

First Flight: Diamond Star DA40 XL

Whatever you do, don't ask Ryan Ramos to give you a demo ride in a new Diamond Star DA40 XL...at least not unless you have the means to acquire your own or the outlet to rent one. Ryan is the regional sales manager for Premier Aircraft Sales, Inc., and he's just set up shop at Concord Regional Airport (JQF). Oh, he'll give you a ride if you're serious about buying a new Diamond, but it's going to be awfully hard to say "no" once you've been up. Ryan is a good salesman, no doubt, but this plane sells itself, even at a price tag some \$60-70,000 above an almost-comparably equipped Cessna 172 SP. I'll try to limit the hyperboles in this DA40 XL review so as not to sound like a paid advertisement, but rest assured, the only compensation I received was an hour at the controls of the plane that now occupies the top spot on my wish list.

Form

Before you even get to function, the DA40's form catches your attention. And, the closer you get, the prettier it gets. With the fit and finish of a fine German luxury sedan, its luxuriously appointed interior and its unique architecture, this thing will turn heads at any FBO or fly-in...as it did at the

Lake Norman fly-in just a week before my demo ride. The XL is the top of the line DA40, standard with leather seating, the G1000 flight system, fuel-injected IO-360 and enough gizmos to keep you entertained on even the longest cross-countries. A fixed-pitch, carbureted FP model is available for about \$100,000 less. It lacks a few of the XL's amenities, but is perfect for the flight school environment (ask the Air Force and major U.S. aviation universities!). The gently swept-up wing tips of my XL demo plane (visible on the right wing in the top right photo on page 7) have morphed into right-angle winglets in the models currently rolling off the assembly line (Diamond stock photo, above right).

Function

For a 6'3" pilot, the first bit of "function" you admire is the DA40's ease of ingress. The flip-forward canopy and large rear hatch give front and back-seat flyers easy access...no more wedging past folded front seats. The cockpit is wide enough that two normally sized adults don't have to rub arms the whole trip. And, with a useful load of 640 pounds with full fuel (more than a Cessna 182), the XL can actually carry a few normally sized adults...and



still cruise 30 knots faster than the 172. Electrically adjustable pedals extend plenty far to let my legs stretch out. Taller pilots may have to slouch, as my headset's headband made me just tall enough that I couldn't sit fully upright. An airline-type earset would solve my problem, but taller pilots will struggle.

Performance

Performance and handling in the DA40 XL don't disappoint. The rivetless airframe significantly reduces parasitic drag while the carbon fiber and Kevlar® makeup reduces induced drag (lighter aircraft = less lift = less drag). Coupled with the fuel-injected IO-360 swinging a 3-bladed constant speed scimitar prop, the DA40 XP simply wants to run. The two of us climbed out of Concord at 1,300 ft/minute, which Ramos said would have been better if I'd have held Vy instead of 10 knots above. But again, this baby wants to run. Leveled out at 3,000 feet at 25 inches and 2,500 RPM, we clipped along at 150 knots. Effortless, quiet, and absolutely hauling'—with the same engine, Ramos kept reminding, as the Skyhawk.

The XL comes with few options, meaning that the Garmin G1000 glass cockpit and integrated GFC 700 digital autopilot and flight director are standard. There's a more in-depth discussion of the G1000 beginning on page 9, but the integrated Garmin autopilot on the DA40 XL, Ramos claims, is the most advanced in general aviation. He dialed in a simulated instrument approach to Concord and then we sat back and watched it intercept the approach fix, anticipate the wind (no kidding, it turned early to compen-



sate), turn 90 degrees to track the final approach, intercept the glide slope and fly us right down to the numbers.

Safety

Ramos notes that Diamond set out to make the DA40 the safest airplane in general aviation. A Kevlar®/carbon fiber roll cage runs from the firewall to the rear of the fuselage and is stressed to 26 Gs. Kevlar® seats are designed to absorb the better part of a 26-G impact and are angled back to prevent submarining into or under the dash. Dual Kevlar® wing spars are each capable

istics also contribute to safety. Unlike conventional single-engine airplanes, the Diamond climbs out at Vy in a nearly flat attitude, allowing the pilot to watch the end of the runway slip by instead of staring up at the clouds. Straight-and-level cruise is maintained with a nose-low attitude, giving unmatched forward visibility. With wings that attach behind the front seats and the expansive bubble canopy, pilot and co-



seems like the better alternative, especially at low altitudes and in the pattern.

The end result of all this attention to safety is a fatal accident rate per 100,000 hours flown 8 times below the national single-engine average.

Maintenance

Over 1,000 DA40s have been produced since 2000, and to-date, the DA40 enjoys the singular distinction of having no airworthiness directives. Ramos claims that the aircraft's advanced design features also make for faster (and less expensive) annuals. Flight surfaces are controlled with push-pull rods, which require inspection at only three panels. Only 6 screws must be removed to open up the control panel and an A&P can access the avionics standing next to the plane. The main landing gear attach to the fuselage, not the wings, allowing 2 people to disconnect and remove the wings in about 20 minutes without jacking up the plane.

Get Yours

For more information on the DA40 XL, visit www.diamondaircraft.com, or call Ryan Ramos at the numbers below.



of carrying the weight of the airframe, which itself has no life limit, unlike some other composite aircraft. Even the control surfaces are composite.

Unseen, but equally important, the Diamond features military-grade steel braided fuel lines and aluminum wing tanks instead of "wet wings." As such, the DA40 has never experienced a post-crash fire.

Inside the cockpit, the DA40's backup steam gauges are high on the panel, enabling the pilot to fly the plane without looking down at his/her knees for airspeed, attitude and altitude indications. Mixture and fuel selectors require a two-step process to engage, as does the rear door latch.

The DA40's in-flight character-

pilot enjoy exceptional downward and lateral visibility as well.

The curled up wing tips contribute to almost unbelievable stall characteristic. While a full stall in many certified aircraft results in a sharp noseover, the DA40 never broke. Instead, I maintained aileron control authority even while "riding the buffet" at 42 knots and falling 400 feet a minute. The noseover does get stalled wings flying again fast, but with the Diamond, you never actually stop flying, which



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