

NASA SBIR/STTR Technologies

Rigidized Deployable Lifting Brake for Atmospheric Entry

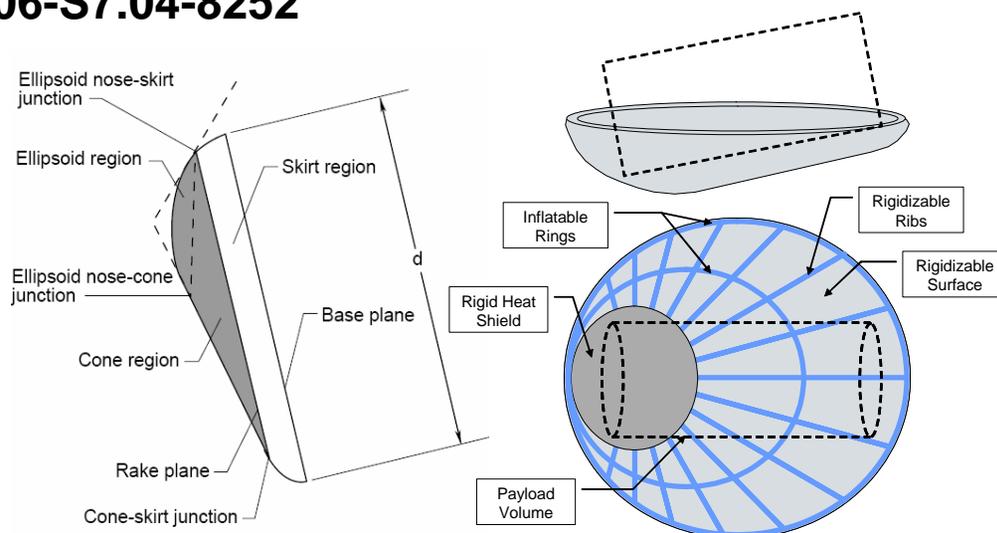
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Proposal No: 06-S7.04-8252



Identification and Significance of Innovation

The proposed design, development, and test activities will allow Andrews Space, Inc. to address technical issues related to deployment, stability, and control of a rigidized deployable aerobrake. These brakes will enhance the capability and performance of interplanetary transportation and exploration elements while minimizing launch constraints.



Phase I Technical Objectives

1. Determine aerobrake design requirements.
2. Complete aerobrake design concept evaluation.
3. Design and plan a deployment test article.
4. Determine relevant test flight regimes.
5. Design a demonstration aerobrake test unit.

Work Plan

Task	Mo 1	Mo 2	Mo 3	Mo 4	Mo 5	Mo 6
Program Management	█	█	█	█	█	█
Requirements Development	█	█				
Aerobrake Design Development		█	█	█	█	
Test Planning					█	█

NASA/Non-NASA Applications

Deployable, rigidizable aerobrakes maintain the best combination of design margin, usage flexibility, and cost for atmospheric entry deceleration. Aerobrakes can also be used for planetary orbit capture, with potential multi-use capability in those modes. Reliable and capable aerocapture will be needed for commercial cargo return to Earth or for hardware return for refurbishment.

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