

A vintage biplane with golden-bronze wings and a black fuselage is flying over a large body of water. The aircraft is viewed from a low angle, showing the underside of the wings and the fuselage. The text 'OFFICIAL SHIP NATIONAL AIR TOUR ASST. TIMER' is visible on the fuselage. The background is a clear blue sky and a distant shoreline with trees.

# *'The thoroughbred of the airways'*

BY SPARKY BARNES SARGENT

**T**he biplane was elegantly poised on the flightline, its shimmering golden-bronze wings and empennage softly framing a bold black fuselage, creating

a sublime semblance of the golden years of aviation. This Laird LC-1B-300 is a sight so alluring and lovely that it's somehow surprising to learn that this "thoroughbred of the airways" was quite the workhorse after it first flew away from Ashburn Field in Chicago in

September 1930. Let's wing our way through the highlights of this biplane's life, as owner/restorer Larry Howard shares its colorful details.

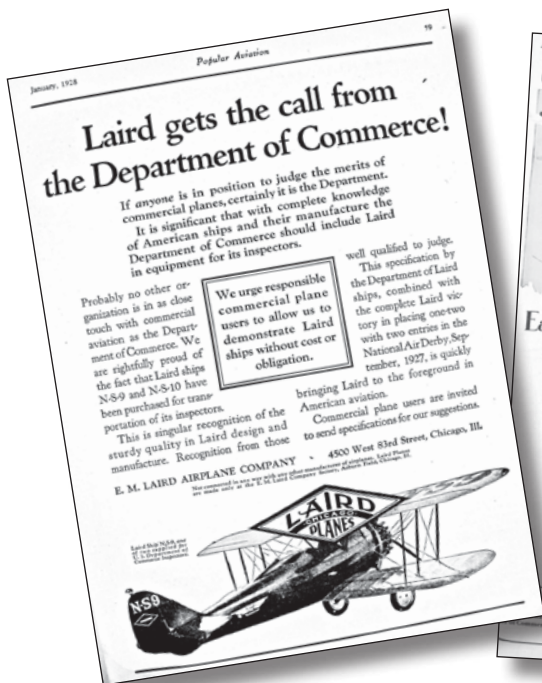
## **A Thoroughbred's History**

First of all, let's place this Laird in its appropriate context—there were

# Larry Howard's *Lovely Paird*



MIKE STEINEKE



Popular Aviation January 1928



Aviation January 1928



Aero Digest April 1928

only four LC-1B-300s built by the E.M. Laird Airplane Company, and each one was built by hand. The “C” stands for commercial, and the “1B-300” indicates that NC10402 was a high-performance version, powered by a Wright J-6-9 of 330 hp. “There were less than 40 Laird commercial aircraft built all together, from 1925 up into the early 1930s,” explains Larry. “Of those, there were about three built with an OX-5 engine, two with the Wright J-4, and most of them had Wright J-5s. Four had the Wright J-6-9s, of which this is one—this airplane was built in 1930 and had a very fun life.”

The first owner, A.D. Knapp, lived in the Detroit area and soon sold the biplane to another pilot in the area. In May 1931, it was purchased by Thomas Berry Colby, vice president of Berry Brothers Incorporated (maker of Berryloid aircraft finishes). As with the previous five airplanes the company owned, the Laird was christened after its advertising slogan, “On the Wings of Progress,” and bore the number “VI.” “Colby flew it as an official ship during the 1931 Ford National Air Tour,” says Larry. “He was the assistant timer and flew ahead of the fleet. He took the times as the

pilots arrived at each stop.” During the mid-to-late 1930s, the biplane was flown to its new home in Pennsylvania, and a banner release mechanism from a PCA-2 autogyro was installed. NC10402 started towing banners—first in Pennsylvania and then at Miami Beach. In 1941, yet another owner installed a 30-gallon smoke-oil tank in the front cockpit, and the Laird was used for an additional form of aerial advertising—skywriting. The biplane changed hands several times during World War II and was flown to its next home in Van Nuys, California, in May 1945. “Un-



COURTESY LARRY HOWARD



The Laird, after conversion to a sprayer in 1952. Extensive modifications were made to the rudder, fin, and cockpits, and a Lycoming R-680 had been installed in place of the Wright.

NC10402 as it emerged from the E.M. Laird Airplane Company at Ashburn Flying Field, Chicago.

APRIL, 1930

**Pick a Winner!**

WHETHER it's an entry in the Kentucky Derby, an entry in the Stock Exchange, or an airplane—you get a real satisfaction out of picking a winner.

If you're keen to own the fastest ship, and the swiftest ship, you'll want a Laird-Whitford. Look at the sleek lines! Notice the spine of the wings, the careful streamlining of struts and landing gear. Speed is apparent in every line!

Then step into the roomy cockpit, take the stick yourself, and get her through the jumps. You'll find that Laird performance bears out Laird appearance. As for stability—by her "hands off" and so for yourself.

Laird superior design and Laird superior workmanship plus Wright Whitford power result in the perfected flying unit.

Laird airplanes are built for the sportsman-pilot and the commercial buyer whose chief interest is high efficiency and dependability rather than price. We invite such buyers to write for our free booklet and the name of the nearest distributor who can arrange a demonstration.




**E. M. LAIRD AIRPLANE COMPANY**  
Ashburn Field—4500 W. 33rd St., Chicago

**"THE THOROUGH-BRED OF THE AIRWAYS"**

Aero Digest June 1929

APRIL, 1930

**Again Laird Takes the Lead**

—and announces, this year, the Speedwing Special, of great power and speed



**Speedwing Special and P. & W. 425 H. P. Wing**

These who believe in the combination of Laird and Wright-Whitford have four models to choose from: Laird Standard Wing, Model LC-B, and Laird Speedwing, Model LC-B, both powered with the Wright-Whitford J-5 engine of either 200 or 300 H. P. Efficiencies in detail and design add a complement of high-revving and maneuverability which keep Laird 1930 models a long stride ahead of their class.

In addition, the Laird Speedwing Special makes its first appearance at the 21st American Aircraft Show, now made at "Spokane," Wash. You are invited to inspect the E. M. LAIRD AIRPLANE COMPANY

**E. M. LAIRD AIRPLANE COMPANY**  
4100 West 33rd St., Ashburn Field, Chicago, Illinois

**"THE THOROUGH-BRED OF THE AIRWAYS"**

Aero Digest April 1930

munication with Mr. Edmiston, who owned the Laird but didn't want to sell it."

Backing up just a bit, Larry shares how he became interested in aviation. "I've dreamed of flying airplanes since I was a teenager," he recalls, smiling. "In those days *Mechanix Illustrated* had cards you could tear out and send in to get a brochure about Cessnas and Beechcraft and whatnot. Eventually I bought the very aircraft that I was dreaming about—my first airplane was a 1957 straight-tail Cessna 182, and then I had a V-tail Bonanza. Thankfully, I got to know Addison Pemberton [a neighboring antiquer] who infected me with the old-airplane disease. And before you know it, I was trying to explain to my wife why I needed to buy a wrecked Great Lakes in Guatemala. I brought it back to the United States and restored it from the frame up."

It was during that time that he began talking with Dick, and in November 2001, after completing the Great Lakes, he bought the Laird. Chuckling, he reflects, "I kind of went to grad school in the restoration game, straight from the grade school of a Great Lakes to the Laird, and I loved learning the skills involved. I live at Sky Meadows Airport, and my hangar and shop is just 100 feet from the house. I don't like television, so I work in my shop every evening, and it was a fun project. It is very rewarding

fortunately it was wrecked on its arrival," says Larry, "but after it was rebuilt, it served for the United States Army as a coastal patrol and target tug off the coast of California."

In 1946, the Laird flew to Long Beach with another owner and was converted to a crop duster. A hopper, venturi, and agitator were installed, and "all of the controls were taken out and BT-13 controls were put into it," says Larry, "along with a BT-13 tail wheel. It served as a duster in southern California for several years."

Then in 1952, the Laird was converted to a sprayer. A metal tank and sprayer bars, along with a Lycoming R-680-13, were installed, and

the biplane worked in the California valley and Arizona for several years—up through 1957. By the late 1950s, the thoroughbred "was retired to a duster's yard in Woodlake, California," says Larry. "It was discovered as a derelict behind a hangar there by local Dick Edmiston. He rescued it in 1984 and spent years trying to get it restored."

### Owner/Restorer

Enter Larry, a dentist (now retired) from Greenacres, Washington. He heard about the aircraft from a patient. "We were talking about airplanes, and he said, 'I know a guy who has a Laird'—and that started about a five-year com-



During the Ford National Air Tour in 1931.



The Laird as a skywriter with a 30-gallon smoke-oil tank in the front cockpit and extended stacks.

COURTESY LARRY HOWARD



COURTESY LARRY HOWARD



Larry Howard with his bare Laird in July 2005.

(February 2004) Larry Howard works on the wings. You can also see the unusual aluminum tube fuselage framework construction. All steel junctions were plated with silver cadmium, and the aluminum tubing was coated with zinc chromate.



COURTESY LARRY HOWARD

It takes quite a few helping hands to carefully install the wings.



STEVE SCHULTE

The neatly finished baggage compartment, aft of the pilot's seat.

to see this aircraft come to life, after spending about nine years and thousands of hours restoring it."

### Research

A good portion of those hours were invested in research. In his quest for drawings, he traveled to the Smithsonian and the FAA office in Chicago, but departed empty-handed. He did collect some drawings when he "communicated with Matty Laird Jr. in Carson City." He also spoke with a 90-year-old Laird owner in Canada: "Mr. Edmiston had actually collected quite a few, and he had communicated with the Colby family, as well," says



The distinctive rounded tail group of the Laird.

SPARKY BARNES SARGENT



STEVE SCHULTE

The instruments were overhauled by Keystone in Lock Haven, Pennsylvania.



The folding windscreen for the front cockpit can easily be installed or removed.



These 30 x 5 wheels were made by Dick Fisher of California.



A spacious front cockpit seats two—note the fuel tank below the panel.

SPARKY BARNES SARGENT PHOTOS



MIKE STEINEKE

Larry. “It was interesting, though, that sometimes I’d have two or three drawings of the same part, yet they were different, because the airplanes were pretty much all custom, hand-built to order; they weren’t production line.”

### LC-1B-300

According to the late aviation historian Joseph Juptner, this model Laird was cleaned up aerodynamically by the addition of a low-drag cowl, and its lower wing roots were neatly faired into the fuselage—plus it had the advantage of 30 extra horses. With an upper wingspan of 34 feet and a lower span of 30 feet, this thoroughbred measures 23 feet 9 inches from tip to tail. It came equipped with a Pioneer instrument panel, an Eclipse hand inertia starter, and a Hamilton-Standard ground-adjustable propeller. Its landing gear was the split-axle type with rubber shock cords for smoother landings, Goodrich tires, and Bendix brakes. Today, as powered by a 300-hp Wright J-6-9, the Laird has an empty weight of 1,958 pounds, a gross weight of 3,022 pounds, and a useful load of 1,064 pounds.

### Fuselage

The Laird’s fuselage isn’t made from steel, as one might think. The tubing that composes the complex framework is all aluminum. “The tubing fits into steel clusters at each station,” explains Larry, “and the longerons slide through these weldments—while the vertical and horizontal tubes just nest in. There is one bolt that bolts through the longeron, to locate the longeron fore and aft, but that’s the only bolting. Then there are tie rods at each station in all directions—they go crosswise through the center of the station, and the sides, bottom, and top all have cross tie rods in them. There are up to 12 tie rods per station, with at least 60 tie rods in the whole fuselage. It’s very much like the construction of World War I airplanes that were built out of wood, with steel stations and tie cables. So the construction was difficult, especially since those stations had corroded after being a duster for years.”

Larry built the adjustable aluminum seat for the rear cockpit by taking measurements from an original one that he was able to locate. One

interesting feature that is easily visible in the cockpit is an elevated floorboard, which neatly conceals the flight control connections and cables. “Down in the belly, just above the last station, is a plywood floor that goes from the firewall all the way to the back of the aft cockpit,” he explains. “All of the controls are underneath that plywood floor; so the cockpit is very clean, both front and back. You could fill it up with marbles, and they wouldn’t run into the belly!”

Another feature—the combined rudder/brake pedals—requires some fancy footwork of the pilot. “There’s a structure that suspends the brake mechanism under the floor, and the rudder pedals rotate inward for brake. The brakes are unique in that the rudder pedals are longer on the inside than they are on the outside. You have to push on the in-board side of the rudder pedals to activate the brakes, which is quite a difficult undertaking, to train yourself to do that,” notes Larry, smiling. “That’s the hardest task of flying the airplane—getting from landing to braking. Also rare for the time was that the throttle, mixture, and carb



Larry Howard

SPARKY BARNES SARGENT



Rubber shock cords cushion the Laird's landings.

SPARKY BARNES SARGENT

The Laird's trim system is rather nice, with a full trimming stabilizer. A Johnson bar provides gross trim control, and a wheel directly behind that provides a fine trim control. "You can trim it up at any power setting to fly straight and level," says Larry, "which is nice! You can't do that with all old airplanes. It's a pushrod affair that actually works a bell crank, which jacks the tail up and down."

## Wright

Since Larry lives in Washington, where mountains loom large on the horizon, he decided to go with a later version of the Wright Whirlwind, instead of the older "snap cap" engine. Radial mechanic Al Holloway of California overhauled the Wright J-6-9 R975-11. "This one is a sacrificial 'oiler' engine, so it has pressure lubrication to the valves on the top half of the engine and gravity lubrication to the ones on the bottom. It's a very nice, clean-running engine—it does not leak very much at all," he says, adding, "John Swander of Missouri built the cowling ring for it."

## Finishing Touches

Meticulous with his restoration, Larry took the time to include several nice yet subtle finishing touches for his rare Laird. For one, he installed a brass trim plate along the top edge of the front cockpit, which has LAIRD neatly engraved on its top, polished surface. Brass buckles and latches fasten the front cockpit and baggage compartment (there are two) covers, and a three-piece folding windscreen for the front cockpit can be quickly installed or removed with brass thumbscrews.

But perhaps the crown jewels of these extra details are the navigation lights. Originally, the Laird was equipped with Pioneer lights, which could be ordered through the Nicholas-Beazley catalog of the day. "I've only seen them on two other airplanes, and I couldn't locate any," explains Larry, "so

heat controls were located in the sidewalls of the cockpit."

## Wings

Surprisingly, most of the wing hardware, along with the original flying and landing wires, survived those long years of neglect. "That was a big help," he comments. "The wings are built of spruce with truss construction ribs. The cap strips are all routed, and the center webs are reinforced plywood with diagonal reinforcing strips. There are two very healthy spruce spars, so each wing is very strong, and the ailerons are built of wood, as well. All the wood construction is new, of course, which is not surprising

for an airplane of this vintage."

## Empennage

The tail group is of mixed construction; the horizontal stabilizer is built of wood, but the fin, rudder, and elevators are all welded steel tubing. They presented yet another challenge to this restorer. "They'd all been extensively modified when it was a duster," Larry details. "At one stage, the aircraft had a Cessna T-50 tail wheel installed, and the bottom foot of the rudder had been cut off to accommodate that. It had a balanced rudder and fin design built on top of it, so I rebuilt all of those parts. Some of the structural welding was done by Matt Burrows of Spokane."

I made my own light bases using rubber molds and lost wax casting. I reproduced the lights, the lenses, and the castings [for the fixtures].”

A few modifications were also made for safe operations in today’s environment. They include modern avionics, such as a transponder, encoder, GPS/comm, emergency locator transmitter, and a fuel flow meter. Additionally, a Scott tail wheel (as opposed to a tailskid) and hydraulic brakes have been installed.

## Aloft in the Laird

NC10402’s first flight was in September 2008, and Larry logged about 20 hours before winter set in. This past spring, it returned to the sky. “We’ve put about 120 hours on the airplane this year already,” he says.

The Laird maneuvers nicely on the ground, thanks to its steerable tail wheel and BT-13 brakes. Accelerating down the runway on its 30 x 5 wheels (made by Dick Fisher of California), the biplane begins levitating skyward at 80 mph. “It’s a very spirited aircraft on takeoff,” says Larry, smiling. “It climbs out somewhat over 1,600 feet per minute, and the takeoff run is very short. It’s got a very skinny wing with a little undercamber on the bottom of the wings, and I was real concerned that it would have a lot of adverse yaw and be a snappy staller. Well, it is a snappy staller, but it has very little adverse yaw once it’s in the air. It’s a very fast airplane and cruises between 125 to 135 mph at 1950 rpm. We’re burning between 16 and 17 gph, and it carries 74 gallons total, with 53 in the main tank (located in the front cockpit) and 23 in the wing center section tank. So it’s got long legs and has about three and a half hours’ duration.”

In flight, the Laird has “very nice control harmony. It’s fairly neutral in pitch, so it will hold pitch without a struggle, but it’s not nearly as pitch stable as a modern airplane. But in smooth air, you can fly it hands-off for a long time,” he says. “Landing is a little more of a challenge. It sits a little high on the

gear, and the way the wheels are set up, the camber actually changes—when it’s in flight attitude, the gear has a neutral toe in and toe out. But as the weight of the aircraft comes down on the wheels, they toe in because of that camber. So in normal landing configuration, it’s very docile, and it rolls out straight and handles just fine. It much prefers a three-point landing; it tends to dart and weave on a wheel landing,” he explains. “During crosswind landings, you’ve got to get it going straight, or else it’ll skip, and with all the bungee cords in there, it’s like a slingshot—so it can relaunch itself pretty easily. And at that point, it quits flying all together! So we tend to make approaches at about 80 mph and start to flare at 75, and once you get to 55, it’s done flying all together. You have to be very near the ground or it will land, because the thin airfoil does not allow it to float. Yet the aircraft glides surprisingly well; compared to something like a PT Stearman, it will glide 50 percent better at the same speed. It’s taken most people who have flown it a while to get used to that—you have to fly a little bit bigger approach because it doesn’t like to come down.”

One of the most rewarding aspects of this restoration is that, after all those long years of work, Larry has discovered that he really does like flying the Laird. “It’s a nice-flying airplane, and it is pretty much as Matty Laird advertised it—the thoroughbred of the airways. It has a beautiful combination of performance and looks. The fact that it’s the one and only is certainly fun,” he says, smiling, “and I love to show the airplane, because not many people have seen one—there are not many Lairds around.”

Larry’s years of research and hard work have also been formally recognized, with accolades including the Silver Age (1928-1936) Champion - Bronze Lindy at AirVenture 2009 and the Antique Pre-1936 Sweepstakes and the Ken Love awards at the Antique Airplane Association



STEVE SCHULTE



SPARKY BARNES SARGENT PHOTOS



fly-in. “We’re flying it extensively this year, and then the future is uncertain for the airplane,” relates Larry. “I hope it lives a long life, and I’m hoping that I can move on and build something else. I’d love to build a World War I aircraft—maybe a Sopwith Pup. That’s kind of my thought, so I’m looking for a Le Rhone rotary engine.”

And in the meantime, keep an eye open for this owner/restorer and his rare Laird LC-1B-300 at fly-ins...where the antique flying machines gather together to effortlessly transport us back to the golden age of aviation. 