

Stinson Gullwing

A victorious V-77

BY SPARKY BARNES SARGENT



BONNIE KRATZ

N9116H taxied onto the flightline in the vintage aircraft camping area just as the crowds had thinned for the day. The early evening sun caressed its bright scarlet gull-shaped wings, setting them aglow atop a velvet black fuselage. Freshly restored to show status in August 2005, this victorious 1944 Stinson-Vultee V-77 (AT-19) was making its first public appearance at the 2006 Sun 'n Fun Fly-In at Lakeland, Florida. The judges, along with many other pleased vintage aircraft buffs, discovered it there the next morning, and it was soon proclaimed Custom Champion.

Military to Civilian

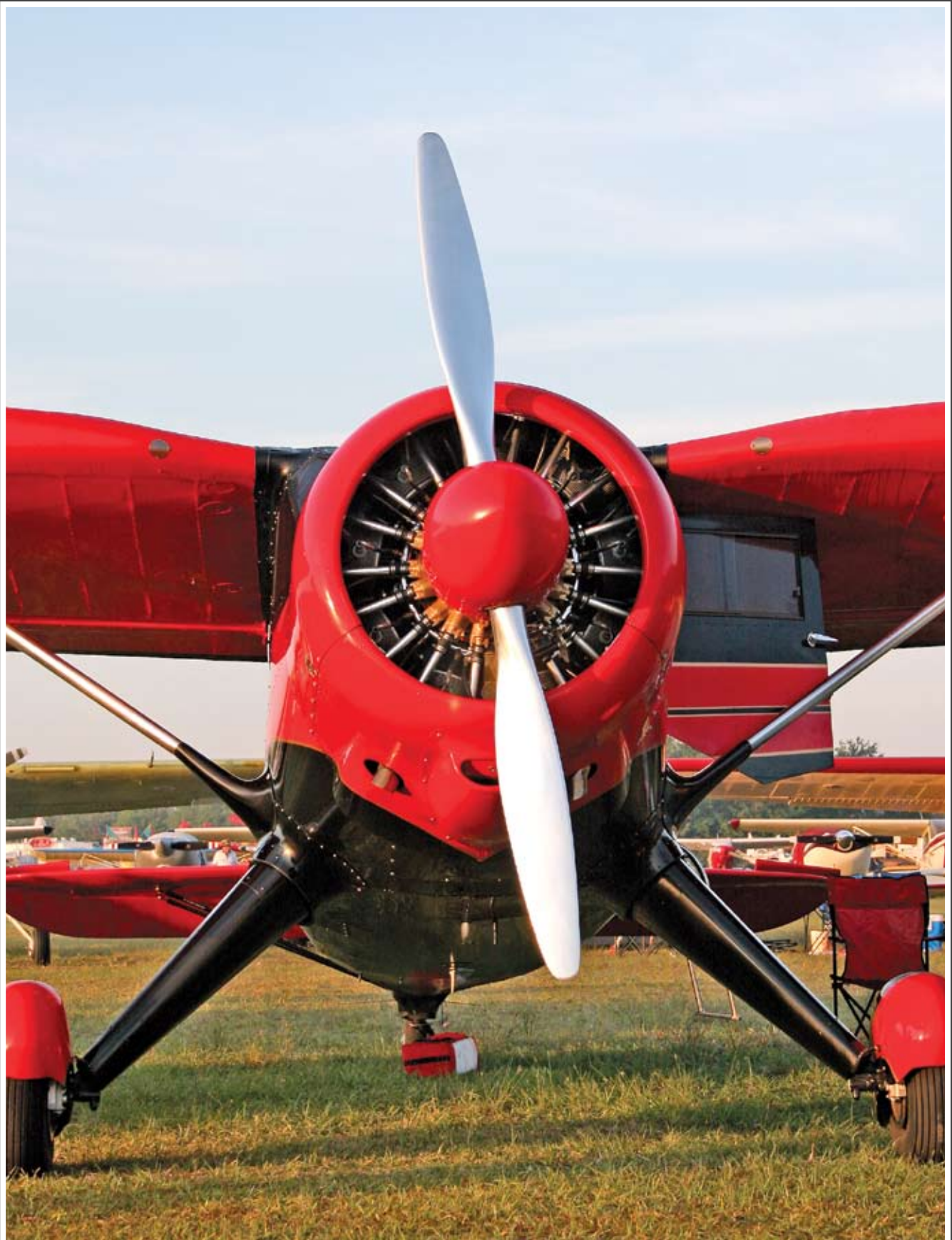
Those graceful, double-tapered

gullwings denoted N9116H's Stinson Reliant heritage, but N9116H began life as a military AT-19. The Stinson Aircraft Division of Vultee built 500 of these robust aircraft for use as navigational trainers by the United States Army Air Forces. Powered by a 300-hp Lycoming R-680, the AT-19 had a wingspan of 41 feet 11 inches, measured 28 feet 3 inches from nose to tail, and stood an impressive 8 feet 7 inches tall. It carried 38 gallons of fuel in each of its wing tanks and was capable of cruising at 120 mph while burning around 17 to 18 gph, giving it a range of about 500 miles. It landed smoothly at half its cruising speed on widespread, cantilever oleo landing gear. Hydraulic toe brakes and a full-swivel tail

wheel facilitated ground handling.

The majority of the AT-19s were sent to Great Britain via our government's Land-Lease program during World War II, and the British military employed them for a variety of uses, ranging from training navigators and transporting personnel or cargo to flying observation and aerial photo missions. Yet their need was short-lived, and several hundred AT-19s were destined to become military surplus back in the States after the war.

These hardy, five-place airplanes were soon made available for civilian purchase and subsequently certificated as the V-77. They quickly gained popularity in Alaska as bushplanes—whether on wheels, pontoons, or skis. While 134 V-77s and 15 AT-19s remain listed on the FAA Registry, they are still a fairly rare sight to behold. In fact, restorer Mark Henley hadn't ever seen one until he and his father went to look at N9116H. Although the disassembled aircraft had been in storage for several decades and its major components were stored in three separate locations, Henley knew it would become his third significant restoration project. "My father and I bought it the night I looked at it," he recalls, adding, "I loved it from first sight."



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Pilot Chris Emerson and owner Don Henley with N9116H.

Sixty Years

The Henleys' Stinson began its civilian life in November 1946, when it was sold by the United States' War Assets Administrator via the Surplus Property Act of 1944, and it was purchased by a gentleman in Virginia for the sum of \$1,500. Although its ownership varied, it remained in Virginia until 1962. From there, it went to the North Carolina coast, then to Tennessee, and briefly back to Virginia. In 1970, N9116H found a new home in

Idaho, where it remained for six years before it went to Oregon and Colorado. A decade passed and the Stinson changed hands again, landing in Arkansas. It languished there for nearly a quarter of a century before Mark Henley and his father, Don, heard about it from family friend and pilot Chris Emerson.

"It had belonged to a friend of mine who had planned to restore it," recalls Emerson, "and he had it for years, sitting in the back of the hangar in

Wynne, Arkansas. Then he sold it to another friend of mine, and it sat again for years and years. Finally, this fellow decided he wanted to sell it, and I told Don and Mark about it. They bought it in the spring of 2004 and started restoring it to show quality."

Restoration and Challenges

The V-77, at that point, had only 1,077 hours total time in service, but it desperately needed a heavy dose of tender loving care to bring it back together into flying form. The ensuing ground-up restoration took about two years overall, according to Mark Henley, who says he "was also doing annual inspections, overhauling engines, and making various repairs to other aircraft in the daytime during that period of time."

Aircraft restorations can become a concerted team effort, and the V-77 was no exception. Don Henley, along with John Richey, was steadily involved in the project. "The three of us together put about 5,000 hours in it, and it was a process. My son, Mark, is the A&P, and he had restored two

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The Stinson has ample space and horsepower to carry camping gear.

"We bought it the night I looked at it; I loved it from first sight."

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AirVenture Lindy award winners—a 1946 Piper Cub and a 1947 Aeronca Champ—before taking on this Stinson. He's a perfectionist, and he knows what it takes to do a quality restoration. I am a house builder, and he's an airplane builder, and there's a tremendous difference there. Mark has taught me a lot in rebuilding this airplane." And when the airframe components were completed and ready for the final assembly phase, Ross Jones gave Mark Henley a helping hand.

Nearly all of the Stinson's major components had somehow survived those long years of storage. There was even a set of Fiberglas wheelpants that, while not original, were available with the project. Just a few items were missing, such as the tail wheel, landing gear fairings, and the cabin interior (except for one seat). Mark Henley fabricated new sheet metal panels for the Stinson and designed the interior panels and upholstery for the cabin. He took his design locally to Pat Roby, who installed the headliner, carved the foam for the seats, embossed the embroidered panels, and sewed the new gray leather upholstery.

After installing the fabric on the Stinson's steel tubing and aluminum-faired airframe, Henley used the Air-Tech coatings system, just as he had for his previous award winners. "It's real user-friendly and has a really good shine, plus it holds up well," he explains, adding, "I've had real good luck with it, and I prefer it over other paint systems. The color scheme came from a Hallmark Christmas ornament that a buddy gave me—it was a miniature Stinson Reliant, painted black and red—and I modified that scheme for the V-77. I used just a basic black and asked Air-Tech to mix the exact color of red that I wanted, which they named Henley Red." (*That Hallmark Christmas ornament is a model of Dr. Paul Sensor's Stinson SR-8E Reliant.*—Editor)

Even the Stinson's powerplant, a 300-hp Lycoming R-680 overhauled by Radial Engines Ltd. of Guthrie, Oklahoma, was included in the Stinson's overall color scheme. Its gold-tone nose case matches the gold-tone instrument panel, while a thin gold accent trim highlights the airframe's paint scheme from engine cowling to rudder.

Throughout the restoration, the

Henleys encountered a variety of challenges. For Don Henley, it was "learning how to sew the hidden rib stitch that Mark taught me and then rib-stitching those gullwings, because the depth of the wing varies, and it has so many internal structures."

For Mark Henley, one notable challenge that required some careful thinking was the wing installation. "That was a head-scratcher, for sure," he recalls, explaining, "we ended up making padded, carpeted slings that hung from the ceiling to help slowly raise those heavy but fragile wings into position so we could bolt them on to the fuselage and install the struts. It took about two hours just to raise each wing, and we didn't put a scratch on them."

Share the Knowledge

One of the most helpful aspects of a restoration can be making comparisons between your project and a similar model airplane (preferably airworthy). During the Stinson's restoration, Mark Henley had the good fortune to meet a friendly V-77 owner, Buddy Kirkland of Tennessee,



The Stinson logo is neatly embroidered in gold thread on the cabin upholstery.

SPARKY BARNES SARGENT PHOTOS



N9116H boasts a 300-hp Lycoming R-680 from Radial Engines Ltd. Note the gullwing style cowling, which provides easy access to the engine and reveals the Stinson's military heritage.



This Lycoming nameplate is one of the finish details added by the restorer.



Bright Henley Red paint and gold trim accentuates the Stinson's tail.



BONNIE KRATZ

at a fly-in at Bartlesville, Oklahoma. "When I met him, he asked me what I was restoring, and I told him what it was. Most people hadn't even heard of one, and he actually had one! So he took me flying in it, and that was real encouraging because I hadn't even seen a complete V-77 at that point. And it's the only one I've seen except for mine since then. He's a real nice guy, and I called him a hundred times—he never hesitated to answer any questions about the airplane. So he was absolutely a great help."

Features and Mods

This custom restoration was designed to keep the aesthetic beauty of the gullwing Stinson intact while simultaneously incorporating the practical convenience of modern technology. Its modifications include Cleveland wheels and brakes; an alternator; a Garmin GNS 430 GPS, GTX 327 transponder, and GMA 340 audio panel; and for the pilot and passengers' entertainment, a PS Engineering CD player.

One unique feature about the V-77 is its vacuum-operated flaps. "I was going to modify them and put electric flap actuators in it," explains Mark Henley, "because I didn't realize how smooth and reliable the vacuum-operated flaps were until after I flew with Buddy in his Stinson. The flaps are lowered by using manifold pressure from the engine, and a return spring helps them retract. If the engine quits, there is an extra reservoir tank that gives you one last chance to lower the flaps, and they're very effective."

Another important item of interest pertaining to the Stinson V-77, according to Mark Henley, is that "there are no airworthiness directives at all on this airplane. I was getting ready to research all the ADs when Buddy told me that my research could stop right then, that there weren't any. This airplane is built really strong, and the AT-19 handbook shows that it's aerobatic, with just a few restrictions."

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Rib-stitching the Stinson's gullwings was a time-consuming job.



Work on the wings is well underway.



Work on the fuselage is nearing the point of fabric installation.



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Beautiful Henley Red gullwings form a bold yet graceful silhouette against the blue Florida sky.

Lessons and Rewards

Together, the Henleys gained some valuable knowledge throughout the project. When asked what tips or suggestions they might share with others, Mark Henley laughs good-naturedly and comments, "Know when to stop! That's because before too long, it can cost you more than it might be worth."

Don Henley, who watched his son Mark become interested in airplanes as a child, shares that his own "personal satisfaction was to see my son fulfill a dream," adding, after a moment's thoughtful reflection, "I know how to build houses, and how to make a living, but I had no clue we would spend a third this much

time to build an airplane. So it's important to have patience and not be overwhelmed by a project. If you can learn to take it one step at a time, it's not so overwhelming."

Perhaps the most satisfying thing about the project, for both men, was seeing it accelerate down the runway and take off for its maiden flight.

Sweet Flying Machine

Of course, one of the ultimate rewards of this custom restoration is reserved for those aviators who have the good fortune to climb inside the spacious cabin and experience flying in this victorious V-77. Mark Henley wasn't able to attend Sun 'n Fun be-

cause of his work schedule, and it was Chris Emerson who received the honor of flying the newly restored Stinson from Batesville, Arkansas, to Lakeland, Florida, accompanied by Don Henley.

"Well, somebody had to fly it," says Emerson, laughing as a huge smile spreads across his face. He quickly adds, "Seriously, it's a real opportunity to get to fly it, and opportunities like that don't come along every day. We left Arkansas a little after 9:00 a.m. and arrived here at Lakeland about 7:30 p.m. When we left, it only had about 10 hours on it, and we put about seven hours on it flying down here. It's very fun to fly; it's kind of like a big truck because it has a heavy, solid feel to it. It's not bad at all on landing, but it does need brakes because the tail wheel doesn't steer. It's a real sweet flying airplane, real easy to handle, and very predictable."

Mark Henley agrees the Stinson is a good-handling airplane, and adds that "the flight controls have needle bearings, so it's an incredibly smooth and fluid control system—it takes a much lighter touch on the controls than what I thought it might require."

No doubt Emerson and the Henleys will continue to cherish the opportunity to fly this award-winning Stinson at every available opportunity, especially since the airplane is now available for purchase and may soon take off for new horizons under the loving care of another pilot.

