

Keeping it (very) light

With the unveiling of the Eclipse Concept Jet, **Peg Billson ('84, PC)** is turning heads—and redefining the cutting edge—in general aviation

Peg Billson ('84, PC), COO of Eclipse Aviation, is no stranger to risk. Whether she's trekking through the high-desert trails of New Mexico or designing an aircraft intended to revolutionize the general aviation industry, Billson is not afraid to take on rough terrain.

"I never look for the easy path," Billson says. "I believe we must be willing to take risks and face occasional setbacks, because it is those challenges that make the rewards even greater."

Her latest challenge was a whopper: Secretly design and build the Eclipse Concept Jet (ECJ)—a single-engine Very Light Jet (VLJ) that would change the way people think about general aviation—and do it in six months.

Billson, who has spent a large part of her career influencing the directions of major aerospace companies—including stints as a vice president at McDonnell Douglas and Honeywell, Inc.—was more than up to the task. "I have always enjoyed being a part of what seems impossible, with no constraints," she says. "This has been one of the most challenging opportunities of my career, but that is part of the drive and excitement."

THE SPEED OF INVENTION

Billson's "drive and excitement"—along with her diverse career experience—would prove useful as she moved to assemble a team that could design the ideal plane for personal travel—and do it quickly. "One of my major contributions was being able to identify the best of the best people to work with, from those I had worked with during the first half of my career," she says.

Her team included a small group of highly

skilled contractors, including an aerodynamicist and an interior designer she knew from previous companies.

The team determined every detail of the ECJ, from the number of seats to how far and how high it would travel. "The six of us were proud to know our fingerprints would be on the ECJ," Billson says.

In just six months from its initial design, the ECJ was ready for its first flight. For Billson, it was the first of many high points to come. "The excitement and energy we had was the highest I had ever experienced," she says. "By completing this project in only six months, we proved that the speed of invention is still possible."

RAVE REVIEWS

Almost as quickly as it went public, the single-engine, turboprop-powered, V-tail ECJ took the aviation world by storm. After its public debut at the 2007 EAA AirVenture Convention in Oshkosh, Wis., the ECJ enjoyed rave reviews.

"From the research and the anecdotal responses we've received, it's clear that we nailed it with this project," Billson says. "People are calling it an innovative design but one that can be practically executed."

The ECJ's mass appeal created so much buzz that it was featured on the cover of *Popular Science* magazine, earning Billson some additional bragging rights at home. "That was exciting," she recalls. "My kids still carry the magazine around with them."

GETTING TECHNICAL

Billson credits Embry-Riddle with laying a solid foundation for her career. Having started flying at age 14, she followed her passion and earned a Bachelor of Science in Aeronautical Engineering at Embry-Riddle's Prescott Campus. The combination of the theoretical and practical design challenges she encountered in her classes helped develop her engineering instincts.

"Without the focused education [at Embry-Riddle], I would not have been able to do what I have done in my career," Billson says. "Combined with my professional



By Ashlee (Fiser) Ilg ('03, DB)



The Eclipse Concept Jet

The Concept Jet features a uniquely placed single Pratt & Whitney turbofan jet—atop the fuselage and just forward of a V-tail—to allow for improved balance and aerodynamics and better engine efficiency than other small-jet designs. The jet also can fly 390 miles an hour and up to 41,000 feet, which means it's able to fly higher and faster than propeller-powered airplanes with a similar price tag.

The aircraft's interior also was designed with the personal traveler in mind. Resembling that of high-end sports cars, the passenger cabin is styled in black, orange and grey leather

with brushed metal throughout, and includes a bench seat with integrated armrests, fold-over capability and a vertical-tracking capability, to allow for plenty of flexibility and legroom. Passengers also have access to MP3 power plugs for audio entertainment and extra baggage areas that hold up to three full sets of golf clubs or skis.

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experience, it gave me what I like to call a 'technical gut,' to know what is possible and what is not."

Her "technical gut" has served her well, including her leadership in the ECJ Project. "I was simply designing an airplane that I wanted to fly, and would be suitable for the majority of people who travel," says Billson, who has her Single- and Multi-Engine Private Pilot ratings. "Being a pilot myself and having a technical opinion allowed me to know what was truly possible for us to accomplish."

MAKING THE IMPOSSIBLE POSSIBLE

Now that Billson and her team have taken the bold step of defining the ideal plane for personal travel, the next step will be translating its best features into a viable product for the marketplace.

For Billson, the timing couldn't be better. "One of my philosophies in life is 'Every great idea has its time,' and I think the time is right for the Very Light Jet (VLJ) market."

While some experts might dispute that assertion, Billson's "technical gut" tells her that point-to-point personal air travel is more than possible; it's probable. "I think it will soon become common to see folks flying around in VLJs," she says.

And Billson plans to be first among them. "I've already picked out the color for my plane," she says. "Candy-apple red."



PROJECTED PERFORMANCE

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|----------------------------------|------------|
| Max cruise speed (FL 350) | 345 KTAS |
| Service ceiling | 41,000 ft. |
| Range (IFR + 45 minutes reserve) | 1,250 nm |
| Stall speed (V _{so}) | 61 kt |
| Takeoff distance | 2,200 ft. |
| Landing distance | 1,800 ft. |
| Time to climb to FL 250 | 12 min. |
| Time to climb to FL 410 | 27 min. |