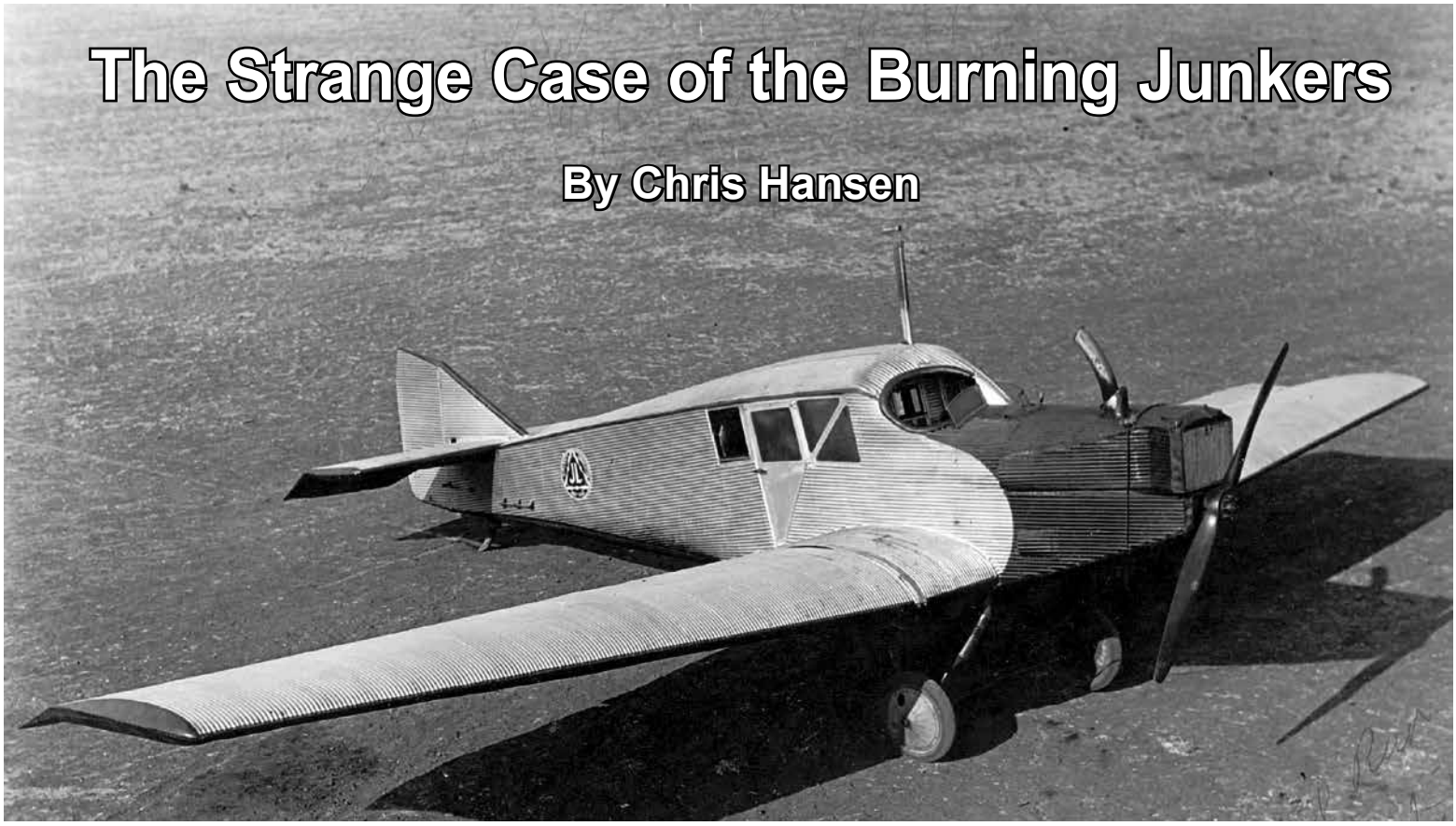
The Strange Case of the Burning Junkers

By Chris Hansen



Junkers-Larsen JL-6 in an undated photo, possibly at NAS Anacostia. (AAHS Archives, Gerald Balzer collection)

It has always been a mystery why one of the great aircraft of history, the Junkers F13, turned out to be an utter disaster in the United States – and only here. So much so that it is hardly remembered at all – even though, for exactly two years, it was a major embarrassment for many prominent people.

The true story of the debacle is shocking, almost unbelievable, and uncovering it has required a lot of digging. Important parts of the evidence come from Germany and Denmark, and the grand finale played out in the courts of the state of New York. In this limited space, however, your author must restrain himself to the story of how 23 German – technically, enemy – aircraft arrived in America in 1920 and promised to revolutionize aviation here, only to cause tragedy and end in a notorious crime.

Let us first introduce the F13, celebrated in Europe as "the first modern airplane," but for at least a century "*damnatio memoriae*" in the United States.

Herr Junkers defies Convention

During and after the Great War, Professor, Dr. Hugo Junkers had a big factory in Dessau, about 50 miles southwest of Berlin. Dessau was then the small but glorious capital of the *Freistaat Anhalt* and is now in Sachsen-Anhalt. Both the town and the sprawling Junkerswerke west of it were bombed flat during the war. There is a new museum there now, replacing the famous Junkers exhibit Colonel Lindbergh visited in 1938. Lindbergh, now with the U.S. Army, returned to the rubble in June 1945, just ahead of the Soviets, and seized the priceless technical library Hugo Junkers had spent a lifetime assembling. It has never been found again.[1]

Born a Rhinelander in 1859, Professor Junkers was a visionary genius whose academic specialty was thermodynamics, but he was also a practical man. He made his name inventing and producing heating equipment – primarily, *badeofens*, or water heaters. His interest in aviation came late in life, after the first flights in Europe. He shared it with his colleague Professor Hans Reissner, and their first flyable metal plane was the Reissner Ente, a canard, in 1912. Both focused on building airframes of thin, corrugated iron, called *wellblech* in German. After all, Junkers's heater factory was familiar with it.

When the Great War erupted, his efforts were funded by the Reich government. The theoretician Reissner left, and with the help of young chief engineer Otto Reuter, Junkers continued his research despite pervasive skepticism among aeronautical experts. The antipathy concerned Junkers's singular devotion to two then disreputable ideas: the internally braced "fat wing" monoplane, and all-metal construction.

The experts weren't wrong. Junkers's first iron airplane (J1) could fly, but not very well. It was not light enough for adequate performance with the heavy, low-powered engines available. On the other hand, Hugo's persistence and resourcefulness were equal to the challenge. He heard of a new lightweight alloy, called duralumin, invented by Alfred Wilms in 1906. This was strong enough to keep its shape under stress, and, with corrugation it was quite resistant to lengthwise bending loads. "Dural" is about 4% copper and 0.5% manganese. While the

The Junkers-Larsen JL-6 was equipped with a luxurious passenger cabin by standards of the day. It would have been similar to this restored Junkers F-13 cabin seen here. (Photo via Flickr by Pilot_Micha)

While the passengers enjoy a degree of comfort, pilots still sat in an open cockpit protected marginally by a small windscreen. Seen here is a slightly later model F-13 (circa 1923) that still retains the open cockpit design. (Photo via Flickr by Pilot_Micha)

formula got tinkered with later, it would eventually take over aircraft construction almost completely. The Type J4 aluminum sesquiplane (227 built) was successful, and the Allies examined it with immense curiosity when they managed to capture a crash-landed example.

At that time, "normal" sticks-wires-and-linen aircraft had a lifespan of about two years - if hangared. Metal planes could resist the weather. To be sure, dural corrodes easily, and Junkers countered this with paint and varnish; later, a thin layer of "alclad" (pure aluminum) sufficed. From the start, Junkers also pointed out that metal planes were "*unverbrennbar,*" e.g. unburnable – a claim that would cause much future derision. Fire was the greatest terror of all pilots, especially before parachutes were common.

With the two-seat all-metal monoplane J10, Junkers hit his stride. But by then the German war effort was collapsing, and Hugo, of basically pacifist temperament, quickly converted from military to civilian production. The J13, the world's first "*Ganzmetallluftverkehrsflugzeug*," i.e., all-metal airliner, was born with the new year. It would change the world, but its infancy was a desperate survival struggle.

Some misinformation persists about the designations. Junkers planes were first known as J[n] and only adopted letter codes in 1923 so that the J13 became Type F and then F13. *Werknummers* 531 and 533 were the first (532 was used for static tests). Junkers named these two *Herta* and *Annelise* after his two eldest daughters. Test pilot Emil Monz took *Herta* up on June 25, 1919, and *Annelise* on August 28 (sources often vary about details. The best data is from Angelika Hofmann's work; she keeps the Junkers papers). These two were all Junkers-Dessau had in 1919, and unfortunately, in October, the latter was confiscated by the new Lithuanian state after a safety landing there during a secret mission to Moscow. (Incidentally, the Moscow (Fili) built versions were called Ju 13s. Dessau later adopted the Ju [n] convention.)

The all-metal Airplane

The boxy all-metal J13 was not pretty by the standards of the day. Yet in retrospect it was seen as "*Neue Stil*" or an Art-Deco icon, much used on posters and air mail stamps. With its corrugated metal, it looked like it had been built of trash cans. Not only was it – heresy – a monoplane, but that giant wing was thick (two feet at the root) and cantilevered out. How could such a thing even fly?

It flew better than most, and it was far more comfortable for the passengers. They even had safety belts! The heated, enclosed cabin normally held four to five people, while the crew sat forward, huddling within a coaming behind two oval holes. This gave the plane a googly-eyed, otherworldly look. At first, even Junkers dared not break the custom that real pilots sat out in the open, fighting wind, bugs, and oil spray. Transparent windshields did make conditions bearable, and goggles were not normally required. The crew could communicate with the passengers through a small sliding window in the aft cockpit wall.[2]

The interior was inspired by limousine standards, then unheard of in aircraft (except airships). There was a clock, a folding table, flowerpots, and sliding windows. Curtains and even a radio are shown in some photos. Behind the aft bench seat was a sizable baggage compartment. Passengers entered via the wing through doors on both sides, but the crew had to climb in through the holes up front.

Professor Junkers was among the first to understand airfoil theory: that the wing need not be thin and concave to "grab the air." The J13's big flat-bottomed wing had no flaps. The landing gear was fixed, with big wheels and four thick rubber shock absorbers. Airplanes still operated from turf, and the flexible, jointed tail skid doubled as a brake on landing.

The F13 had two triangular fuel tanks in the wing roots, in some models totaling 75 gallons, yielding an endurance of six to eight hours. The fuel pump fed a small lead tank above

the pilot's head; this then fed the engine by gravity. The crew could use a wobble-pump if the electric pump failed. Junkers brochures said that all the tanks could be switched on and off, and a main fuel cock could stop any flow to the engine, "in case of a carburetor fire."

A clever innovation was a small trim tank in the tail to which fuel could be pumped for center-of-gravity management. This, if used properly, could nearly eliminate trim drag.

Americans would find the fuel system deeply suspect, and it did indeed need to be modified.

Early weight-and-balance instructions noted 2x145 kg benzol main tanks, a 20 kg benzol gravity reserve tank, and an 82-liter trim-tank. The plane was in "equilibrium" with six people aboard; missing persons required pumping benzol to the trim tank. For each 10 kg baggage, the crew was to pump out seven liters. It was a fine way to remove trim drag, but not without its complications in practical use.

John M. Larsen

The *Blechesel* (tin-donkey) used the ubiquitous and reliable 185-hp BMW IIIa six-cylinder inline motor. The similar 160 hp Mercedes IIIa was optional. The ratings can be misleading. German "horses" were bigger, and the nominal rating applied to sustained cruise. Performance tests at the U.S. Army's McCook Field later stated: *Engine rated at 185 bhp but develops 198.4 at 1400 rpm at sea level with aviation gasoline and 233.2 with 50% gas and 50% benzol.* Later versions received stronger engines.

Uniquely, the BMW had a so-called "*Höhenvergaser*" – a high-altitude carburetor to be progressively engaged during climb.[3] It added air and fuel in the best mixture and could maintain sea-level power at cruise altitude.Army testing claimed an absolute ceiling of 15,000 feet, which, however, was often far exceeded![4] Although it was a war engine subject to confiscation, the BMW was probably the best available, and under the Junkers name it was steadily improved in the 1920s.

A big flat radiator (that always seemed to leak) was mounted square on the nose, not helping the looks. The first J13s had the typical German "rhino" exhaust, a curved chimney directly ahead of the cockpit. Mercifully, that changed in many later aircraft; some were fitted with a pipe that extended past the cockpit. Not only did that spare the crew from fumes, it also didn't blind them at night.

The initially published gross weight was over 3,600 pounds. This was routinely ignored, and a frequent game seems to have been "how many people can we fit into the cabin." The result was a sluggish airplane with longer landing and takeoff runs than pilots were used to, but the big wing gave good climb (and float!) performance. Later F13s had an even bigger wing with, at 58 feet span, 10-feet more than earlier.

The "first modern airplane" accolade stretches the truth. It did not use monocoque construction, had no tricycle or retractable gear, generated copious parasite drag, and really should have had flaps and brakes. But OK, it was 1919.

Of the first 38 J13s, 23 would be sold in the United States as JL6s, commonly referred to as Junkers-Larsen JL-6s. This occurred in defiance of the Entente's building ban and the U.S. Trading with the Enemy Act. How that happened is our next mystery.

The Battle to Survive

Although we tend to think the Great War ended on November 11, 1918, that was just a temporary cease-fire on the Western Front. The actual Versailles Treaty did not take effect until January 10, 1920, and its onerous terms were not ratified by the United States, which made a separate peace as late as August 1921. Meanwhile, Germans lived in want, fear, and uncertainty as chaotic fighting persisted in the East. The Entente's blockade continued, the Rhineland was occupied, workers revolted, and the economy crashed.

Hugo Junkers had to improvise day-to-day. There was no market for new civilian aircraft, and the peace treaty not only forbade aircraft construction, but demanded the hand over of all warplanes, including their engines. By the end of 1919, Junkers managed to sell two J13s to a German businessman. They promptly crash-landed when the motors quit. Then, on February 3, *werknummer* 539 crashed in Dessau with four high-profile fatalities, including the test pilot Hugo Schaefer. It dove into the ground from 600 meters, and no convincing explanation emerged. For the time being, "pilot error" would serve.

It was a terrible way to begin. How did Junkers find the courage and funds to authorize full-scale production so that by

October 1920, he had 85 planes on hand? It was a case of "if I build it, they will come." The Inter-Allied Control Commission certainly came; but the officers were highly impressed with Junkers' work and initially, if tacitly, let him build in peace. Junkers was certain of the revolutionary importance of the J13. He concluded that to succeed, he must risk everything and depend on mass production efficiencies to save the business in the end. But to do that, he needed customers.

The Ice Cream Man to the Rescue

From early on, Hugo Junkers cast a covetous eye on the potentially enormous American market. Indeed, the second airplane, *Annelise*, had been intended for a transatlantic flight in 1919 for both prize money and marketing purposes. Other flights preempted that, but since Junkers was in nearly desperate straits, interested American walk-ins were given considerable attention.

In America, on account of his unusual name and his wartime work for the "Huns," Hugo Junkers faced a "branding" problem. ("Hun" didn't originate as a slur. In a famous speech, the Kaiser exhorted his troops to emulate the Huns.) He was not actually a Junker, a member of the much-resented Prussian ruling class, and his planes were definitely not junk. He conceded that the U.S. market might require some creativity.

The American whom Dr. Junkers hoped would get his production line kick-started was a 45-year-old dairy expert and self-taught refrigeration engineer who had made a fortune selling ice machines. John Miller Larsen was not your typical aviator, many people noticed; he was short and at some 300 pounds quite rotund, perhaps as collateral damage from his creameries. Born Johannes Møller Larsen, a poor boy in rural Jutland, he emigrated to Wisconsin at 19. Rarely was he seen without his hat and cane. More importantly to Junkers, he was wealthy and almost compulsively fond of flaunting it.

Larsen had dabbled in building luxury cars, but during the war he discovered aviation and devoted his considerable technical skills to it. Though now an American citizen, he was of Danish birth, and since the Nordic countries had remained neutral in the war, he regularly traveled to his old country and could conduct business in Germany without attracting attention. The neutral countries made a pretty penny off of blockaded Germany, and Junkers looked to them for a way out of the Entente's stranglehold.

The Curtiss factory in Buffalo awarded Larsen the dealership for the Nordic countries, and in April 1919 he had a Curtiss MF Seagull flying boat shipped to Bergen, Norway. Along with his pilot, the ex-U.S. Navy Carl Truman Batts, he undertook long flights throughout these countries, reaching as far as Tallinn in newly freed Estonia. (Batts was an unusual "early bird" who lived to old age – even to chair the Society of Early Birds, q.v.)

The Aeroplane, well-informed as usual, later wrote:

> *Interrupted by five years of war, Mr. Larsen last year restarted his yearly combined pleasure and business trip to his various ice-production plants in Denmark and arranged his cruiser to take a flying boat on board. Piloted by the American Captain Batts, he took cinema pictures of most of the beauties of his old country from the air, and but for the delay in the return of Slesvig to Denmark would have been the first to have dropped "Dannebrog" from the sky there, which is the legend of the origin of the Danish flag. Before returning to America, he visited Germany and made a trip in the Bodensee airship, at which time he apparently also met the Junkers people, who have long been known to have the intention of going ahead with their original product in the United States.*[5]

Larsen was the first to cross the Skagerrak from Norway to Denmark by air.[6] He took the first motion pictures from the air of Copenhagen. That John M. Larsen was rather special was evident when he flew over the city's main square at clock-tower height, dropping notes with 500-kroner bills to be given to "lonely old people."[7] He also bought a yacht, intending to carry the plane aboard it. In Copenhagen, Larsen officed at the grand Hotel d'Angleterre and advertised Curtiss planes – without the slightest luck.

He had another Seagull shipped, a bigger one, he said, and auctioned off the first in Christiania (Oslo).[8] He got only $2,500 for the $8,000 plane. After many eventful and well-publicized adventures, he wound up donating his next Seagull to the Danish Navy in November, when he returned to the States. It was designated F.B.VI by *Marinens Flyvevæsen*. The preceding was registered N-4 in Norway after the auction.

While Larsen attracted the attention he craved, he could barely give the flying boats away. They were obsolete by European standards, and even the Danish military had acquired surplus German aircraft of far greater utility. In early June 1920, Mr. Larsen wrote to the Manufacturers Aircraft Association that he had wasted his time "carrying coal to Newcastle," using a British expression. Let him make his case:

> *... new, better built and more efficient machines could be bought there at less than the cost of transport on my machines from New York to Norway, which amount to over $3,000 per machine. When I realized that I had wasted my time and much money because American aircraft builders were not equal to Europe's best, I, as an engineer, designer, and manufacturer, who had made good in my own line ... came to the conclusion that I would not accept defeat, and that if anyone else had anything better in aircraft than we had home in the U.S.A. I wanted to know the reason why!*
>
> *Accordingly, I visited, investigated and analyzed the aircraft industry throughout Europe and wound up by collaborating with Europe's greatest aircraft authority Prof. Hugo Junkers of Dessau (often called the Edison of Europe) with the result that a machine of a type considered most suitable for America was completed and thoroughly tested out, and after securing all patent rights for America I further had constructed at my own cost a limited number of machines sufficient to make a thorough demonstration in this country of the advantages of this form of construction.*
>
> *This work has been entirely at my own cost and I am a 100% American beyond any question and every cent in this venture is good American money and all the rights are now*

American owned, and I flatter myself with my work being of real service to American aeronautics, by putting the last word in post war aircraft design within the reach of the American manufacturers. The work and capital invested by me as an individual for the ultimate good of the game should be appreciated by everyone honestly interested in the future welfare of American aviation.[9]

In the meantime, the J13 accomplished another feat over Dessau. Early on the morning of September 13, 1919, Emil Monz stuffed eight people, himself included, into *Annelise* and kept climbing. At the peak, the plane reached 6,750 meters (22,150 feet), without oxygen. Admittedly, the eight frozen souls weighed only 500 kg, and the plane ran out of fuel while taxiing home. Junkers pretended that this was a world altitude record; in fact, it was only a load-to-altitude record (on June 17, a DFW C.IV had attained 9,760 meters out of Munich; the flight is significant because it used a similar BMW altitude engine, and its mechanic, Ernst Bühl, later worked on the Junkers-Larsen planes), but it was persuasive nonetheless.

Larsen's visit on September 29, 1919, was the first of several. Larsen flew in the J13, toured the factory and met Hugo Junkers, Otto Reuter, and the top staffers including the pilots. As Junkers historian Hofmann wrote, "He recognized immediately the superiority of the F13 over contemporary American aircraft and changed his business plans. Now he wanted to introduce the Junkers-airliner in America."[10]

The cerebral, punctilious Hugo Junkers was wary of the blustery American self-promoter, who had no degrees, no classical education, no refined manners. But Larsen's business credentials checked out, and he admittedly had expertise, enthusiasm, and dollars to burn. And what cards did the German hold?

On November 1, 1919, Larsen and Junkers signed a sales cooperation agreement that revealed a startling optimism: Larsen was expected to sell at least 100 F13s in the first year, then 200, then 500 in year three. Otherwise, Junkers could back out of the 10-year, 50/50 profit, deal. Larsen, however, was noticeably careful to limit his own risks. On the flight back to Berlin, Larsen agreed to buy 10 planes outright, although he changed his mind later, and the pilot, Monz, offered his services to him in America. Junkers agreed to send his English-speaking pilot Schaefer, with Monz to follow later; but after Schaefer died in the February wreck, Monz came with the first demo plane to New York.

Larsen returned to Dessau on November 27, this time with his son Harry. He revised the contract and requested a license to build the plane. Junkers did not agree but promised to build 20 aircraft a month for Larsen by May 1920. Both had high hopes despite the Versailles Treaty; the Germans thought the terms so oppressive that they surely would be revised. They were wrong. But the enforcement of the building ban would become a cat-and-mouse game in which sensible officers of the Entente often chose to look the other way. In the case of the F13, an obviously civilian plane, the battle went back and forth until at least 1923. Junkers went on building, customers or not; he felt he had no choice.

The Enthusiasm of Summer 1920

Emil Monz arrived in New York on March 4. He accompanied the first boxes of sections (rather brazenly labeled "Made in Germany") for *werknummers* 535 and 536 to Roosevelt Field in Mineola and oversaw their reassembly. On March 24 he was ready to fly. Unfortunately, the first one, Nr. 536, only lasted a few minutes in the air – at least in its first incarnation.

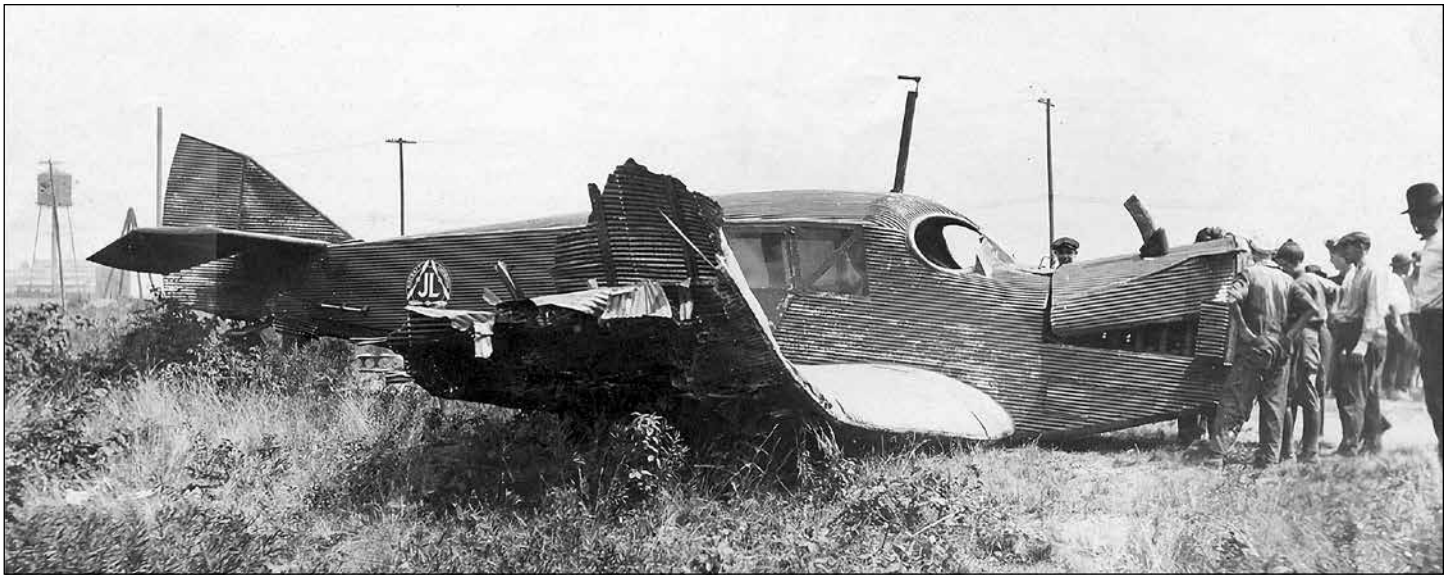
Both Junkers and Larsen had managed to circumvent the rules. The German aircraft were considered contraband under the Trading with the Enemy Act, but by shipping parts via his native Denmark, Larsen avoided scrutiny – for a while. Both Congress and the press would have hard questions about this later. German newspapers wrote that the first sale was characterized by "all manner of intrigue and obstacles." The rules were inconsistently enforced on both sides of the Atlantic.

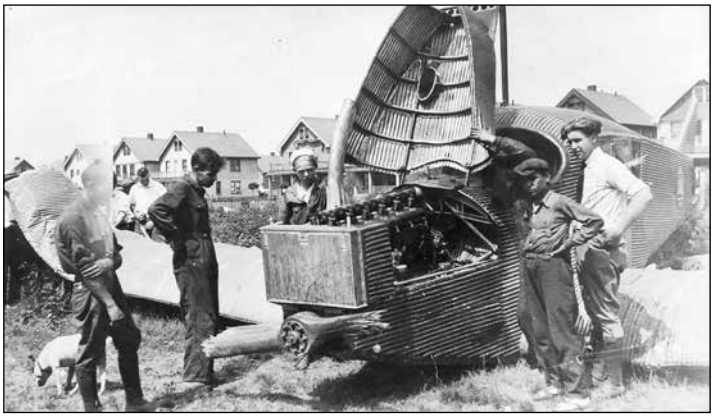
"The Huns" were still not popular, so to avoid the taint, Larsen labeled the plane JL-6, as it had six seats. More ominously, Larsen pronounced himself the inventor, designer, and builder of the JL-6, declaring it fully American in every respect : for example, "Made in America by American workmen and of American material." (*Aerial Age Weekly*, Jan/9/1922). There was rather minimal truth in this: the J.L. Aircraft Co. did bolt together the fuselages, wings, and engines at a small, leased field in Plain Edge, Long Island, specifically in "Central Park" on Bethpage Road. This was near Mineola, which held many historic airfields, and close to the later Republic Field in Farmingdale.

Admittedly, Larsen did make many changes to the F13, but only as time revealed the weaknesses of the original plane, at least in American use. Most importantly, this included progressive changes to the fuel system. A mechanic testified later that the landing gear was modified with larger wheels, new exhaust manifolds and engine mounts were fitted in some planes, and the tail was braced. In those days you could just go do it and not mind the paperwork. All the planes became different.

Larsen's extravagant claim was caused by his need to preempt animus against the plane's German origins. The knowledgeable were not fooled, and it grated severely on his German staff and on Junkers back in Dessau. Still, Larsen's efforts must not be discounted. His dream was to build a nationwide airline with 400 JL-6s, the first serious such venture in the U.S. He said he was driven by the shame of American backwardness in aviation, a well-acknowledged issue that had disgraced the nation during the Great War. His commitment was solid, as evidenced by his bringing Emil Monz to New York. After some trouble getting the engines to run well on American fuel, he also hired Junkers's recommended BMW mechanic, Ernst Bühl, who became Ernest Buehl in America (initially, Larsen told him to be "Wallie Bugh" to hide his origin. It didn't work; his accent was too thick). With the further help of Charles Kirkham, the Curtiss "engine man" who had helped him before, they now had the expertise to back the grandiose plans.

Junkers, who had almost no other customers, ironically was thinking along the same lines. He would just create his own airline system to buy his planes. That succeeded beyond expectations not only in Europe (as the forerunner of Lufthansa), but in Latin America. In fact, Colombia's German-run SCADTA





The first JL-6 "built" (assembled) by J.L. Aircraft was test flown on March 24, 1920, by Emil Monz at Roosevelt Field, Long Island, New York. It was damaged beyond repair following an engine failure. (AAHS archives, Gerald Balzer collection)

became the "world's first profitable airline" months after the Larsen venture began in North America. Colombia received 22 F13s, one less than Larsen; but there, the plane became a cherished icon of national pride.

At home, to evade the Entente's building ban, some F13s were assembled in Sweden, Switzerland, and Russia. Dessau built other F13s for reparations. The F13 and its variants would become a standard airliner, and it led the way for the even more successful Ju-52, a signature plane of the Nazi empire. In Germany, at least, it is considered the progenitor of all modern aircraft. By 1930, 351 F13s had been built. The number varies a bit with the source you consult, probably due to lost records; however, if all the many variants and license-built versions are counted, Hofman quotes a total of ca. 2,700.

John M. Larsen thus saved the Junkers factory at a very critical time. Still, a year later, Junkers would have to get rid of him.

Initial Reception

The JL-6 makes all other airplanes seem so frail in comparison that experts say that aircraft builders throughout the world will have to change their ideas to meet this new departure in construction. Army officials consider it ideal for an inspection plane… though German inventors are developing an all-metal plane, the JL-6 type is Larsen's own creation.[11]

At Mineola, Emil Monz took the first Larsen plane up on March 24 and promptly crashed it beyond repair after the motor quit on the second takeoff. Many accounts claim that the propeller "disintegrated," but this almost certainly confuses cause and effect. The best explanation was that using American gasoline instead of benzol, the slower-burning German *ersatz* fuel, caused engine indigestion and overheating. Kirkham and Bühl began making modifications to the fuel system, although not on all planes immediately.

An early trade magazine article reveals how much some people feared and loathed the Junkers F13 even before it was sold in America. It was ominously headlined *German Cabin Plane makes Debut at Mineola – Tests of Junkers All-Metal Monoplane nearly cause Renewal of Great War.*[12] The gist was that the strange Hunnish plane not only worried American manufacturers, but reignited Germanophobia among others. At Mineola (technically, Roosevelt Field, the British and French crews there served a Farman and a Sopwith Dove), there were still Allied aircrews who hurled epithets at the German pilot "Munn," and took obvious *Schadenfreude* in watching the demo plane crash on its second flight:

Monz hauled the machine out of the mud, and, exasperated by the taunts of "the enemy," he decided to go up again, despite the fact that the engine had been missing on the first flip. So he took off again. He had hardly reached 100 feet before the engine gave up the ghost for good and the big machine side-slipped onto the main road near the

field, where it hit on the left wing and pivoted over on the nose. The left wing was buckled up beyond repair, the engine section broken off and the cabin was demolished.

The crash gave nosy observers a chance to examine the strange innards of the "Hunnish junk." After the air mail crashes began later that fall, plenty of posturing pundits damned the "German death planes." Such criticism was heartily endorsed by those who feared foreign competition. There was practically no demand for new civil aircraft at all, since the market was saturated with cheap surplus junk.

Larsen thus faced an uphill battle. But he also had a far superior product. He needed to get the word out.

The all-metal JL6 monoplane which created great interest at the Third Pan-American Aeronautic Congress. Left to right: Mark Ovenden, Mayor Thos. S. Baldwin, John M. Larsen, Alan R. Hawley, Commander C. C. Witmer, U.S.N.R.F., A. D. Smith, Commander M. Utgoff, Mr. Conklin, and Bert Acosta, the pilot, standing on the wing

*Larsen promoted the aircraft heavily. Here we see one of two displayed at the Third Pan American Aeronautic Congress. Left to right: Mark Ovenden, Mayor Thomas S. Baldwin, John M. Larsen, Alan R. Hawley, Cmdr. C.C. Witmer, USNRF, A.D. Smith, Cmdr. M. Utgoff, Mr. Conklin, and Bert Acosta, the pilot, standing on the wing. (*Aerial Age Weekly*, June 14, 1920)*

Aggressive Marketing

Despite the two fatal German crashes and Larsen's bitter complaints to Junkers, the factory shipped three more planes on March 31. In turn, Larsen, Monz and Kirkham steamed off to Germany and arrived in Dessau on April 24 and 26. The Germans and Kirkham were much impressed by each other; but Larsen made a scene and demanded to start production in America. He tried "all possible tricks" to obtain the construction drawings for the J13, without luck. Hugo Junkers was beginning to see through him.

In late May 1920, Larsen put two JL-6s on display at the third Pan-American Aeronautics Congress in Atlantic City, which seemingly everyone in aviation visited. Monz flew one, Bert Acosta the other. One had the 160 Mercedes and was used to set an efficiency record, while the BMW-powered one set a speed record – that is to say, it flew to Philadelphia and back in one hour at 120 mph with six passengers, while the other did the same on just 12 gallons, yet carrying eight passengers.

The odd, silvery aircraft caused a sensation. Not only the performance, but the passenger comfort was far beyond American standards. Larsen kept the planes busy, flying as many as 600 guests around for free. After the Atlantic City campaign, he demonstrated the plane in Washington. Thus, the JL-6 caught the eye of the military, which in turn alerted the U.S. Department of the Post Office's nascent air mail service. In a coordinated purchase, the Army and the Navy bought three each, though for testing and proving purposes only. The Navy's planes (A5867-9) were on floats as well as wheels. The first arrived at NAS Anacostia from New York on July 28 for testing on the Potomac River.[13]

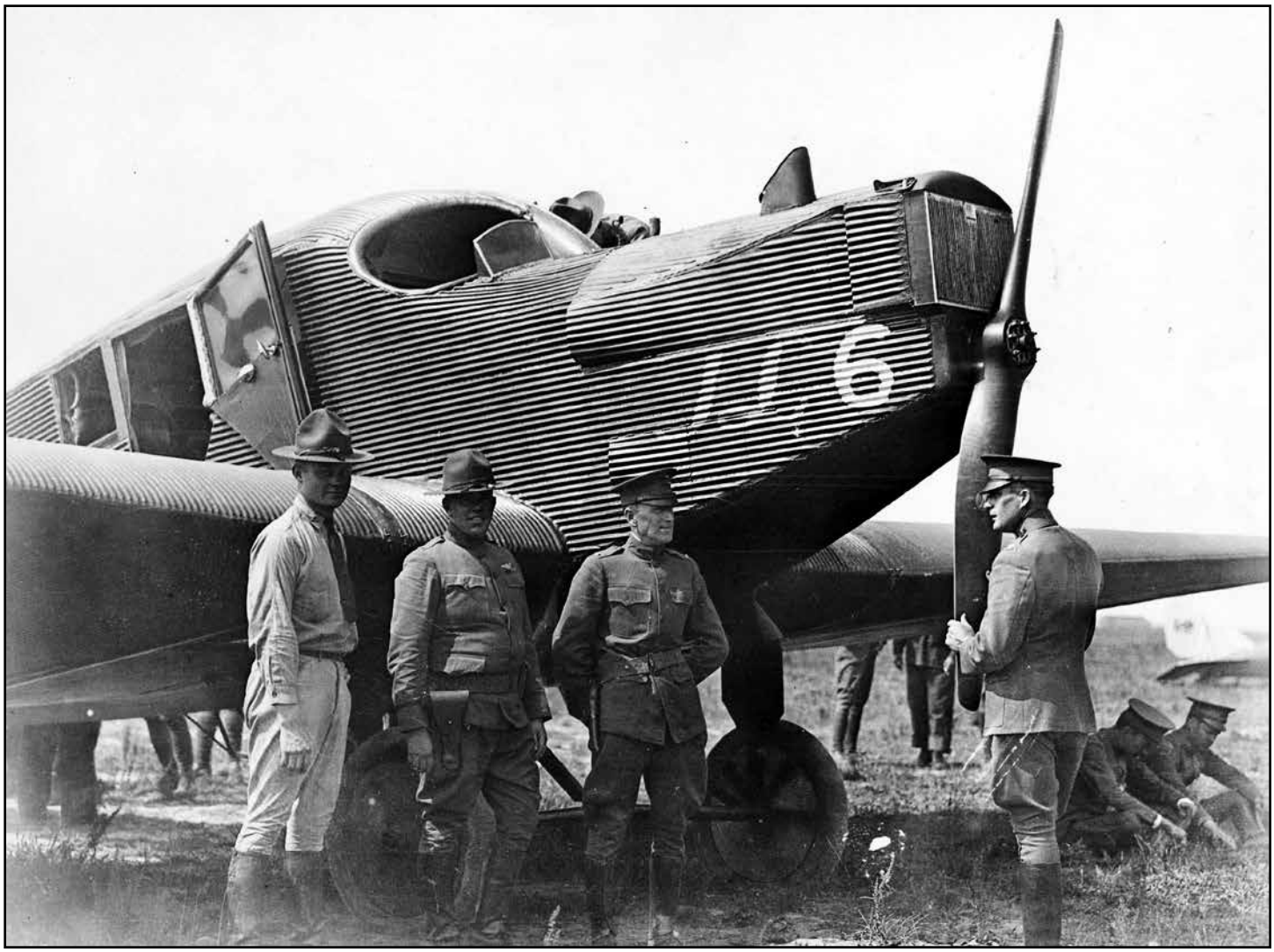
McCook Field in Dayton received three JL-6s, and Wright State Univ. has a neat photo of one surrounded by the adoring employees of the Dayton-Wright Aircraft Co. Army fliers were impressed, at least at first. They included influential officers like Maj. William C. Ocker ("the airplane of the future") and Col. W.K. Wilson ("a new era in aviation… it is both fireproof and weatherproof"). Wilson and other top officers flew in the plane on June 11 and 12 from Bolling, Langley, and Larsen Fields. The Bureau of Standards declared the plane "incombustible." Air Service chief Gen. Charles Menoher was converted, although he couldn't afford more JL-6s. Besides they were not warplanes, but Larsen had a plan to remedy that.[14]

In contrast, Grover Loening, a struggling competitor, grumbled about the media-hyped foreign airplane: "Personally he finds nothing of any value in the design except the engine, and that the value of this is discounted by the fact that it requires a special grade of benzol and cannot be run on ordinary spirit." He was wrong in this, as in much else. As the perceptive reporter countered: "*It is just possible, however, that Benzol, owing to the absence of pre-ignition, may permit the BMW to run continuously at higher power than with petrol, and that the Junkers depends for its performance on running the engine overloaded."*[15]

Groening was not the only naysayer. Critics said, "you'll get a fireproof plane when you use fireproof gas." One historian, Schatzberg, claims that dural was inferior to classical construction (properly designed), and that, as many pilots know, aluminum may not burn but it melts swiftly to a clump.[16]

At McCook Field, the Army's top test pilot, Lt. John MacReady, delivered a critical but promising report.[17] He was plainly puzzled by something this different; yet he admitted that there were many potential advantages to the metal monoplane. He complained of excessive adverse yaw, spiral instability, and poor pilot visibility. The top speed was found to be 112 mph, and the stall speed 52. Endurance was 7:35 hours, but at economy throttle the plane could fly for 10 hours. MacReady stressed that pilots should receive adequate conversion training. His report (after the first engine fires) added:

Backfiring of the engine tended to ignite and explode gasoline from the carburetor which drained into the fuselage thru air intakes having no outlet from the fuselage. Efforts were made, apparently successful, to eliminate fire hazard by installing air intake pipes leading from the pan under the crankcase ... below the engine, thus directing



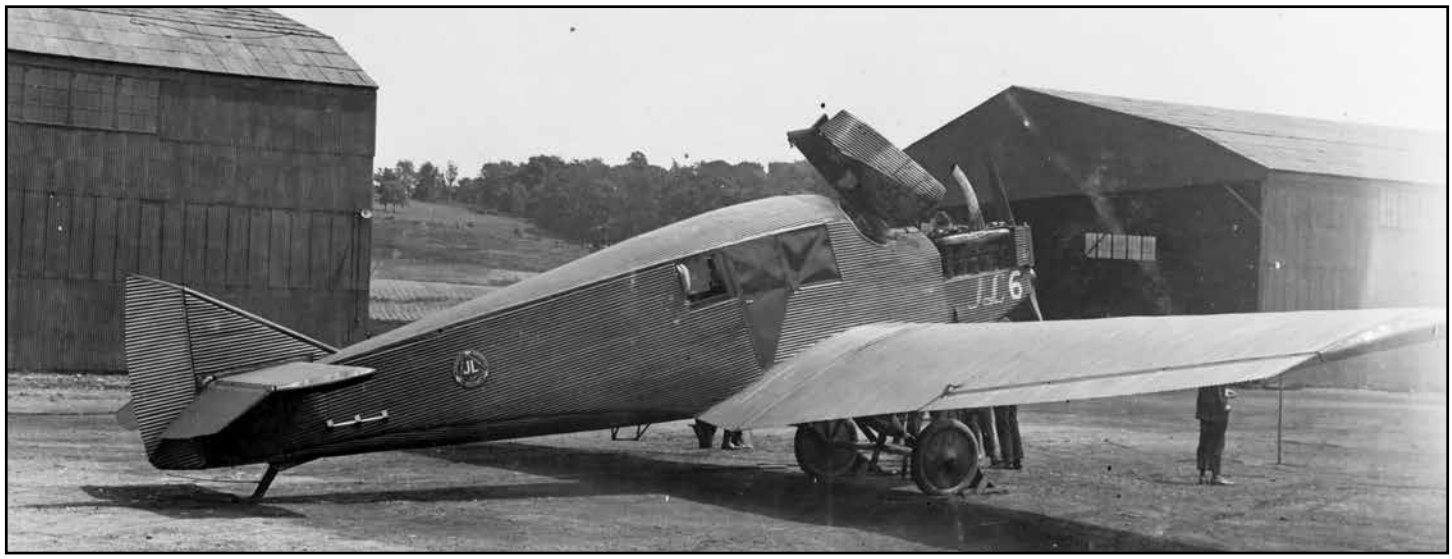
The U.S. Army showed an interest in the unique design of the JL-6 and purchased three for evaluation. Seen here is a group of unidentified Army officers with one of the JL-6s at McCook Field. (AAHS archives, Gerald Balzer collection)

> *backfire outside. Breakage of dangerous gas lines was prevented by installing flexible hose connections. The gas pump was firmly fastened at the bottom. Holes were cut across the bottom of the fuselage at the bulkhead back of the engine to prevent the collection of gas and oil there.*[18]

Another keen observer was William B. Stout, who later helped start Henry Ford's famous foray in aviation, the Ford Tri-motor. Stout flew the JL-6 on several occasions, and his next planes were built of corrugated metal. Converted, he also recommended the JL-6 to the U.S. Department of the Post Office. When Ford tried to export his Trimotor to Europe, Hugo Junkers sued him for patent infringement – and won. As a strange aside, *EAA Vintage* magazine stated that Stout later kept a disassembled JL-6 in his plant. It could have something to do with his work for the Navy at Anacostia, where he tested the structure.[19]

The hard-charging Otto Praeger (merely a second assistant Postmaster but with a public profile far above his pay grade), who led the air mail service with a firm but unlucky hand, was also enthralled, and for good reason. The newly established air mail had been saddled with over a hundred American-built surplus DH-4s, planes still known to the public as "flaming coffins." Just as America's bravest had gone down in flames over France in DH-4s, now the flying postmen were dying in the unsuitable but "free" biplanes. Gradually, the fire danger was reduced, but other troubles persisted, and nothing could make a mail express liner out of the stodgy old wood-and-fabric warplane. With its gas-guzzling 400-hp Liberty engine, the DH-4B carried just 400 pounds of mail, right up next to its giant fuel tank. DH-4s were soon converted to DH-4B models, resembling the British DH-9A. They were much safer. The JL-6 could carry over twice the payload on half the fuel.

"Burned" by the DH-4, and its even more disastrous derivative, the twin-engine DH-4. Praeger told Witteman-Lewis to convert 25 DH-4s to "light twins" with two V-6s (half Libertys). They couldn't fly on one engine and broke apart in the air. Next year, the U.S.P.O. began to reconvert them back.



The U.S. Navy purchased three JL-6s for evaluation with both wheeled and pontoon configurations being examined. Seen here is one of the three at NAS Anacostia on June 10, 1920. (Naval History and Heritage Command, NH 91059)

Praeger saw just what he needed in Mr. Larsen's new metal *Wunder*. After all, it couldn't burn! Or, as Mr. Larsen said, "these metal machines eliminate the aviator's greatest fear, fire!" Gone, too, might then be the public's sniping about the "flaming coffins" and the "murderous" bureaucracy that sent mail pilots to their deaths.

Larsen sold eight JL-6s to the U.S. Mail for $200,000. This included spare parts and engines. Apart from Larsen's demonstration flights, there seems to have been little testing and proofing. The planes went to work in August, with barely trained pilots. Larsen was selling them for $28,000 to $30,000, far more than most airplanes at the time. A German report says he paid $8,000 for them, but there's also a note that tariff ran $2-4,000, and shipping may have cost about $3,000. Although Larsen might have exaggerated when he said he poured $700,000 of his own money into the venture, his ostentatious promotion of the JL-6 cost him plenty.[20] Junkers, however, saw very little of the money.

On June 27, 1920, piloted by Bert Acosta and copilot/mechanic "Wallie Bugh" (Ernst Bühl), Larsen made a much-touted non-stop flight from Omaha "almost" to New York. After 11 hours, Bert had to land in a potato field near Lancaster, Pa., to ask for directions. This trip is important for the details it provides of the JL-6's performance. It took 10 hours and 58 minutes and reportedly used 105 gallons of fuel. That would imply a fuel economy of 9.5 gph. The average speed of 110 mph was helped by a tailwind. Curiously, the direct distance is 1,050 miles, but Larsen claimed 1,200 (statute miles).

Referring to the entire flight, Larsen said he burned 970 pounds (which would be about 138 gallons only if we allow for seven pounds per gallon) of Alpro-Benzol (a "combination fuel" from Alcohol Products, Inc. of New Jersey), about 12 gph The plane grossed 4,184 pounds at take-off and consumed 45 pounds of oil on the trip (about 6 gallons!). Junkers brochures listed an oil consumption of 2.3 kg per hour, or five pounds. It was not a tight engine. The BMW ran at an average 1,325 RPM. It was an American distance record. This was right about the time, the end of the fiscal year, that the Post Office and the military bought their 14 examples.

Germans paid close attention to the initial success of the F13 in America. For example, the press reported that American experts thought the plane's altitude record an impossibility until, on July 1, Emil Monz took it up to 6,200 meters (20,600 feet), with five persons aboard, including Larsen.[21]

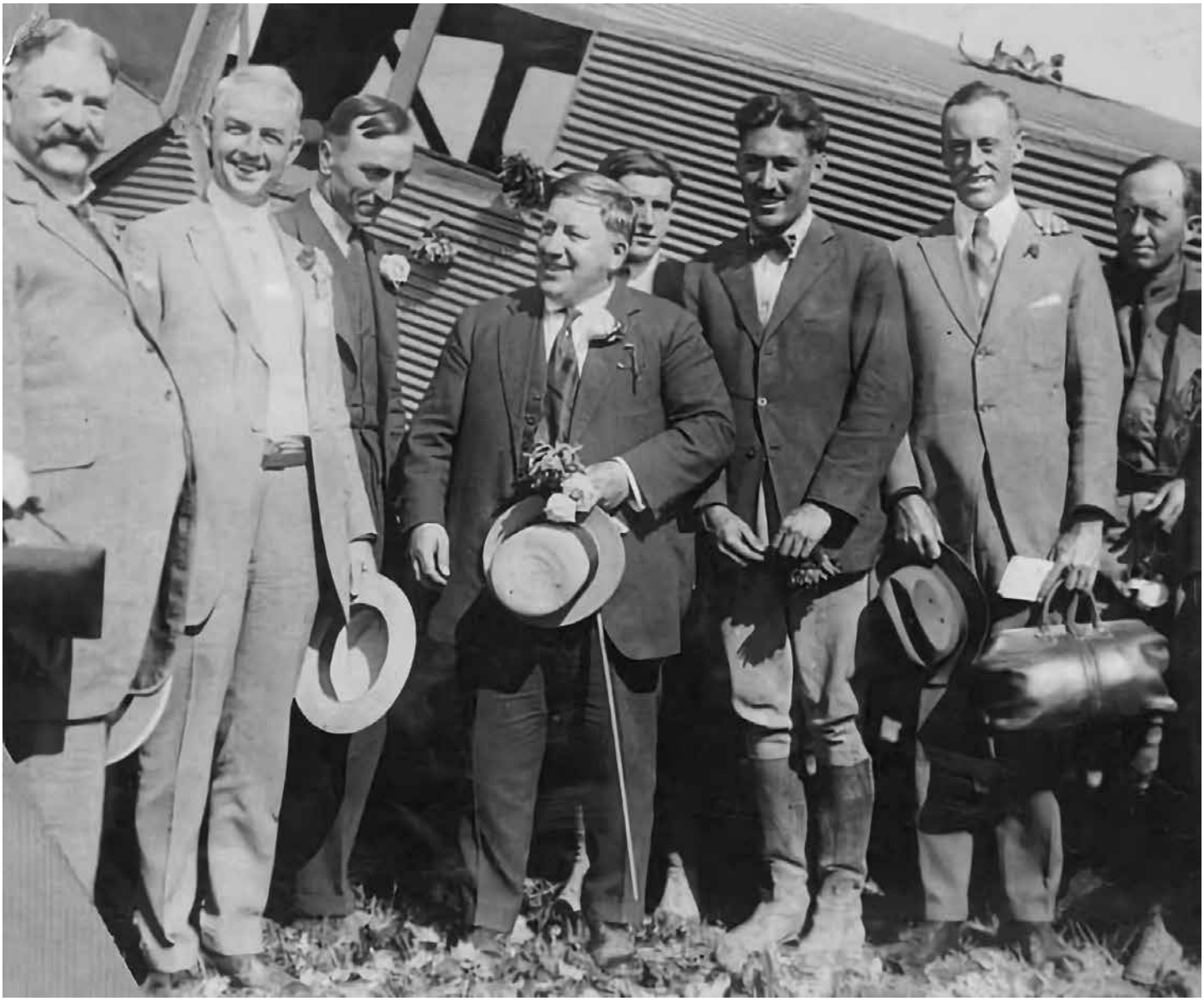
Larsen was indeed riding high that summer, but not for long. In February 1922, he claimed to be the world's most air-travelled person, with more than 300,000 miles in the air. He also told the U.S. House of Representatives mail committee that he had no paper license but was always captain on his flights. He said he could take over the air mail at 75% of the government's cost. He did not tell them he was broke.

A Warning from Germany

On June 2, 1920, a J13 intended for SCADTA crashed near Dessau. Lt. Wilhelm Griebsch had already flown it once, but on the second takeoff, at about 1,000 feet, flames enveloped the plane and Griebsch dove for the ground. At 150 feet the plane exploded, taking the pilot with it into the instant funeral pyre.

This was the second fatal J13 accident, and this one couldn't be explained away. Junkers acknowledged that there were still problems with the fuel system, and a week later he wrote Larsen that the fuel line had broken at the *Vergaser* (carburetor). The factory decided that vibrations might break the lines and told Larsen that he should anneal the lines to prevent stress build-up. But the American users, including the Post Office, had already identified the defect and had chosen to splice in a rubber tube in an attempt to isolate vibrations. They were wrong to think this solved the problem – at least fully.

On August 31, pilot Wesley Smith had the engine quit on a mail run south of Toledo. Quite logically, he switched tanks,



Larsen promoted the JL-6 to the U.S. Postal Service and staged a transcontinental New York to California promotional flight involving three JL-6s carrying both mail and passengers. Here we see the group on arrival at Oakland, California. Left to right: Mayor of Oakland John L. Davie, Mr. E.E. Allyne, Capt. Eddie V. Rickenbacker, John M. Larsen, Ernest Buehl, Bert Acosta,Postmaster Joseph J. Rosborough, Major L. B. Lent. USPO. (Oakland Public Library)

only for a raging fire to erupt when leaking fuel ignited and the flames intruded into the cockpit. He brutally sideslipped the plane and eventually smacked it down in a cornfield. Both he and his companion jumped out with minor burns. Smith stated that the fire went out and the JL-6 bounced upright after the tires blew.[22] The next day was a black one for the air mail. Max Miller, probably the most experienced and admired pilot in the service, died along with his mechanic Gustav Rierson when their JL-6 caught fire and exploded at Morristown, New Jersey. Observers said the engine was sputtering and backfiring before becoming engulfed in flames. The plane had known fuel leaks; the crew chanced it anyway.

It has never been entirely clear why four U.S. Post JL-6s burned within the next six months, taking the lives of seven air mail heroes (as they were widely considered). As usual in these cases, everyone pointed fingers: the Post Office bitterly denounced Larsen's defective aircraft; Larsen blamed Junkers and also claimed the USPO had made dangerous, incompetent changes; and the press vilified the "German-built death-planes." Both Larsen and Junkers strongly suspected sabotage by competitors or anti-German interests. Dessau noticed that Larsen had not informed the Post Office of the fuel issue when told about it, and that his own aircraft had not experienced fires despite extensive flying.

The changes recommended by both Junkers and the Air Service's test team did in fact cure the problem, but the early air mail planes did not benefit from them. Paradoxically the famous crash on February 9, 1921, that killed three postmen

in Wisconsin may not have been caused by the same issue; the pilot clearly elected to fly a defective plane. That did not assuage the critics, and the air mail planes were withdrawn for good. Soon after, on February 18, the repatriated Emil Monz died in an F13 crash near Danzig, but that crash was weather-related. (A classical VFR-into-IMC case and not a suicide, as some have surmised; an airline executive died with him.) Still, three of the pilots Larsen had flown with in Germany were now dead.

The Larsen story kept getting stranger. While his relations with Junkers deteriorated, he redoubled his efforts at marketing, publicity, and record-setting. His pamphlets and the articles he wrote seemed to contain ever more Larsen and ever less Junkers. Undoubtedly the relentless self-glorification grated, especially among competitors and anti-foreign agitators. It was also noticed in Dessau. (Hofman says Larsen publicly reviled the Germans and *verleugnete* (denied, repudiated) Junkers)

Space confines us here to the fate of the JL-6 airplanes, but their flights were epic that summer. From July 29 to August 22, 1920, Larsen led a formation of three across the country, with one returning to New York. Two crashed, one of them being replaced, and one was sold to film-mogul Cecil B. DeMille's hobby airline, Mercury Aviation, in Hollywood. Almost miraculously, nobody got hurt on this expedition; in a sense the "unscheduled rapid disassemblies" along the way highlighted the great safety of the enclosed metal cabin. Also, they didn't catch fire.

Interestingly, at each stop the team asked to have 200 gallons of "90% benzol" ready, as well as the same amount of "high-test gasoline" and 50 gallons of "35-35 oil."[24] The planes were supposed to take off on benzol and use gas in cruise. When pilots failed to do so, the engines sputtered and backfired. Another consideration was that using low-compression pistons seemed to make the engines run smoothly on gas.

From the beginning, the U.S. Post Office had constant trouble with the planes, or rather their engines. In late August 1921 it sent a top-class technical expert, Alexander Klemin, straight to Dessau. Both Hugo Junkers and Klemin clearly understood the quandary: the F13 was a superb choice for the air mail when engine issues were resolved, but because of the Larsen contract, the USPO could not buy directly from Germany. While Klemin was there, the fatal accidents began, and the issue of further purchases became moot as many American newspapers launched a shrill campaign against the JL-6.

By this time, Larsen had fired Monz, whose bad aeronautical luck had continued, and who was angry at anti-German prejudice and critical of Larsen's business methods. He returned to Germany, but Bühl, the obedient mechanic, stayed, for his efforts "babying the BMW" were much in demand.

After the epic transcontinental flight, Larsen took a quick trip to Europe. In Denmark, he held lectures accompanied by the films of his adventures and was in return honored as a true native hero. At one point he promised to return via his own transatlantic flight. With Junkers, things were not so festive. The two sides met "on neutral ground" in den Haag (Hague) from October 1 to 5. Larsen complained that he had received defective aircraft, and the fires made it impossible to sell more. Larsen got no new F13s after September 1920. In a fit of exasperation with the Germans, the Allies seized 11 in Hamburg in October, and five that had already made it to New York were returned, unpaid, to Junkers. The confiscated planes were released in December after U.S. pressure, but they were not allowed to be exported.

A disillusioned Junkers informed his officers on October 11 that the deal with Larsen was dead: "Rather end the Horror than Horror without End… Larsen has shown himself even worse than we thought."

The Fate of the JL-6s

Back in the USA, Larsen had hit the wall. He had sold 14 planes to the U.S. government and two to Canada. Two went to Mexico, one via Mercury Aviation in Hollywood. Mercury had ordered five, but canceled all but one, the *Goose*, after the crashes. That one (NC-2154) was privately sold in 1923 and was used for filming movies; as the last of the JL-6s, it was cut up in 1935.

Three of Larsen's planes had been wrecked, and he had four he couldn't sell. Three participated in a race in Omaha in October 1921 – an "efficiency" race Larsen had set up to win himself for publicity purposes. To his shock and fury, an Ansaldo took first place, probably through fraud; but that's a whole other story. In a sort of Hail-Mary try, that fall he also turned the wreck of Nr. 536 into a bizarre 30-gun ground attack plane, the JL-12, with a Liberty engine. It elicited polite interest from the Army, but no sales. Still, Larsen valued it at no less than $85,000 for insurance purposes.

John M. Larsen contrived one last hurrah when he sent Eddie Stinson and Lloyd Bertaud on an endurance record flight of 26:19 hours on December 29, 1921. They said they had fuel for another seven hours, but the oil pump failed, and besides they were frozen half to death. That caught the attention of Roald Amundsen, who wanted this plane for a flight from Alaska to Norway via the North Pole. Flown by H.T. Lewis and Oskar Omdal, and with Bühl aboard, that wrecked on April 10, 1922, on its very first leg near Clarion, Pennsylvania. Amundsen said that the engine overheated and seized, and the plane flipped over on landing.

Amundsen had another F13 shipped to Wainwright, Alaska, aboard his schooner *Maud*. This one reportedly came from the U.S. Navy via Larsen's intervention, while the first was a "donation" upon which Larsen got $10,000 for Amundsen's modifications plus $8,000 in insurance. Omdal wrecked the new plane on May 11, 1923, when the ski gear broke. Amundsen said, "The machine was excellent, and all was in perfect order…but the new undercarriage, built by Larsen, was too weak." (This JL-6 later ended up with Ace Aviation Corp. in Seattle, sporting a Liberty-6 engine.) Floats were also available, but photos suggest there was no way to use them in pack ice. Amundsen gave up at this point, and there has been some historical debate as to why.[25] However, via German reporters, Hugo Junkers said that when he heard of the venture, he wired Amundsen to not trust Larsen: the plane he had been "given" was too modified and had insufficient range for the planned crossing. Also, cruise performance, especially with

Roald Amundsen had intended to fly from Alaska over the North Pole to Svalbard with it. However, during a test flight at Wainwright, Alaska, the ski gear broke and the expedition was terminated. (Photo from the National Library of Norway)

skis, was too degraded.[26] Presumably this and the accumulation of other setbacks ended the venture. Now Omdal was angry at the JL-6, whose engine, he claimed, "had been working very unsatisfactorily." Amundsen, in turn, was fed up with Omdal, Larsen, and Junkers; he rejected a German offer of an F13 to use the next year.[27]

A curious outcome was that Junkers sent an F13 to Spitzbergen in 1923, initially to rescue Amundsen, whose success Junkers doubted. That plane managed a few Arctic flights before the engine failed. A sister F13 wrecked in Denmark on its way north, due to engine trouble. Even so, the expedition got great PR in Germany, and Junkers was finally succeeding with his F13-equipped airline all over Europe.

On auction, for a measly $6,044, Eddie Stinson bought the Post Office's four surviving JL-6s for his new "Detroit-Chicago Air Line." With Eddie Rickenbacker, he began a nationwide tour of Rick's car dealerships in 1922. The junket ended when Stinson wiped out the gear on takeoff: "They experienced much mechanical trouble en route, chiefly with the engine accessories, and finally the machine was wrecked when it was taking off at Omaha, on 10 June, bound for Denver…" A disgusted Rickenbacker commented that commercial flight was still not feasible on the European scale here. But note that the insurers would not touch that JL-6, saying it evinced "a substantial lack of attention and care."[28]

By 1924, Stinson had two left – one silver and one yellow - and he flew one as late as October 1925, when it assisted in the Ford Reliability Air Tour out of Dearborn. When Hugo Junkers visited Detroit in 1924, he struck a deal to let the reconstituted New York office (JUCORAM) lend Stinson a new F13, the newer model with a bigger wing. Marked NC-87, in 1925 it reverted to Junkers as a demo plane; it won second in the Ford's Tour. It was flown by Frederik Melchior, who was ex-Swedish military. As a Junkers company pilot, he later shared in the rescue of the transatlantic "*Bremen*," a Junkers W33 (a stretched F13 intended for freight, and frightfully ugly) famously stranded on Canada's Greenly Island in April 1928. Indeed, he flew the F13 from New York with Herta Junkers, who was organizing the rescue. That F13 became a handy air taxi for the numerous trips that followed.

"*Bremen*" ignited a monumental media feeding frenzy. As a result, by May there were four Junkers family members in America: Hugo *und Frau*, daughter Herta, with her brother Erhart; and unlike their quiet visit in 1924, this time they were much celebrated. Hugo again went to meet with Henry Ford; speculation was rife about a joint venture, or about a Junkers factory said to be planned for Seattle or Portland. In November 1925, Junker's subsidiary Metal Aircraft Express Corp. reportedly intended to begin Florida-Cuba service. It was reported that it had 10 Junkers with 20 more being built. (*NYT, SEP/22/1925*) Nothing came of it.

In May arrived a sister ship to the *Bremen*, a W-33 (NC5797) assembled at Curtiss Field, Long Island, where the demo F13 was also kept. Tragically, on October 18, that plane dove into a swamp near Atlantic City, killing W.O. Chanute and badly injuring six investment bankers on a joy ride. The pilot, George E. King, also badly hurt, claimed that someone jammed the controls so he couldn't recover from a spin following some "stunts." He implied it was Chanute, the grandson of the famous aviation pioneer.[29]

One of the Navy's planes burned in a hangar fire, and one Army plane (#64121) was used only for static tests. An Army

One of Eddie Stinson's JL-6s. Date and location unknown. (AAHS archives, Gerald Balzer collection)

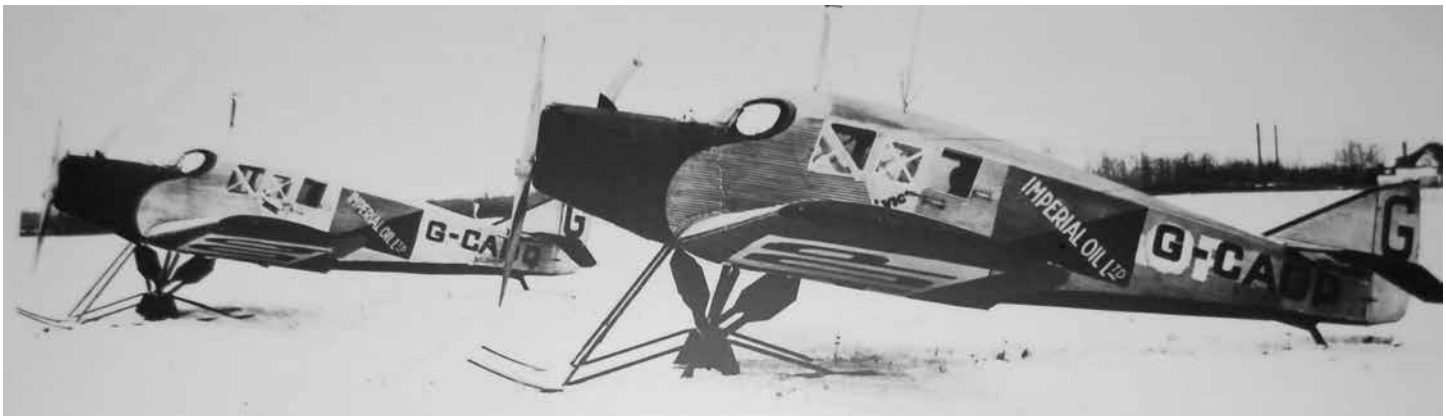
JL-6, nr. 64122, labeled P145, is listed as having been salvaged in 1923. The Mexican planes (1-EA-81 and -82) were destroyed in counter-insurgency operations in 1924, and the two Canadian ones (*René* and *Vic*) enjoyed a brief but epic career as bush planes along the Mackenzie River.

In February 1923, the former air mail director Leonard Lent, along with Charles Kirkham, had obtained three JL-6s with which they briefly operated the "International Airways Corp." between Detroit and Cleveland. Thus, those who knew the plane best were still strongly in favor of it – so much that they asked Junkers for a new quote, but they found the price too high.

Junkers's new office advertised F13s for $18,000, much less than Larsen had charged; yet despite assiduous efforts, it simply couldn't make inroads in America. Tariffs, freight and public hostility stymied Junkers, even though Fokker's metal airliners and Ford's Trimotor did well. Junkers considered both to be knock-offs. Elsewhere, 30-40% of airlines used Junkers planes in the 1920s and 30s, and while they saw their share of crashes, fire does not seem to have haunted them. The Dessau plant grew to over 20,000 workers, only to be taken from Junkers by the Nazis, and then destroyed and looted by the Allies.

Up in Flames: The end of the Larsen Venture

It is a whole different story, well worth a book, but on February 8, 1922, being unable to pay his bills, Larsen ordered his mechanic Bühl to set fire to his three hangars in return for $1,500 and help sending his brother Fritz to the U.S., also as a mechanic. Two JL-6s and the JL-12 perished. Two months later, Larsen collected $192,000 in insurance and split for Germany, where he bought a large mansion in Dresden. He was knighted



Larsen sold two JL-6s to Imperial Oil of Canada for exploration in the McKenzie River. Licensed in Canada as G-CADQ (René) and G-CADP (Vic), G-CADQ was lost in a river landing accident and G-CADP was lost in 1929. A third, G-CADT was returned to Larsen after lease in 1921. (Photo via oztypewriter.blogspot.com)

Junker-Larsen JL-6 Aircraft

JL-6 Index	Werknr.	Produced	Motor	Shipped/Use	Notes
1	535	29.12.1919	Merc.	31.02.1920	2nd Demo
2	536	20.01.1920	BMW	07.02.1920	24.03.1920 Monz crash; became JL-12
3	538	31.03.1920	Merc.	USPO 301	fatal crash 09.02.1921
4	540	31.03.1920	Merc.		
5	541	31.03.1920	BMW	US Navy?	J13W (floats)
6	546	08.05.1920	BMW		
7	548	08.05.1920			
8	549	17.06.1920			
9	550	17.06.1920			
10	551	25.06.1920			
11	553	25.06.1920		Mercury Av.	NC2154, H. Crawford
12	555	25.06.1920			
13	556	06.08.1920	BMW		
14	558	06.08.1920	BMW	Imperial Oil	(floats) G-CADQ, “Rene”
15	559	06.08.1920			
16	560	06.08.1920	BMW	USPO 308	fatal crash 15.09.1920
17	561	26.08.1920		Imperial Oil	(floats) G-CADP, “Vic”
18	562	26.08.1920	BMW		
19	563	26.08.1920	BMW		
20	564	26.08.1920			
21	566	28.08.1920		Imp. Oil lease	G-CADT, returned to JML
22	567	28.08.1920			
23	568	28.08.1920		To Amundsen	non-fatal crash 10.04.1922
JL-6 werk# 569-573 returned unpaid. #574-583 seized by Entente. #584-593 redirected to avoid confiscation. #594-609 seized for reparations.					

by the king of Denmark and became a prominent businessman, known for introducing American style ice cream to the Danes. With expert (and expensive) legal help, he beat the rap in New York and later was involved in similar, though smaller, insurance disputes in Denmark. The trials revealed that he had been arrested for arson after he collected insurance pay-offs on his creamery in Michigan in 1898. He was also sued when his New York mansion burned in 1923, the year after his planes burned. While he skated every time, it is certain that he had worn out his welcome in the American aviation world. After the 1923 trial, Larsen didn’t visit America until 1936, when he traveled on the *Hindenburg*.

It’s hard for any aircraft to recover its reputation after such a notorious debut. Still, Larsen’s initial plan appeared sound, and had it not been for these unforeseen issues he might have succeeded, since the plane was strong, rugged, comfortable, and economical. It is not true that Larsen was criminally negligent or careless in selling unsafe airplanes. Further proof of this is that Eddie Stinson operated JL-6 planes for many years afterwards, and he was thoroughly familiar with their strengths and weaknesses. All planes have “teething” problems. Others have basic design flaws. The JL-6 was not among the latter.

A not-quite-complete table of the Larsen machines, based mostly on German sources, follows. It is hard to match the American planes to their *werknummers*, and your author has not been able to track the fates of six remaining ex-military and ex-P.O. aircraft. This was before U.S. registration was mandatory. ✈

Based on www.ju-f13.de/F13/, with revisions. Also http://hugojunkers.bplaced.net/junkers-f13-production-list.html and Otto Rösser: *Die letzten Junkers-Flugzeuge*, *I.*; Angelika Hof\fman: *Als das Auto Fliegen Lernte* (2020).

Sources

This article is an abbreviated version of a much larger work. The records of the Supreme Court of New York were invaluable in bringing out details of the Junkers-Larsen business. Congressional testimonies provided insight into the JL-6's air mail operations. Contemporary news and specialty magazines covered the plane's brief career, though often inaccurately. Some books, such as *Flying the Mail, The Great Air Race, Aerial Pioneers,* and *City Lawyer* bring out important points, and German books on the plane and its maker were essential (Hofmann: *Als das Auto Fliegen Lernte: Die Geschichte der J. F13*; Wagner: *Hugo J.*; Zöller: *Die Letzten Ju Flugzeuge*; Günther Schmitt: *J. und seine Flugzeuge*.) Eric Schatzberg's "W*ings of Wood, Wings of Metal* is an impressive history of the metal airplane's birth, though his claim that it was a fad is flawed. Records and exhibits of the National Postal Museum have been useful, as have the ever-helpful National Archives and the on-line resources of the many Junkers fans in Germany. The *Deutsches Zeitungsportal* (news archives) yielded important tidbits. Danish sources and the online newspaper archives of the Royal Library in Denmark have revealed much colorful detail.

A Montana man, Mark Taylor, who married into the Ernest Buehl family and found himself custodian of a trove of aviation memorabilia, has done exceptional research into the JL-6 subject. Thanks to him, a new Buehl biography has been published (2023), with more books to come on the transcontinental expedition and John Larsen. Mr. Taylor and this author cooperated on some of the details in this article.

Endnotes are not comprehensive for space reasons. Photographs of both the Junkers F13 and JL-6 are widely available and have aged out of copyright.

Author

Chris Hansen is a retired systems engineer (FAA, Hughes Aircraft) in Tucson, AZ. Born in Denmark, he holds Commercial and Flight Instructor certificates and flies a '47 Luscombe. He has a fondness for researching hidden history: events previously neglected or otherwise suppressed. Thus, he wrote *When Pigs Flew: The TFX Affair* about the F-111 contract, and the *Life and Schemes of General Elliott Roosevelt*. His interest in this subject came about accidentally from an inquiry into the "flaming coffins" debacle of 1918. That burning trail led inevitably to the Junkers-Larsen JL-6.

Endnotes

1. Günter Schmitt: *Junkers und seine Flugzeuge* (GDR, 1986) has some details on Lindbergh in Dessau. The fate of the library has been of great recent interest in Germany.
2. F13 details can be found in numerous German online resources and published sources, eg. hugojunkers.bplaced.net See also Angelika Hofmann's postings; Zöller: *Die letzten Junkers-flugzeuge, Vol. 1 (2023); Technikmuseum Hugo Junkers* website; NACA: A.C. nr. 6 at https://ntrs.nasa.gov/citations/19930085313 (transl. fr. German)
3. Carburetor information from Mark Taylor: *The Flying Dutchman: Ernest H. Buehl* (2024)
4. *Aerial Age Weekly*, November 7, 1921 for the Air Service performance test.
5. *The Aeroplane*, July 28, 1920. *LZ120 Bodensee* had just begun scheduled service to Berlin.
6. Rob Mulder: *Mr. Batts Flies in Norway*, www.Europeanairlines.no (emphasizes Batts, not Larsen).
7. *Kongelige Bibliotek Mediestream* (Danish online newspaper archive). Flight was over a poorhouse.
8. *The Aeroplane*, December 10, 1919
9. Larsen letter to MAA, April 1920, in MAA Archives, U. of Wyoming. Has much Junkers and Larsen material.
10. Hofmann: *Als das Auto fliegen lernte– die Geschichte der F13* (2020). The ultimate F13 history.
11. *New York Times Current History,* Aug/1920, 892
12. *Aircraft Journal*, April 20, 1920
13. *Aircraft Journal*, November 6, 1920
14. Schatzberg: *Wings of Wood, Wings of Metal* (1998). Argues that metal was unsuitable for aircraft.
15. *The Aeroplane*, November 10, 1920
16. Schatzberg: *Wings of Wood, Wings of Metal* (1998)
17. *Flight*, MacReady/Harris report on JL-6, May 5,1921
18. *The Aeroplane*, April 6, 1921
19. *EAA Vintage*, April 2014, "Stout ST-1" Did Stout take the Navy's last JL-6, or the fire-damaged one?
20. U.S. House of Repr. Hearings on Air Mail Bill, February 21, 1922, Comm. On Post Office and Post Roads
21. *The Aeroplane*, August 18, 1920
22. *Stuttgarter neues Tageblatt,* July 7, 1920
23. Leary: *Aerial Pioneers* (1985) – like the Post Office itself, Leary was extremely critical of the Junkers.
24. *United States Air Service*, February 1921. The benzol was difficult to get in many places.
25. Mittelholzer: *By Airplane towards the North Pole* (1924) has interesting details about the F13s role.
26. See for ex. *Bielefelder Abendzeitung*, June 26, 1923. (Hugo was wrong; this plane was unmodified).
27. See for ex. Olav Gynnild: *Den hvite ørnen (2002)*
28. *Aviation,* July 17, 1922 has details of this plane's many mishaps and mistreatment.
29. *New York Times* coverage and Hotson: *the Bremen* for the rescue, the Junkers visit, and the W-33 crash.

Junkers-Larsen JL-6 at NAS Anacostia in April 1921. (AAHS archives, Gerald Balzer collection)