

**NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Washington, D.C. 20594

November 18, 2013

**Human Performance**

**Human Performance Specialist's Factual Report**

**A. ACCIDENT**

Location: Thomson, Georgia  
Date: February 20, 2013  
Time: 2006 EST<sup>1</sup>  
Aircraft: Hawker Beechcraft Premier IA Model 390, N777VG  
NTSB #: ERA13MA139

**B. GROUP**

The Human Performance Specialist joined the Operational Factors/Human Performance Group. This report summarizes human performance information that supplements the factual report of Operational Factors group.

Maryam Allahyar, Ph.D.  
Human Performance Division (AS-60)  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594-2000

Captain David Lawrence  
Senior Air Safety Investigator  
National Transportation Safety Board  
490 L'Enfant Plaza East S.W.  
Washington, DC 20594

Mr. Scott Marshall  
Aviation Safety Inspector  
Federal Aviation Administration  
Atlanta Flight Standards District Office  
Atlanta, GA 30320

Captain Mark Mohler  
Senior Sales Demonstration Pilot  
Beechcraft Corporation  
10511 E. Central  
Wichita, KS 67206

**C. SUMMARY**

On February 20, 2013, at 2006, a Beechcraft 390 Premier IA<sup>2</sup>, N777VG, was destroyed following a collision with a utility pole, trees, and terrain following a go-around at Thomson-McDuffie Regional Airport (HQU), Thomson, Georgia. The airline transport-

<sup>1</sup> All times are in eastern standard time (EST) unless otherwise noted.

<sup>2</sup> Throughout this factual report, Premier and Premier IA are used interchangeably.

rated pilot and co-pilot were seriously injured, and five passengers were fatally injured. The airplane was registered to the Pavilion Group LLC and was operated by the pilot under the provisions of 14 Code of Federal Regulations (CFR) Part 91 as a business flight. Night visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed. The flight originated at John C. Tune Airport (JWN), Nashville, Tennessee, about 1827 central standard time (1927 eastern standard time).

#### **D. DETAILS OF THE INVESTIGATION**

The Operational Factors / Human Performance Group convened in Thomson, GA on February 21, 2013 to begin the field phase of the accident investigation. The group visited the accident scene, reviewed relevant documents, and interviewed witnesses and company personnel.

The Operations / Human Performance Group Chairmen also conducted interviews with the two accident pilots on March 4, 2013, and then again on June 17, 2013 after both pilots had the opportunity to review the content of the cockpit voice recorder (CVR).

On April 18, 2013, the Operations/Human Performance Group Chairmen visited the FlightSafety International (FSI) training facilities in Wichita, Kansas and interviewed the program manager, assistant program manager, training center evaluators (TCE), and instructors on the Premier program. Subsequent interviews of additional FSI staff at the Wilmington, Delaware facility was conducted on June 16, 2013.

The Operations/Human Performance Group Chairmen also conducted interviews with the FAA principal operations inspector (POI) and training center program manager (TCPM) overseeing the FSI certificate on May 12, 2013.

#### **E. FACTUAL INFORMATION**

##### **1 Flight Crew Information**

##### **1.1 Captain**

##### **1.1.1 Background**

The captain, age 56, held an Airline Transport Pilot (ATP) certificate and a single pilot type rating on the Premier (390). He had a total flying time of 13,319 hours. Of his total flying time, 12,609 hours were as pilot in command. His total flying hours in the Premier were 198 hours, all of which were as pilot in command. He had flown the Premier since

June 2012.<sup>3</sup> He held a second class airman medical certificate (October 29, 2012) with a restriction letter dated March 2, 2011 requiring the captain to wear glasses for near/intermediate vision.

He was the director of operations of a 14 CFR Part 135 Fixed-Base Operator (FBO) in Greenwood, South Carolina (Sky's the Limit doing business as Executive Shuttle). He was hired by the Pavilion Group which was owned by the Vein Guys to provide pilot services. He was originally hired to fly the company's King Air 300 in 2008 before transitioning to the Premier when it was acquired by the Pavilion Group in 2012. He stated that his FBO had grown, but he "could put it on autopilot" and it did not require much attention. He also stated that he originally started flying for the Pavilion Group only 2 days a week, but the hours had grown more recently.

The captain resided in Greenwood, South Carolina, approximately 1 hour away from Thomson Georgia, HQU FBO, where the accident airplane was based.

There were no prior incidents or accidents reported by the captain with the exception of one enforcement action. The captain had been cited by the FAA for violations of 14 CFR 91.139(c) and Section 99.7 for a flight in the DC ADIZ.<sup>4</sup>

### **1.1.2 Activity / 72-Hour History**

The captain stated that when he began working for the Pavilion Group, he was not aware of the extent of his schedule. According to the captain, the Pavilion Group did not discuss with him that as the company was expanding, the frequency and the length of the days requiring the captain's services would increase. The captain's recent activities were as follows:

On Friday, February 15, about 1230 the captain flew the owner of the company and his family to Orlando, FL. He stayed in Orlando until Monday morning when they departed for Thomson.

On Sunday, February 17, he went to bed around 2200 and awoke on Monday around 0600 or 0630. He said he was not a "late person." He went to the airport around 0830 for the 0930 flight back to Thomson. After landing in Thomson, he drove back to Greenwood, and went to bed about 2100. Cellphone records showed activity<sup>5</sup> between 0902 and 1858 on Sunday and 0604 and 1946 on Monday.

---

<sup>3</sup> For more information on the captain's pilot certification and ratings see Operations Factual Report.

<sup>4</sup> For more information on the captain's FAA violation see Operations Factual Report.

<sup>5</sup> Cellphone activity refers to inbound and outbound calls and texts.

## DCA12IA141 Human Performance Specialist's Factual Report

On Tuesday, February 19, he awoke around 0500. He flew the company staff about 0730 to Olive Branch, MS. They stayed there until about 1500 central time. At Olive Branch, he did not go to the pilot lounge to sleep but rather he looked around the airport. He assessed the airport setting since the company he flew for was considering opening a new office at that location. He thought the crew bunkroom was very adequate, but he did not sleep there. They returned to Thomson around the airport closing time of 1700. Upon arrival, he fueled up the plane for the following day. Occasionally, the captain would stay at a nearby hotel in Thomson; however, that night he elected to drive to his residence in Greenwood. He arrived home around 1820 and went to bed about 2100. Cellphone records indicated activity between 0711 and 1806.

On Wednesday, February 20, the captain woke up around 0200, and departed his house around 0230 to drive back to Thomson. He arrived in Thomson around 0330 and prepared the airplane for the 0400 flight to Nashville. He estimated he had about 5 hours of sleep the night prior to the accident. According to the captain, after arriving into Nashville, he went to the pilot lounge and slept for about 4 hours. After he woke up, he went for breakfast and lunch later in the day. About 1600 central time, he requested fuel. His passengers arrived about 1700 central time to return to Thomson. The captain described Wednesday as a "tough, tough day." The following table shows the call and text activity from the captain's cellphone on the day of the accident:

Calls	Outgoing	0708, 0713, 0802, 1038, 1134, 1151, 1200, 1215, 1217, 1224, 1230, 1232, 1332, 1401, 1403, 1542
	Incoming (other)	0902, 1207, 1208, 1307, 1308, 1346, 1354, 1446, 1454, 1530, 1630
Texts	Outgoing	0902, 0905, 0916, 1021, 1304
	Incoming (other)	0508, 0850, 0851, 0853, 0904, 0910, 1049, 1308, 1318, 1325, 1818, 1905

Times listed in this table are in central time.

The captain said that on approach to Thomson, they were on profile. He was using the electronic checklist. They went over Athens, Georgia which was about 5 minutes out from Thomson. He saw the runway at Thomson and could see his home airport of Greenwood as well. As they were descending, he asked the co-pilot to cancel Instrument Flight Rules (IFR) flight plan with Augusta. He wondered about his landing lights since they were too dim. He expressed that the landing lights on the Premier aircraft were "terrible." He looked up to make sure the landing light switches were on

during flare. The next memory he had was waking up in the hospital the following Sunday.

### **1.1.3 Medical/Personal Issues**

The captain lived with his wife in Greenwood, South Carolina. He had not had any recent changes in his vision or hearing, and had no major weight gain or weight loss in the past 12 months.

The captain stated that he slept "very, very well" and the only time he had trouble sleeping was during the 2008 financial crisis. He did not take any sleeping medications prior to the accident. He was trying to eat better and go to the gym. He generally ate at least two meals a day.

The captain was a nonsmoker who did not take any prescription medications prior to the accident. He stated that he had not consumed any alcohol since he was 19 years old.

## **1.2 Co-Pilot**

### **1.2.1 Background**

The co-pilot, age 40, held an Airline Transport Pilot certificate. He had a total flying time of 2,932 hours of which 2,613 hours were pilot in command hours. He had 45 total flying hours in the Premier, all of which were as second in command. He was not type rated in the Premier.<sup>6</sup> He held an unrestricted second class airman medical certificate (February 12, 2013).

The co-pilot was employed by Executive Shuttle. He flew with the accident captain on many of the Premier flights at the request of the captain. The accident captain indicated that he had completed a 14 CFR 61.55 check ride for the co-pilot. He also allowed the co-pilot to do the landings at Raleigh in the Premier since it was a longer runway. The co-pilot had only trained on the Premier as the second in command and did not have any simulator training. There were no known prior accidents, incidents, or enforcement actions on the co-pilot's FAA records.

### **1.2.2 Activity / 72-Hour History**

The co-pilot's recent activities were as follows:

On Monday, February 18, he woke up about 0600 or 0630. He was not scheduled to fly that day. He stayed home and engaged in routine activities. He went to bed about 2200 on Monday night. Cellphone records indicated one call at 1756.

---

<sup>6</sup> For more information on the co-pilot's certification and ratings see Operations Factual Report.

## DCA12IA141 Human Performance Specialist's Factual Report

On Tuesday, February 19, he awoke about 0530 or 0600. He and the accident captain flew the company staff to Olive Branch around 0800 and returned to Thomson around 1600. The co-pilot went back to his residence after they returned. His drive home took approximately 1 hour. He was not certain about what time he went to bed or fell asleep on Tuesday night, but he estimated it to be around 2000. Cellphone records indicated activity between 0730 and 2148. The last telephone activity at 2148 was an outbound call.

On Wednesday, February 20, he awoke around 0200 or 0215. He then drove with the accident captain to Thomson. They left Thomson with their passengers around 0400. When they arrived in Nashville, he was able sleep in the pilot lounge. He estimated to have slept for about 4 or 5 hours, waking up around 1000 central time. He and the accident captain went to lunch around 1500. They left Nashville around 1800 central time. The following table shows the call and text activity from the co-pilot's cellphone on the day of the accident:

Calls	Outgoing	1155
	Incoming (other)	2011, 2022, 2040, 2108, 2110, 2111, 2122, 2140, 2208, 2210 (all post-accident)
Texts	There were no text activities on Wednesday, February 20	

Times listed in this table are in central time.

### 1.2.3 Medical/Personal Issues

The co-pilot resided in the Due West, South Carolina with his wife and child. He drove approximately 1 hour from his home to Thomson, Georgia where the accident airplane was based.

He stated that he had no problem sleeping and had no known sleep disorders. He normally ate three meals a day and some snacks. He had not had any recent major weight gain or weight loss. The only change in his life was the arrival of their child who was 5 months old at the time of the accident. He had no recent changes in his vision or hearing. He was a non-smoker and his last alcoholic beverage was in 2008.

## **2. FlightSafety International (FSI) Instructor Interviews<sup>7</sup>**

The accident captain received his initial ground and simulator training in the Premier at FSI in Wichita, Kansas in June of 2012. He received additional training in January of 2013 at FSI's other facility in Wilmington, Delaware. FSI management and instructors at both of these facilities were interviewed by the NTSB staff.

### **2.1 Descriptions of the Captain**

The assistant program manager for the Premier program at FSI recalled having the captain in his ground school. He stated that the captain was quiet and did not express any concern about any of the areas of the ground school. The captain's performance did not stand out for the assistant program manager since the captain passed the ground school.

A simulator instructor described the captain's performance as "non-remarkable" and another instructor stated that nothing specific came to mind about the captain and that he normally remembered the clients who had difficulty.

The captain's training center evaluator (TCE) at FSI also indicated that he did not recall the specifics of the captain's check ride other than it was satisfactory.

### **2.2 Crew Resource Management Training at FSI**

According to the FSI management and staff, Crew Resource Management (CRM) training was conducted with their clients during ground school, avionics module, and simulator training.

The assistant program manager for the Premier program described single pilot Cockpit Resource Management in terms of teaching the pilots how to use available resources such as cockpit instruments, automation, individuals on the ground, and air traffic control (ATC) assistance.

The Premier program manager stressed that the focus of the single pilot CRM was on the decision making process, handling emergencies, and situational awareness (SA).

One of the former TCE and ground school/simulator instructors explained that in their training, CRM for a single pilot would entail "cockpit" resource management. As an instructor he assessed the pilot's ability to stay ahead of the aircraft. He also looked at decision making in a timely manner, listened to their briefings, evaluated automation management and pilot's recognition of a system failure.

---

<sup>7</sup> For complete interview summaries, see attachment 1.

At FSI, clients received two 8.5 X 5.5 inch cards, labeled Crew Resource Management. The focus of the cards was on crew performance standards and crew cockpit resource management.<sup>8</sup> The topics emphasized under crew performance standards included: Situational Awareness, Stress Management, Communication, Synergy and Crew Concept, Workload Management, Decision Making, and Advanced/Automated Cockpits. The highlighted issues in cockpit resource management included: Situational Awareness in the Cockpit, Command and Leadership, Communication Process, Decision Making Process, and Error Management. Much of the information contained in the CRM cards was consistent with the aeronautical decision-making (ADM) information provided in Federal Aviation Administration Handbook of Aeronautical Knowledge.<sup>9</sup>

### **3. Medical and Pathological Information**

Drug and alcohol testing was conducted by Federal Aviation Administration, Civil Aerospace Medical Institute (CAMI) on serum samples of both pilots post-accident. Toxicology results were negative for both pilots on a wide range of drugs that included major drugs of abuse.

## **F. LIST OF ATTACHMENTS**

Attachment 1: Interview Summaries

Attachment 2: Crew Resource Management course material

Attachment 3: Lab and Toxicology Results

Submitted by:

---

Maryam Allahyar, PhD  
Human Performance Investigator

Date

---

<sup>8</sup> See attachment 2 for a copy of the CRM training cards.

<sup>9</sup> Pilot's Handbook of Aeronautical Knowledge, 2009, Department of Transportation, Federal Aviation Administration, Flight Standards Service. Chapter 17: Aeronautical Decision-Making.