



Budget Buys

The flying station wagon

William T. Piper's Stinson 108-3 is still in factory-new condition

BY ALTON K. MARSH

You would never have called Eddie Stinson "Edward." He lived in a time when male aviation legends were named "Speed" or "Ace." (In fact, a guy nicknamed "Speed" was associated with our AOPA Centennial of Flight Sweepstakes Waco UPF-7.) Stinson learned to fly more than 90 years ago in Dayton at the Wright brothers' flight school on Huffman Prairie, now part of Wright-Patterson Air Force Base. An indefatigable pioneer, he persevered through setbacks until his Stinson Aircraft Company succeeded magnificently, delivering 13,000 aircraft in three decades. From the start his early models were known for their stability and innovations, like the 1925 six-seat Detroiter (he was based in Detroit) that featured a heated, soundproof cabin, an electric starter, and wheel brakes.

PHOTOGRAPHY BY MICHAEL P. COLLINS



The Stinson 108-3 is a class act that hauls a lot but cruises at about 100 knots.



The Stinson 108 series built on the positive features of earlier models, but Stinson never got to see it. The \$100,000-per-year businessman and stunt pilot (and that was in mid-1920s dollars) died at age 38 in a crash near Chicago while on a sales trip in 1932. The 108, including the Voyager and Flying Station Wagon models, became one of the most successful postwar aircraft offered: 5,260 were built and 2,700 still fly—2,276 of them in this country. They include the 108, 108-1, 108-2, and 108-3 models. They were intended as fair-weather airplanes and even today few are flown IFR; radios and instruments are arranged in the panel based on a “hither and yon” design. That aside, the 108-3 Flying Station Wagon is an affordable and elegant budget buy, and it does the job, lifting a lot and transporting it at 110 mph—but look at the price! It is truly affordable flying.

The 108 series

The 108 first flew in 1944 but didn't hit the market until 1946. Models progressed rapidly until 1948 when the predicted aviation boom turned to bust. The first 108 had a 150-horsepower Franklin engine and offered a choice of props, including those with variable or two-position pitch. In 1947 Stinson boosted the 108-1's maximum gross weight from 2,150 to 2,230 lb and added a baggage compartment. (Watch out for original 108s with illegal baggage compartments added.) Later in 1947 the 108-2 emerged with the 165-hp Franklin

engine, and the names “Voyager” for the basic airplane and “Flying Station Wagon” for the cargo-hauling model were born. The Flying Station Wagon had wooden side panels and leather seats just like the woody automobile. In 1948 the -3 emerged with 50-gallon tanks and a maximum gross weight increase to 2,400 lb. But its most distinctive feature was a huge vertical fin that some Stinson aficionados say was intended to provide additional stability for flight at higher gross weights. It had the unwanted effect, though, of making the aircraft a challenge to taxi in crosswinds.

That fin, like the horizontal stabilizers, flaps, ailerons, and engine cowling, is metal while the wings and fuselage are fabric-covered. Some owners have re-

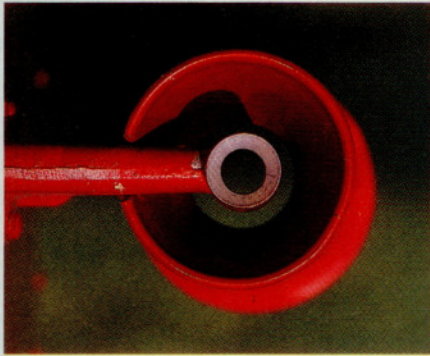
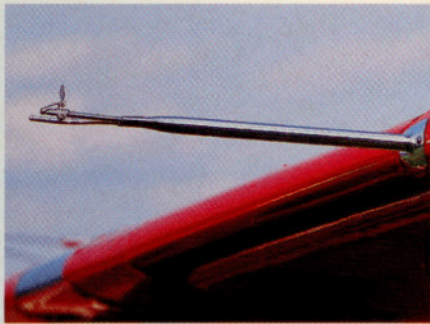
placed the fabric with metal to avoid fabric maintenance issues. Some owners feel that the metalization of the aircraft increases noise levels in the cabin. Stinson never built a metalized 108, but several companies over the years offered a metal covering as a modification. Many of the companies are out of business, and thus today's owners have difficulty finding supporting documentation showing that the metalization was approved.

There actually was a 108-4, according to Larry Westin who maintains a Web site on the Stinson 108 and Flying Station Wagon (www.stinsonflyer.com/westin_index_frame.htm). Only one was built, and when Piper bought the company the 108-4 went with the sale, but the aircraft was dismantled in September 1949.

A blast from the past

The Stinson 108-3 owner's operating manual is a hoot to read because of its references to an earlier time. "The Halli-crafter Skyfone two-way radio receiver is equipped with a standard broadcast band, permitting reception of commercial programs," it says. "Headphones are not required because of speaker installation. Transmitter check should be made only when the control tower frequency is clear."

The Stinson company's success soon attracted takeovers, first by Consolidated Vultee Aircraft and later, Piper. Intrigued by the company's design for a twin-tail, twin-engine aircraft (later redesigned to become the Piper Apache), Piper bought the company from Consolidated Vultee on November 29, 1948, but aviation was hitting a slump and production was immediately halted. Piper acquired an inventory of 375 finished but unsold aircraft that were re-named the Piper Stinson: The aircraft reviewed for this article, serial number 5181, was among them. William T. Piper personally flew the airplane to Piper's plant in Lock Haven, Pennsylvania, in January 1949 and used it for another flight to Harrisburg, Pennsylvania. Thus, Piper's choice of N4181C made it the pick of the litter—the best one on the



Owner Steve Harris (right) pays the same attention to detail when cleaning it as the original engineers did when building it. Chrome fittings and trim created one of the most elegant aircraft of its era.



The 108 series was created to cash in on the postwar aviation boom, which went bust.

new-plane lot—a sort of Cinderella chosen by the boss himself.

The way things were

An ad placed by Piper in an aviation magazine in 1949 promised that new Stinson models were in the works, and that the Stinson reputation would be upheld in the “years to come.” But there was only one year ahead and that was spent selling off the remaining Stinson 108s. Univair, of Aurora, Colorado, purchased the type certificate for the 108 series from Piper in 1953 and today sells parts for 90 percent of the aircraft structure. Because of that, parts availability for a Stinson 108-series aircraft is better than for a mid-1950s Cessna 172, Univair official Mike Sellers said. Another parts supplier is Sunrise Valley Aviation, of Cedarville, California.

There were other interesting tidbits of information in the 1949 ad. It boasts about wing slots on all 108 leading edges

that help direct airflow over the wing at airspeeds near a stall. It calls the aircraft “virtually stall-proof.” During a stall series flown for this article the aircraft proved that it stalls only reluctantly, and then without much drama. It prefers to mush straight ahead rather than drop a wing or pitch down. Flight controls have a solid feel like those of a large cargo liner.

The ad also claims that insurance companies give the Stinson a “top place in safety records.” Accident rates in the decades since the aircraft was manufactured do show a low fatality rate compared to other aircraft, but also shows a high occurrence of fender-bender accidents per 100,000 hours flown, mostly because of ground handling or takeoff and landing incidents. The AOPA Air Safety Foundation database shows 250 accidents from 1983 to the present time, including 47 landing and 60 takeoff accidents. The percentage of takeoff and landing accidents is about the same as

for the general aviation fleet as a whole, a foundation official said.

The Franklin engine

The engines for the 108s—the Franklin 150-hp and 165-hp models—are no longer made, although a Franklin 220-hp engine was still being made by PZL, of Poland, until recently. At this writing PZL has temporarily suspended production of that engine. For now, though, parts remain in plentiful supply even for the engines no longer made.

Until the supply of 220-hp Franklins runs out, U.S. distributors such as Franklin Aircraft Engines, of Fort Collins, Colorado, can upgrade Stinson 108s to the 220-hp engine. Univair owns a supplemental type certificate (STC) that allows mounting a 180-hp or 200-hp Lycoming O-360 or IO-360 engine on a Stinson 108-series aircraft.

Or you can always rebuild existing 150-hp and 165-hp engines—well, may-



Hits and Misses

Hits

- Hauls a lot.
- Has charisma.
- Is affordable.
- Has solid handling—steady in the air.
- Unlike earlier 108 models, the -3 has adjustable rudder trim.
- Offers quality construction.
- Airframe parts are readily available.
- STCs exist to use other engines.

Misses

- Fuel indicator must be set to show desired tank.
- Engine parts may become a problem in coming years.
- Narrow landing gear means less stability during landing.
- Large rudder makes taxi in crosswinds challenging.
- Wings complicate scanning for traffic.
- Not that fast.
- Backseat not that roomy.

be not always. Don Maxfield, owner of Lil Red Aero located in Kearney, Nebraska, specializes in rebuilding Franklin engines and warns that in four or five more years there may be a shortage of engine bearings.

During a test flight it was apparent that the aircraft could use a little more speed and therefore benefit from more power, although it is a steady performer on 165 hp. The takeoff was sprightly enough—in fact, on several takeoffs the lightly loaded aircraft de-

veloped a climb of 1,000 feet per minute. Cruise speeds are not much slower than a Cessna 172. Owner Steve Harris sees about 110 mph in cruise and has seen as high as 120, while other owners say they routinely get 118 mph. A lot depends on prop pitch.

The gotchas

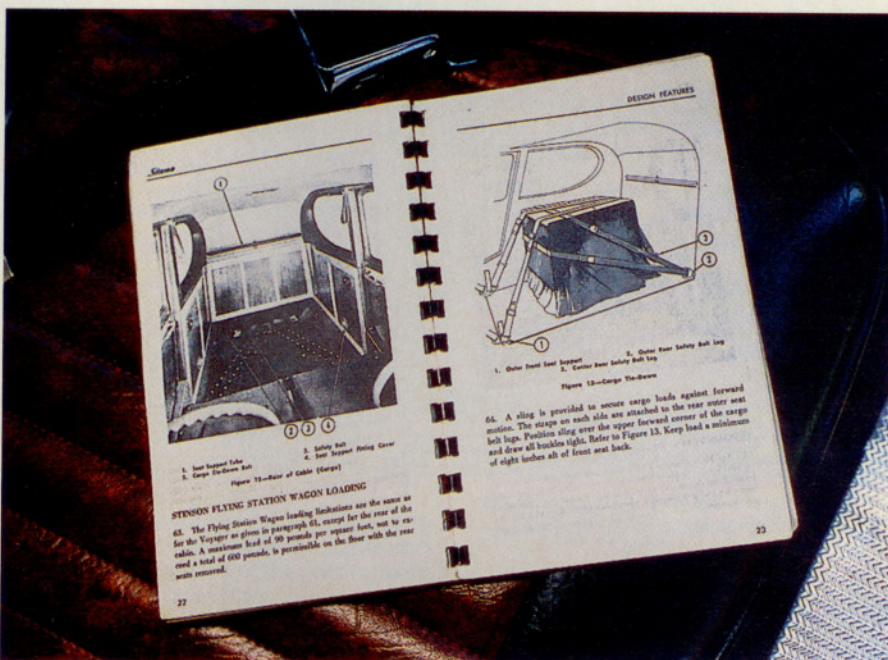
There's one fuel quantity gauge but two tanks, so a switch must be used to read the quantity in the desired tank. It is possible to have the switch set to a full

tank while burning from the other, a curious oversight in an aircraft that otherwise exhibits painstaking attention to detail. Also, the carb heat and mixture controls have the same tan-color knob, making it easy to lean the fuel mixture when selecting carb heat.

Westin lists airworthiness directives (ADs) on his Web site as well, but there are few serious ones, and most date to the late 1940s and early 1950s. When Harris bought the aircraft flown for this article, he found that the only major one involved magnetos. Many of the ADs concern the Franklin engine. There are two schools of thought about the Franklin brand: One insists that it leaks oil like a sieve, while the other says that owners who take care of oil seals and gaskets never see a drop. Early versions of the engines had crankcase cracks, but the cases were strengthened and newer engines escaped the problem.

There are dozens of STCs for a variety of modifications to the aircraft, everything from removing a door for aerial photography to better detection of carburetor ice: Univair owns most of them.

Any resemblance to wooden-paneled station wagons of the 1930s and 1940s is intentional. Designers wanted the public to be as comfortable in their aircraft as they were in their cars.



It seems you can do anything with the Stinson 108 except convert it to an aerial ice cream truck (the bell messes up the aerodynamics). When shopping, Dick Bourque of the International Stinson Club suggests you check for the following items: Cleveland brakes, an alternator conversion, a Scott tailwheel, and a thorough check of the airframe for corrosion—especially near the tail cluster of tubing.

Steve's excellent adventure

Harris recently brought his 108-3 from Evergreen Airport near Vancouver, Washington—where it was purchased—to Maryland, a trip of 2,338 nm. Total flight time was 24 hours. Before describing the flight, a word about our choice of airplanes for this article. Yes, Harris is on the AOPA staff and no, that wasn't the reason this airplane was chosen. Former Oregon owner Gene McBee restored the aircraft to pristine condition, turning it into a show plane. That's the reason. It was a project that grew and grew, finally covering five years.

At first, McBee was going to re-cover only the wings, but then he pulled the fabric off the fuselage as well. He kept pushing back the completion date of the restoration six months at a time. He worked 20 hours a week and finished in 1988; afterward he started winning

awards at fly-ins. But fly-ins weren't enough—he wanted to perform community service with the aircraft as well. A ham radio enthusiast, he installed a VHF radio that covered ham and air bands, and he performed search-and-rescue work. He also directed forest fire crews for Oregon agencies.

Flying was more fun if he could share the experience, and the Stinson became transportation to the deserts of southeast Oregon for McBee's non-pilot friends. He showed them rock formations of the Black Rock Desert, great fishing, and the beauty of the Owyhee Canyon. Once, on a tip, he found waves of mountain flowers at the 8,000-foot elevation of nearby mountains. A medical problem has now discouraged the 64-year-old McBee from flying, but he stays in touch with the aviation community.

On his Oregon-to-Maryland trip, Harris averaged 110 to 115 mph TAS and burned 10.5 to 11 gallons per hour. He flew with two 200-pound men and 100 pounds of baggage, and still had 207 pounds leftover for additional cargo.

But those are not the most important details about the journey home. It was a GA pilot's dream trip, showcasing the northern United States in a way a non-pilot can never imagine. Most of the West was overflown at 1,500 ft agl—sometimes 1,000 ft. (The Rocky Moun-

tain passes were crossed at 9,500 ft. msl) He recalls a course filled with well-equipped airports run by nice people willing to help with rides into town, hotel and restaurant recommendations, and first-class FBO service. The Stinson drew a crowd wherever he landed. As luck would have it Harris crossed the United States inside a high-pressure area; the weather was always improving ahead but closing in behind. The trip was what owners hope for when they first buy their airplane.

Are Stinson 108s available and affordable? No and yes. A recent issue of *Trade-A-Plane* lists only two 108-3 aircraft available, both priced at \$40,000, plus a straight 108 for \$27,500 and two 108-1 aircraft ranging from \$22,500 to \$27,000.

i Links to additional information about the Stinson Flying Station Wagon may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

The "Flying Station Wagon" lives up to its name, hauling like a truck and flying doggedly stable, taking the family on a safe and long-overdue vacation. No one will ever nickname

it "Speed," but Eddie would have been proud of his flagship. **AOPA**

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SPECSHEET

1948 Stinson 108-3 Flying Station Wagon

Current market value: \$25,000 to \$40,000 (Vref)

Price as tested: \$35,000

Specifications

PowerplantFranklin 6A4-165-B3 6-cyl,
165 hp @ 2,800 rpm
Recommended TBO1,200 hr
Propeller.....McCauley two-blade, fixed-pitch,
76-in dia
Length.....25 ft 2 in
Height7 ft 6 in
Wingspan33 ft 11 in
Wing area155 sq ft
Seats.....4
Cabin length5 ft 2 in
Cabin width3 ft 4 in
Cabin height3 ft 11 in
Standard empty weight1,320 lb
Empty weight, as tested1,376 lb
Max gross weight2,400 lb
Max useful load1,080 lb
Max useful load, as tested1,024 lb

Max payload w/full fuel804 lb
Max payload w/full fuel, as tested748 lb
Max takeoff weight2,400 lb
Fuel capacity, std.....50 gal (46 gal usable)
300 lb (276 lb usable)
Baggage capacity100 lb in baggage
compartment (600 lb in place of rear seats)

Performance

Takeoff distance over 50-ft obstacle...2,383 ft
Max demonstrated crosswind component
.....15 kt
Rate of climb, sea level675 fpm
Max level speed, sea level133 mph
Cruise speed/endurance w/45-min rsv,
std fuel (fuel consumption)
@ 75% power, best economy, 5,000 ft
.....118 mph/3.75 hr
(63 pph/10 gph)

Service ceiling.....15,000 ft
Landing distance over 50-ft obstacle...1,955 ft

Limiting and Recommended Airspeeds

V_X (best angle of climb)75 mph
V_Y (best rate of climb)80 mph
V_A (design maneuvering).....120 mph
V_{FE} (max flap extended)88 mph
V_{NO} (max structural cruising)126 mph
V_{NE} (never exceed)158 mph
(170 mph Utility category)
V_{S1} (stall, clean)65 mph
V_{SO} (stall, in landing configuration)62 mph

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.