
VINTAGE
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The Buhl Sport Airsedan

Ettienne Dormoy's Golden Age Sesquiplane

by H.G FRAUTSCHY

It really doesn't sink in just how hot the aviation industry was in the late 1920s until you sit down and flip through the pages of the first three volumes of Jos. Juptner's "U.S. Civil Aircraft." Near the end of Volume 1 is the entry for A.T.C. 98, issued in January of 1929 for the Buhl Senior Airsedan, model CA-8A. Now flip to the last entry in Volume 2, A.T.C. 200 for the Parks P-2. There are 97 other airplanes listed in that one volume, all of them issued type certificates between January and August of 1929! You have to get all the way into Volume 3 for the entry on ATC 284, the Lincoln PT-W before you get to the end of that year! 187 airplanes, built by 72 manufacturers, were type certificated (some, of course, were newer versions of the same airplanes) in 1929 alone. It would take the worldwide calamity of a stock market crash to cool the fires of aviation that had produced such a tremendous amount of activity. Aviation was the baby of many who enjoyed the fruits of the free enterprise system. Some used the products made in the industry, and a few even managed to make their fortunes in it.

The Buhl family of Detroit was already well established in business (they'd been around as a manufacturing concern for over 100 years) when son Lawrence D. Buhl set his sights on the burgeoning aircraft manufacturing industry. His first product was in conjunction with

Photo by LeeAnn Abrams

Real gold paint glistens and sparkles like nothing else could when the late afternoon sun bounces off the lower wings of the Buhl Airsedan.

LeeAnn Abrams

noted aero engineer Alfred Verville, and was issued A.T.C. No. 1. The airplane? The Buhl-Verville Airster, powered by a Wright J4. Verville had plans for other designs, and when he and Buhl decided it was best if they parted ways, Verville sold his interest in the company back to Buhl. An imaginative engineer who had worked with Verville in the Engineering Division of the Air Service would come to Buhl after Verville recommended him for the position. Ettienne Dormoy, whose fanciful "Dormoy Bathtub" very light airplane of 1924 had captured the hearts of many aviation tinkerers, was a very capable designer, and he would head up the program for the next series of airplanes to be built by the now reorganized Buhl Aircraft Company of Marysville, MI.

This new series was to incorporate a number of advances coming into vogue at that time, but particularly the enclosed cabin for both the passengers and pilot. Over the next five years the Buhl Airsedan line was refined and built in a variety of sizes, from the little 3-place Junior Airsedan, powered by a 110 hp Warner, all the way up to the 8-place, Wright Cyclone powered Senior Airsedan, the CA-8A. Records were set with various models of the Airsedan too.

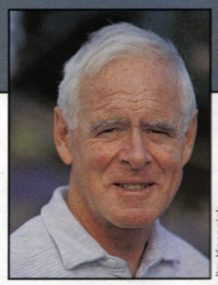
Jim Koepnick

The cabin and seats are upholstered in a sharp looking grey ribbed fabric, and there are doors on both sides of the cabin.

One of the infamous Dole Derby entrants was a modified Airsedan named Miss Doran, after the passenger on the flight, Mildred Doran. Piloted by Auggie Pedlar with V.P. Pope as the navigator, the Airsedan managed to get in the air while it was overloaded to nearly 5,000 lbs. Their 220 hp was enough to get them over the airport fence, but they, like so many others entered in the race, disappeared without a trace somewhere over the Pacific.

The Airsedan series did well in the air derbies that were popular forms of aviation sport back then, including a 10th place in the 1928 National Air Tour, and a sixth spot for the 1928 New York to Los Angeles Air Derby.

In July of 1929, a CA-5A, equipped with a 220 hp Wright J-5, was flown to a new endurance record by Loren Mendell and Pete Reinhart. Their 246 hour record didn't last long. Nobody was just sitting around waiting for the other fellow to do something—two weeks later, the St. Louis Robin hung up there for a total of 420 hours!



Jim Koepnick

Harry Thibault, retired Northwest Airlines pilot, has been spending time recently putting his consummate skills to work flying many of the old airplanes in the Yellowstone Aviation Collection. Eventually, a new home, the Golden Wings Flying Museum, will be built to house this collection, one of the most unique groups of airplanes ever assembled.

A month later, Nick B. Mamer piloted the Buhl CA-6 Airsedan dubbed the "Spokane Sun God" in a remarkable endurance test. Instead of flying about in a relatively small racetrack pattern or circle above the city the airplane had taken off from, Mamer and his copilot/refueling hose man Art Walker had put together an ambitious plan to fly to New York from Spokane and return, landing only when the "Sun God" had returned to Spokane. It would take 11 air-to-air refueling rendezvous to complete the mission, and they did it, flying the 7,500 miles in 115 hours.

Perhaps one of the design's most famous moments was still to come. As you'd expect with so much activity, there was a lot of technical innovation in the

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This nickel-plated throttle quadrant, one of two installed in the airplane by Air France when the Buhl was converted back to a Wright engine, has been maintained as part of the historical legacy of the "Packard Buhl."

late 1920s. One of the major players in the automotive world was the Packard Motor Co., and for many years they had also had profitable business building aero engines. A brilliant engine designer, L. M. Woolson worked for Packard on a special project he championed within the company, a diesel radial engine. Woolson was convinced that the diesel, which had enjoyed some success in the automotive industry, was perfect for aviation if the engine was being built specifically for that purpose. Interestingly, the FAA and NASA also seem to feel the same way, with new initiatives made recently to stimulate the production of a modern diesel engine.

Some 100 airplanes were flown with pre-production Packard diesel engines as the engine was being considered for production. One of the airplanes purchased for use by Packard was a brand new Buhl Airsedan, model CA-3D, s/n 57 and registered as NC-8451. Beautifully finished in black, with bright gold wings and lettering on the tail, the Buhl was a stately cabin airplane when delivered to Packard after its purchase for $8,566 on May 28, 1930. Originally equipped with a 300 hp Wright J-6-9 gasoline engine, the Wright was removed and replaced with one of the experimental Packard diesels, and the special propeller made for the power plant. It was then flown registered in the "Experimental" category. Later, after the Packard engine had received its Type Certificate, the Buhl was recertified under a CAA "Group 2" approval.

By the way, many of those who worked around airplanes in those days know that gold paint was just that, paint with gold metal flakes suspended in the clear dope, but nowadays you'll find brass or other gold-like metals used to make up the "gold" paint. The original paint on this Buhl was indeed gold, as were many of the airplanes built by Buhl.

Packard used the Buhl for testing until it was sold February 27, 1931 to Aeroposta Argentina. Within the Packard company, interest in the diesel had flagged since the untimely death of its designer, L. M. Woolson. Woolson had been killed in an airplane accident, not related to the diesel engine. Even larger companies who saw their profits erode in the aftermath of the October 1929 Stock Market Crash had to "pull in their horns" and concentrate on business ventures that would quickly realize income, rather than drain on already strained resources. With Woolson's death, any life in the Packard aviation diesel engine was soon gone, and the engine never made it into production.

The Buhl's sale and export to Argentina would once again put the airplane in the spotlight. After its arrival in the country, Aeroposta Argentina had Air France remove the Packard and replace it with a Wright Whirlwind, and the airplane was registered as LB-NVF. A few years later, it was again to be part of an historic event. During the 1934 International Eucharistical Congress, Cardinal Monsignor Eugenio Pacelli decided to go for a ride in the Buhl for an aerial tour of the city. Not too long afterwards, the good Monsignor was elected Pope Pius XII, and his excursion in the Buhl would go down in the books as the first airplane flight by a Pope.

The Buhl continued in the service of Aeroposta Argentina until 1943, when it was sold. The engine was removed because it needed to be serviced, and while sitting outside a strong wind flipped the Airsedan over on its back, ending its flying days in Argentina. Many years later, in 1987, the son of the Argentine owner let it be known that the airplane was available for purchase. By 1989, a deal had been made, and the bits and pieces that made up the Buhl Airsedan were headed back to the USA.

Before he could get the project started, the man who bought the Airsedan passed away, leaving it to lie in a pile in the corner of a building. Later, after ownership had

The instrument panel is just as it appeared over 60 years ago when the airplane was exported to Argentina after serving as one of the Packard diesel engine demonstrators in 1930. The Star Pathfinder compass is there, along with a Bulldog clip for holding a map. Both front windows can slide open after unscrewing the small clamps. They must let in a tremendous amount of air!
The radio package at the bottom of the panel is easily removed when the airplane is on display.

Photos by Jim Koepnick

This wide shot of the cockpit shows the dual control wheels, along with the steel tube interior bracing. There are three of those "hoops" visible in the interior of the Airsedan, adding to the strong nature of the cabin.

Photos by Jim Koepnick

Jack McCarthy

Antique/Classic treasurer Charlie Harris wears a number of hats during the annual Convention, including interviewer for the A/C video crew. Here, Charlie is getting ready to interview Greg Herrick, owner of Yellowstone Aviation and the Buhl Airsedan.

been transferred to an associate of the importer, Greg Herrick happened to be speaking with Jon Aldrich, a well-known collector and purveyor of old airplane parts and projects. Jon mentioned to Greg that he knew of the whereabouts of a Buhl. Now for many years, ace builder and restorer Ed Marquart has been working on a Buhl Airsedan project that he owns. This would mean there were at least two of the Buhls that still existed, but this project was far from complete. When contacted about the remains of the airplane, Greg was told to make an offer, or it would most likely end up in the county landfill!

The offer was accepted, and Greg had the project hauled up to Minneapolis, MN to Dan White and the restorers at HO Aircraft in Anoka. Taking stock of what was there, the crew discovered that many important pieces were in place, including most of the control systems and complicated horizontal tail trim mechanism (Greg says it looks husky enough to raise and lower the flood gates on a dam!). The wings are completely built out of wood, with the bulk of the structure chrom-moly tubing, although much of the tubing had to be replaced due to corrosion. The airframe had been sitting out in the open for a number of years in South America, and rust had really gotten a head start on the restorers!

Often, when a restorer begins a project, he'll try and gather as many photos as possible of the airplane as it originally appeared. For the Buhl, the process was helped by the historical significance of the airplane - it had been used in a number of Packard advertisements, but at times, the pictures would leave you tantalizingly short of a detail. While doing his homework on this particular Airsedan, Greg called Sue Lurvey in the EAA Aviation Foundation's Boeing Aeronautical Library, and asked if the collection had any photos of a CA-3D Airsedan. After doing some research, Sue came back to Greg with the news that there were some glass plate negatives in the Worthington collection of a CA-3D, but they appeared to be all of the same airplane. Imagine both Sue and Greg's surprise when they realized the photos were of NC-8451, the exact airplane Greg and HO Aircraft were restoring!

Photos are not all that are required to restore an airplane - you also need technical data, the kind

normally found on the factory blueprints. You can also benefit from those who may have already gone down that road before you. A visit with Ed Marquart helped fill in some details for both men and their projects. It was also fortunate that Greg was able to obtain a complete set of prints for all of the Airsedans, and he even managed to come up with a few parts for a Buhl Senior Airsedan. Who knows what the future holds?

The photos and blueprints would prove invaluable during the restoration, especially when the final details were added to the finish. As the paint on the sheet metal near the engine was removed, the unmistakable outlines of the words "Packard Diesel Aircraft Engines" appeared in gold, just as they appeared in the photos. It turns out the photos in the Worthington collection were the same shots that had been taken in California by Packard for publicity purposes. The lettering was later duplicated exactly, thanks to the photos and the original paint.

Neat little pieces that were part of the airplane's history were still in place. When the airplane was imported into Argentina, at the time of the engine replacement, a pair of beautifully machined, nickel-plated throttle quadrants were installed. A sharp looking Scintilla magneto switch was installed in Argentina, and an added bonus of the time the airplane spent in Argentina were the very complete records Greg was able to obtain from the family of the Argentinean owner. For many antique airplanes in the US, a portion of their records may be missing, since a fire many years ago in a FAA warehouse destroyed thousands of records. But the Argentine family had kept copies of it all, including the CAA records which were included with the

LeeAnn Abrams

The fall harvest has yet to come to the Minnesota cornfield below Harry Thibault and the Buhl CA-3D/E Airsedan. The lower wing on the Airsedan series started out at nearly the same size as the upper wing, but as the design evolved, it became more of a structural necessity than an aerodynamic one. A biplane is referred to as a sesquiplane when one set of wings is less than half the area of the other.

(Right and below) Packard diesel engine designer L.M. Woolson (left) and Packard pilot Walter M. Lees pose in front of Buhl Airsedan NC-8451. The Packard Sedan in the lower photo was added in these publicity shots done for Packard in 1930.

airplane at the time of its export. Those copies, at the time of importation, were laboriously hand copied in longhand penmanship!

Early on in the process it became obvious that it would be unreasonable to expect to install a Packard diesel engine on the Buhl, if it were to be flown. First of all, they were very rare, even back in 1930. Greg has been told by a man who has done extensive research on the Packard diesel engine that he was pretty sure Packard made only about 25 engines. Along with the engine, a special propeller incorporating shock absorbing features was also needed, and few of those still exist. There's also the story of how the pilots of the Buhl, after a long cross-country to Florida behind the diesel, had to throw their clothes away because the diesel smell just wouldn't go away! A longer exhaust stack soon appeared on the airplane after that episode.

The decision was made to install a Wright Whirlwind and Hamilton Standard ground-adjustable propeller, just as the airplane appeared when Packard bought the airplane. To honor its historical heritage, the Packard logo was maintained.

Other clues for the restoration were found on the airframe. A careful review of the window and door frames yielded a scrap of fabric here and a paint color there, confirming the black and gold color scheme, and the type of fabric used in the interior upholstery. The photos helped fill in too. Mounted in the top of the cabin ceiling is a dome light, the same one used in many automobiles. After searching for one just like it and buying four that were close, but not exactly it, Greg happened to find out who the original manufacturer was of the dome light. Amazingly, that same manufacturer is still making that same dome light in Detroit, and has done so since 1928!

The instrument panel and cockpit were reproduced in exact detail, right down to the Bulldog clip screwed onto the top of the panel, and the Star Pathfinder compass. A clock-style hour meter adds to the ambience of a Golden Age cabin sesquiplane, and the flip-forward copilot's seat is a quaint reminder that sometimes concessions must be made for strength and the convenience of the passengers.

With much of the research work completed (does it ever really end?) Dan White and Tom Oostdik, assisted by Curt Storby and Amy Green, were able to get into the restoration of the Buhl. Covered with Dacron fabric, it is finished in black with gold paint, and yes, it is real gold paint, made specially in Europe at the unreal price of $400 per gallon! You can bet they did their best to be sure and get it right the first time.

Finished in the late spring of 1997, Col. Joe Kittinger flew NC-8451 on its first flight in almost 60 years, and we have Harry Thibault to thank for flying the Buhl CA-6D/E (E is the model designation with the Packard diesel installed) to EAA Oshkosh for all of us to enjoy. Parked alongside its new stable mate, the one and only remaining Cunningham Hall PT-6F, the airplanes drew crowds all week long. Thanks to Greg Herrick and The folks at HO Aircraft for their efforts in keeping a rare pair of antiques in the air for all of us to enjoy!

Woolson and Lees in another publicity shot on a Southern California airport. (Right) This example of the rare Packard Diesel engine is in Kermit Weeks' collection at his Fantasy of Flight complex in Polk City, FL.