

## young members

**Tim Robinson**

# Test pilots rate virtual aircraft



*Above: The winning Swansea University team with former test pilot John Farley.  
Right: RAF careers advice was available during the day.*

Merlinsim's student aircraft design and handling competition, in conjunction with the RAeS Flight Simulation Group, is rapidly growing from small beginnings to a must-attend event for anyone interested in aerodynamics and design. This year's competition fly-off, held at Hamilton Place on 13 June, was the largest ever, with ten university teams competing and the standard of entries, according to the judges, was 'higher than ever'.

As before, the judges this year were the legendary Harrier chief test pilot John Farley, and Dave Southwood, fixed wing tutor at the Empire Test Pilots School (EPTS), who also flies WW2 warbirds on the airshow circuit in his spare time. A more experienced and knowledgeable pair of pilots would thus be difficult to find!

The designs ranged from regional jets, to turboprop commuter aircraft to transports and advanced military trainers. The teams also entered some extremely innovative designs that large aerospace manufacturers would be jealous of. The University of Manchester team, for example, had designed a low-observable UAV air tanker to refuel other UAVs. Meanwhile, the University of Bath had designed an electric GA recreational aircraft, with a tandem wing to make it extremely safe and stall-proof. Salford University's Team One had designed a 850-seat Blended Wing Body (BWB) airliner, while the University of Leeds entry was Five Star — a Very Light Jet. (VLJ).

As in previous competitions, the format took the form of both John and Dave taking turns to pilot the designs in the sim, with the HUD and display projected in the Boeing Lecture Theatre, along with the commentary. A series of short flight test manoeuvres were performed, from take-off to landing, to attempt to demonstrate the types' handling characteristics and spot any vices.

During the lunch break there was another interesting use of the simulator, when Dave Southwood attempted to fly a 'virtual' Cody Flyer. This had been modelled in the sim and, due to lack of time, used a standard GA aerofoil. However, the results of Dave's flight test, short hops, with little directional stability due to the small 'top rudder' were extremely consistent with contemporary accounts of Cody's first hop over Farnborough Common in 1908.

First prize, which consisted of £1,000 from the RAF Directorate of Recruiting, the Harrier Trophy of the Merlin Flight Simulation Group, and a year's free RAeS membership went to Swansea University for its four-seat, twin turboprop, commuter, executive aircraft which featured a pusher layout. The team also won a prize from the Aircraft Owners and Pilot Association (AOPA) of an hour's flying lesson each for 'best new aircraft design'.

Second prize, which was £500 donated by Messier-Dowty, went to the University of Salford Team One and its large BWB aircraft. The team won the £200 prize for 'most innovative design' from the Association of Aerospace Universities, as well as a year's subscription from *Today's Pilot* for 'best individual entry'. Third prize, of £300 from Goshawk Aerospace, was given to The University of Manchester, for its stealth refuelling UAV.

Other winners included Kingston University, which won £250 donated by Information Handling Systems — Engineering Sciences Data Unit, for 'best technical information' for its environmentally friendly short-haul airliner.

Finally the University of Bath won a 20-minute flight in a Stearman biplane, donated by Touchdown Engineering for its electric GA concept aircraft.

The competition once again showed the value of test pilot feedback to students to inspire and encourage them in furthering and staying in aerospace. The standard of entries, too, is getting more and more professional every year.

Thanks go to Merlinsim and the RAeS Flight Simulation Group for organising this event as well as the companies and organisations that contributed the prizes for the winners.

## shortcuts

Next year's January YM lecture topic is yet to be decided. What would you like to see discussed in a YM lecture? Is there anyone you know, whether at your work or elsewhere, who would be a good speaker? If you have an idea for a lecture, on any aviation or space related topic, please do get in touch!

More broadly, if you want to get involved with the work of the YMB, we are always looking for enthusiastic members to help out. Even if you can't commit to a position on the board, you can always help out as a facilitator — this summer we had volunteers helping out at the Farnborough Air Show and at the Royal International Air Tattoo at Fairford. Get in touch and get involved!

### Current YMB Discussion Points

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Future YMB lectures  
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### Have your say!

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