



Crew's Failure to Monitor Terrain Clearance After Night Takeoff Results in Collision with Mountain

The pilot of the accident flight, carrying members of a country music band, had three conversations with an FAA Flight Service Station specialist before takeoff. But the conversations still left the pilot with a misunderstanding of the correct departure altitude.

Editorial Staff Report

The twin-turbojet Hawker Siddeley DH125-1A departed Brown Field Municipal Airport, San Diego, California, U.S., under visual flight rules (VFR) at night. After takeoff, the pilot contacted air traffic control (ATC) to obtain an instrument flight rules (IFR) clearance for a flight plan that had been previously filed. While the pilot was communicating with ATC, the airplane collided with rising terrain, eight miles (12.8 kilometers) northeast of the airport. Visual meteorological conditions (VMC) prevailed. All eight passengers and both crew members were killed in the March 16, 1991, accident.

The U.S. National Transportation Safety Board (NTSB) concluded in its final accident report that the probable causes of the accident were "improper planning/decision by the pilot, the pilot's failure to maintain proper altitude and clearance over mountainous terrain and the copilot's failure to adequately monitor the progress of the flight."

The report also said that "factors related to the accident were: insufficient terrain information provided by the flight service specialist during the preflight briefing after the pilot inquired about a low-altitude departure, darkness, mountainous terrain, both pilots' lack of familiarity with the geographical area and the copilot's lack of familiarity with the aircraft."

The aircraft was owned by Duncan Aircraft Sales of Florida Inc., and was operated by Prestige Tours Inc., Dallas, Texas, U.S. The accident flight, operating under U.S. Federal Aviation Regulations (FARs) Part 91, was carrying members of country singer Reba McEntire's band. [The U.S. Federal Aviation Administration (FAA) later sought action against Prestige Tours, charging that it was operating as a "common carrier" subject to Part 135 rules.]

On March 15, the accident aircraft departed Gallatin, Tennessee, U.S., with band members as passengers. The destination was San Diego, with a fuel stop in Amarillo, Texas, U.S., the report said. The report did not include the departure time from Gallatin nor did it include details about the pilot's activities, such as duty-time and rest periods, prior to departure from Gallatin until the accident flight.

The aircraft arrived at San Diego International Lindbergh Field about 1530 hours local time. The passengers deplaned, and the aircraft was refueled. At 1700, the aircraft was flown to Brown Field. This repositioning was necessary because of noise curfew restrictions that would be in effect at Lindbergh Field when the passengers departed later that night, the report said.

When the aircraft arrived at Brown Field, a different copilot was assigned to the aircraft for the return flight, the report said. A second aircraft and crew that would transport some of the band members were also at Brown Field.

At 2315, the pilot of the accident aircraft telephoned the San Diego FAA Flight Service Station (FSS), and filed an IFR flight plan to Amarillo, with a proposed departure time of 0000 hours (midnight), the report said. The specialist told the pilot that if he could depart VFR, he (the specialist) would provide a frequency to obtain the IFR clearance once airborne, the report said.

“The FSS specialist asked the pilot if he was familiar with the Brown Field departure procedure,” the report said. “The pilot stated ‘no, not really.’” A discussion followed about where to locate the departure procedure for Brown Field (see transcript of conversation, at right). The specialist then issued a frequency for the pilot to use after takeoff to obtain his IFR clearance, and the conversation terminated, the report said.

At 2348, the pilot called the San Diego FSS (page 3), and spoke to the same specialist. The pilot told the specialist that he had reviewed the approach charts for California, and could not find a standard instrument departure (SID) for Brown Field, the report said. After some discussion, the specialist asked the pilot which runway he would depart from. The pilot said that he would depart Runway 8. “The FSS specialist read the instrument departure procedure for Runway 8, and then read the instrument departure procedure for Runway 26,” the report said. The pilot then terminated the conversation.

At 0023 on March 16, the pilot called the San Diego FSS, and talked to the same specialist for the third time (page 4). The pilot “told the FSS specialist that if he followed the instrument departure procedure that he would enter the Terminal Control Area (TCA) without a clearance,” the report said. [All TCAs have since been reclassified as Class B airspace.] “The pilot said, ‘I’m breaking into the TCA without a clearance.’ The FSS specialist responded, ‘That’s right. Yeah, that’s right, you are.’ The pilot said, ‘So, I would be better off if I headed right northeast and stayed down, say down below 3,000 [feet (915 meters)].’ The FSS specialist responded, ‘Uh huh.’ The pilot then asked, ‘Do you agree with that?’ The FSS specialist said, ‘Yeah, sure, that’ll be fine,’” the report said. The pilot ended the conversation at about 0030.

The standard instrument approach procedure chart for Brown Field showed a minimum sector altitude (MSA) of 7,600 feet (2,318 meters) northeast of the airport, the report said. The MSA provides at least 1,000 feet (305 meters) of obstacle clearance within a 25-mile (40.2-kilometer) radius of the navigation facility shown.

“Witnesses at Brown Field reported observing the passengers arrive, and reported seeing them get aboard the [accident] aircraft,” the report said. The aircraft departed Runway 8 at

Transcript of Accident Aircraft Pilot’s Conversations with FAA Flight Service Station Specialist

Excerpt from first telephone conversation

2322:24 FSS: Okay sir, I copy your flight plan. It’s in the system, ready to go for ya. Give San Diego Radio a call on this line for your clearance.

2322:31 Pilot: [unintelligible] can I get airborne outta here?

2322:32 FSS: Pardon?

2322:33 Pilot: Think I can get airborne outta Brown Field.

2322:35 FSS: Okay, if you can go out depart VFR, ah yeah, I can get a frequency ah to pick your clearance up in the air.

2322:40 Pilot: Yeah, I like that.

2322:41 FSS: Okay, I’ll call approach and get your frequency. Are you familiar with the Brown Field departure, sir?

2322:46 Pilot: No, not really.

2322:47 FSS: Okay, it should be in your chart ah let me read it to you, because they’re very ah particular on the ah departures, sir.

2322:55 Pilot: Okay.

2322:55 FSS: Let’s see here [unintelligible].

2323:08 Pilot: It would be in a SID [standard instrument departure].

2323:09 FSS: It’s in the SID, yeah, just a second. Actually, I think it’s in the STAR [standard terminal arrival route], but let’s see.

2323:31 Pilot: SIDs [unintelligible] government ones are right behind [unintelligible].

2323:33 FSS: Takeoff minimums.

2323:38 Pilot: No, no you’re in the wrong area.

2323:49 FSS: Pardon?

2323:41 Pilot: They’re right there where the approach plates are for the field.

2323:43 FSS: Right, I know.

2323:44 Pilot: Right behind ’em. No, if they would be in the charts, I’d have them anyway.

2323:49 FSS: Oh, you have the charts there.

2323:50 Pilot: Oh yeah, I got [unintelligible].

2323:51 FSS: Oh, okay, no problem.

2323:53 Pilot: Yeah, I’ll just look it up in the approach plates.

Brown Field at 0141. About one minute after takeoff, the pilot contacted San Diego Approach Control, “and stated that he was standing by for his instrument flight rules clearance,” the report said. “The [approach] controller told the pilot that his clearance ‘clocked out,’ and that he would ‘put it right back in.’” The FAA computer had deleted the pilot’s IFR flight plan, since his actual departure time was more than 90 minutes past the proposed departure time filed in the flight plan, the report said.

The approach controller issued the pilot a transponder code, which the pilot read back. “The controller asked the pilot to state his position,” the report said. “The pilot did not respond. No further transmissions were recorded from the pilot. The [approach] controller received a call from the control tower at Navy North Island, San Diego, about 0145 hours. The Navy controller stated, ‘I was just watching a ah VFR squawk off of Brown Field, and I just noticed a large explosion over that way, and the target disappeared from my radar screen up here.’ The San Diego [approach] controller responded, ‘Mine also,’” the report said.

The president of Prestige Tours was on the ground at Brown Field, and watched the aircraft depart Runway 8. “He reported that while watching the aircraft’s lights after it departed Brown Field, he saw the aircraft ‘explode,’” the report said.

The aircraft struck the west side of a mountain, at 3,300 feet (1,006 meters) mean sea level, eight nautical miles northeast of Brown Field. The aircraft was destroyed by impact and a postcrash fire. “The cause of death listed on the autopsy for the pilot, copilot, and all eight passengers was ‘massive blunt force injuries,’” the report said.

When investigators arrived on the scene, they found that “the wreckage consisted primarily of aircraft skin and component fragments along a wreckage path of about 1,200 feet [366 meters] from the point of first impact, along a 30-degree upslope, and in a path about 30 feet [9.1 meters] wide,” the report said. “With the exception of the engines and the empennage, the wreckage consisted of fragments of aircraft skin.”

The report described the wreckage path: “The aircraft’s left wing first contacted a rock outcropping or small ridge. Scars at this location were consistent with the aircraft being in a shallow left bank. The aircraft descended about 40 feet [12.2 meters], and continued traveling on a magnetic heading of about 50 degrees. The aircraft’s second point of impact was noted about 225 feet [68.6 meters] from the initial point of contact, and was to the southwest of a dirt and rock road.”

The report continued: “The width of the path of the aircraft is consistent with an aircraft that is cartwheeling. The aircraft continued up a 30-degree slope, with the fuselage leaving skin fragments along the impact path. Major fragments of the fuselage were noted about 150 feet [45.7 meters] from the major impact

Excerpt from second telephone conversation

2353:49 Pilot: Yeah, I went out there and looked in the California approach plates as far as ah some sort of special SID out of here.

2353:54 FSS: Uh huh.

2353:55 Pilot: I show absolutely nothin’ they ...

2353:58 FSS: Okay, well let me find it for you, and I’ll read it to you, because they are very particular how you depart. I know you have to intercept Mission Bay [Vortac] ah radials, and uh let’s see, this is Oregon.

2354:08 Pilot: Does it show, see it doesn’t show anything in that.

2354:11 FSS: Yeah, like I said, it’s ah let’s see even I have a hard time finding it in here. It’s I think it’s in this in this STAR and ah ...

2354:26 Pilot: Would it be in the STAR as a SID?

2354:28 FSS: Yeah, as a SID.

2354:29 Pilot: [unintelligible].

2354:30 FSS: I know it’s funny, but ...

2354:32 Pilot: I didn’t think, I didn’t look at the STAR.

2354:35 FSS: Okay, Brown, Brown, Brown, Brown, [unintelligible] look under San Diego [unintelligible] Lindbergh, okay, which runway will you be departing on, sir?

2355:04 Pilot: Ah, what is it, [Runway] 26?

2355:06 FSS: 26.

2355:07 Pilot: I can go either way if the wind’s real light and variable, whichever’s the better way. Actually, probably be better if I went off the east runway.

2355:13 FSS: Okay, which one you go off, [Runway] 8 left right?

2355:15 Pilot: Ah, what’s the longer one? There’s only one lit tonight. The longer one, whatever one that is.

2355:20 FSS: Okay, 8 left or right.

2355:24 Pilot: Okay.

2355:26 FSS: Okay, it be ah okay, well let’s see, I believe 26 left and right are the longer runways.

2355:44 Pilot: 26 right or left.

2355:46 FSS: Left and right, either one.

2355:48 Pilot: Okay, well, there’s just one lit. I think it’s 26 right, so it’d be eight left.

2355:51 FSS: Okay.

2355:57 Pilot: Yeah, I’m sure of that, because then you cross over the other one.

point. The empennage was found about 125 feet [38.1 meters] southeast of the fuselage wreckage. One engine was found about 500 feet [152.5 meters] northeast of the fuselage fragments along a second road. The other engine was on the primary road about 150 feet southeast of the fuselage fragments.”

An autopsy was performed on both pilots, and no evidence was found of incapacitation or impairment in either pilot, the report said.

The qualifications of both pilots were reviewed. The pilot, age 43, held a U.S. airline transport pilot (ATP) certificate with ratings for single- and multi-engine land airplanes and a type rating in the DH125. He held a first-class medical certificate, with the requirement to have glasses available for near vision, the report said. The pilot had more than 15,000 total flying hours, with 150 hours in the DH125. He was employed as a full-time pilot by Duncan Aircraft Sales, the report said.

The owner of Duncan Aircraft Sales told investigators that the accident pilot “was a very experienced pilot, and he [the owner] thought that he was an outstanding pilot,” the report said. The owner also said that the accident pilot “had many flight hours as a solo pilot ferrying aircraft to overseas locations, and that [he] was the type of pilot to do everything on a flight,” the report said.

Investigators played for the owner the recorded conversations between the accident pilot and the San Diego FSS, and with San Diego Approach Control. The owner recognized the voice on each recording as that of the accident pilot, the report said.

The copilot, age 22, held a U.S. commercial pilot certificate with ratings for single- and multi-engine land airplanes and instruments. He also held a flight instructor certificate with ratings for single- and multi-engine airplanes and instruments. The copilot held a current first-class medical certificate, without limitations. He had 1,750 total flying hours. No evidence was found that the copilot had any flight time in the accident airplane, or held a type rating in the accident airplane.

When investigators asked the owner of Duncan Aircraft Sales about the background of the copilot on the accident flight, the owner said that he didn’t know who the copilot was, or his qualifications, the report said. The owner told investigators that “it is not unusual to use inexperienced copilots, and that he used several copilots in this category,” the report said. Investigators also asked a pilot for Prestige Tours about the background of the accident copilot, and they were told that the accident copilot had said that he “had three takeoffs and landings in the [DH125],” the report said.

Investigators attempted to determine why the pilot of the accident flight was not more aware of the terrain in the vicinity of Brown Field. The copilot who flew with the pilot from Lindbergh Field to Brown Field during the repositioning flight

2355:59 FSS: Okay, you’re be departing eastbound then right.

2356:02 Pilot: Yeah, so I might as well just go ahead off 8 left.

2356:04 FSS: Okay, for 8 left ah turn left, climb direct Poggi Vortac to cross at or above 1,500 [feet (458 meters)]. Continue climb on Poggi radial 270-degree radial.

2356:21 Pilot: On Poggi 270.

2356:23 FSS: Right ah to intercept the Mission Bay Vortac 160-degree radial at or above 3,000 feet [915 meters]. Climb direct Mission Bay Vortac via 160-degree radial.

2356:42 Pilot: Okay, all right, I got it all. Is that it?

2356:46 FSS: Okay, well yeah, if you take off 26 that gives you the same thing, but you’re going direct to Mission Bay. It may be ah better ah climbout for you.

2356:55 Pilot: Okay, what is, what is, 26.

2356:56 FSS: Okay, 26 ah Runway 26 departure ah climbing right turn heading 280. Cross Mission Bay Vortac radial 130 at or above 1,500 [feet]. Intercept the Mission Bay Vortac radial 160 at or above 3,000 [feet] direct Mission Bay Vortac.

2357:21 Pilot: Okay, all right. That’ll do me.

Excerpt from third telephone conversation

0028:06 FSS: San Diego Flight Service, good evening, may I help you?

0028:08 Pilot: Yes sir, this is the ah pilot flying that Eight-Three-One Hawker ah Eight-Three-One-Lima-Charlie is ah down at Brownsville ah Brown a airport, got a question for you. Remember, you mentioned that SID outta here?

0028:21 FSS: Okay.

0028:22 Pilot: I have looked that up, and I do have that in the in the basically in the STAR section, or actually in the minimums section.

0028:26 FSS: Right, that’s what I said, it’s in the STAR, in the arrival section.

0028:29 Pilot: Yeah, the thing that I, I question on that ah

0028:32 FSS: Uh huh.

0028:33 Pilot: And see if you can clarify this ahh I’m going off here VFR.

0028:37 FSS: Right.

0028:37 Pilot: And if ya if ya meet that SID

0028:41 FSS: Right.

said, "You could see the terrain around Brown Field when [we] flew there," the report said. The copilot also told investigators that, on the night of the accident, "you could see the outlines of the mountains."

The owner of Duncan Aircraft Sales was asked by investigators if the accident pilot had been supplied with sectional aeronautical charts. The owner's reply was, "This is a goddamned jet outfit, we don't carry VFR charts," the report said.

The pilot of the second aircraft that transported the remaining band members told investigators that he had no discussions with the crew of the accident flight about departing from Brown Field, the report said. "He [the second aircraft pilot] also said he did not observe [the accident crew] performing preflight planning," the report said.

The San Diego FSS specialist, who had three telephone conversations with the accident pilot, was interviewed four days after the accident. The report said that the FSS specialist was asked "if he remembered agreeing with [the accident pilot] during the third telephone conversation when [the accident pilot] asked what he thought about his plan to take off from Brown Field and fly to the northeast, remaining at about 3,000 feet, and to pick up his instrument flight rules clearance while airborne. [The specialist] said that he vaguely remembered the conversation, and he further stated that [the accident pilot] was indicating that he would fly at 3,000 [feet] above ground level."

The FSS specialist was also asked if he "was required to provide specific information about local terrain when briefing a pilot," the report said. "He said that there are no specific instructions to do so."

The weather in the San Diego area during the day and night of the accident flight was visual meteorological conditions (VMC). The closest aviation weather reporting station to the accident site was Lindbergh Field, about 20 nautical miles (32 kilometers) northwest, the report said. At 0150, the weather was reported as clear, with 10 miles (16 kilometers) visibility, and calm winds. "Witnesses closer to the accident site reported clear [visibility], with scattered clouds at 4,000 feet [1,220 meters], winds calm," the report said.

The accident airplane's maintenance records were reviewed by investigators. "Examination of the records revealed no unresolved discrepancies documented against the aircraft prior to departure," the report said. "Additionally, the copilot who flew the aircraft from Tennessee to San Diego reported that the aircraft 'flew fine' and had no apparent maintenance problems."

Investigators reviewed the circumstances and regulations under which the flight was conducted. The owner of Duncan Aircraft Sales was interviewed. "[The owner] said he had furnished the accident aircraft, along with another aircraft to ... [Prestige Tours]," the report said. "The accident aircraft was furnished as a sales demonstration aircraft. He [the owner] said that the

0028:42 Pilot: You're climbing into the TCA [terminal control area] [unintelligible].

0028:45 FSS: Okay, yeah that's right. I understand what you mean.

0028:47 Pilot: Very possibly without an IFR [clearance].

0028:48 FSS: Right.

0028:48 Pilot: Or a clearance to climb into the SID, or into the TCA.

0028:53 FSS: Uh huh.

0028:54 Pilot: I question that.

0028:55 FSS: Well, okay if you want to depart or depart under VFR conditions, then just contact approach control on the ah 124.35 frequency.

0029:05 Pilot: Yeah, you see what I'm saying.

0029:06 FSS: Yeah, I understand what you're saying now.

0029:07 Pilot: If I have an IFR clearance, yes that would be ...

0029:09 FSS: That would be fine, right.

0029:10 Pilot: Procedure, but what I see if I did with that procedure said.

0029:14 FSS: Uh huh.

0029:14 Pilot: I'm breaking right into the TCA without a clearance.

0029:17 FSS: That's right. Yeah, that's right, you are.

0029:18 Pilot: So, I would be better off if I headed right northeast and stayed down, say down below 3,000 [feet (915 meters)].

0029:23 FSS: Uh huh.

0029:24 Pilot: Do you agree with that?

0029:25 FSS: Yeah, sure, that'll be fine.

0029:26 Pilot: Okay, just wanna check with you on it. And I understand that's a normal IFR departure, but I'm going out of here VFR.

0029:40 Pilot: Yeah.

0029:40 FSS: But you're right. You will be entering the TCA.

0029:42 Pilot: Without a clearance.

0029:43 FSS: In VFR conditions, right.

0029:44 Pilot: Yeah, okay sir. Thank you very much. I just wanted to check that with you because I know you said you were very very stiff on that procedure, but then again ...

0029:50 FSS: Yeah, that's right. I forgot. I keep forgetting, I kept forgetting you're climbing out VFR to get your clearance in the air.

0029:55 Pilot: Right, okay sir. Thank you very much.

0029:57 FSS: You're quite welcome.

flight was conducted under the provisions of [FARs] Part 91, and was not a revenue operation. When asked if he was aware that [Prestige Tours] was operating the airplane as a revenue flight, thus requiring it to be operated under the provisions of [FARs] Part 135, he stated that he was not aware of this," the report said.

When the president of Prestige Tours was interviewed by investigators, he said that Prestige Tours "had a contract to provide transportation for Ms. [McEntire], her husband and certain personnel in her employ, including her band," the report said. The president told investigators that the accident aircraft had been obtained from Duncan Aircraft Sales for a sales demonstration. "He [the president] said that Ms. [McEntire] wanted to buy an [airplane], and wanted to look at the Hawker Siddeley 125," the report said. When asked if the accident flight was a revenue flight, the president "answered that it was not, and that he was going to pay [Duncan Aircraft Sales] the actual expenses incurred," the report said.

Reba McEntire and her husband were interviewed by investigators. "They said that Ms. [McEntire] and her company had a one-year contract with Prestige Tours Inc. for Prestige Tours to provide transportation for Ms. [McEntire] and personnel in her employ," the report said. "Both interviewees stated that Prestige Tours Inc. and its [president] were being paid for the transportation and use of [the accident aircraft] as part of the contract," the report said.

Both interviewees told investigators that they "were not interested in buying an airplane, and that they did not know

that [the accident airplane] had been provided by Duncan Aircraft Sales of Florida as a demonstration flight," the report said. They said that they "were paying for the use [of the accident aircraft] under the provisions of the contract they had signed with [Prestige Tours Inc.]," the report said.

[On Aug. 28, 1991, the U.S. National Transportation Safety Board's (NTSB's) Office of Law Judges upheld an earlier ruling revoking the commercial pilot certificate of the president of Prestige Tours.

[The FAA had alleged that the company president had served as pilot-in-command on 53 flights "for compensation or hire, without meeting the training and examination requirements of (FARs) Part 135." Although not referring specifically to the accident flight, the NTSB order, upheld by the full Board, concluded that "Prestige's direct solicitation of the music industry as clients for air transportation constituted common carriage, precluding Prestige's claim that its operations fell within an exception to Part 135 contained in section 91.501. We adopt the law judge's findings that Prestige Touring Inc.'s operations, as alleged in the Administrator's order, were governed by Part 135 and that respondent's operation of the aircraft as pilot-in-command resulted in violations of the allegations of the (FARs) as alleged, including section 91.13(a)."]♦

Editorial note: This article was adapted from a factual aviation report prepared by the U.S. National Transportation Safety Board (NTSB) on Hawker Siddeley DH125-1A/522, N831LC, San Diego, California, March 16, 1991.

ACCIDENT PREVENTION

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