

NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering
Washington, DC
March 30, 2005

SUPPLEMENT TO PERFORMANCE STUDY
CVR OVERLAY

Specialist's Report of Investigation
By Abdullah K. Kakar

DCA05MA004

A. ACCIDENT

Location: Kirksville MO
Date: October 19, 2004
Time: Approximately 1937 central daylight time (CDT¹)
Aircraft: British Aerospace Jetstream 32, N875JX

B. GROUP

Not applicable

D. SUMMARY

At approximately 1937 central daylight time, October 19, 2004, a Corporate Airlines, Inc operating as American Connections flight 5966, BAE Systems Jetstream 3200, N875JX, operating in accordance with 14 CFR Part 121, crashed while the flight was on approach to the Kirksville Regional Airport (KIRK), Kirksville, Missouri. The flight was conducting a non-precision LOC/DME Runway 36 approach. Eleven of the 13 passengers and the 2 flight crewmembers were fatally injured. The two surviving passengers received serious injuries. The airplane was destroyed by impact and post-impact fire. The reported weather was visibility 3 miles in mist and an overcast ceiling at 300 feet.

Data available pertaining to the accident included a five parameter Flight Data Recorder (FDR), Cockpit Voice Recorder (CVR), radar data from the Kirksville Air Route Surveillance Radar (ARSR), atmospheric data from the Automated Surface Observing System (ASOS), and evidence from the accident scene collected by the investigation team.

¹ All future time references will be in CDT unless otherwise specified.

This supplement contains plots of the simulated altitude profile² and ground track, and raw FDR data each with an overlay of the excerpts from the CVR transcript.

E. RESULTS OF PERFORMANCE STUDY

The J32 commuter airplane was flying at an altitude of about 2,500 feet, (ft) mean sea level (MSL) when it crossed the final approach fix, Kemmy, and began its final descent at approximately 1,200 feet per minute (fpm), never deviating in heading or pitch attitude until just prior to the initial tree impact. The evidence from the accident scene revealed the airplane's initial impact occurred with trees about 50 ft above ground level or 1,000 ft MSL. The airplane then struck numerous other trees leaving a trail of aircraft debris and finally the main wreckage came to rest at about 775 ft due north of the initial impact location and 1.2 nautical miles (nm) south of landing runway 36 threshold.

F. CVR OVERLAY

The purpose of the overlays was to capture the events and decisions made by the crew during the last 35 seconds of the descent for landing. Figures 1S and 2S are the simulation altitude profiles and ground track, respectively, and figure 3S is the FDR data, each with an overlay of the selected excerpts from the CVR transcript. The time of each comment and sound in minutes and seconds (mm:ss.s) format was also included (see Performance Study for details of CVR time synchronization). The source of each comment is identified below³:

HOT-1 Voice identified as Pilot-in-Command (PIC). Crewmember hot microphone voice or sound source.

HOT-2 Voice identified as Co-Pilot (SIC). Crewmember hot microphone voice or sound source.

HOT-3 Voice identified as aircraft mechanical voice.

CAM Cockpit area microphone voice or sound source

² For more details of the Simulation see the Aircraft Performance Study.

³ See the CVR Group Chairman's Factual report for more details.

Corporate Airlines BAE 32 Crash Short of Runway
 Altitude vs Distance Profile with CVR Transcript Overlay
 Kirksville, MO October 20, 2004 DCA05MA004

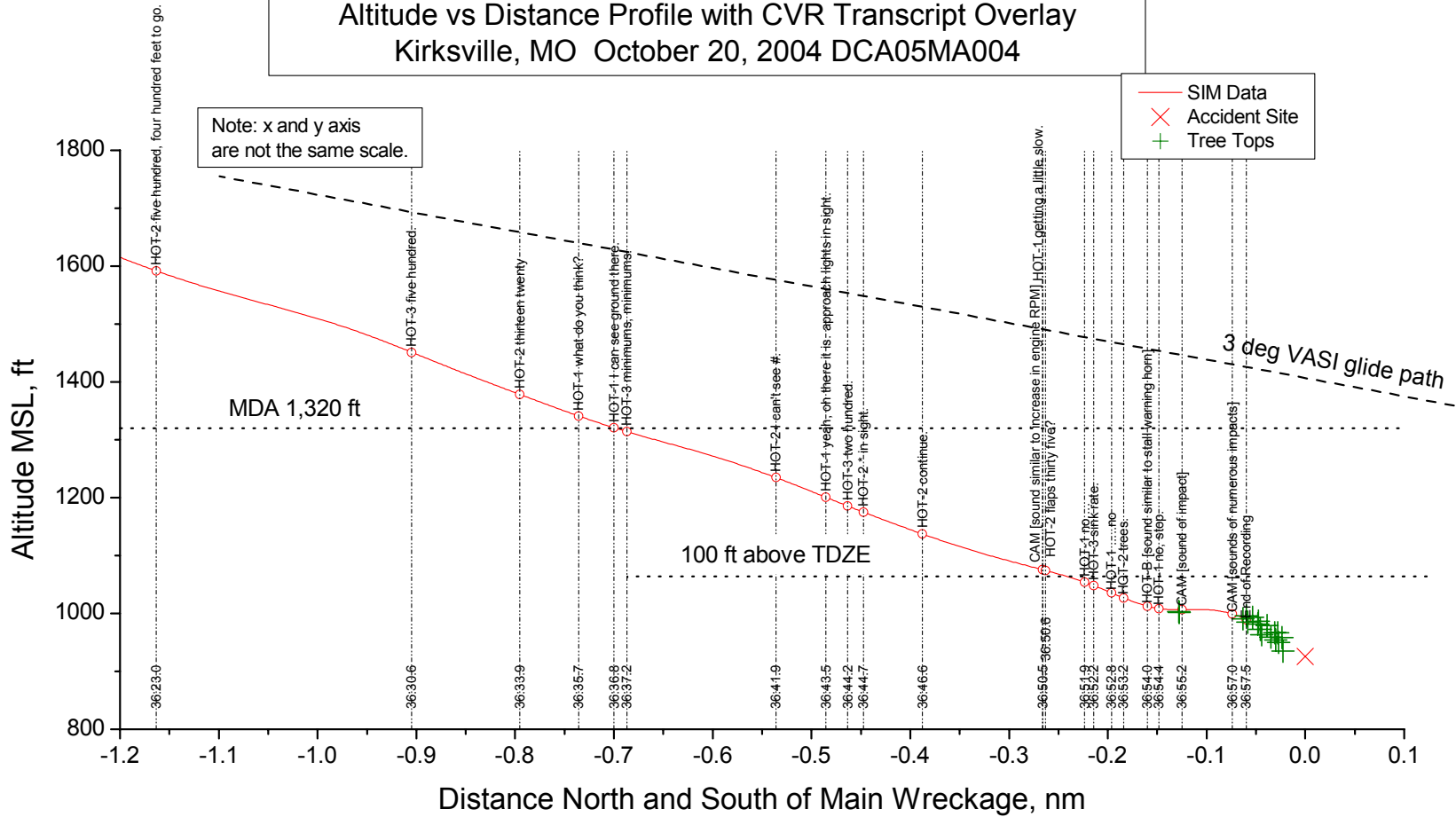


Figure 2S. Altitude Profile with CVR Overlay

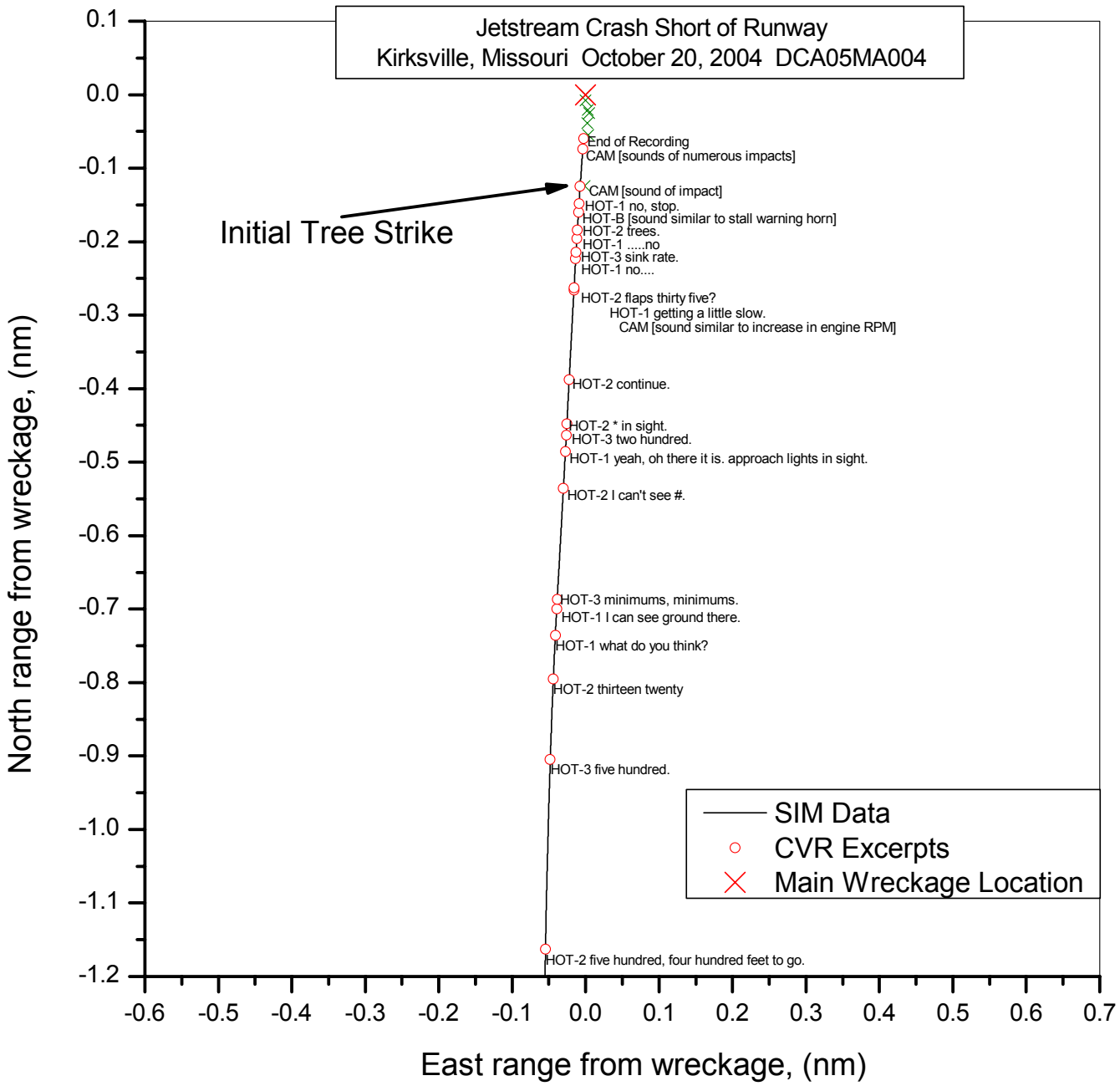


Figure 2S. Ground Track with CVR Overlay

Jetstream 32 Crash on Approach to Runway 36
 Kirksville, Missouri October 20, 2004
 DCA05MA004

FDR Data Raw

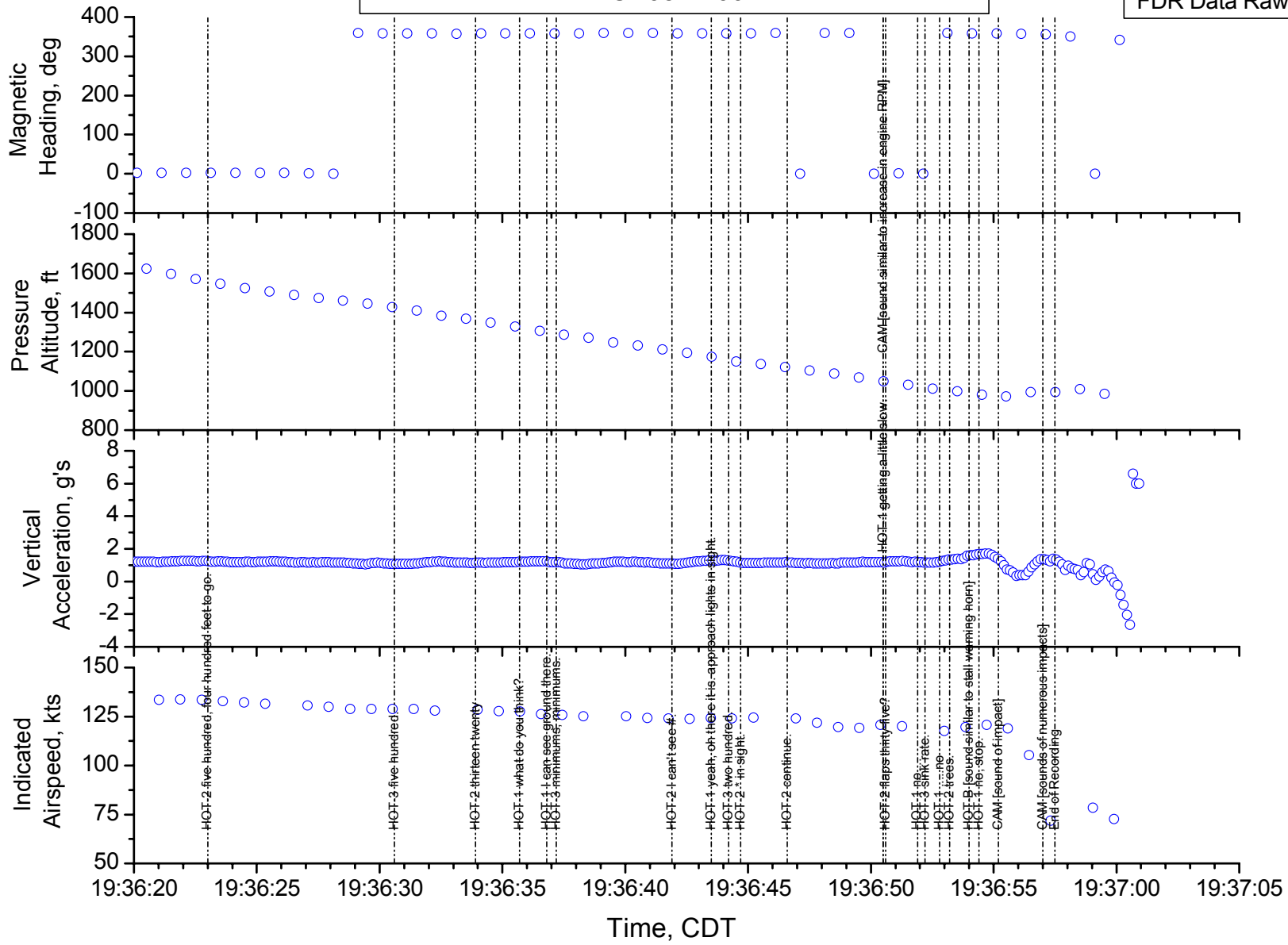


Figure 3S. FDR Data with CVR Overlay

Abdullah Kakar
Aerospace Engineer