

**FOR IMMEDIATE RELEASE**

***Chromalox Plays Crucial Role in Discovery Mission's Success***



**Touchdown!**

Image Credit: NASA/ Carla Thomas  
For high-resolution image, visit:

[http://www.nasa.gov/images/content/124881main\\_shuttle\\_landing.jpg](http://www.nasa.gov/images/content/124881main_shuttle_landing.jpg)

**Discovery lifts off!**

Image Credit: NASA/Bill Ingalls  
For high-resolution image, visit:

[http://www.nasa.gov/images/content/123688main\\_image\\_feature\\_375\\_vs\\_full.jpg](http://www.nasa.gov/images/content/123688main_image_feature_375_vs_full.jpg)

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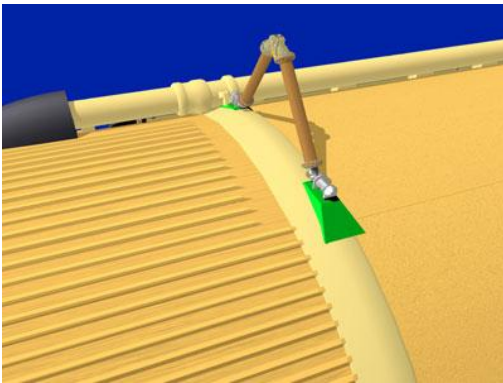
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**PITTSBURGH — August 15, 2005** — Chromalox<sup>®</sup> congratulates NASA and the crew of the Discovery shuttle on its safe return home. The Discovery shuttle has landed safely after elaborate, intensive planning, and consequent modifications undertaken to make the space shuttle flight safer, as part of the “Return-to-Flight” program. Chromalox is proud to have been part of this program -- a crucial step towards ensuring the safety and success of future space shuttle missions.

The Chromalox-NASA relationship has a 20-year history. Chromalox heaters have been supplied to NASA and used for the ground support systems. They've been used in 184 launches to-date. After the Columbia shuttle tragedy, Chromalox had an opportunity to play a crucial role in making the shuttle safer.

Investigators believe that during Columbia's launch in January 2003, insulating foam from the bipod broke off the external tank during liftoff. They believe this damaged the Orbiter's left wing, creating a hole. Searing gases entered the hole upon re-entry, leading to its destruction and causing the tragic death of seven astronauts. One of the recommendations by the Columbia Accident Investigation Board was the elimination of foam and its replacement with heaters, in order to minimize potential debris.



**External Tank Bipod Redesign using heaters instead of foam**

Image Credit: Lockheed Martin/ NASA Michoud

For high-resolution image, visit

[http://www.nasa.gov/images/content/104701main\\_99508main\\_Bipod\\_Redesign\\_2400x1800.jpg](http://www.nasa.gov/images/content/104701main_99508main_Bipod_Redesign_2400x1800.jpg)



**External tank bipod main location**

Image Credit: Lockheed Martin/ NASA Michoud

For high-resolution image, visit

[http://www.nasa.gov/images/content/106840main\\_1093-ET\\_NICE\\_2200x1760.jpg](http://www.nasa.gov/images/content/106840main_1093-ET_NICE_2200x1760.jpg)

In September of 2004, Chromalox heaters successfully completed the qualification testing to be used on the new bipod. The anti-icing cartridge heaters are mounted in a copper plate between the bipod fitting and the phenolic isolator at the bipod attachment assemblies to the forward orbiter attachment point. The function of the heaters during the launch phase is to maintain the web area of the bipod attachment fitting above 32°F so as to prevent the formation of ice that could dislodge in flight and damage the orbiter. The Chromalox heater type used was a ¼” diameter cartridge, hermetically sealed with flange fitting, and 15 feet of Kapton<sup>®</sup> wrapped, shielded cable, which is brazed to pins and potted to provide a moisture barrier to attachment point of cable.

Referring to the replacement of foam with heaters on the bipod of the external tank, NASA deputy associate administrator Michael Kostelnik said, *“This is a fix that really gets to the root of the technical problems that caused the loss of Columbia. By eliminating this debris source as well as potential debris from other areas, we are making the shuttle a safer spacecraft”*. By flying the Discovery and bringing it home safe, NASA achieved one of its major goals in this mission: to “return to flight”. *“The crew of Discovery and all the NASA support teams should be an inspiration to us all. Their dedication to task and exemplary performance throughout the RTF effort made for an almost flawless mission. It was a job well done!”*, says Amy Barker, Component Heater Design Engineer, Chromalox, Inc. Once again, Chromalox congratulates NASA on this important success.

For more information about Chromalox products, go to [www.chromalox.com](http://www.chromalox.com) or contact Chromalox at:

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**About Chromalox, Inc.**

For more than 85 years, customers have relied on Chromalox for the utmost in quality and innovative solutions for industrial heating applications. Chromalox manufactures the world’s largest and broadest line of electric heat and control products, including heating components, immersion heaters, circulation systems, heat transfer systems, boilers, industrial and comfort air heating, heat trace cables, sensors and precision electronic controls. With multiple manufacturing, engineering, warehousing and sales locations throughout North America and Europe, Chromalox is a global supplier providing the highest level of customer support. Chromalox is headquartered in Pittsburgh, PA.

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