Lockheed Martin F-35 Leads To New Titanium Machining Process

A groundbreaking cryogenic titanium machining process, planned for use in the production of Lockheed Martin's F-35 Lightning II stealth fighter, will make its public debut at the International Manufacturing Technology Show (IMTS) 2010, Sept. 13-18 in Chicago. IMTS is the largest and longest running manufacturing technology trade show in the United States.

The new process brings numerous improvements over existing titanium-machining methods, including increases in cutting-tool life and material-removal rates, which directly reduce costs.

The team of Creare Incorporated, H.M. Dunn Company, and MAG IAS has worked for the past several years on the development of the low-flow cryogenic machining of titanium, funded through Small Business Innovation Research (SBIR) program awards. The high performance titanium machining process was designed, developed and tested at Creare, Inc., headquartered in Hanover, N.H.

"This is a prime example of the successful transition of an SBIR-sponsored and funded technology from its developmental stages to a production environment that can enhance affordability for near-term military systems, like the F-35," said Mike Packer, Lockheed Martin vice president of production operations.

Creare, a premier engineering research and development firm, has led the technology development. H.M. Dunn of Euless, Texas, a Tier I supplier for the F-35 program, will be the site of performance demonstrations to be completed in late 2010 or early 2011. MAG IAS, North America's leading machining and machine tool supplier, headquartered in Hebron, Ky., is commercializing the technology.

Other development team members include the U.S. Navy SBIR Program Office and the Joint Strike Fighter Program Office.

The F-35 Lightning II is a 5th generation fighter, combining advanced stealth with fighter speed and agility, fully fused sensor information, network-enabled operations, advanced sustainment, and lower operational and support costs. Lockheed Martin is developing the F-35 with its principal industrial partners, Northrop Grumman and BAE Systems.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's 2009 sales from continuing operations were $44.5 billion.

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