



The sky's going to be black with them, they say – but after NBAA we're little the wiser about VLJs, as Liz Moscrop reports

Earlier this year at Geneva's European Business Aviation Convention and Exhibition, the VLJ session positively burst with the best industry brains thrashing out the issues *du jour*. Several audience members spilled into the corridor – and still they stayed to listen. Yes, it was that popular. Murdo Morrison, editor of *Flight International*, was moderator; and there was a lively and useful debate with plenty of input from the floor.

The National Business Aviation Association's (NBAA's) annual convention in Florida had all the ingredients to continue where Switzerland left off – six VLJ CEOs, two start-up air taxi operators and the FAA's head of general aviation operations. But what happened? It provided a hot overfilled room; with no feisty moderator to stop presentations degenerating into sales pitches; and no time at the end for audience questions.

The VLJ notion is creating a lot of buzz. Some say they will extend the benefits of business aviation to remote communities. Their avionics will allow them to fly efficiently at lower altitudes and they will be able to access airports with 3,000-ft. runways. Therefore, they will be instrumental in defining a new air taxi market – if it takes off.

It was a pity the monitoring at NBAA was not stronger. The talent at the top table is shaping a new market segment, and the show offered the perfect opportunity for robust discussion. There was general agreement that new engines, new avionics and new manufacturing methods are slashing the entry price to a formerly prohibitively expensive (for many people) business jet market. The decline in airline standards, overcrowded terminals and security hassles are causing business travellers to abandon the airlines in favour of private jet travel. There was dissension over the potential size of the VLJ market, although most panellists estimated 2,500 to 2,700 deliveries over the next decade, or 5,200 to 5,700 if the air taxi industry flies.

That's a lot of new jets and these manufacturers are introducing radical technology, so it is appropriate that they have a voice to describe their wares – it just would have been more useful if they had done so in addition to contributing to a general discussion about what it all means. The aircraft under discussion are almost all at the fruition stage, with several certifications either just awarded, or likely to come in the next 24 months.

What's in a name?

VLJs embrace a wide church, with some denying membership. Rick Adam, Adam Aircraft's CEO and president is happy to be in and claims his twin boom Adam 700 will be the third VLJ certified, after Cessna's Citation Mustang and the Eclipse 500, although he did not say when. Like other VLJs, the aircraft aims to be profitable at low production rates because its carbon fibre construction does not require a massive investment in high-rate tooling. George Bye, ATG's CEO, names his 500-knot, two-seat Javelin the 'sports car' of VLJs. Cessna's CEO Jack Pelton, however, shifts away from the VLJ label, calling the Mustang a 'downward extension' of the Citation product line. Whatever the name, Cessna has revised its VLJ sales estimates upward and now envisages a market demand for 300 to 500 of them each year until 2017.

The original VLJ manufacturer, Eclipse Aviation, was there. CEO Vern Raburn always gives great press and this time was no exception. He says that what is happening today will have such a profound effect that there are no existing business models that reflect the potential market. His belief is that the aircraft industry charges more money for more performance, resulting in no change in the value equation. However, the high-tech industry from whence he came charges



Top: Piper's new jet will use the Williams F-33 engine

Above: Cessna's Mustang sallies forth
Below: Embraer is enjoying phenomenal success with its VLJs



Eclipse 500s in formation





Above: Spectrum Aeronautical's renamed Independence S-33
Above right: Adam 700 will be the third VLJ certified
Below: the experimental 7X sailed through flooded runway trials earlier this year



less money for more performance with each new generation of equipment. He told me later that he feels the aviation industry has lacked entrepreneurs for many years, which means that it is slow to change and embrace new

technologies and concepts. The man was an early Microsoft employee, and this shapes many of his pronouncements. (During the session he apologised for inflicting PowerPoint on the world, thus earning the respect of most of those present).

Luis Carlos Affonso, executive VP of Embraer executive jets, believes there will be more than 5,000 VLJs flying in ten years if the air taxi market develops. The firm's Phenom 100 and 300 aircraft are designed for high utilisation, boasting fully enclosed aft lavs, and lots of baggage space, making them ideal for air charter. Embraer has already booked air taxi fleet orders in Spain and Switzerland.

The air taxi market will be tested in the US, which has different travel requirements to Europe, although there will be some similarities. Start-up operators Day Jet and Magnum Jet were represented on the panel. The companies will shortly see their first aircraft deliveries. Ed Iacobucci of Day Jet will use the Eclipse 500 to serve 'Day Port' locations in Florida, and he plans to expand across America over the next four years. Low cost travel is his mantra. Magnum Jet's Jim Burns has invested heavily in Adam Aircraft and plans to use Adam 700 and Embraer Phenom 300 aircraft. Burns says that air taxis



have great market potential because of their speed: passengers won't have to deal with airline hassles and departure delays.

Piloting training

A key area of concern is training. It is a topic that crops up constantly and which has sparked many column inches and fierce disputes. Many people erroneously believe that a PPL can jump into the cockpit of one of these new sophisticated machines and tootle around at airline altitudes. Not so. The NBAA has issued VLJ Training Guidelines, which follow the FAA/Industry Training Standards (FITS) programme for technically advanced aircraft that VLJ manufacturers are adopting. Traditionally, when a pilot wanted to qualify to fly new aircraft, s/he passed an FAA checkride. Under the Eclipse 500 training program, which follows FITS, a candidate must hold a private pilot's licence plus multiengine and instrument ratings. VLJ training also offers a mentoring program, in which airline pilots work with candidates to reach and maintain proficiency. Manufacturers are also working closely with insurance companies as well as the flight-training providers, such as FlightSafety and SimuFlite.

This is the stuff that people really wanted to talk about. But by the time it was FAA's Ron Baker's turn to speak, the session was running out of time. Although Baker admitted training was an issue and said that the FAA is gearing up for large numbers of VLJs with new standards in the pipeline, he was hazy about what exactly the administration was going to do. Pilot training standards have remained static for years and around 90% of accidents involve pilot error. Flying VLJs will require more training, but development of FAA training standards is not matching new aircraft production.

On that note, the session came to a close with time for just one question from the audience. Whether the VLJ market takes off or not remains to be seen. One thing's for certain though, conference organisers need to make more space to talk about it - in every sense of the word. ■

Below: eat your heart out Concorde -Aerion's supersonic bizjet hopeful



NBAA highlights

More than 33,000 turned up to see 1,150 exhibitors show off 133 aircraft and associated products and services. There were new jets galore. In a welcome recovery from a difficult year Spectrum Aeronautical renamed its VLJ the Independence S-33 and announced the new Freedom S-40 jet; the launch platform for Honda's new GEHF120 engine. Cessna was bubbling with \$1bn in show orders, certification for the Mustang, and two new model announcements: the CJ4, which will carry up to eight passengers at 435kt and the Citation XLS+. The company also disclosed it may produce a large cabin intercontinental jet. (Cessna is not alone in this - look out for large jet announcements from the major players next year). Dassault's digital Falcon 7X is still classified as experimental under US FAA rules, but the first completely digital Falcon 7X with a fully fitted interior was on display.

EADS Socata presented the latest version of its turboprop VLJ pretender the TBM 850, which will have a new multi-function display Garmin GMX 200 as standard, and Pilatus announced its next-generation PC-12 turboprop. Raytheon split its Hawker 850XP variant in two: it now comes as the super-light Hawker 750 and mid-sized Hawker 900XP. Piper introduced a new six-seater VLJ, powered by the Williams F-33 engine. Williams enjoyed a great show. Cirrus launched its single engine CirrusJet and confirmed that it, too, will use the 1900-lb thrust FJ-33 powerplant. Additionally, the Williams FJ44-4 was chosen to power the CJ4. Piaggio said it is going ahead with its business jet, but earliest launch date is the middle of next year according to CEO Jose Di Mase, who says it will be a twin turbofan and bigger than its P180 Avanti II. Boeing finally confirmed its BBJ3 - the VIP derivative of the 737-900ER - and Airbus announced the first delivery of its A318 Elite. Honda, meanwhile, announced 400 show orders for its new HondaJet.

Avidyne Corp and S-TEC were obviously hoping to break into the turboprop market with a fully integrated glass cockpit for the Beechcraft King Air 200 family. And the concept of supersonic business jets is becoming a reality. Says NBAA CEO Ed Bolen, "I don't know when, but it's certainly a logical progression of aviation." The major obstacle is mitigating the noise, as current FAA regulations forbid a civil aircraft sonic boom from reaching the ground. Gulfstream produced its "quiet spike" noise reducing telescopic boom at Farnborough and announced at NBAA it was simply waiting for the right conditions to test the equipment in collaboration with NASA. In anticipation of eventual regulatory acceptance, Nevada based Aerion introduced its eight seater supersonic jet, which it says can accelerate to Mach 1.5 at 51,000ft for transatlantic crossings.