

The Week In Technology, Nov. 7-11, 2016

Graham Warwick | *Aviation Week & Space Technology*


Nov 7, 2016



EMAIL

TWEET

G+1

COMMENTS  1

Flexrotor Guides Fleet Through Arctic Ice

Aerovel's Flexrotor vertical-takeoff-and-landing (VTOL) unmanned aircraft has helped guide a fleet of workboats through Arctic pack ice to retrieve anchors from mooring sites in the Beaufort and Chukchi seas.

The long-endurance small UAV, which takes off like a helicopter then tips over into wingborne flight, operated from the lead ship to provide long-range reconnaissance imaging at sea. The two-week mission involved five flights totaling 19 hr.



Flexrotor was operated from the helicopter deck of a ship to provide reconnaissance of Arctic ice floes. Credit: Aerovel

(more)

The mission was safer and cheaper than using manned aircraft, according to Aerovel. Fast-forming fog can make reconnaissance difficult over the Arctic, “but Flexrotor simply returned to the fog-shrouded ship, landed automatically, and waited for the skies to clear,” the company says.

“This was the first genuinely sustained and economically successful mission for unmanned aircraft aboard ship in the Arctic,” says Matt Parker, vice president of Flexrotor launch customer Precision Integrated, which was contracted by Alaska’s Fairweather Science LLC to perform the mission. [Watch video of the mission here:](#)



“We are always careful to tread lightly in the Arctic, and wanted to avoid breaking sea ice on this mission to minimize our environmental presence,” says Justin Blank, senior scientist and project manager at Fairweather Science. He also cites the Flexrotor’s small size and low noise as advantages.

The aircraft weighs less than 50 lb. and carries a nose-mounted Alticam Vision sensor turret. The Mk. 1 Flexrotor has more than 15-hr. endurance at a 45-kt. cruise speed. The Mk. 2 in development will provide more than 40-hr. endurance, says Aerovel.



The VTOL aircraft's two-blade rotor becomes a propeller in wingborne flight, extending endurance. Credit: Aerovel