NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, D.C. 20594

July 19, 2012

Errata #1 to:

Aircraft Performance Study Addendum #1

by John O'Callaghan

A. ACCIDENT

Location: Roswell, New Mexico
Date: April 2, 2011
Time: 09:34 Mountain Daylight Time (MDT)
Aircraft: Gulfstream Aerospace Corporation GVI (G650), registration N652GD
NTSB#: DCA11MA076

B. REVISIONS

On July 12, 2012, Gulfstream Aerospace Corporation (GAC) provided the NTSB with a revised version of their "white paper" titled *GAC Post-accident Actions for Takeoff Airspeed Development and Testing*. The original "white paper" was included as Appendix B to the *Aircraft Performance Study Addendum #1*. A list of the changes in the revised "white paper" is presented on the following pages.

Gulfstream Changes to White Paper

July 12, 2012

Upon further review, Gulfstream makes the following revisions to the Gulfstream white paper entitled "GAC Post-accident Actions for Takeoff Airspeed Development and Testing" set out as Appendix B of NTSB Aircraft Performance Study Addendum #1, dated March 29, 2012:

CHANGE 1.

On page 1 of 7, change the last sentence of the third paragraph from:

> "At the higher values of T/W this methodology established ratios of V_R/V_{SR} at values which approached unity, or the Reference Stall Speed."

To:

> "This methodology established ratios of V_R/V_{SR} that resulted in a V_R that was too close to V_{SR} for the accident condition."

CHANGE 2.

On page 1 of 7, change the last two sentences of the final paragraph:

> "These were utilized during Roswell I testing. Prior to Roswell II testing, the initial pitch attitude for flaps 10 was reduced to align with the flaps 20 initial pitch target while retaining the same takeoff speeds."

To:

> "These were utilized during Roswell I and the initial part of Roswell II testing. Prior to resuming CTO testing in Roswell II (that is, prior to Flight 153), the initial pitch attitude for flaps 10 was reduced to align with the flaps 20 initial pitch target while retaining the same takeoff speeds."

CHANGE 3.

On page 5 of 7, change the last paragraph to add results of Gulfstream testing with the FAA at Roswell V by deleting the current text:

> "The results of the Roswell IV flight tests provided excellent agreement with the predictions for the airspeeds, field lengths and angle of attack margins. The aircraft responded as both the desktop simulations and ITF predicted and at no time were any problems noted by the flight crew regarding general handling of the aircraft or the ability of the aircraft to lift-off and safely reach obstacle clearance height. This new approach has been proven to provide a safe, systematic and physically accurate method that will be utilized by Gulfstream for future aircraft development."

And replacing it with:

> "The results of the Roswell IV company flight tests, and the subsequent Roswell V certification flight tests performed with multiple FAA pilots, provided excellent agreement with the predictions for the airspeeds, field lengths and angle of attack margins. During this period of testing, the pilot technique originally developed in the ITF, and used in the desktop simulation to develop the take off safety speeds, was evaluated by multiple flight crews and proven to provide a suitable and repeatable pilot technique, allowing the aircraft to safely rotate and climb-out through obstacle clearance height without requiring exceptional pilot skill. The aircraft responded as both the desktop simulations and ITF predicted and at no time were any problems noted by the flight crews regarding general handling of the aircraft or the ability of the aircraft to lift-off and safely reach obstacle clearance height. This new approach has been proven to provide a safe, systematic and physically accurate method that will be utilized by Gulfstream for future aircraft development."