



# The Joint Aircraft Survivability Program

## Aircraft Survivability RDT&E

### What is the JASP?

The mission of the Joint Aircraft Survivability Program (JASP) is to increase the economy, readiness, and effectiveness of Department of Defense aircraft through the joint coordination and development of survivability (susceptibility and vulnerability reduction) technology and survivability assessment methodology. The Joint Aircraft Survivability Program Office (JASPO) coordinates the inter-Service exchange of information to increase the survivability of aeronautical systems in a combat threat environment. The JASPO works with Joint and Service staffs, other Government Agencies and Industry to identify new capabilities that require aircraft survivability Research, Development, and Test & Evaluation (RDT&E) and to ensure the capabilities are conceived and developed in a joint warfighting context. The JASP funds projects, complementary to Service survivability programs, to develop and test survivability technology and assessment methodology. The JASP is funded by Office of the Secretary of Defense, Operational Test and Evaluation Directorate and chartered by the Service aviation commands.

### Where JASP Fits

While JASP may fund all levels of RDT&E, its primary area of effort is in aircraft survivability Advanced Technology Development and Demonstrations.

### JASP Projects

JASP funds projects of interest to more than one Service or more than one aircraft type within a single Service. Quantifiable objectives are identified in terms of effectiveness, cost, and/or reliability. Deliverables are also identified including annual progress and final technical reports. Projects typically require no more than three years to complete and average \$100-\$200K

per year of JASP funding and leverage Service funding. The results of all JASP research efforts are documented in technical reports available through the Defense Technical Information Center (DTIC) and the Survivability/Vulnerability Information Analysis Center (SURVIAC).

Where possible, projects complement other programs in the JASP, Service programs, other DOT&E programs and Industry. Projects may be executed through contract to a vendor, but must be led by a US Government employee.

### Key Dates for Project Proposal Submission

- **October**—Issue annual guidance and call for proposals
- **December 31**—Deadline for submitting proposals
- **January**—Peer group technical review and approval to go forward
- **March**—Projects approved
- **October**—Funding issued

### JASP Subgroups

JASP RDT&E is primarily executed in three research areas that, together, fully define the aircraft combat survivability discipline. The Susceptibility Reduction (SR) subgroup conducts RDT&E to develop technologies and techniques that enable an aircraft to **avoid and counter** the elements of an enemy's air defense. The Vulnerability Reduction (VR) subgroup conducts RDT&E to develop technologies and techniques that enable an aircraft to **withstand** damage caused by a man-made hostile environment. The Survivability Assessment (SA) subgroup conducts RDT&E to develop improved Modeling & Simulation (M&S) tools for the **analysis and assessment** of aircraft susceptibility and vulnerability.



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Each subgroup is supported, on a part time basis, by aircraft survivability experts from the Services' Science and Technology (S&T) community. These experts are the technical backbone of the JASP and are instrumental in JASP project selection, tri-Service coordination and recommending technology requirements. The three subgroups are further organized into committees with specific technical areas of interest. The subgroups and committees are led by a chairman and a co-chairmen from each service.

### **Susceptibility Reduction**

The SR Subgroup is comprised of three committees: Electro-Optical/Infrared (EO/IR), Radio Frequency (RF) and expendable flare decoys. Current emphasis is on technologies or concepts supporting defeat of current and future generation IR threats, countering advanced coherent, parameter-agile radar threats or technology solutions having an immediate (<2yrs) impact to the warfighter.

In FY06, the SR subgroup executed 15 projects varying from development and demonstration of an Infrared (IR) Hollow Core Photonic Bandgap (HC-PBG) fiber to determining the susceptibility of several new foreign infrared threat seekers. FY07 projects focus on reducing the susceptibility of aircraft to missiles with IR seekers.

### **Vulnerability Reduction**

The VR Subgroup is comprised of six committees: Aircraft and Crew Protection, Flight Systems, Fuel Systems, Propulsion Systems, Structures & Materials, and Battle Damage Assessment and Repair (BDAR). Current emphasis is in the areas of developing lighter weight opaque and transparent ballistic protection systems and fuel containment technologies for fuel system components.

In FY06, the VR Subgroup executed 15 projects including demonstration of affordable spaced and multifunctional integral armor solutions for rotary wing aircraft, passive fire protection in dry bays using intumescent technology, prediction of damage effects of MANPADS on large aircraft engines, and hydrodynamic ram mitigation strategies. FY07 new projects focus on transparent armor development, reduced vulnerability of flammable fluid lines, and survivable engine control algorithm development (SECAD) application to turboshaft engines.

### **Survivability Assessment**

The SA Subgroup is comprised of three Committees: Vulnerability Assessment, Susceptibility Assessment, and Strategic Initiatives.

A demonstration of the Integrated Survivability Assessment process on the Multi-mission Maritime Aircraft (MMA) revealed the need for better vulnerability assessment tools and evidence of model credibility for all survivability models and simulations. Work is on-going to generate a roadmap for vulnerability/lethality tools, as well as to address specific issues with blast and fire modeling. To improve model credibility, a project is underway to validate the Enhanced Surface to Air Missile Simulation (ESAMS) and to provide configuration management support for the most widely used survivability models.

### **For More Information, Contact:**

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