

QuesTek Innovations, LLC



IMAGE COURTESY | Bell Helicopter

EVANSTON

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IMPACT

\$52M

IN SALES AND PHASE III REVENUE

QUESTEK INNOVATIONS, LLC

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When the U.S. Navy sought a new type of high strength steel for Helicopter gears, QuesTek Innovations utilized the SBIR program to not only meet this need, but deliver a brand new material that is reaching far beyond the military. Currently, major aerospace companies all over the world are investing in QuesTek's patented Ferrium® C64®, which provides gearbox longevity, increased power-to-weight ratio, and a reduction in production, operation and support costs.

QuesTek, through the Army's Future Advanced Rotorcraft Drive System (FARDS) program, was awarded a subcontract from Bell Helicopter to jointly evaluate the applications of C64 in an effort to improve the performance and affordability of current aircraft drive systems. The U.S. Army is particularly interested in "oil-out" survivability – which is the ability to continue operating when the transmission system leaks oil, mainly due to gunfire. Recent tests have shown that a helicopter can still maintain stability after 80 minutes when equipped with C64 – compared with today's industry standard of only 15 minutes.

C64 is currently licensed out to Carpenter Technology, which produces and sells the alloy. In a related SBIR project with the Army, QuesTek is evaluating and demonstrating C64 steel for the additive manufacturing of aerospace gears and fatigue-driven applications. Other applications include racing transmission gears, gears with integral bearing races, and other power transmission components where durability, compactness, weight savings, high temperature resistance and/or high surface fatigue resistance is valued. C64 is also being evaluated under a Department of Energy Phase II SBIR program for the additive manufacturing of wind turbine gears.

QuesTek developed Ferrium® C64® - an ultra-high strength gear steel that reduces helicopter gearbox weight, increases durability, and improves high-temperature performance.

C64 steel is 50 percent stronger than the conventional materials used in gears and gearboxes, requiring less material for production, and the ability to handle larger loads..

The success of C64 comes on the heels of another QuesTek successful SBIR-funded technology - Ferrium® M54® - one of the strongest steels in the world. M54 is qualified by the U.S. Navy and can be found flying on T-45 jets.

Total DOD SBIR Investment for C64:
\$2.1 million

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