

# REPORT DOCUMENTATION PAGE

*Form Approved*  
*OMB No. 0704-0188*

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<b>1. REPORT DATE (DD-MM-YYYY)</b> 05-10-2006		<b>2. REPORT TYPE</b> Press Release		<b>3. DATES COVERED (From - To)</b>	
<b>4. TITLE AND SUBTITLE</b>  Air Force-Navy Team Achieves Important Flight Test Milestone for Responsive Space Lift				<b>5a. CONTRACT NUMBER</b> FA9300-05-M-3010	
				<b>5b. GRANT NUMBER</b>	
				<b>5c. PROGRAM ELEMENT NUMBER</b>	
<b>6. AUTHOR(S)</b> John Garvey (Garvey Spacecraft Corporation)				<b>5d. PROJECT NUMBER</b>	
				<b>5e. TASK NUMBER</b> 300305KJ	
				<b>5f. WORK UNIT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b>  Garvey Spacecraft Corporation 389 Haines Avenue Long Beach CA 90814-1841				<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>  AFRL-PR-ED-PR-2006-381	
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b>  Air Force Research Laboratory (AFMC) AFRL/PRS 5 Pollux Drive Edwards AFB CA 93524-7048				<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b>	
				<b>11. SPONSOR/MONITOR'S NUMBER(S)</b> AFRL-PR-ED-PR-2006-381	
<b>12. DISTRIBUTION / AVAILABILITY STATEMENT</b>  Approved for public release; distribution unlimited (AFRL-ERS-PAS-2006-242)					
<b>13. SUPPLEMENTARY NOTES</b> Press release to be published in various forms, including websites and media publications.					
<b>14. ABSTRACT</b>  A joint service team consisting of the Air Force Research Laboratory's Propulsion Directorate (AFRL/PR), the Space and Missile Systems Center (SMC) and the Naval Air Warfare Center (NAVAIR) achieved a significant milestone on 28 September 2006 with an initial demonstration of responsive launch operations from the Navy's San Nicolas Island. Using an early prototype of the first stage for a reusable launch vehicle (RLV), the test focused on programmatic processes and issues that are considered to be critical factors to enabling responsive space lift with future launch systems. San Nicolas Island, which is situated off the coast of southern California and is a key element of NAVAIR's Sea Range, was chosen to host this test because it shares many of the same features relative to geography, facilities and logistics as other candidate launch sites that SMC is assessing as part of its Generic Approach to Launch Transformation (GALT) initiative.					
<b>15. SUBJECT TERMS</b>					
<b>16. SECURITY CLASSIFICATION OF:</b>			<b>17. LIMITATION OF ABSTRACT</b>	<b>18. NUMBER OF PAGES</b>	<b>19a. NAME OF RESPONSIBLE PERSON</b>
<b>a. REPORT</b>	<b>b. ABSTRACT</b>	<b>c. THIS PAGE</b>			<b>19b. TELEPHONE NUMBER</b> <i>(include area code)</i>
Unclassified	Unclassified	Unclassified	SAR	11	N/A

- PRESS RELEASE -

## **Air Force-Navy Team Achieves Important Flight Test Milestone for Responsive Space Lift**

05 October 2006

A joint service team consisting of the Air Force Research Laboratory's Propulsion Directorate (AFRL/PR), the Space and Missile Systems Center (SMC) and the Naval Air Warfare Center (NAVAIR) achieved a significant milestone on 28 September 2006 with an initial demonstration of responsive launch operations from the Navy's San Nicolas Island. Using an early prototype of the first stage for a reusable launch vehicle (RLV), the test focused on programmatic processes and issues that are considered to be critical factors to enabling responsive space lift with future launch systems. San Nicolas Island, which is situated off the coast of southern California and is a key element of NAVAIR's Sea Range, was chosen to host this test because it shares many of the same features relative to geography, facilities and logistics as other candidate launch sites that SMC is assessing as part of its Generic Approach to Launch Transformation (GALT) initiative.

Under SMC's direction, the flight took place on the first attempt after just two days of on-island operations by the launch crew. The test vehicle, ground support equipment and consumables had been previously delivered to the island the week before on a series of C-130 cargo flights from the nearby Naval Air Weapons Station at Pt. Mugu, California. The entire elapsed time from the start of coordination between the Air Force and Navy participants was only three months.

According to Maj. Steven Mathews, SMC's Mission Director, "...this GALT pathfinder test at San Nicolas Island has established a broad set of reference points for responsive launch operations. Through the innovative use of existing range assets and processes, it shows that we can already talk about mission lead times that are measured in hours, days and weeks, instead of the months and years that are usually associated with present launch operations."

AFRL/PR provided the Prospector 7 test vehicle, which was developed and operated by the team of Garvey Spacecraft Corporation (GSC) and California State University, Long Beach (CSULB) through an ongoing Small Business Innovation Research project that is addressing RLV operations. This was the fourth and final flight for the Prospector 7, which featured liquid propulsion and a design that traded off performance for extensive structural margin to accommodate high loads during parachute recovery and landing. GSC's John Garvey noted that "... prior to this SNI pathfinder mission, we had conducted all of our flight tests at facilities in the Mojave desert. This test and the close coordination with the Sea Range has helped us transition our operations so that they are now compatible with standard government range requirements and practices. In addition, we have identified numerous opportunities for further streamlining operations to cut both time and cost in future launch campaigns."

Several other organizations took advantage of this test opportunity to manifest student-developed payloads. Both the Naval Research Laboratory and the California Polytechnic University, San Luis Obispo provided RF telemetry experiments that successfully acquired and transmitted to ground a variety of dynamic parameters. The launch team is now reviewing this data to assess the Prospector 7's performance.

For this flight, the trajectory was tailored to achieve a water impact, resulting in a peak altitude on the order 4,000 ft. Plans are now underway for follow-on flight tests that will involve next generation RLV prototypes to extend the mission envelope to fifty miles.

For further information about this responsive space lift flight test, the SMC GALT initiative or the Prospector series of test vehicles, please contact:

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For further information about the Prospector 7 and related nanosat launch vehicle development activities, please check the following web sites:

Garvey Spacecraft Corporation (Long Beach, CA)  
<http://www.garvspace.com/>

California State University, Long Beach  
<http://www.csulb.edu/rockets/>

### ATTACHMENTS

1. Prospector 7 Starting Flight at San Nicolas Island

**Attachment 1**  
Prospector 7 Starting Flight at San Nicolas Island



photo by D. Holker, The Aerospace Corporation











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