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GroundVenture 2020: A year to remember



EAA Chapter 1637 put on a weekend of airplanes, education and shenanigans over what should have been the opening weekend of

AirVenture 2020.

After chapter President, Kurt Stanich coordinated with Alaine and Andy Lange, managers at

Platteville Municipal Airport, GroundVenture 2020 began to take flight.

And boy did it ever!

Kicking off Thursday, July 16 and running through Sunday, July 19, the four-day event featured endless entertainment for all who attended.

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Move in day on Thursday was interrupted often with opportunities for members to get up in the air and see the area from above. For those that were able to make it through the lines that seemed endless at the registration booth, they were treated to the amazing aerobatic demonstrations of Oliver and Nick Stanich.

The family duo wowed spectators with their incredible feats of flying. The pair capped off the night by flying into the setting sun, mystifying the audience with their aerial magic act.

Friday morning was met with what one attendee estimating nearly 4,000 airplane landings per hour. The amount of traffic left many airport personnel in awe and forced the diversion of what could have been thousands of planes.

With the pattern closed, campers and event attendees traveled to nearby Potosi, Wisconsin to tour the National Brewery Museum and Library and to grab a bite to eat.

Thousands of cases of locally brewed beer could have been purchased, along with hundreds of gallons of root beer for the kids and kids at heart. Potosi Brewing Company offered great relief from the heat, fantastic educational opportunities, and delicious meals for all that attended.

Friday evening would present those in attendance with a movie screening at Theatre in the Pavilion. With an updated sound system in place, the movie showing would lead to the arrival of the local Sheriff's Department, sent to investigate certain matters.

With the incident addressed, the kids in attendance returned to eating what some would say were thousands of pounds of cheese balls, chips and candy. The movie and snacking would leave some to stay up so late they claimed they saw the sunset and rise in the same evening.

Campers on Saturday morning were awoken to probably one of the most spectacular air displays never seen.

In what was being coined the "First ever aerial display of a new invisible military plane", GroundVenture saw the destructive nature it possessed.

"I heard it coming, but then out of nowhere it must have passed us by cause all I saw was my stuff flying into the nearby corn field," explained one camper.

Nearly all in attendance that were interviewed stated they could only hear the new military machine, but no one could describe what they saw.

"I heard it too, but then I had to help a friend secure their belongings because the jet wash that was created was so strong, it literally blew the corn over," stated another camper.

With the destruction from the mornings display cleaned up, many GroundVenture participants took to their vehicles on an excursion to Illinois.

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In a state of oddities, time in the “Land of Lincoln” was spent in a city that was home to President U.S. Grant, dinner at an American-Mexican restaurant that seemed to be “missing the Mexican,” and shopping at stores that forced the healthy to shield their illnesses with face masks.

The final day of GroundVenture featured breakfast that took hours to make in order to feed the starving masses that had yet to vacate the area.

A&A Aviation, who were fantastic hosts all week-end long, continued to impress attendees. Child after child were allowed to tour the airport, receive firsthand ground school basics and were even allowed to roll out on the taxiways.

Despite the cancellation of AirVenture 2020, EAA Chapter 1637 made the most of the weekend by hosting the first ever GroundVenture.

After the airport was cleaned, disinfected and searched for anyone missing, Chapter President was heard saying, “Well that was a lot of fun, but let’s not miss AirVenture ever again.”





NASA X-57 Maxwell: Innovation To A New Level

NASA's X-57 'Maxwell' is the agency's first all-electric experimental aircraft, or X-plane, and is NASA's first crewed X-plane in two decades. The primary goal of the X-57 project is to share the aircraft's electric-propulsion-focused design and airworthiness process with regulators, which will advance certification approaches

for distributed electric propulsion in emerging electric aircraft markets.

The X-57 will undergo as many as three configurations as an electric aircraft, with the final configuration to feature 14 electric motors and propellers (12 high-lift motors along the leading edge of the wing and two large wingtip

cruise motors).

The X-57 team is using a "design driver" as a technical challenge, to drive lessons learned, as well as best practices. This design driver includes a 500 percent increase in high-speed cruise efficiency, zero in-flight carbon emissions, and flight that is much quieter for the community on the

ground.

WHAT IS THE X-57

A small, experimental airplane powered by electricity!

All-electric technology will make flying cleaner, quieter, and more sustainable.

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New Technologies

Technologies, not aircraft!

NASA researchers are looking at ways to improve aircraft, not reinvent them.

New Challenges

- Reduce noise
- Lower fuel usage
- Lower emissions

Why build an electric airplane?

Electric power is efficient and reliable. Electric motors can be placed anywhere on the plane to improve efficiency.

Propulsion

No fuel, no combustion engine! It's powered 100% by a cutting-edge distributed electric propulsion system.

Environment

How Does Distributed Electric Propulsion Technology Stack Up to Piston Engines? See the image above.



Engines

Electric motors are smaller, quieter, and lighter but transfer less power than combustion engines. So the X-57 has 14 electric motors instead of two piston engines!

Why was the X-57 nicknamed the Maxwell?

James Clerk Maxwell, a 19th century Scottish physicist, pioneered the theory of electromagnetism, which paved the way for Einstein's theory of special relativity and Planck's formulation of quantum mechanics.

How will the X-57 be built?

An Italian Tecnam P2006T aircraft will be modified with an electric propulsion system. NASA will compare data from the Tecnam to the X-57 to measure efficiency.

Modification 1

Electric motors are smaller, quieter, and lighter but transfer less power than combustion

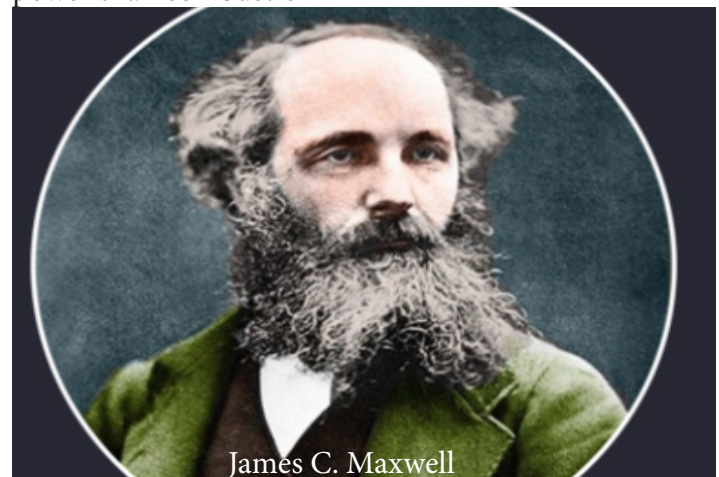
engines. So the X-57 has 14 electric motors instead of two piston engines!

Modification 2

Ground and flight tests of the electric motors, batteries and instrumentation.

Modification 3

Flight testing of the electric wingtip motors, and development and fabrication of new wing.



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Modification 4

Flight testing with all fourteen motors!

Why so many motors?

You've probably noticed all the propellers along X-57's wing. It takes a lot of lift to get an airplane off the ground!

How can all that lift be created?

12 Leading Edge High-Lift Motors

The X-57, in its final form of the project, features 12 high-lift motors along the leading edge of the distributed electric propulsion wing.

Similar to the 18 small motors used during LEAPTech ground tests, the high-lift motors are electrically powered to generate enough lift for X-57 to be able to take off at standard Tecnam P2006T speeds, even with the high aspect ratio experimental wing.



The high-lift motors and propellers are designed to activate, along with the wingtip cruise motors, to get the X-plane airborne. When the plane levels out for cruise mode, the high-lift motors will then deactivate, and the five propeller blades for each motor will then stop rotating, and will fold into the nacelles, so that they don't create unwanted drag during cruise. The two wingtip cruise motors will maintain flight during this phase of the flight.

When the time comes to land, the motors will then reactivate, and centrifugal force will cause the propeller blades to unfold and create the appropriate lift for approach and landing.

Can batteries power an airplane?

Batteries power everything from your cell phone to equipment on the International Space Station! The X-57 uses rechargeable lithium-ion batteries.

X-57 Batteries are:

- Commercial lithium-ion, in two 400 pound packs
- Placed inside custom-designed battery packs
- Located in the cabin
- Supplies 23 kilowatt hours of energy
- Extensively tested for safety, energy usage and weight

How can a small wing act bigger?

The X-57 aircraft uses 12 small motors located across the wing to increase airflow so that the wing produces lift even when the aircraft is flying slowly.

Who's on the team?

Engineers, researchers, pilots, visual artists, and many other people from the four flight centers and business partnerships work together to make the X-57 Maxwell idea a reality.

For more information on the X-57, visit:
[Nasa.gov/specials/x57](https://www.nasa.gov/specials/x57)

Smithsonian's National Air and Space Museum Receives \$10 Million Gift From Textron

The National Air and Space Museum has received a \$10 million gift from Textron Inc. to support the transformation of the “How Things Fly” exhibition at the flagship building in Washington, D.C.

“How Things Fly” is a dynamic, hands-on exhibition that allows visitors to explore the physics of flight using interactive stations, engineering design challenges and science demonstrations.

Construction on the gallery is scheduled to begin in 2022.

“The generous support from Textron allows the museum to continue its mission to inspire those who will write the next chapter of air and space history,” said Ellen Stofan, John and Adrienne Mars Director of the National Air and Space Museum.

“How Things Fly” provides an opportunity for deeper engagement around STEM concepts and will be reimaged with an upper-elementary to middle school-age audience in mind.

The new exhibition will feature a new Textron Aviation-built Cessna Skyhawk 172 as the centerpiece, which will give many visitors their first experience inside a cockpit and a more sophisticated design and immersive interactive experience.

Additional artifacts will be included in the transformed gallery to allow visitors to learn physics of flight alongside the machines that put those concepts into practice.



We have recently received an update

Allison Mitchell, the Deputy Director of Communications for the National Air and Space Museum.

“Thanks so much for your interest in the new gallery and for your participation in the announcement last year! The Textron How Things Fly exhibition is still scheduled to begin construction in 2022.

We don't have a lot of public updates yet. We're still very much in the

design phase and will be plugging away to be ready to begin construction in a couple of years.

It's in the second phase of the renovation project in our building on the National Mall so the exhibitions in the west end of the building will open first, then we'll move to the east end (where How Things Fly is located).

We'll be updating on the gallery on social media in the coming months so that's probably the best place to check on a regular basis.”

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