

The ABCs of  
Air Racing >>>

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in Space p.34

# AIR & SPACE

Smithsonian

## Fighter, Bomber, Hero, Sneak

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STEALTH FIGHTER  
UNIQUE

When UAVs  
Replace SUVs

How Computers  
Rate WWI Fighters

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Offers the Ultimate  
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Lockheed F-117A

JANUARY 2008



# AIR & SPACE

Shirley Ann

On the cover: The F-117A Nighthawk in Bob Wickley's photo seems to have been chiseled from the mountains beneath it. In his retrospective on the first stealth fighter as it heads for retirement (p. 42), Bill Sweetman notes that the technology that made the aircraft look so freakish at birth matured quickly. We'll never see another like it.

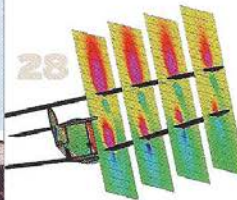


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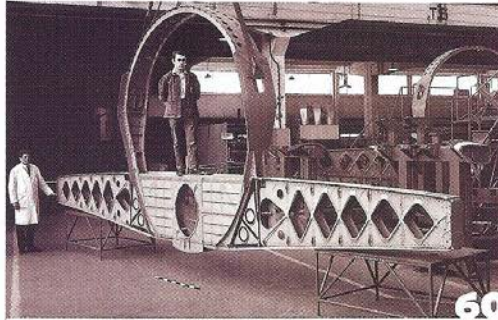
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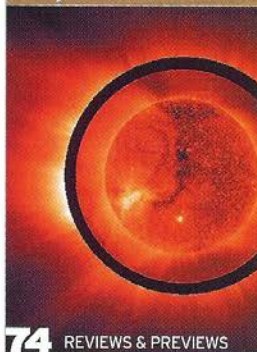


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# OUT IN THE Breezy

WITH LITTLE  
FANFARE  
(AND LESS  
STRUCTURE),  
THE BREEZY  
HOMEBUILT  
SPREADS THE  
MESSAGE:  
FLYING IS FUN.

BY JASON PAUR

**AFTER GIVING MORE THAN 7,000 FREE RIDES** over the course of 40 years, Carl Unger still delights in recalling one of the first passengers on the airplane he and two friends designed and built: "She was wearing nothing but sandals," he says with a laugh.

It was 1965, and Unger, along with fellow Chicago-area corporate pilots Charles Roloff and Robert Liposky, had just finished the 40 hours of test flying the Federal Aviation Administration mandates for homebuilt aircraft. "The FAA drew us a corridor for the 40 hours over some sparsely populated area," Unger says. "Nobody ever saw this airplane." On his first day flying outside the corridor, he landed on a small strip south of Chicago surrounded by thick woods. While taxiing back to take off, he saw three women emerge from the trees, indeed wearing nothing but sandals.

Unger had landed at a nudist colony.

"The tall one waved and I waved back, so they came running out to the airplane," he recalls today with a nod to his wife, who is sitting across the living room and knows the story well. Unger stopped the airplane and the women walked around it. They laughed and said, "It looks like us—it's got nothing on!"

Before long, dozens of nudists were standing next to the naked airplane. "I remember meeting them and looking them right in the eye. I thought

I handled myself pretty good," he says with a wink. After a few minutes, one of the nudists asked if she could go for a ride. Unger was surprised that anyone other than his pilot friends would want to get on the airplane; this was a time long before ultralights, and the airplane looked like nothing else in the sky. But Unger figured, Why not? "Yeah, get on," he said. The woman doubled her wardrobe by donning a pair of goggles, set down a towel, hopped onto the back seat—and Unger flew one of the first of what would be thousands of passengers in the Breezy.

Since that day, the Breezy has become most famous as an airplane that seems tailor-made for giving rides. Shortly after the visit to the nudist colony, Unger, dressed in the tidy red vest, tie, and slacks that would become his trademark, made his first flight to the Experimental Aircraft Association's 1965 fly-in in Rockford, Illinois (now known as EAA AirVenture and held in Oshkosh, Wisconsin). That first year, the airplane was presented with a trophy for the most popular homebuilt, as well as an award for the most unusual instrument panel (it's beneath plexiglass under the pilot's feet). The Breezy, formally called an "RLU-1" for Roloff-Liposky-Unger, was a hit, and people asked how they could catch a ride. "Get on" was Unger's simple reply.

The founder of the EAA and the man who helped usher in the homebuilt movement, Paul Poberezny, recalls those early years, and the decades that followed. "The Breezy has been one of the most popular airplanes [at Oshkosh] over the years, and

Carl has given thousands of people rides at his own expense for many years at Oshkosh. I give him a lot of credit for [getting people excited about flying]."

The Breezy was never intended to fill such a role. The three designers all worked for the same corporation, flying twin-engine Beech 18s out of Midway airport in Chicago. Unger was in his 30s. "It was all right flying," Unger says, "but it's not like the basics." The young pilots wanted to build something that would get them back to the fundamental stick-and-rudder flying that had lured them to the skies in the first place.

The first foray "back to basics" came when Roloff built a Benson Gyro-Copter from plans in 1963. He flew it many times, but Unger and Liposky weren't totally enthusiastic. Eventually Roloff crashed the Gyro-Copter, escaping with a few bumps

and bruises. Despite the crash, Roloff told the other pilots how much fun it was, sitting out in front of the engine with nothing around you. It was something Unger responded to, as he had always wanted an open-air pusher like those Glenn Curtiss or Lincoln Beechey flew in the early days of aviation. "Let's build something that's safe, where we're sitting out there," Unger said. "That's really flying."

In addition to all being pilots, Liposky was an engineer, Roloff was an aircraft inspector, and Unger was an expert welder who had been a heli-

copter mechanic in the Army. The three figured they had the skills to design and build an airplane on their own.

After some discussions, the trio built a small wire model; then, without any written plans, they started to construct the airplane in the company hangar at Midway. They bought 4130 steel aircraft tubing, just a few pieces at a time, because they never really planned out how much they would need. A friend at the airport gave them a deal on a pair of wings off a wrecked Piper PA-12; many of the parts were donated by friends, or literally scrounged from the trash, including a nose-wheel fork from a Cessna 150.

Their two big purchases were a brand-new 90-horsepower Continental engine for \$1,700, and \$800 for a radio, which brought the total cost of the airplane to \$3,500. After six months of welding and cobbling together parts, the team had a prototype ready. Roloff was chosen to make the first flight, based on the fact that he had had his instructor rating the longest. "Two weeks ahead of time we gave him his wake," Unger says about the party at a local bowling alley. On August 7, 1964, the first flight went flawlessly, with Roloff taking off from Lansing Airport in Michigan. The three took the winter off, then resumed testing the following year. The Breezy was on its way to that first EAA airshow and many others throughout the upper Midwest. Once, when Roloff stopped for gas during an early test flight, the airport manager took a long look at the unusual air-



**Opposite: Look, Ma! No fuselage!** Carl Unger has introduced thousands to Breezy flight at airshows, where fans have learned to look for his trademark red vest, goggles and backwards cap.

craft and remarked, "A little breezy, ain't it?" The name stuck.

When Unger returned home after that first airshow, there was a stack of letters at his house from people asking for brochures and plans. "We never thought anybody would want to ride on it, let alone build one," he says. "We had no plans; we built it out of our heads."

After the rush of requests, the three started to reverse-engineer the Breezy, carefully measuring the original in order to develop a set of plans. One American Airlines captain was so eager to build one that he often stopped by the hangar to help; he ended up with the first set of plans, and the second Breezy ever built.

Since 1965, more than 1,000 sets of plans have been sold. Potential builders "don't know what they're up against, and I warn each one of them," says Unger. "I'll tell them, 'Listen, when you get this thing finished, everywhere you go and stop for fuel, they're going to ask for rides.'"

"I love it, but I want them to know what's going to happen," he adds, grinning.

Despite its appearance, the Breezy is not an ultralight. Be-

cause of its weight, fuel capacity, and top speed, it falls into the experimental category, like many homebuilt airplanes, and requires registration with the FAA and a pilot's license to fly. And many pilots who have flown a Breezy say that in addition to being fun to fly, the aircraft, because of its open fuselage, is one of the easiest.

Matt Hlavac (pronounced le-VACK) flies a Breezy in the San Diego area. Because the airplane flies so slowly (90 mph is fast for a Breezy; most cruise at 60 to 70 mph) and has very little fuselage, Hlavac says it can be forgiving in challenging conditions. "I'm never thinking in the back of my mind, *Oh boy, I've got a big crosswind, it's going to be a handful to land.*"

Of the many Breezys flying, several include their builders' personal touches: There's a biplane Breezy; a four-place Breezy (the original can fit three passengers, with two sitting close together on the rear bench seat);

a Breezy on floats; a high-powered, aerobatic Breezy that performed at a handful of airshows. "There's even a guy who built one in South Africa with real leopard skin seats," Unger says, thumbing through one of his many picture albums.

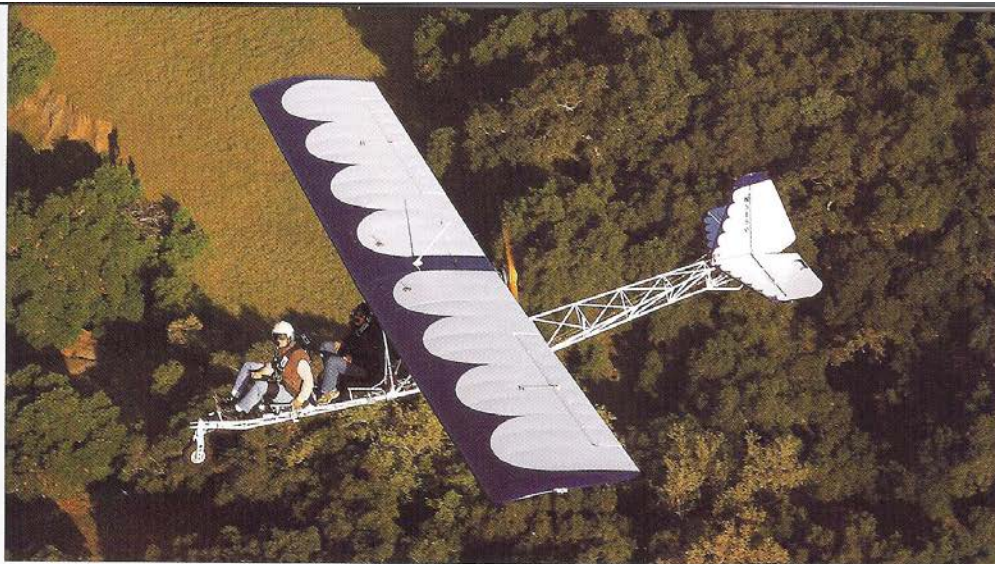


Carl Unger, Charles Roloff, and Robert Liposky (above, from left, in 1965) wanted to build something that would get them back to basic stick-and-rudder flying, a longing shared by others (below).

COURTESY CARL UNGER



GRANT/DUP, INC.



JASON PAIR

Arnie Zimmerman of Downers Grove, Illinois, has been flying passengers at Oshkosh and other airshows in his Breezy for more than 20 years. He estimates he's given rides to more than 9,000 people. "It's unusual, it's a feeling.... It's an airplane you fly low and slow and you can see everything," Zimmerman says of the Breezy's appeal, "It's a conversation piece." While some people start the ride with white knuckles, "ninety-nine percent of them end with the biggest smile."

Over the years, Zimmerman and Unger have given rides to far more people than they can remember. Kids are always fun, they say, but both have had some memorable famous passengers. Zimmerman recalls one passenger who was put on the back seat and immediately reached forward and began working the controls. "I didn't know he was one of the world's top test pilots," Zimmerman says of cosmonaut Anatoly Artsebarsky. Zimmerman had been told only that he was a visitor from Russia. "He loved it," Zimmerman adds.

In 1994, on the 25th anniversary of the first moon landing, the Apollo astronauts were honored at Oshkosh. And, being pilots, many of them wanted to experience the Breezy. Charles Duke, the lunar module pilot on Apollo 16, went for a ride, but he says it was his wife who surprised him: "She won't fly with me in a light aircraft, but she really enjoyed the Breezy and was just thrilled to be up and feel the wind and see the visibility you have with the thing." Duke says the Breezy provides "a feeling of freedom that is the attraction of aviation." He says he enjoys the highly technical side of aviation and complex aircraft, "but these real simple ones show you what a little inge-

nuity and practicality will do. It was just a lot of fun."

Unger recalls all of the Concorde pilots going for rides, several of them more than once. But both pilots remember the less famous passengers as well. Unger fondly recalls an 89-year-old grandmother who took her first airplane ride on a Breezy.

Some of the passengers go on to become aviators themselves—and a number go on to build Breezys. The original flew every year until 1990, when Unger donated it to the EAA museum in

Oshkosh; soon after, he found a used Breezy to purchase. Unger's current Breezy was built in 1974 by then-14-year-old Jay Vieaux. The teenager had gone on a ride with Unger; his parents later bought him a set of plans. "I'm sure my parents never thought anything would materialize of it," he says more than 30 years later. But after some welding lessons and a lot of mentoring from Unger himself, Vieaux finished the airplane. He's proud to see Unger still flying it each year at Oshkosh. "It's really good to see that he's still giving rides and keeping people interested in aviation," he says.

Today, Unger is a spry 76 years old. And when he starts talking about flying, a listener might think he had just taken his first ride. His voice rises with excitement as he leans in to the conversation. His eyes widen and he carefully studies your face to make sure you truly understand what an amazing thing it is to travel through the air. When passengers on the Breezy—from astronauts and Concorde pilots to grandmothers and kids on their first rides—walk away from a flight with the same kind of excitement, you have to wonder if they caught it from Unger, or from the little naked airplane. ➔

**Slung beneath a replica Piper PA-12 wing, the Breezy (piloted by Matt Hlavac, near San Diego, above and below) is less confining than a sleigh but, as Santa would agree, no less magical.**



MATT HLAVAC