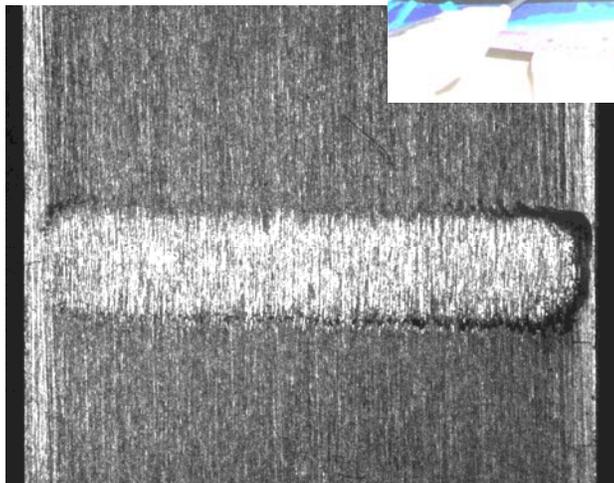
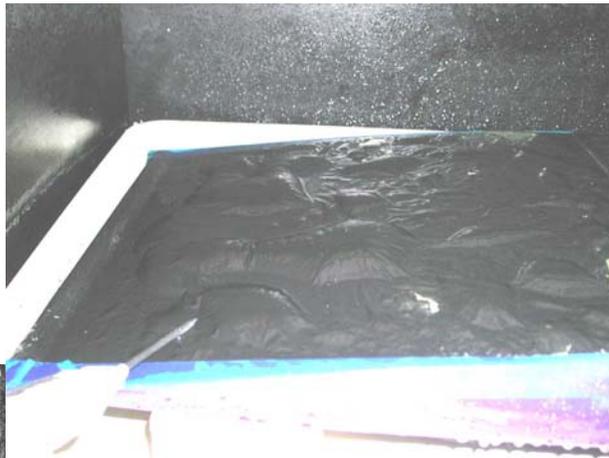


Rotor Blade Paint Removal Using Photostripping

Existing methods of removing paint from helicopter rotor blades rely on hand sanding—a time consuming, inexact, and sometimes damaging process. This method also creates ergonomic, environmental and repair cycle time problems. TCAT through the Academic Center for Aging Aircraft conducted testing and validation of a new technology called Photostripping. The Photostripping process involves a chemical solution and light energy source to remove paint coatings quickly and cleanly, reducing process time and the number of man-hours required to remove paint.

TCAT's task was to conduct the investigation by testing the effects of the process on coupons that simulated the construction of an H-60 rotor blade's skin. The test plan involved four cycles of coating removal from the coupons using Photostripping and hand sanding, then an exhaustive examination of the physical, mechanical, and fatigue properties of the substrate material in both a control and photostripped condition. In addition, we conducted an examination of the gloss, hardness, and roughness of the test coupons as well as electron microscopy and chemical characterization of the substrate surface and cross-sections.

At the completion of the test program no measurable effect on the composite substrate had been found, nor had there been any measurable effects on the substrate's physical, mechanical, or fatigue properties. Initial test runs using the prototype chamber achieved 97 percent coating removal. Our report recommended that the DoD proceed to the process verification, flight clearance, and implementation of the process.



TEXAS CENTER FOR APPLIED TECHNOLOGY

There are many problems that require the careful and proper integration of applied technologies to find solutions. The Texas Center for Applied Technology (TCAT) was created to focus on these specific problems and to develop effective and efficient solutions. TCAT's core competency is the innovative application of existing technologies and advanced research to solve complex real-world problems.

TCAT's primary objective is to apply and test technologies to address targeted problems and engage basic research as required. TCAT has employees in a variety of locations with the ability to perform research that cuts across multiple technologies, disciplines, and cultures. The Center's employees are knowledgeable regarding customers' requirements and are ready to respond effectively to provide the best value for the customers' needs including expertise in technology insertion, technology assessments, and test and evaluation.

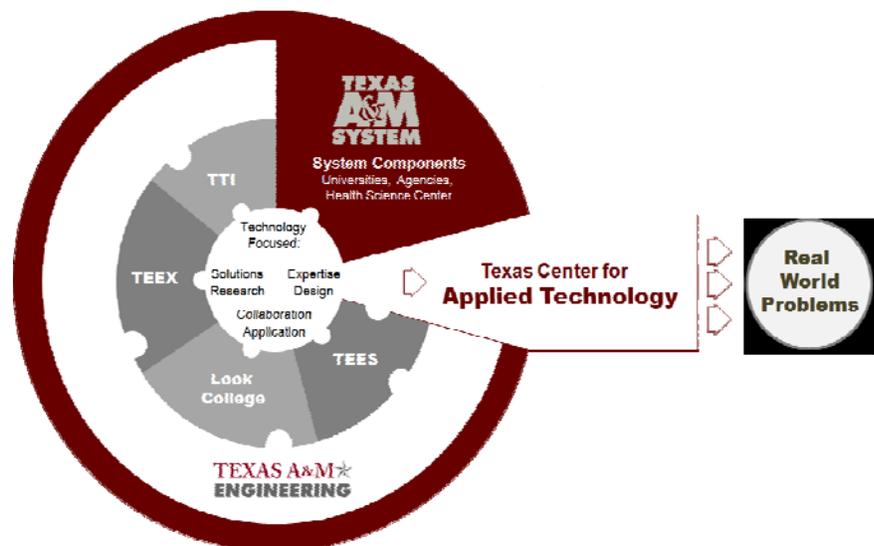
TCAT is part of the Texas A&M Engineering Experiment Station (TEES), a member of The Texas A&M University System. The A&M System is one of the largest and most comprehensive systems of higher education in the United States. Through a statewide network of eleven university campuses, seven state agencies, and a comprehensive health science center, the A&M System educates more than 120,000 students on its university campuses, conducts more than \$780 million in research, and reaches another 22 million people through service each year. TEES is an engineering research agency for the state of Texas and conducts over \$147 million in research annually. Because of the Center's position within the Texas A&M Engineering program, TCAT's expertise can easily be extended by rounding out its team with world class faculty researchers, as appropriate. TCAT is in an excellent position for collaboration not only with The Texas A&M University System components and their customers but with other universities, institutions, centers, and industry.

TCAT'S CORE COMPETENCIES

Energy Sustainability ★ Environmental Sustainability
Manufacturing & Systems Engineering ★ Information Technology ★ Modeling & Simulation
Technology Insertion ★ Test & Evaluation

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