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EDITOR'S PICK

Lift off for autonomous helicopter in Nashua

By Jonathan Phelps Union Leader Staff
Jan 30, 2024


FBO

With no humans aboard, the autonomous helicopter R22OY by Rotor Technologies made a test flight for spectators at a launch event at Nashua Airport Tuesday afternoon. Nashua Fire Department personnel were nearby in case of any emergencies.

Allegra Boverman/Union Leader

NASHUA — A small helicopter hovered 30 feet in the air as a crowd watched at Nashua Airport Tuesday afternoon. On a normal day, that wouldn't be anything special.

This chopper, however, had no pilot on board.

Rotor Technologies hosted the first public viewing of an "uncrewed" test flight, with the pilot controlling the flight from a trailer nearby. Gov. Chris Sununu was also on hand to help unveil the R550X, a larger aircraft built on the Robinson R44 Raven II platform, and the company's first product.

The helicopter that took flight was an R220Y, a smaller prototype based on the Robinson 22.

The helicopter is operated by software which can be controlled by a pilot remotely in a wide range of operating environments, including at night and in limited visibility.

The first R550X was given the name "Spirit of New Hampshire" and christened with two bottles of champagne.

Hector Xu, Rotor's co-founder and CEO, said he expects commercial operations with two aircraft later this year. The company is working closely with the Federal Aviation Administration.

The company launched with $21 million in venture capital in 2021.

"In the near future our R550X helicopters, whether they are crop dusting in the Midwest or firefighting in California or even further afield in the world, they will be flown from right here on University Drive in Nashua," Xu said. "That is pretty exciting to me."

Christening a new autonomous helicopter named "Spirit of NH" at Tuesday's ceremony at Nashua Airport are Gov. Chris Sununu, left, and Rotor CEO Hector Xu.

Allegra Boverman

Hector Xu, founder of Rotor Technologies, speaks during the demonstration as Siddharth Suri, left, of Nashua, Rotor's lead embedded engineer, and airport manager Chris Lynch listen.

Allegra Boverman/Union Leader

The operations would require a ground crew, including a visual observer, onsite with the aircraft.

The R550X can lift up to 1,200 pounds with a flight time of about three hours. It can reach a top speed of 150 mph. Some uses could include firefighting, crop dusting or offshore deliveries.

Rotor Chief Commercial Officer Ben Frank said such activities are historically dangerous for pilots and crew members.

Xu was working as a researcher at Massachusetts Institute of Technology when he broke away to start Rotor, an idea born in his one-bedroom condo.

Most airports in and around Boston didn't have room for the startup, Xu said. The company moved into Nashua's Hangar 9 in July 2021, a week after meeting with airport leadership.

Nashua Airport Manager Chris Lynch congratulated the team at Rotor, which has about 50 employees.

"I spend a lot of time coming down here to visit because I am really interested in what is going on," he said. "It really is above and beyond."

Xu also showed Sununu the remote operation center inside the former library of the old Daniel Webster College, which is used as the company's research and development center. One wall is lined with aviation and technology magazines.

Sununu sat in the cockpit of a simulator as a practice flight near Pats Peak in Henniker was replayed on the screens.

"It's not hooked up, by the way," Xu joked with Sununu.

Xu said the autonomous helicopter will improve safety, since 70% of accidents are caused by human error.

"It will make these much safer for everyday use," he said.

The high level of automation also helps with pilot restrictions and wages, according to the company's website.

Unlike other such aircraft, the R550X is ready for commercial use once all the FAA regulations are cleared. The aircraft is not approved for passenger flight.

Gov. Chris Sununu tries out a helicopter flight simulator at the headquarters of Rotor Technologies in the old library building at the former Daniel Webster College campus in Nashua, adjacent to Nashua Airport, on Tuesday afternoon. The view on the simulator screen is of the Henniker area and Pat's Peak ski area, where the company does some flight training at a private airstrip nearby.

Allegra Boverman/Union Leader

Every technology story has an origin story.

“I want to say ‘in an airport hangar at Nashua Airport.’ That’s the origin story,” Xu said. “Hopefully one day if we succeed there will be a plaque outside that says this is Rotor’s original hangar.”

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