

Memorandum of Conversation

Date: 09 August 2018

Time: 1400 eastern daylight time (EDT)

Conversation Including: John L. Berman; pilot/airplane owner
Andrew Todd Fox; NTSB Investigator-In-Charge
Paul Suffern; NTSB Meteorologist



Conversation Regarding: CEN18LA077, N787SB

Duration of Call: 93 Minutes

Summary & Factual Information from Conversation:

On August 9, 2018, between 1400 EDT and 1533 EDT, NTSB Investigators Fox and Suffern conducted a telephone interview with Mr. John Berman, the pilot/owner of N787SB, concerning the accident that occurred near Santa Fe, New Mexico, on the evening of January 15, 2018.

Mr. Berman stated that he has recounted the accident numerous times, including once with FAA Inspector Ken Hand while he was still in the hospital, and that he was willing to discuss the events leading-up to his accident. Mr. Berman recalled that when he saw supercooled liquid water on the center of the windscreen of the airplane he knew the flight was "in trouble". Mr. Berman recalled leaning forward to get a better look at the approximately 1 ft diameter, clear, gelatinous, mass of supercooled water on the windscreen. The supercooled mass froze solid in less than a second, and the remainder of the windscreen was covered in crystallized ice within a few seconds. Mr. Berman mentioned being aware of the dangers of airframe icing, especially during the winter months, and, in fact, had developed a method to detect airframe icing and notify the pilot for which he submitted a patent application that was subsequently rejected. Mr. Berman stated that, before the accident flight, he had never encountered icing conditions besides trace ice on a Cessna 177B wing; although, he was aware of the negative effects of airframe icing.

Mr. Berman explained how he typically used the weather forecast Java tools available on aviationweather.gov to look for icing during his normal preflight routine, as well as review other potential weather issues. He stated that his normal flight planning usually took about 1 to 1.5 hours and that he looks at all the weather products, including, but not limited to, METARs and TAFs. Mr. Berman also noted that he would often recheck weather data to get a sense of any changing conditions.

Mr. Berman explained that earlier in the day he had flown from Rosecrans Memorial Airport (STJ) in St. Joseph, Missouri, to Liberal Mid-America Regional Airport (LBL), Liberal, Kansas. He noted that he spent about 1.5 hours looking at weather before departing on the flight leg from STJ to LBL. Mr. Berman reiterated that he typically avoids flying in actual instrument meteorological conditions (IMC), especially during the winter months because of his strong icing concerns.

Mr. Berman reported that he was physically "extremely cold" when he arrived at LBL and remarked that the airplane was not well heated. He noted that he and a mechanic had discussed possible retrofits to the airplane heating system during a stopover at STJ. He was aware of the many issues with cold weather from his years growing up in the East and Midwest. Mr. Berman stated that he had become so cold during the STJ-LBL flight leg that he immediately ran inside the fixed base operator (FBO) upon landing at LBL to warmup next to a space heater for several minutes. After warming up, he used the courtesy car to drive to both a Walmart Supercenter and a Walmart neighborhood market to purchase food. Mr. Berman stated that he was traveling on a tight budget and acknowledged that his focus on keeping costs low likely contributed to his "making bad decisions."

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Mr. Berman stated that while he was on the ground at Liberal, Kansas, he called the local Motel 6 to inquire about room availability and their nightly rates. Mr. Berman noted that after turning 60 years old he decided that he wasn't going to fly over mountains at night anymore, believing the elevated risk was not worth it anymore. Additionally, he preferred to avoid night flying for the same reasons.

Mr. Berman stated that he decided to continue to Santa Fe Municipal Airport (SAF), Santa Fe, New Mexico, after comparing the hangar costs at Liberal, Kansas, to that at Santa Fe, New Mexico. Mr. Berman believes that he exercised poor judgment, predominantly based on his self-imposed financial pressures, when he decided to continue to SAF instead of staying the night in Liberal, Kansas. Mr. Berman further postulated that his being physically cold likely contributed to his poor decision making before the flight. The financial consideration that influenced Mr. Berman was the lower nightly rate to hangar his airplane at SAF versus LBL. Mr. Berman remarked that his decision to depart on the flight was "pointless" and that he should have stayed the night in Liberal, Kansas. His original plan was to fly to Phoenix the following day, and for him to divert to SAF instead of staying the night in Liberal, Kansas, would have used additional fuel that would have rendered any hangar cost savings inconsequential.

Mr. Berman stated that he didn't follow his normal preflight activities before departing LBL. He postulated that his being excessively cold (hypothermic with low temperature delirium, as diagnosed after the accident by the hospital psychologist), or possibly some other reason, likely contributed to his not following his normal preflight routine. Mr. Berman remarked that he violated every personal limitation by departing on the accident flight. He specifically noted that he did not check the weather conditions before departing LBL. Mr. Berman mentioned that he typically checks weather using his Apple MacBook computer; however, in his rush to get inside the warm FBO, he had left his Apple MacBook inside the airplane after landing at LBL and did not retrieve it from the airplane during his time on the ground in Liberal, Kansas. Mr. Berman stated that he topped-off with fuel before departing LBL and added about a half quart of oil to the engine. Mr. Berman remarked how slow the oil poured from the bottle due to the cold outside air temperature and, had he been thinking clearly at the time, the slow pour of oil should have been another indication not to depart on the flight. He also tightened a hex nut on the nose landing gear shimmy damper during his preflight. Mr. Berman recalled climbing into the airplane and starting the airplane's engine without any issues. He also observed no airframe ice during his taxi to the runway. Mr. Berman also doesn't recall monitoring the local ASOS at LBL before takeoff, as he was primarily focused on "getting warm" and his mindset likely had become "topsy turvy" at that point. He recalled requesting visual flight rules (VFR) flight following shortly after takeoff.

Mr. Berman stated that he did not ask the air traffic controllers (ATC) about the weather ahead of the airplane, despite having plenty of available time and opportunity to do so. He also didn't make any plans for alternate landing areas while enroute. Mr. Berman doesn't remember any significant details of the accident flight until when he reported to ATC that he thought the airplane was in IMC and sometime thereafter when he told ATC that the airplane had encountered icing conditions. Mr. Berman did not recall making a descending 360° turn mid-route, which had been observed on radar track data. He has flown across the country before and knew there were limited ground-light visual points of reference in that part of New Mexico. He distinctly remembers being in IMC and would normally have diverted toward visual meteorological conditions (VMC), but he probably wasn't thinking clearly because he was likely hypothermic with low temperature delirium.

Mr. Berman stated that after the airplane encountered IMC, he recalled seeing a 1 ft diameter gelatinous form of supercooled liquid on the windshield. The gelatinous form crystallized right in front of his eyes and across whole windshield within 2-3 seconds. Additionally, within a few seconds after the windshield had iced over the airplane nosed over into a "real steep dive". Mr. Berman increased engine power and recovered the airplane into level flight after descending 500-1,000 ft. He does not believe the airframe experienced asymmetrical icing, which would likely have resulted in an unrecoverable spin. Mr. Berman further remarked that there was no vibration from the propeller, which would have been an indication of ice accumulation on the propeller blades.

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After recovering from the dive, Mr. Berman told the controller, "declaring icing emergency," and that he could not maintain altitude. Mr. Berman remembered receiving an instrument clearance to SAF; however, he cannot fully recall the actual sequence of events. He remembers initially telling ATC that the airplane had encountered IMC and observing ground lights out the side windows that ATC indicated were Tucumcari and another town. He remembered telling ATC about the IMC before he observed the supercooled water mass on the windscreen. He recalled not having the windshield defrost turned on; however, he does not believe it would have likely made a difference. Mr. Berman remembered increasing engine power, but the airplane was unable to climb or maintain altitude after encountering the icing conditions. Mr. Berman recalled that immediately after declaring emergency he looked at the multi-function display, which depicted the airplane's position either 13 or 23 nautical miles from SAF. The last thing he remembers before the impact was looking in the distance toward the airport. Mr. Berman does not recall the airplane impacting terrain. The first thing he remembers after the accident is seeing the distant lights of what he hoped were emergency vehicles. He recalls praying that the vehicle lights would not disappear and remembers being physically weak and not knowing where he was. He believed the emergency personnel were coming for him, and although he does not recall hearing any voices postaccident, he remembered being pulled horizontally out of plane by emergency personnel.

Mr. Berman reiterated that he did not check weather conditions before departing on the accident flight. He stated that he had checked weather conditions for the previous flight leg (STJ to LBL) and that he typically checks weather in detail and over several hours before each flight leg. He recalled leaving STJ around 1300 CST on the day of the accident, landing at LBL between 1600 and 1630 CST, and being on the ground at LBL between 1 and 1.5 hours. (After the interview, Mr. Berman contacted the investigators to correct when he landed at LBL. He stated that after reviewing his mobile phone's call history, he believes that he landed between 1515 CST and 1530 CST) Mr. Berman noted that he ate some fried chicken and drank some chocolate milk before departing LBL. Mr. Berman stated that he has 4 mobile phones and that one of them has a screen grab of airnav.com with the METAR (2,800 ft ceiling) at LBL with the fuel prices. The screen grab was taken before he departed STJ. Mr. Berman noted that during the previous two weeks he had spent a lot of time preflight planning for his previous flight legs; however, he reiterated that he completely lost his focus and did not check weather or do any flight planning before the accident flight.

Mr. Berman recalled that the airplane encountered icing conditions less than 5 minutes after the airplane entered IMC. Additionally, he did not recall any weather issues, other than being physically cold, before the airplane encountered IMC. When asked how quickly the ice had accumulated on the airframe, Mr. Berman stated that the gelatinous super cooled water on the windscreen crystalized the whole windscreen in about 5 seconds from the time he first saw the gelatinous formation. He further noted that the airplane had entered the rapid dive within a few seconds after the icing had covered the entire windscreen. Mr. Berman reiterated that his first awareness of icing was seeing the gelatinous supercooled water on the windscreen. He further confirmed that he has never encountered weather conditions like this before.

When asked what could be improved about weather forecast information, Mr. Berman stated nothing realistically could be improved and believes the weather information currently available is great, including the icing tools available on aviationweather.gov. However, he has noticed the cloud tops and cloud bottoms are often inconsistent with METARs in the Graphical Forecast for Aviation (GFA) tool on aviationweather.gov. Specifically, that the GFA tool can show clear skies in areas that clearly were not. Mr. Berman remarked that if pilots solely relied on that tool they would potentially have incorrect information. He stated that the Java and slider tools are useful on aviationweather.gov. Mr. Berman stated that he takes as much of an integrated approach as possible when reviewing weather information. His flight instructor previously remarked that he spends a lot of time on the icing forecast and advised him to also focus on the wind aloft forecast. His normal routine would be to review the prognostic charts, terminal winds, winds aloft, icing, etc. Mr. Berman stated that he reviews weather in a sequence to remain as methodical as possible during his typical preflight weather review.

--- End of interview summary ---

I can attest that the above summary and factual information was taken on the above stated day, and is correct to the best of my knowledge:

Signed: _ Andrew Todd Fox _

Dated: _ 09 August 2018 _

Andrew Todd Fox
National Transportation Safety Board
Air Safety Investigator