

2008 Summary of Research Reports

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Project: Determination of life and validation of enhancement factors for advanced application of aircraft composite material

Sponsor: NAWCAD

Statement of Work:

Background: Service life extension for all DoD fighter aircraft systems is a concern for US warfighters and the determination of inspection intervals is currently based on incomplete data sets or theoretically calculated strength and life values. A program to characterize open hole and pristine composite specimens for existing design material will allow designers and government engineers to evaluate current procedures as well as develop accurate predictions for the life impact of specific composite properties in use on legacy aircraft. Preliminary test matrix specimen panels will be provided by Boeing Corporation (with waterjet fabrication at NAVAIR). Methods employed will likely include replicate, radiographic, and strain measurement systems. Specimens will be tested for fatigue life in varied orientations and a variety of maximum stress levels to determine life for a specified threshold damage level.