Helicopter testing in snow and icing

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Summary of the planned lecture

Flying a helicopter without a full icing protection system in heavy snow and icing can be quite dangerous. Ice can accrete on the rotor blades and destroy the aircraft’s performance. Snow can accumulate in the engine intakes and cause these to flame out. Yet, as a manufacturer, Airbus Helicopters has to go out and fly in snow and icing to demonstrate that safe operations are possible.

The lecture will tell the story of a snow and icing testing campaign with an H145 helicopter in Norway. It will answer how the test location was selected, how the prototype helicopter was prepared, how the flight testing was conducted, and how safety could be maintained flying in heavy snow and severe icing conditions. Key findings of the test campaign will be shown and background information will provide insight into the challenges and opportunities of helicopter flight in icing. Finally, an outlook will be given on how Airbus believes future rescue helicopters will be able to operate safely in light icing conditions.

Biography

After completing his studies at Delft University of Technology and the University of Maryland, Carl started his career at the DLR in Braunschweig as a research engineer for helicopter handling qualities. In 2001, Carl joined Airbus Helicopters in Donauwörth as experimental flight test engineer. He participated in numerous flight tests on EC135 and EC145. From 2010 onward, Carl was lead flight test engineer for the H145 program, was a crew member on the maiden flight of the D-2 and D-3 prototypes, and flight tested the H145 in cold, hot, and high conditions. Carl is an Airbus Senior Expert for Rotorcraft Flight Test Engineering.