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## Commentary

### Flying Carpet

#### Dawn of flight

"The engine is the heart of an aeroplane but the pilot is its soul." Each morning before flying I imbibed that romantic bit of aviation philosophy from my coffee mug — until becoming obsessed. "Sir Walter Raleigh, *The War in the Air*, 1922," said the attribution.

No bookstore or library listed such a title when I went looking for it, and pre-Internet author searches led only to the well-known colonial-era figure. After months exhausting every conceivable source, I had to content myself with just that provocative saying on my coffee cup.

Then one day the Scottsdale Public Library's interlibrary loan desk phoned. "We've located the books you requested," said the caller.

"Which books are those?" I asked.

"Let's see...something called, *The War in the Air: Being the Story of the Part Played in the Great War by the Royal Air Force*, by Walter Raleigh and H.A. Jones. Now that we've found them, getting them here should only take a week. Do you want the books one at a time, or all seven volumes at once?"

"Seven volumes?" I replied, squelching surprise. Within days, an encyclopedic stack of dog-eared books overshadowed my nightstand. In them, I discovered contemporary accounts of the dawn of aviation — from the official history of Britain's Royal Air Force in World War I.

Even modern aviators grow accustomed to alarming apprehensive nonpilots we meet, although today's aircraft are inherently quite safe. But in 1914 when WWI began, safe flight in and of itself was not a given. The yellowed pages told of early "aeroplanes" falling apart in flight. And how procedures that today's pilots take for granted, such as stall recovery and night flying, were widely considered impossible.

Early in the war, few airplanes could climb to 10,000 feet; those that could required an hour or more to accomplish it. Those first anemic WWI airplanes were limited to directing artillery and reconnoitering enemy ground forces. Before long, however, adventurous aviators began dropping grenades and threatening each other with pistols. Since the early airplanes lacked enough power to carry fixed guns, authorities experimented with other methods for vanquishing opponents. One proposal called for snagging enemy aircraft with a grappling hook, and sliding an explosive device down the cable!

Once aircraft became powerful and sturdy enough to carry machine guns, the problem arose of where to mount them without threatening one's own propeller. "Pusher" airplanes offered one solution, while "tractor-airplane" pilots experimented unsuccessfully with obliquely mounted guns. Then Frenchman Roland Garros bolted deflector blocks to the back of his propeller so he could fire through it. After downing several German airplanes, Garros shot off his own propeller behind enemy lines. Aircraft designer Anthony Fokker turned the tables after examining the captured airplane — he engineered an interrupter gear allowing German pilots to fire between their propeller blades without striking them.

Aircraft improved rapidly as the war progressed, but with fearful loss of life — flying primitive airplanes into battle, new recruits received less than half the training of today's private pilots. Many striking accounts in the volumes related to Germany's Zeppelin dirigibles and British efforts to combat them. The giant airships delivered tons of bombs at a time when airplanes could scarcely lift their own weight. Bristling with defensive machine guns, the high-tech dirigibles lowered fish-shape "cloud cars" on cables, from which observers telephoned scouting information back to their commanders.

When Zeppelins bombed England in history's first mass aerial assaults, authorities struggled with how to warn civilians of impending air raids. When bicycling "bobbies" carrying "take cover" signs proved ineffective, someone thought of firing mortars to alert the populace. Although the mortar fire effectively urged people to shelter, it wouldn't work for signaling "all clear" following attacks. Ultimately, police sounded the all clear by driving Boy Scout buglers through the streets in open cars.

Life wasn't easy for Zeppelin crews, either. Imagine doing battle from a highly flammable hydrogen gasbag. As British air defenses improved, the vulnerable Zeppelins switched from day to night attacks. To combat them, British fighter pilots developed the world's first night-flying procedures. (Previously, most night takeoffs resulted in crash landings.) To avoid alarming the populace and triggering antiaircraft fire, since at first only enemy Zeppelins flew at night, British pilots



alarming the populace and triggering anti-aircraft fire, since at first only enemy Zeppelins flew at night, British pilots initially practiced night-flying techniques in daytime using dark goggles. Ultimately the defenders drove the German airships above 20,000 feet, where hulls and engines iced up, crews fainted from hypoxia, and disastrous 100-mph wintertime jet-stream winds overwhelmed the 80-mph airships.

Initially, British air operations were conducted by the Royal Flying Corps, a branch of the British Army, and the Royal Naval Air Service, affiliated with the Royal Navy. But by 1918 the growing strategic importance of air power led the British to organize the world's first independent air force. With no tradition of ancient air armadas to draw upon, founders of the Royal Air Force considered distinctive new officer ranks. Among the proposed titles were ardian, reeve, banneret, second - ardian, and flight leader. Imagine how different the hierarchy of the world's air forces might sound today, had those early titles been adopted: "Mr. Prime Minister? Ardian Smith reporting, accompanied by Banneret Wycliff, Reeve Patterson, and Flight Leader Jones."

Long out of print, *The War in the Air* was until recently nearly impossible to find, but now you can read Volume I for free at [books.google.com](https://books.google.com) (search: "The War in the Air, Raleigh"). If you get hooked, hunt down the remaining volumes via library or rare-book dealer.

Perhaps the biggest thrill in treading 90-year-old skies is realizing how closely the adventures of early aviators parallel our own. Sure, no one's shooting at us, and thankfully today's aircraft are not prone to spontaneous disintegration, but the underlying adventure of leaving Earth to challenge the atmosphere remains unchanged. Flying is as exciting today as it was 90 years ago — just a lot less dangerous!

*Greg Brown was the 2000 National Flight Instructor of the Year. His books include Flying Carpet, The Savvy Flight Instructor, The Turbine Pilot's Flight Manual, Job Hunting for Pilots, and You Can Fly! Visit his Web site, [www.paperjet.net](http://www.paperjet.net).*

**By Greg Brown**

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**The skeletal Caudron G.3 served WWI British reconnaissance pilots through 1917.**