

At the U.S. National Drone Racing Championships in California, pilots had to navigate their drones through a series of gates and hoops 10 ft. wide by 5 ft. high.

California State Fair Hosts Big Drone Race

Visitors to the 2015 California State Fair could see 120 pilots from 9 countries compete in the U.S. National Drone Racing Championships. The race was won by an Australian, who did 5 laps of the 100 by 130-yard field in 1 min., 44 sec. The drones were souped up quad copters equipped with video cameras.

"We had 8 pilots in the air at a time doing heats," explained Scott Refsland, race director and CEO, Flying Grounds, Inc. "The 120 pilots were the largest group ever to race at one venue."

Of course the pilots never left the ground. In what is called First Person Viewing (FPV), all were seated wearing view screens that showed them the course ahead of their quad copters as they used remote controls. Each quad copter was equipped with a video camera, a transmitter and its own frequency.

"We used brand new technology for the video downlink to the pilot," says Refsland. "Previously only 4 could be in the air at a time."

Refsland said the race organizers worked closely with the FAA (Federal Aviation Administration), the AMA (Academy of Model Aeronautics) and the FCC (Federal Communications Commission).

The 2,000 to 3,000 spectators had the option of watching the race course live, watching a large screen view, or wearing race sponsor Fatshark viewing goggles and seeing a pilot's view. With the latter, they could pick a frequency and see what a pilot was seeing. In addition, the event was live-streamed to more than 10,000 people in 85 countries.

The course consisted of a series of gates and hoops 10 ft. wide and 5 ft. high. Pilots had to navigate their drones, capable of flying upwards of 70 mph, through each in a set



If a hoop was missed, the pilot had to loop back and try again.

order. They sped through turns, obstacles and in one case a switchback. If a hoop was missed, the pilot had to loop back and try again, all without going above the FAA's 50-ft. ceiling height.

Refsland sees this event as the first in a growing industry. He expects to produce more drone races based in part on what was learned.

"The National Championships hoped to determine if drone racing could be a mainstream sports event with thrills and entertainment," says Refsland. "It has all the elements of great entertainment."

Soon after the races, it was announced that the owner of the Miami Dolphins had invested a million dollars into a drone-racing league in New York. It looks like more races are indeed likely.

Check out the video at www.farmshow.com.

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Homemade Cannon Shoots Cement-Filled Soup Cans

By Emilee Mathwig

My dad, Tom Mathwig, has been making noise in rural Fall Creek, Wis., ever since he built his own cannon from scratch. As our neighbors can testify, they really work.

He is an 85-year-old retired dairy farmer, although he still continues to work as a jack-of-all-trades. Since he was a boy, he has dreamed of owning a cannon. "It's one of those things that carry over from childhood to when you're a big boy," he says.

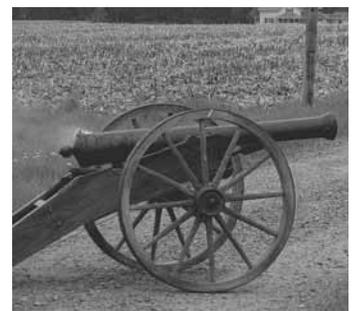
He modeled the cannon after French weapons of Napoleon's era. His creation is about 3/5 the size of the French boomers. The 5-ft. long barrel was formed by building up layers of pipe, driving one inside the other for a tight fit. After the seventh layer, he carefully polished the barrel to a steel blue color.

The 3-ft. dia. wheels each have 12 spokes, and every one is hand carved. The rims posed the biggest challenge, as he had to bend straight pieces of wood into smooth circular wheels. He did so by boiling the wood to make it tender enough to curve. Each inch of thickness took at least an hour of boiling to make the wood pliable enough. Once the wheels were arched into a circle, he placed a metal rim around each one to hold it securely in place.

Upon completion, he had to test his masterpiece for safety. He took it to a field behind the house, loaded it with 14 oz. of gun powder, and packed in 2 soup cans filled with cement. Each can weighed 2 lbs.

A 2-ft. long dynamite fuse was inserted into the breach. Dynamite fuse burns slowly, about 1 in. per min., so it gives dad time to run to the next field. There he waits patiently to see if his whole winter's work will withstand the blast, or blow to bits.

"When it goes off, about 6 ft. of fire shoots out the front and the cannon jumps back 5



Tom Mathwig, an 85-year-old retired dairy farmer, built this cannon that shoots cement-filled soup cans.



The 5-ft. long barrel was formed by building up layers of pipe, driving one inside the other for a tight fit.

ft.," he recalls.

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Unique Cub Hauler Is A Working Tractor

By Cindy Ladage

Kenneth Tapley is a retired mechanic and a Farmall collector who decided to combine those interests to create what he calls a Limited Edition Cub Hauler. "I had two Cub Cadets. The one with the serial number 497138 was a 1974 Cub Cadet 149. I had a junk one that I cut off and welded. For the running boards my brother had some blood wood that I spliced and used. Then I also made a bracket for the seat. I built the body from scratch and trial and error."

The result is a working tractor that's helpful for small farm jobs. "I can put a 14-gal. sprayer on and spray fence rows," Ken adds.

Farming with the Cub Hauler is great fun, and the little machine is a hard worker on the Tapley farm. To contact Kenneth Tapley, call 912 658-9553.



Kenneth Tapley created what he calls his "Limited Edition Cub Hauler".