

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

April 2, 2012



On-Scene Interviews

DCA11MA076

A. ACCIDENT

Operator: Gulfstream Aerospace Corporation (GAC)
Location: Roswell, New Mexico
Date: April 2, 2011
Time: 0934 Mountain Daylight Time¹
Airplane: Gulfstream GVI (G650), N652GD, serial number 6002

B. ON-SCENE INTERVIEWERS

Tom Latson – Investigator-in-Charge²
National Transportation Safety Board
Arlington, Texas

TR Proven – Party Coordinator
Federal Aviation Administration
Washington, DC

Brian Durrence – Party Coordinator³
Gulfstream Aerospace Corporation
Savannah, Georgia

Mark Twibell
Gulfstream Aerospace Corporation
Savannah, Georgia

Bud Ball
Gulfstream Aerospace Corporation
Savannah, Georgia

C. SUMMARY

On April 2, 2011, about 0934 mountain daylight time, an experimental Gulfstream Aerospace Corporation (GAC) GVI (G650)⁴, registration N652GD, serial number 6002, crashed during takeoff from runway 21 at Roswell International Air Center Airport (ROW), Roswell, New Mexico. The flight was being operated by the manufacturer as part of its G650 developmental field performance flight test program. The two pilots and the two flight test engineers were

¹ All times are Mountain Daylight Time (MDT) based on a 24-hour clock, unless otherwise noted. Actual time of accident is approximate.

² Mr. Latson was the original investigator-in-charge for this accident investigation.

³ Mr. Durrence was the original party coordinator for Gulfstream Aerospace Corporation.

⁴ Gulfstream uses the Roman numeral designation “GVI” for aircraft certification purposes and the designation “G650” for marketing purposes. These designations mean the same aircraft model for purposes of this report and are used interchangeably.

fatally injured, and the airplane was substantially damaged. The flight was being conducted under 14 *Code of Federal Regulations* Part 91, and visual meteorological conditions prevailed at the time of the accident.

D. DETAILS OF THE INTERVIEWS

A partial investigative team was launched the day of the accident. On April 3, 2011, seven witnesses were interviewed by a team led by the Investigator-in-Charge. All of the witnesses interviewed were either in the telemetry (TM) trailer or one of two trucks collocated at the end of an inactive runway near the intersections of taxiway B and E. All of the witnesses interviewed at this time were GAC employees.

Witness #1: Brian Ehret, Flight Test Instrumentation Engineer

The GAC flight test instrumentation engineer (FTIE) was in the TM trailer at his station with the door of the trailer open. His console screen had an area map depicting the position of the accident aircraft relative to the TM trailer. The FTIE's first indication that there was a problem with the accident aircraft was hearing "bank angle" over the audio channel. He also heard "increase thrust" but he was not sure who stated it. The FTIE could see on his screen that the accident aircraft was coming toward the TM trailer and he stated, "It's coming at us". He ran to the door and saw the accident aircraft sliding on its belly with sparks coming off of it. He heard the engines spool up and he initially thought "it didn't seem too bad," as the accident aircraft passed the TM trailer. He then heard several "pops" from the aircraft. Smoke from the accident aircraft became very black with several explosions and eruptions of fire. The aircraft continued to track forward with the nose of the aircraft beginning to angle to the right, and came to rest with the nose turned approximately 60 degrees to the right. He ran along the ground track of the aircraft. As he approached, he momentarily saw an exit window visible/separated from the aircraft resting on the ground. The smoke was along the path of the airplane starting primarily from where the airplane passed the TM trailer. He didn't recall the smoke coming toward the TM trailer. He went around the tail of the aircraft to see if crew had exited from the exit door or if there was anything he could do to assist. The aircraft was heavily involved with fire by that point and there was nothing he could do to aid the crew. After leaving the aircraft site, he went back to the TM trailer to turn off the data.

Witness #2: Eric Upton, Performance Specialist

The GAC performance specialist was in the TM trailer at his station monitoring pre-takeoff discussions in the cockpit. The test point for the accident flight was a V1 cut⁵ and they had just completed an attempt to achieve the same test point immediately before the accident. The performance specialist was looking at the TM data and he saw the right engine was pulled back at 20 knots below V1. During the accident rotation, he heard over the audio channel from the aircraft, "whoa" then "bank angle". A flight test engineer was also in the TM trailer, and he heard her say, "Oh my God, it's coming right for us". He also heard, "power up, power up". The performance specialist had previously heard the exclamation "whoa" from a pilot crew

⁵ Simulated One Engine Inoperative (OEI) takeoff.

member back in the November testing when a wing drop bigger than expected occurred. On that occasion, the flight test crew recovered and that caused them temporarily to stop testing. The TM data for the accident aircraft he was monitoring the day of the accident indicated that the accident aircraft was coming at them. The performance specialist saw the accident aircraft in an approximately 10 degree right bank as he started to exit the door of the TM trailer. He saw sparks and flames along the trailing edge of the right wing while the aircraft was skidding. He also saw an enormous cloud of black smoke and flames obscure the aircraft immediately after the aircraft hit the berm⁶. The landing gear had broken free of the accident aircraft by that point in the accident sequence. Thick smoke covered the aircraft before it came to a stop. The nose of the accident aircraft rotated to the right after hitting the berm and slid with the nose pointed 45-60 degrees to the right. After the accident aircraft came to a stop, the top structure caved in along the entire length of the aircraft and the vertical tail kicked or fell back when the roof collapsed. The engine was still creating noise and pops immediately after the aircraft came to rest. The wind was mild from left to right, with smoke and fumes generally blowing toward the nose of the aircraft. The performance specialist went around the tail of the aircraft looking for people. The flames were intense and none of the TM crew that ran to the aircraft could approach the main exit door or emergency exits. Even though he reached the aircraft within seconds of it coming to rest, it was impossible to get close to the aircraft because of the intense heat. He had gotten as close as he could comfortably go with the level of heat and the occasional explosions that were ongoing. He circled around the plane in an attempt to find a way to help. Once he realized there was no assistance he could render the crew, and the fire trucks had arrived, he turned away from the plane and returned to the trailer.

Witness #3: Carlos Lespier, Mechanical Team Lead

The GAC mechanical team lead was in one of two vehicles stationed alongside the TM trailer with the left side facing the crash. The left vehicle had the maintenance personnel and the right vehicle was the Instrumentation personnel vehicle which is also the vehicle used to tow the TM trailer. He heard an engine whining noise and he looked up to see the accident aircraft crossing a taxiway. He yelled that the "aircraft crashed, just crashed" and he immediately left the vehicle to follow the accident aircraft as it slid along the ground. Two other personnel in the vehicle got out to chase the accident aircraft, and one person grabbed the rolling fire bottle. He saw the landing gear beginning to detach from the accident aircraft. The landing gear broke off while the fuselage was still moving. After the accident aircraft hit the berm, he noticed a crack form at the top of the crown. After the aircraft came to rest, the aircraft remained intact with smoke and fire immediately increasing to a significant level. He saw an emergency exit on the ground burning. He ran to the left side of the accident aircraft but it was already engulfed in flames when he arrived. He looked for people moving in the aircraft but saw none. The left engine appeared to have imploded/exploded. He perceived that the airport fire response was quick.

Regarding activities prior to accident flight, the aircraft was fueled to 40,000 pounds that morning. The main landing gear tires had been changed the night before, as all of the main landing gear tires were worn. The nose tires were change the week before. The tire pressure was topped off before the flight. There were no other maintenance write-ups on the accident aircraft.

⁶ Berm was actually a cement bunker (culvert) that housed electrical components. He had not realized there was a concrete pad there until after this initial statement had been provided.

Witness #4: Chris Gehm, Maintenance Technician II

The GAC maintenance technician II stated that there were three radios in his maintenance truck which he was in at the time of the accident. One radio was set to the tower frequency, one radio was set to the ground frequency, and one radio was set to the GAC company frequency. He was listening to the tower give takeoff clearance to the accident aircraft. He then heard two small pops than a loud thud. He saw the nose and right wing on the ground as the aircraft was sliding in the grass/dirt between the runway and taxiway B. He initially saw a lot of dust then flames as the accident aircraft crossed taxiway B. He began to run after the aircraft, initially pulling a rolling fire bottle toward the aircraft that he had grabbed from the front of the TM trailer. When he came around the back side of the TM trailer he saw black smoke and flames increase dramatically as the accident aircraft hit the berm, and knew a rolling fire bottle would not help, so left it at that point at the back side of the TM trailer. The accident aircraft skidded nose right approximately 45 degrees as it came to rest. He ran around the tail of the aircraft to the left side of aircraft to see if anyone was getting out, and he could see the aircraft was already engulfed in flames.

Witness #5: Mark Nutting, Instrumentation Technician

The GAC instrumentation technician first saw the accident aircraft as it hit the cement of taxiway E. The aircraft was heading straight with flames coming off the bottom of the aircraft. The aircraft almost hit a porta potty next to the TM trailer. He stated that the accident aircraft looked okay until it hit the ditch. He stated, “the ditch screwed it” and “broke the aircraft’s back”. The accident aircraft was already on its belly when it hit the ditch. He saw major smoke and flames erupt after the aircraft hit the ditch. He could not see the trajectory of the aircraft due to the black smoke. He was following behind the burning accident aircraft on foot to the point where it stopped. He saw an emergency exit resting on the ground about 50 feet from the burning aircraft. He went to the left side of the accident aircraft but could not get any closer than approximately 40 feet due to the heat. He stated, “trying to get these guys out of there”.

Witness #6: David O’Nan, Senior Aircraft Technician

The GAC senior aircraft technician was in the back seat of the vehicle that had the maintenance personnel. He heard a whizzing noise and then heard a rapid “pop, pop, pop” that sounded like a compressor stall. He then looked up and saw the accident aircraft skidding by the TM trailer on the ground with the right wing down about 10 degrees. He saw sparks and flames on the backside of wing and engine. He followed until it came to a stop near the ATC tower. A parked aircraft obscured some of his view during a portion of his run. When it came into view again, it was in flames with a lot of black smoke. The fire truck arrived within two minutes after he reached the stopped accident aircraft. He did not recall hearing the engines running when he arrived at the accident aircraft.

Witness #7: Timothy Vezzi, Instrument Technician

The GAC instrument technician was in the TM truck (there were two vehicles stationed alongside the TM trailer. The left vehicle was the maintenance personnel vehicle and the right vehicle was the Instrumentation personnel vehicle which is also the vehicle used to tow the TM trailer) and because his video tape requirements were done for the time being, he wasn't paying attention at the moment of the accident. He had stopped filming three landings prior to the accident. He exited the truck at the first noise and saw a cloud of white smoke, but the accident aircraft looked like it was rolling okay as it passed. At the drain depression, he heard a loud pop and saw a main landing gear come off. After the aircraft hit the depression, the aircraft was "consumed in flames and black smoke". He then got back in the truck and chased the aircraft using taxiway B and the tower access road while talking to tower. He could get within about 40 yards of the accident aircraft.