



MEMORANDUM FOR RECORD

Todd Gunther
Air Safety Investigator
Eastern Region

Date: October 19, 2021
Subject: Information Provided by Inspector Karrie E. Bowden (FAA)
NTSB Case Number: ERA22LA019

According to Inspector Bowden,

She was able to contact the pilot on the evening of October 18, 2021. The pilot stated that he closed the door and cranked up the engines. There was a Cessna 210 taxiing in, that kept inching closer and closer to him, so he was trying to get some space between him and that airplane, since he thought he wanted his parking space. The 100LL truck was parked “real close,” and when he turned left, he caught 8-9 inches of the right wing tip on the fuel truck. He said he estimated his speed at about 5-6 mph and that at first, he thought he had run over a wheel chock. He stated there were 7 passengers and he was the only crew. Inspector Bowden mentioned that we may want to talk to his passengers and asked him to get their contact information (along with a statement and any photos he has). He said he’d have to dig that up because he really didn’t know who was on his plane, that it was just some of the “MUSC Crowd” (Medical University of South Carolina).

Today, she was able to speak with a Line Service Technician from the airport who advised her that he was 100% certain that there were six passengers and “two pilots.” The line service technician described the pilot sitting in the right seat as “short, about 5-5, gray hair, older guy.” He said he did not wear glasses but smoked a lot. He was wearing a pilot uniform and said he’d just moved down here about a week ago and had just got on with the company.



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Todd Gunther
Air Safety Investigator
Eastern Region

Date: November 3, 2021

Subject: Information Provided by Inspector Karrie E. Bowden (FAA)
NTSB Case Number: ERA22LA019

According to Inspector Bowden,

Mr. Timothy Doctor (Line Service Technician) from the airport did not see the accident as he was fueling a couple of Blackhawk helicopters at the time. He did see 6 passengers and 2 pilots, and was the Line Service Technician who described the other pilot as being short, real old, and having just moved down here a week ago, and just got on with the company, was 5'5" tall, with gray hair, No glasses, smoked a lot, and was wearing a pilot uniform.



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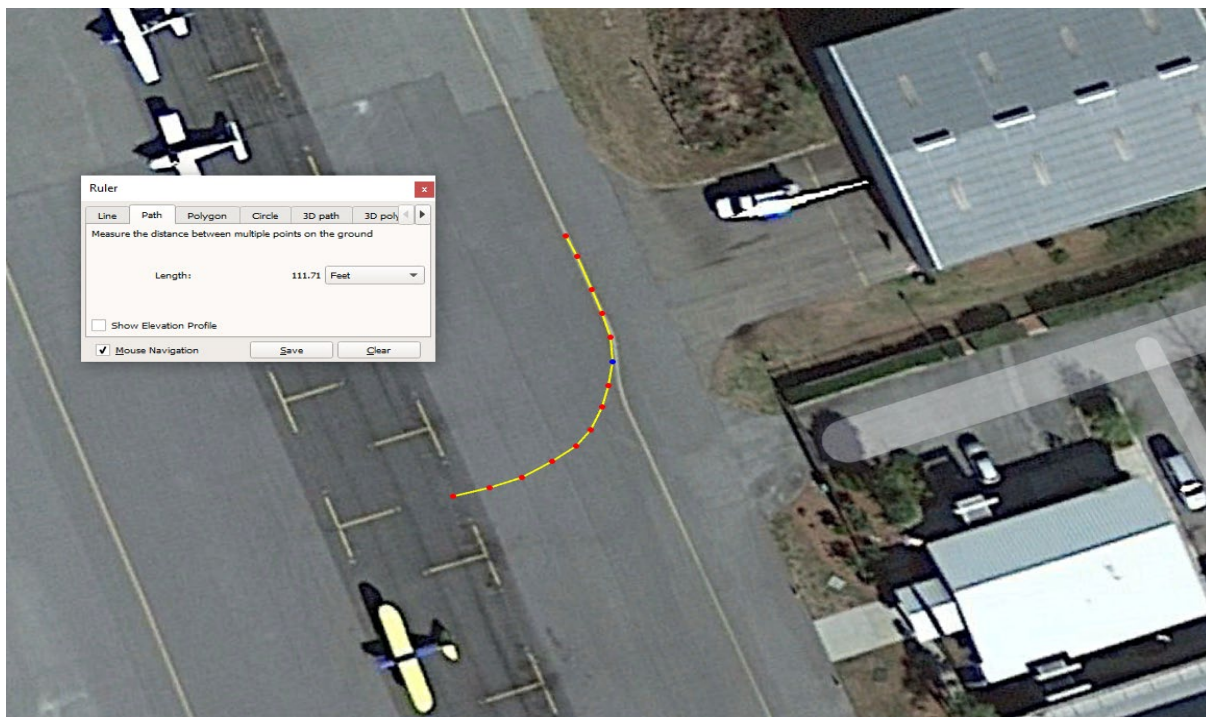
Todd Gunther
Air Safety Investigator
Eastern Region

Date: December 30, 2021

Subject: Aircraft Speed Estimate Provided by Inspector Karrie E. Bowden (FAA)
NTSB Case Number: ERA22LA019

Aircraft taxi speed estimate:

The aircraft was parked straddling two different parking spots, due to the wingspan. I was able to determine which two spots by watching the video footage. I then made notes of the timestamp on the video of when the aircraft started moving and when it collided with the fuel truck. Using the distance measuring tool on Google Earth, I estimate that the distance traveled from the starting position of the aircraft to the point of collision being 111.7 feet. Per the time stamp on the video, the aircraft started moving at 4:16:38 pm and then collided with the truck at 4:16:50 pm.



If I use a constant velocity where $V = \Delta d / \Delta t$, then $V = 111.7 \text{ ft} / 12 \text{ sec} = 9.3 \text{ fps} = 6.34 \text{ mph}$ average speed. The shortcoming with this calculation is that it completely ignores the fact that the aircraft started from a velocity of 0 mph, so if anything, it is an overly conservative speed estimate.

Getting a little more complicated, let's calculate final speed if you assumed starting from zero and a constant rate of acceleration all the way to the point of impact....

1. $v_f = v_i + a \Delta t$ 1st Equation of Motion

2. $S = v_i \Delta t + \frac{1}{2} a \Delta t^2$ 2nd Equation of Motion

3. $2aS = v_f^2 - v_i^2$ 3rd Equation of Motion

where v_f is the body's final velocity

v_i is the body's initial velocity

a is the acceleration of the body

Δt is the time interval/taken between the initial and final states

S is the displacement

Using the 2nd equation first, $111.7 = 0 \text{ fps} * 12 \text{ sec} + \frac{1}{2} * a * 144$ gets you to $111.7 \text{ ft} = 72 a$ and $a = 1.55 \text{ fps}^2$

Going back to the 1st equation, we can then get the final velocity.

$$V_f = 0 + 1.55 \text{ fps}^2 * 12 \text{ sec} = 18.6 \text{ fps} = 12.7 \text{ mph.}$$