Tail Rotor Airfoils Stabilize Helicopters, Reduce Noise

Langley Research Center

Van Horn Aviation LLC (VHA)
Tempe, Arizona

Originating Technology/NASA Contribution

- A NASA collaborative rotorcraft research program with the U.S. Army resulted in many outcomes that have enhanced the safety and performance of helicopters
- Among these are advanced airfoils designed and wind-tunnel tested at Langley

Partnership

- VHA employed a Langley airfoil design in the public domain—the NASA RC(4)-10—to craft an updated aftermarket tail rotor for the popular Bell 206 series of helicopters
- The company plans on using NASA airfoil designs for future projects aimed at advancing rotorcraft performance

Product Outcome

- The VHA 206 tail rotor received Federal Aviation Administration certification in 2009
- The tail rotor provides multiple benefits, including enhanced lifespan, improved control, superior performance at high altitude, and as much as 40-percent less noise