

Hawk XP.

Doing the Skyhawk One Better

Text and photos by RAY MARTIN / AOPA 634209

Pilots who get a queasy feeling just thinking about what gotchas loom high at the end of hot summer runways might find a welcome measure of relief in Cessna's Hawk XP. Since its introduction just two years ago, the XP has offered 35% more power than its look-alike, 160-hp Skyhawk brother. That extra power, mated with a constant-speed prop, offers Hawk pilots a degree of increased performance without having to move up to the next model in Cessna's single-engine line, the 230-hp Skylane.

Like its winged namesake whose favorite habitat is pasture interspersed with woodland, the four-place Hawk XP seems to have found a natural roost in short fields ringed with 50-foot potential airplane snatchers. Many XPs are finding homes in western states where the airplane's power advantage over the Skyhawk can be put to judicious use at high density altitude airports. And several other XPs are making waves on Edo and PeeKay floats.

The XP is powered by a six-cylinder, fuel-injected Continental engine which has been derated from its original 210-hp to 195 at 2,600 rpm. According to the operating handbook, the XP can handle a short-field takeoff over a 50-foot obstacle in a ground roll of 1,510 feet at 2,550 pounds gross weight on a calm 86°F day. In a 2,300-pound gross weight Skyhawk, the same conditions would result in a 1,590-foot roll.

On Cessna's Wichita ramp, N736ZZ, the first of two Hawk XPs flown by The PILOT during a recent flight check, looked for all the world like the basic Skyhawk which has been in production for 24 years. The XP does, however, have a slightly beefier engine cowl and a different paint scheme. A dead give-away for name-that-plane buffs is the distinctly meaner looking hawk that is stenciled on the XP's vertical fin.

Preflighting the Hawk is simple. A hands-on check of the aircraft surfaces, control systems and fluids is easily performed. The only effort required comes when climbing onto the wing struts to

check the fuel cells. Optional steps and handles seem so necessary to us that we think they should be standard equipment.

The XP burns 100LL fuel, which, with the long-range option installed, is contained in integral fuel cells ("wet wings") instead of fuel tanks. Maximum capacity is 33 usable gallons in each wing. Cessna installs the integral cells in several of its 1979 models, opting for them over separate tanks to achieve more fuel space.

Subtract full fuel and oil from the basic Hawk XP's useful load of 1,017 pounds and there are still 606 pounds left for payload. This figure compares with the 595-pound payload of the basic Skyhawk, when its two 25-gallon fuel tanks are filled. By the time radios and extra equipment are added to the basic Hawk XP, that three-adults-plus-baggage payload with full fuel begins dropping off.

The oil filler cap, oil dipstick and fuel strainer drain are located on the top of the engine and are accessible by a small flip-up door in the cowl. Pilots who want a closer look-see at the engine compartment will have to remove the top cowl, which is fastened mostly by quick-release screws.

Brakes on the XP are single-disc and are in plain view for preflighting at the inside of the wheel fairings which have been cut away around them. The master cylinder has been redesigned this year with fewer parts. Tires and air valves can be checked through small, fist-sized doors on the outside of the fairings.

Cockpit entry is easily accomplished through wide doors on either side of the fuselage, with an assist step mounted on each landing gear leg. Individually adjustable standard front seats, with three seat-back angle positions, slide forward to make adequate room for rear occupants to settle into either the standard bench-type or optional split-back rear seat. Infinitely adjustable front seats, which include crank-type up and down control movement, are also available.



It may look like a Skyhawk, but the Hawk XP's beefier engine cowl covers a 195-hp Continental engine that teams with a constant-speed prop for extra performance.

The Hawk XP has been a part of Cessna's single-engine line for three years now, having found a home with pilots who prefer its 35% power advantage over the Skyhawk.





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Two baggage areas, with a 200-pound combined weight limit, are located aft of the rear seat. They can be reached through a locking door on the left side of the fuselage or from within the cabin. An optional child's seat can be installed in the main (120-pound limit) baggage area.

The XP's electrical system includes a 24-volt battery, a circuit breaker panel on the left lower side of the instrument panel and an on/off avionics power master switch, which doubles as a circuit breaker. The system features a new alternator control unit which now warns of low-voltage, as well as over-voltage, conditions by illuminating a panel-mounted warning light. Earlier Hawks employ a regulator and an over-voltage relay system.

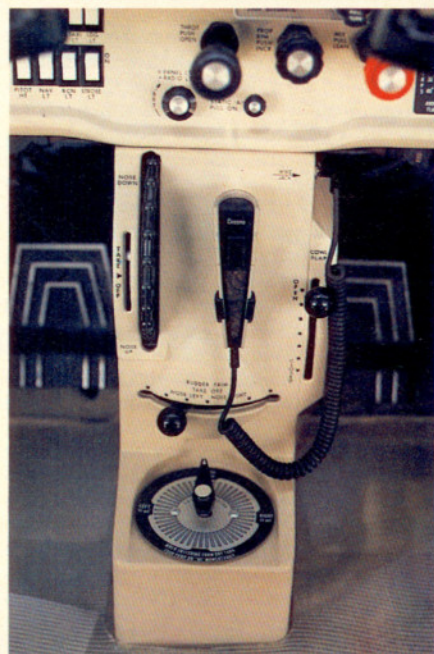
Instrumentation is neatly arranged in the familiar "T" fashion, with gyros in front of the pilot and the avionics stack in the center of the panel. Oil and cylinder-head temperature gauges have been redesigned with wider, more easily read arcs. Fuel quantity gauges show fuel in pounds and gallons.

Starting the Continental IO-360-KB engine, which has a 1,500-hour time between overhaul (TBO), requires no unusual technique. Before cranking, however, the fuel shutoff valve (not to be confused with the floor-mounted fuel selector valve) should be on, meaning that fuel is flowing to the engine. The valve is used in emergencies to shut off fuel flow in the engine compartment to isolate a fire. This is more positive than turning off the fuel selector valve, which is located between the front seats.

The shutoff valve is located on the far left side of the panel, just a couple finger-widths above the like-sized



Instrumentation is neatly arranged in the Hawk XP, with the panel accommodating as much radio space as most IFR pilots would ever require.



The Hawk XP's systems control quadrant below the instrument panel contains the elevator trim (left), cowl flap lever (right), and both the rudder trim and fuel selector valve (lower center). The microphone attaches to the quadrant center.

With a 66-gallon useful fuel capacity in optional integral fuel cells, the Hawk XP offers a maximum 938-statute-mile range with 45-minute reserve.



primer. Although Cessna has provided different-shaped knobs for each valve, their close location could make it possible for a pilot to mistake the shutoff valve for the primer, especially in a darkened cockpit.

Pilots accustomed to flying carbureted engines shouldn't have any trouble transitioning to the fuel-injected Hawk XP. The manual plunger-type primer is rarely used except in extremely cold weather starts. The XP's auxiliary fuel pump, however, is a regular engine-start checklist item.

The rocker-type fuel pump switch is split into red-yellow halves, indicating high- and low-pressure positions. The pump is used primarily for engine starting, with the high pressure side spring-loaded off. When the high pressure switch is held on, the low side automatically trips on. In the event of failure of the engine's manually driven fuel pump, the auxiliary fuel pump must immediately be held in the high position to reestablish fuel flow. It then is left in the low position until a landing can be made.

The auxiliary fuel pump isn't used during letdown, landing or taxiing, because it would result in an excessively rich mixture during periods of reduced engine power. Operation with the pump on in these flight phases will result in a rough-running engine.

Since, during start-up, the low pressure side automatically trips on when the high pressure is held on, the low side must be turned off manually. With mixture full rich and the master switch on for starting, the intake manifolds could become flooded if the engine is cranked with the auxiliary fuel pump accidentally left on.

The XP is easy to taxi. Visibility through the 360° vision windows is good, but the high wings dictate crossing active runways with caution since landing aircraft could be a little difficult to see. Nosewheel steering is limited to 10 degrees to either side of center, though braking extends the turn arc to 30 degrees either side.

The before-takeoff checklist is routine. The Pilot's aircraft, however, had an inaccurate indicator on the roll-type elevator trim wheel on the lower instrument panel post. The trim tab itself could be easily seen out the rear windows, though, making it possible to position the tab for takeoff.

Rudder trim is provided by a bungee which connects the rudder control system to a trim lever also located on the lower center post. The system, which merely tension-cocks the rudder left or right, is easy to operate; detents provide six nose-left and -right positions.

A vertically adjustable cowl flap lever on the right side of the center post also provides detents for positive positioning of the single cowl flap located on the belly of the aircraft above the nose wheel. A minor irritant to us was the microphone cord which hangs in the way of the rudder trim and cowl flap levers.

With the long-range fuel cells each

CESSNA HAWK XP (C-R172K)

Basic price \$33,950

Specifications

Engine	Teledyne Continental, fuel-injected, 6-cyl. IO-360-KB, 195 hp @ 2,600 rpm
Propeller	McCaughey constant speed, 76-in diameter, 2 blades
Wing span	36 ft
Length	27 ft 2 in
Height	8 ft 9½ in
Wing area	172 sq ft
Wing loading	14.7 lb/sq ft
Passengers and crew	4
Cabin length	108 in
Cabin width	39½ in
Cabin height	48 in
Empty weight	1,541 lb
Useful load	1,017 lb
Gross weight	2,558 lb
Power loading	13.1 lb/hp
Fuel capacity (standard)	52 gal (49 usable)
Fuel capacity (long-range tanks)	68 gal (66 usable)
Baggage capacity	200 lb

Performance

Takeoff distance (ground roll)	800 ft
Takeoff over 50 ft	1,360 ft
Rate of climb	870 fpm
Maximum level speed	133 kt (153 mph)
Normal cruise speed (80%)	130 kt (150 mph)
Economy cruise speed (70%)	122 kt (142 mph)
Range, normal (45-min res)	675 nm (776 sm)
Range, economy (45-min res)	723 nm (836 sm)
Service ceiling	17,000 ft
Stall speed (clean)	53 kt (61 mph)
Stall speed (flaps down)	46 kt (53 mph)
Landing distance (ground roll)	620 ft
Landing over 50 ft	1,270 ft



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brimming at their 33-gallon useful capacity and two adults on board, 736ZZ was within 200 pounds of gross weight. The day was a beautiful 73°F, with northwesterly winds at about 16 knots, light for Kansas where the winds blow wild.

Our first takeoff was a normal one, with 10 degrees of flaps. This flap setting decreases the ground run by about five percent, according to the handbook. With full throttle developing the maximum 2,600 rpm for takeoff, fuel flow was about 15 gallons per hour, as noted on the fuel flow gauge.

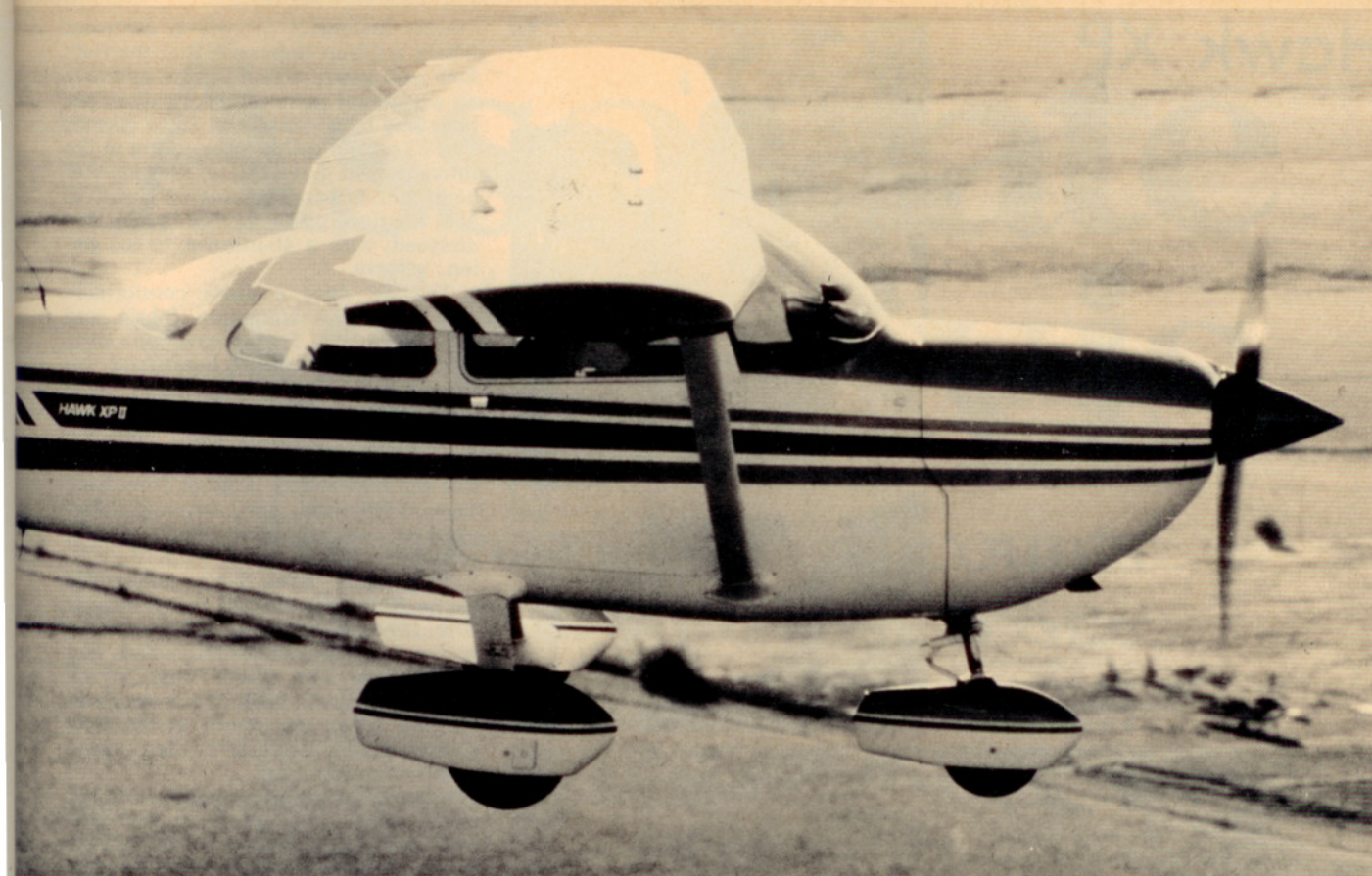
During the ground roll, the XP's power advantage over the Skyhawk could be felt as the aircraft accelerated down the blacktop. Easing back the yoke at 56 knots lifted the nosewheel and the Hawk was soon airborne in the first quarter of the 3,800-foot runway. At best rate of climb speed (81 knots), the craft climbed skyward at just over 800 feet per minute (fpm). At sea level, the climb rate would be about 870 fpm, according to Cessna, an advantage of 100 feet per minute over the Skyhawk's sea level climb rate.

Cook Airport, a 2,500-foot paved strip just southeast of Wichita, provided The PILOT an opportunity to explore Cessna's short-field pledges for the XP. In the pattern, the first notch of flaps could be lowered at 110 knots to begin slowing the airplane. This new flap extension speed is a hefty 25-knot increase over last year's model.

A standard pattern was flown, with full 40 degrees of flaps lowered on mid-final, helping peg an approach speed of 70 knots. Skyhawk pilots might experience a brief initial tendency, as we did, to reduce power a little too soon. Given the XP's gross weight advantage of 250 pounds over the Skyhawk, the XP's sink rate seems greater. Carrying a little power over the threshold and closing the throttle just prior to flare seemed to work out fine. With the nosewheel held off the runway during roll-out, minimum braking was required.

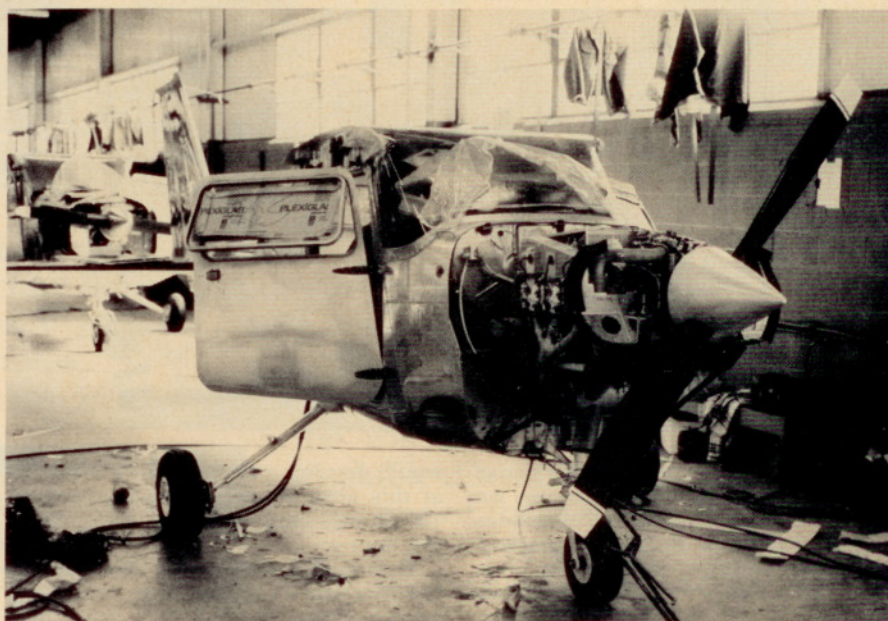
A short-field takeoff was set up with the recommended 10 degrees of flaps and full 2,600 rpm before brake release. Holding a slightly tail-low attitude during the roll and then easing the Hawk off as soon as it would fly let us climb out at the best climb angle (60 knots). Fifty-foot obstacles that can loom larger and larger to pilots of some lesser-powered aircraft appeared to be dwarfs over the end of the runway.

Placing the Hawk XP and the Skyhawk at their respective 2,550-pound and 2,300-pound gross weights on an airport with a theoretical pressure altitude of 6,000 feet and an 86°F temperature produces an interesting comparison. The Hawk's ground roll of 1,565 feet would be only 20 feet better than the Skyhawk's, with the Hawk clearing a 50-foot obstacle in 2,765 feet, com-



The aerodynamic design of the Hawk XP has a long and successful lineage, traced to more than two decades ago with the introduction of Cessna's Model 172. That design, already incorporated in more than 30,000 Skyhawks, has been heralded as one of the most stable of any aircraft in its class or weight.

The four-place Hawk XP is built at Cessna's Strother, Kan., facility, where the Skyhawk and 152 models are also produced. The company is currently turning out an average of two Hawk XPs a day.



pared to the Skyhawk's 2,895 feet.

While both sets of figures appear very close, remember that the Hawk is carrying 250 more pounds of useful load. That's one more adult, 13 more gallons of fuel and a little more than an hour's range at cruise. In extremely high density altitude situations, a Hawk pilot should be able to get his payload of passengers and cargo out of most airports by simply trading off fuel capacity. In a Skyhawk, the tradeoff could begin to eat into the payload.

A stall series at 4,000 feet produced no surprises. The stall warning horn sounded between 10 and 5 knots above actual stall, which in the Hawk produces only a slight buffeting. At our near gross weight of some 2,300 pounds, the XP stalled at 46 knots with wings level and full flaps; in a power-off 30° turn, stall speed was just

above 50 knots. Keeping the ball centered and continuing to hold back-pressure as the aircraft buffeted finally resulted in the nose pitching down lazily. Standard recovery technique was used with minimal altitude loss.

At Strother Field south of Wichita, PILOT picked up a factory-new Hawk XP to examine its cross-country traits on a trip to Mattoon, Ill. Strother, incidentally, is where Cessna currently is turning out a combined 17 152s, Skyhawks and Hawk XPs a day.

Light surface winds were from 300

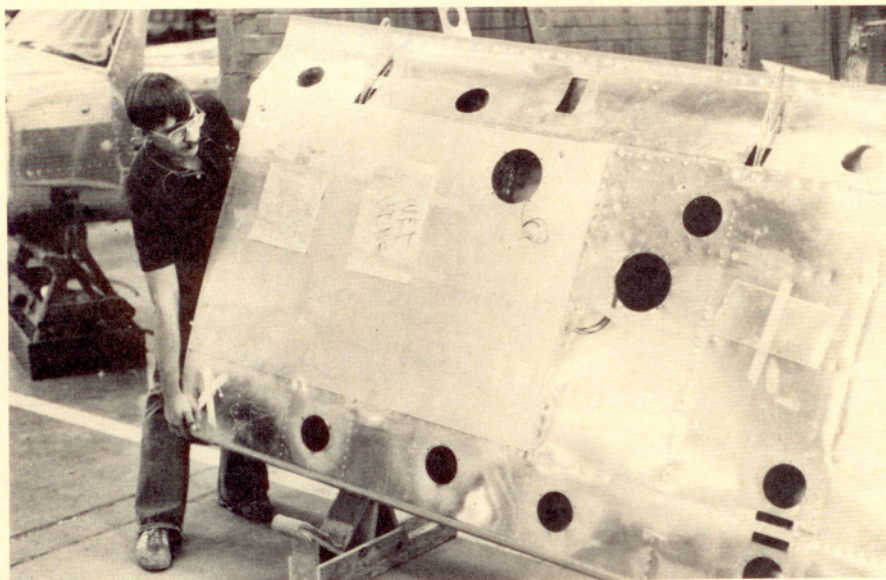
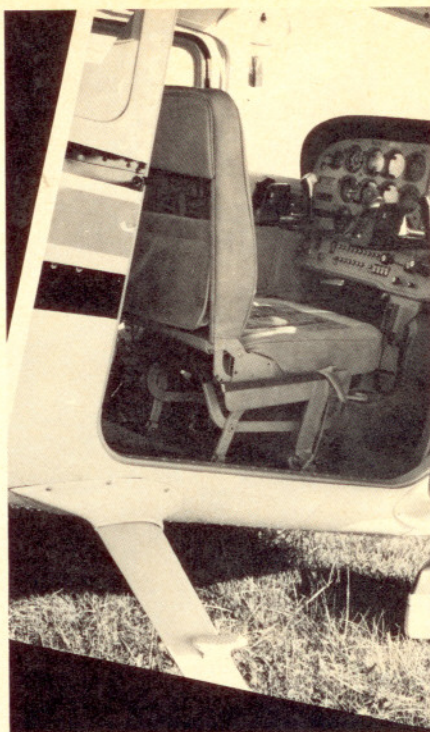
degrees and the temperature had warmed to 76°F as we flew N758DF off the runway and established an 80-knot climb speed. Climbing at about 800 fpm, our en route cruising altitude of 5,500 feet was reached in just under seven minutes. There was a long way to go to the XP's 17,000-foot service ceiling.

Leaning at altitude according to the manual, 80% power was set up at 2,600 rpm and 23 inches of manifold pressure. At power settings above 70%, Cessna recommends using an optional

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Two wide cabin doors swing out to provide easy access to the Hawk XP cabin, which is roomy and comfortable.

The Hawk XP's optional wet wings increase fuel capacity to a usable 33 gallons in each wing. Cruise range at 80% power and 6,000 feet is 675 nautical miles.



exhaust gas temperature (EGT) gauge to lean the mixture to 50 degrees on the rich side of peak EGT. Continuous operation at peak EGT is authorized for power settings of 70% or less. Since Delta Foxtrot had less than two tach hours when she was whisked from her roost, Cessna asked that 80% power be used to break in the engine and ensure proper seating of the piston rings.

With the aircraft properly leaned, the Hawk peppered along at 119 knots indicated airspeed. Though the EGT gauge could be used for leaning, it was somewhat erratic at times, with dramatic needle fluctuations.

At our pressure altitude of 5,500 feet and a 41°F outside air temperature, the true airspeed was 130 knots, agreeing with what the performance tables said we'd get. Fuel flow was 11 gallons per hour. By comparison, the Skyhawk

would develop a maximum 75% power at this altitude, for a true airspeed of 120 knots, while burning 8.4 gallons per hour.

Best fuel economy at 70% power (2,600 rpm, 21 inches mp), with the mixture leaned to peak EGT, saved just over two gallons of fuel an hour in the Hawk, at seven knots less true airspeed.

Well into the 438-nautical-mile trip, we dropped down to 3,500 feet beneath a scattered cloud deck east of the Missouri River to take in some of the colorful Jack Frost nature palette below. A power setting of 2,500 rpm and 24 inches manifold pressure produced just under 80% power, with speed dropping only three knots from our original 130-knot TAS cruise at 5,500 feet, but with half-gallon-an-hour fuel savings.

Three hours, thirty-four minutes into the trek, the Hawk winged into Coles

County Memorial Airport at Mattoon, where a fill-up indicated that the fuel-flow rate gauge was accurate and that an average of just over 11.2 gallons per hour had been consumed since takeoff. The 23 usable gallons remaining in the tanks would have permitted another hour and fifteen minutes of flight, or 159 nautical miles at 126 knots true airspeed, with a 45-minute, or 8.5 gallon, reserve.

The XP gave a quite comfortable ride, with the attractive fabric and vinyl standard front seats providing ample hip, shoulder, head and leg room. Adult rear-seat passengers, while treated to bountiful leg room, might get a little uncomfortable on a long trip since there's little lateral squirm room. But the sightseeing is great from back there, with wide, deep windows offering an unobstructed view of the scenery.

The noise level isn't unbearable in the Hawk XP, though the passenger door window did howl a bit where a section of the weatherstripping had pulled free. The pilot's door, which didn't close flush with the fuselage as did the other, no doubt added to a slightly higher noise level than a pilot might normally find.

Cabin ventilation is good, with optional \$165 high-speed blower and overhead outlets available. Heating the cabin, however, is another matter. Ducts carrying heated air from the engine compartment feed only into the front cabin at floor level. By the time the warm air reaches the rear occupants, it has cooled down considerably.

The Hawk comes in three models: the basic Hawk XP at \$33,950; the Hawk XP II (offering some factory-installed avionics and accessories), \$37,200; and the Hawk XP II with Nav-Pac (even more avionics), \$41,150. The extended-range fuel tanks are an option at \$575, while the 26-pound float-plane installation kit, exclusive of floats, rings in at \$2,495. Extra goodies on both aircraft flown by The PILOT brought the average list price for the two to \$48,600.

For owners of Skyhawks and other carbureted-engine aircraft, the Hawk XP offers a natural step-up to increased performance, without the added systems complexity and operating cost that other aircraft in that category sometimes demand. It is curious to note, however, that you can buy a 1979 Skyhawk II with Nav-Pac for \$33,150, \$800 less than the basic Hawk XP will set you back. Comparatively, the basic 144-knot-cruise Skyplane costs \$39,995.

Nevertheless, the blend of venerable Skyhawk familiarity with an engine and constant-speed prop which produce a little extra oomph when it can be needed most, seems to be a winning combination in the Hawk XP. With some 892 Hawks having been delivered to date, many pilots apparently have found the XP's added performance factor over the Skyhawk worth the investment. □