



CHEMICAL EMBRITTLEMENT EFFECTS TO AIRCRAFT HAZARD **(CHEETAH)**

Project Summary: Quantify Chemical Warfare Agent (CWA) effects to enable the development of tactics, techniques and procedures for preservation of military transport aircraft air worthiness following a CWA event.

- (i) Characterize, prioritize, and quantify the agent-specific CWA detrimental effects on aircraft systems/components and materials resulting from exposure with recognized military utility.
- (ii) Fill gaps in information and technology through technology assessments and targeted Research, Development, Test, and Evaluation efforts to facilitate the development of effective Tactics, Techniques, and Procedures for aircraft protection, post-event recovery, and subsequent employment.
- (iii) Identify/prioritize critical technology gaps that need to be addressed with material solutions to ensure aircraft operations/survivability, including immediate, short and long-term response measures.



Return on Investment: The Return On Investment (ROI) can be determined through a number of means including aircraft cost, wartime contribution, and loss of revenue.

- *Aircraft Cost:* A 100% ROI will occur the first time an aircraft is chemically contaminated and TTPs have been adopted to allow unrestricted use.
- *Wartime Contribution:* The loss of a single C-17 results in a loss of 0.33% of the total airlift wartime requirement.
- *Loss of Revenue:* ROI of less than 1 month based on the loss of approximately \$2M of revenue that is lost for every month a C-17 is grounded.

Duration of project: FY12-FY14

Participants: Air Force Research Laboratory (AFRL)

Project advocacy (funding or otherwise): United States Transportation Command J5, Air Mobility Command, AFRL

Transition: Develop and deliver tactics, techniques and procedures to minimize/mitigate the effects of CWA exposure on aircraft systems/components, materials, personnel, and operations.