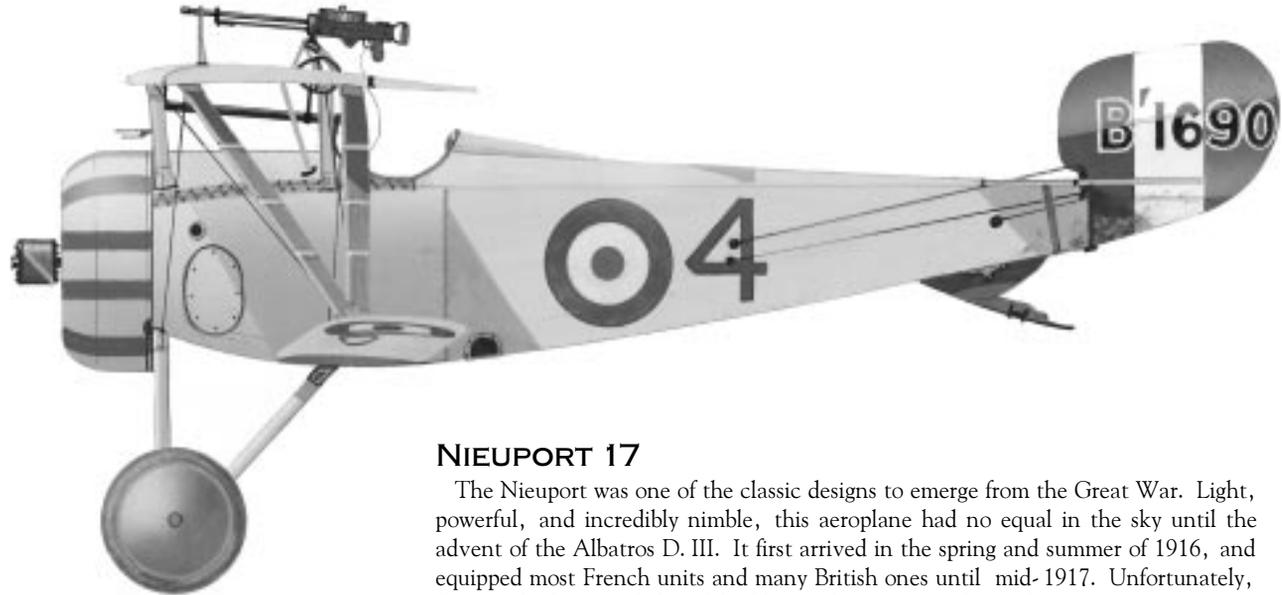
MORANE SAULNIER N

Accepted into service before the start of the war, the Bullet was one of the first airplanes to mount a machine gun to its cowling. While only a few were put into service, it flew virtually undisputed until the appearance of the Fokker EIII.



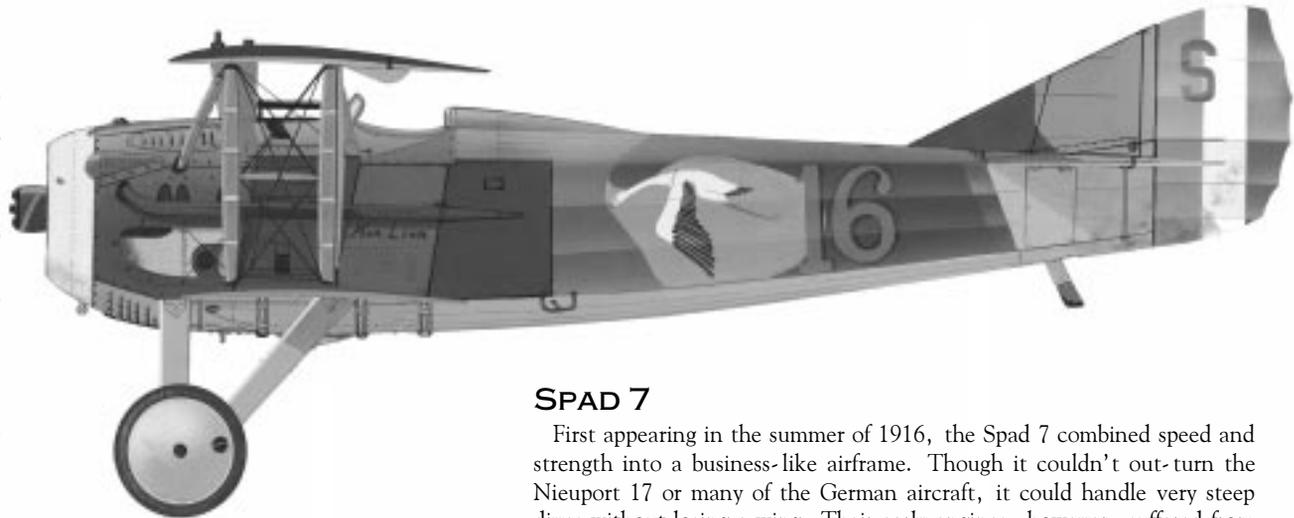
NIEUPORT 11

Incredibly maneuverable, the Bebe (Baby) enabled the allies to gain air superiority in the skies over France at the end of 1915 and much of 1916. Many great aces, like Albert Ball, Billy Bishop, and Charles Nungesser, began their fighter careers in the Nieuport 11.



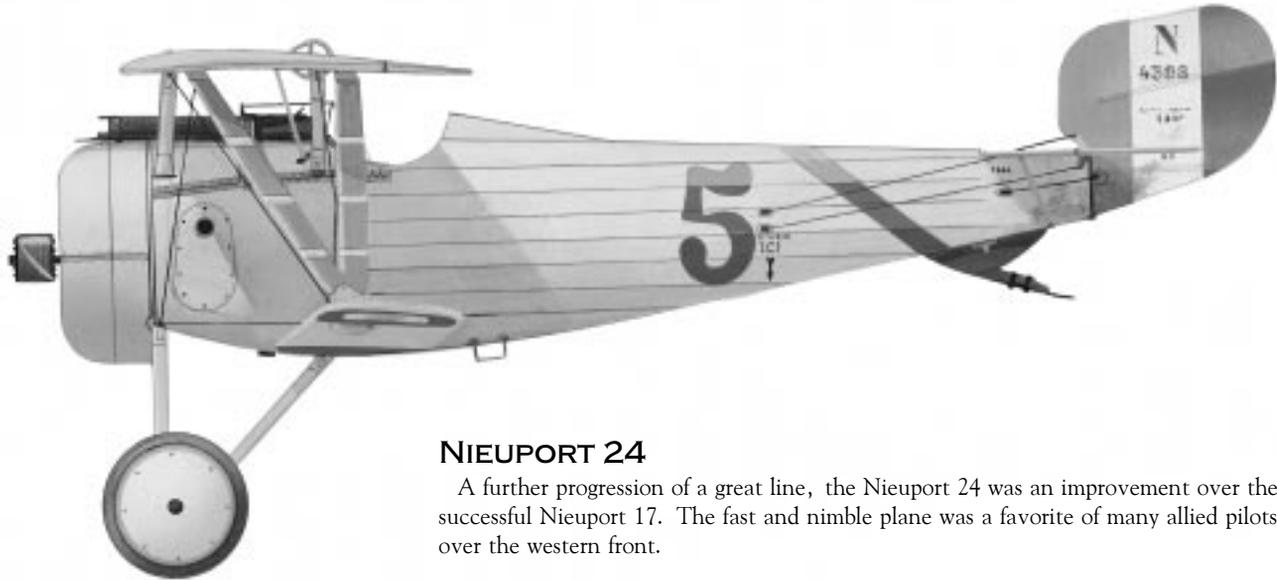
NIEUPOINT 17

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. It first arrived in the spring and summer of 1916, and equipped most French units and many British ones 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.



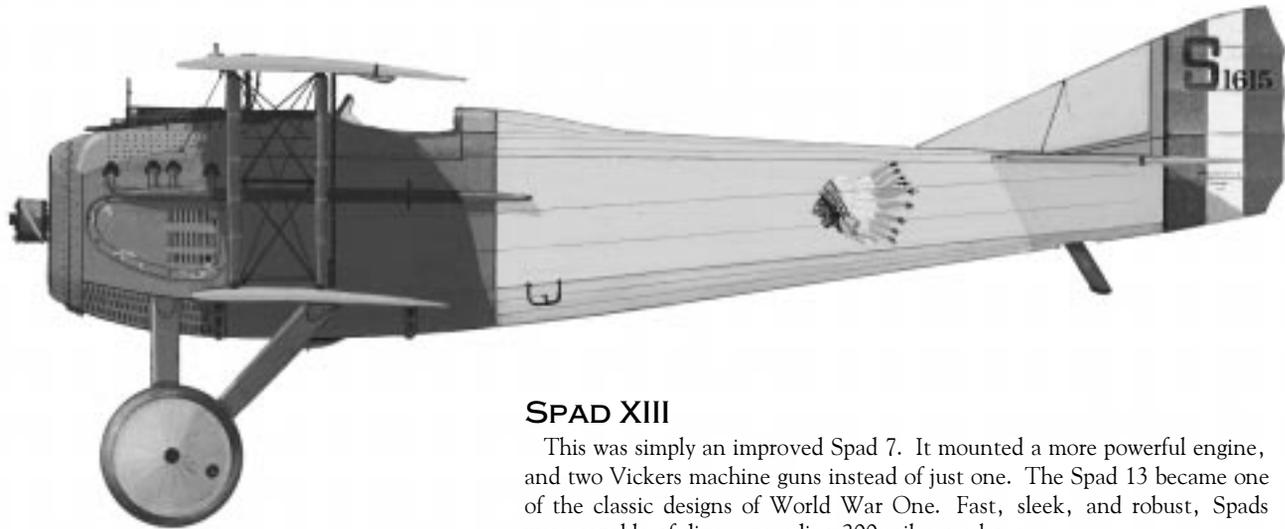
SPAD 7

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 many of the German aircraft, it could handle very steep dives without losing a wing. Their early engines, however, suffered from all kinds of teething troubles. Eventually, these were ironed out and the Spad became a deadly adversary in the air.



NIEUPORT 24

A further progression of a great line, the Nieuport 24 was an improvement over the successful Nieuport 17. The fast and nimble plane was a favorite of many allied pilots over the western front.



SPAD XIII

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 classic designs of World War One. Fast, sleek, and robust, Spads were capable of dives exceeding 200 miles per hour.



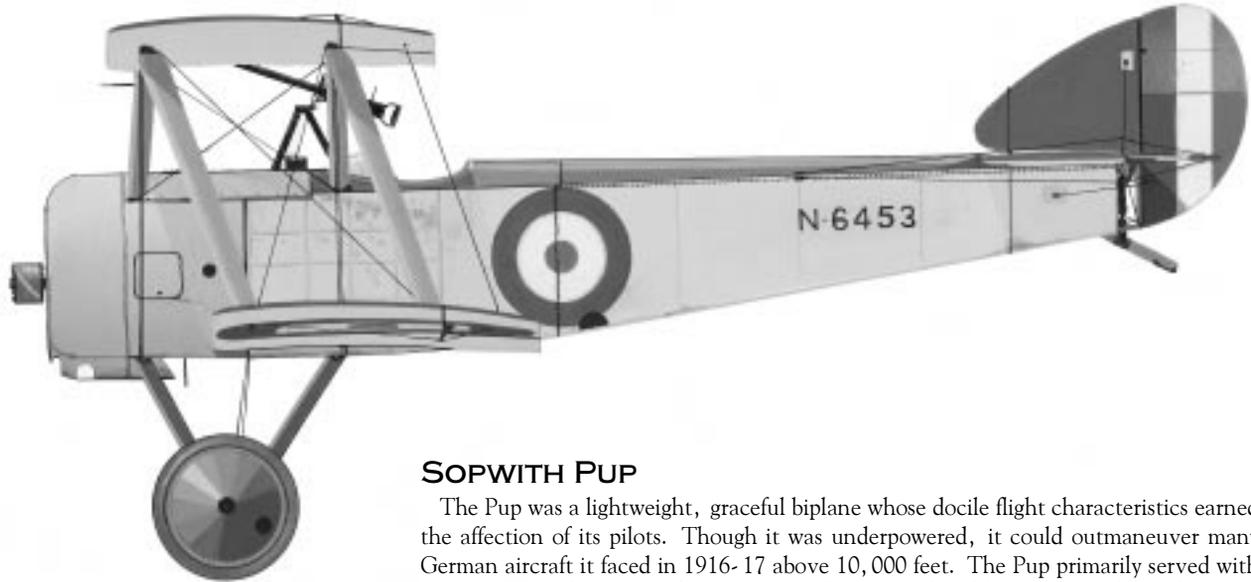
NIEUPORT 28

A great plane in its own right, the Nieuport 28 entered service after the Spad XIII had been accepted as the front-line fighter of choice. The Nieuport 28 was assigned to many units that couldn't get the Spad, including most of the American Expeditionary Force.



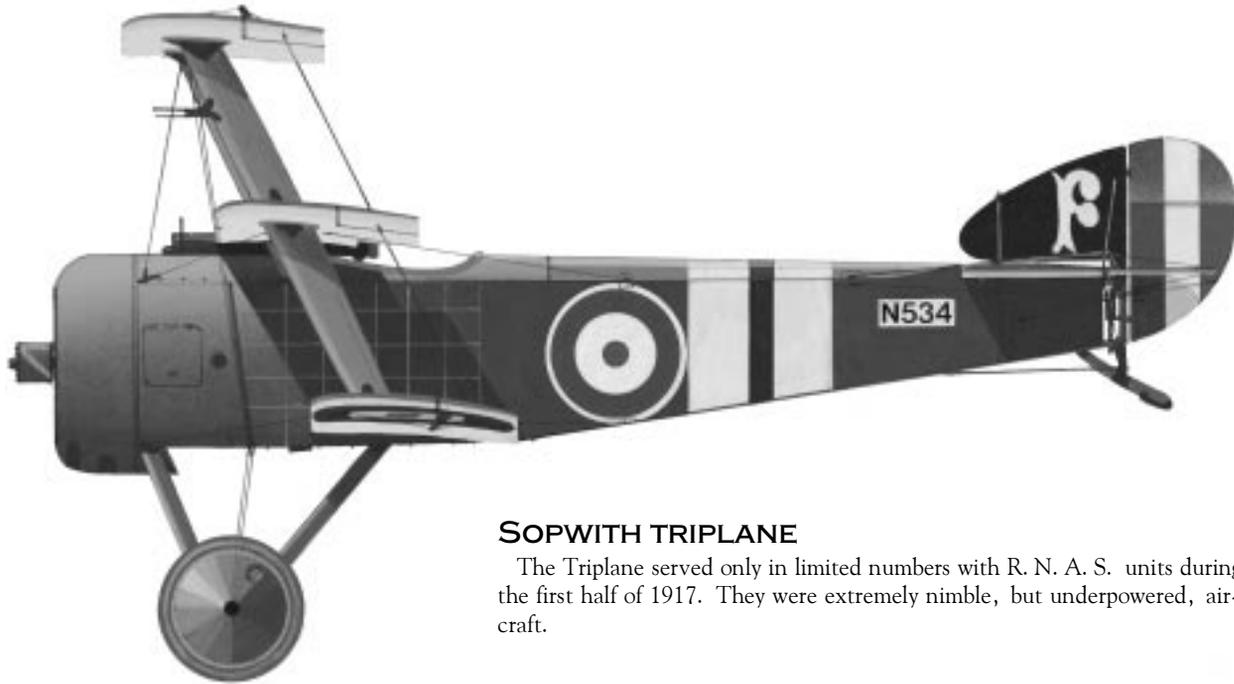
AIRCO D.H.2

The D.H.2 was nimble and highly maneuverable. 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 abort because of engine trouble. Nevertheless, it served well into 1917.



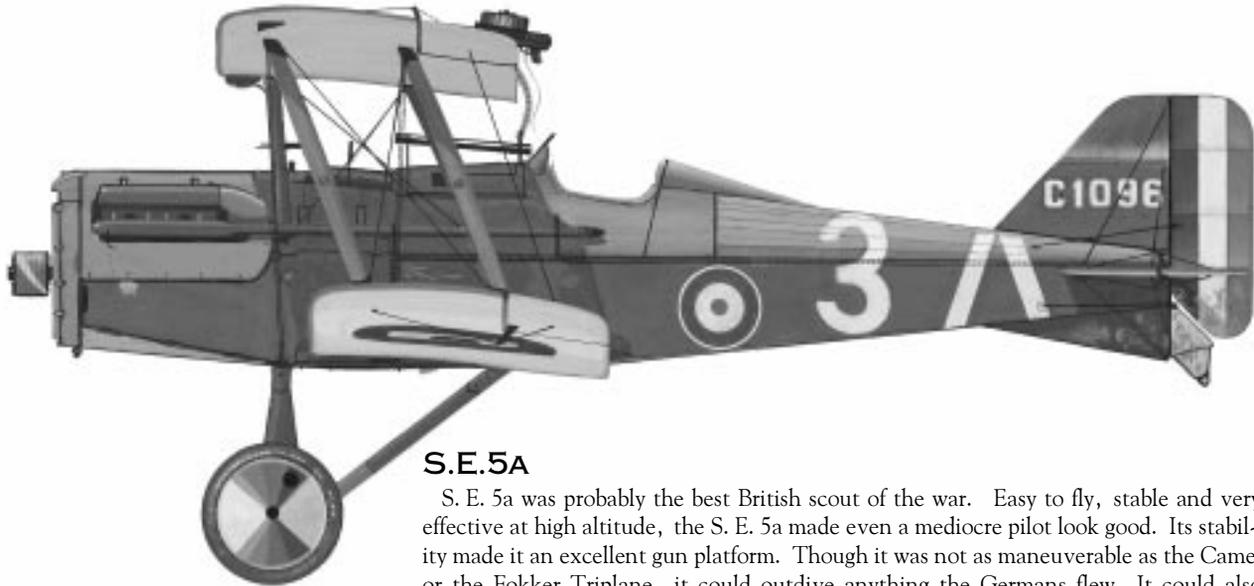
SOPWITH PUP

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. The Pup primarily served with R. N. A. S. and Home Defense units until it was replaced by the Sopwith Triplane and Camel.



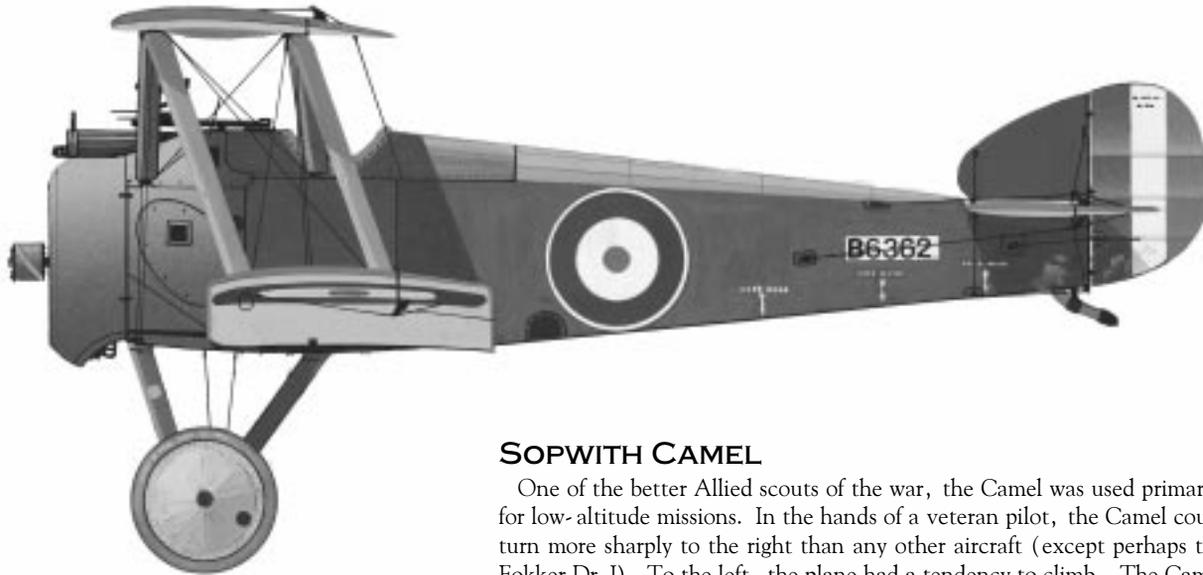
SOPWITH TRIPLANE

The Triplane served only in limited numbers with R. N. A. S. units during the first half of 1917. They were extremely nimble, but underpowered, aircraft.



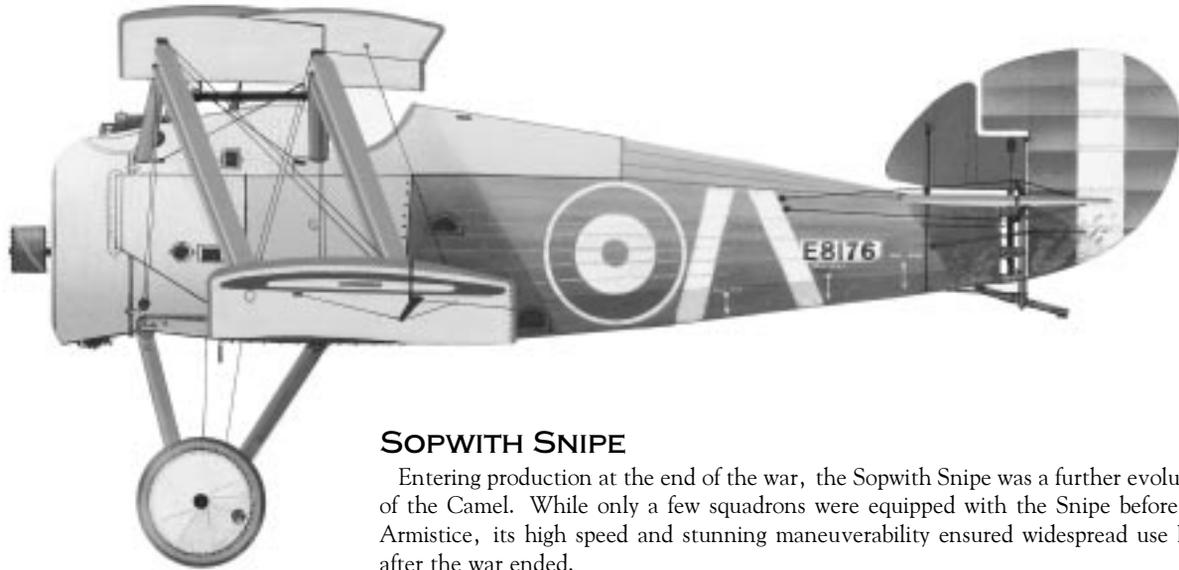
S.E.5A

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. 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.



SOPWITH CAMEL

One of the better Allied scouts of the war, the Camel was used primarily for low-altitude missions. 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

Entering production at the end of the war, the Sopwith Snipe was a further evolution of the Camel. While only a few squadrons were equipped with the Snipe before the Armistice, its high speed and stunning maneuverability ensured widespread use long after the war ended.



FOKKER E.III

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.

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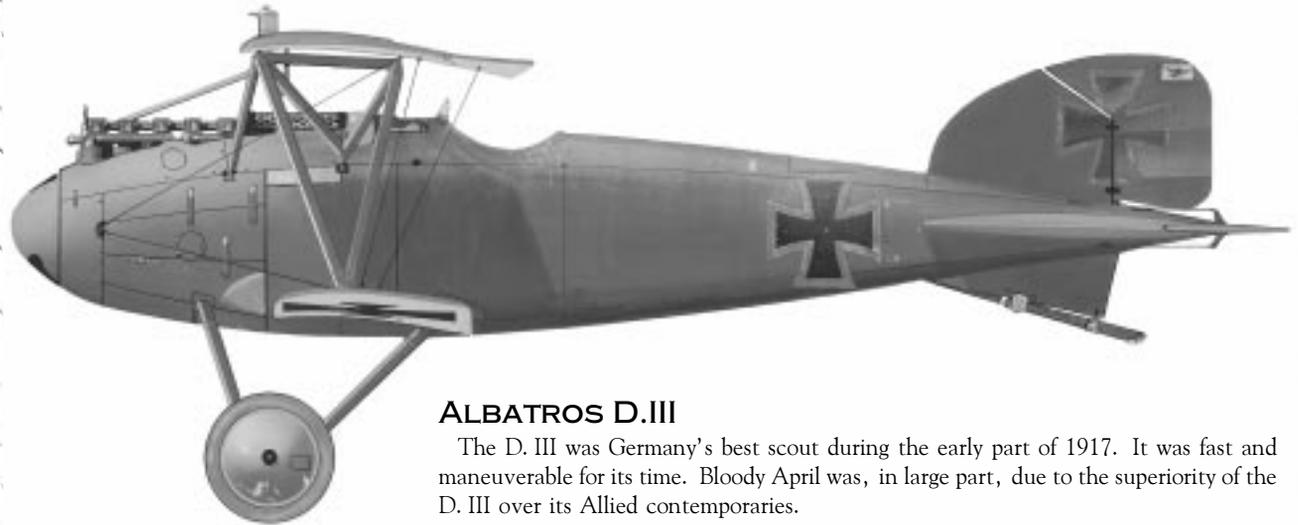
HALBERSTADT D.II

An early German biplane fighter, the Halberstadt DII was armed with only one forward-firing machine gun. While quite successful early on, it was outclassed with the emergence of the DH2 and Nieuport fighters and was finally replaced with the Albatros series of scouts.



ALBATROS D.II

The first in one of the wars most successful design series, the Albatros D. II re-established parity in the air in late 1916. Fast, maneuverable and heavily armed with twin Spandau machine guns, the D. II served as Germany's primary scout plane until the arrival of the Albatros D. III in early 1917.



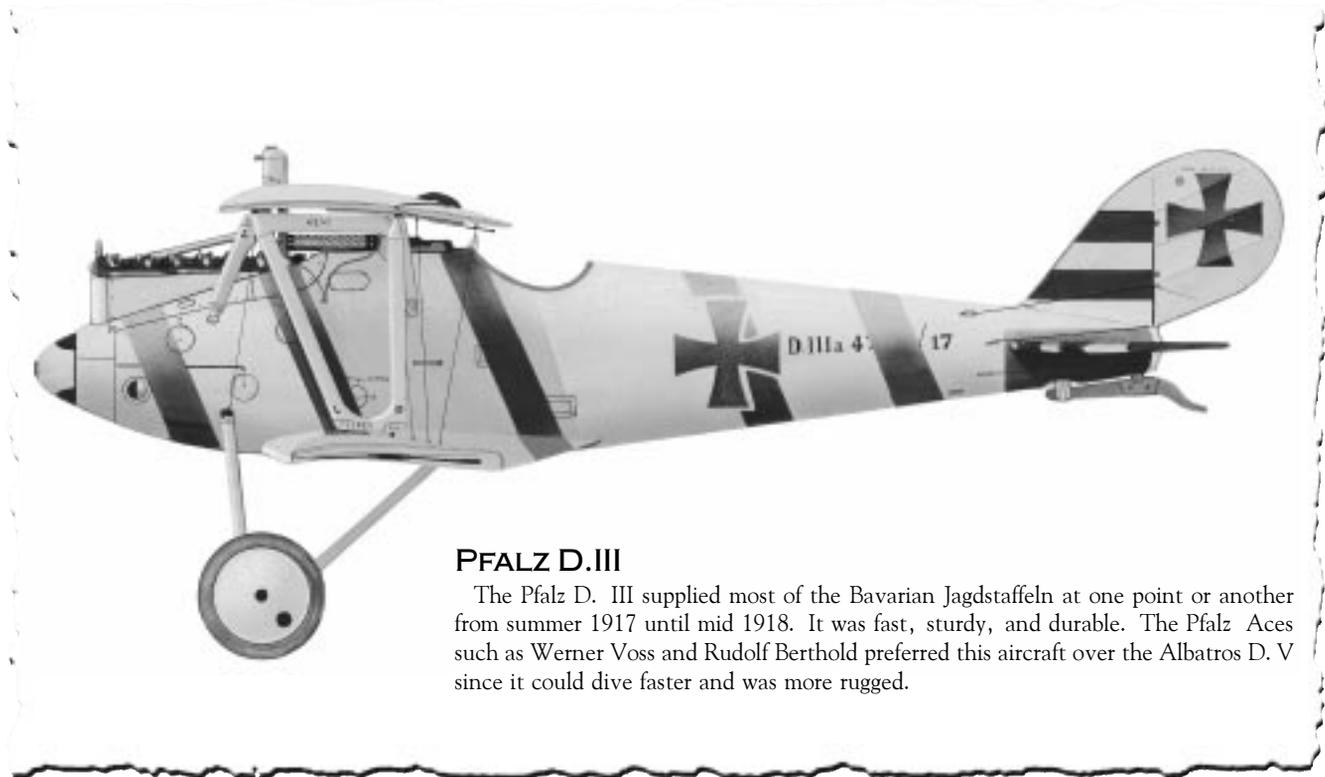
ALBATROS D.III

The D. III was Germany's best scout during the early part of 1917. It was fast and maneuverable for its time. Bloody April was, in large part, due to the superiority of the D. III over its Allied contemporaries.



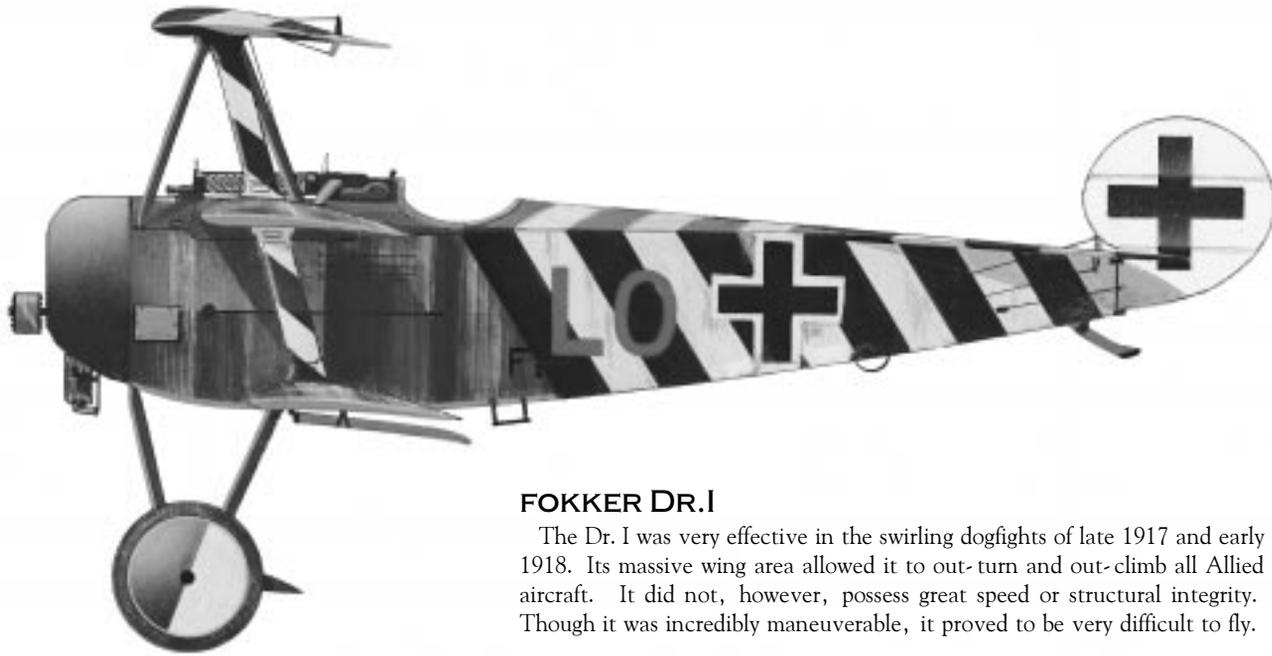
ALBATROS D.VA

Most German pilots were disappointed with the D. Va since it was not a major improvement on the Albatros D. III. In fact, the D. Va was heavier and could not climb as fast as its predecessor. While it wasn't an outstanding aircraft, it was very easy to fly. Despite its mediocre performance, this aircraft served until the Armistice in many German units.



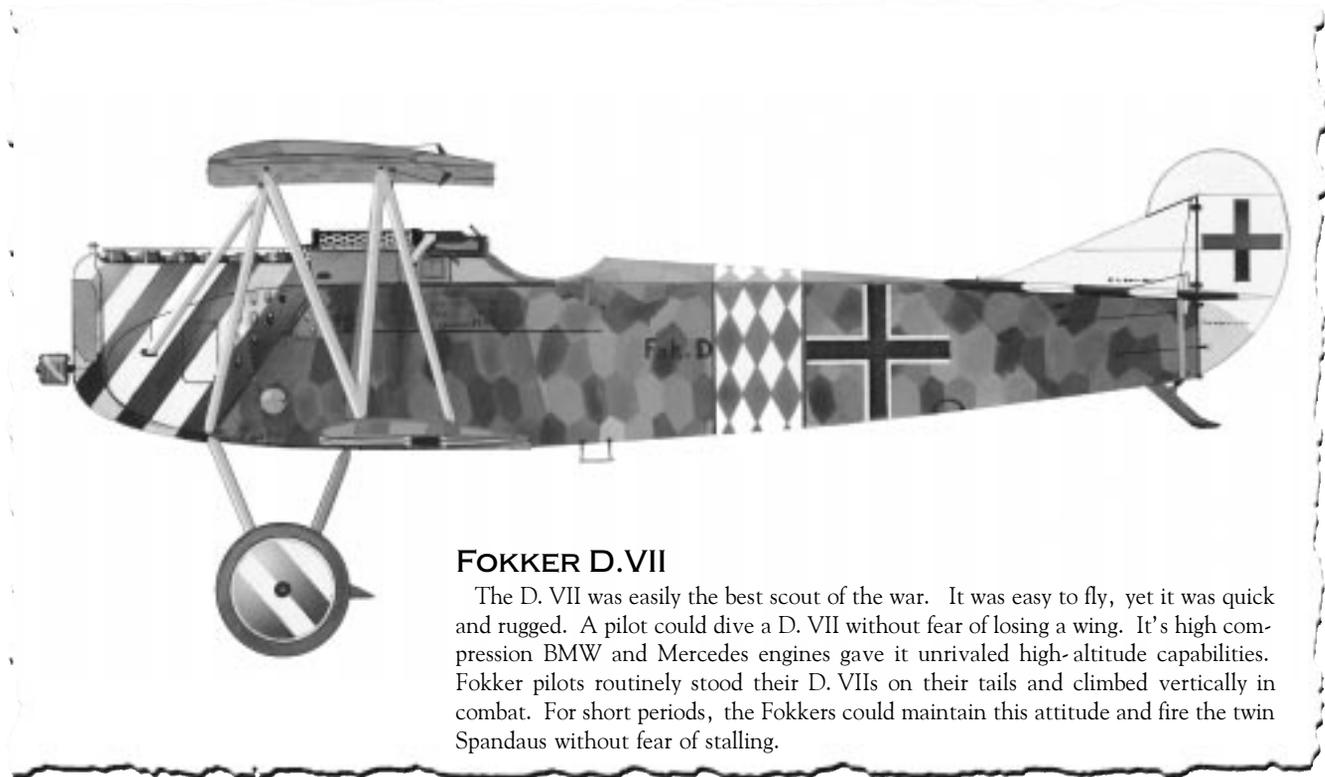
PFALZ D.III

The Pfalz D. III supplied most of the Bavarian Jagdstaffeln at one point or another from summer 1917 until mid 1918. It was fast, sturdy, and durable. The Pfalz 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.



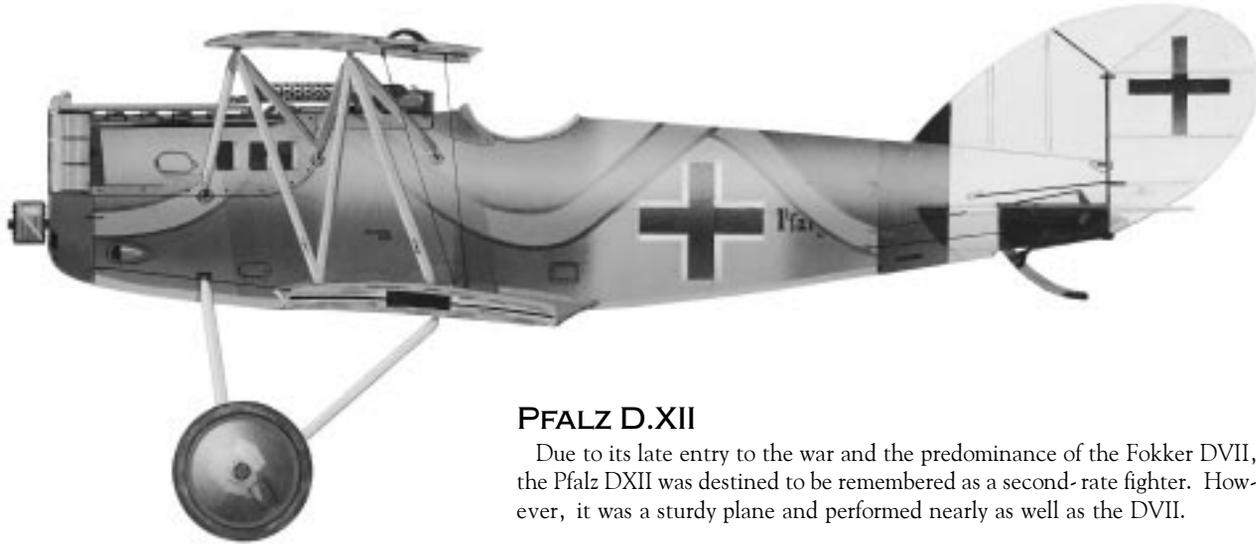
FOKKER DR.I

The Dr. I was very effective in the swirling dogfights of late 1917 and early 1918. Its massive wing area allowed it to out-turn and out-climb all Allied aircraft. It did not, however, possess great speed or structural integrity. Though it was incredibly maneuverable, it proved to be very difficult to fly.



FOKKER D.VII

The D. VII was easily the best scout of the war. It was easy to fly, yet it was quick and rugged. A pilot could dive a D. VII without fear of losing a wing. It's high compression BMW and Mercedes engines gave it unrivaled high-altitude capabilities. Fokker pilots routinely stood their D. VII's 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.



PFALZ D.XII

Due to its late entry to the war and the predominance of the Fokker DVII, the Pfalz DXII was destined to be remembered as a second-rate fighter. However, it was a sturdy plane and performed nearly as well as the DVII.

MEDALS AND AWARDS



MEDALS
AND AWARDS

BACKGROUND

Both the Central Powers and the Allies had their own awards structures that came into play during World War I and which were given for gallantry and military merit to natives and others deemed deserving. Among higher-ranking officers and royalty there was much exchange of awards as a customary military nicety. But the fighting man, both officer and man alike, was also recognized not only by his own country but if his bravery was sufficient, by the other nations allied with it in war.

While many nations had highly developed and complex awards structures, especially in countries with long dynastic histories like the Romanovs in Russia and the Hohenzollerns in Prussia, none was quite as extensive as that which existed in Imperial Germany during World War I. The reason was that even though Prussia was the lead entity in the empire and its king was the emperor (Kaiser), the other states still retained certain military privileges. These included their own individual awards.

Since Germany was still a collection of four kingdoms, many grand duchies, duchies, principalities, the three free cities of the old Hanseatic League and the Imperial Domain of Alsace-Lorraine (only the latter did not make awards), a fighter pilot of the prominence of Manfred von Richthofen could amass a truly staggering array of such awards.

One point regarding Imperial German awards needs to be made. There were no "German," or empire, awards for bravery and military merit in World War I. Each came from an individual state. Thus it is not correct to call the famous *Orden Pour le Merite*, the so-called "Blue Max," Germany's highest recognition for officers on the battlefield. It was Prussia's. However, because of its pre-eminent position within the empire, Prussia was called upon to make its awards throughout all contingents, not just its own. So, in effect, they became empire awards while still retaining their specific identity and origin.

BRITISH AWARDS



The Victoria Cross

Instituted by Queen Victoria in 1856, it takes precedence over every other honor in the British Empire including such illustrious orders of knighthood and chivalry such as the Order of the Garter, Order of the Thistle, Order of St. Patrick, Etc. It was meant to recognize

some signal act of valor or devotion to the country that was performed in the presence of the enemy.



The Distinguished Service Order

Established in 1886 to recognize distinguished or meritorious service in war, it was awarded to officers only. It generally went to more senior officers for superior work. It was also awarded as recognition for valor or merit of a superior kind which did not warrant the award of the Victoria Cross.

As with other British awards, bars were awarded to represent subsequent awards of the same decoration. Albert Ball is believed to be the first officer to receive the D. S. O. with 2 Bars.



The Distinguished Flying Cross

When the Royal Flying Corps and the Royal Naval Air Service were combined to create the Royal Air Force with an effective date of April 1, 1918, it had been decided to found a new range of awards for the service which were meant to replace the Army and Navy awards previously bestowed.

The Distinguished Flying Cross was meant to reward officers and Warrant Officers of the R. A. F. for an act or acts of valor, courage or devotion to duty performed while flying in active operations against the enemy. It was meant to replace the M. C. There were 889 awards of the D. F. C. to pilots in the R. A. F. .



The Military Cross

This decoration was established on December 31, 1914 as an Army award to commissioned officers from the rank of Captain and below and to Warrant Officers. It was meant to recognize distinguished and meritorious service in time of war by men of these ranks. There were 1,077 awards of the M. C. for service by men in the R. F. C. / R. A. F.

FRENCH AWARDS



Legion of Honor

Founded by Napoleon Bonaparte on May 19, 1802, it was France's highest honor. It came in five grades.

The two lowest, the Officer's Cross and Knight's Cross, could go to the younger combat officers and the Knight's Cross could also go exceptionally to non-commissioned officers and men.

It was awarded to French citizens and foreigners for outstanding services of a civil or military nature. There was, however, no distinction on the insignia to differentiate between an award won, for example, on the battlefield versus one that might have been given for a distinguished career in civil life.



Croix de Guerre

This decoration was established on April 8, 1915 as a means to mark individuals who had been mentioned in dispatches. It could go to both officer and man alike.

For a mention in an Army Dispatch (or the corresponding unit in the navy), a bronze laurel wreath, called a palm, was affixed to the ribbon of the cross. An Army Corps dispatch mention rated a gilt star. A Divisional dispatch mention was marked by a silver star and a Brigade, Regimental or Unit mention in a dispatch by a bronze star.



Military Medal

Established in 1852 during the reign of Napoleon III, the *Medaille Militaire* consisted of a gilded portrait of the French Emperor suspended by an eagle. It was awarded to both officers and NCOs for bravery in battle.

GERMAN AWARDS



Order for Merit (also known as “The Blue Max”)

Prussian name:
Orden Pour le Merite
Founded in 1740
by Friedrich the
Great of Prussia, he

used French terminology for the words “for Merit” rather than the German because he was a great admirer of French court customs and insisted that language be used in his court. It was Prussia’s highest recognition to officers for courage on the battlefield and for superior military performance in time of war. Thus it was rewarded in large numbers to senior military leaders and royalty as well as to officers for bravery in actual conflict with the enemy. In that respect it differed from the Victoria Cross and the U. S. Medal of Honor.

The order came in one class, that of knight, and was worn from the neck on a cravat. There was also a separate and

higher award of the order, the Orden Pour le Merite mit Eichenlaub (the Order for Merit with Oakleaf). The oakleaf did not indicate a second award of the same order as a bar or an oak leaf cluster would in the case of a British or U. S. award respectively.

No combat flier received the order with Oakleaf during the war although von Richthofen was proposed for it (see the Red Eagle Order description).

There were 81 awards of the Orden Pour le Merite within the various air services in World War I. The Prussian awards system valued the consistent performer more so than a man who might perform a single act, however brave. It usually took repeated acts of bravery or continued good work over time to earn a high award like the Pour le Merite. For the combat airmen then, this got translated into the number of victories for a fighter pilot or in the case of the men



in the multi-place aircraft, many successful missions across enemy lines.

The first aviation awards of the Pour le Merite went to Oswald Boelcke and Max Immelmann on January 12, 1916, the day each scored his eighth confirmed victory. For the rest of that year, it took eight victories for the other fighter pilots who had been flying for some time before they received their awards. For the newer fighter pilots, a higher requirement was adopted in November 1916. The first to feel its effect was Manfred von Richthofen who was made to wait until he had 16 victories before his award was approved on January 12, 1917. Thereafter, it usually took at least 20 victories before the award would be approved but there were a few exceptions (Goering was one of them). In the last months of the war with scoring at a rapid rate among the leading German aces and paperwork breaking down, the award sometimes did not reach a man until he had considerably more than 20 victories. The last two aviation recipients of the order, for example, had 30 victories when the award caught up with them.



Royal Hohenzollern House Order with Swords

German name: Ritterkreuz des Königlich Hausorden von Hohenzollern mit Schwertern

Founded on December 5, 1841 by King Friedrich Wilhelm IV of Prussia, it was the major award used by Prussia in World War I to recognize bravery and distinguished military service by officers after they had received the Iron Cross, 1st Class. It thus became the customary intermediate award between an Iron Cross, 1st Class and the Orden Pour le Merite. It is important to note that unlike Great Britain and the U. S. , Imperial Germany did not engage in making multiple awards of the same order or decoration. To recognize a man for repeated acts of courage or superior performance it was necessary to go to a higher

and separate award.

The order came in three classes with the lowest, that of Knight, being the one going to the young combat officers. Since the order could also be given in peacetime for service to the House of Hohenzollern, when awarded in wartime, a pair of crossed swords was placed between the arms of the cross on the insignia. It was then said that the order had been given “with Swords.”

The first airmen to receive the Knight’s Cross with Swords of the order were, again, Boelcke and Immelmann. They received it in November 1915 after their sixth confirmed victories. Throughout 1916 it usually took fighter pilots six victories before they, too, received the award. In 1917 and thereafter it usually took at least 10 victories before a man would be favorably considered. In total, 8,291 Knight’s Crosses with Swords were awarded for service in World War I.



The Red Eagle Order

German name: Roter Adler-Orden mit Schwertern

Prior to World War I, this order, founded in 1705, was used to reward junior officers for bravery in

action and for meritorious service. Its usage in these ways was dropped in World War I and the Royal Hohenzollern House Order was employed instead.

However, one combat airman received the order. He was Manfred von Richthofen who received the Red Eagle Order, 3rd Class with Crown and Swords

on April 6, 1918 in recognition of his 70th victory and his nearly three years of service in the air. It was thus a unique award within the Imperial German Air Service in World War I.

Actually, von Richthofen had been proposed for the award of the Pour le Merite with Oakleaf instead. This was turned

down on the basis of the archaic criteria for that award among which was that a recipient had to have forced the enemy to withdraw from a battlefield, i. e. , to have won a battle. When General Ludendorff heard that von Richthofen had been denied the award because of this narrow interpretation, he is alleged to have snorted, “Richthofen has won many battles!”



Iron Cross
1st Class,
Iron Cross
2nd Class

*G e r m a n
Name: Eisernes
Kreuz I. Klasse
and Eisernes
Kreuz II. Klasse*

King Friedrich Wilhelm III of Prussia established the Iron Cross on March 10, 1813 as the main award to be used in the war then being fought against the French under Napoleon. There were three classes, Grand Cross, 1st Class and 2nd Class. Originally, it was a very prestigious award and temporarily replaced many other Prussian bravery awards that might otherwise have been used.

After the Napoleonic Wars the Iron Cross was discontinued but renewed again on July 19, 1870 by King Wilhelm I of Prussia for the war that had again broken out with France. After the war, it again lapsed and was not renewed until August 5, 1914 when Emperor (Kaiser) Wilhelm II did so for

World War I.

In the first years of the war, the award still retained much of its original prestige but large numbers awarded in the later years of the war, particularly in the 2nd Class, caused it to lose much of its meaning. It is estimated that for service in World War I, about 218,000 1st Class awards and over 5 million 2nd Class awards were made. No figures for aviation awards are known to exist although it can be said that any successful airman would undoubtedly have possessed both the 1st and the 2nd Class by the time the war ended.





UNITED STATES AWARDS

Congressional Medal of Honor

The Medal of Honor, given for service “above and beyond the call of duty,” is the highest award for valor in action against an enemy force that can be bestowed upon an individual serving

in the Armed Services of the United States. It is usually presented by the President of the United States in the name of Congress, and is therefore often called the Congressional Medal of Honor.

The Medal of Honor holds a special place as the first American decoration not patterned after English awards. It began as a Civil War decoration, approved by President Lincoln, intended for use by the Navy as a morale booster. It was to be awarded upon those servicemen “as shall most distinguish themselves by their gallantry in action.” The Army soon adopted the award as well, and in 1904 added a wreath to the

basic star-shaped medal for their own service. The Air Force added a separate wreath design to create their unique version of the medal in 1965.



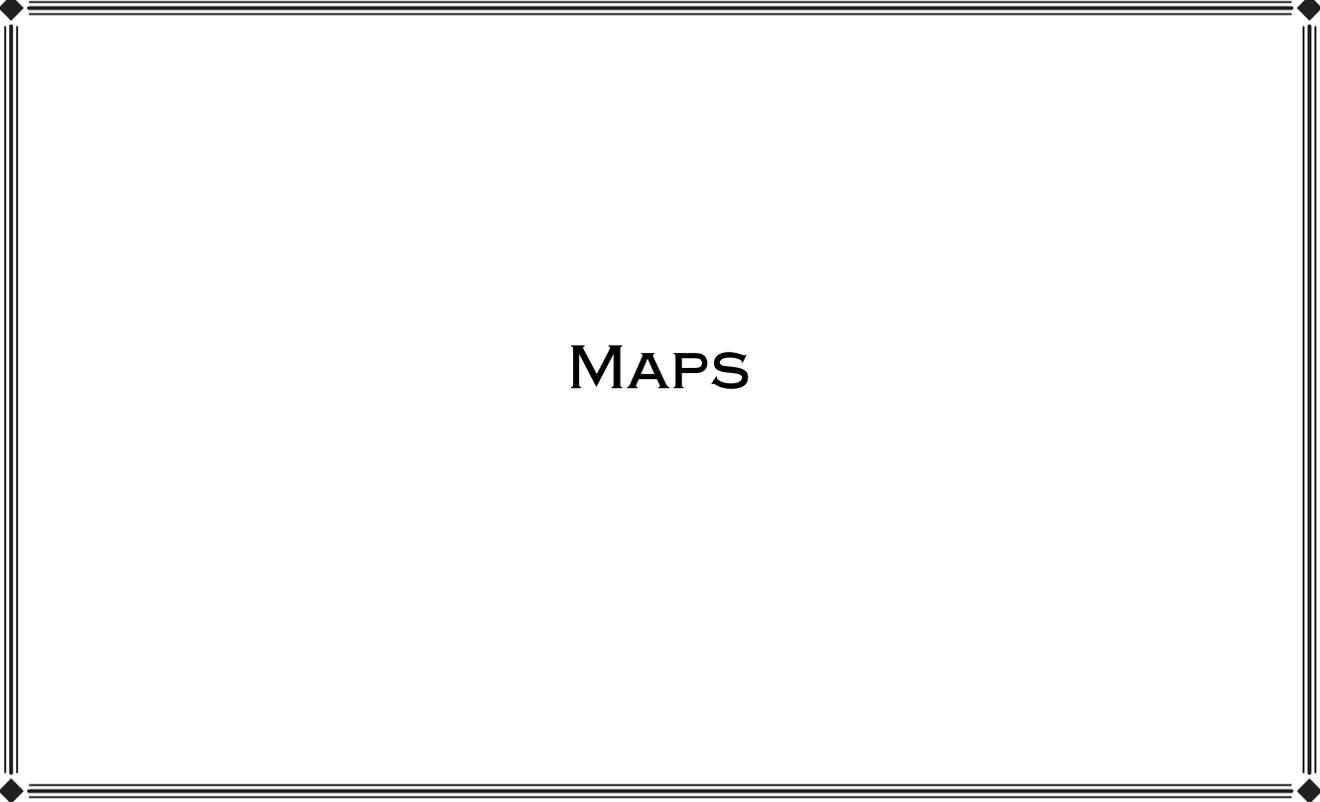
Distinguished Service Cross

The Distinguished Service Cross, established by an Act of Congress on July 9, 1918, could be awarded to any member of the US Army for “Extraordinary Heroism in Connection with Military Operations Against an

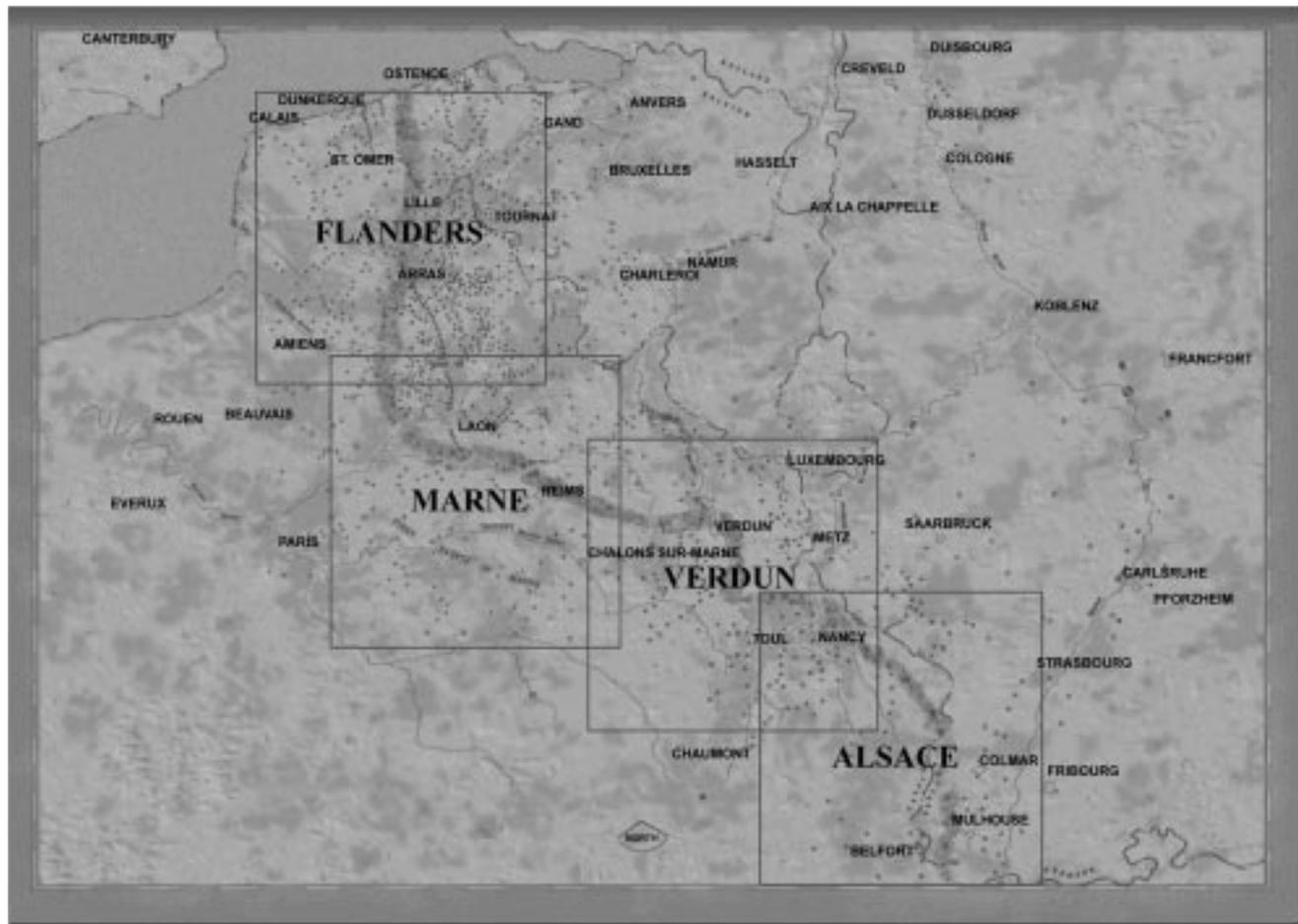
Opposing Armed Force.” This service could be in any capacity under the following circumstance: against an enemy of the United States; while engaged in military operations involving conflict with an opposing or foreign force; or while serving with friendly foreign forces engaged in an armed conflict against an opposing Armed Force in which the United States was not a belligerent party.

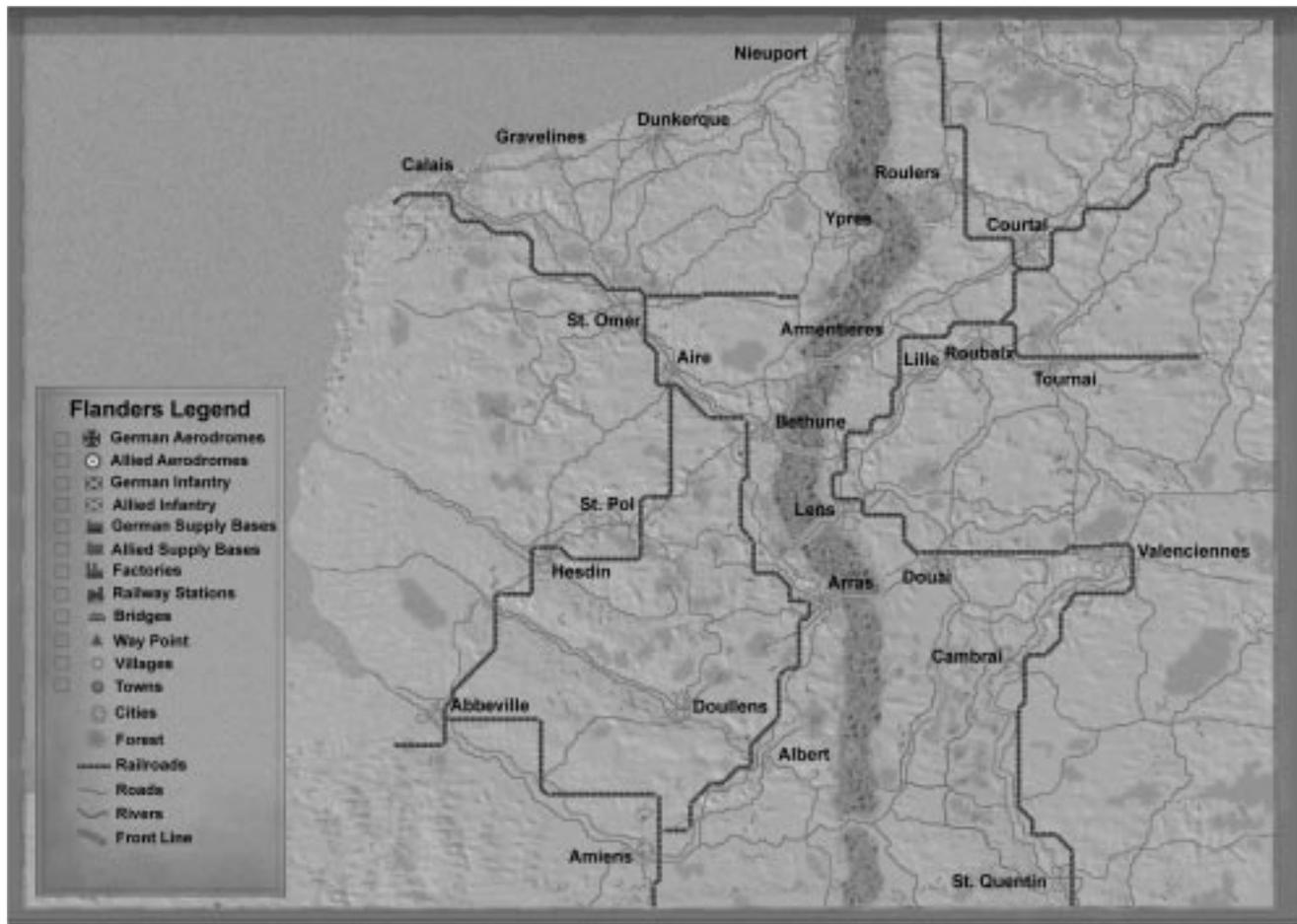
This medal was intended for presentation to servicemen whose actions were “so notable and have involved risk of life so extraordinary as to set the individual apart from his or her comrades,” yet whose ac-

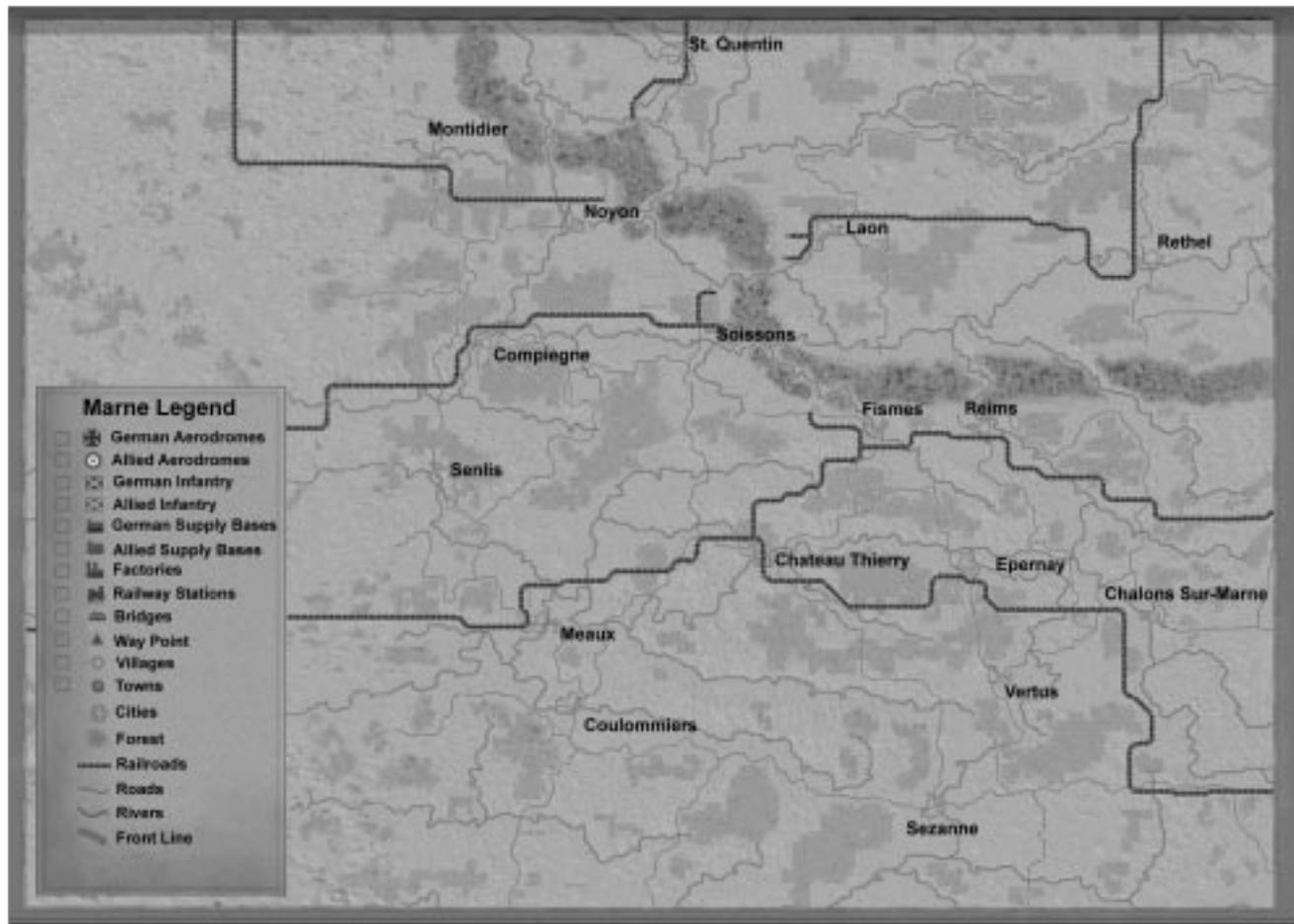
tions were not judged sufficient for the Medal of Honor. Although established in 1918, servicemen were eligible for this decoration for any action taking place after April 6, 1917.

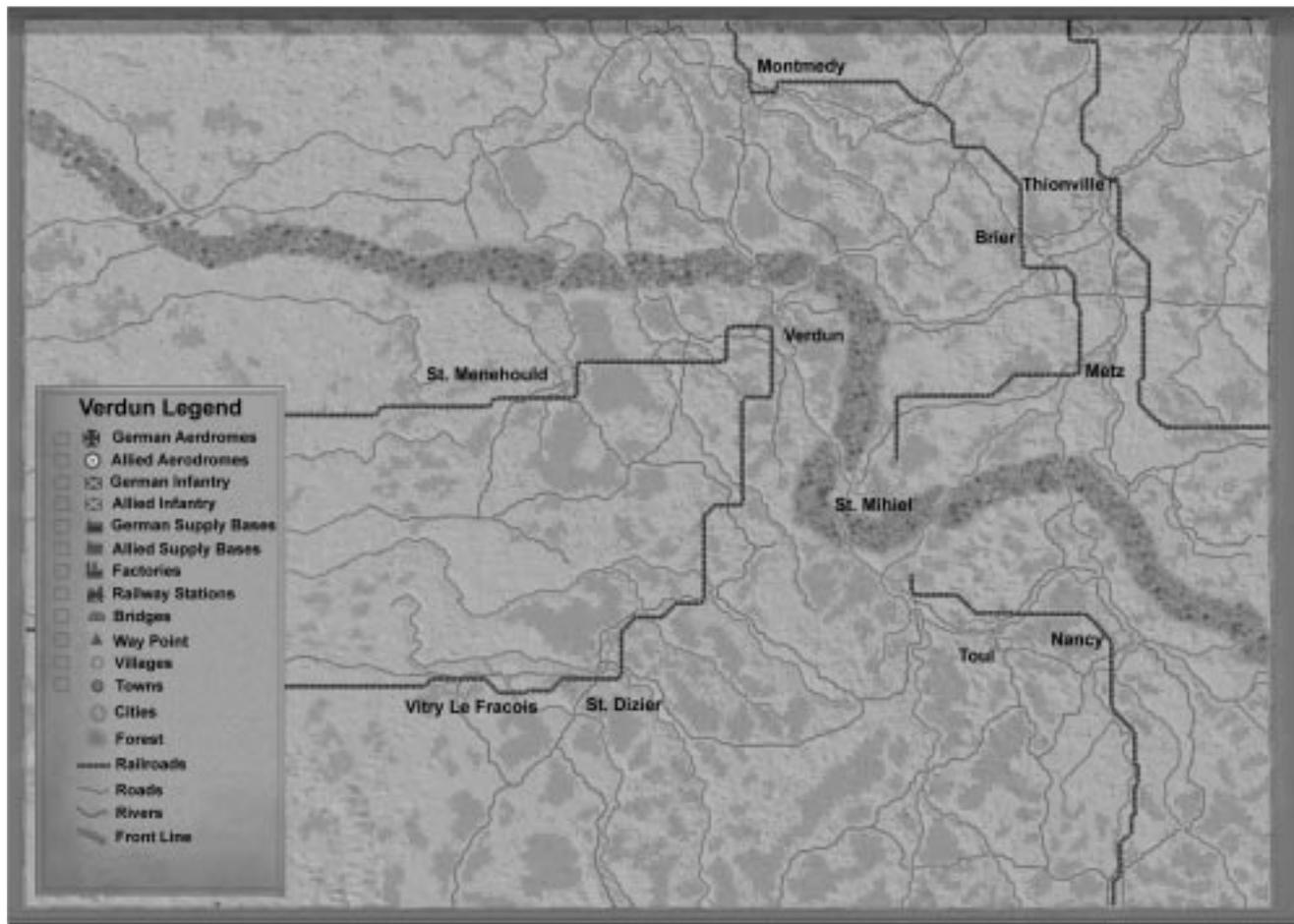


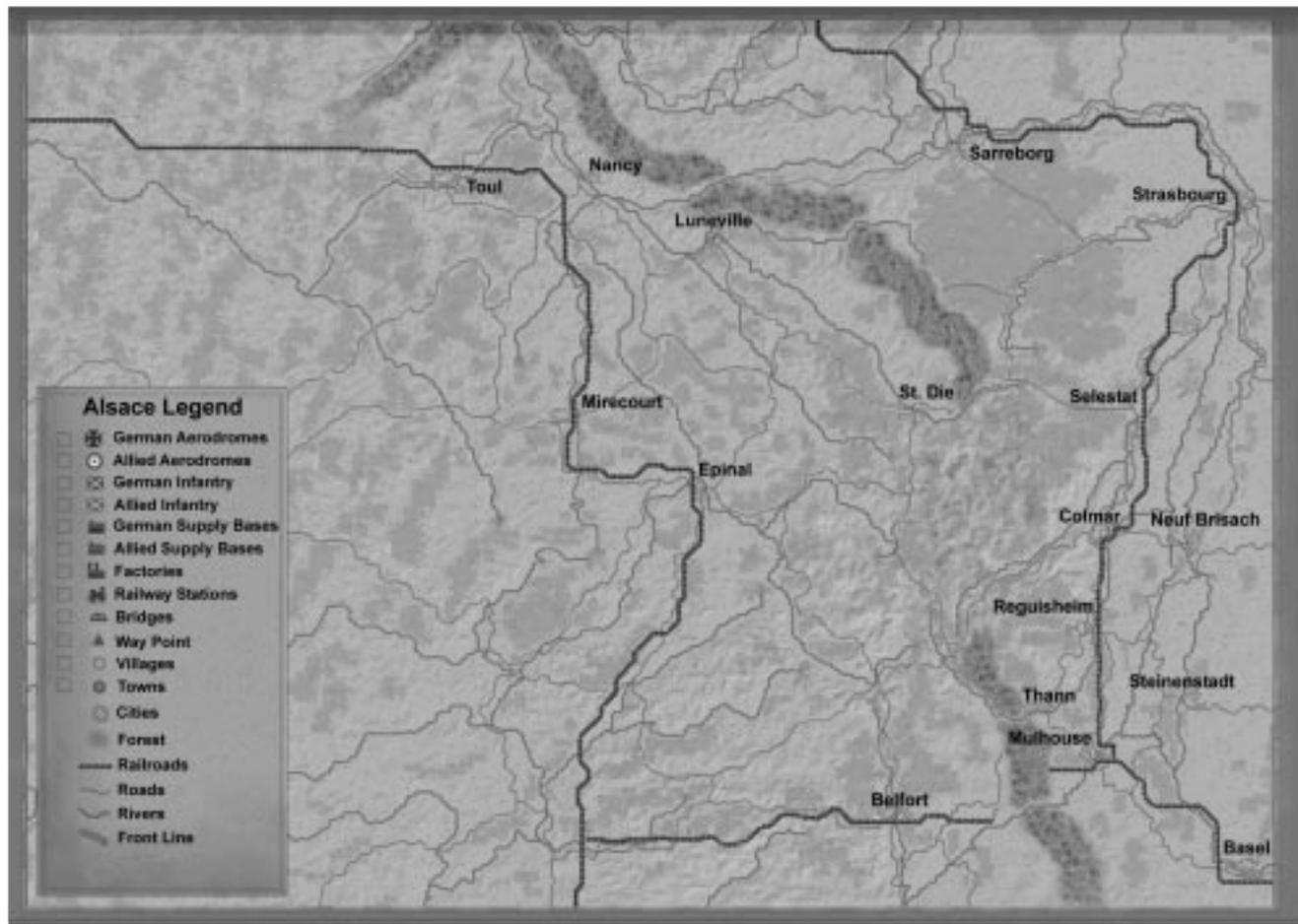
MAPS













GAME PLAY

INTRODUCTION

Red Baron II is a flight simulation program set in World War I, an era that saw the dawn of aerial warfare. There are three ways to play this game, each with its own appeal.

The simplest way to play *Red Baron II* is using the *Fly Now* option. When you select *Fly Now*, you jump straight to the simulation part of the game to begin dogfighting. By setting options on the *Preferences* menu, you can fly most of the fighter planes available during WWI in a dogfight against any other plane from the same set. A *Fly Now* game has no mission goal; you fly alone, your only purpose being to shoot down as many opponents as you can.

For a more complex game, you may choose to play a *Single Mission*. These missions are stand-alone scenarios that may be historical in scope, or may instead be fantasy “What if?” missions. Each *Single Mission* is a separate entity, with no connection to any other mission, but all of the elements of a full campaign are present: you fly as part of a squadron, with a specific mission goal chosen from a long list of possible targets. *Red Baron II*

includes a *Mission Builder* module you can use to create customized single missions to fly yourself or to share with friends.

For the longest and richest game experience, you can play a *Campaign* game. In this mode, you create a pilot whose career can span the entirety of World War I (though you can choose to run a shorter campaign if you wish.) For the Campaign mode, *Red Baron II* creates a dynamic virtual world of great historical accuracy, constantly populated and maintained as the campaign progresses. A single campaign may include hundreds of missions over years of game time.

Whichever style of game you choose, *Red Baron II* will provide an exciting and challenging flight sim experience.

GETTING STARTED

When you insert the *Red Baron II* CD, if your computer has the *Autoplay* function enabled you will see the **Autoplay** screen displayed. To play *Red Baron II* solo, click on *Play Red Baron II*.

THE MAIN MENU SCREEN

When you select “Play Red Baron II” from the *Autoplay* screen, the **Main Menu Screen** appears. The first three buttons (*Fly Now*, *Single Mission*, and *Campaign*) allow you to select the mode of play you want. The next two (*Object Preview* and *Ace Preview*) bring up historical information about the people and things you may encounter in *Red Baron II*. The *Preferences* button lets you customize the game parameters to suit your computer’s power and your own tastes.

- The *Fly Now* button takes you straight into the flight sim for a quick standalone dogfight. The parameters for the *Fly Now* dogfight are set from the **Preferences Screen**. *Fly Now* dogfights are completely indepen-



THE MAIN MENU

dent of either Single Mission play or Campaign play.

- The Single Mission button takes you to the **Single Mission Screen**, from which you can design, save, and play individual missions.

it that may be useful to you.

- The Ace Preview button allows you to view the biographical information and career records of the top German, French, British,

- The Campaign button takes you to the **Campaign Screen**, where you can create a pilot and re-fight World War I.

- The Object Preview button allows you to select enemy or allied planes, ground forces, or buildings, see a 3-D picture of the object, and acquire some information about

and American Aces of World War I.

- The Preferences button allows you to change game parameters such as the level of graphic detail, the sound volume, and the specifics for your *Fly Now* instant dogfights.

FLYING A SINGLE MISSION

Clicking on the Single Mission button on the **Main Menu Screen** takes you to the **Single Mission Screen**. The controls on this screen allow you to fly non-Campaign missions, and to create and save standalone missions for *Red Baron II*.

- The Fly Mission button takes you straight into the cockpit to fly the current mission.

- The View Briefing button brings up detailed information about the currently selected mission.

- The Select Mission button calls up a list of previously created missions for you to play. Once a mission has been selected, a box containing that mission's name and informa-

GAME PLAY

tion will appear at the bottom of the screen. If there is no currently selected mission, this box will not appear.

- The New Mission button takes you to the **Mission Builder Screen** so you can construct a custom mission. (See “The Mission Builder” section.)
- The Edit Mission button takes you to the Mission Builder with the currently selected mission already loaded and ready for editing.
- The Main Menu button returns you to the Main Menu.

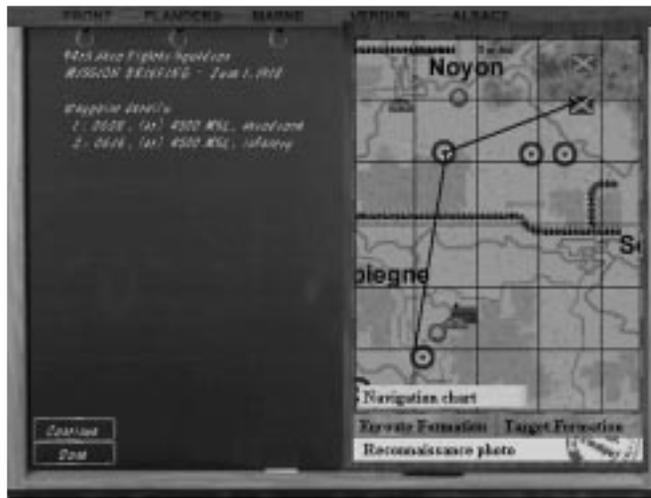
SELECTING A MISSION

When you choose the Select Mission button, a box containing a list of the available missions appears. Both the pre-created missions included with this game and any missions you have built yourself appear on this list. The missions are displayed in alphabetical order by filename, with the mission type and squad name also shown. To load a mission, click on its filename. If the list is too long to display completely, use the scroll bar

to scroll the list until you find the file you want. The filename will highlight, and a short description of the mission will appear in the textbox above the list.

If you decide to play the mission you’ve highlighted, click on the Select button at the bottom of the list. The list disappears and the Selected Mission box appears on the **Single Mission Screen**. You can then view the mission briefing, edit the mission, or head for the skies.

If you decide you don’t want to select a mission after all, click on Cancel to exit the list. If you decide to completely erase a mission, select it and then click the Delete but-



THE MISSION BRIEFING SCREEN

ton. The game will ask you to confirm that action, and then delete the file. This deletion can’t be undone, so be sure you want to get rid of that mission forever. The only limit on the number of missions you can store is on your disk space.

VIEWING THE MISSION BRIEFING

When you click on the View Briefing button on the **Single Mission Screen**, the Mission Briefing chalkboard appears. The chalkboard summarizes the key information about your flight and your mission. (Note: The maps are disabled while you are viewing the mission briefing.)

When you've reviewed the basics of your mission, click on Continue. The briefing clipboard will appear on the right half of the screen with your mission navigation chart (in black and white) visible on the top page. This is the portion of the map that will appear on your kneeboard during the actual flight. Your flight path is displayed, along with all nearby units and terrain features. The waypoints of your projected flight path are listed to the left of the clipboard.

After rechecking your flight path, click on Continue to flip to the next page of the clipboard. This page displays the formation your squad will fly on their way to the target. (See Formations in the Reference section.) The basic mission information is recapped next to the formation diagram. Click on Continue to

view the formation diagram for your squad to assume when it reaches its target.

After reviewing your formation plans, click on Continue again to bring up a black and white recon photo of your mission objective as viewed from the southeast. If your mission is a bomber escort, this page will show a schematic of the lead bomber in the flight to be escorted.

Once you finish examining the photo, you may click on Replay to flip back to the top page of the clipboard and view any or all of the pages on it a second time. You may click on the Done button on any page of the briefing to return to the **Single Mission Screen**.

PLAYING A CAMPAIGN

When you select Campaign from the Main Menu, *Red Baron II*'s **Campaign Screen** appears. When you choose to play a campaign instead of a single mission, you begin by creating a pilot character and determining the date on which he entered service in World War I. Your pilot is then assigned missions to carry out. If your pilot does well in his assignments, he will earn promotions which will allow you to have greater control over which

missions you will fly and what tactics you can employ to carry them out.

The basic unit of organization for pilots in World War I was the **squadron**, a group of up to twelve pilots (for Allied squadrons) or nine pilots (for German squadrons) under the command of a senior flyer, the **Squadron Commander**. On any given day, the squadron might be assigned one or more **missions** to fly. For this mission, the squadron may be divided up into smaller groups, called **Flights**, each with its own subcommander, the **Flight Leader**. Each Flight Leader has charge of the pilots in his flight, subordinate to the wishes of the Squadron Commander. Not every mission calls for the squadron to be divided this way, but it's more common than not.

Different squadrons have pilots of different quality. Better pilots tend to clump together in certain well-reputed squadrons. The best of the pilots, the **Aces** (those flyers who had shot down five or more enemy planes) are often, but not always, Squadron Commanders. A green pilot usually starts in a poor quality squadron; if he performs well enough, he may be able to swing a transfer to a better group. The better squadrons get the first shot



THE CAMPAIGN SCREEN

at the latest and greatest planes to roll off the assembly line, and also get replacement pilots and planes more quickly than poorer ones. The possible squadron ratings are *Poor*, *Average*, *Good*, and *Elite*.

In *Red Baron II*, you play a pilot in a fighter squadron in the service of your choice. Al-

though bomber flights exist in the game, and can even be created in the Mission Builder, your pilot will never fly a bomber, only fighters.

Starting the Campaign

The first time you start a new campaign, or any time you begin a campaign without any pilots created and saved, the **New**

Pilot Screen will automatically appear on top of the **Campaign Screen** (see “Creating a Pilot”).

The **Campaign Screen** itself has the following buttons:

- **Next Mission:** Once you have created

a pilot, this command will cause the game to generate your pilot’s next mission. Since you may have more than one pilot “active” at a time, missions will be created for whichever pilot you have currently selected using the Pilot Log button. Each pilot’s career is entirely separate from every other pilot’s and keeps its own separate timeline throughout the war.

- **Squadron Ops:** This button takes you to the **Squadron Ops Screen**, where you can examine data on the pilots and planes in your squadron, request a transfer, or personalize your plane (if your rank is high enough; see the section titled “Painting Your Plane”).

- **Intelligence:** From this screen, you can view intelligence data on other Aces and squads and get intelligence updates about the war effort in general.

- **Pilot Log:** This button takes you to the **Pilot Log Screen**, where you can view the identification papers of all the pilots you’ve created, select which pilot you want to fly, or remove a pilot permanently from the roster.

- **Personal Stats:** This button brings up the dossier of your current pilot.
- **Medals/ Awards:** This button will bring up your medals box and allow you to view your earned honors (if any).
- **New Pilot:** This button takes you to a blank pilot dossier, where you can create a new pilot with which to campaign.

Creating and Changing Pilots (*New Pilot* and *Pilot Log* buttons)

When you click on the New Pilot button, or if you enter the Campaign area of the game without any pilots, the blank Pilot Log book opens on the screen. On the left are the new pilot's enlistment papers, and on the right, a summary of his enlistment information.

To create a new pilot:

- **First**, select a service by clicking on the paper labeled *Service* in the left part of the dossier folder. A panel pops up, giving you a choice of the four available nationalities in the

game. Select the one you want by clicking on it, or click Cancel to close the box without making a selection. The box marked *Service* on the summary sheet (right page of the dossier folder) changes to show your choice.

- **Second**, choose an enlistment date (*DOE*) by clicking on the paper labeled *Enlistment Date*, then selecting a start date from the list shown. If you want to start later in the war, click on More to bring up more dates to choose from. The later you start in the war, the fewer missions your pilot can go on before the war ends, and therefore the shorter your campaign will be. Select the



THE PILOT LOG

date you want to start by clicking on it, or click Cancel to exit the Pilot Log. The box marked *Date of Enlistment* on the summary sheet changes to show your choice. Note that since *Red Baron II* uses historical data for campaigns, your choice of service will affect the date at which your pilot can enter the war.

GAME PLAY

- **Third**, choose the squadron you want your pilot to be assigned to at the start of his career. The choices you've already made for his service and enlistment date limit which squadrons are available to your pilot. (More squads are available later in the war than during the earliest months.) Select the squadron you want to belong to by clicking on it, or click Cancel to exit the Pilot Log. The box marked *Current Squadron* on the summary sheet changes to show your choice.

- **Fourth**, choose a starting rank for your pilot. This list is displayed with the lowest rank at the top and the highest rank at the bottom. Starting at a higher rank gives your pilot more privileges but fewer opportunities for promotion during the campaign itself. (See "Pilot Rank and Position".) Select your pilot's rank by clicking on it, or click Cancel to exit the Pilot Log. The box marked *Rank* on the summary sheet changes to show your choice.

- **Fifth**, christen your pilot. Click in each of the boxes on the summary sheet next to *Last Name* and *First Name*. Type in your pilot's

name and press enter.

- **Last**, you may select a photo for your pilot by clicking on the box in the upper left corner of the summary sheet (which by default says "*No Pilot Photo Available*".) Continue clicking on the photo box until you find a photo that you like.

- When you are finished, click on the Done button below the Pilot Log in order to save your pilot and exit from the Pilot Log screen.

Once you have created one or more pilots, you can switch between campaigns by clicking on the Pilot Log button and selecting a new pilot. You can shuffle through the available pilot logs by using the Next Page and Previous buttons at the bottom of the screen. The last page in the logbook always displays a blank page for creating a new pilot.

To remove a pilot completely (and the campaign he is associated with), bring up his log in the book and then click on Delete.

Pilot Rank and Position

The rank you select for your pilot at the

start of the campaign will tend to affect what position he is assigned in the squadron. If you choose a high rank, your pilot may be assigned as **Squadron Commander**, a position with command privileges over the entire squadron. If you choose a moderate rank, your pilot may be assigned as a **Flight Leader**, with command privileges over his own flight, but not over the squad as a whole. If you choose a low rank, your pilot will probably begin with no privileges at all.

Choosing a high rank is no guarantee of your pilot's position, however. If there is another pilot of equivalent rank in the squadron, the pilot with the most seniority will be posted as the Squadron Commander. Similarly, if your mid-ranked pilot is assigned to fly in the same flight as Squadron Commander, he may end up without command privileges despite his rank. Conversely, your low-ranked pilot may find himself in charge of a flight, or even the entire squadron, if all the higher-ranked pilots in your squadron are killed.

If your pilot scores five kills, he becomes an **Ace**, a designation that gives him the right to personalize his plane. Other pilots may work their way up to become Aces during the course

of the campaign; however, only historical Aces will have personalized planes and entries in the Ace Preview.

Learning About Your Squadron (*Squadron Ops* button)

The **Squadron Ops Screen** holds commands that you can use to find out about the pilots and planes in your squadron.

- The Kill Board button brings up a list of the pilots in your squadron and their score of kills, with the pilot having the most kills listed at the top. Click on Done to return to Squadron Ops.

- The Pilot Dossiers button brings up a notebook, which shows your squadron's name and insignia on the left page and a list of the pilots in the squadron on the right. Click on the name of one of the pilots to bring up that pilot's dossier and kill list. You can turn the pages of the notebook by clicking on them, or by using the Previous and Next buttons at the bottom of the screen. To return to the pilot list, click on the tab marked "I" (for Index.) Click on Done to return to Squadron Ops.

- The Squadron Info button brings up a notebook which shows your squadron's name, insignia, base of operations, assigned region, quality, and which Aces (if any) are part of the squadron on the left page, while the right page shows a list of the planes in your squadron. If there is an Ace in your squadron who has a personalized plane, that plane will have a separate entry of its own. Click on the name of a plane to bring up a picture of that plane and its performance specifications. You can turn the pages of the notebook by clicking on them, or by using the Previous and Next buttons at the bottom of the screen. Click on



THE SQUADRON OPS SCREEN

Done to return to Squadron Ops.

- The Transfer button allows you to request assignment to a different squadron. (See "Requesting a Transfer.")
- The Paint Shop button lets you change

GAME PLAY

the graphics for your plane and/ or for the other planes in the squadron, *if* your rank is high enough. See “Painting Your Plane” for details.

- The Campaign button returns you to the **Campaign Screen**.

Requesting a Transfer

To request a transfer to a different squadron, click on Transfer on the **Squadron Ops Screen**. A transfer request form appears. Click on the box under *New Squadron* that says Select and a selection box will pop up (this box is moveable). Click on the name of a squadron to which you are possibly interested in transferring. With that squadron’s name highlighted, you can then select Info to pull up the Squadron Info for that squad, or you can select Locate to see the Front Map with that squadron’s location marked by a flashing red box.

When you’ve decided on a squad to transfer to, click on Done (with that squad highlighted). You will be returned to the **Squadron Ops Screen**. At the end of your next mission, you will be informed whether or not

your transfer request was granted. You must complete a mission after putting in the transfer request in order to have the transfer request considered.

Painting Your Plane

Selecting the Paint Shop button from the **Squadron Ops Screen** allows you to customize the look of your plane, **if** you have the appropriate position in your squadron.

- If you are an **Ace** (that is, you have five or more kills to your credit), you will be allowed to customize your own plane. Many, but not all, of the historical Aces in the game have their own personalized paint schemes for their planes.
- If you are **Squadron Commander**, you may redesign the paint scheme for every plane in your squadron except any Aces who have their own plane design. If there is an Ace in your squadron who does not have a personalized plane, his plane will be redesigned with the rest of the squad’s.
- If you are neither an Ace nor the Squad-

ron Commander, you cannot repaint any planes.

When you click on the Paint Shop button, the **Paint Shop Screen** appears. From this screen, you can apply previously created paint schemes to the planes in your squadrons (assuming you have the right status.) The first column on the page shows the list of plane types available to your squad. The two columns to the right of the plane list show what paint schemes, if any, are currently assigned to each type of plane. The buttons in the *Self Assignments* column can be clicked on to assign a paint scheme to just your own plane *if you are an Ace*; the buttons in the *Squadron Assignments* column can be clicked on to assign a new paint scheme to all planes in your squadron *if you are the Squadron Commander* (except those belonging to Aces with their own personal paint schemes.)

There are three settings for each of the paint schemes buttons:

- If the button says **None Available**, it means that no paint schemes have been created yet for that type of plane.



THE PAINT PLANE SCREEN

- If the button says **Unassigned**, paint schemes are available but none have actually been applied to that plane.
- If you have already assigned one or more paint schemes, the button will show the filename of the chosen paint scheme.

any changes.

To create a new plane paint scheme, click on Paint Shop. The **Paint Shop Screen** will appear. On this screen, you can choose to either load an entire paint scheme to be applied to your plane all at once, or you can custom design a pattern for each of the areas

To assign a paint scheme, or to switch to a different paint scheme, click on the button in the appropriate row and column. A file list will appear. Select a scheme by clicking on it, then click on Select to apply that scheme, or click on Cancel to go back to the **Paint Shop Screen** without making

of the plane's surface. The number of areas to be painted will vary between planes, depending on the number of wings.

There are two types of files used in painting planes:

- **Parts** files: These are bitmap files (BMP format) that hold patterns for a single part of the plane. To customize a bitmap, you can export one of the designs that come with *Red Baron II*, alter it using most common graphics programs, and re-import the changed file. Each bitmap is created to fit onto a specific part of the plane — if you attempt to load a bitmap created for one plane part onto a different plane part, the game will try to map that bitmap onto the new plane part (most likely with unpleasing results.) Therefore, it's a good idea to be careful when naming files so you will later be able to tell which bitmap goes with which part of the plane. Also, you are not allowed to load a bitmap that has too much "blank" (transparent) color as part of the image.

- **Configuration** files: When you save an entire paint scheme, a configuration file (CFG format) is created which lists the

GAME PLAY

bitmaps to be used when creating that paint scheme. If you create a configuration file, then later remove one of the bitmaps called for in that file, the game will use the default bitmap for that plane in place of the missing one.

Paint schemes for each of the squadrons and many of the Aces in the game come preloaded in *Red Baron II*. You can freely borrow any of the existing paint schemes for your own plane or squadron, or mix- and- match parts of different schemes to create a unique pattern.

To paint your plane, start by painting each of the surfaces. (The default paint texture for your squadron will be displayed when you begin.) On the left of the **Paint Plane Screen** is the Plane Part panel. Click on the up/ down arrow buttons in the selection box at the top of this panel to select a plane part to paint. The picture under the selection box will change to show the plane part being painted.

- If you want to use one or more of the pre- existing paint textures, click on the up/ down arrows in the *Squadron Texture* selection box under the part graphic to choose a pre- existing squadron or Ace paint texture for that part. (Only paint textures from

squadrons and Aces of your own service are available.) Clicking Cancel reverts to the last applied paint job. When you find a design you like, click on Apply, and the new paint texture for that part will be applied to the 3D picture of the entire plane (to the right of the Plane Part panel.) Once you click Apply, you can't cancel your choice unless you either exit without saving and start over, or reapply the default paint texture. Note: If you can't see the part of the plane you're painting on the 3D picture, try rotating the plane to expose the lower surfaces.

- If you want to modify an existing texture by hand, find the part and paint design you want to work on, then click on Export. In the file list that appears, click on the bottom box, type in a file name (eight characters, no extension) and click on Save. You can then exit *Red Baron II* and use the graphics program of your choice to modify the bitmap. Then bring the modified bitmap back into the **Paint Plane Screen** by clicking on Import. A file list appears. Click on the file name and on Select, or click Cancel to return to the **Paint Plane Screen** without loading the

edited bitmap

The right side of the **Paint Plane Screen** allows you to save a paint scheme for the entire plane at once. A 3D picture of the plane is displayed, showing the current paint scheme. Use the view control diamond directly beneath the 3D- plane graphic to get a good look at all the painted surfaces of the plane. Click on an arrow to rotate the plane in that direction, left- click on the magnifying glass in the center of the diamond to zoom in, and right- click on the magnifying glass to zoom out.

When you have a paint scheme you're pleased with, click on Save. In the file list that appears, click on the bottom box, type in a file name (eight characters, no extension) and click on Save.

To bring in a previously saved paint scheme, click on Load. A file list appears, with the currently selected file highlighted in green. Select the file to load by clicking on it, then clicking on Select. The new paint scheme appears.

If there is more than one plane available to your squad, click on Plane List to see them all. You can then click on the type of plane

you want to create a design for to select it, then click on Select to load that plane for painting. Note that if you want to see your fancy new paint scheme on your own plane, or on those of your squad members, you have to make sure you've assigned them that type of plane to fly!

If you decide you don't like your new paint scheme after all, click on Exit to return to discard all your changes and return to the **Paint Shop Screen**.

Learning About the Enemy (*Intelligence* button)

The **Intelligence Screen** gives you four sources of information on the players in the war.

- The Top Aces button shows you a list of the top fifteen Aces of all four services in descending order, the Aces with the most kills at the top.
- The Ace Dossiers button opens a notebook you can use to get information on the

Aces serving in the war. (Note: The list of American Aces is not available until 1918.) You can jump to the list for a particular service by clicking on either the service name or the index tab marked with that service's initial (click on the "I" tab to return to the index) or you can flip through the notebook a page at a time by either clicking on the page you want to turn or by clicking on the Previous and Next Page buttons at the bottom of the screen. On the index page for the service you've chosen is a list of the Aces of that service; select an Ace by clicking on his name and his dossier will open, showing his biographical information



THE INTELLIGENCE SCREEN

and his kill list. (Note: if the Ace's kill list is very long, the pilot's dossier may take up more than two pages of the notebook.)

- The Local Squads button brings up a notebook holding information on any other squads which are reported to be in action in the same region as your own squad. As with

GAME PLAY

the pilot dossiers, select a service by clicking on the service name or on the appropriate index tab, or flip through the notebook page by page to see all the entries in order. On the squadron index page for the service you've chosen is a list of the nearby squadrons of that service. Select a squadron by clicking on its name and a Squadron Info sheet on that squadron will appear. As with your own Squadron Info sheet, you can bring up information on the squadron's planes by clicking on the plane name on the right-hand page.

- The Intel. Reports button brings up a short movie which will describe some new development in the ongoing war effort.

Viewing Your War Record (*Personal Stats and Medals/* *Awards* buttons)

Clicking on the Personal Stats button on the **Campaign Screen** brings up the dossier for your current pilot, showing his biographical information and his performance record. You can flip through the pages of your dossier either by clicking directly on the page you want

to turn, or by using the Next Page and Previous buttons at the bottom of the screen.

To view your war honors (if you've earned any), click on the Medals/ Awards button. Your medal box will appear on the screen and open to show your medals. Click on a medal to zoom to a close-up picture of the award and read a text description of the meaning of the medal. Click on Done to return to the **Campaign Screen**.

Flying a Mission (*Next Mission* button)

When you select Next Mission from the **Campaign Screen** for the first time, you will automatically be taken to the first screen of the Mission Briefing for your current assignment. The information presented in this briefing is exactly the same as that presented for a Single Mission (see "Viewing the Mission Briefing"). You may skip the briefing by clicking on Done on this first screen.

After you have read (or skipped) the briefing, the orientation screen for your new assignment appears. There are four buttons on this screen:

- Fly Mission will take you directly to the cockpit of your plane to start flying.
- View Flight Plan will take you to screens allowing you to view and – if your rank is high enough – change elements of the flight plan for the current mission.
- Repeat Briefing will return you to the briefing screens to review the mission profile.
- Campaign will return you to the **Campaign Screen**.

Campaign Time

Time during a campaign passes in a more-or-less normal fashion. Most days your squad will be assigned to at least one mission flight, perhaps as many as four. Missions can be assigned once every four hours, but in the winter months there might not be that much daylight available. (Although you can design a night mission in the Mission Builder if you choose, during a Campaign you will never be assigned to fly in the dark.) Any day on which your squad is not assigned a mission flight,

you have the option of rounding up some of your squad mates and taking them out on an *Unofficial Flight* (see “Unofficial Flights”).

Some days your squad will not be able to fly, either because of weather or because HQ has ordered your squad to stay grounded that day. Days on which your squad can’t fly are simply skipped without comment on the campaign calendar.

Some campaign events that can happen to your pilot during his career will advance the campaign calendar by significant jumps. If your pilot is wounded, for example, he will be out of action for several months, on average. He may also be captured by the opposition and imprisoned for some length of time before he is able to escape.

When a non-player pilot in a squad is killed, it will take a certain amount of time before a replacement is assigned to fill the space. The amount of time it will take for a new pilot to arrive will vary from a few days to a week. Squadrons with a higher quality rating will get replacements faster than poorer squadrons. Similarly, if a plane is lost but the pilot survives and remains active, the amount of time it will take for a replacement plane to arrive

will vary but will usually take about a week, and will be delivered more quickly to the better squadrons.

Viewing and Changing Your Flight Plan

There are three screens within the Flight Plan section of the mission: the Flight Path Map, the Flight Ordnance screen, and the Squadron Status screen. On each screen is a different set of information about your mission plan, with a number of options that you *may* be able to adjust, depending on your position within the squadron. The higher your pilot’s status in the squad, the more elements of the flight you have the authority to alter.

- If your pilot is the highest-ranked flyer in the squadron, he will be the **Squadron Commander**. (If you and another pilot have equal ranks, the one with the most seniority will be the Squadron Commander.) The Squadron Commander has the authority to rearrange all elements of the mission except for the mission targets.
- If your pilot has sufficient status, he may be assigned as the **Flight Leader** in his own flight. (As with the Squadron Com-

mander, in case of a tie on rank, the flyer with the most seniority gets the leader spot.) As Flight Leader, you can rearrange all elements of your own flight, but not of any other flights in the squadron.

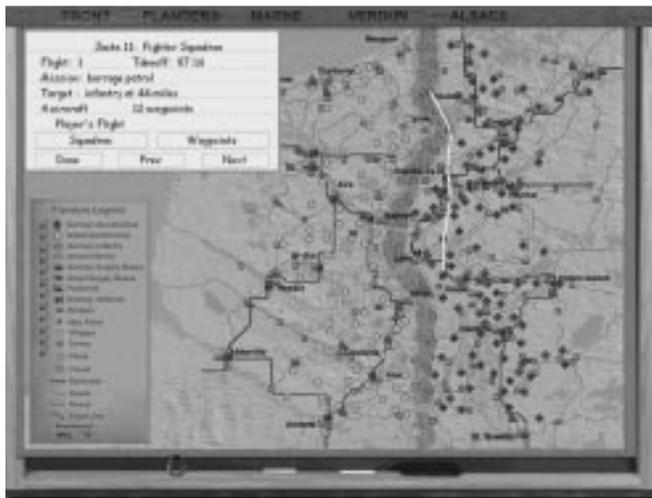
- If your pilot is neither the Squadron Commander nor the Flight Leader, the only thing you can change in the flight plan is the status of your own ordnance.

Note that your pilot’s status in the squad may change even if he doesn’t get promoted; if a senior officer is killed, your pilot may be moved up in position and gain new authority even though he remains at his former rank.

Changing the Flight Path

The first screen that appears when you select the View Flight Plan button is **the Flight Path Map** which shows the area of operations, target, and vector for your flight, plus the flight summary card. The pointer appears as a magnifying glass. To zoom in for a closer look at any area, center the pointer over the area you want to view and click the left mouse button. To zoom back out, click the right mouse button. You can also use the plus (+) and minus (-) keys to zoom in and out. There

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THE FLIGHT PLAN SCREEN

are two levels of magnification available.

To view a different area of the map while zoomed in, move the cursor to the edge of the map in the direction you want to travel and the map will scroll that way. The closer to the edge of the map the cursor is placed, the faster the map will scroll.

On this screen, player position in the squad allows the following things to be changed:

•By the Squadron Commander:

The squad commander may change, add, or delete any waypoint (except for the start and target waypoints, which may be edited but not moved or deleted) for any flight in the squad.

• **By the Flight Leader:** The Flight Leader may change, add, or delete any waypoint (except for the start and target waypoints, which may be edited but not moved or deleted) for his own flight only.

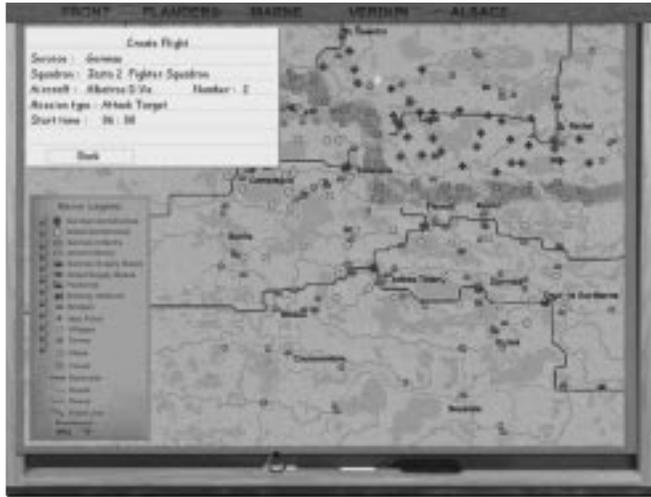
• **By other pilots:** If you are neither Squadron Commander nor Flight Leader, you may not edit any waypoints.

The *Flight Summary Card* has the following buttons:

• **Squadron:** This button brings up the *Squadron Card*, which shows all the flights in the squadron. You can view the flight path of any flight in the squadron by clicking on the flight number; the *Flight Summary Card* for the flight number will appear. You can access the **Squadron Screen** from this card by clicking Done. When the *Squadron Card* is displayed, the flight paths of all the flights in the squadron show up on the map. The player flight is shown in red; all other flights are shown in yellow.

• **Waypoints:** This button brings up the list of waypoints for the current flight. If your pilot has the authority, these waypoints can be edited as they are in the Single Mission builder (see “Editing Waypoints” in the Single Mission section).

• **Restore Path:** This button only appears



THE FLIGHT PATH MAP

after a change in the flight path has been made. Clicking it will return the path to its original state, erasing any changes you've made.

- Next and Prev: These buttons allow you to shuffle through the stack of flight summary cards.

card (or the Flight button on the **Squadron Screen**), the **Flight Ordnance Screen** appears. This screen holds a summary of information about the current flight, including the target nature and location, takeoff time, pilots assigned, and planes. To the right of the pilot names is a four-column table with

• **Done:** This button takes you to the **Flight Ordnance Screen**. The flight whose flight card is showing on the Flight Path Map will appear on the **Flight Ordnance Screen**.

Changing the Flight Ordnance

When you click on the Done button on a flight

one of the four possible types of ordnance in each column. You can always adjust the ordnance carried by your own plane. If you are Squadron Commander or Flight Leader, you may adjust the ordnance carried by all planes in the flight. To select a type of ordnance, click in the check box. Depending on the type of plane your squadron is flying, some kinds of ordnance may not be available (the boxes will be obscured and inactive.)

You can return to the **Flight Path Map** by clicking on the red ring under the appropriate map name (top of the screen); the *Flight Summary Card* for the current flight will be automatically displayed. Click on Squadron to switch to the **Squadron Screen**. Click on Done to save your changes and return to the **Next Mission Screen**. Click on Cancel to discard all your changes and return to the **Next Mission Screen**.

Changing the Squadron Status

The **Squadron Status Screen** appears when you click on Squadron while on the **Flight Ordnance Screen**, or when you click on Done from a squad card on the flight path map. This screen shows a list of all the flights

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THE FLIGHT ORDNANCE SCREEN

in the squadron and which pilots are assigned to which flights. The final slot on the flight chart shows those pilots who are *Available* – not currently assigned to any flight. A check mark by the flight number shows which flight is currently selected; to select a different flight,

- You may transfer any pilot from any flight to any other flight, including yourself, or transfer a pilot into or out of the *Available* pool of idle pilots. (You can put yourself in the Available pool too, if you wish to avoid the mission altogether.) The only restriction is that each pre-existing flight must have at

click on the flight number and the check mark will change position.

This screen can be used to rearrange pilot assignments, but the degree to which you can do this depends on your pilot's authority in the squadron.

If you are the **Squadron Commander**, you may make the following changes:

least two pilots.

- You may change a plane assignment by right clicking on the plane name. To swap planes between two pilots, left-click on the first plane name and drag it into the slot next to the second pilot's name. The two planes will swap positions.

- If you have sufficient pilots available, you can create a new flight to add to the ones already assigned to your squadron. (See "Unofficial Flights.")

- You can remove a flight that you created yourself. (Note: only those flights that you created yourself can be deleted – you can't delete flights assigned by HQ.)

If you are a **Flight Leader**, you may transfer any pilot in your flight to the Available pool (including yourself), or add any pilots in the Available pool to your flight. **One important point:** If you transfer yourself to the Available pool, your pilot will lose his Flight Leader privileges and be unable to return to his previous position in the flight! You will never be placed in the Available pool by the game at the start of a mission; if there is a flight

scheduled, your pilot will be assigned to it.

If you are neither the Squadron Commander nor a Flight Leader, you may not make any changes in the squadron assignments.

To change a pilot's assignment in the squadron or in your flight, click and hold on the pilot's name, then drag it to a new slot on the chart and release the mouse button. If you drag your current choice into an empty slot, that pilot will be added to that flight (or to the Available pool); if you drag your choice to a slot that already has a pilot in it, he will swap places with your choice.

Pilots who remain unassigned to a flight (that is, in the Available pool) at the start of the mission will be able to provide air cover for the aerodrome in case of enemy action. Note that squad members can die during a mission, which may leave your squadron underpowered until a replacement is assigned.

You can return to the **Flight Path Map** by clicking on the red ring under the appropriate map name (top of the screen); the squad card for your squad will be automatically displayed. Click on Flight to switch to the **Flight Ordinance Screen**. Click on Done to save your changes and return to the **Next Mission**

Screen. Click on Cancel to discard all your changes and return to the **Next Mission Screen**.

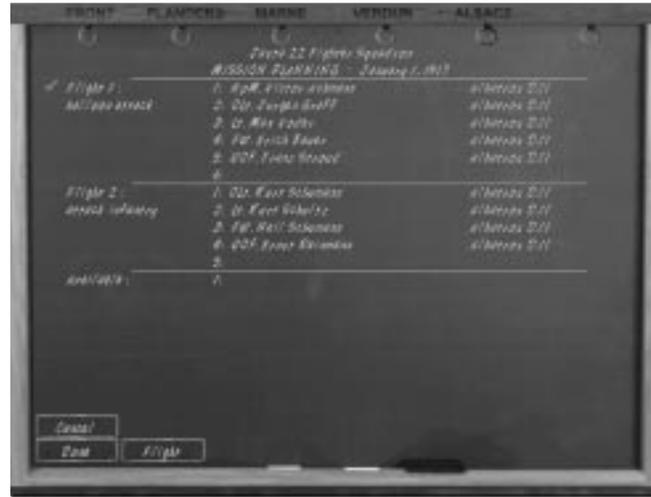
Rules for Creating Unofficial Flights

Sometimes, your pilot may have the option of organizing a flight that wasn't called for by HQ. Your ability to set up one of these unofficial flights depends on several factors.

An unofficial flight may be set up during a regular mission. In order to add a flight such as this, your pilot must be either the Flight Leader or the Squadron Commander.

Although your player will always begin assigned as part of a flight, if you are a Flight

Leader, you have the option of moving yourself (and any excess pilots in your flight, if you wish) into the *Available* pool and then attempting to create a new flight. Remember that you will lose your Flight Leader privileges once you move into the Available pool, so move your extra pilots out *before* you move



THE SQUADRON STATUS SCREEN

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yourself.

The rules for successful flight creation are:

- You may always create a “Lone Wolf” flight for just yourself, with no other pilots.

- You may recruit any other pilots from the available pool who are **of your rank or lower** to join you in one of the limited mission types available.

- Some mission types require a minimum number of pilots to set up. If there are too few pilots in the pool who are of your rank or lower, you will not be able to set up certain types of missions.

If you are the Squadron Commander, you have the option of creating a flight just as a Flight Leader does, except that you do not have to include yourself in the new flight. The limitations on pilot minimums for missions still apply, however.

Creating an Unofficial Flight

Whenever conditions are right to allow the creation of an unofficial flight, a new button will appear on the **Squadron Status Screen** labeled Add Flight. Select this button to be-

gin creating the new flight.

When you select Add Flight, the view will switch to the **Flight Path Map**, and you will be presented with a card listing the possible types of missions your new flight can undertake. (These mission types are the ones that can be accomplished without a need for coordination with other units.) Choose a mission type by clicking on it. If there are not enough pilots in your new flight for the mission type you’ve chosen, a dialog box will appear informing you of this fact.

Once you have a usable mission type selected, select a target for the flight. The flight will be added to your squad’s mission profile and can then be edited like any other flight.

If you change your mind about creating this flight, you may remove a flight you added yourself by selecting your flight and then clicking on the Delete Flight button that appears when your new flight is created.

Mission Results

A mission can end in any of several ways.

- Your pilot could **Die** in a crash or if directly hit by enemy fire. Naturally, this ends the campaign.

- Your pilot could be permanently **Maimed** in a crash, by direct enemy fire, or when bailing out of a burning plane. This also ends that pilot’s campaign. (To bail out of a plane, press the **j** key three times in a row. Note that you don’t have a parachute, so this should be considered an action of the last resort.)

- Your plane could **Crash**, your pilot making it out unscathed somehow.

- Your pilot could be **Injured** in any of the same ways. In this case, his wounds are not severe enough to cause a permanent disability. The campaign date will be advanced several months from the mission in which the pilot was injured, to allow for recovery time.

- Your pilot could be **Captured** if he ends his mission over enemy territory, or if he crashes or bails out into enemy territory but survives. This may or may not end that pilot’s campaign; there is a chance that he will escape before the end of the war and be able to return to his unit.

- Your pilot could be **Disciplined** if his actions during the mission were deemed criminal or just plain incompetent. For serious infractions, such as shooting down members of his own squadron, the pilot might be executed or imprisoned, ending the campaign. For lesser offenses, he might be transferred to a lower-quality squadron, demoted in rank, or officially reprimanded. If your pilot is sent before a court martial for his actions, there is also a chance he'll be cleared – that is, an investigation will determine that his breach of conduct was due to the heat of combat, and he will not be disciplined for it.

- Your pilot could get **Promoted** if his total earned points for the campaign reach the next rank threshold.

- Your pilot could get a **Medal or Award** if his actions were particularly meritorious. (These are usually given out based on number of kills.)

It's possible for your pilot to get some combination of these results. He could be both wounded and captured, for example, or be

promoted and get a medal at the same time (or die and get a medal posthumously.) One or more short animated sequences will play to show you what happened at the end of your mission.

The accumulation of mission points during the campaign may also allow your pilot to transfer to another, better-quality squadron if he chooses.

OBJECT PREVIEW

This screen allows you to view information on objects that you may encounter during your missions. The main window on this screen displays a three-dimensional picture of whatever object you have selected to view. The name of the object appears at the top of the window.

To rotate the object, click on one of the four arrows in the *Control Diamond*. The right and left arrows will rotate the object horizontally, and the up and down arrows will rotate the object vertically. You can change the view in small steps by clicking repeatedly on an arrow, or you can scroll the view smoothly by clicking on an arrow and holding down the mouse button. To resize the picture, click on

the magnifying glass icon in the center of the Control Diamond. Clicking with the left mouse button zooms in (enlarges the picture) while clicking with the right mouse button zooms out (reduces the picture). You can either resize one step at a time with each click, or you can click and hold the mouse button down to smoothly zoom in or out of the picture.

To view a new object, click on the List button at the bottom of the **Object Preview Screen**. A panel will pop up on the left side of the window. You can choose from one of four object "classes": German planes, Allied planes, ground forces, and structures. An "X" appears in the check box next to the name of the currently selected class. To switch to a different class, click the mouse pointer in the check box next to the class you want to view. The "X" will move to that class, and the objects within that class will appear on the list below the class selection box.

To select an object from the list, use the arrows at the left of the list box to move through the list until you find the object you want to view, then click on the button labeled Select. The object will appear in the



THE OBJECT PREVIEW SCREEN

Object Preview window. You can flip through the list one page at a time using the Page Up and Page Down buttons on your keyboard. If you change your mind about selecting a new object to view, click Cancel to return to the **Object Preview Screen** without changing the displayed object.

ACE PREVIEW

This screen allows you to view biographical data and career records of the greatest Aces of World War I. Unlike the dossier you can access from within the campaign, this screen presents historical information on each Ace's

To see useful data about the pictured object, click on the button labeled Specifications. A block of text will appear next to the pictured object. To remove this block, click on Specifications again.

To return to the **Main Menu Screen** from the **Object Preview Screen**, click on Main Menu.

performance for the entire war.

When you select the Ace Preview button from the Main Menu, the *Ace Dossier Book* appears on the screen and opens to the *Index*. From the Index page, you can choose to view the Ace biographies of any of the four nations represented in *Red Baron II*. To choose a nation, you can either place the mouse pointer over that nation's name on the index page and click, or you can click on one of the *Index Tabs* at the right edge of the *Ace Dossier Book*. The book will open to the alphabetical listing of all the Aces of that service who saw service during World War I. To return to the Index page at any time, click on the "I" tab.

Select a record to view by clicking on the Ace's name. The dossier book will open to that Ace's page and display his picture, biographical information, and record of kills throughout the war. To turn to the next page, you can either click anywhere on the right-hand page itself, or click on the Next Page button at the bottom of the screen. To flip back a page, click anywhere on the left-hand page, or on the Previous button at the bottom of the screen.

When you are done reading the Ace biographies, click on Done to return to the Main

Menu.

PREFERENCES

The options on the **Preferences Screen** allow you to customize your game to fit your wishes or the capabilities of your computer. Each button on this screen brings up one or more sub-screens with options for setting the various parameters of the game.

Realism Setting

The options in this area control how “realistic” your game is. The higher you set the level of realism, the more difficult the game becomes as more limitations on your plane’s capabilities come into play.

When you select this button, a panel labeled *Realism Settings* appears, with a slider bar and three buttons. The slider bar provides global control over the level of realism in your game. The closer toward **High** that you move the slider, the more reality options will be enabled. The number and nature of the reality options that are enabled at each level on the slider are predetermined by the game.

After you have set the reality level, click on OK to return to the **Preferences Screen** with your new settings enabled, or click on Cancel to return to the **Preferences Screen** with your former settings unchanged.

If you would prefer to customize your own game, setting each option individually, you should ignore the slider bar and instead click on the button labeled *Realism Options*. On this screen you can pick and choose which reality options you want to include and which you want to leave out. *Note: if you customize your Realism settings and then move the global slide bar, you will lose all your*



THE ACE PREVIEW SCREEN

custom settings, so be careful.

The options that can be set and their effect on the game are as follows:

- **Vulnerability:** With this option set to *On*, your plane and pilot will take damage from enemy fire, crashes, and so on. With this option set to *Off*, your plane (and you!)

GAME PLAY

become invulnerable and won't take damage from anything at all. Note that making your plane invulnerable drastically reduces your game score modifier.

- **Ordnance:** Set this option to *Limited* to limit the amount of ordnance (ammo, bombs, and rockets) your plane can carry for any one flight. Set it to *Unlimited* to have infinite ordnance. If you run out of things to fire at your opponent, you can still ram the enemy plane or maneuver him into crashing, if you have the skill (and luck) to pull it off.

- **Fuel:** Set this option to *Limited* to limit the amount of fuel your plane can carry. Set it to *Unlimited* to have infinite fuel. If you run out of fuel, your engine will stop. You may still be able to make a dead stick landing and bring your plane in safely, but it won't be easy.

- **G-Force Effects:** With this option set to *On*, pulling too many gees will cause you to become dazed (red out) or fall completely unconscious (black out). Alternatively, the stress may tear your plane apart. In a red out,

your view fades to red, and in a black out it fades to black, and in both cases your plane is out of control until you recover. The length of time you will be dazed or unconscious depends on how many gees you pulled. With this option set to *Off*, you can pull an infinite number of gees without ill effects on either you or your plane.

- **Collisions:** When this option is set to *On*, two planes can crash into each other. With it set to *Off*, planes on a collision course simply pass through one another at the point of impact, and impacts with the ground or



THE PREFERENCES SCREEN

ground objects are also harmless. You may still be damaged by weapons fire, however, from either enemy planes or from ground installations. Also note that if you have set your plane to *Invulnerable*, collisions are automatically disabled as well.

- **Sun Glare:** Set this option to *On* to allow the position of the sun to affect your view from the cockpit, and to *Off* to disregard the sun. When this option is enabled, flying toward the sun will obscure your vision, making it much harder to see your opponent. The degree to which your vision will be impaired will depend on how directly into the sun you are flying.

- **Gun Jams:** With this option set to *On*, your guns may jam when overheated or simply due to mechanical problems. Jammed guns may be unjammed by pressing the “**u**” key repeatedly on the keyboard, but the delay can cause problems in a tough dogfight. Set this option to *Off* to have perfectly reliable guns at all times.

- **Enemy Skill Factor:** You can set this option at any level from *Minimum* to *Maximum*. The closer to maximum you set the slider, the tougher and smarter the computer opposition will become. Note that there will still be individual differences between pilots; there will always be Aces and novices, but this option controls how tough each of these

different pilots will be within their own skill class. In other words, a novice opponent at Maximum skill level may be more difficult to shoot down than an average opponent at Minimum skill, but even at Minimum level there will be some Aces who will be tough to shoot down.

- **Instruments:** You can choose any of three types of instrumentation. The hardest setting is *Authentic*, which allows you only the minimal instruments that were available in WWI. The easiest setting is *Modem*, which provides you with a complete set of modern instruments. *Balanced* provides a moderate number of gauges, about equal to those in a WWII plane cockpit.

The **Score Modifier** indicator shows you the percentage modifier that will be applied to your total points earned in any mission with the current realism settings. For example, a game with a very low realism might have a modifier of 20%, meaning that you would be credited with only 20% of the points you earned during that mission. For extremely difficult sets of conditions, your score modifier might go above 100%.

When you are done setting the reality options, click on OK to return to the Preferences panel, or click on Cancel to revert to your original settings and return to the Preferences panel.

Graphic Setting

The options in this area control how detailed the graphics for your game will be. The higher you set the graphics, the more demanding the game will become on your computer system. If at any time the frame rate drops too low, reducing the level of graphics detail will probably speed things back up.

When you select this button, a panel labeled *Graphic Settings* appears, with a slider bar and three buttons. The slider bar provides global control over the level of graphic detail in your game; the closer toward **High** that you move the slider, the more detailed the graphics become.

After you have set the level of graphic detail, click on OK to return to the **Preferences Screen** with your new settings enabled, or click on Cancel to return to the **Preferences Screen** with your former settings unchanged.

GAME PLAY

If you would prefer to customize your own display, setting each graphic option individually, you should ignore the slider bar and instead click on the button labeled Graphics Options to set your game graphics. *Note: if you customize your Graphics settings and then move the global slider bar, you will lose all your custom settings, so be careful.*

The graphics options that can be set and their effect on the game are as follows:

- **Object Detail:** This option controls the distance at which ground objects (buildings, etc.) will become detailed. With this option set at *Far*, objects in the distance will be drawn in detail; with it set at a *Near*, ground objects will be indistinct until your plane is quite close to them.

- **Aircraft Detail:** This option controls the distance detail of other aircraft in the same way that the Ground Range option controls the appearance of ground objects.

- **Object Density:** This option controls how many ground objects the program will generate. Set this option to *High* to produce a large number of ground objects, or to *Low*

to produce relatively featureless terrain.

- **Ground Shadows:** With this option *On*, airplanes and other objects will cast shadows on the ground. With it *Off*, no shadows will appear. Turning the shadows off will speed up the game's frame rate.

- **Prop Animations:** Set this option to *On*, and your plane's propeller will be animated. Set it to *Off* for no propeller. Removing the propeller animation will speed up the game's frame rate.

- **Max Detail:** Turn this option *On* to have the greatest detail possible for the game graphics. Set it to *Off* to reduce the amount of detail and increase the game's frame rate. *Note: Turning this option off may make it slightly harder to identify enemy planes.*

- **Combat Detail:** Setting this option to *On* will improve game speed during combat by reducing the detail level of all background graphics (clouds, object details, terrain details, and so on) for the duration of the dogfight. Turning this option to *Off* will keep the amount of background detail during combat

at its usual level.

- **Terrain Range:** This option controls how far you can see from the cockpit of your plane. The closer to *Far* this option is set, the farther you can see. If this option is set to *Near*, distant objects are obscured by haze.

- **Terrain Detail:** This option controls at what distance from your viewpoint the ground changes from low detail to high detail. If this option is set to *Far*, details of the terrain will be visible at a distance. When this option is set to *Near*, the terrain will be low-resolution until your plane gets close.

- **Clouds:** Set this option to *On* to add clouds to the sky. Set it to *Off* for a perpetually clear day. Note that the clouds have no effect on game play – neither you nor your opponent can fly into the clouds.

- **Terrain Textures:** This option can be set at any of three levels. *Normal* is the standard setting for terrain graphics. To improve the look of the terrain, set this option to *Smooth*. If frame rate slows down, the ter-

rain texture can be set to *None*, which is the least realistic but provides the fastest rendering.

- **Sim Resolution:** Set the screen resolution in the sim to 640 x 480 or to 320 x 240.

- **Pixel Size:** Set this option to *Large* to have fewer but bigger pixels, or to *Small* for more detailed pixellation. Larger pixels give a rougher look to the game but increase game speed.

- **Graphics:** Set this to *Windowed* to have *Red Baron II* displayed as a window on your screen. Set it to *Full Screen* to have it occupy the entire screen.

When you are done setting the object graphics options, click on OK to return to the **Preferences Screen**, or click on Cancel to revert to your original settings and return to the **Preferences Screen**.

Sound

The options in this panel control the sounds you hear while playing *Red Baron II*. Each as-

pect of the sound mix can be controlled separately to allow you to completely customize what you will hear as you play.

- The **Shell Music** slider controls the volume of the music that plays whenever you are not actually flying your plane.

- The **Shell Sounds** slider controls the volume of the sound effects that accompany actions you take while you are in the game shell (such as pressing buttons).

- The **Sim Sounds** slider controls the volume of the sounds you hear while flying your plane.

For each sound, you can lower the volume by moving the slider down or raise it by moving the slider up. If you want to turn any of these sounds off completely, click in the check box next to the word **Mute** at the bottom of the appropriate slider control. An “X” will appear to show that the sound is turned off. To turn the sound back on, click in the check box again to remove the “X”.

When you are done setting the sound options, click on OK to return to the **Preferences Screen**, or click on Cancel to revert

to your original settings and return to the **Preferences Screen**.

Fly Now

The options that appear when you select this button are used to determine what type of mission you get when you choose to play *Red Baron II* in the **Fly Now** instant dogfight mode.

You can set the following options:

- **Player’s Plane:** Use the vertical scroll bar to find the type of plane you want to fly. Highlight the name of the plane by clicking on it, then click the button labeled Select just below the list. If you want the game to pick a different plane for you each mission, select **Random**.

- **Enemy’s Plane:** Use the vertical scroll bar to find the type of plane you want to fly against. Highlight the name of the plane by clicking on it, then click the button labeled Select just below the list. If you select a particular type of plane, every plane you fly against will be that type of plane. If you select **Random** in this panel, you will encounter a variety of planes during a single flight.

GAME PLAY

- **Weather:** Select one of the five weather conditions for your flight by clicking in the check box next to the weather you want. These settings affect the game graphics only – they have no direct effect on your flight.

- **Season:** Select a season for your flight by clicking in the check box next to the season you want. These settings affect the terrain graphics only – they have no direct effect on your flight.

- **Enemy AI Level:** This setting controls how savvy your computer opponent will be. In order from least to most difficult, the ratings are: *Novice*, *Junior*, *Veteran*, *Ace*, and *Elite*. If you want the game to choose a different rating for your opponent each time a new opponent is generated, set this variable to *Random*.

- **New Enemy Activated:** This setting determines how soon your second and subsequent opponents will appear. (Your first opponent will always be present at the start of the mission.) Click on the up/down arrows

at the left of the box to adjust the time interval between opponents from one to ten minutes.

- **Time of Day:** This setting determines what time of day your flight takes place. Night missions are allowed (but difficult.) Click on the up/down arrows at the left of the box to adjust the flight time between 0100 and 2300 hours, military time. (0100 is 1 a. m. ; 2300 is 11 p. m.)

When you are done setting the Fly Now options, click on OK to return to the **Preferences Screen**, or click on Cancel to revert to your original Fly Now settings and return to the **Preferences Screen**.



THE FLY NOW SCREEN

THE MISSION BUILDER: CREATING A SINGLE MISSION

To create a Single Mission from scratch, click on the Single Mission button on the **Main**

Menu Screen to get to the **Single Mission Screen**. The controls on this screen allow you to create and save standalone missions for *Red Baron II*.

Creating a Single Mission

A Single Mission, unlike a Campaign (see “Playing a Campaign”), is a stand-alone scenario you can customize to suit your tastes or to provide a unique challenge for another player. Once you have created and saved your new mission, it can be selected using the Select Mission button on the **Single Mission Screen** and then flown using the Fly Mission button. The mission can be played as many times as you like, and edited at any time with the Mission Builder.

Mission Creation Outline

There are six steps to creating a Single Mission for *Red Baron II*:

1. Name your pilot and set the general environment variables for the mission.
2. Choose whether you want to build the mission using *Historical* information (and limits) or whether you prefer a *Free Form* mis-

sion with no constraints on your design decisions. If you choose *Historical*, decide whether you want to create all the flights yourself, or have the game generate appropriate flights for all active squadrons in your chosen region.

3. Create a *Flight* in which the player will pilot his plane. (Or, if you have used the “Generate Flights” option, choose an existing flight for the player pilot.)
4. Edit the flight path, plane ordnance, and squadron status for the player flight, if you wish (these steps are optional).
5. Create any additional non-player flights you wish (or, in *Historical* mode with flights generated by the game, delete extraneous flights you don’t want to bother with).
6. Save the mission file.

Historical Mode Vs. Free Form Flights

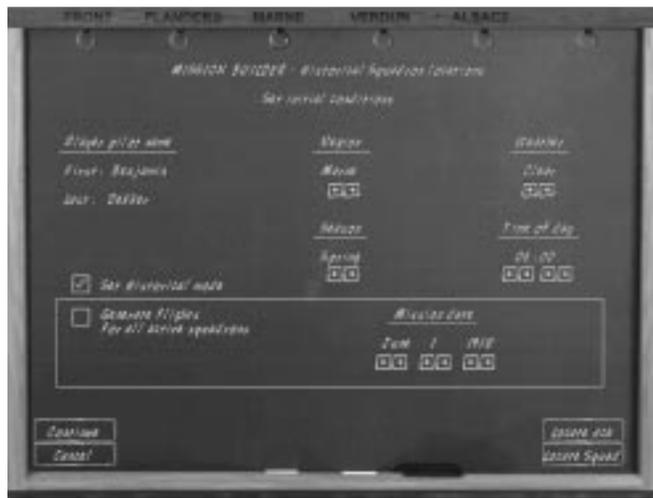
Missions in *Red Baron II* can be designed in either of two modes. In *Free Form Mode*, there are no limitations on any of the design

elements of your mission. In *Historical Mode*, which is enabled when the *Historical Mode* check-box on the introductory **Mission Builder Screen** is selected, the choices you are offered for certain design elements have been limited to only those which were actually available during the war at the mission date you set.

The following limitations and features come into play when *Historical Mode* is chosen:

- Squadron assignments are limited to those squadrons that were historically available at the specified date and in the specified region for the mission.
- Pilots may be assigned only those types of planes that were historically available at the specified date of the mission (you may disable this option).
- The Locate Ace and Locate Squad buttons on the introductory **Mission Builder Screen** can be used to find the historical location of specific Aces or squads at the specified date of the mission, so that you may target flights toward or away from these historical figures.

GAME PLAY



THE MISSION BUILDER SCREEN

- The **Generate Flights** check box on the introductory **Mission Builder Screen** is enabled, giving you the option of having the game generate flights for all of the historically available squads, instead of designing each of the flights for the mission individually. (See

“Creating a Flight” for a description of this feature.)

To use the **Locate Ace** or **Locate Squad** feature, click the appropriate button on the introductory **Mission Builder Screen** and the **Front Map** will appear, with a moveable selection box superimposed. Use the arrow buttons at the bot-

tom of the panel to select a nationality; the list of the Aces (or squadrons) from that nation who were in active service at the date specified for the mission will appear in the top box on the panel. Click on the Ace or squad you want to locate. A flashing red box will appear on the **Front Map** in the historical location of

that squad or Ace. Click **Done** to close the map and return to the introductory **Mission Builder Screen**.

Squadrons and Flights

A **Squadron** is a military air unit which can have up to twelve pilots assigned (in an Allied squadron) or nine pilots assigned (in a German squadron.) A squadron may be divided in one or more **Flights**, which can have a single pilot, or can contain every pilot in the squadron.

Each flight has a separate mission assignment to pursue, with its own flight path, take-off time, and so on. In **Free Form** design mode, you need to create the assignment details for each flight in each squadron in the mission. This can be as few as one flight, or as many as there are available flights in the game. If you choose to design in the **Historical mode** with the “**Generate Flights**” option enabled, the game will generate flights for all the active squadrons in the region.

In **historical design mode**, historical Aces will always appear in one of the historical squadrons with which they really flew. If you want the player to fly with a particular Ace,



THE SINGLE MISSION SCREEN

you'll need to determine which squadron the Ace was assigned to and use that squadron to set up the player flight.

Both fighter and bomber squadrons appear on the squadron list, but only a fighter squadron can be assigned the player flight.

their functions are:

- The *Map Bar*, at the top of the screen, which holds a detailed map for each of the four regions that make up the front, plus a fifth map which shows the entire front at one time (see the following section).

Setting the Initial Conditions

When you select **New Mission** from the **Single Mission** Screen, a chalkboard appears that provides you with some starting information, a place to name your pilot, and the opportunity to set the overall variables for the mission.

The areas on this screen and

- The *Pilot Name Boxes*, in which you can christen your pilot by clicking in the space next to *First* and *Last* and typing in a name.
- The *Initial Settings* for *Region*, *Weather*, *Season*, and *Time of Day*.
- The *Historical Mode Box*, which enables *Red Baron II*'s Historical Mode of play when checked (see "Historical Mode Vs. Free Form Flights").
If the Historical Mode Box is checked, the following additional areas appear on the screen:
 - The *Generate Flights* option, which instructs the game to create a batch of flights for you.
 - The *Mission Date* option, which determines the historical limits of your mission (note that the *Season* variable will automatically change to stay consistent with the chosen date).
 - The *Locate Ace* and *Locate Squad* buttons, which allow you to find the historical location of a particular WWI Ace or squad-

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ron at the date you've chosen for your mission.

Click on the right/left arrows underneath each of these areas to set the Region, Weather, Season, and Time variables. If you have set the builder to Historical mode, changing the *Region* will affect which squadrons you can assign to your flights. (Only squadrons that were actually in that region at the time set for your mission will be available.) The *Weather* and *Season* variables will change the graphic look of your flight, but have no other effect on the mission. The *Time of Day* variable (set using military time conventions) will determine the position of the sun during your flight, including sunrise and sunset. (You can even create a mission to be flown at night – if you really want to.) This will then become the default value for every flight, but this variable may be adjusted for individual flights on the *Create Flight card* when the flight is created.

When you've finished setting the initial parameters for your mission, click on **Continue** to move on to creating and editing the mission flights, or on **Cancel** to return to the **Single Mission Screen**. After you hit Con-

tinue, these initial options are set and cannot be changed (although the departure time for individual flights may be adjusted later.)

The Front Map and the Region Maps

The tactical maps for *Red Baron II* are accessed through the Map Bar at the top of the Mission Builder screens. The name of each mapped area is shown on the bar. To access the map, click on the pull-ring just beneath the map name. The pull-ring under the map for the selected region will be highlighted in red.

Note: All maps are reprinted at the end of the reference section in this manual.

The first map is the **Front Map**. This is a large-scale map of the entire geographic area covered in *Red Baron II*. The four boxes indicate the four sub-regions of the game (Flanders, the Mame, Verdun, and Alsace.) The front can be seen as a cratered area running roughly through the center of the four regions. The pointer appears as a magnifying glass. To zoom in for a closer look at any area, center the pointer over the area you want to view and click the left mouse button.

To zoom back out, click the right mouse button. Clicking the right mouse button while the map is fully displayed will exit back to the introductory **Mission Builder Screen**. You can also use the plus (+) and minus (-) keys to zoom in and out. There are two levels of magnification available.

To view a different area of the map while zoomed in, move the cursor to the edge of the map in the direction you want to travel and the map will scroll that way. The closer to the edge of the map the cursor is placed, the faster the map will scroll.

In the lower left corner is the map legend. This area is active whenever you are viewing one of the Region Maps, but not on the Front Map. Beside each unit on the legend is a check box; click on this box to display that type of unit on the map. At the bottom of the legend is a scale bar showing the map scale. This bar is a moveable object which can be picked up and placed directly on the map to measure distances. Click and hold on the scale bar, then drag it onto the map and drop it in place.

To close the map and return to the introductory **Mission Builder Screen**, click on the pull-ring hanging from the bottom edge of

the map.

Navigation in the four Region Maps on the Map Bar is done in the exact same fashion as in the Front Map. Each of the regions is a 10,000 square mile area with its own unique geographical attributes and distribution of landmarks. For example, Flanders is relatively flat and heavily populated, while Alsace is hilly and thinly populated.

Flight Creation Outline

There are seven steps to creating a mission flight:

1. After you've set the starting conditions for the mission and selected a design mode, the region map for your mission will drop down and the *Create Flight* index card appears. Set the service, squadron, type and number of aircraft in the flight, the mission type, and the start time of the mission.
2. Select the start point for the mission from any location on the map.
3. Select an appropriate landmark as the target for the mission.

4. If you want the current flight to be the one the player will fly, click in the *Player's Flight* check box.

5. Edit, add, or delete the waypoints on the flight path (optional).

6. On the **Current Flight Screen**, set the ordnance to be carried on the mission (optional).

7. On the **Squadron Status Screen**, change pilot assignments, plane assignments, and pilot skill levels (optional).

The Create Flight Index Card

When you finish setting the initial conditions for your design, you will arrive at the **Flight Creation Map**, where you can create, delete, and edit the squadron flights for your mission. If you have chosen Historical Mode and enabled the Generate Flights option, the map will show a large number of colored lines, each one a squadron flight, which you can then proceed to edit or delete. If you have chosen Free Form Mode or Historical Mode with the Generate Flights option disabled, you will instead see the Create

Flight "index card" panel. You must create at least one flight and designate it as the player's flight in order to have a useable mission.

To create a flight, begin by setting the flight options. Note that the choices available for some settings depend on the values of the other settings – for example, the type of missions you can choose from are determined by your choice of squad.

- Use the up/down arrows on the first line of the card to set the *Service* – the nation to which the pilots in this flight will belong.

- Click on the second line on the *Squadron* name, and a list of available squadrons of the appropriate nationality will appear. Click on the squadron you want to select (it will be highlighted) and then click on Done. Note that your choice of a fighter, bomber, or bomber/recon squadron at this point will determine which aircraft and mission types you can assign to the flight, and that only fighter flights may be assigned to the player.

- In the same way, on the third line of the card select the default *Aircraft* that all the pilots in the flight will fly. (This assignment may be changed later for individual pilots.)

GAME PLAY

You must choose from the list of planes available to that service only. If you are designing in historical mode, a check box appears on the list of plane names; uncheck this box if you would prefer to choose from the entire list of that service's planes, not just the historically available ones.

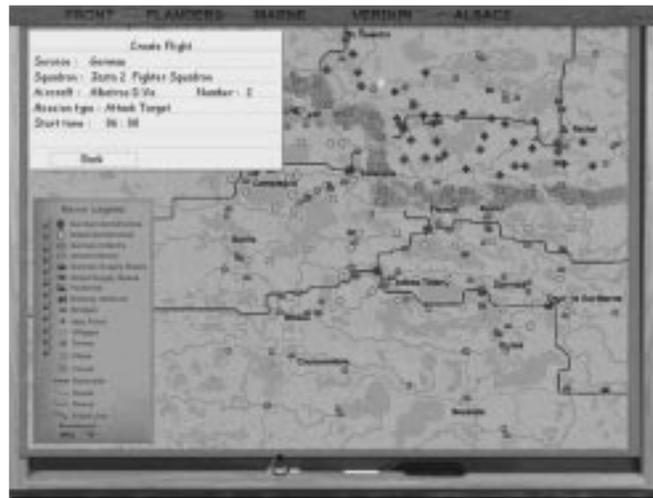
- Next to the aircraft name, click on the up/down arrows to set the *Number* of planes in this flight. Allied flights may have up to twelve planes, and German flights may have up to nine. Note that if you have already created other flights for this squadron, you may be limited in the number of planes remaining that you can assign to your current flight.

- On the fourth line, select the *Type* of Mission you want the flight to pursue (See Mission Types in the Flight Reference section.) This mission list will be different for fighter flights, bomber flights, and bomber/recon flights.

- On the fifth line, use the right/left arrows to set the *Time* you want the flight to begin, using military time conventions.

Once these options are set, click on Continue to set the start location, destination, and default flight path for the flight. To set the start point, click the mouse cursor on any point on the map. A red triangle will appear, marking the spot you've chosen. (Note: All "cards" on this screen are moveable panels that can be relocated if you want to see the map beneath them.)

If you want to fly the takeoff in the sim, be sure to select a friendly aerodrome as your start point. If you move the pointer close enough to a friendly aerodrome, a red targeting box will appear at that aerodrome; you can click the pointer when you see the red



THE FLIGHT CREATION MAP

targeting box to assign that aerodrome as your start point. A flashing red box shows where the current squadron's historical aerodrome was located (unless that squad was stationed in a completely different region), but you are not limited to starting the flight from that location. In this mode, the magnifying glass

zoom is disabled, but the key zooms (+ to zoom in, – to zoom out) still function.

Next, select a target for the flight. Unlike the start point, which can be anywhere in the active region of the map, the target point must be a landmark of some kind. A red box will appear around whatever landmark the mouse pointer is closest to; if you want to select that landmark as a target, click the mouse. If you have selected a mission type that calls for a specific kind of target, you will only be allowed to select targets that fit the mission profile. (If you are sending this flight to attack a balloon, for example, you won't be allowed to select an aerodrome as a target.) For the most part, friendly landmarks are chosen as the targets for defensive missions while enemy landmarks are chosen as targets for offensive missions.

When you click to select the target, a yellow line appears between it and your chosen start point. This line shows the default flight path that will be used by the game's Autopilot function when it is enabled. The *Create Flight Card* is replaced by the *Flight Summary Card*, which recaps the options you've chosen for this flight. Until you select your target

point, you can back up and reset any of the flight variables; once your target point is set and the *Flight Summary Card* appears, these variables can no longer be changed without deleting the flight and starting over.

If you wish to create only one flight for this mission, you must designate that single flight as the *Player Flight*, and it must be a fighter flight, not a bomber flight. Without a player flight, a mission cannot be saved. To mark any fighter flight as a Player Flight, click in the check box on the *Flight Summary Card* next to the label *Player's Flight*. (You can't have more than one Player Flight per mission.) The flight path changes from yellow to red. If you want to adjust the waypoints for this flight, click on Waypoints to bring up the waypoint list card. If you don't wish to make any changes to the waypoints, click on Done to close the Region Map and bring up the **Flight Ordnance screen**.

At this point, if you have chosen a mission type for your flight that calls for an attack on a ground target, you have a complete mission, which can be saved and played. However, if you have chosen a mission goal that involves aerial combat, you will have to add at least

one more flight, assigned to the opposition, to give your pilots something to shoot down. Similarly, if you want to set up an escort mission, you will need to create a bomber flight to be escorted.

You can create as many additional flights as you want by clicking on the Create Flight button on the *Flight Summary Card*, and then following the same Flight Creation method outlined above. If you want to get rid of a previously created flight, click on the Delete Flight button on the *Flight Summary Card*. (Note that if you try to delete the player flight from the mission, the game will ask you to confirm this decision, since removing the player flight makes the mission unplayable.) To shuffle through your stack of Flight Summary index cards, use the Prev and Next buttons; a card will appear for each flight.

If you choose to set your initial conditions to Historical Mode, and enable the Generate Flights option, you will begin on the **Flight Creation Map** with a large number of flights created for your mission. You can then remove or edit any of these flights as usual; add new flights to this map (if there are pilots available); or choose one of the pre-gener-

GAME PLAY

ated fighter flights to be the player flight.

To select a generated flight to adjust, first click on the aerodrome where the flight originates. This will bring up an index card listing the squads that are stationed at that aerodrome. Click on the squad you want to work with, and the *Squadron Card* for that squad will appear, listing all the flights for that squadron. Click on one of the flights to bring up the *Flight Summary card* and edit the flight. You can also select a flight by shuffling through the stack of flight cards with the Prev and Next buttons.

The color scheme for flight paths is as follows:

- Any currently selected flight is shown in **Yellow** *except* for the Player Flight, which is always shown in **Red**.
- Unselected Allied fighter flights are shown in **Blue**.
- Unselected German fighter flights are shown in **Green**.
- If a fighter flight has been assigned a Bomber Escort mission, when that fighter

flight is selected the bomber flight it is assigned to escort is displayed in **Gray**.

Editing Waypoints

Each flight you create starts out with two waypoints: the start point and the target point. These two waypoints can't be moved after the flight is created, but you can add other waypoints between these two points or beyond the target point. (You *can* change the altitude and plane formations at the start and target points, however – just not their locations.) These waypoints are locations used by the Autopilot when your plane is on automatic flight or when you are flying in time compression mode, so they can be used to set a flight path that, for example, avoids passing over enemy units on the way to the target. The program also uses these waypoints to determine the flight path for all non-player pilots and flights. All enemy units except towns and villages have anti-aircraft guns that will shoot at enemy planes that pass within range of them.

To adjust the waypoints of a flight, click on the Waypoints button. The *Waypoint Details* card appears, listing the waypoints for the flight

and the features of each. To change the features of a waypoint, select the waypoint (it will highlight on the list, and appear as a white triangle on the map), then click on the Edit button. The *Edit Waypoint* card will appear. The top line shows the sequence number of the waypoint on the flight path and the type of landmark nearest to the waypoint.

The waypoint options that can be adjusted are as follows:

- **Time at Waypoint:** Set the time you want the flight to arrive at the waypoint. If you don't leave enough time for the flight to get to the waypoint, the times for all points before that one in the flight will be automatically adjusted downward to compensate.
- **Altitude at Waypoint:** Set the altitude the flight will be at when it passes over this waypoint. This figure is shown as feet above Mean Sea Level (MSL) until it is set within 1500 feet of the highest point in the immediate area of the waypoint. At this point the number is shown as feet Above Ground Level (AGL).
- **Action to:** Choose the action your flight

will take on the way to the waypoint. (See “Waypoint Actions”)

- **Action at:** Choose the action your flight will take when it reaches the waypoint. (See “Waypoint Actions”)

- **Minutes:** This setting appears only if you have *Loiter*, *Support Attack*, *Defend Infantry*, *Defend Balloon*, *Barrage Patrol*, *Support Defense*, or *Defense Patrol* as the “Action At” setting. Set the number of minutes you want the flight to spend at that waypoint performing this action.

- **Formation to:** Choose the formation the flight will assume on the way to the waypoint. (See Flight Reference: Formations.)

- **Formation at:** Choose the formation the flight will assume when it reaches the waypoint. (See Flight Reference: Formations.)

To add a new waypoint, select the waypoint just before the location where you want the new waypoint to go and then click on Add.

The game will add a new waypoint at the landmark that is closest to being halfway between the two waypoints that already exist and create a line on the waypoint card for the new waypoint. If you select the last waypoint on the waypoint card and click Add, the game will extend the vector of the existing flight path and add the new waypoint at the closest landmark in that direction. To adjust the location of the new waypoint, click the mouse on the white triangle, which represents the current waypoint, and then drag it to its new location on the map. The new flight path will be shown in yellow, and a blue or green line (Allied or German) will show what the original flight path was. (This line will disappear once you finalize the new path.)

Once you have added a waypoint beyond the start and target points, a Delete button will appear on the card. You may delete any waypoint except the start and target points by selecting the waypoint on the waypoint details card and clicking on this button.

Click on the Flights button to return to the Flight Summary card for the current flight.

Waypoint Actions

Waypoint actions can be either **actions to** (something your flight will do on its way to the waypoint) or **actions at** (something your flight will do when it reaches the waypoint.) The available choices for these actions will depend on what kind of squadron the current flight is, and also on what kind of mission the flight has been sent.

There are three possible things your flight may do on its way to a waypoint:

- Your flight can **Ingress:** navigate to the target;

- Your flight can **Egress:** navigate away from the target;

- If your flight has been assigned a Patrol mission, your flight may **Patrol** as it heads for the waypoint. When the *Action To* variable is set to patrol, the flight will proceed to the next waypoint, but will be very aggressive in searching for enemy flights on the way.

Note that you can't set an *Action To* for the start waypoint on your flight's flight path.

Your flight has many more options for things to do once the waypoint is reached, although there are some limitations on your choices de-

GAME PLAY

terminated by the type of plane in the flight, the mission type, and the landmark present at the waypoint. The *Action At* setting for your target waypoint is always preset by the flight's mission type; for example, if the flight's goal is to attack an enemy balloon, the flight's *Action At* will automatically be set as *Attack*.

The following *Action At* settings are specific to certain waypoints on the flight path:

- For **non-target waypoints**, your flight may do the following:

1. **Navigate:** The planes will simply reorient toward the next waypoint and keep flying. Most non-target waypoints will have this *Action At*; this prevents the flight from stopping to bomb a factory on its way to its assigned mission target.

2. **Loiter:** If the flight has been assigned a *Patrol* mission, the pilots may be directed to wait some length of time at a non-target waypoint and look for enemy planes to engage. If you wish to have the flight patrol a large area, you can accomplish this by adding new waypoints at the perimeter of the patrol area and setting each of the *Action At* settings for the new waypoints to *Loiter*. This will

cause the flight to patrol between all the sequential waypoints set in this fashion until the time duration set at the first *Loiter* patrol point has elapsed. The *Loiter* option is also available as an *Action At* for the target waypoint, if the flight is a fighter flight assigned to Patrol duty at that target location.

3. If the flight is a **Bomber flight only**, the **Rendezvous** action is available when a bomber flight has been assigned a fighter Escort. This option should be set at the waypoint where the fighter escort has been directed to meet the bomber flight it is escorting.

- If the landmark at the **Start Waypoint** is a friendly aerodrome, your flight may be assigned the *Takeoff* action at this waypoint. (This is not required; the flight path could start with the flight already in the air.) Setting the action to Takeoff means that the sim will begin with the player's plane on the ground; the player will have to pilot the plane through its takeoff.

- If the landmark at the **End Waypoint** (which is not necessarily the same as the Tar-

get waypoint) is a friendly aerodrome, your flight may be assigned the *Land* action at this waypoint. If the elevation of the waypoint is above the aerodrome, the flight will circle down until it gets close enough to assume a landing pattern.

The next group of *Action At* settings is available only to **Fighter Flights at the Target Waypoint**. These are set automatically when the mission type is selected.

- **Defend Balloon:** If the fighter flight's mission is to defend a friendly observation balloon from enemy fighters, this is the action at the target waypoint. Use the time setting to determine how long the flight will stay on patrol in the area of the balloon.

- **Defend Infantry:** If the fighter flight's mission is to defend a friendly infantry group, this action is set at the target waypoint. The fighter flight will attempt to defend the infantry from attacks from both the sky and the ground. Use the time setting to determine how long the flight will provide cover for the ground unit.

- **Support Attack:** If the fighter flight's mission is to aid in an offensive ground maneuver, this action is set to have the pilots strafe and drop bombs on ground targets in the enemy area.

- **Escort:** If the fighter flight's assignment is to escort a bomber group, set this action at the waypoint where the fighters are to meet up with the bombers to be escorted. In order to set this action, a friendly bomber flight must already have this waypoint set for *Rendezvous*. Once this action has been accepted, waypoints leading up to the escort waypoint (including the start point) will adjust their times so that the escorts will be at the waypoint at the same time as the bombers or shortly before.

The following *Action At* option can be used only by **Bomber/Recon flights at the Target Waypoint**:

- **Reconnaissance:** A bomber flight can be sent on a reconnaissance mission to gather intelligence. The flight will circle for the specified time at the target, taking intelligence photos or calling down artillery fire.

Fighters, Bombers, or Bomber/Recon

squads at the Target Waypoint can use the last *Action At* option:

- **Attack:** This will be the *Action At* setting if a flight has been assigned to attack an enemy landmark.

1. A flight of fighters can only attack enemy infantry or aerodromes.

2. If the flight is a bomber or bomber/recon flight, any enemy landmark may be the target.

Creating an Escort Mission

Designing an Escort mission involves a few extra steps beyond those required to create a non-Escort mission.

- To make an Escort mission, begin by creating the Bomber flight that will be escorted.

- Next, create a new fighter flight.

- Set the mission type for the fighter flight as **Escort**.

- You will then be asked to select a bomber flight to escort. The currently se-

lected bomber flight will be shown in gray. If there is more than one bomber flight available to be escorted, use the **Prev** and **Next** buttons to shuffle through the stack of bomber flights until the one you want is highlighted, then click on **Select**.

- Set the start point for the fighter flight.
- Set the target point (which is the location for the escort rendezvous point) for the fighter flight. You may choose one of the existing waypoints on the bomber flight's flight path (except for the target waypoint), or it can be a completely new location. If you select a new location, the bomber flight will be redirected to include the fighter flight's target point on the bombers' flight path. This completes the creation of the escort mission.

Changing the Flight Ordnance

When you have finished setting up the basics of the flight, click on Done on the *Flight Summary* card, or zoom out beyond the farthest magnification. The map will roll up, revealing the chalkboard beneath with the **Flight Ordnance Screen** for the current flight showing. From this screen, you can set

GAME PLAY

what type of ordnance each plane will be carrying by clicking on any or all of the check boxes that appear to the right of the pilot name. (Note: you can only set ordnance for fighter flights.) Each pilot will start out with a full load of all the types of ordnance you assign to him. If a plane has two machine guns, you may assign both incendiary and normal ammo rounds to that pilot, and one type will be loaded in each gun. If the plane has only a single machine gun, you must pick either incendiary or normal rounds, not both. Not every type of plane can carry every type of ordnance; the appropriate checkbox will be unavailable if this is the case for the current plane.

To move forward or backward in the flight list, click on Prev Flight or Next Flight. You can return to the **Flight Plan Map** at any time to edit waypoints by clicking on the red pull-ring beneath the map of the appropriate region. To move on to the **Squadron Status Screen** to continue adjusting the current flight, click on Squadron.

To Save the current mission, click on Save, then click on the file name box that appears and type in a file name. You may also type in

a longer description of the mission in the *Mission Description* box by clicking in the box and typing in your text. Click Done to return to the **Single Mission Screen**. (You will be prompted to save the current mission if you haven't done so.)

Changing the Squadron Status

On the **Squadron Status Screen**, you can adjust most of the elements that make up the current squad. This screen shows a list of all the flights in the squadron and which pilots are assigned to which flights. The final slot on the flight chart shows those pilots who are *Available* – not currently assigned to any flight. A check mark by the flight number shows which flight is currently selected; to select a different flight, click on the flight number and the check mark will change position.

This screen can be used to rearrange pilot assignments, rearrange plane assignments, change the skill level of the squad pilots (except the historical Aces) and give a name and rank to the player pilot.

- To change a pilot's assignment in the squadron, click and hold on the pilot's name, then drag it to a new slot on the chart and release the mouse button. If you drag your

current choice into an empty slot, that pilot will be added to that flight (or to the Available pool); if you drag your choice to a slot that already has a pilot in it, he will swap places with your choice.

- To change a plane assignment, right-click on the plane name. A panel with a list of available plane types will pop up. Click on the aircraft you want to select it (it will highlight) and then click on Done. To swap planes between two pilots, left-click on the first plane name and drag it into the slot next to the second pilot's name. The two planes will swap positions.

- To change the skill level of a pilot (except for Aces, who cannot be changed), right-click on the name of the pilot. A panel with a list of skill levels will appear. Click on the skill level you want the pilot to have (it will highlight) and then click on Done. If you want the game to randomly select a skill level for the pilot each time the mission is played, select "Random" as the pilot's skill level.

- To change the name and/or rank of the player pilot, find the pilot entry for the player

and right-click on the name. In the panel that appears, click in the first box and type in the pilot's first name, click in the second box and type in the pilot's last name, then select a rank for the pilot and click on Done.

You can return to the **Flight Plan Map** at any time to edit waypoints by clicking on the red pull-ring beneath the map of the appropriate region. When you do this, you will see the *Squadron Card* on the map, listing all the flights in that squadron. Click on a flight to bring up its *Flight Summary Card*.

To move back to the **Flight Ordnance Screen**, click on Flight. To Save the current mission, click on Save, then click on the file name box that appears and type in a file name. You may also type in a longer description of the mission in the *Mission Description* box by clicking in the box and typing in your text. Click Done to return to the **Single Mission Screen**. (You will be prompted to save the current mission if you haven't done so.)

Editing an Existing Single Mission

To adjust an already-created mission, first

select it using the Select Mission button, then click on Edit Mission. The Mission Builder opens to the Region Map for the mission, with the *Flight Summary Card* for the player's flight displayed. Mission flights may then be added, deleted, and edited as usual.

Sharing Missions

Once you have created and saved a mission, it can be shared with other players. Find the sub-folder labeled **Single** in the second player's game directory and copy the three mission files into that sub-folder, and the mission will be made available for selection. (There will be one **DAT**, one **DSC**, and one **MIS** file for each mission; all three must be copied.)

FLYING THE SIMULATION

INTRODUCTION

Red Baron II is an historically accurate and detailed recreation of flight during World War I, the era that launched aerial combat. The

controls available to the great Aces were few and primitive. However, as a computerized simulation *Red Baron II* is capable of offering you controls unlike anything the Aces would have ever dreamed. This portion of the manual outlines and describes these controls. The elements of flight such as takeoff and landing, maneuvers, and tactics are described in the Flight Reference section of this manual.

Key identification conventions: Most keyboards have two sets of number keys, one in the main keyboard panel and one off to the side in a separate keypad. To clearly identify which key is meant, the convention KP# is used for numeric keypad (Be sure that your number lock is turned on!) Keys given as F# are found in the function key row above the main keyboard panel.

FLIGHT CONTROLS

Movement

You use the control surfaces and the throttle to maneuver your aircraft. These include the ailerons, the elevators, the rudder, and the throttle. You may use a joystick setup, the keyboard, or a combination of both to control your plane.

Rudder

The rudders can be controlled from the keyboard or by using rudder pedals. On the keyboard, the longer you hold in the key, the more the rudder moves toward its maximum position. If you release the key, the rudder will remain fixed at that position until you change it.

Keyboard Rudder Controls

, (comma) left rudder
 / (slash) right rudder
 . (period) center rudder

For information on rudder pedals, please refer to the manual that came with them.

Throttle

The throttle can be controlled by the keyboard or by a joystick throttle.

Keyboard Throttle Controls

1 through 0 controls throttle.
 1 =idle
 0 =full throttle
 + (plus) increase throttle

– (hyphen) decrease throttle
TAB Engine On/Off

For information on a joystick throttle, please refer to the manual that came with your joystick.

Historical Note: Airplanes with rotary engines had no throttle control; the engines ran at full power constantly. The pilot could cut throttle with a “blip- button,” which would simply turn the engine off completely. If you wish to simulate this mechanical limitation, you may use the keyboard controls for your plane’s throttle, alternating between 1 (no throttle) and 0 (full throttle) and ignoring the numbers in between.

VIEW COMMANDS

There are three different viewing modes for the flight sim in *Red Baron II*. Each mode has its own particular strengths and weaknesses.

- The **lockdown cockpit view** is the simplest but least flexible mode. In this mode, you have seven fixed views, each of which covers a different portion of the sky. To enter the lockdown view from any other view mode, press **F1**.

- The **sleuable cockpit** (a. k. a. Pad-lock) **view** is a free- moving view that allows you to scroll smoothly across most of the sky. The sleuable view is more flexible than the lockdown view, but makes its slower to reach any particular view since you must scroll over to it instead of jumping directly as with the lockdown view. To enter the sleuable view from any other view mode, press **F2**.

- The external camera views are a set of special “outside” views that take you out of your plane’s cockpit and to a vantage point elsewhere in the sky. To enter one of the external camera views, press the appropriate function key.

The Lockdown Cockpit Views

The lockdown cockpit views use a traditional sim system which allow you to look around from the vantage point of your cockpit in any of seven fixed directions: *forward*, *side left*, *side right*, *back left*, *back right*, *forward up*, and *forward down*. Each view lets you scan a different piece of the sky, except for the forward down view which shows you the lower half of your cockpit (which will have more gauges and readouts on it, if you have chosen to use one of the more extensive cockpit instrumentation sets.)

To call up one of the lockdown views from the keyboard, use the following keys:

KP 8 Forward lockdown view.

KP 2 Back lockdown views (toggles left back and right back).

KP 4 Side left lockdown view.

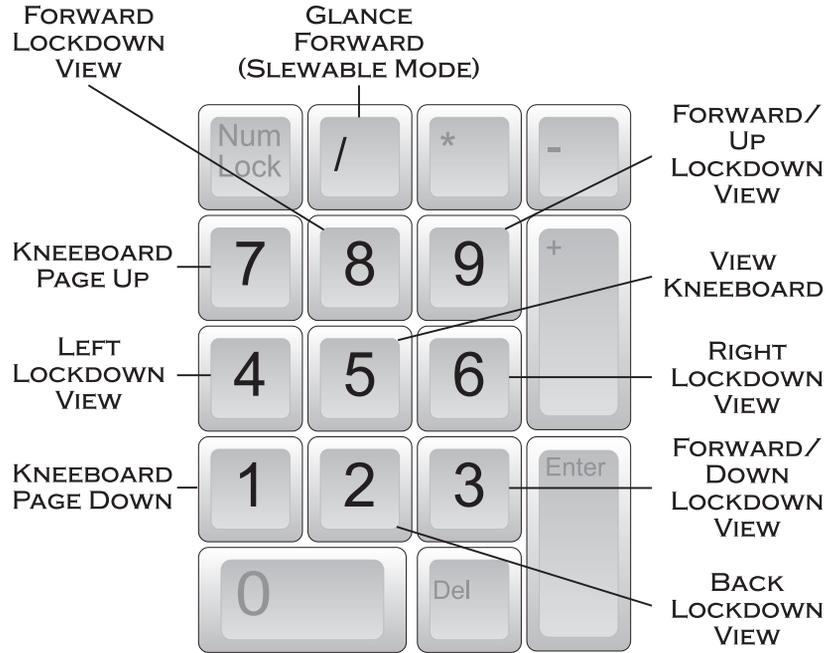
KP 6 Side right lockdown view.

KP 9 Forward up lockdown view.

KP 3 Forward down lockdown view.

Note: The Number Lock must be turned on in order for these keys to work as shown; if the Number Lock is off, these keys control the plane's pitch and roll instead.

Hit the **F1** key to return to the forward lockdown view from any other view mode in



NOTE: THE NUM LOCK KEY MUST BE PRESSED (SO THE NUM LOCK LIGHT IS ON) IN ORDER FOR THESE KEYS TO BE ACTIVATED.

the sim.

Setting a Target for Slewable Cockpit and External Camera View Modes

Both the slewable cockpit and external camera views can be set to orient themselves on a preset target that you select. The target may be any other plane in the sim or a stationary ground object. To choose a target, press one of the following keys:

- n** Target next plane (closest enemy or friendly)
 - e** Target closest enemy plane
 - f** Target closest friendly plane
 - m** Target closest plane in your formation
 - d** Target best enemy plane to dogfight
 - t** Target most threatening enemy plane (i. e. plane most likely to shoot successfully at you.)
 - l** Target nearest ground landmark
 - o** Target ground object in front of guns
- All targeting commands except for **d** (dog-

fight) and **t** (threat) cycle; that is, if there is more than one target fitting the description within visual range, repeatedly pressing the targeting key will cause the target to jump to the next target of the right type. For example, repeatedly pressing **m** (formation) will target each of the other planes in your formation in sequence, eventually returning to the first (closest) plane in the formation.

The Slewable Cockpit View

The slewable cockpit view simulates the pilot's head moving dynamically to follow a preset target. The chosen target will remain centered on the screen *as long as the pilot's head could reasonably continue to view it*. The target will be lost if it goes below your plane, where the pilot can't see. If the target circles in back of your plane, the view will not scroll past the back of the plane (thus simulating your pilot's head spinning completely around) but instead will turn back the other way and pick up the target again on the other side of the plane.

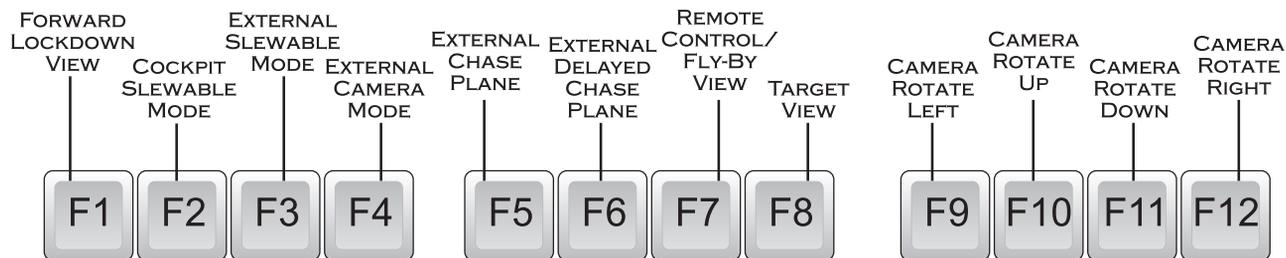
Hit **F2** to enter the slewable cockpit view mode. If there is no target selected, the view remains pointed center forward (straight

ahead). When in slewable mode, hitting the glance key, **KP/** (the forward slash on the numeric keypad) will force your view straight ahead for as long as the key is held down. The view returns to its previous setting when you release the glance key.

If you want to temporarily unlock the target as the center of your view and look elsewhere in slewable view, press and hold the **Enter** key, or button 2 on the joystick, and move the joystick in the direction you want to view. Note that while you're using the joystick to determine which way you are looking, you cannot use it to control your plane, so it might be useful to engage the Autopilot before looking around. When the **Enter** key or button 2 is released, the view will return to the current target and joystick control of the plane will return. You may also unlock the camera by pressing the following keys, which will shift your view as long as they are pressed:

- F9** Rotate view left.
- F10** Rotate view down.
- F11** Rotate view up.
- F12** Rotate view right.

The External Camera Views



The external camera view system in the flight sim allows you to get an “outside” view of various objects in the game. In all external camera views, you can zoom out by pressing the **z** key and zoom in by pressing the **x** key. Note that if you bring up an external view of a target other than your own plane, you are still flying your own plane even though you can’t see it – so it might be a good idea to enable the Autopilot while you’re checking out the scenery.

The following external camera views are available:

- Press **F3** to activate an external

sleable view showing your plane and your current target in relation to each other. Your plane stays in the foreground while your target remains in the center of the screen in the background. If there is no target selected, and therefore no background object, the view remains centered on your plane. You can temporarily unlock the “camera” by pressing and holding the **Enter** key or button 2 on your joystick and then using the joystick to move the viewpoint to any position around your plane. (Note that you won’t be able to control your plane with the joystick while you are doing this.) The “glance” key (**KP/**) also

works in this view as it does in the sleable cockpit view.

- Pressing **F4** activates an external view much like **F3** except that the “camera” is permanently unlocked. All camera movement must be manually. You can use the joystick to move the viewpoint to any position around whichever plane is in the foreground of the camera view. (Again, you won’t be able to control your plane with the joystick while you are doing this.)
- Press **F5** to enable the “chase plane”

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view, with the camera following in a fixed position behind whichever plane is in the foreground of your external camera view.

- **F6** activates a delay in the chase plane view. The further out the camera is zoomed, the longer the delay.
- **F7** shows a fast fly-by view of whichever plane is in the foreground of your external camera view. Once the target has passed, the camera will follow at a distance. (Stationary targets will simply be shown as stationary.)

If you have selected a target, pressing the **F8** key causes the external camera to swap the foreground object (usually your own plane) with the background target and takes you automatically back to the **F3** external slewable view. You can then use **F4** through **F7** to get external camera views of your new foreground object. Press **F8** again to swap back to your original foreground object and jump to the **F3** slewable view. Jumping to either of the cockpit views (**F1** or **F2**) automatically reassigns your own plane as the foreground object for

the external camera views.

FIRING CONTROLS

Your primary weapon as a World War I pilot will be the machine-gun; you may have one or two, depending on the type of plane you are flying. Certain types of planes may also be able to carry a certain number of bombs or rockets.

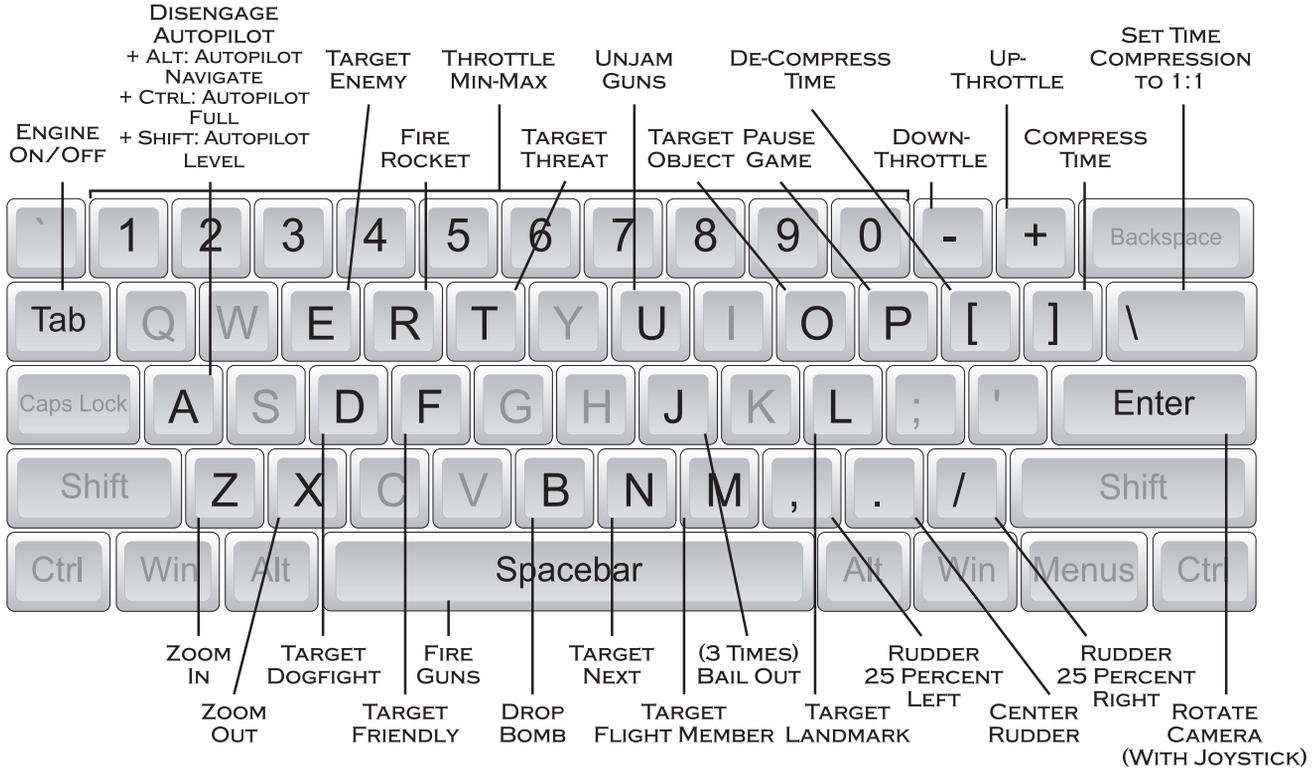
To fire your gun(s), press and hold **button 1** on your joystick or the **space bar** on the keyboard. Firing too long a burst may cause your guns to jam; if this happens, you may be able to unjam them by pressing the **u** key repeatedly. This won't always work, but being persistent might bring a result eventually. (Note that sometimes your guns will jam even if you don't abuse them; WWI firearms weren't terribly reliable). Muzzle flashes show that your guns are firing; if you succeed in hitting your opponent, the other plane will give off puffs of black smoke. Damage to your own plane is signaled by the sound of bullets impacting your fuselage and possibly by the appearance of wreckage torn from your plane.

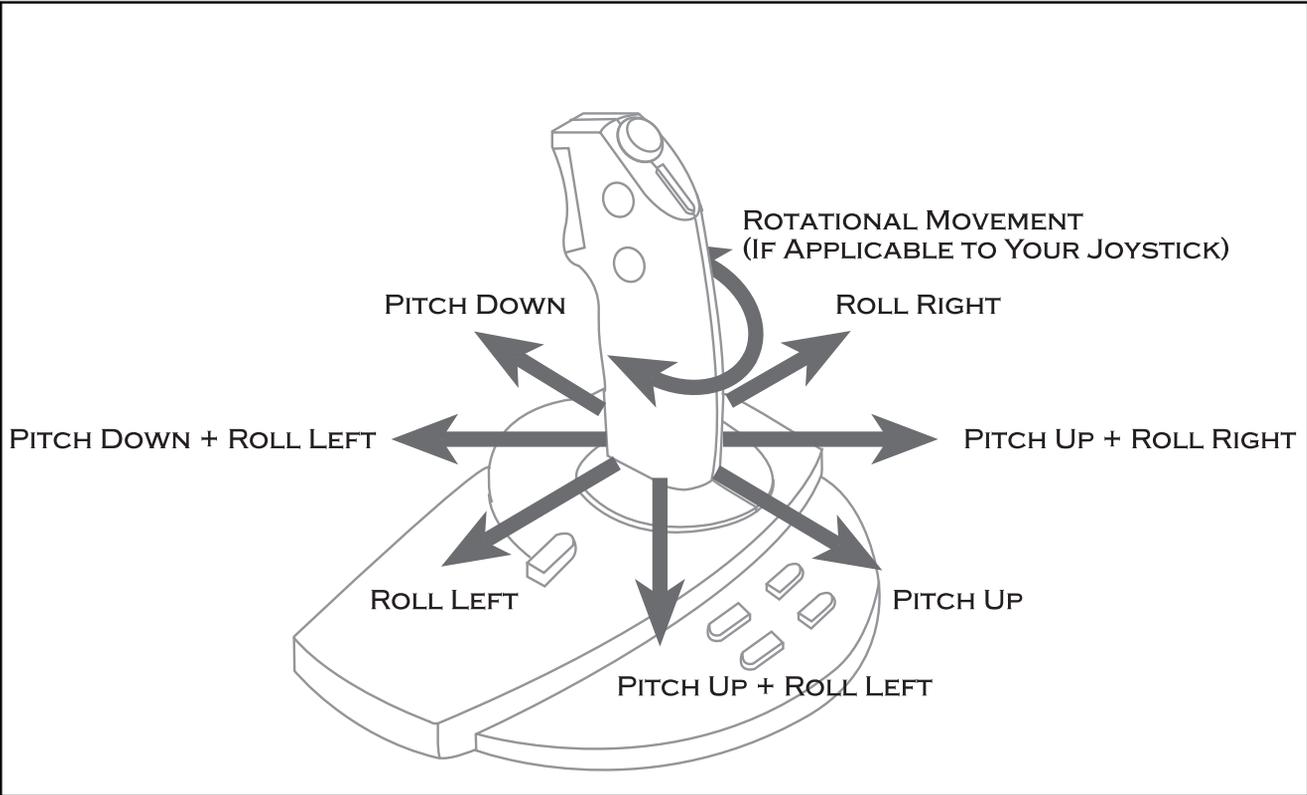
Your guns may be loaded with either of two types of ammunition: normal or incendiary.

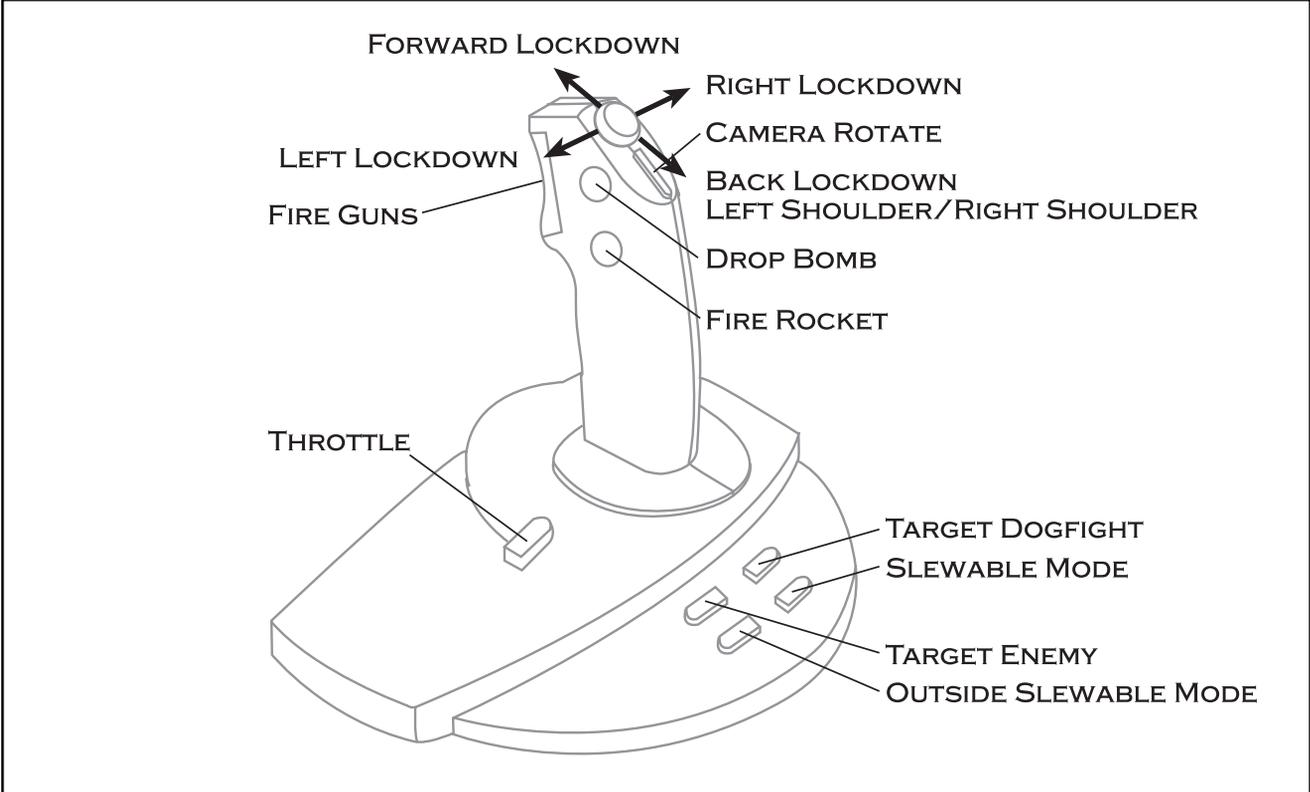
Normal rounds are better in most cases – they are more accurate, travel farther, do more damage, and are less likely to jam your guns. However, incendiary rounds are extremely useful if your target is an enemy observation balloon; incendiary rounds will ignite the hydrogen in the lighter-than-air craft and usually cause quick and complete destruction. Normal rounds are much less effective against balloon-type targets. If your plane has only a single gun, you will have to choose which type of ordnance to load onto your plane on the *Flight Ordnance Screen* before entering the sim. If your plane has two guns and you choose to load both types of ammo, one gun will be loaded with standard ammo and one with incendiaries. (This will somewhat reduce the effectiveness of both types of ammo.)

Most machine guns held 500 rounds of ammo per gun. The exceptions to this rule are the Lewis and Parabellum machine guns, which held only 98 rounds.

Allied fighter biplanes also have the option of carrying Le Prieur rockets, four on each side. These rockets have short ranges and miserable accuracy, but one hit on an observation balloon guarantees a dandy explosion.







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To fire a rocket, press **r** or button **4** on your joystick. Be sure to load rockets on your plane on the *Flight Ordnance Screen* before entering the sim if you think they might be useful.

Most fighter planes are also able to carry a pair of bombs on a mission, which can be useful if your target is on the ground (enemy infantry or aerodrome). To drop a bomb, press **b** or button **3** on your joystick. Be sure to load bombs on your plane on the *Flight Ordnance Screen* before entering the sim if you think they might be useful.

COCKPIT INSTRUMENTATION

You can choose one of three cockpit instrumentation sets, depending on the degree of historical accuracy you find appealing. This option can be set from the Preferences screen.

The **Authentic** cockpit includes a selection of instruments that were available in World War I:

The **Engine Temperature** gauge, which will tell you if your engine starts to overheat. This will only happen if your engine loses its cooling system because of damage that causes

an oil leak. An overheated engine may seize up, or even burst into flames.

The **Tachometer**, which tells you the current speed of your engine in revolutions per minute (RPMs), with each tick mark representing 100 RPMs. This is a measure of your current throttle setting.

The **Compass**, which shows you the direction in which you are flying.

The **Altimeter**, which shows you your current altitude. The readout is in thousands of feet for Allied planes, and kilometers in German planes. Zero indicates sea level.

The **Inclinometer**, a simple device that tells you how far off level your plane currently is, and which way the plane is currently banked.

An ordinary **Clock**, to help your pilot get to his waypoints on schedule. Failing to keep on schedule will lower your pilot's performance evaluation for the mission.

The **Balanced** cockpit adds a number of instruments to the board that weren't normally available during World War I, resulting in a display similar to that available to pilots of the second World War. In addition to the instruments listed above, the Balanced cockpit also has:

The **Airspeed Indicator**, which shows how fast your plane is going. The readout is in miles per hour for Allied planes, and kilometers per hour for German planes.

The **Vertical Speed Indicator (VSI)**, which tells you how fast your plane is losing or gaining altitude. A positive number indicates that your plane is climbing, while a negative number indicates a descent.

The **Fuel Gauge**, which shows how much fuel you have left.

The **Oil Pressure Gauge**, which shows you how much oil is in your engine. If your engine's cooling system is hit, it will start to lose oil, and your oil pressure will drop. If your engine loses too much oil, it will overheat.

The **Modern** cockpit has instrumentation equal to that found on a modern airplane. In addition to all the instruments found in the Balanced cockpit, it has:

An **Artificial Horizon**, which shows your plane's bank and pitch.

An improved **Compass**.

A **G-Meter**, which shows how many positive or negative Gs are being applied to your plane and pilot.

THE AUTOPILOT

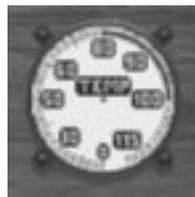
Red Baron II includes a multilevel Autopilot function that can take over some or all of the flying for you depending on which level you pick. The Autopilot is most useful when you want to look around without worrying about keeping your plane straight and level, or when your flight plan calls for a long stretch of flying.

There are three levels of Autopilot in the game. You may enter any of them at any time in the sim.

- Press **Shift-a** to activate the lowest level of the autopilot, the "straight and level" version. Like the name says, this version of the Autopilot will keep your plane flying in a straight line, but won't do anything else for

you, like keep you from crashing into a mountain. This is a good Autopilot to use for short periods of scanning the skies.

- Press **Alt-a** to activate the medium level of the autopilot, the "navigation" version. If you are the Flight Leader, this Auto-



pilot will automatically guide your flight to each successive waypoint. If you are a wingman, this Autopilot setting will keep you in your correct position within

the formation.

- Press **Ctrl-a** to activate the most complete autopilot, which will do everything for you except turn on your computer.



- Press **a** to turn the Autopilot off.

Only the highest level of the Autopilot will react to any threat;

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if you are using one of the lower levels of the Autopilot and enemy planes engage your flight, your plane will be helpless.



TIME COMPRESSION



There may be periods of simulation play when there's not a lot of action going on – for example, 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 II* contains a time compression mode that will speed up the simulation to many times its normal

speed to get to the action more expeditiously.



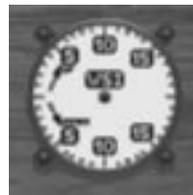
Time compression is activated by pressing the] (right square bracket) key. Each press of this key will double the speed at which the simulation takes place, up to a maximum of 16 times normal. A small display in the upper right hand corner of the game window shows you what level of time compression is currently enabled.

You can decompress time back to normal in the same steps by hitting the [(left square bracket) key. Time compression will be automatically deactivated when you press the \ (backslash) key, when you fire your machine

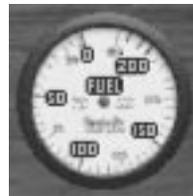


guns, when you come too near enemy aircraft or balloons, and when you fly near the ground. If you are flying with compressed time and an enemy approaches, time compression will auto-

matically turn off to give you a chance to respond.



IMPORTANT: It's very difficult to control your plane when time compression is active. Because of this, it would be a good idea to activate the Autopilot before you go into time compression.



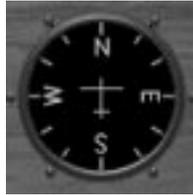
NAVIGATION AND THE KNEEBOARD

To keep track of the progress of your flight, your pilot is provided

with a kneeboard map that displays the flight plan for your mission. (This is the same map found within the *Mission Briefing* area outside of the sim.) To bring up your kneeboard map, press the **KP5** key; press the same key a second

time to return to your previous view

On your kneeboard, the map displays your mission area, flight path, and any important landmarks nearby. As your flight progresses, the path you've flown up to the current point will be shown in red. If you fly off the edge of the map, the map will *not* scroll; you will have to navigate by eye from that point. A small marker at the edge of the map shows



Mission Briefing. You can flip to the next page by pressing **KP1**, and flip back to the previous page by pressing **KP7**. Note that if this is a *Fly Now* dogfight, the



your relative position to the map.

The kneeboard also contains other information relevant to your mission, identical to the info that appeared during the

the navigation map, so the paging buttons are disabled.

FLIGHT COMMUNICATION

If you are the Flight Leader, you can issue very simple orders to the rest of your flight. Since plane-to-plane radios were not yet in use, only information that could be communicated through the use of hand signals, flares, or other basic signaling methods could be passed to the flight.

- Press **Ctrl-e** to tell your flight to engage the enemy. Note that if the flight starts taking enemy fire, or if enemy planes get uncomfortably close, your flight will probably take the initiative and engage without your go-ahead.

- Press **Ctrl-r** to call for a regroup (a return to formation flying after an engagement.) This is useful if your flight starts to run off after fleeing enemy fighters when their mission has some other goal (such as escorting bombers or strafing an enemy infantry unit.)

IN-FLIGHT PREFERENCES

It is generally easier to set all your sim pref-

GAME PLAY

ferences from the *Preferences* area outside of the sim. However, you can also adjust some preferences from within the sim by right-clicking anywhere in the game window. A menu appears, which will allow you to select the type of preference you want to change.

In addition to changing graphics and sound preferences, you can use this menu to adjust your joystick setup by selecting *Input Devices* to bring up the Windows 95® joystick configuration panel. You can also select *Help* to summon up a list of keyboard commands.

ENDING THE SIMULATION

There are several ways that a simulated flight can conclude.

- At any time, you may press the **Escape** key to end the sim.
- Your plane may crash, or your pilot may be shot.
- Your plane may be disabled.
- Your plane may land, either at the aerodrome or force down at some other location.

If you choose to end the flight in midair over enemy territory instead of after landing, your pilot might wind up shot down and cap-

tured or killed. There is also a small chance that something bad might happen to your plane if you end the flight in midair over friendly territory – your plane may crash on landing or your pilot might be shot by an enemy patrol in friendly territory – but this isn't very likely.

At the end of the simulated flight, you will see a menu appear giving you several options for how to conclude the sim:

- **End Mission:** If you choose this option, you will exit the sim and enter the Mission Debriefing area.
- **Restart Mission:** If you choose this option, the sim will reset to its starting conditions and begin over.
- **Abort Mission:** This option returns you to the shell as if you never started the mission. Use this option if you want to skip a certain mission completely.
- **Return to Sim:** If you hit the Escape key by accident, or change your mind about ending the mission, choose this option to re-

enter the sim at the place and time you left.

MISSION DEBRIEFING

If you choose the End Mission option, a map appears and the flight path flown by the pilot will be animated on the map. Boxes will appear to note interesting events at the sites where they took place, and the animation will pause; to move on quickly, hit any key or click the mouse. If you don't want to watch the entire animation, you can hit the **Escape** key at any time to move on to the next part of the debriefing.

The mission summary chalkboard appears next, displaying a summary of your mission performance and statistics about your pilot's performance and ending condition (number of kills, injuries, crashes, etc.) If the mission was a simple *Fly Now* dogfight, this will conclude the debriefing. For any other type of flight, the chalkboard will also display the outcome of the mission.

To see the animation tracing again, click on **Replay**; to conclude the debriefing and return to the shell, click on **Done**.

GLOSSARY

Ace An aviator with at least five victories.

Aerodrome An airfield, generally make-shift 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 that was allied against the Allies.

Crate Slang for aircraft.

Deflection angle The angle of a target 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. A 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 Immelman.

Egress Navigate away from the target.

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 Anti-aircraft 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.

Ingress Navigate to the target.

APPENDIX

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.

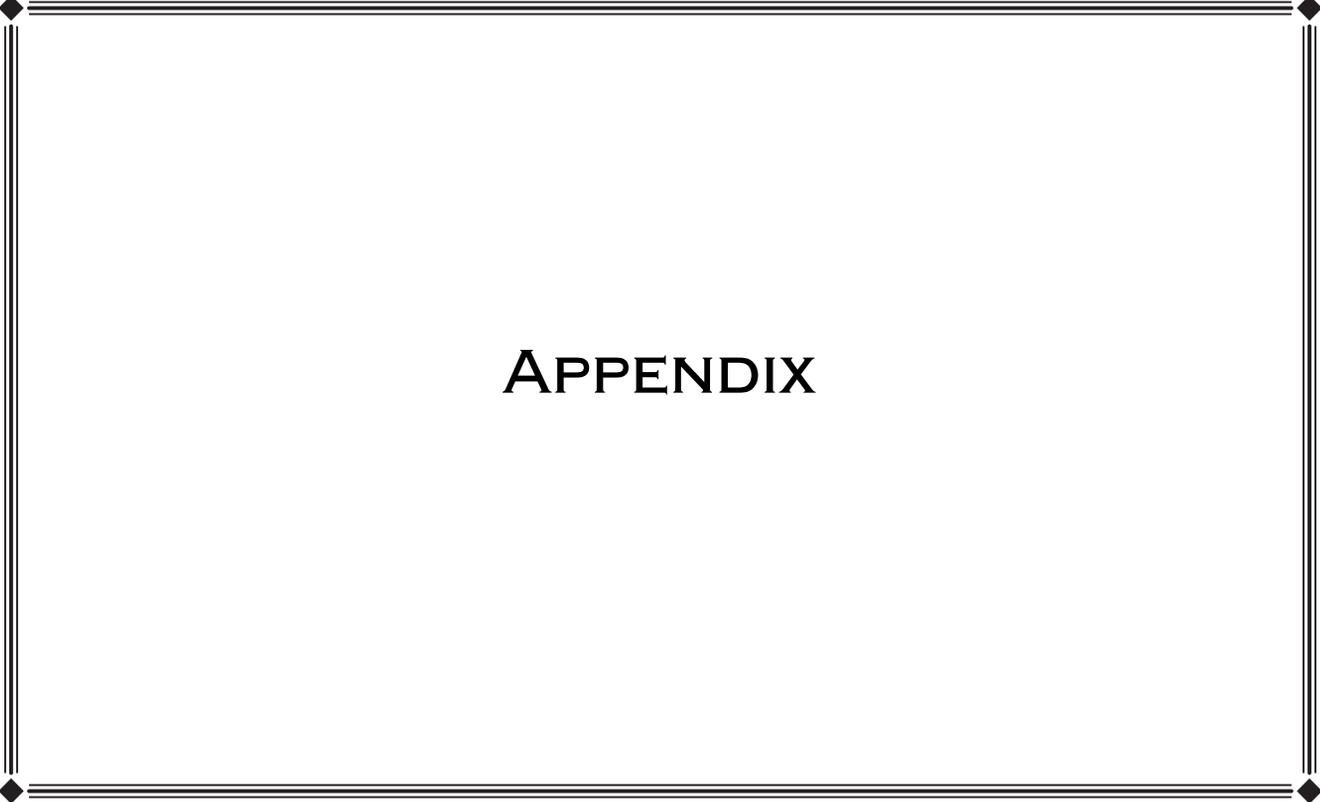
Piste French for landing field, used by American pilots.

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

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

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.



APPENDIX

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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.

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

Scout 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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