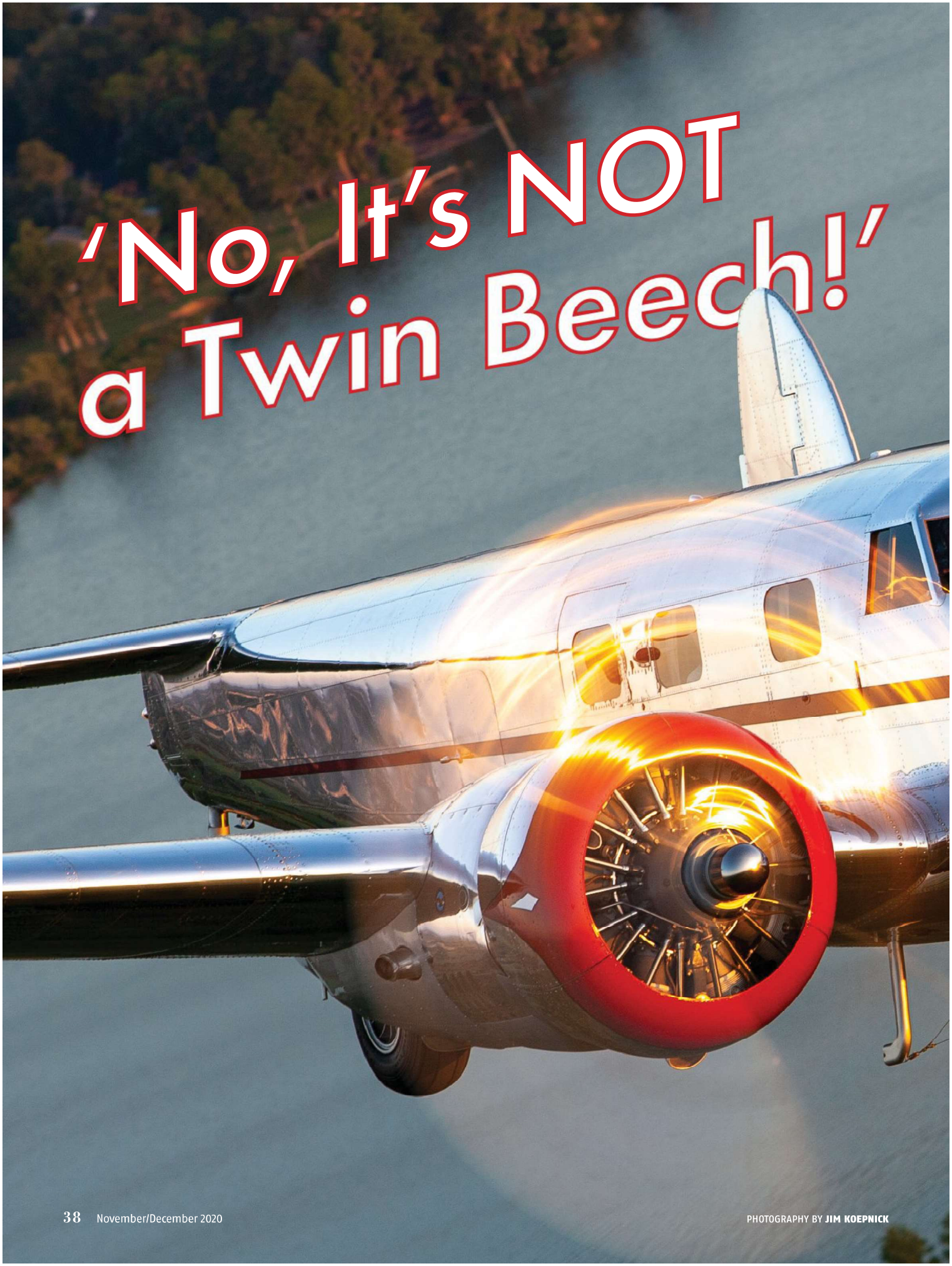
'No, It's NOT a Twin Beech!'

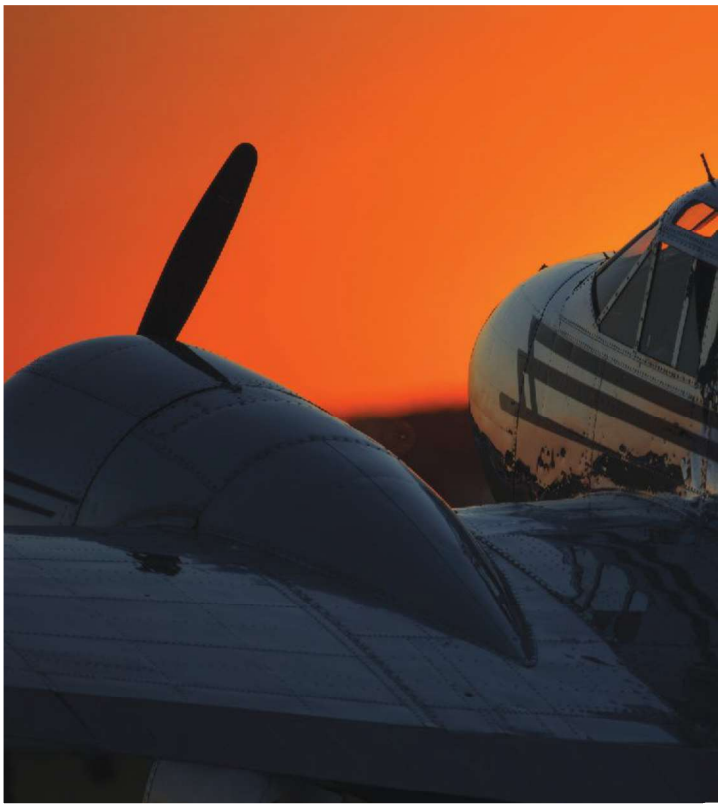


PHOTOGRAPHY BY **JIM KOEPNICK**

LOCKHEED ELECTRA JUNIOR VERSUS
BEECHCRAFT MODEL 18
BY BUDD DAVISSON

The life of a Lockheed 12A Electra Junior owner has to be just a little frustrating. Yes, they own and fly what is arguably one of the most beautiful and legendary airplanes in the world. However, they also have to develop a thicker skin to withstand a cascade of fly-in comments such as, "What a nice-looking Twin Beech!" Or, "How many Twin Beeches like yours are still flying?" It's unlikely any 12A owner ever actually gets angry, because they totally understand how easy it is to confuse the two. But, still...

It's hard to ignore the fact that there is a definite similarity between the two airplanes, and unless parked close together, it is hard to tell them apart. It's a line here, a dimension there, a difference in the tails and another in the cowlings. The differences are subtle, but to the knowledgeable observer, they are what put the Electra Junior in one age and the Twin Beech in another. The 12A is a very slick representation of art deco design and the age that birthed the concept. By comparison, the Model 18 Beechcraft doesn't belong to any age and is surprisingly modern for an airplane that first flew in 1937. The Lockheed is an art form, and the Beech is a good-looking, purposeful tool.



PHOTOGRAPHY BY **DENNNIS BIELA, CHRISTOPHER MILLER**

‘No, It’s NOT a Twin Beech!’

ABOVE: For decades the Twin Beech was *the* corporate airplane.

BOTTOM LEFT: A line of 12As at AV: Be still my heart.

BOTTOM RIGHT: Beech 18 flight deck. Compare its visibility to the Lockheed 12A cockpit on Page 48.

THE 1930S: AN ERA OF PROGRESS

It could be argued that the 1930s is the decade in which huge advances were made without being part of an ongoing war. It was a period during which every few months something new was discovered or something new flew for the first time. In 1930, the Ford Tri-Motor was still the standard airliner. By 1940, the DC-3 had been holding the airliner lead for over three years and the DC-4 was only a few years over the horizon. At the beginning of the decade, military aviation still depended on biplane fighters. The Boeing P-12 and Curtiss P-6E started the decade, and the Boeing P-26 popped into view in 1932. It was the last open-cockpit, first monoplane, and last fixed-gear fighter for the U.S. Army Air Corps, respectively. However, by 1940, the P-40, P-38, and B-17 were functioning in squadron service, and Spitfires and Messerschmitts were mixing it up over Britain. It was the dawn of modern aerial combat.

All of the foregoing is another way of saying that in 1930s aviation, a lot happened in very short periods of time. Case in point: The Model 12A Electra Junior first flew on June 27, 1936, and the Twin Beech on January 15, 1937. Not even six months separates those flights, yet they represent different visual and mechanical design concepts.

In August 1935, the Bureau of Air Commerce kick-started the smaller twin market when it issued a request for bids for just such an airplane. The bureau itself would buy a few airplanes for its inspectors to fly around. It theorized that by giving the winner of the competition that much visibility, small airline operators would be encouraged to expand the feeder airline market.

‘No, It’s NOT a Twin Beech!’

The long, lean fuselage, engine-mounted cowlings, and stabilizer protruding help identify the 12A.

TWIN-ENGINE MYTHS

It is often said that the bureau’s competition is what started Beechcraft down the road toward the Model 18 Twin Beech. This, unfortunately, is not a proven fact. In his book *Beech 18: A Civil & Military History*, Robert Parmerter points out, “Beech files reveal that Ethyl Gasoline Corporation, NY, and Beech Aircraft Company signed a contract dated August 1, 1935, for one twin-engine business aircraft two weeks before the Air Commerce announcement.”

So, Beech was already headed in that direction. In fact, although the bureau competition was ongoing and represented a possible market, Beech conducted intensive marketing interviews and sent hundreds of letters to executives and businesses. It actively solicited potential buyers’ input as to how and what Beech’s design needed to correctly fulfill their needs. By the time Beechcraft was done with its marketing due diligence, it had only 10 months left to produce a flying prototype by the bureau’s do-or-die deadline of July 1, 1936 — clearly a major challenge. It was not only starting from scratch, but also at that point in time, its wildly successful Model 17 Staggerwing was its only product, so aluminum monocoque construction was not in its wheelhouse. It had a steep learning curve ahead. Plus, it was a fraction the size of its main competitor, Lockheed. Reportedly, Lockheed had more engineers and draftsmen than Beechcraft had employees.

At Lockheed, designing a twin to meet the bureau’s specification was a different ballgame. It was already producing its 10-passenger Model 10 Electra for the airlines, so it embarked on building the 12A Electra Junior using the Model 10 as its template but scaled down. It also helped that there was a lot of established aeronautical talent involved. Names like Lloyd Stearman and Clarence “Kelly” Johnson are on the airplane’s birth certificate.

When the Bureau of Air Commerce’s deadline dawned on July 1, 1936, the Electra Junior was the only airplane at the starting line. The other five competitors didn’t make it, although Beechcraft was close on its heels and comments were already being made about the similarity in appearance.

Today there are tales of Beechcraft personnel measuring the Lockheed 12A and going from there. There is a certain amount of truth in that, but only a little. Ted Wells, Beech’s chief designer and VP, did a video interview in 1988 that explains the facts. According to Robert Parmerter, in the video Wells clearly remembered that the Beech team was curious about the competition. So, when an opportunity arose to get a closer look at the Model 10 Electra, which Lockheed was planning to scale down for the 12A, they jumped at it. In his book, Robert says, “Late in 1935, Wells and Dean Burleigh, Jack Wassal, W.B. Woody, H.W. Earhart and W.R. Blakley drove 100 miles south from Wichita to Bartlesville, OK, to look at Lockheed 10A Electra, NC14901, owned by Continental Oil Drilling Company. They looked it over, went back to Wichita; and rumors have persisted since that they copied the Lockheed design.”

PHOTOGRAPHY BY **JIM BUSHA**

Truth is, the aeronautical design specifications that the Bureau of Air Commerce included in its request for bid were very exacting. As such, the laws of physics pretty much determined what the airplanes were going to look like. The designers had free rein with the details, but to do what the government asked, the airplanes couldn't help but be similar.

Even though the Beech 18 was cheaper, at the time the envisioned feeder airline market never developed for either aircraft. However, the Twin Beech became the king of that market segment in the 1960s.

By 1938-1939, World War II was erupting across the world and was just over the horizon for the United States. Beechcraft saw the military market overseas and courted France for trainer and bomber variations of the 18, but with little success. Lockheed saw little future in the market for the 12A, and in 1937, less than a year after the Electra Junior's first flight, the USAAC put forth specifications for a twin-engine "interceptor." Lockheed saw that as a more lucrative market, threw its engineering hat in the ring, and the P-38 was born.

With Lockheed out of the way, Beechcraft had the light twin-engine market pretty much to itself and the USAAC/USAAF was its primary market. During WWII, there were 5,186 Twin Beeches built for the U.S. Navy and U.S. Army Air Forces in a wide variety of configurations and designations. Following WWII, the airplane become the darling of the corporate aircraft and commuter markets and remained in production for a total of 32 years, with just under 9,000 being built.

ELECTRA JUNIOR VERSUS MODEL 18: GLENN HANCOCK HAS BOTH

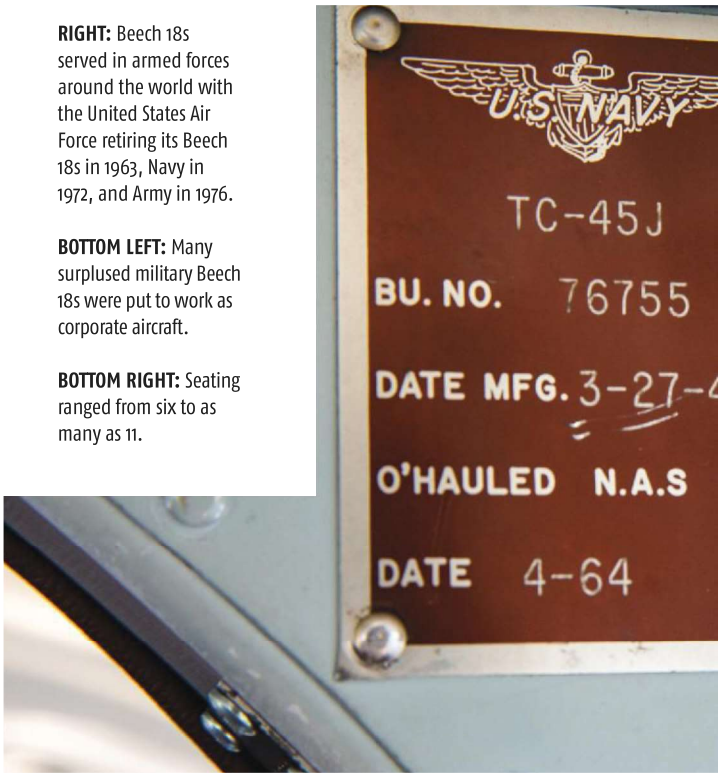
In doing research to compare the two aircraft, it didn't take long to stumble onto Glenn Hancock of Jackson, Georgia. He doesn't claim to be the expert in all things historic in this discussion, but he does own both a 1936 Lockheed 12A (serial No. 1208) and a 1948 Beechcraft D18S. That definitely makes him the expert when it comes to comparing one to the other.

Glenn says it was his grandfather, who flew for Eastern Airlines, who got him into flying. He had him in the cockpit by the time Glenn was 10. Flash-forward many decades, Glenn's software company took off, and he found himself going through a series of airplanes for his business. He went through C-310 to Aero Commander, eventually settling on a Twin Beech. He says it makes carrying a handful of people much more doable and is much more comfortable. He's talking utility here as much as he is the pure joy of sitting between two R-985s and knowing it's a legitimate part of his role as manager of his company.

RIGHT: Beech 18s served in armed forces around the world with the United States Air Force retiring its Beech 18s in 1963, Navy in 1972, and Army in 1976.

BOTTOM LEFT: Many surplused military Beech 18s were put to work as corporate aircraft.

BOTTOM RIGHT: Seating ranged from six to as many as 11.



PHOTOGRAPHY BY **CHRISTOPHER MILLER, JASON TONEY**

'No, It's NOT a Twin Beech!'

"It was my grandfather that got me into flying," he said, "but it was my friend Joe Shepherd who got me into the Lockheed 12A. I was flying my Beech 18 and liked his 12A but hadn't thought about actually owning it until Joe lost his medical and made me a deal I couldn't pass up. Joe had something like 20,000 man-hours and 19 years invested in restoring it, and I think about that every time I start to fire it up. He created a real work of art."

When talking about the design of the Beech versus the Lockheed, he said, "Lockheed was a huge company with experience in building big airplanes. Beechcraft was a brand-new company, and almost no one in it had a lot of experience with sheet metal, monocoque structures. For that reason, the structures of the two airplanes reflect the experience differences. The Lockheed is much more sophisticated. The main center section spar in the Lockheed, for instance, reflects the different philosophies: The 12A's spar is a fairly complicated and highly engineered aluminum truss that has a history of being reliable. The Beech has a welded steel tube truss that runs between the two engines and has a history of ADs being directed at it. Some of those ADs were the result of STC'd mods that required drilling holes in the tubes, causing corrosion. In fact, at one point, a percentage of the Beech 18 fleet was threatened with being grounded until it did inspections of the center section spars and/or installed strap reinforcements. Today, all of them have the straps installed but still have to go through regular X-ray requirements to stay airworthy. In comparison, the Lockheed 12A has zero ADs or failures being reported.

"Basically, when you compare the two designs, you can see how Beechcraft was concerned with reducing the parts count and simplifying the structure," Glenn said. "They, for instance, hung the cowlings on the firewalls, rather than attaching them to the engines. Also, rather than using a fairly complex and expensive screw jack to raise and lower the landing gear, they had a series of cables and pullies. That was simpler to manufacture but not as reliable or as easy to maintain. Beech went out of their way to make an airplane that could be sold at a lower price than the 12A. They were very successful in that area: Back in the day, the Beech 18 sold for less than half what the Lockheed did."

‘No, It’s NOT a Twin Beech!’

IN-THE-AIR COMPARISON

When comparing the flying characteristics of the two aircraft, Glenn said, “I hesitate to say that one is better than the other. They are, however, different in a lot of areas. Both of them, for instance, with all the applicable mods, have a gross weight of around 9,000 pounds. However, they handle the weight differently. Our home strip is 2,900 feet of grass, and I’ve flown both airplanes out of there at gross any number of times. In the Beech, as I get closer to six or seven folks in the back, I can tell it. As the weight goes up, the airplane definitely lets you know it.

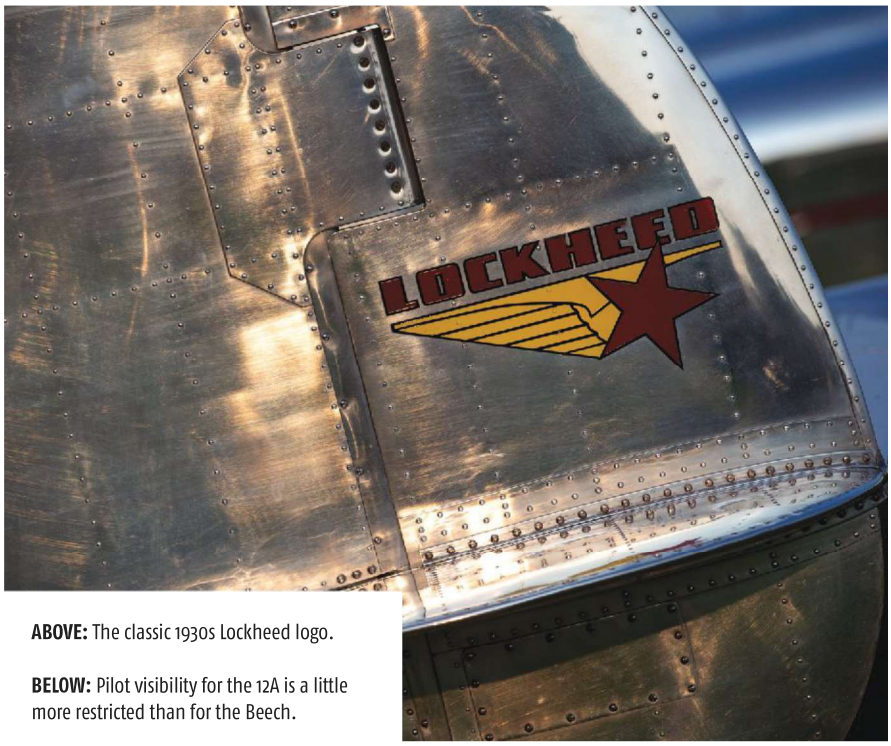
“It’s a different story with the Lockheed,” he said. “I can toss seven in the airplane with their coolers and golf clubs, and I can’t tell whether there’s a load back there or not. It’s as if the airplane just doesn’t care what you put in it. They both have about the same wing area, but the Beech’s wings are 2 feet shorter so they aren’t as effective. That’s why there are a number of STC’d wingtip extension kits for it.”

Glenn said in the air, both airplanes handle pretty much the same, although there’s a noticeable difference in the way the cockpits feel.

“The Lockheed is definitely old-school, with the windshield in a single tight ‘V,’ with the windshield coming back over the instrument panel and fairly close to the pilots,” he said. “Plus, the windshield isn’t very tall, so you’re a little more closed in. You get used to that in about five minutes. The Beech, on the other hand, has the windshield a good distance in front of the panel, and even in the early 18s, the windshield is fairly tall by comparison with the Lockheed. In the postwar Beeches, especially ones like mine, which has about every Twin Beech STC available, including the new-style windshield, the visibility is terrific and the cockpit has a very open feeling.

PHOTOGRAPHY BY **CHRISTOPHER MILLER**

"In terms of speed, the Lockheed is a little faster than most Beech 18s," he said. "At 27 inches of manifold pressure and 1900 rpm, the Lockheed will true about 155 knots at 8,000 feet and will be burning 18 gph per side when lean of peak. At rich of peak settings, you're looking at around 165 knots and 24 gph per side. I say 'most' Beech 18s, because my 18 is a little faster than any other 18 I've flown in or with. It has every mod ever created for an 18 to help with speed, but otherwise, it performs almost the same."



ABOVE: The classic 1930s Lockheed logo.

BELOW: Pilot visibility for the 12A is a little more restricted than for the Beech.

PUTTING IT ON THE RUNWAY

All sorts of tales circulate about how difficult the Twin Beech is to land safely. Part of this is because it's a taildragger, and part of it is because both airplanes are heavy taildraggers. Glenn has his thoughts about that.

"The two airplanes require slightly different approaches and landing techniques, but they share one characteristic: I've been flying almost nothing but tailwheel aircraft my entire life, so I feel safe in saying that when you get an airplane as heavy as these crossed up, you're just along for the ride. They aren't hard at all to keep straight on the runway, but if you land one of them crooked and it starts for the bushes, you have to catch it very quickly. Remembering you have differential power can help a lot, but you'll be working pretty hard if you let her get too far away.

"The problem when talking about a Beech 18, though, is that you have to tailor how you fly to that individual airplane," he said. "Almost every 18 still flying has different mods from the last one you flew. As a result, the performance numbers and specs are a bit different. My 18, for example, has zero dihedral in the tail, making the airplane considerably faster than a stock 18, but it also means you'll never do three-point landings in the airplane because she'll quit flying on you around 80 mph. This means approaches in the 18 for me have to be around 90 mph, with the initial flare between 85 and 90. Any slower and you won't have anything left in the elevator when you go to flare, and she'll just fly onto the runway, landing harder than you wanted."

In the 12A Glenn said things happen much slower.

‘No, It’s NOT a Twin Beech!’

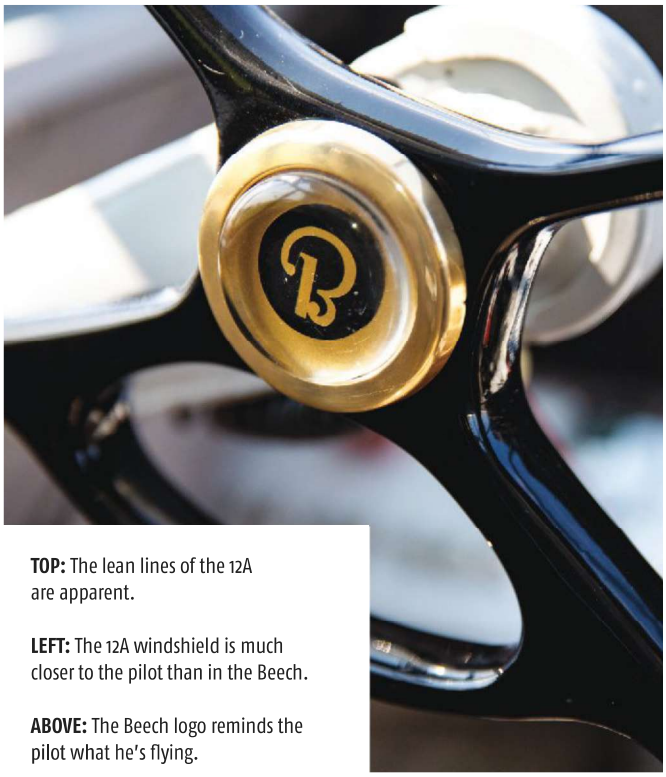
“First, you’re coming down final at 80 mph and you hold it off slightly tail down until it actually stalls and settles onto the mains,” he said. “A little forward yoke keeps the tail up until it comes down at about 40 mph. This makes the Lockheed a pussycat to take into our little runway. I guess a good example of how this all plays out is that most landings in the Lockheed 12 result in zero brakes and being stopped about halfway up the runway, adding power to get to my hangar at the end. The Beech 18 results in using the brakes to get stopped before I reach my turnoff, and in a few cases, having to turn around to come back.

“I’ve been thinking about selling the Beech 18, strictly because I do my own maintenance and keeping up with four R-985 engines is a bit tough, but I haven’t decided for sure yet,” Glenn said. “Please, don’t tell my wife. ... Both airplanes are a blast to fly, and my Beech 18 is beautiful in her own right, just not in the same league as the Lockheed 12.”

It has often been said that the only thing better than flying an R-985 is to be flying two R-985s. It could also be said that when you have two airplanes and can’t decide which you like best, you just keep them both. Problem solved!

Glenn, just so you know, we’re all very jealous!

FOR MORE TWIN BEECH INFORMATION and history, read Beech 18: A Civil & Military History by Robert K. Parmerter, 2004. It’s published by Beechcraft Heritage Museum and available through its bookstore; email info@beechcrafthm.org or visit www.BeechcraftHeritageMuseum.org.



TOP: The lean lines of the 12A are apparent.

LEFT: The 12A windshield is much closer to the pilot than in the Beech.

ABOVE: The Beech logo reminds the pilot what he’s flying.

PHOTOGRAPHY BY **PHIL HIGH, CHRISTOPHER MILLER, MARK SCHAIBLE**