



## Ready for takeoff

*‘The Nicol competition helped us learn to think like business people’*

As aspiring young engineers, Curtis Parks and Chris Polowick are used to solving complex technological challenges. But it was another set of skills entirely that propelled them to the top of the 2011 Nicol Entrepreneurial Award Competition.

The two Carleton University students won the award on the strength of their idea for a new service that would use unmanned aircraft to conduct routine aerial surveys for companies in remote locations.

“Curtis and I tend to approach problems from a technical perspective, but the Nicol competition helped us learn to think like business people,” explains Polowick, a native of Calgary, Alberta.

Parks, who grew up in Peterborough, Ontario, says that in the process of refining their business pitch, he and Polowick learned a lot about what it takes to be an entrepreneur. “Our heads are into the engineering side of things so we like to talk about the aircraft itself. But in the end there was a lot more in our presentation about the business strategy and market potential.”

Now both 23 and enrolled in Carleton’s master’s program in aerospace engineering, Parks and Polowick got to know each other three years ago while competing in NASA’s annual Great Moonbuggy Race in Huntsville, Alabama. The popular event challenges teams of students to design, build and race lightweight, human-powered vehicles that address many of the same engineering hurdles encountered by Apollo-era lunar rover developers in the late 1960s.

Although their team failed to complete the grueling race, Parks and Polowick became good friends. Later, they spent 16 months together on a co-op assignment with Defence Research and Development Canada (DRDC), the R&D arm of Canada’s Department of National Defence.

It was while they were at DRDC that the two young engineers began working with unmanned aerial vehicles (UAVs). Widely used for military surveillance and attack missions, UAVs are now showing up in an increasing number of civilian roles, such as firefighting and search and rescue.

As luck would have it, the operators of a diamond mine in the Northwest Territories approached DRDC around the same time to ask whether it would be feasible to use UAVs to perform routine tasks such as wildlife surveys, aerial mapping and inspections of remote infrastructure. Like many resource companies, the firm had been using conventional aircraft to gather such data, but it was looking for a way to reduce costs and eliminate the risks that crews face when flying in remote areas.

By the time they finished their internships, Parks and Polowick had made up their minds to design and build a cost-effective unmanned aerial survey system. “We could see that there was a need for it,” Parks says. “Until now, UAVs have generally been available only for military uses and companies with deep pockets.



## The Nicol Entrepreneurial Award

We felt we knew enough about the technology that we could create a simpler and less expensive UAV system geared specifically to low-cost aerial surveys.”

But figuring out the technology was only part of the challenge. Competing for the Nicol Award exposed the two engineers to a different set of problems. “I guess I’ve always seen myself as designing planes and rockets,” Polowick says. “During the competition we had to learn to ask the right business questions: how much will the product actually cost, why would companies use it, what would they be willing to pay for it, and so on. Those definitely aren’t the kinds of things we’ve been exposed to in engineering school.”

Since winning the Nicol trophy, Parks and Polowick have been working to get their Ottawa-based company, Next Generation Flight ([www.nextgenflight.ca](http://www.nextgenflight.ca)), off the ground. “Originally we were planning on taking it slow and growing organically, but we’ve decided that we need to move faster to stay ahead of the potential competition,” Polowick says.

In the fall of 2011 they finished building a prototype aircraft and conducted their first test flights. By the summer of 2012 they hope to begin a series of trials with one or more potential customers. In the meantime, they are drawing on their Nicol Award experience -- and the contacts they made while taking part in the competition -- to refine their business plan and prepare to approach investors.

“Hopefully two years from now we’ll be running a successful business,” Polowick says. “But no matter how this turns out, I’m sure it will be incredibly valuable to the rest of my career.”

Adds Parks: “We always thought there was a need for a product like this, but the experience of competing for the Nicol Award, and then working through the business plan, has given us a much better idea of the scale of the opportunity. It’s not like trying to break into an established industry. It’s a unique opportunity to develop a business in a field where things are developing very fast.”