

Human-powered helicopter wins Sikorsky prize

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This undated photo courtesy of AHS InternationalAeroVelo, Inc shows AeroVelo's winning flight of the Igor I. Sikorsky Human Powered Helicopter Competition. The Canadian-built helicopter that is powered by a human riding a bicycle has become the first winner of a decades-old \$250,000 engineering prize, the US awarder said Friday.

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The American Helicopter Society had never given out its Igor Sikorsky

Human-Powered Helicopter Award—initiated 33 years ago—until the team from the University of Toronto snatched it this week.

The challenge was to create a flying machine that would be able to reach a height of three meters (yards), fly for 30 seconds by human power alone, and stay in a 10 by 10 meter area.

"It was long seen as impossible to win this," AHS International executive director Mike Hirschberg told AFP.

The winning vehicle is called the Atlas, and was designed by a team of about 20 students and young professionals.

The aircraft is extremely light—just 121.4 pounds (55 kilograms)—but it spans a sprawling 162 feet (49.4 meters).

"This is not about creating a practical machine," said Hirschberg.

"This is to set a challenge for young engineers, to harness their creativity and technical skills and to experience working as a team against really, extremely challenging requirements," he added.

"It is sort of like climbing Mount Everest for the first time—to prove it can be done."

The winning June 13 flight was pedaled by team leader Todd Reichert, 31, an [aerodynamics](#) expert and competitive speed skater.

Reichert is chief aerodynamicist at a company called AeroVelo, which was created by the students in their mission to win the competition's cash.

AeroVelo co-founder Cameron Robertson, 26, said the aircraft is

designed to be ridden by someone 160 pounds or less.

It also requires a fairly strong pedaler, requiring about one horsepower to operate, when the average person could probably manage a half horsepower, he said.

Robertson said the team was motivated by the prospect of "showing people that impossible is nothing."

The \$250,000 prize, which was formally awarded Thursday after about a month of technical review of the winning flight, was also a key factor.

Winning it will allow the team to invest more in AeroVelo and support research with the current crop of University of Toronto engineering students, Robertson said.

"We are not rich but it will enable us and the students with us to continue doing what we love doing," he said.

The prize is named for Igor Sikorsky, a Russian born engineer and pilot who came to America in 1919 and in 1939 designed and flew the first successful single main rotor helicopter in the world.

The amount was set at \$10,000 when the award was initiated in 1980 and was soon raised to \$25,000.

But no-one ever won, and the program stagnated through much of the 1990s and 2000s until Sikorsky Aircraft Corporation agreed in 2009 to raise the amount to \$250,000.

"That quarter of a million dollars absolutely brought out some of the best innovators and the best talents in tackling this challenge," said Hirschberg.

The first prize attempt at a [human powered helicopter](#) was by California Polytechnic State University, which flew its craft for 8.6 seconds at a height of eight inches off the ground in 1989, according to AHS.

A team from Nihon University in Japan set the endurance record for the [prize](#) with almost 20 seconds in 1994.

For the winning University of Toronto AeroVelo team, Robertson said the next lofty challenge is building an extremely lightweight bicycle that can reach human-pedaled speeds of 75 miles per hour (120 kilometers per hour).

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