

VLJ fever pushes

east



Cessna Mustang

Judging by the buzz at the European Business Aviation Association's annual gathering in Geneva in early May, the Very Light Jet (VLJ) phenomenon has propelled its way from the U.S. to Europe and beyond. VLJ makers attending the show had tripled their floor space over last year's. Briefings on the subject spilled into the hallways, and one purchase rivaled airliner buys at the Paris and Farnborough air shows—a \$280-million deal for 100 VLJs built by new entrant Embraer for a new Switzerland-based air taxi operator called JetBird.

Created by aviation leasing tycoon Domhnal Slattery, JetBird is billed as Europe's first low-cost, on-demand executive travel service, a business that will attempt to connect 800 airports across Europe with a fleet of six-seat \$2.75-million Embraer Phenom 100 VLJs. JetBird plans to buy 20 aircraft a year starting in 2009. The startup will follow the launch of several jet taxi operations in the U.S.

This year, a company called DayJet will begin flying per-seat, on-demand routes in the southeastern U.S. using six-seat Eclipse 500 VLJs built by Albuquerque-based Eclipse Aviation. The company has orders for 239 of the \$1.4-million aircraft, with options for 70 more.

Other VLJ makers—Eclipse Aviation, Adam Aircraft, and Cessna—did not announce mega sales, but did increase their presence in Geneva in preparation for more European attention.

"A lot of people are really interested in how [the A700] will be used in Europe," said Joe Walker, president of Colorado-based Adam Aircraft, speaking of the company's \$2.25-million A700 VLJ at the show. Adam has orders for 61 A700s for owners who will fly the six-passenger aircraft themselves, and 225 orders for operators who plan to use the twin jet in fleets. Adam Aircraft CEO and founder Rick Adam had earlier told *Aerospace America* his company has sold 100 A700s to a startup European "fractional" provider that will call itself Nexus, though the order was not discussed in Geneva.

In a fractional program, as many as 16 owners buy a share in the airplane, which is then managed and crewed by an umbrella company, in this case Nexus. Eclipse Aviation reports that 10% of its 2,500 orders are for international buyers, most of them in Europe. Cessna's largest European customer so far for the Mustang VLJ is London Executive Aviation, which bought seven of the \$2.4-million aircraft in November. The company plans to use the Mustangs for charter work.

Predicting ripple effects

The momentum in Geneva comes as European aviation authorities wrestle with the possibility that this new breed of relatively low-cost jet—weighing under 10,000 lb and capable of single-pilot operations—could exacerbate a boom in business aviation growth already in motion. Eurocontrol, the European organization responsible for air navigation safety for member countries, recently completed a study that estimated the European business aviation fleet, including propeller-driven and jet aircraft, will grow by 4% over the next 10 years.

Within that growth, the organization found jet-powered aircraft will increase the fastest, generating roughly 1,100 extra flights per day by 2015, with a fleet that will have grown from roughly 1,100 jets today to between 1,600 and 2,600. The predictions mirror what Eurocontrol is already seeing in its statistics: In 2005, there were 630,000 business aviation flights, up 22% from 2001, compared to a 10% growth in the rest of air traffic in the same timeframe. In 2005, flights by business jets had increased 8.9% over 2004.

The organization initiated the study, it said, because business aviation was "growing and changing rapidly" but had been "relatively poorly documented" in Europe.

In all, Eurocontrol found that business aviation could add 0.4% per year to the 3.3% growth in flight movements for all of the other seg-

Interest in very light jets is growing rapidly, moving from the U.S. to Europe and beyond.

Experts predict especially high demand in the Middle East, where flights are often relatively short and thus well suited to VLJs. Following the U.S. trend, several air taxi operations are set to begin in Europe. The coming boom poses some new challenges, including an increased burden for air traffic managers and the need for an improved aviation infrastructure.

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A700s are being ordered for both private and fleet use.

ments of aviation. If optimistic VLJ sales predictions come true, the business aviation growth rate could reach 0.7% a year, meaning as many as 1,800 extra flights a day by 2015.

Complicating air traffic management is that more business aircraft are flying under instrument flight rules (IFR), a preferred option for pilots and operators since IFR aircraft can travel regardless of most weather conditions. However, this choice also adds more surveillance work for air traffic managers. Eurocontrol's study said the number of IFR flights for business aircraft is growing twice as fast as the number for commercial and general aviation aircraft. Under IFRs, each aircraft must be under surveillance by air traffic controllers.

Causative factors

According to Eurocontrol, business aviation's growth has resulted from a combination of factors: globalization and its associated increase in business travel; a perception of greater delays at airports in the post-2001 era; the growing prosperity of the population; and a weaker dollar—U.S. aircraft are "cheaper" to buy.

Another, less subjective influence, cited by Eurocontrol and other industry observers, is that Europeans increasingly see business aviation as a tool for running an efficient business rather than as simply a perk or luxury. That is partially because in Europe, as in the U.S., business aviation fills the gaps in scheduled service, meaning it is often the only option for timely travel to locations outside the airline hub and spoke system.

In Europe, the business aviation network has three times as many links as the scheduled service network, nearly 100,000 in 2005, though most "city pairs" are flown less than once a week, Eurocontrol found. The agency observed that the most common distances for business aviation flights differed markedly from those for commercial service: 30% of commercial scheduled flights in Europe were under 500 km; for business aviation, 47% were under 500 km and most were 300-400 km.

The downside of the activity, however, is "unscheduled" traffic at origin and destination points. Eurocontrol said that although there is "relatively little business aviation traffic" compared to airline and other

traffic, business aviation traffic tends to generate "more and bigger unanticipated peaks in demand at airports than does scheduled traffic at airports of similar size."

The key word is "unanticipated." Because business aviation does not work to a fixed schedule, Eurocontrol said, it can consume a "disproportionate amount of flow management resources." The agency admitted, however, that "procedures for giving business aviation access to capacity-constrained airports could be standardized and improved."

Another major challenge in Europe will be to build the infrastructure at the outlying airports favored by many business travelers, particularly with the short-field performance promised by VLJs (these take off in fewer than 3,000 ft). Eurocontrol found that only 11% of the 1,100 airfields in Europe currently are able to accept business aviation, because it requires them to have ground handling enterprises that can provide the needed ground transport, fuel, maintenance, catering, and customs services.

Benefits and affordability

Not surprisingly, VLJ proponents believe the benefits will outweigh the infrastructure hurdles. Vern Raburn, president and CEO of Eclipse Aviation, speaking to a standing-room-only crowd at a VLJ presentation in Geneva, said the aircraft will add a new layer of air transportation to underserved communities in Europe.

The Eclipse 500's 1,280-n.mi. range will cover "most of Western Europe," Raburn said, adding that its light weight will result in the "lowest Eurocontrol fees of any twin-engine jet." Europe has a pay-as-you-go air navigation system whereby IFR aircraft pay fees to Eurocontrol in proportion to the distance of the flight and weight of the aircraft. Raburn said air navigation charges for a flight from London to Geneva in the Eclipse 500 would be about \$130 (€100) as of May.

Adam Aircraft's Joe Walker, speaking in the same session, suggested an imbalance between Europe's wealth and its business jet fleet. Walker said the European Union (EU) contains 39% of the world's gross domestic product, four points above the U.S. share, while the EU's share of the world's business aircraft is currently 13%, 59 points below America's 72% share. How that wealth is distributed is a key factor—the number of people in Europe with wealth in the range of \$5 million-\$30 million exceeds the number with more than \$30 million by nearly 10 times. Based on this, said Walker, "It is clear that halving the costs of jet ownership far more than doubles the potential for private ownership."

Vendor delays pushed back the certification of the Eclipse 500 by several weeks. DayJet will be using these aircraft for its on-demand service.



Filling the gap

Currently the most active jet type in the EU, according to Eurocontrol, is the Cessna Citation 550 Bravo, a light jet that costs more than \$5 million used. Adam is currently charging \$2.25 million for the A700.

Walker said VLJs “fill a value gap” between fractional or chartered flight providers and airline travel. By his analysis, an airline ticket covering the 400-n.mi. distance from London to Geneva costs about \$1/mi., but takes about 5 hr if connecting through a major hub such as Paris. Having a connection for such a short trip is not atypical for most airlines flying the route.

Chartering a London-based Learjet 45 for the same flight would get you there in just under 2 hr as well, but it would cost \$8/mi., Walker pointed out. Taking the trip on a business jet as part of a prepaid 25-hr block of travel time, a program offered by some fractional providers, would cost \$10/mi., he said. With an A700 carrying two pilots and one passenger, said Walker, the cost would be \$5/mi., and the time just over 2 hr. With its maximum of six passengers on board, however, he said the cost would be about the same as the \$1/mi. the airlines can deliver.

Burgeoning demand in Middle East

The eastward push of VLJs is not only continuing but gaining momentum as well. Saad Wallan, chairman of Riyadh-based Wallan Aviation and the Cessna's top salesman in the Middle East last year, said his customers were “patiently awaiting” the certification of Cessna's new \$2.4-million VLJ, the Mustang, later this year. The company so far has orders for more than 240 aircraft. Wallan was in Geneva buying an assortment of seven Cessna Citation business aircraft, the company's line of light and midsized jets. Overall, Cessna sold 11 Citations to Middle East customers at the show.

In terms of Mustangs, Wallan had sold eight so far, but he sensed much more demand to come, based on sales of Cessna Citation light jets there. He said Citations are popular in the Middle East because the average length of trips (under 1,000 n.mi.) is a good fit for the aircraft's capabilities. He said the Mustang would be “an extension” of the Citation line.

“I believe it will be an aircraft for almost anything,” Wallan pointed out, including flight training for the airlines, business travel, and personal travel. “It will be like the Cessna 172 of the jet fleet,” he added, referring to one of the most popular propeller-driven training aircraft in the world. 75



London Executive Aviation will be using Cessna Mustangs for its charter business.

Euro jet makers show off wares

Western hemisphere VLJ manufacturers may have generated much of the hype at the annual European Business Aviation Conference and Exhibition (EBACE) in Geneva during the first week of May. But it was two business jet programs home grown in the European Union that generated most of the gawking—they actually brought aircraft.

French jet manufacturer Dassault was showing off its soon-to-be-certified Falcon 7X, an aircraft the company calls the “world's first purpose-built fly-by-wire business jet.” Powered by three Pratt & Whitney Canada PW307A turbofans, the 12-plus-seat, \$36-million airplane on display was the third test aircraft built, and the first to be equipped with a full interior.

The 7X will take its place in a long line of Dassault business jets that started with the first Falcon 20 in 1963. The company today builds four tri-jet models (including the new 7X) and two twin-engine models, and it has produced more than 1,650 Falcon business jets in total. Dassault delivered 51 aircraft last year and expects to deliver 60 this year. It has a backlog of 200 aircraft on order, 84 of which are Falcon 7Xs. Though 60% of its sales have traditionally gone to the U.S., Dassault says a strengthened global demand resulted in a 50-50 split this year, with the other half going primarily to Brazil and other parts of South America, Russia, Ukraine, and the Middle East.

The aircraft displayed at EBACE was being used in the certification testing to validate the air conditioning and pressurization systems, sound-proofing, and all of the avionics. Dassault has 40 7Xs in various stages of production; 10 are in final assembly, in parallel with certification flights scheduled to begin this summer and to end with final certification early next year. In early April the second prototype successfully completed five days of cold soak trials at Iqaluit and Resolute Bay in northern Canada, where temperatures during tests dipped down to -33 C. As of late July, the company said flight testing would be completed by December with certification following in the first quarter of 2007.



In the less expensive regime, German manufacturer Grob brought its first business jet, the Grob SP light jet, to the exhibit. The company first unveiled the all-composite eight-passenger light jet at the Paris Air Show last summer. Though the \$5.8-million SP is Grob's first foray into

the business jet market, the company has produced more than 3,500 all-composite gliders and propeller-driven single-engine aircraft since 1971.

Grob has 400 orders for the Williams FJ44-3A-powered SP and expects European certification in the first quarter of 2007, followed by FAA certification and first deliveries in the second quarter. First flight for the aircraft took place in July 2005.

