



The Regal RNF

"Ask any pilot"

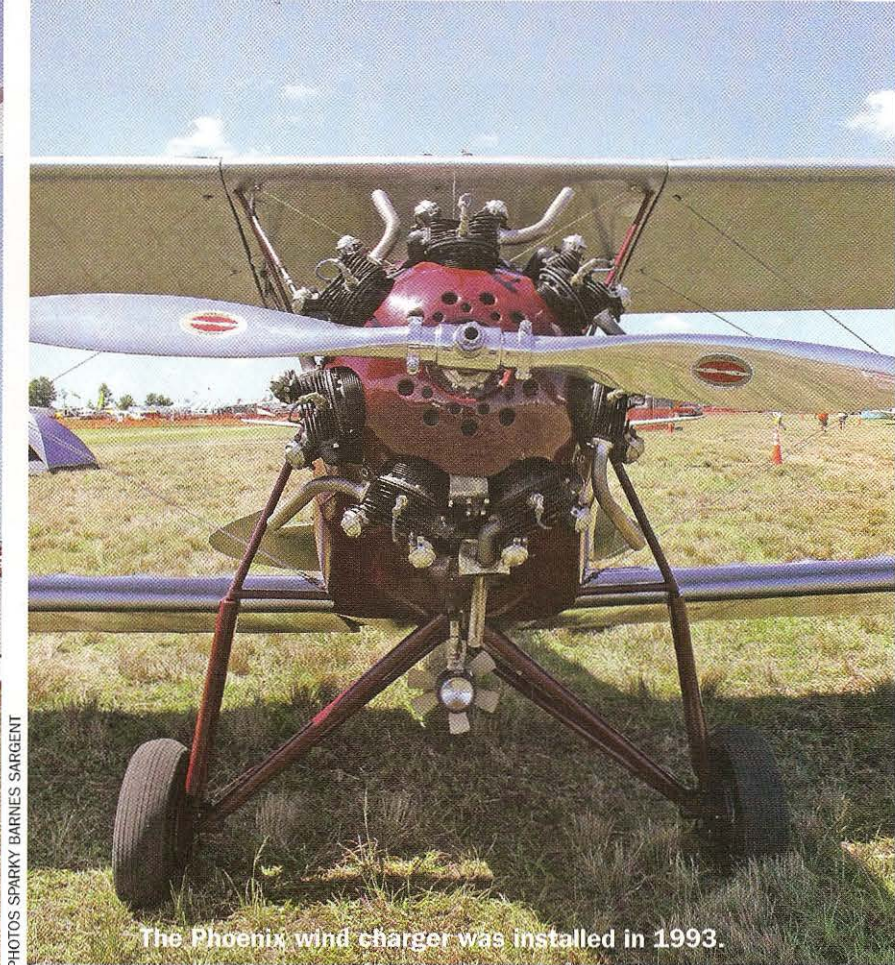
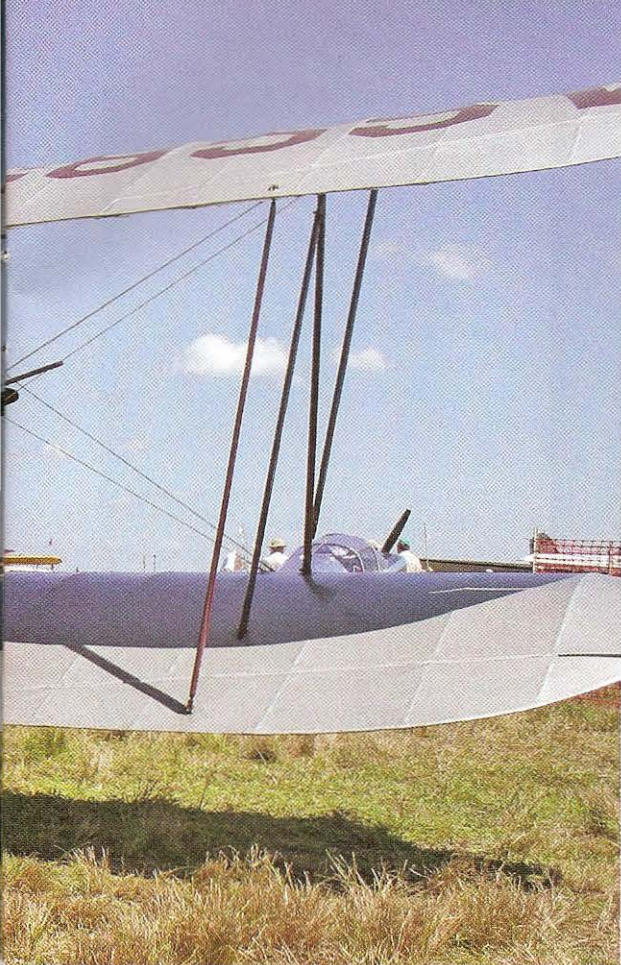
BY SPARKY BARNES SARGENT



SPARKY BARNES SARGENT

Regal in its burgundy and silver, NC855V was proudly poised on the flightline at the Sun 'n Fun Fly-In at Lakeland, Florida, this year, a noble representative of Waco's family lineage. Its current owner, John "Lites" Leenhouts of Jacksonville, Florida, considers himself fortunate to have this 1930 Waco in his possession, and enjoys sharing it with other antique and vintage enthusiasts. He acquired it in 2005 and has

The pilot flies from the rear cockpit; two passengers can sit in the front.



PHOTOS SPARKY BARNES SARGENT

The Phoenix wind charger was installed in 1993.

been actively flying it since then, logging 130 hours in it.

Manufactured under approved type certificate number 311 in 1930 by Waco Aircraft Company in Troy, Ohio, NC855V was originally equipped with a 110-hp Warner Scarab engine and a wooden Hartzell propeller. The RNF was the first of the Waco "F" series; "R" stood for its Warner engine, "N" signified the wing and fuselage design, and "F" denoted the model series. It was designed to carry two passengers and 15 pounds of baggage in its front cockpit, while the pilot flew from the rear—yet dual controls gave a single front-seat occupant the opportunity to try his hand at flying this fine machine.

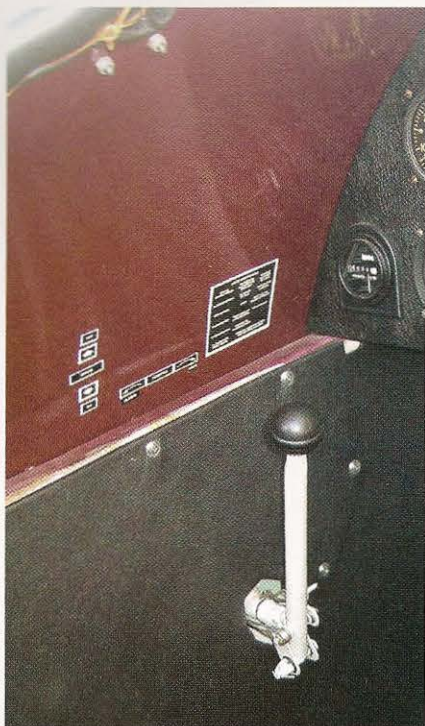
The Waco RNF was quite popular among pilots of the day, with excellent short-field performance and handling characteristics, along with its sturdy construction. Its welded steel tubing fuselage was neatly faired to shape with wooden formers, and its tail was also built of welded steel tubing. Its wings

were built with spruce spars and spruce/plywood ribs, and the airframe was covered with fabric. The RNF's outrigger gear had oleo-spring shock absorption to cushion its landings, and its horizontal stabilizers were adjustable in flight, via a jackscrew. Two 16-gallon center-section fuel tanks gave it a range of around 400 miles. According to aviation historian Joseph Juptner (Vol. 4, *U.S. Civil Aircraft Series*), the RNF, as powered by the 110-hp Warner, had a maximum speed of 112 mph, with a cruising speed of 95 mph and a landing speed of 35 mph. Its upper wing spanned 29 feet 6 inches, and its lower wing spanned 27 feet 5 inches. The biplane measured 20 feet 8 inches long, stood 8 feet 4 inches tall, and weighed 1,150 pounds empty, with a gross weight of 1,897 pounds. The type certificate was apparently later amended for the installation of a 125-hp Warner, with a corresponding gross weight increase to 1,938 pounds. The RNF was also certificated for Edo L floats.

The Waco RNF's popularity extended beyond the borders of the United States; there were several flying in other countries, as well. Andy Heins of the National Waco Club sheds some light on this topic, stating "a total of 181 RNFs were built, although two of these were fuselages only. Of these, the following went to foreign countries: China—1, Argentina—3, Norway—2, Canada—1, and Brazil—22." Today, 43 Waco RNFs are listed on the FAA Registry, and Heins indicates that 21 are in flying condition (and his wife, Susan, owns two of those).

Acquiring NC855V

In 2005, Leenhouts received a phone call from "Hank" Avery, then owner of NC855V. Avery wanted Leenhouts to make an offer for the Waco. "Hank's health was going down, and he knew I loved the airplane," shares Leenhouts, explaining "I'd met him a couple of years before, through a mutual friend, Tommy Hennessey, and had admired and shown an interest in his

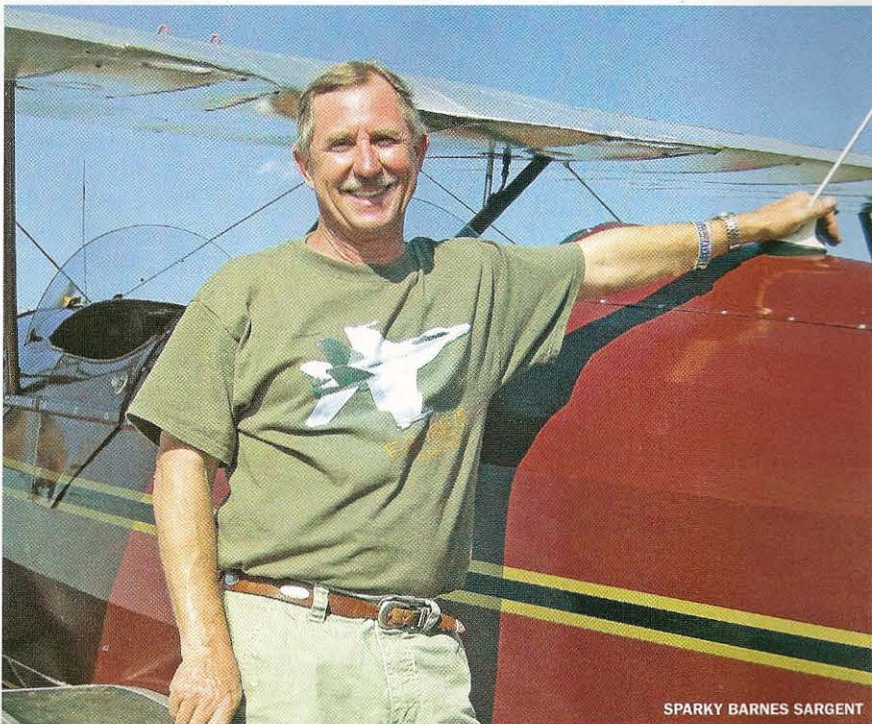


Close-up view of the throttle/brake lever.

PHOTOS SPARKY BARNES SARGENT



Leenhouts demonstrates the braking portion of the throttle/brake lever.



SPARKY BARNES SARGENT

Retired U.S. Navy Capt. John "Lites" Leenhouts loves flying his RNF.

Waco—so he called me. As it ended up, I made an offer that I thought he'd turn down, but instead, he told me to come get the airplane."

When Leenhouts arrived at Silver Creek Airport in Morganton, North Carolina, to complete the purchase of NC855V, he'd never even been up

for a flight in it—or any Waco, for that matter. So he was in for a bit of a surprise when he went up for a familiarization flight—he noticed as he climbed into the roomy front cockpit that there were no instruments in the panel. "Hank's friend checked me out in it, and he was in the rear

cockpit," chuckles Leenhouts, "so I asked him how I would know what the engine rpms were, and he told me, 'You'll figure it out, it's not that hard.' He takes off, flies around, and comes back and lands on the grass—then says, 'Okay, now taxi.' Well, the brakes are weird, because the brakes are [combined with the throttle lever]. For throttle, you move the lever fore and aft, and then side to side to activate the brakes—that's the original setup. Then he told me, 'Alright, it's your airplane.' Yeehah, this is going to be a fun one—so I run that throttle up and the tail comes up and then we're flying! It's just stick and rudder, seat of the pants flying—I go around the pattern and do six landings—then he told me, 'You own the airplane!' That was all the flight time I had in it; the very next morning, a friend and I flew it from Silver Creek to Jacksonville, Florida. We didn't have a GPS; we just flew by dead reckoning—and I've been having fun with it ever since!"

Flying the RNF

As Leenhouts has logged time aloft in his Waco, he's gained even more appreciation for its fine flying characteristics—and its nostalgia. "The RNF dates to a time when life was so much simpler and so much more enjoyable," he reflects, "without the complexity of the high-tech world of the 21st century."

The RNF's upper and lower ailerons make it a very responsive and nimble airplane, with "a very nice roll rate, and it's very controllable at low speeds, so somewhere around 40 mph it still handles like a dream. It can get airborne in about 300 feet when fully loaded, and it'll fly as far as you want to go at 85 mph. The Hamilton Standard ground-adjustable prop was set for climb when I bought the airplane, and it was only cruising around 75 mph. I've adjusted it for speed, and now it flies very comfortably at 85 mph. It's a very docile airplane; when you stall it, it just kind of mushes down. It's fully aerobatic, and when you push the nose downhill, it'll



Close-up view of the Waco's outrigger gear.

PHOTOS SPARKY BARNES SARGENT



Note the clean lines of the RNF.



This RNF began life with a 110-hp Warner, but today it has a 145-hp Warner

go from 85 mph to 120 mph just about like that," says Leenhouts, snapping his fingers.

Historian Joseph Juptner writes the following when describing the RNF: "Just to prove what a good pilot could do with the RNF, Johnnie Livingston entered the 'dead-stick' landing contests at the 1930 National Air Races held in Chicago. With several scores remarkably 'close to the mark,' Livingston came up with 2 first, 2 second, and 2 third place wins in the daily events. In the 'balloon busting' contests he deftly wheeled the RNF to 3 first place wins with almost the grace of a ballet dancer."

Chain of Ownership

It's always interesting to pore through aircraft records and documents, and once in a while, a glittering gem of history is brought to light. This Waco's early chain of ownership goes like this: On June 6, 1930, Waco Aircraft Company issued a certificate of transfer (bill of sale) for NC855V to Mr. Phil Love, of Lambert Field in St. Louis, Missouri. Love owned the biplane for barely a month; on July 3, 1930, a record, transfer, and reassignment form shows that he sold the Waco to Harry H. Knight, of 401 Ol-

ive Street, St. Louis, Missouri. Knight's "most convenient flying field" was listed as Curtiss Steinberg Field, St. Louis. Knight owned NC855V a little more than two years, and during that time, he made a few changes to the biplane. He had a metal propeller and Townend ring installed in June 1931. Then on August 25, 1932, an operation inspection report indicated that a 125-hp Warner was installed in place of the original 110-hp Warner. The next record, transfer, and reassignment form reveals that Knight sold the Waco to Frank H. Robertson of Robertson, Missouri, on September 27, 1932; Robertson's "most convenient flying field" was listed as St. Louis Municipal Airport.

Upon discovering Love's address of Lambert Field, I became intrigued and decided to invest some time researching the history surrounding Love. It wasn't long before I cautiously surmised that he was the Phillip "Red" Love who was Charles Lindbergh's classmate and buddy, and a fellow CAM-2 airmail pilot. Not only that, but that Harry H. Knight helped fund Lindbergh's trans-Atlantic New York-to-Paris flight, and that Robertson was of the Robertson Aircraft Cor-

poration and also an airmail pilot. It just didn't seem to be a coincidence that Robertson's signature on corporate checks made out to C.A. Lindbergh and Harry Hall Knight matched the Robertson signature in NC855V's aircraft records.

Mike Gretz, president of the Antique Airplane Association's Airpower Museum, has intently studied Lindbergh's life and times, and corroborated my suppositions. He states, "From the documents and letters I have seen between Phil Love and Lindbergh in the 1920s and '30s, I am convinced that Phil Love was Lindbergh's closest aviation friend and confidant during the first half of Lindbergh's life...I believe Lindbergh considered Love his equal in all matters aviation... The trail [of ownership] from Love to Knight to Frank Robertson is the clincher. They were all Lambert Field buddies of Lindbergh's. Yes, Knight was one of Lindbergh's two most important financial backers for the flight of *The Spirit of St. Louis* (the other being Harold M. Bixby). And yes, Frank Robertson was the co-owner of Robertson Aircraft Corp., who Lindbergh worked for. Frank and his brother Bill were



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The RNF has two center-section fuel tanks, with a total fuel capacity of 32 gallons.



COURTESY ANDY HEINS/NATIONAL WACO CLUB

This photograph shows NC855V in one of its previous color schemes.



COURTESY JOHN LEENHOUTS

NC855V on the flightline at Wold-Chamberlain Field in Minneapolis, Minnesota, during the 1930s.

also backers of *The Spirit of St. Louis* flight. It all ties together very well.”

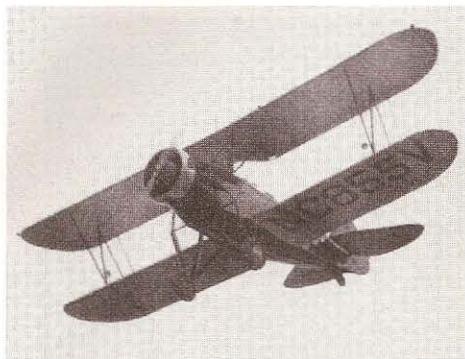
Robertson owned NC885V for about three months and then sold it to C.A. Thomas of the then-notable and prosperous Thomas Fruit Co. of Joplin, Missouri, on December 21, 1932. At that time, the Waco had 256 hours and 30 minutes of total time. After that, it flew from Missouri to Colorado and then Nebraska, where it was owned by Rapid Air Lines Corporation of Omaha during 1933 and 1934. Its total flight time by September 1933 was 382 hours, and 671 hours by August 1934. The Waco was around Wold-Chamberlain Field in Min-

neapolis, Minnesota, in September of 1937 and 1938—which is likely around the time that Leenhouts’ historical photograph of NC855V was taken as it sat on the ramp, ready to give rides.

Another interesting tidbit is that Grimes position lights were installed in October 1939, along with a Grimes warning light on the leading edge of the upper left wing, and automotive spotlights (for landing lights) on the lower end of the front struts—and this is nicely illustrated by the historical photograph shared by Andy Heins.

NC855V was used for sightseeing rides in Minneapolis in the early

1940s, and it was owned by two flying clubs during 1944—first, Milan Flying Service in Minneapolis, and then Rutherford Flying Club in Rutherford, Tennessee. Fast-forward to 1960—the Waco had accumulated 1,323 hours and 20 minutes of flight time, and that was when owner Robert S. Sherman of Tucson, Arizona, had another engine installed. The original plywood engine support ring was replaced with a steel engine mount ring, and a Warner Series 50 engine rated at 145 hp at 2050 rpm was installed, along with a Hamilton Standard ground-adjustable propeller. NC855V is still powered by this engine.



This black and white photo depicts NC855V with the automotive spotlights that were installed as landing lights on the lower portion of the front struts in 1939.

The next significant transfer of ownership transpired on December 6, 1963, when William C. Hiller of Louisiana sold the Waco to Silver Creek Aviation in Morganton, North Carolina—and ultimately put it in the hands of one Herbert H. Avery. You might say that the 33-year-old biplane had landed at its long-term care facility, for that's where it remained until 2005. "Hank" Avery was a U.S. Marine Corps captain and pilot during World War II, and became a prominent citizen and businessman in Morganton, North Carolina, in the years following the war. Avery was well-known for his collection of warbirds and antique aircraft, which he kept at Silver Creek Airport. In November 1993, Avery "updated" the Waco by having Catawba Valley Aviation in Hickory install avionics in it; those included a radio, transponder, and altitude encoder. One month later, A&P Greg Deal signed off on the installation of a Phoenix wind charger (alternator). Deal had also removed the old cotton fabric (from a re-cover job in 1971), disassembled the aircraft, primed the airframe, re-covered it with Ceconite, and reassembled it with new hardware. After logging around 1,800 hours' total time, NC855V was all spruced up and ready to fly through modern-day airspace.

That pretty much brings us up to June 17, 2005, when Leenhouts purchased the Waco from Avery's Antique Airplanes Inc. But the other interesting aspect of this

COURTESY ANDY HEINS/NATIONAL WACO CLUB



JOSE RAMOS

story is just how Leenhouts became involved with aviation in the first place, and the heights to which he has soared since then.

Dreams Take Flight

Enamored as he is with vintage and antique airplanes, it's not surprising that this is the third biplane Leenhouts has owned. First, he had a 1946 Stampe, which he loved flying—but he sold it to pay for his daughter's college tuition. He really wanted another biplane, and several years later, a Stearman flew into his life—and he still owns that one. His love for biplanes—and jets—started when he was a youngster. "I grew up as a kid who just loved airplanes, and I really wanted a biplane because I just loved that era. I was a small kid and I got beat up a lot, and I always wanted to be bigger than the other guy, but stature wasn't going to get me there," laughs Leenhouts good-naturedly, "so I had to do something to set myself apart—to be important, to be bigger than me. When I was about 14, I was down visiting my grandparents in Ft. Worth, Texas, and Caswell Air Force Base had an air show going on. I hitchhiked up there, and that's when I decided I wanted to be a fighter pilot."

Leenhouts applied himself in school, went to college, and signed on with the Navy. "I flew A-7 Corsairs from 1975 up through Desert Storm and was a Landing Signal Officer in my junior officer days," explains Leenhouts energetically, "which gave me the additional opportunity to cross-train in the F-14 Tomcat as well—I qualified in one

week, because that's all the time I had! From 1977 through January 1986, I flew the A-7 day and night, and the F-14 Tomcat during the day off of several carriers in the Mediterranean Sea and the Atlantic Ocean. During that time, I became the Senior Landing Signal Officer for the Atlantic Fleet in Virginia, and I flew off every ship on the Atlantic coast with every Tomcat Squadron for two years—I had a great time; it was a blast! I transitioned to F/A-18 Hornets in 1991, after returning from the Gulf War I."

Retired U.S. Navy Capt. Leenhouts was the Strike Fighter Wing Atlantic commander; he retired in 2000, after 27-1/2 years with the Navy. He received numerous medals and made 1,645 carrier-arrested landings (425 of which were made at night) during his career—the most ever in U.S. history. Today, he is employed by Northrop Grumman Technical Services as an F/A-18 Program Manager for Modification, Repair and Overhaul at Cecil Field Operations in Florida.

There's no doubt that Leenhouts has achieved—if not surpassed—his childhood goal of setting himself apart from others. And aviation has been his ticket for the greatest ride of his life—from supersonic to subsonic, he's happiest aloft, whether he's in front of a screaming jet engine or behind an old throaty radial, with his worldview framed by fabric-covered wings, and the heart-warming sound of wind singing through the wires. Hmm—wonder what Love, Knight, and Robertson would think of NC855V's newest owner, if they were still around!