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07 MAY **A Day at the Drone Races**
 by Meixia Huang (Randstad Managed Solutions) in [Events](#), [Stories](#)



That sound you hear is not an approaching swarm of bees but the buzzing propellers of tricked-out ready-to-fly and custom-made unmanned aerial vehicles against the wind. On a sunny, 62 degree day at the races – the *drone* races - spectators gathered to watch Microsoft's very own pilots fly their creations around tricky turns on a looped course for several laps before reaching the finish line. For the pilots, it was about having fun and testing their custom drones with fellow enthusiasts. Garage member and maker [Todd Rawlings](#), who coordinated the event, described how

members from several DLs came together for Microsoft's Premier Drone Race, primarily the "[Full-Immersion Flying \(FIF\)](#)" group that started about 2 years ago, and the "[Drone/UAV Discussions](#)" DL which has been around for 3-4 years. With over 160 combined members on the DLs, the drone enthusiast community started in the Maker Garage and continues to grow, though the racing group is early in its formation. "People love races and competition and we thought, what better way to get people excited about drone technology than to show them the best gear and best pilots at Microsoft." Todd explained. "We wanted to demonstrate to everyone that there is a group in Microsoft working on these things and they can get involved if they want. We encourage anyone interested to join one of the DLs."

The drone community roots trace back to when the Maker Garage first started, where Todd and a group of enthusiasts first met to discuss quad-copters, build Windows applications to interface with drones, and test pilot their constructions. "The people who worked in offices near us were pretty tolerant of our regular crashes into the walls." They developed a Windows 8/8.1 application that ran on the Surface and would allow a person to pilot one of the more popular quad-copters at the time, a Parrot AR Drone. Previous to their efforts, the flight control application was only available on Apple iPhones/iPads. They ported it over to the Surface and had the dream of demonstrating Surfaces in our retail locations by flying drones around the stores. While that idea didn't materialize, since then, the Full-Immersion Flying and UAV groups have peppered Microsoft history with exciting missions such as capturing aerial video of the [Xbox One Launch fireworks at night](#), flying drones at the San Antonio Data Center, and at the University of Texas, Austin campus with the Recruiting team. "We generated a lot of excitement from students who didn't expect Microsoft to be pursuing something as cool as drones."

On race day, spectators noticed the pilots sporting some cool eyewear – definitely not your typical shades for a sunny day. "You'll notice all the pilots were using something called First-Person



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Video/Viewing (FPV) to fly their copters around the trees on the course and avoid obstacles. There is a camera on each quad-copter and it transmits a video signal to the goggles the pilots wear. This FPV gives pilots a literal 'view from the cockpit' of their drones and it makes you feel like you're up there flying." Being able to have a first-person experience is part of the goal for the Full-Immersion Flying group. "The vision for Full-Immersion Flying came from a dream that many people have of flying, where you use your body to turn and you feel fully immersed as you dodge trees or skim the surface of a lake. I wanted to recreate that feeling by using some of the latest technology including Kinect, High-Definition video cameras, Immersive video goggles, and quad-copters. The piece that isn't developed yet is the Kinect interface."



The race was the idea of pilot Arvid Elias. "Arvid has been an invaluable mentor to me and everyone in the Maker drone group with his deep knowledge of building and flying these machines," explained Todd. Other pilots flying that day were David Easterson, Charles White, Rory Hayes, Nanda Sreerama, Nate Waddoups, and Nils Brasz. Pilots flew two classes of drones, Nano size (which fit in the palm of your hand) and 250 mm size (which are about 1-2 feet wide), and

each quad-copter carries one or more Lithium-ion batteries, an on-board video camera and is radio controlled. Also at the race was the Inspire 1, Paul Elliott's impressive and stylish quad-copter that captured aerial footage of the event flying high above the race course.



The Nano-sized copters were mostly 'Ready-To-Fly' devices, but almost all the 250 mm quads were custom-built. "If you do want to build one, you're going to need to understand electronics, circuit boards, soldering, electric motors, lithium ion batteries, and propellers," Todd explained. It may sound a bit daunting, but it's not hard to get started. "I would recommend heading to

one of the local hobby stores and they'll get you set up with something inexpensive that you can crash a lot and not completely break. Then you work up into the racing copters." You can also join one of the DLs and get involved that way.

A team of volunteers built all the navigation signs and safety barriers for the race, but there were still some costs involved to put on the event. "Thanks to Mike Farabelli, the Quality and Business Excellence organization and SESIT who helped by co-sponsoring the event with the Garage and covering our costs." Todd has plans for more drone races this summer and into the future, and he'll work through the Garage to spread the word. As for the future of unmanned aerial vehicles (UAVs), "I think we have a ton of opportunity to change the world with drones. They will become aerial worker robots, handling everything from Search and Rescue, to



Security/Surveillance, monitoring and measuring of crops, farmland, timberland, whale pods, volcanic activity and even the servers in a data center. They are going to do a lot more than just deliver your packages and shoot aerial footage of sporting events."

The hover cars of Star Wars and science fiction may be far in the future, but drone technology will continue to advance, and racing competitions could help drive forward developments in battery, electric motor,

telemetry, and other flight technologies. At least in the maker world, we know there will be many tinkerers up for the adventure.

Interested in all things drones and UAV related? Join the [Full-Immersion Flying \(FIF\) DL](#) and the [Drone/UAV Discussions DL](#).

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Nils Brasz Was a blast to pilot, looking forward to the next one!
Tuesday, May 12, 2015