

# **NASA completes investigation of July 2014 Terrier-Improved Malemute sounding rocket failure**

January 13 2015, by Keith Koehler

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File photo of a Terrier-Improved Malemute sounding rocket. Credit: NASA

An investigation team has determined that the failure of a July 2014 Terrier-Improved Malemute suborbital sounding rocket flight from NASA's Wallops Flight Facility in Virginia was linked to the installation process for the second stage igniter.

The rocket was launched at 4:36 a.m. EDT, July 3, 2014, carrying a payload to test several new suborbital rocket technologies. The flight ended about 19 seconds after its launch.

Range controllers detected a flight anomaly with the second stage Improved Malemute [motor](#). The vehicle flew to an altitude of 27,000 feet and impacted about one nautical mile downrange. There were no injuries or property damage as the vehicle landed in the established hazard zone in the Atlantic Ocean, which was cleared prior to launch. Neither the vehicle nor the payload were recovered.

The Improved Malemute is a surplus solid-fueled motor from the U.S. military that has been modified for use in the NASA [sounding rocket](#) program. As part of the modification, a NASA-developed igniter and mechanical safe and arm system is installed in the front end of the motor. The July mission was the seventh flight of this type of motor by NASA.

During the July [flight](#) when the motor was ignited, the motor pressure ejected the igniter resulting in the motor burning from both ends and ending the mission prematurely.

The Anomaly Investigation Board determined the incorrect installation of the Improved Malemute clip was due to inadequate procedures for the NASA modification. The board recommended the corrective action is to update the modification procedures including adding drawings and verbiage for correct installation and verifying that the clip is properly installed after placing the igniter in the motor.

Phil Eberspeaker, chief of the Sounding Rocket Programs Office at Wallops, said, "The program accepts the recommendations of the Anomaly Investigation Board and appreciates its hard work to determine the cause of the failure."

"The recommendations are being applied in the program and clears the way for the launch of two Terrier-Improved Malemute vehicles in January 2015 from the Poker Flat Research Range in Alaska," he said.

Provided by NASA

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