NASA SBIR/STTR Technologies

Proposal 06-S7.04-8252 Rigidized Deployable Lifting Brake for Atmospheric Entry

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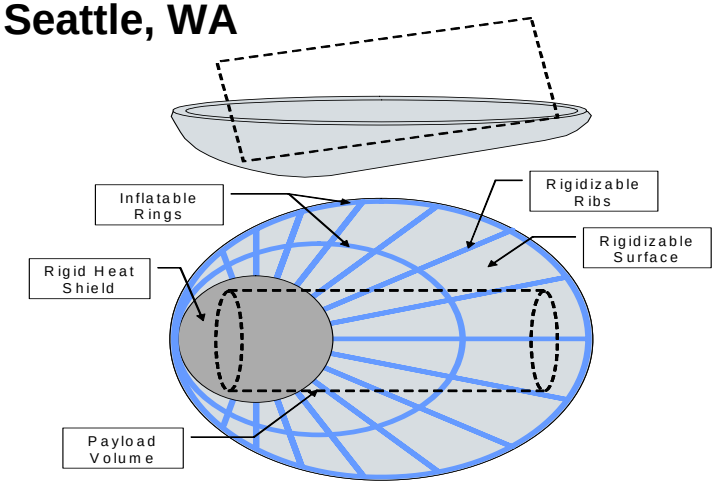
Identification and Significance of Innovation

The proposed activities will allow Andrews Space, Inc. to demonstrate the rigidized deployable aerobrake technology. The inherent advantages of this design enhance the capability and performance of interplanetary transportation and exploration elements while minimizing launch constraints.



Phase II Technical Objectives

1. Refine estimates of heat and mass flux.
2. Test carbon phenolics under sub-optimal cures (to represent space curing environment).
3. Demonstrate curing under operating conditions.
4. Validate process on sample cross-section.
5. Deploy a representative segment of aerobrake.

Work Plan	2008			2009		
Material Tests @ U of W	■	■				
Analysis and Simulation		■	■			
Cure Property tests @ ARC			■			
Element level tests				■		
Segment Deployment Testing					■	■

NASA/Non-NASA Applications

The primary NASA application for the lifting brake is for science missions Utilizing aerocapture at Jupiter or Saturn, where traditional aerobrake designs lose their advantages over chemical propulsive systems. The rigidizing technology itself also has applications with other deployable structures.

Contacts

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