



# II for the road

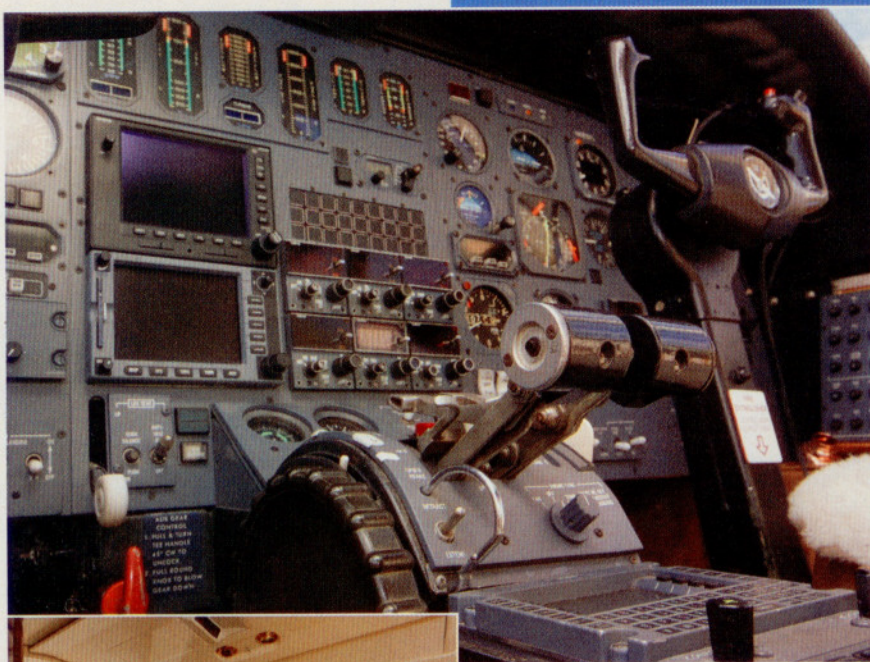
Citation IIs in the used marketplace

BY THOMAS A. HORNE

Anyone in the market for a used business jet knows that there are deals aplenty these days. Yes, the inventory of used jets has dropped slightly from 2008's highs, but you can still find highly capable, well-maintained airplanes. It just takes patience, a good prepurchase inspection, and a willingness to accept less-than-cutting-edge avionics and powerplant technology.

PHOTOGRAPHY BY JOHN FLECK





Don't look for fancy glass cockpits on older Citation IIs—although retrofits are now being offered. The cockpit of a II (top) has the vertical-tape engine gauges typical of the brand, along with a recently installed Garmin GNS 530 and a Bendix King KMD 850 MFD and radar display. The thrust levers are connected to a hydromechanical fuel control system that uses governors and cables to manage power. No FADECs here, although Citation II re-engineing programs offered by Sierra Industries and the Clifford Development Group do match up FADECs with Williams FJ44-3 engines. In typical interior configurations, Citation IIs have refreshment centers, side-facing seats and closets aft of the pilot seats (above).

Perhaps one of the best examples of an enduring, appealing design is Cessna's Citation II series. These airplanes have more power, speed, range, and cabin volume than the original Citations and Citation Is, and are plentiful in the used market. According to AMSTAT and Aircraft Shopper Online, as of this writing some 195 Citation IIs—or 24 percent of the current, 815-strong Citation II fleet of various types—were up for sale. Many of the earlier Citation IIs can be had for less than \$1 million, which makes them quite a deal. Imagine, 360- to 400-knot cruise speeds, eight to 10 seats, a maximum range of 1,900





nm—all in an airplane that can be flown single-pilot under an FAA exemption. Here's a brief rundown of each model in the series.

#### **Citation II (1977-1994)**

The Citation II was the first of the II series, which carry the model 550 designation (except for the 551SP, about which more follows). This is an FAA Part 25 airplane with a maximum takeoff weight of 13,300 pounds. Normally this requires two-pilot operations, but single-pilot authorization can be earned at flight training organizations such as FlightSafety International.

Cessna wanted a faster successor to the Citation and Citation I, the first of which came out in 1972 and earned the infamous moniker of "Slowtation" for its comparatively slow (for a twin-jet) maximum cruise speeds, which were advertised in the 350-knot range at 35,000 feet—but which many say is overly optimistic.

The II was given more powerful Pratt & Whitney JT15D-4 engines of 2,500 pounds of thrust apiece—a 600-pound boost in thrust over the Citation I's JT15D-1 engines. The result is a 375-knot cruise speed and a maximum range of 1,200 nm with

NBAA IFR fuel reserves. Fuel capacity is 5,000 pounds, or about 746 gallons. The wingspan was upped to 51.7 feet from the I's 47 feet, and the cabin was stretched 3.5 feet. Takeoff weight and max payload also went up. The goal, as with all straight-wing Citations, was to make the airplane easy to fly and easy to land, yet still provide respectable speed and range. Runway performance was improved as well. Flying off the same runway lengths as those used by the Citation and Citation I, a II can fly longer legs. Avionics included a combination of Sperry and Collins instruments and radios. The airplane



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was an instant hit, and 608 Citation IIs were sold during its production run.

Today, aircraft value reference guide *Vref* says that Citation IIs bring retail sales prices between \$760,000 (for a 1978 model) to \$1.7 million (for a 1994 model). This assumes the airplane is well maintained, has midlife engines, Reduced Vertical Separation (RVSM) approval for flying between FL290 and 410, terrain awareness warning system (TAWS), like-new paint and interior, and no major damage history. *Vref* gives Citation IIs a “CCC” demand rating, meaning that they can be sold in eight to 10 months at a discounted price.

### Citation IISP (1977-1987)

Made especially for the single-pilot market, the Citation IISP (model 551) is built to FAR Part 23 standards, and so its maximum takeoff weight is lower—12,500 pounds. But the rest of the airplane’s specifications are essentially the same as those for the straight II. As with the II, special training is required to earn authorization to fly the IISP single-pilot. Some of the single-pilot equipment requirements seem trivial (a boom microphone and a yoke-mounted transponder-ident button among them), but those are the rules. The idea behind the IISP was

to compete with the twin turboprops of the day—such as the Twin Commander, the Mitsubishi MU-2, Beech King Airs, and Piper Cheyennes. But the IISP’s weight limitations made for keen competition with some turboprops; full-fuel payloads of some 550 pounds meant shorter legs carrying fewer passengers.

*Vref* quotes IISP retail prices from \$720,000 (for a 1978 model) to \$1.1 million (for a 1987 model). As with equipment, condition, maintenance, and appearance qualifications, *Vref* also posts hourly penalties for exceeding what it determines an airplane’s aver-





age airframe total time. For example, a 1978 IISP is cited as having an average airframe time of 10,650 hours. For every hour above that, *Vref* says to deduct nine dollars. A 1987 model should have 7,590 total airframe hours; deduct \$20 per hour above that number.

#### **Citation SII (1984-1988)**

The SII (model S550), another Part 25 airplane with a single-pilot exemption, is the fire-breather of the Citation II line. The SII brought numerous changes to the airplane's wing, and its engines (now the Pratt & Whitney JT15D-4B, still rated at 2,500 lbst) were upgraded for

Some features for plane-spotting Citation II enthusiasts: The Pratt & Whitney JT15D-4 engine (below) of 2,500 lbst; the pneumatic deice boots (top inset) used on all but the SII models, which have TKS "weeping wing" leading edge ice protection; the bleed-air windshield heat (center inset) for preventing windshield icing—along with a glycol spray system; and straight-legged landing gear (bottom inset). It wasn't until the mid-1990s that an offshoot of the II/SII line—the model 550B Citation Bravo—came with trailing-link main gear.





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higher fan speeds and thrust at altitude. For the first time, computer-assisted design (CAD) technology was used to alter the shape of the wing for minimal drag. TKS "weeping wing" ice-protection panels were installed on the wing leading edges (previous IIs had pneumatic deice boots), and the shapes of the wing roots, engine nacelles, and engine pylons also were changed. The result was that laminar flow was preserved farther aft on the wing chord. Together with the new engines, it all

added up to a claimed 403-knot maximum cruise speed. And thanks to a larger maximum fuel capacity (5,800 lbs or about 865 gallons) than the other Citation IIs, the SII has a nearly 2,000-nm maximum NBAA IFR range.

Even so, the SII's price (\$3.3 million in 1986) proved a deterrent to many prospective customers, especially since the straight II could be had for \$2.6 million. This caused Cessna to drop the SII and concentrate on the II. Only 160 SIIs were built, but today they're in

strong demand, and Vref gives them a "B" demand rating—meaning that most will be sold within six to seven months, and retail for between \$1.1 and \$1.4 million. This assumes all the usual conditions mentioned earlier. If it's bang for the buck, then the SII takes the cake in today's market.

Another member of the II family—the model 550 Bravo—came much later, with production running from 1997 to 2006. Its Pratt & Whitney PW530A engines and Honeywell Primus 1000 avionics put this airplane in a different, pricier category, so we're not addressing it in this article.

### Mods

There are a number of modifications available for Citation IIs, and most of

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The Williams engine retrofits are expensive, but can add more than \$2 million to the value of a Citation II or SII—and give these 20- to 30-year-old jets 400-knot-plus cruise speeds.

them center on engine upgrades. Sierra Industries of Uvalde, Texas ([www.sijet.com](http://www.sijet.com)), offers its Super II and Super S-II mods, which replace the old JT15Ds with Williams FJ44-3A engines of 2,820 lbst each. These push maximum cruise speeds to 416 knots (for the Super II mod, available for the II and IISP) and 426 knots (for the Super S-II mod, available for the SII). The Super II mod also boosts straight II takeoff weights to 14,100 pounds. The price is \$1.6 million, without thrust reversers; the Super SII mod is \$1.8 million. (For more information on the Super S-II mod, see "Thrust-Buster: Sierra Super S-II," March 2010 *AOPA Pilot*.)

The Clifford Development Group ([www.clifforddevelopmentgroup.com](http://www.clifforddevelopmentgroup.com)) also offers Williams FJ44-3A engines for the Citation II and SII, plus 36 other upgrades in its \$2.3 million Clifford

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Series 550 Citation modification. These include digital engine gauges and heavy-duty brakes and tires.

Those mods are expensive, but they add more than \$2 million to the market value of a Citation II or SII. For those wanting to keep their Citation IIs and realize the performance of a jet costing more than twice the modification price, it's a great way to bring a 20- or 30-year-old jet up to date.

Cessna offers its own glass-cockpit avionics retrofit, called the AdViz system. This suite, built by Innovative Solutions & Support (IS&S), comes in two- or three-screen options and interfaces with the II's original instrumentation.

#### Caveats

When checking out any older airplane, there are trouble spots that demand attention. In Citation IIs—as with most other airplanes—corrosion is among the top concerns. Prebuy specialist Don Sebastian says the most likely places to find corrosion are under the potty area, beneath the entry door, and around any belly antennas. These areas are apt to trap water or other contaminants.

Another common problem is windshield cracks. Citation IIs have plastic windshields, and cracks can propagate from attachment screws. Sebastian says another issue can crop up when the rubber pressure drains at the bottom of the pressure vessel fail or fall out. This causes losses of bleed air in flight, which in turn can increase fuel consumption. And if the drains are clogged water can be trapped in the belly, where it can cause corrosion.

#### Maintenance and general condition: pluses and minuses

On the other hand, compliance with recommended maintenance intervals boosts resale value. Recently completed phase checks can increase values by \$50,000 or more. New avionics—such as a dual Garmin GNS 530/430 combination—also can bump up values.

Cessna's Citation II maintenance is broken up into five phases. Phase I and II inspections and maintenance procedures come at 12-month intervals and generally run \$20,000 to \$25,000. Phase III and IV checks are due at 24-month intervals and also cost about \$25,000. The big inspection is Phase V, set for three-year or 1,200-hour intervals; it runs \$75,000 to as much as \$200,000,

and comes with a 20-page checklist encompassing a radome-to-tailcone evaluation. All this is apart from the engine hot section inspections and overhauls (TBO for the JT15Ds comes at 3,500-hour intervals). As you might suspect, a freshly completed Phase V can count for a lot when it comes time to sell.

Even so, used Citation IIs can make sense for the price-conscious. Look at it this way: a new Hawker Beechcraft G58 Baron now carries a retail price

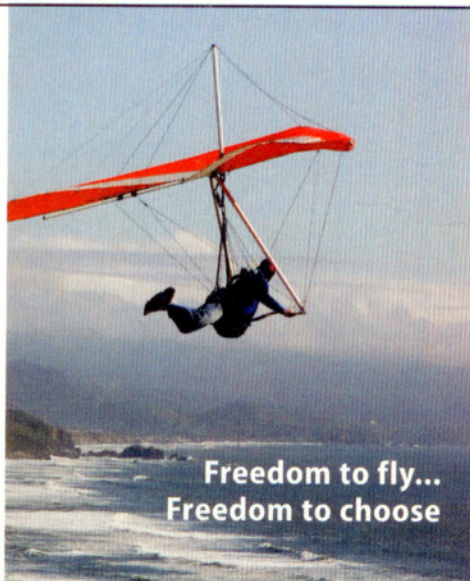
of at least \$1.2 million. But the Baron cruises at 200 knots, seats four comfortably, and has a maximum range (tanks full) of 1,500 nm or so. For the same price you can land a Citation II. And for growing companies with a need to move a half-dozen people in comfort halfway across the nation and back in the same day, it's a choice worth considering.

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