

Improved Threaded Fastener Coatings for Turbine Engines

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Many fasteners in turbine engine hot sections seize and break upon removal, despite the use of silver anti-seize coatings. Overhauls require extra labor, and collateral turbine damage occurs. Silver also corrodes titanium alloys, embrittles engine superalloys, and migrates above 1200°F. Improved anti-seize coatings have been developed that have better properties than silver, remain stable and adherent at 1500°F, and are completely benign to engine alloys. Fastener failure analyses and coating performance tests will be presented. The U.S. Air Force estimates that \$25 million in annual maintenance costs can be saved by using the improved coatings.

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