

CONGRATULATIONS!

Engineering Student of the Year 2010



Rick E Cory

Massachusetts Institute of Technology

2nd Place: Bin Li, Washington State University

3rd Place: Onur Bilgen, Virginia Tech

Honourable Mentions:

Koray Celik, Iowa State University

Sertac Karaman, Massachusetts Institute of Technology

Justin Koning, Delft University of Technology

Alexander Le Page, Cranfield University

Shawna Libeau, New Mexico State University

Manas Chandran Menon, Massachusetts Institute of Technology

Mario Merino-Martinez, Universidad Politécnica de Madrid

Binh-Minh Nguyen, Northwestern University

David J Moore Pitman, Massachusetts Institute of Technology

Yan Qun, Aerospace Engineering Institute of CAFUC

Mohammad Ali Rafiee, Rensselaer Polytechnic Institute

Thomas Robertsson, Royal Institute of Technology (KTH)

Soumik Sarkar, The Pennsylvania State University

Sheng-Wen Wang, University of Minnesota

Thomas Wormer, University of Colorado

Dr. Yoshinori Yamada, Mississippi State University

Tatsunori Yuhara, University of Tokyo



Flightglobal
Achievement
Awards 2010

BOEING ENGINEERING STUDENT OF THE YEAR



Meet the winners
of the Flightglobal
Achievement
Awards
AWARDS P55

Salute to the greats



Stepping out in style: Willie Walsh joins other guests on a specially chartered Routemaster



Former Flight International Editor Allan Winn catches up with Andrew Braley of AJ Walter Aviation



The evening provided plenty networking opportunities after the show



Meeting up with old friends and colleagues over a drink



Former Beirut hostage and broadcaster John McCarthy explains why travel broadens minds

British Airways boss Willie Walsh, the passengers and crew who tackled a suicide bomber and the team behind a fly-by-wire system for Embraer business jets were last night named Leader, Aviator and Innovator of the Year in the second Flightglobal Achievement Awards.

The 89-year-old Joe Sutter, father of the Boeing 747 in the 1960s, picked up an award for Lifetime Achievement at the ceremony in front of 150 industry VIPs at TAG Farnborough Airport.

The winners topped a poll on flightglobal.com, where voters had to choose their favourites from a shortlist in each category.

Also announced at last night's ceremony was the fifth Boeing Engineering Student of the Year, Rick Cory. Chosen by a panel of former Boeing senior engineers, Cory left school with few qualifications and was working in a DIY store when he decided to go back to college and indulge his passion for robotics. He has ended up with a PhD from one of the USA's top universities for his work on perched landings with hand-held, fixed-wing unmanned air vehicles.

The event was sponsored by Abu Dhabi Aircraft Technologies, AJW Aviation, Bombardier and Boeing, and hosted by *Flight International* editor Murdo Morrison. Special guest John McCarthy, author, broadcaster and former Beirut hostage, gave an inspirational talk on international relations and understanding cultures.

Cory, Sutter and Walsh attended in person to pick up their awards. The passengers and crew of Delta 253, on which a young Nigerian tried to explode a bomb hidden in his underpants on 25 December last year on an Airbus A330 flight from Amsterdam to Detroit, were represented by Jasper Schuringa, a Dutch film producer who overpowered the terrorist after he saw flames coming from his lap and gave cabin crew a chance to fetch fire extinguishers.

Embraer's award was picked up on behalf of his team of engineers by Ciro Tokasiki.



Joe Sutter (above): father of the Boeing 747 won the Lifetime Achievement award. Jasper Schuringa (right): hero of Delta 253 accepted the Aviator of the Year award on behalf of the flight's passengers and crew



Ciro Tokasiki of Embraer (above right) collects the Innovator award from TAG's Brandon O'Reilly on behalf of the Legacy 450/500 fly-by-wire team. Rick Cory (right) accepts the Boeing Engineering Student of the Year award from Boeing's UK president Sir Roger Bone



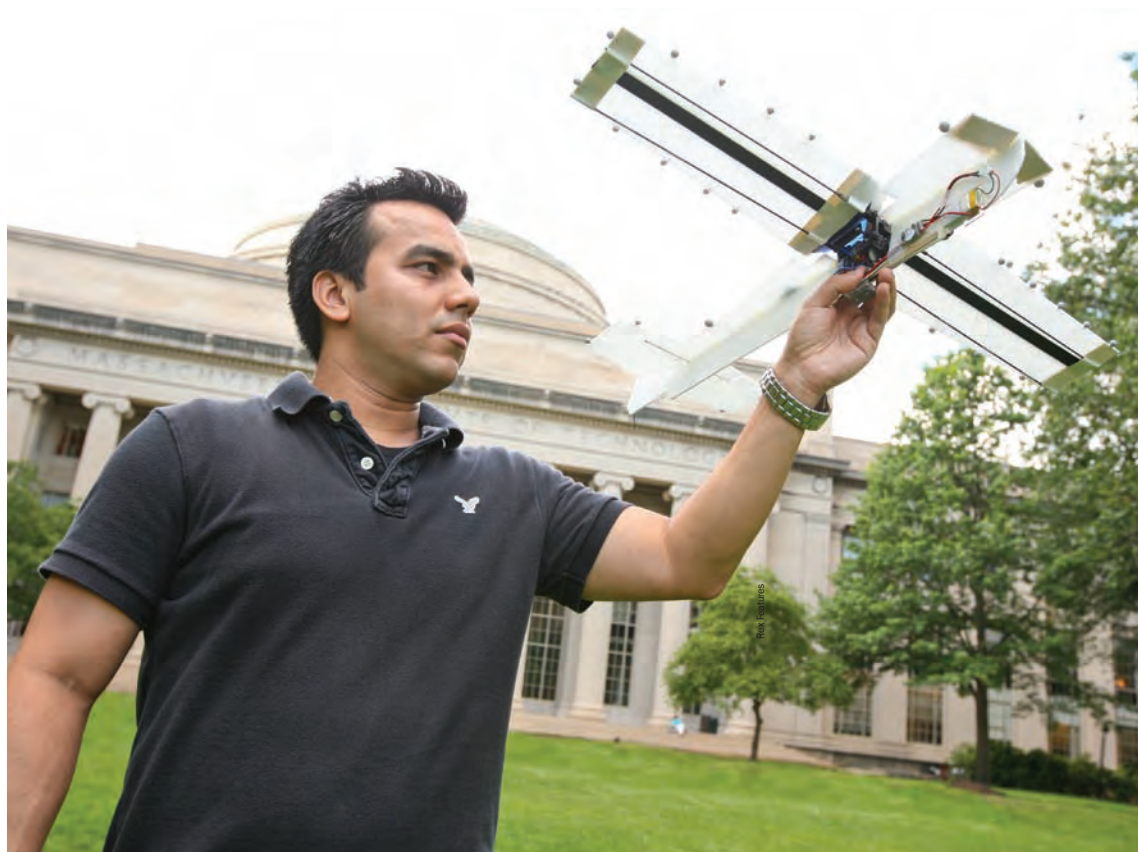
Leader of the Year, British Airways boss Willie Walsh (centre left) is handed his award by Christopher Whiteside of AJ Walter Aviation and colleagues



FLIGHTGLOBAL ACHIEVEMENT AWARDS

RICK CORY

A high-school drop-out and struggling rock band drummer, Rick Cory was working in a DIY store when he discovered that it was possible to earn a living from his dream job – designing robots – which he had loved from an early age



Cory: his PhD thesis contained “breakthrough research” into flying robotics

It was when Rick Cory realised that his teenage dreams of being a rock star were probably not going to happen that he decided he wanted to design robots for a living. The Star Wars fanatic was stacking shelves in Home Depot, having flunked high school, and playing drums in a band in the evenings. But he knew he needed a proper career.

“I was never interested in the academic side at school and I didn’t do well, but there is no motivation like living in the real world” says the Californian. “I had been into robots since I was eight or nine years old and when I realised people got paid for designing them, I knew that was what I wanted to do.”

A decade or so on and Cory has just been awarded his PhD from one of the USA’s top academic institutions after completing his dissertation on flying robots. He has also landed a position with Walt Disney’s Imagineering Research business, and at the Flightglobal Achievement Awards ceremony held at the Farnborough air show yesterday was named Boeing Engineering Student of the Year.

His journey from Orange County hardware store to Massachusetts Institute of Technology doctorate has been one of determination and passion for robotic technology, something he says was instilled in him watching science

fiction movies when he was eight or nine-years-old. It concluded in June with the publication of his PhD thesis and what the judges described as “breakthrough” research in unmanned flight. The paper contained the first successful experimental demonstration of dynamic perching landing with an unmanned air vehicle, something birds can do but had never before been accomplished with a fixed-wing aircraft.

The journey started back in the late 1990s with Cory deciding he had to get

“I had been into robots since I was eight or nine years old and when I realised people got paid for designing them, I knew that was what I wanted to do”

RICK CORY

some qualifications. He went to his local library and immersed himself in books on physics and maths over a summer. That allowed him to pass the entrance exams for community college. Once there his straight As meant he could transfer after two years, with a scholarship, to the University of South-

ern California to study computer science and engineering.

A professor who specialised in human robotics took him under his wing and his enthusiasm developed into an academic interest in the field. He began working on projects of his own and after graduating in 2004 with a bachelors degree, landed a six-month placement with a technology laboratory in Japan, where he continued his work on humanoid robots. He also did a stint at NASA in Houston on a project to design a robot to go into space.

He was accepted for a masters at MIT, the leading centre for robotics research – “There was nowhere else I wanted to go” – where he teamed up with another academic, later to become his PhD advisor, Russ Tedrake. Tedrake was doing research into how various aspects of bird flight could be replicated on unmanned flying vehicles. One of the biggest challenges was understanding the precise complex aerodynamics of how a bird controls its wings to land on a perch.

The two-and-a-half years Cory spent on his masters were spent largely, he says, trying to “understand what the problem was”. For his PhD, he took the process further, looking at post-stall aerodynamics, turbulent flow and look-forward non-linear feedback control.

The judges were highly impressed. “Typically this level of complexity

could only be handled by a larger super computer if the motion of the manoeuvre could be modelled at all,” they said. “Instead, Rick’s out the box approach for developing the needed control laws, by experimentally studying the fundamental mechanisms needed for a successful perching landing in a windtunnel, which he specially designed to help for this application, allowed him to solve the problem in a much more simple and elegant way. By using this innovative approach he was able to create the control algorithms at a level that they could be run on a small micro-processor carried by a miniature UAV.

SURVEILLANCE

“The impact of his work in the near term will be in the UAV arena, where the perching landings are needed to perform surveillance and observation missions for government civil, and commercial applications. Currently perching missions for UAV are performed with helicopter type aircraft, which by their nature are not as energy efficient as fixed-wing vehicle.

“In the longer term, it’s difficult to predict what will result from Rick’s work but we can be sure it will be significant. The ability to create machines that can perform in the physical world as well as animals and man can will undoubtedly have a major impact on our future. Today, we are only scratching the surface with our robots when it comes to abilities which man and animals perform effortlessly such as running, climbing, swimming, flying and playing sports.”

Cory has not said farewell to the aviation industry. Although he cannot reveal details of his two-year post-doctoral assignment with Disney in Glendale, California, he says he will be “working on technology for the next-generation of entertainment robots”, adding: “Remember, there are Disney characters that can fly.”

After that, he will “look at what opportunities are available”. It might even involve rock music again. “I took my drums to Boston and teamed up with some guys,” he says. “We have just done our last show, but I’m keen to reconnect with my old band in California.”

Boeing has paid tribute to the other candidates for this year’s Engineering Student of the Year Award, who it says were a “very impressive group of new engineers with a very wide and diverse set of interests and work. They represent countries from around the world and have done work from the micro level, such as grapheme composite materials that are a single atom thick, to the macro level, such as the design of full scale aircraft.” ■