

PIPER SARATOGA II HP

A little primping gives the PA-32 a whole new look.

BY THOMAS B. HAINES

IN debuting the new Saratoga II HP, Piper Aircraft Corporation took a cue from the automobile industry: Give the customer something new, a reason to buy. Auto manufacturers have perfected the annual subtle grille and trim change and the addition of a new bell or fab-

PHOTOGRAPHY BY MIKE FIZER



ric to attract buyers. Remember Chrysler's "rich Corinthian leather"?

Piper even went a step further. The 'Toga II not only looks different and smells new, it really is faster than the PA-32s of yesteryear. The 6- or 7-knot increase in cruise won't change your life much, unless maybe you're a Beech A36 Bonanza salesman, in which case, you may find formerly loyal customers taking a closer look at the Piper product.

Indeed, the A36 has owned the new six-place-single market for most of a decade now. Cessna stopped building 210s and 206s in the early to mid-1980s, at about the same time Piper's management problems and the withering marketplace quieted the Saratoga production line. Piper revived the PA-32 briefly in 1988, but only a few were built until the July 1991 bankruptcy filing, which shut down almost all of Piper for a few months. Since the filing, Piper has continued to build airplanes and parts, mostly filling backorders. The introduction of the new Saratoga is the company's first big marketing and production push under the leadership of President and Chief Operating Officer Charles M. Suma and owner Stone Douglass.

Piper chose the Saratoga for the facelift because market research showed a need for the comfortable load-hauler. The goal of the project was to improve the performance and comfort of the Saratoga and to give the customer a reason to buy new, according to David W. Schwartz, engineering test pilot—a goal met. The new II HP keeps all of the older machines' good qualities, like a stable ride and oodles of payload and fuel capacity, and adds a new panel and interior à la Mirage, a rakish new cowl, and lots of refinements throughout. Indeed, the II HP is what the PA-32 always wanted to be since it debuted in the mid-1960s as the fixed-gear, 260-horsepower Cherokee Six.

The design's evolution over the decades included an increase in power, to 300 hp, and retractable gear. Aside from the change to the double-taper wing from the straight "Hershey bar" wing in the 1970s, little about the exterior has changed since day one. Inside, too, the PA-32 received only minor refinements over the years.

For the latest iteration, Piper engineers looked first at the cowl as a place to perhaps reduce drag and increase engine cooling. Help in testing new cowl designs came from the Raspets

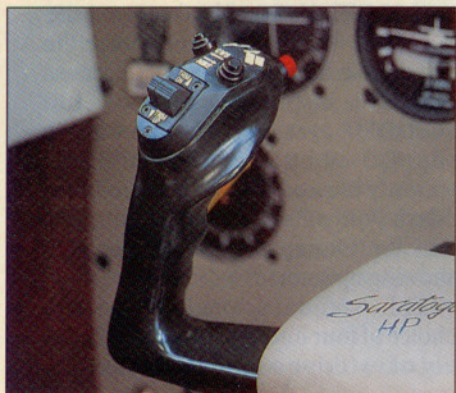






The II HP's aerodynamic refinements bring its 166-knot cruise speed to within 10 knots of the speedy Bonanza.

New fairings behind the wheel wells (below) and elsewhere help Piper eke out an extra few knots of cruise speed.



the fairing is supposed to smooth the flow of air behind an opening in the airframe. Aerodynamic guru LeRoy LoPresti, who formerly was associated with Piper, recently patented the design for a similar device. He was not involved in the Saratoga project, according to Schwartz.

The practiced Saratoga watcher will also notice that the wing attach bolt, formerly protruding on the bottom of the wing, has been covered. Also, Piper slightly extended the bottom skin on the trailing edge of the wing to close the gap ahead of the flaps.

Gone are the flap attach fairings and a few other fairings, which Schwartz says consumed many man-hours to build but resulted in a negligible increase in speed.

What's it take to get these seemingly minor aerodynamic changes blessed by the Federal Aviation Administration regulators? About 70 spins and a stack of paperwork 2.5 inches thick, according to Schwartz. Thus rests one of the reasons aircraft manufacturers have not been able to annually make improvements to designs like the auto industry does. Not only do the auto manufacturers not have to meet such stringent regulatory criteria, they can also spread the engineering costs of that new grille or headlight treatment over hundreds of thousands, if not millions, of copies. An aircraft manufacturer these days would be lucky to spread the costs over 100 units.

Planning to take full advantage of its engineering dollars, Piper will soon move similar changes up the model line to the Seneca and eventually down the line to the PA-28 aircraft.

The enhancements include not only those airframe items developed for the Saratoga, but also the interior refinements. For the II HP interior, Piper management reversed the usual process and gave an empty Saratoga fuselage to the upholstery shop instead of the engineering department. Management's only instructions were to make an interior that lived up to the level of comfort and taste of the trend-setting Piper Malibu.

When the upholsterers finished, the engineers took the interior apart and made drawings from that prototype. The reverse engineering process drastically reduced the time to complete the project and resulted in an interior that's cheaper and easier to build because it was built by the same folks



Round cooling inlets and a recessed NACA scoop decrease drag on the II HP compared to the 1988 PA-32 (below).





who actually construct the interiors day in and day out rather than the engineers. The fit and finish of the airplane we flew, N9203R, bound for Muncie Aviation in Indiana, a Piper distributor, is indeed impressive. The leather upholstery, comfortable seats, and attention to detail finally approaches that found in luxury automobiles, a standard airplane interiors have usually fallen well short of.

The cabin details include convenient overhead light switches located on the armrest at each of the four aft seats, a folding writing table, and new folding window shades instead of curtains. To accommodate the shades, which were adopted from the Malibu, the window line of the II HP was changed. The middle window now is more square than in earlier renditions.

When we last wrote about the Saratoga ("Toga Party," November 1988 *Pilot*), we harkened for a little plastic surgery on the old panel, commenting that it reminded us of the 1960s. Piper noticed, too. In updating the panel, Schwartz tossed out the plastic and went with a flat metal panel, again à la Malibu, but he didn't just replace the panel, he completely redesigned the layout.

Two rows of big, lighted, and easy-to-read rocker switches reside front

Piper went the leather and luxury route on the II HP interior, adopting the window blinds and folding table of the Malibu.



and center over the throttle quadrant. They're even in a sensible order, with master, alternator, and fuel pump switches all in a row, just like you'd use them in the start-up sequence. The large manifold pressure/fuel flow gauge and tachometer are stacked high on the panel instead of nearly hidden low in front of the pilot's knee. Likewise, the separate small fuel gauges have been combined in a single larger display and moved into the scan area. The oil temperature and pressure gauges have been combined with the CHT into one display. A large exhaust gas temperature gauge makes leaning easy. The three or four simple annunciators on the earlier Saratogas have been replaced with a new panel capa-

ble of displaying nine messages.

An electric standby vacuum pump, formerly an option, is now standard, as is the 90-amp alternator. A 60-amp alternator was the previous standard. The electrical system can be monitored on a new digital ammeter.

The first 30 Saratogas, all to be built this year, come with a standard instrument and avionics package. The only option is air conditioning. Again, engineering did its homework and designed a standard package that fits the Saratoga's cross-country mission profile and takes advantage

of the latest systems. All of the avionics are by Bendix/King; included are an audio panel, two nav/coms, KFC 150 flight control system, DME, transponder, ADF, slaved compass system, horizontal situation indicator, and KLN 90 GPS. Noticeably absent are the KNS 80 or 81, which for years were the standard in area navigation equipment for light airplanes. Instead, the VOR/DME area nav system has been supplanted by GPS, which the FAA recently blessed for IFR use. No filing "slash Romeo" yet for II HP pilots, but look for IFR-capable receivers to start showing up soon.

This standard airplane, with a choice of four interior colors and a variety of exterior color combinations,

retails for \$309,800. It is considered a 1994 model. Air conditioning adds \$6,775 and 62 pounds.

The first additions I'd make to my new Saratoga panel would be a Stormscope, six-place intercom, and yaw damper, still leaving plenty of space for future enhancements.

Back in 1988, an airplane similarly equipped to N9203R, but with the KNS 80 instead of the GPS and with no second DME receiver, retailed for \$205,293. Besides inflation, the one-third increase in price can be at least partially explained by considering the management practices of Piper five years ago. Then-owner Stuart Millar was offering the entire product line at fire-sale prices in order to attract business and spur interest. Such low-ball pricing practices contributed to Piper's financial problems and, ultimately, bankruptcy.

An average equipped 1993 A36 Bonanza retails for about \$425,500, \$441,500 with air conditioning. The II HP's aerodynamic refinements bring

its 166-knot cruise speed to within 10 knots of the speedy Bonanza. Payload with full fuel is about equal between the competitors, but the Saratoga can lug around 102 gallons of usable avgas, compared to the Bonanza's 74 gallons. The extra fuel means the Saratoga may arrive first on long trips if the Bonanza has to stop enroute. Also, the ability to off-load more fuel gives the Saratoga pilot additional flexibility in load-carrying, and the PA-32 has a larger center-of-gravity envelope, along with a nose baggage compartment. The Saratoga's 49-inch-wide cabin is 7 inches vaster than the Beech's. In addition, the Saratoga's Lycoming engine comes with a recommended time between overhauls of 2,000 hours, compared to the TBO of 1,700 hours for the Bonanza's Continental.

From a handling perspective, the two are quite different. The Bonanza is a delight to fly. Light and well-harmonized control forces make it the benchmark that other aircraft have always strived for. But light stick forces may

not be so desirable in instrument conditions. Here, the Saratoga wins. The Piper's control forces are heavier around all axes, especially in roll and yaw. Pilots may not yearn to rack the II HP around the skies on a pretty day, but when it comes to an approach to minimums, few airplanes can beat the rock-steady Saratoga.

N9203R is the second production II HP. As of mid-June, when we visited Piper, 25 of the 30 airplanes in this production block had already been spoken for by distributors, though the company hadn't yet prepared brochures or done any advertising to encourage prospective retail buyers. Nonetheless, two of the airplanes had been retailed.

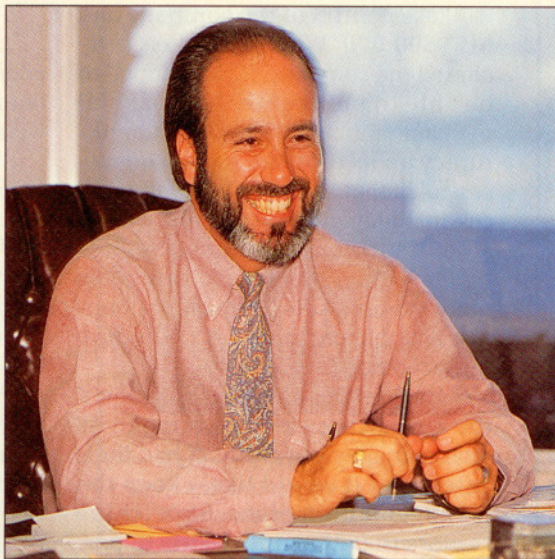
This latest genesis of the PA-32 shows how a manufacturer willing to invest a little in its current designs can offer incremental improvements without busting the bank, perhaps spurring pilots to buy new rather than used. Most important, the debut of the II HP shows pilots that Piper is indeed alive and producing airplanes. □

THE RETURN OF PIPER AIRCRAFT

A company poised to begin anew.

Those who think nothing's happening at Piper Aircraft Corporation ought to visit the Vero Beach, Florida, headquarters. The company is working its way through bankruptcy proceedings. It delivered 50 new aircraft in the past six months, making it the largest producer of general aviation airplanes. The list of backordered parts has been drastically decreased. Piper now employs 352 workers and had revenues of \$39 million in 1992 and, in each of the past few months, has been earning a profit of \$500,000 to \$600,000. The company is building about eight airplanes a month: two Malibu Mirages, five Saratoga II HPs, and one Seneca. It was scheduled to finish building the last of a block of 17 Super Cubs in July. The Dakota, Archer, and Warrior line should be up and running by early 1994. Still, Piper President Charles M. Suma is quick to point out that there are many steps yet to be taken along the convoluted path from bankruptcy.

Piper filed for protection under



Charles M. Suma

Chapter 11 of the federal bankruptcy laws on July 1, 1991, when it had only \$1,000 in cash and 45 employees. Since then, former owner Stuart Millar has sold the company to Stone Douglas for \$500,000, and Suma has emerged as president and chief operating officer. Most of Suma's first year in the position has been consumed

with the bankruptcy proceedings, and he is quick to credit the employees with reviving the company. "It is happenstance that Stone and I are at the helm of the company during these times," he says, noting that at a recent court proceeding, there were 11 "PAPAs" (Potential Acquirers of Piper's Assets) in the courtroom. "That's a testimony to what the employees have done to turn the company around. I've never seen the employees pull together like they have in the last 18 months."

And Suma, 37, has seen plenty during his 17 years with the company. He's seen the glory days of the 1970s, the dim and depressing days under the ownership of Lear Siegler in the 1980s, the initial groundswell of support for Millar that eventually turned into mistrust, and finally the bankruptcy filing.

He is confident that, one way or another, the company will be out of bankruptcy by the end of the year. Before that happens, qualified potential buyers must participate in an auc-

tion for the purchase of the company's assets. If the creditors approve the final bid, the purchase goes to a confirmation hearing and then to a closing. The process could be completed by early October.

On June 22, Piper filed a plan of reorganization with the courts. Earlier in the month, Piper management and David Epstein, a court-appointed attorney representing future Piper claimants, selected a little-known European investment group, 2I, Inc., as its choice for a buyer. Suma explains that in its letter of intent, 2I offered the most attractive financial plan for the company. The court, meanwhile, in determining its pick, looked at more than just financial aspects. After its consideration, the court chose Swiss aircraft manufacturer Pilatus, calling it the "better strategic industrial buyer." The unsecured creditors also favored Pilatus.

Nonetheless, that does not mean Pilatus will end up owning the company. Instead, it means that the letter of intent from Pilatus will be the yardstick by which all other bids will be considered, Suma says.

Regardless of who ends up with the company, Douglass will get nothing out of the deal, according to Suma. He will lose control of the company and his \$500,000. When Douglass purchased the company, he had hoped to be able to put together a financial package to bring Piper out of bankruptcy on its own, but he was unsuccessful in that attempt. Only if the successful bidder offers enough to pay off all of the creditors would Douglass have a chance of recouping his money. Suma says that will not happen and that creditors will not receive the face value they are owed.

Suma, too, could be out of a job if the new owner elects to bring in its own management team. 2I had indicated that it would likely keep the management in place. Squelching rumors that 2I simply wants to part out the company and turn a quick profit, Suma says it just can't work that way. "The real value of this company is the name and the relationship with the customers, vendors, and distributors. The assets in pieces will not bring in what the company will go for. So it's not worth buying just to sell off the assets."

Perhaps the biggest question yet to be answered deals with a trust fund

that might be set up to handle future liability awards against existing Piper aircraft. Some of the bidders, such as Pilatus, have made the trust fund a requirement in their letters of intent. 2I made no such demand.

One proposal has it that whatever price the winning bidder pays for the company would be split between the creditors and the trust fund. Epstein is conducting a study to try to determine just how many Piper airplanes might crash in the future, the damage that might be done by the crashes, and how much the awards might be. The creditors understandably would rather not see the trust fund established because that would decrease the funds available to them. If the trust fund is established, it may relieve the Piper Aircraft that emerges from bankruptcy of liability for existing aircraft. If so, it would be responsible only for those aircraft it builds in the future. In

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addition, all outstanding lawsuits filed before or since the bankruptcy filing would be settled out of the trust.

Suma believes the company can survive out of bankruptcy even without the trust fund. With the monthly profit it currently earns and relieved of the \$2.25 million it spends each year in bankruptcy costs, Piper could afford to purchase liability insurance, and that's at the current level of production. Suma expects Piper to increase its production rate soon. "I don't see it as a stretch to see this company building 200 to 250 aircraft per year within a couple of years," he declares. Piper can produce some models of aircraft, such as the Seneca, which simply aren't available from any other sources. That, coupled with pent-up demand for new airplanes and the possibility of some fleet sales in the future, will allow Piper to sustain those production rates, he says.

Though the company has been through rough times and may see more of the same at least in the short term, when visiting the factory, it's hard not

to come away enthused about the future. Suma and the rest of the management—those who have been there only a few months and others with decades of experience—all seem excited and ready to take on the next challenge. They've trimmed the company down to a manageable size, reduced costs, and slashed overhead. They seem poised to emerge as a new company, ready to build airplanes again.

—Thomas B. Haines

Piper PA-32R-301 Saratoga II HP
Base price: \$309,800

Specifications

Powerplant	Lycoming IO-540-K1G5, 300 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propeller	Hartzell constant-speed, three-blade, 78-in diameter
Length	27 ft 8 in
Height	8 ft 2 in
Wingspan	36 ft 2 in
Wing area	178 sq ft
Wing loading	20.2 lb/sq ft
Power loading	12 lb/hp
Seats	6
Cabin length	10 ft 5 in
Cabin width	4 ft 1 in
Cabin height	4 ft 1 in
Empty weight	2,500 lb
Gross weight	3,600 lb
Useful load	1,253 lb
Payload w/full fuel	641 lb
Fuel capacity	107 gal (102 gal usable) 642 lb (612 lb usable)
Oil capacity	12 qt
Baggage capacity	200 lb, 24.3 cu ft

Performance

Takeoff distance, ground roll	1,196 ft
Takeoff distance over 50-ft obstacle	1,768 ft
Max demonstrated crosswind component	17 kt
Rate of climb, sea level	1,110 fpm
Cruise speed/endurance w/45-min rsv, std fuel, mid-weight (fuel consumption)	
@ 78% power, best power	166 kt/5.1 hr
5,000 ft	(17.5 gph/102 pph)
@ 75% power, best power	164 kt/5.3 hr
5,000 ft	(16.8 gph/100.8 pph)
Landing distance over 50-ft obstacle	1,460 ft
Landing distance, ground roll	640 ft

Limiting and Recommended Airspeeds

V _X (best angle of climb)	80 KIAS
V _Y (best rate of climb)	91 KIAS
V _A (design maneuvering)	134 KIAS
V _{FE} (max flap extended)	112 KIAS
V _{LE} (max gear extended)	132 KIAS
V _{NO} (max structural cruising)	160 KIAS
V _{NE} (never exceed)	193 KIAS
V _{S1} (stall clean)	65 KIAS
V _{SO} (stall in landing configuration)	60 KIAS

For more information, contact Piper Aircraft Corporation, 2926 Piper Drive, Vero Beach, Florida 32960; telephone 407/567-4361; fax 407/770-2237.

All specifications are based on manufacturer's calculations. Additional cruise information and service ceiling information still being calculated at press time. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.