

## **Flight Test Report**

### **Antenna Installation on AFT Upper Fuselage Of Bombardier CL-600**

This report describes the test results of the experimental flight test flown supporting the Supplemental Type Certificate project to install an antenna on the AFT upper fuselage of a Bombardier CL-600 aircraft. The flight test plan supporting this project is the Kruse Aerospace Corporation Document Number THA/KAI-04/07-1, dated August 1, 2004, Revision A dated August 31, 2004 and Revision B dated September 20, 2004.

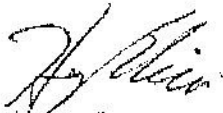
The flight test was conducted out of Peachtree-Dekalb Airport in Atlanta, Georgia and was completed in four (4) flights on September 24<sup>th</sup> and 25<sup>th</sup>, 2004. The first flight on September 24 (30 minutes in duration) was terminated when, during climb and prior to any data being taken, a critical vibration sensor became inoperative. After landing, the sensor was repaired and the takeoff was reaccomplished. The second flight was 1 hour 34 minutes in duration with approximately 20% of the flight test data being taken on this flight. A landing was accomplished at Montgomery, Alabama where a refueling took place to get the aircraft up to maximum gross weight. The third flight proceeded from KMGM and lasted 3 hours 25 minutes. Approximately 40% more of the flight test data was obtained on this flight with a landing at PDK. The fourth and final flight was accomplished on September 25, 2004 and was 2 hours 25 minutes in duration. All remaining test data points were completed on this flight. A total of 7 hours 54 minutes were flown to complete this test.

All test points with the antenna installed were accomplished satisfactorily; no adverse effects were observed at any test point. Stalls remained benign in both straight and turning stalls. The longitudinal short period damping remained heavy throughout the envelope in all configurations tested; and the Dutch Roll damping was positive throughout the envelope in all configurations tested. Dive speed was attained (0.861 Mach @ 31,500' PA and 390 KIAS @ 21,500' PA); no perceptible buffeting was observed and no excessive vibrations were felt up to and including dive speed. Handling qualities were not degraded in any way in any configuration; positive control was maintained in all axes throughout the envelope; and the aircraft remained stable in all axes.

It was determined that no aircraft operating procedures need to be changed due to antenna installation and there is no change required to the operating limitations. Therefore, revisions to the Airplane Flight Manual (AFM) are not required.

No additional tests to further prove airworthiness are recommended.

This report pertains only to the flying qualities of the aircraft due to antenna installation and does not in any way consider the structural vibrations analysis.



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Attachment

Appendix C, Flight Test Cards