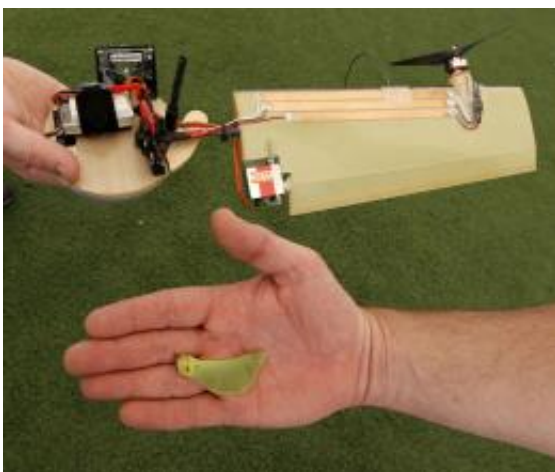


# Lockheed Martin develops maple-seed-like drone

August 15 2011, By Geoff Mulvihill, The Associated Press

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Lockheed Martin Advance Technology Laboratories' Craig Stoneking, bottom, holds a maple seed as engineer David Sharp holds the company's new drone on Wednesday in Southampton, N.J. The unmanned, one-winged flight machine is based on the flight of maple seeds that twirl down from trees during the spring. (JULIO CORTEZ / AP)

The seeds that drop from maple trees each fall, whirring softly to the ground like silent one-winged helicopters, are the inspiration for a new kind of flying machine that could be useful for military information-gathering.

Lockheed Martin's [Intelligent Robotics](#) Laboratories, based in Cherry Hill, N.J., has spent the last five years developing an [unmanned craft](#) to

replicate the motion.

The device, dubbed the Samarai, is scheduled to make its public debut next week at the Association for Unmanned Vehicle Systems International conference in Washington, D.C.

Its engineers gave The Associated Press a preview Wednesday at an indoor soccer field in Southampton, N.J.

The Samarai is about a foot long, and has just two moving parts plus a camera. It can be controlled by a remote control or by an app on a tablet computer.

On Wednesday, engineers Dave Sharp and Craig Stoneking piloted a Samarai, which in flight looked like a translucent [blur](#) around a pair of blue and red lights. They moved it from the soccer field to the ceiling some 30 feet above and across the field.

By [remote control](#), the flight was steady. With the easier-to-use app, it twirled around a bit, not unlike a maple seed. That, Stoneking said, will be fixed in the future.

The idea isn't brand new. Students at the University of Maryland built a smaller maple seed-inspired flyer a few years ago.

Bill Borgia, director of the [Lockheed Martin](#) lab, said it could be useful for the military and police — as well as his lab's work on other devices.

Troops could carry the devices in their backpacks, launch them by throwing them like boomerangs and use real-time images from cameras to find out what might be around the next corner.

They could be dropped from plane to collect ground-level images instead

of just the aerial images used now.

Troops or police officers could use them even to get a look inside buildings.

Unlike most drones used by the military, these can hover in place like a helicopter and take off vertically in tight spaces.

Borgia said they could come in a variety of sizes and be produced cheaply by 3D printing, which uses layers of plastic to create objects.

Putting a motor on a piece of plastic that shaped like a maple seed and getting it to fly was relatively easy, Borgia said. Learning to control the natural movements was the challenge.

Borgia said the lessons learned trying to harness and mimic a natural design have already been used in some of his lab's other projects — robots that behave like human hands or move about like insects.

Lockheed officials wouldn't say how much it cost to develop or which government agencies helped fund the research.

**More information:** See also: Spiraling Flight of Maple Tree Seeds Inspires New Surveillance Technology (w/ Video)

[www.physorg.com/news175247077.html](http://www.physorg.com/news175247077.html)

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