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FOR IMMEDIATE RELEASE

Low Plasticity Burnishing (LPB) document released detailing improvements to engine vane used in AV-8B Harrier II.

Application Note illustrates surface enhancement program to reduce the total cost of ownership and operation of the F402-RR-408 turbofan engine.

Cincinnati, Ohio – June 6, 2007, – Lambda Technologies has released a Low Plasticity Burnishing (LPB) Application Note detailing their successful program to improve foreign object damage (FOD) tolerance and high cycle fatigue endurance limits while completely mitigating cracking along the trailing edge of the Ti-6Al-4V Alloy F402 First Stage Low Pressure Compressor (LPC1) Vane used in the AV-8B Harrier II.

Providing close, offensive air support for U.S. Marine Corps maneuvers, the “Harrier” is powered by the Rolls-Royce Pegasus F402-RR-408 turbofan engine, the world’s only operational V/STOL (Vertical/Short Take-Off and Landing) engine. The F402 Engine’s First Stage vanes are subject to both high stresses and FOD generated by airborne debris during takeoff. Inspection and maintenance costs adversely impact flight readiness and significantly increase the total cost of ownership and operation of the F402 engine.

Conventional surface treatments, such as shot peening, offer only limited benefit while LPB processed vanes have demonstrated improved FOD tolerance, increased HCF endurance limits, and complete mitigation of fatigue cracking by imparting through-thickness residual compression along the vane’s trailing edge.

LPB is a proven surface treatment that develops a deep layer of high magnitude compressive residual stress (RS) to mitigate fretting fatigue, corrosion fatigue, or fatigue from foreign object damage (FOD) in the fatigue prone areas of expensive and critical aircraft components such as landing gear, propeller hubs, and turbine engine blades.

Application of LPB delivers significant fatigue life extension with minimal initial capital investment and low, “on-site” production costs. A turn-key system consisting of the hydraulic control system, tooling, and proven computer numerical control (CNC) code files is delivered to the client for integration into their manufacturing operations. The entire LPB process provides unique, real-time quality control monitoring that is recorded and uploaded to a secure web server for Statistical Process Control (SPC) analysis by the client’s QA system and by Lambda Technologies technicians.

To discover how implementing LPB into your process will improve component performance, or to download the entire [F402 LPC1 Vane LPB Application Note](#) or any of Lambda's LPB Application Notes, visit www.lambdatechs.com and navigate to the "Discover LPB" web page.

Lambda Technologies is an innovative company incorporating a premier materials research laboratory with a world-class engineering and production enterprise dedicated to the development and optimization of surface treatments to improve component performance. For additional information on Lambda Technologies or licensing the LPB process, contact Brian C. Murphy at (513) 561-0883 or visit www.lambdatechs.com.

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