

# Set to soar at long last

## After six long years, Carleton engineering students finally get the chance to see their aerial prototype take flight

By Tony Lofaro, The Ottawa Citizen, March 6, 2010



**Fourth year Carleton aerospace engineering students Alex Iskra, left, Sean Donnelly, Alexandre Adcock, and Sarah Baldwin played a leading roll in the development of a prototype unmanned aerial vehicle, which was unveiled at the campus on Friday.**

Photograph by: Wayne Cuddington, The Ottawa Citizen, The Ottawa Citizen

An unmanned aerial vehicle prototype produced by Carleton University students takes off next month in a test flight from Arnprior airport.

The inaugural flight of the sleek-looking vehicle -- which was designed to conduct high resolution geomagnetic surveys -- is the culmination of countless hours of work by more than 150 students over the past six years. The ambitious school project by fourth-year aerospace engineering as well as electrical, systems and computer engineering students, was unveiled Friday on campus, before more than a hundred enthusiastic spectators.

"We've never done anything like this in our school careers before. Just the fact that we have an actual finished project, a very complex project and a huge number of people who worked on is something," said fourth-year student Alex Iskra, after the GeoSurv II vehicle was unveiled.

The remote-controlled vehicle weighs about 200 pounds, is four feet high, 14 feet long, has a 16-foot wingspan, operates with a 30-horsepower engine and has a cruising speed over 60 knots. It

was built mostly from composite materials -- carbon fibre -- so it can produce more accurate magnetic survey results of the earth's terrain.

The airborne vehicle was designed primarily for geophysical survey work, but its modular design means it can be adapted for other types of missions. Carleton is the only university in the country where students build this kind of system, from the conceptual design to a working prototype. The project was also supported by Sander Geophysics Ltd., an Ottawa company.

Jeremy Laliberté, an assistant professor in the Department of Mechanical and Aerospace Engineering, said this year's graduating students are reaping the benefits of work done by past students on the project.

"That's the bonus for them, they actually get to see something physical that has been completed," said Laliberté, adding that students worked on all aspects of the vehicle, including the design, building and aerodynamics.

He said in the current test flights series, the aerial vehicle will be limited to about 2,000 feet, but is designed to reach an altitude of 15,000 feet so it can be operated in more mountainous regions.

"We'll have to stay initially within visual range so our RC (remote-control) pilot" can see it.

Laliberté said the first test flight will collect data from the onboard systems and operators will keep a close eye on how the aircraft handles in the skies.

"It's been a long road to get here, but it's been exciting," said Laliberté, who was an advisor on the project before coming to Carleton.

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