

AIRCRAFT ENGINE VULNERABILITY

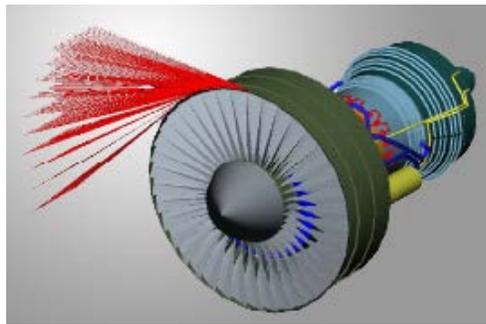


BACKGROUND

The SURVICE Engineering Company is a small business that has, for three decades, specialized in applying a systems engineering approach in support of the design, development, testing, and fielding of systems that are safe, survivable, and effective. For aircraft, one of the largest system vulnerability contributors is the propulsion system. To support the acquisition process and to help the manufacturer design a survivable system, SURVICE has specialized engineers and analysts who focus on performing engine analyses and supporting test and evaluation to identify engine vulnerability reduction features.

TESTING

SURVICE engineers and analysts have supported engine Live Fire Test and Evaluation



(LFT&E) test planning and management and have experience developing pre-test predictions and post-test analysis. Fuel ingestion, foreign object/domestic object debris (FOD/DOD) damage, and fire analyses are just a sampling of the assessments.

MODEL & SIMULATION

The detail required to perform a vulnerability analysis of an engine is similar to that required for a complete aircraft system (e.g., a target description, damage modes and effects analysis (DMEA), probability of damage given a hit [Pd|h] data, fault tree, and analysis inputs). SURVICE has experience in performing these analyses for manufacturers, as well as for all military branches.



UEDDAM

In support of the Navy and the FAA, SURVICE supported the development of the Uncontained Engine Debris Damage Assessment Model (UEDDAM) to provide commercial engine manufacturers with a calibrated tool to analyze uncontained engine debris hazards for compliance with Advisory Circular NO. 20-128A.

RECENT EXPERIENCE

Most engines in currently fielded U.S. aircraft have been evaluated through testing or M&S by SURVICE. The most recent engines evaluated include the T700, T800, F404, F406, F414, F119, F135, F136, YF120, TF34, T64, F100, and the CT7-8. Foreign engines evaluated include the AL-31F and the RD-33.