



RECORD OF CONVERSATION

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Eastern Region

Date: October 21, 2020
Person Contacted: Daniel Moore
NTSB Accident Number: ERA19LA072

Narrative:

Mr. Daniel Moore was contacted by phone on October 6, 2020 at 1146 EDT. He was called at [REDACTED] and left a voice mail message. He returned the call the same day at 1642 EDT from the same phone number. He was called on October 7, 2020 at 1632 EDT and left a voice mail message. He returned the call the same day at 1636 EDT. He provided an e-mail address of [REDACTED]

During the brief call he was advised that I wanted to obtain a copy of his training syllabus for the ground and flight training he provided the accident pilot. He could mark it proprietary. He was also advised that I wanted to ask him some questions about the training. He was informed he had a right to representation and said he would consult with an attorney. He also indicated that he would be away the week of October 12th. He did state that he had been instructing for 24 years.

On October 19, 2020, at 1609 EDT, he was contacted at the same phone number and left a voice mail message. He was called on October 21, 2020, at 1158 EDT, and it was agreed to speak later in the day. He was called later that day at 1331 EDT and returned the call at 1334 EDT from the same phone number.

At the beginning of the interview he was advised that the NTSB is a federal agency mandated by Congress to investigate aircraft accidents, and NTSB has no authority to take any action against any individual. He was also informed that the purpose of an NTSB investigation is for safety only, and any person NTSB talks with has the right to representation; he agreed to the interview without representation.

He was advised that any personally identifiable information such as pilot certificate number, or street address will be redacted and not put into the NTSB public domain. He provided a certificate number of [REDACTED] He is a FAA designated pilot examiner (DPE) in the Nashville,

Tennessee Federal Aviation Administration (FAA) Flight Standards District Office (FSDO). He has been a DPE for about 4 to 5 years and has between 9,800- and 10,000-hours total time, and “well over” 2,000 hours both flying and instructing. He does not own a Piper PA-46-350P but has flown one for several years for local companies. He added that there only is a handful of people in the country with as much flight time in that airplane as him.

He was asked the following questions –

How did the pilot come to him for training?

The seller of the airplane recommended him to the accident pilot. He worked for the company that brokered the airplane. He did the flight training with the accident pilot after it was sold to him. The sale of the airplane was done by 1 company and the training was done by him as Watauga Flight Service. When he and the accident pilot first met, the accident pilot told him he had 350 to 375 hours. Mr. Moore indicated that was as about as low a flight time that the insurance company would allow.

Explain how he trained the proper airspeed for climb and cruise in icing conditions?

He teaches to keep between 130 and 140 knots indicated airspeed. Any speed below that value when flying in icing conditions would result in ice accretion on the bottom of the wing. The accident airplane had a S-TEC 55 model autopilot installed¹. With respect to pitch, the only mode that could be set was vertical speed mode. In training he taught to keep the airspeed between 130 and 140 knots to avoid having ice accrue on the bottom of the wing. One of his training techniques was to do stalls with the autopilot engaged. It would be performed by setting the vertical speed to an extremely high setting with a reduced power setting configuration which would represent reduced performance due to icing. He would then have the pilot disconnect the autopilot, pitch nose down to decrease the angle of attack and recover.

Since the autopilot only had vertical speed mode, he discussed and trained that. On his first flight with him, they departed and did power-on and power-off stalls. He then practiced stalls with the autopilot engaged in the clean configuration and power-off. The second setting was also clean, such as during a non-precision approach with the pilot forgetting to add power. The autopilot stalls were one clean and another configured for non-precision approach (10° Flaps, and Gear Extended). He added that you don’t want to get slower than 130 to 140 knots in icing, which was discussed at 4 portions of the ground school. As part of the ground school he taught limitations of flying in icing, and taught him that in-flight encounter with icing should result in an immediate action to exit the icing conditions.

In reviewing his notes of the training, he noted the pilot needed to get more training. Typically, the training is about 10 hours, but the pilot was required by insurance to get 25 hours dual flight instruction in the aircraft. The typical initial training in the PA-46 is 10 hours of flight instruction. On the Friday the training was completed (December 14, 2018) they flew to

¹ According to the original delivery documents from Piper, the airplane was equipped with a S-TEC 55 two axis autopilot. According to the autopilot Pilot’s Operating Handbook, the vertical speed mode is used to establish and hold a Pilot selected vertical speed. It was the pilot’s responsibility to ensure that the vertical speed selection was within the operating limits of the aircraft’s capabilities.

Cincinnati, landed, and had lunch. When they were returning flying at 15,000 ft mean sea level (msl), they began picking up clear ice. He asked him what he would do, and he replied and asked to descend 2,000 ft where it would be warmer. He either descended 2,000 or 4,000 ft, where it was warmer. In his mind at that time he made the correct decision and did not make any suggestion to him.

On any of his flights were there any problems with the airplane?

The pilot was new learning the systems of it. He noted that he was improving as the training continued and said he did get better. He felt satisfied and would grade him overall as average. If it was an instrument checkride he would have passed as he was at the skill appropriate for a private pilot. There was no problem with the airplane, which was very sensitive to air induction icing. He taught that when the OAT temperature was 5°C or less and the airplane was in visible moisture, before encountering visible moisture, activate engine alternate air, pitot heat, and propeller heat at a minimum.

How did he teach him to use the de-ice system?

He taught him to turn on the de-ice system when the ice was between ¼ inch and ½ inch thick per the Pilot's Operating Handbook.² He taught him that when he cycled the boots once, to wait a couple of seconds after the cycle was completed and cycle a second time. He added that the airplane was only designed for short encounters in icing.

During the ground training did he discuss the types of clouds associated with icing?

He taught the types of clouds in the high altitude and human factors portion of the training. He also taught that inadvertent encounter with icing he should climb or descend. But in the accident scenario near the maximum altitude climbing would not have been feasible. He did not give the pilot a high altitude endorsement because the aircraft did not require one (certified only to 25,000 ft does not need it), but he received identical training to that given to a pilot who would need a high altitude endorsement. He also trained him that icing associated with convective activity produced a lot of ice, even when flying in warmer months, adding that icing did not just occur in winter months. He relayed the story of a flight in Central Florida flying a Piper Mirage. He was in clouds for 1 or 2 minutes and accrued 2 inches of clear ice on the whole airframe.

With convective activity, there is a lot of moisture even in warmer months. That information was taught as part of his high-altitude training. The training indicated that cumulus and cumulonimbus clouds had the potential to produce a lot of ice.

Did you teach about Supercooled Large Drops (SLD)?

Yes. It was covered as part of his discussion in convective weather. SLD was discussed as part of the training both in the aircraft limitations section and also in the high-altitude section. In aircraft limitations section it is mentioned that SLD is beyond the capabilities of the aircraft icing equipment.

² Supplement 3 of the POH/AFM specified that the de-ice boots should be cycled when ice has built to between ¼ inch and ½ inch on the leading edge to assure proper ice removal.

Did you teach him where or how to access data regarding SLD?

No. The training was specific to that airplane. Teaching an instrument rated pilot how to access SLD information was outside the scope of the training regime. He did not recall coaching him nor did he ask him about SLD.

Did he speak to the pilot before the flight?

No. As part of their training, he told him not to hesitate to call him and ask questions. The pilot never contacted him after the training was completed and did not contact him before the flight. He wished he had though. He looked at the weather and noted convective activity and reported the weather was bad. If the pilot had contacted him, he would have told him not to go. He is also an airframe and powerplant mechanic. He told the pilot not to hesitate to contact him with any maintenance questions he had. Usually he gets 4 to 10 calls a year from pilots he had trained.

Were you flying that day?

No. He was cutting trees. He had another client who texted him about the missing airplane and asked him if he had trained the pilot. He saw news about the crash on a pilot forum, and saw the airplane was missing. One of his friends (Ron Cox) who was in Florida at that time stated that he would not have flown in those conditions.

How did he learn about the adverse weather?

As soon as he got the text from the client, he pulled up weather from Flight Aware, and when scaled back noted weather. He saw the weather system. There was a tornado watch which had turned into a tornado warning for the area around Orlando which was in affect during the time the flight departed and while in flight.

Did he prepare a written statement?

No. The only document he has are the training notes.

Any questions I have not asked?

Being really aware of the limitations of the autopilot in pitch was important. He added that the autopilot will attempt to hold the rate of climb until it stalls. The autopilot does not have envelope protection.

One reason for getting the engine alternate air door open was because the air induction opening was on the front of the nose, and it is quick to pick up icing. If that happened the manifold pressure would decrease with a corresponding loss of engine power. The operation of the air induction selection is such that when the selector is in the up position the induction air is in the primary position, and when the alternate air selector is in the down position the alternate air door is open bypassing the filter and providing unfiltered alternate air. He taught that if in icing at a temperature of 5°C or less, to have engine alternate air on the whole time.

Is there anything else?

He said that the pilot seemed very honest and open, and made the statement several times that he could wait and not rush the flight. He liked to hear this. The airplane is capable, and in a Piper

Malibu that was Continental powered, he once executed an instrument approach and encountered rime ice that was accruing 1 inch per minute. He did a missed approach and noted ice forming on unprotected areas of the airplane. He flew the approach faster than normal. In cases like that the autopilot should be turned off.

Can you check your computer for a written statement?

Yes. The only document he has is the training notes.

The call ended at 1419 EDT.

The digest was e-mailed to him for review on October 21, 2020. He replied on November 4, 2020, at 1048 EST with comments that were incorporated into the narrative. The corrected digest was e-mailed to him on November 4, 2020. He replied the same day at 1352 EST, with 1 change that was incorporated into the narrative. The corrected digest was e-mailed to him on November 4, 2020.