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SKYHAWK II

CESSNA



EVERYMAN'S



AIRPLANE

Few subjects over the years have warranted 20 pages in this magazine, but then there has never been an airplane quite like the Cessna 172. Uniquely common, the 172 graces more ramps than any other airplane. Likewise, most logbooks have at least an entry or two with a "C172" in the "Aircraft Make and Model" column. Why such ubiquity? The Skyhawk is an ordinary yet extraordinary airplane. It's not particularly fast nor thrilling to fly. But who doesn't remember his first flight in one? With the 172, Cessna hit on just the right combination of economy and fun to keep us all coming back. The following stories highlight the model's changes over the years, discuss the reasons for the 172's success, note its weaknesses, show it at work, and detail ways to improve it. In the end, we think you'll understand why the 172 really is everyman's airplane. —*The Editors*

# 172: EVOLUTION OBSERVED

*Four decades of Skyhawks*

BY BUZ MARTEN

I've been flying 172s for half my lifetime, more frequently than most of the nearly 40 other types that lurk in my logs. It's never been a love affair—Skyhawks are neither cuddly nor sexy. No, it's more like the relationship that my dad had with his 1952 Plymouth Suburban: "I put 127,000 miles on her, and she never missed a beat," he'd say. (That's remarkable, considering how his teenaged son flogged it in weekend rat races.)

My first flight in a 172 came in 1964 as I worked on

PHOTOGRAPHY BY LONNA TUCKER



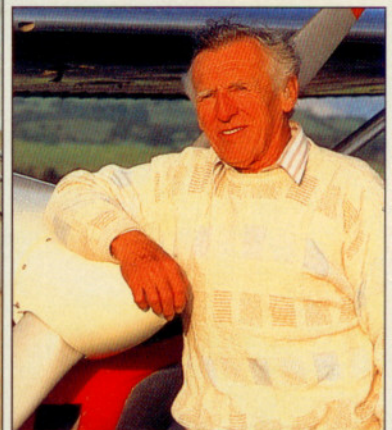
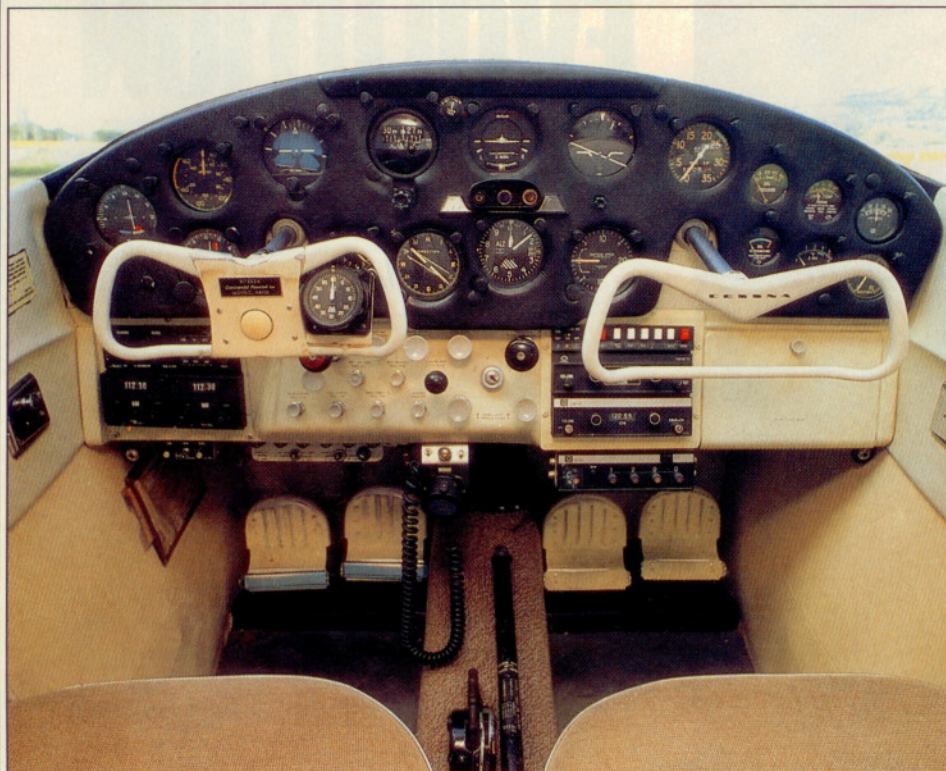
my commercial certificate. It was a pea-soup-colored 1956 model. I was quite impressed by the smooth and stable feel, like a mini-airliner compared to the Aeronca Champs I'd been flying. So too it must have seemed to

its first customers eight years earlier, many of them being graduates of kite-like two-seaters. That first impression, I believe, goes far to explain why, over a 30-year period, more than 30,000 buyers tumbled for Skyhawks. The rest

of its charm, its unique blend of capabilities, is discovered slowly as one lives with the airplane.

Reading a pilot report or specification sheet on a Skyhawk can be a soporific, but it's a real pleasure to discover that your 172 can cover an important amount of ground in a day, day in and day out, in stretch-out comfort, and at a cost that will keep the vein on the side of your accountant's neck from bulging.

My next 'Hawk encounter



Lloyd Hayes (above) picked up his new 172 at the factory in 1956. Visibility over the low panel is excellent.



pable yet undemanding to fly, the 172 (and step-up 182) were central to Cessna's market penetration.

1966 found me 'Hawking again, this time during a five-day accelerated instrument course at Burnside-Ott School in Opa Locka, Florida. The school flew late-model Skyhawks which, by then, had "Omni-Vision" to the rear and truncated vision forward due to the huge panel adopted to accommodate more and more avionics and cockpit toys. Burnside's panels had much open space, having only the basics plus one nav/com, an automatic direction finder, and a marker beacon receiver. Burnside's philosophy was that, if you could fly your check ride with that sparse package, you'd feel more confident as you began your IFR flying with proper equipment. Worked for me.

The 172 is a great instrument platform. Even without an autopilot, it can accommodate a lot of cockpit fumbling while remaining upright and on



*An A&P, Peter Scott (above) does all his own maintenance on his 1963 D Model 172, complete with "Omni-Vision."*

came a year later, in 1965, when I flew two New England businessmen in another 1956 straight-tail on a trip that compressed two workdays into one. They were so impressed that one partner went right to work on his private, bought an airplane, and integrated it into their growing business. It was a page from Cessna's game plan.

After the expected postwar private flying boom fizzled in the 1940s, the remaining light aircraft manufacturers aimed at the business community. Ca-

course. My well-rigged Skyhawk will, if carefully trimmed, hold heading and altitude for several minutes at a time, hands off even with a few little bumps.

Recently, *AOPA Pilot* began a quest for four 172s, one from each decade during which they were produced. Our search culminated in an informal, invitational gathering of 'Hawks at the beautiful Petaluma Municipal Airport, located about 150 miles north of San Francisco. There, over two days, Senior Editor Marc Cook and I, in the company of photographer Lonna Tucker, flew and evaluated the nice examples that you see on these pages.

For a benchmark, we used a known quantity—known to me, anyway—my own N5158Q, freshly groomed for the occasion. It's a 19-year-old M model, which would also serve as our 1970s example. I purchased 58Q in 1983 with just five hours on a fresh engine and 1,200 hours on the airframe. It had spent a lot of time sitting in the Central Valley sun, and the original finish looked like desert camouflage. New polyurethane paint was the first improvement. Then, because accessories had not been included in my field overhaul, over the next couple of years I replaced mags, harness, alternator, vacuum pump, carburetor, and starter. Gap seals on the flaps and ailerons were added in 1986. No speed increase was noticed, but the roll rate improved substantially. Nice mod.

Other logbook highlights include a new windshield in 1988 and new Cleveland wheels and brakes at the latest annual.

For instrument work, I'm equipped only for the "California Lite" variety. That is, pop-ups and letdowns in oth-



erwise nice weather. I have no glideslope, distance measuring equipment, or autopilot, items I consider to be essential these days for serious IFR if one flies only enough to stay current and wishes to stay out of the clutches of ungentle federal computers.

My familiarity with the type made it easy to devise a simple flight profile to use in making direct comparisons across the decades. It consisted of a maximum-performance takeoff (measured by counting runway lights) followed by a best-angle ( $V_X$ ) climb from the 90-foot field elevation to 1,000 feet msl, then a best-rate ( $V_Y$ ) climb to 2,000 feet, at which point I leveled off (due to a head cold), accelerated to 102 knots (120 mph), and reduced power by 100 rpm (to approximate 75-percent power). After stabilizing at that power setting and altitude for a couple of minutes, I recorded the true airspeed, tried some steep turns and stalls, then headed back for a short-field approach and landing. Fuel and payload were near identical for each flight: two FAA-plus bodies totaling 360 pounds and 25 gallons of gas at 150 pounds. Flight conditions for the day were near standard.

First up was Lloyd Hayes' (AOPA 076262) near-pristine 1956 172 N7203A, perhaps the most interesting, as it is an unrestored, original, one-owner

airplane. Hayes, a very pleasant gentleman of 75 years, learned to fly in the early 1950s, training in a two-control Ercoupe and later a Luscombe. After obtaining his private certificate, he bought and flew another Ercoupe for a couple of years. That was to be his only other airplane. When the 172 was introduced in 1955, Lloyd was impressed by its airspeed, capacity, and especially the tricycle landing gear. Within months, he'd made a deal on one and headed back to Wichita to take delivery.



Ron Sieg (above) opted for a full IFR panel in his 1982 Skyhawk. His 172P, also shown on p. 58, carries the last model designation.

After a short time, Hayes earned his instrument rating in the 172 and began to incorporate the airplane into his business. Some of his passengers were unusually cool. Hayes ran a funeral parlor, and he used the airplane—always polished and immaculate—for “removals” and ash burials at sea. Having seen a well-intentioned but highly embarrassing amateur attempt at an aerial burial where a substantial amount of the “mortal remains” wound up in a lineman's shop vacuum, I asked Hayes for his secret.

“I saw that happen to others, so I made up a venturi that cleanly emptied the urn at the desired moment.”

As we taxied out, Hayes explained that the airframe now had 7,000 hours on it. The first engine, a 145-horsepower Continental O-300, had run to TBO twice. Then it was replaced with a new O-300 (“Just wanted a new one.”), which is now approaching the end of its third run. He has never experienced a power interruption.

I commented on the nice interior.

“It's original except that I installed new seat covers and carpets some years back.”

Our takeoff weight was about 1,900 pounds, 300 short of gross. (Over the years, the Skyhawk's gross weight has increased by steps from 2,200 to 2,400 pounds, but average useful load [IFR





Buz Marten (below) notes that his M Model 172 is characterized by the "Camber-Lift Cuff" wing.



equipped] has stayed about the same—about 870 pounds.) Runup was normal; there's been no change over the years in that drill. Lining up on the runway and applying full throttle, the engine seemed smooth, but a little bit low on rpm, beginning to show, perhaps, its 1,700 hours. Nevertheless, we were off in 700 feet and climbing at 500 feet per minute, which held steady at both  $V_X$  and  $V_Y$  until we leveled off at 2,000 feet. The visibility was superb over the smaller panel. We cruised at 115 miles per hour indicated (100 knots), for a true of 103 knots. Interpolating from the book, that was about the expected speed.

A Horton STOL kit had been installed some 10 years back, and I was anxious to try some stalls. Clean, the stall broke straight ahead at about 45 mph IAS. With full 40-degree flaps, the aircraft would fly with the airspeed barely wiggling—the stall, again straight, came in the unknown zone. It was apparent that I could have shortened the takeoff roll some by rotating more aggressively.

The landing into about a 10-knot wind using my usual short-field technique (over the fence with the stall-warning horn humming and dumping the flaps over the numbers) produced a rollout of 200 feet, without squealing the tires.

Next flown was a 1963 D model, N2125Y. The D was the first with "Omni-Vision," and this one was ap-

pointed in a manner suiting its era, with a fake wood panel just like my 1963 Chevy pickup. When I opened up its O-300, it headed down the runway with decidedly more push. I suspected a much newer engine.

"Seventeen-hundred hours," replied Peter Scott, sitting next to me. Scott flies and maintains 25Y when he's not toiling as an A&P/IA at Marin Air Services in Novato, California.

We were off in 600 feet, with a climb rate from 600 to 700 fpm to 2,000 feet, where we indicated 107 knots (123 mph). True airspeed was 110 knots. Another short landing was easy with the good old quick-dump manual

flaps, controlled by a big "Johnson Bar" located between the seats, which was standard through 1966.

It was now time to fly benchmark 58Q. As on previous flights, I used 10 degrees of flap for takeoff. The book calls for zero flap, and that's best at max gross (at which all performance figures are quoted. Most 172 drivers have discovered, however, that a little flap is quite useful at lighter weights. The roll is shortened noticeably with no apparent degradation of climb).

We were off this time in a little over 500 feet, indicating 700 fpm at  $V_X$  (60 knots), which went to 800 fpm after accelerating to  $V_Y$  (74 knots).

The M model was introduced in 1973 and is characterized by a new wing with a leading-edge redesign marketed as the "Camber-Lift Cuff." It resembles somewhat the re-formed leading edge that is a part of various aftermarket STOL kits. It delays the stall and is said to improve climb performance a bit. Many Skyhawk buffs consider the M to be the most desirable model, as it combines the later aerodynamics with the ultrareliable, 80-octane Lycoming O-320-E2D.

Leveling at 2,000 feet, I set power at 2,500 rpm (approximately 72-percent power). Fifty-eight Q has always been a tad faster than the book—even with the wheelpants residing in my hangar for safekeeping. This day, we read 109 knots, for a true of 112 (129 mph). We usually true between 132 and 134 mph



at 7,000 to 10,000 feet.

Fifty-eight Q, like all Skyhawks since 1967, has the smooth but slow-acting electric flaps. While they add to the mini-airliner image, they require bolder technique to make the shortest landing. As I come over the fence at 52 knots with full 40-degree flaps, I flip the selector to the Up position, bringing the nose up with the flaps to arrest any extra sink. With proper execution, ground contact is made with the nose high, the flaps up, and the stall horn at full song. Today, that yielded a ground roll of about 300 feet.

This wouldn't be journalism without bad news, so here goes: While many will argue that the 172 represents a perfect design, no realist will admit to its being a perfect airplane. The fault lies with its maker. Critical hindsight can be most unfair, but a little is due here.

First, too many corners were cut on quality in the manufacturing process. Unlike its competitors, Cessna used no corrosion-proofing on inner surfaces (excepting seaplanes). To compound that, its paint work was often substandard. Cessna owners in wet climates battle oxidation perpetually. Worst off are the 8,000 examples built from 1977 through 1982, which have polyurethane paint applied over an improperly prepared surface. These are subject to filiform corrosion—a most insidious type that spreads unseen through structures and that has grounded many aircraft permanently.

Second, Cessna fixed things that weren't broken, like the flaps (first with electrification, then with a reduction in travel). Then in 1977, it replaced the Lycoming O-320-E2D, arguably the most dependable light aircraft engine ever, with the infamous O-320-H2AD motor and then didn't

*The 172's charm and unique blend of capabilities are discovered as one lives with the airplane.*

admit the mistake until three years had passed, and 5,300 models had been sold. The list becomes longer if one pries, but I don't wish to obscure the fact that, all things considered, the Skyhawk is a great machine.

The 172 is by most measures a STOL performer, but by now, you've noticed that it can be landed on any strip from which a takeoff can be made, but not vice versa. That leads us to examine our final contender that, by virtue of a simple STC'd modification, achieves a balance.

Ron Sieg owns a beautiful 1982 172P—the last Skyhawk model. In 10 years, it has accumulated 2,600 hours. On walkaround and upon entry, I noticed improvements over my airplane, like better latches on all doors, improved soundproofing, and a pre-selector flap switch.

Sieg operates a successful photo lab in San Francisco. He and his wife, Theo, both private pilots, live with their kids in the quaint seacoast town of Mendocino, 150 miles to the north. They use the Skyhawk as I do mine, to commute and for family trips.

Taxiing for departure, the airplane had a posh sound and feel compared to all the others. After runup and a call to traffic, I lined up and applied power for my last high-performance takeoff. With brake release, we shot forward with authority, breaking ground in 400 feet and heading up at a very high deck angle to maintain 60 knots. The

vertical speed indicator showed 950 fpm in this regime, which improved to just over 1,000 fpm after reaching  $V_Y$ .

At TBO, Sieg's airplane had been converted to a Penn Yan Superhawk by removal of its 160-hp O-320-D2J engine and substituting a new 180-hp Lycoming O-360 with matching Sensenich propeller. A gross-weight increase to 2,550 pounds was part of the deal, providing a new useful load approaching 1,100 pounds.

The extra ponies work very hard indeed. At 2,000 feet and cruise power, we saw 125 knots indicated, for a true of 129 (149 mph), exactly 15 percent faster than my airplane.

With only 30 degrees of flap available, the landing consumed 500 feet, but that's a perfect balance for a STOLplane. You can't (without damaging it) land it into a situation requiring a flatbed truck for departure.

For a true comparison, I flew one more late-model Skyhawk (not pictured), 1977 vintage, which had a stock 160-hp engine. It weighed, empty, a bit more than 58Q. Takeoff and climb were identical, and it cruised at 115 knots, 3 knots faster than my airplane.

We expected no big surprises to show up in this review of four fine examples of working airplanes; none were found.

While no Skyhawks have been made since 1986, it is perhaps too good a design to be relegated to history. Steady demand and two recent events threaten to resurrect the 172. Cessna has been sold to Textron (Lycoming's parent), and it is evaluating a return to production. If that fails to happen, Hal Shevers (of Sporty's Pilot Shop fame) has plans to build a clone to be called the Liberty.

Legends die hard. □