EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
B-1B, S/N 85-0083
ELLSWORTH AIR FORCE BASE, SOUTH DAKOTA
23 NOVEMBER 2004

On 23 Nov 2004, at 10:42 Hrs local (17:42 Hrs Zulu), a B-1B, S/N 85-0083, sustained brake, wheel, and tire damage at Ellsworth Air Force Base, South Dakota. The Mishap Aircraft (MA), B-1B, SN 85-0083 and the Mishap Crew (MC) were assigned to the 28th Bomb Wing, Ellsworth Air Force Base, South Dakota. The Mishap Mission (MM) was a normally scheduled training sortie in the local area. The four-person MC consisted of a mishap pilot (MP), mishap copilot (MCP), mishap defensive systems officer (MDCO) and mishap offensive systems officer (MOSO). The damage occurred after the crew entry/egress ladder came loose causing a "thud" and the "Entry Ladder" warning light illuminated on takeoff roll. The MP aborted the takeoff at approximately 139 knots, reported hot brakes, declared a ground emergency and taxied back to the south hammerhead. Approximately three minutes after the MC exited the aircraft, there was an explosion, and a fire erupted in the aft area of left landing gear. Other than the MA, there was no damage to government or private property. The aircraft suffered subsequent heat and fire damage to all main wheel assemblies and associated electrical and hydraulic components with repair costs totaling $962,825.54.

As supported by clear and convincing evidence, the primary cause of this mishap was misaligned rollers on the crew entry ladder assembly causing a "thud" and the Main Caution Panel "Entry Ladder" warning light to illuminate creating the abort condition. There is clear and convincing evidence that the high speed abort caused the brakes to overheat. A substantially contributing factor to the extreme brake temperatures was the MA's gross weight of 381,000 lbs. at the time of the high speed aborted takeoff. Another substantially contributing factor is evidence that the number 6 brake experienced an anti-skid speed sensor failure, which resulted in the number 6 brake not engaging when brake pressure was applied. This resulted in the remaining seven brakes carrying the braking load and an increase in brake temperatures upwards to 1,100° F. As supported by clear and convincing evidence, the high brake temperatures caused the number 8 tire to blow out around the inner rim of the number 8 wheel. This in turn, damaged the number 8 wheel's brake assembly hydraulic fluid lines and the aft inside area of the left landing gear, which allowed hydraulic fluid to ignite on contact with the extremely hot number 8 brake assembly. This chain of events ultimately caused a fire in the left aft area of the landing gear.

There is clear and convincing evidence that the MC continued to taxi the MA with brake temperatures over 900° F but this was not determined as a substantially contributing factor in the resultant damage of the MA.

There is clear and convincing evidence the MP and MCP were unqualified to fly unsupervised. However, the MP and MCP qualification status had no impact on the abort decision and did not contribute to the cause of the accident or resultant damage to the MA.

Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from an aircraft accident, nor may such information be considered an admission of liability by the United States or by any person referred to in those conclusions or statements.