NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Central Region

3/24/2022

INVESTIGATION SUMMARY

CEN22FA113

A. BASIC ACCIDENT INFORMATION

Location:	Heath, Ohio
Date:	February 1, 2022
Aircraft:	Cessna 182T (N716MC)
NTSB IIC:	Joshua Lindberg

On February 1, 2022, about 1340 eastern standard time, a Cessna 182T airplane, N716MC, was destroyed when it was involved in an accident near Heath, Ohio. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

B. PARTICIPANTS

NTSB IIC – Joshua Lindberg
FAA Inspector – Elizabeth Swingle
Lycoming Engines – Ryan Enders
Textron Aviation – Andrew Hall (remote)

C. HISTORY OF FLIGHT

Foreflight track data, retrieved from the pilot's Foreflight account, revealed that the airplane departed Zanesville Municipal Airport (ZZV), Zanesville, Ohio, at 1252. The airplane proceeded north to Richard Downing Airport (I40), Coshocton, Ohio, where it appeared to complete a touch-and-go landing. Then the track proceeded west toward Mt. Vernon, Ohio, where it made a few turns about 5 nm east of the airport. Finally, the airplane proceeded south to Newark-Heath Airport (VTA), Newark, Ohio. At 1338, the pilot completed a touch-and-go landing at Newark-Heath Airport (VTA), Newark, Ohio, then departed to the east. The airplane climbed to about 500 ft above ground level (agl), then descended to 85 ft agl over a residential area. During the last 30 seconds of the flight, the airplane flew about 100 ft agl and about 145 kts groundspeed before it descended into trees.

A witness at ZZV who interacted with the pilot and stated that he seemed to be in a cheerful mood and in good health. The pilot told him that he planned to fly around locally for a little while to practice. They departed separately from ZZV. Later, the witness was on the ground at VTA, and observed the accident airplane approach runway 9 from the west. There were about 5 to 6 other airplanes operating at VTA, and none of them observed the accident airplane at VTA, according to the witness. He stated that there was a direct crosswind from the south about 10 knots and the accident airplane approached with full flaps. The airplane made a hard landing, then he heard the engine go to full power and sounded normal. The airplane climbed out slowly with full flaps and made a few "jerk like" small corrections in heading and altitude.

A second witness at VTA watched the accident airplane land on runway 9, which was the opposite direction of the other departing traffic that day. The accident pilot did not make any radio transmissions that he heard. The airplane approached with what appeared to be 30˚ of flaps extended, and then made a "shaky landing" that appeared "hard enough to possibly damage the firewall." The airplane departed and the "engine was making good power and sounded good."

The witness observed the airplane departed a bit “wobbly,” low, and not climbing well and the flaps were extended at least 30˚ until he could not see the airplane behind the hill to the east.

A doorbell camera video along the route of flight, about one nautical mile southwest of the accident site, showed the airplane flying at a low altitude and in a slight left bank. The airplane appeared to be flying fast as if it was operating with moderate to high engine power. (Figure 3).

Another witness near the accident site observed the airplane flying west to east at a low altitude. He stated the airplane was level with the flagpole at the cemetery which is just south of the intersection of Highway 13 and Linnville Rd SE. (The flagpole is estimated to be about 1040 ft msl to the top of the pole.)

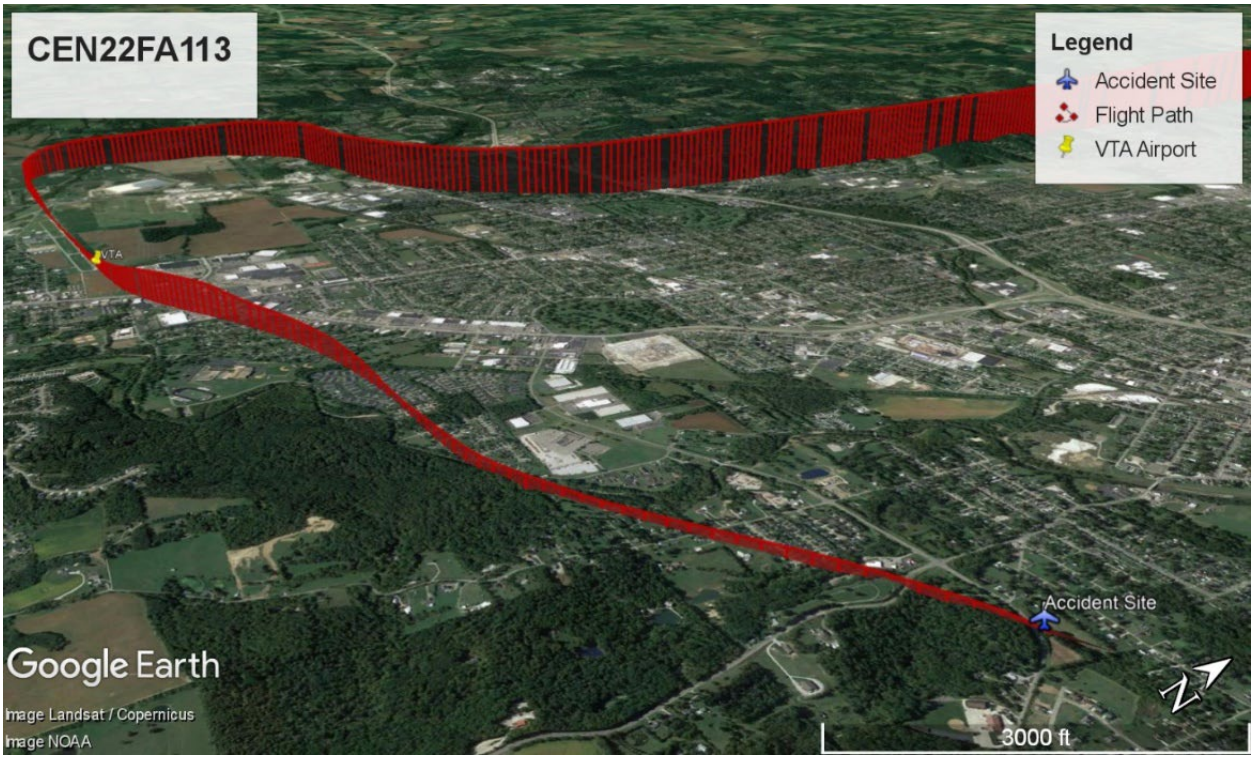

Figure 1. Google Earth overlay that depicts the accident flight path and points of interest.

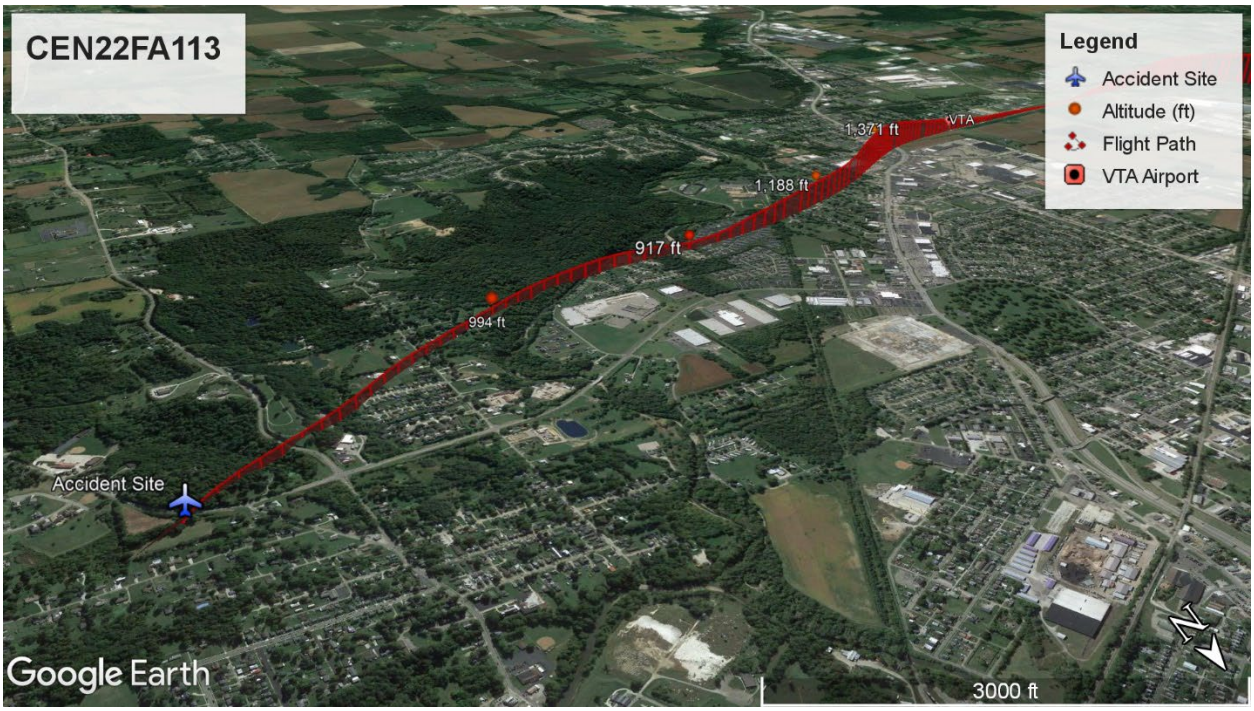

Figure 2. Flight path – departure and low-level flight to the accident site.

Figure 3. A resident in the area where the airplane flew over sent a recording from their doorbell camera that showed the airplane flying at a low altitude in a slight left bank.

D. PILOT INFORMATION

PRIVATE PILOT / Rating: airplane single engine land / Issued: 3/7/2020
Medical: BasicMed Date: 9/11/2020
Note: Third Class Medical Certificate by Special Issuance with the following limitations: "Must have available glasses for near vision. Not valid for any class after 12/31/2020." The Medical Certificate expired for all classes on 12/30/2020 per Special Issuance, but this pilot had applied for BasicMed.

Logbook: pilot logbook found at the accident site.
349.6 total hours, 108.1 hours PIC, 73.6 hours in the accident airplane as of 1/4/2022

Flew the accident airplane exclusively since 9/28/2020, which was a demo flight in the airplane before purchase.

One of the pilot's previous flight instructors, John Talyor, stated to the FAA that he provided flight instruction to the pilot from 2014 to 2016. At this time, the pilot was in the earliest stages of his initial private pilot training when he was under the instruction of Mr. Taylor. He stated that he had refused to endorse the pilot for solo flight as he did not feel he was capable of safe aircraft operations in a solo capacity. He stated his overall concern with the pilot was that he would stop flying the aircraft to 'punch the buttons' (meaning the instrument panel GPS and associated switches/buttons). He noted that he would lose focus on flying the aircraft when he had switched his focus to something else. The pilot was consistently behind the aircraft in tasks they accomplished due to his inability to focus. His other concern was with landing capabilities as he was not able to land the aircraft without resulting in a rough landing, was concerned about him operating in any type of crosswind condition and was concerned he would conduct an unsafe landing in solo flight. The pilot would never become upset when he did poorly, and was always saying "I'll do better next time". He also had a concern for the pilots ability to successfully complete emergency or abnormal procedures in the aircraft without additional assistance. He stated that the pilot was not consistently improving after each lesson and was inconsistent in his training progress because he would have both good days and bad days. He explained that on the good days, the pilot would do very well and be focused on his lessons. In contrast, when the pilot was having a bad day he would fixate on something and it didn't matter what and was generally for no cause. He stated that it could be something completely unrelated to the flight or that he would just 'punch the buttons' and stop focusing on the flight. He said when he was fixating and not focusing, he would drift off course and altitude to the point where he (Mr. Taylor) would need to intervene. He added that the pilot was very goal-oriented and thorough with his lessons and planning, was excellent with his ability to learn the content in the books and always maintained a consistent professional attitude in the aircraft. Because the pilot was so task oriented, he had the general attitude of "I'm going to do it" regardless, yet he demonstrated that mindset professionally and calmly. The pilot was never rushed in anything he did and his preflight procedure at the aircraft was thorough and usually took about 30 minutes to complete.

A second previous flight instructor, Harold Ware, stated to the FAA that he was the pilots recommending instructor for his private pilot certification check ride. He stated that the pilot trained with him in 2016 and that he was an average student when compared to his other private pilot students. He also stated that the pilot required more instruction than other students, as he would be average with his lessons one time, and then on another scheduled lesson they would have to "start all over" with the basics. Sometimes the pilot did well and was focused on the lesson, but then he would "drift a lot" and "seemed like he would forget that he was flying." The pilot would be flying along on a normal lesson, regardless of task or lesson they were working on for the day, and then he would begin fixating on instruments and forget to look outside the airplane. On several occasions during instruction the pilot would drift off of altitude by up to 300 feet before he had to step in and tell him to 'watch your altitude'. The pilot also tended to drift off course when he became fixated on instruments and would be on a new heading that would have to be corrected by intervention of the CFI again. The pilot also had difficulty maintaining directional control in regards to right rudder input and that he frequently had issues with drifting off course to the left during takeoff lessons. He was consistently behind the aircraft in tasks they

accomplished. He never seemed to have distraction caused from personal stressors and that he never shared concerns with him in that area. He added that the pilot came to him stating he needed a local CFI to help him with his private pilot certificate because he “ran out of money at the school in Florida” while working on his flight training there.

A third previous flight instructor, Jarrod Bess, provided flight instruction to the pilot and their last flight together was on February 1, 2017. He was the pilots recommending instructor twice for two subsequently unsatisfactory private pilot check rides with a designated pilot examiner (DPE). Mr. Bess stated he trained with the pilot in the Cessna 172 model aircraft only and that the aircraft were equipped with the round gauges and only one small panel mounted GPS. He said the pilot asked if he could help him get his private pilot certificate since he had failed his previous certification flight check with Harold Ware as the recommending instructor. Mr. Bess trained the pilot on the all of the tasks in the current practical test standards (PTS). The main reason for the two subsequent failures with him as the recommending instructor was because the pilot was unable to maintain consistency in his flight performance and that on the days of his check rides, those were the pilot’s 'bad days'. He stated that he would sometimes have a 'good day' and other times a 'bad day' throughout all of his training and the check rides were "highly reflective of this same pattern". On the 'good days', the pilot would be on top of the maneuvers and had good focus and performed well. However, on his 'bad days', his inadequacies were all over and he couldn't focus on performing any of the PTS maneuvers well. He said this showed itself through each task being conducted on the border or below the required level for a satisfactory performance. He stated that the pilot was very methodical and slow with his thinking. He said this wasn't to imply at all that the pilot was not capable of learning, the opposite, and that the pilot wanted to learn everything about something before he was confident that he knew it well. He noticed this throughout his work with the pilot and that while it worked well in his studies, it worked against him in the cockpit. The pilot would be easily distracted with any external stimuli in the aircraft and would become so focused on trying to understand the other task or stimuli that he would lose focus on the current task at hand. The pilot was unable to divide his attention between tasks in the aircraft and to process his thoughts and decisions in a timely way which caused him to get behind the aircraft frequently. He stated that the pilot was professional at all times and pleasant. When asked if the pilot ever demonstrated that he had external pressure or stress that could affect his learning or flight skills, Mr. Bess stated he never noticed anything like that with the pilot and that the only time he seemed slightly stressed was when he had a bad lesson. The pilot would just be in a 'worried' state following his bad lessons because he just wished to understand what went wrong and that he needed explanations to understand how to correct and improve for the next time. The pilot had an attitude that reflected a "I know better" in the sense that he knew he could do better if he tried. Mr. Bess said the pilot was a very diligent and hard-working student and always took his time to ensure he understood and got things right so as not to inadvertently do something that would cause a rule to be broken. The pilot was impressively intelligent and was set on trying to find the answer to everything he worked on. He stated, "Paul was mentally capable, but mechanically too slow" because of his need to think everything through thoroughly before he acted, and this did not work well in the aircraft for when immediate or time sensitive decisions needed to be made. The pilot’s landings were usually 'quite firm' because he "had no response in the round-out and flare" for every landing, and as a result, he landed flat each time. It appeared that the pilot lacked the ability to make a quick response to the aircraft in the final landing phase and that it did not appear to be a

vision or depth perception issue in his opinion. He said it was consistently due to the pilot having no reaction at the appropriate time to "round out and flare" the aircraft. Mr. Bess stated there was one instance during a night approach to runway 27 at KVTA where the pilot held the aircraft at a 3 degree pitch down attitude toward the runway and made no indication of beginning the transition to flare even just above the runway. Mr. Bess stated he took the controls from the pilot and landed the aircraft because at that moment he was positive that they would have impacted the runway at the consistent 3 degree pitch down aim point. On the last day flying with the pilot, Mr. Bess stated it was the return flight from Bowling Green, Ohio, where the pilot had completed his second unsatisfactory check with the DPE. Mr. Bess and the DPE debriefed the pilot that aviation may not be the best route for him in regard to pursuing a pilot certificate. When they returned to KVTA that evening from the check ride, he talked with the pilot one-on-one and noted that this was the first time he ever saw that the pilot "gave up." The pilot was not a person that quit and, on that day, talking with him alone, he asked him "so what do you want to do next?" and the pilot responded, "I am going to stop flying and pursue other things". At that time, Mr. Bess believed the pilot was intentional in what he said and that he was not going to pursue a pilot certificate. He told the pilot that he felt that was a wise choice and a good decision on his part. He had no additional interaction with the pilot since that day (02-01-2017) until the pilot sent him a text message sometime in 2020, when he told him that he had received his private pilot certificate. Mr. Bess was surprised since he did not think the pilot was going to pursue flying any more.

A fourth and most recent flight instructor, Gregory Miller, stated to the FAA that he provided flight instruction to the pilot in October 2020 in the accident airplane, N716MC. His overall evaluation of the pilot's airmanship was that his skills were weak and that he needed additional training. The pilot had no control of the aircraft on days that weren't really good weather days. The pilot would begin every approach "hot and high" and was never "low and slow" which caused the pilot to land long of his 'aim point' on the majority of his landing practice. The pilot also had a habit of "round out too high and drop it in" for each landing which subsequently produced a hard touchdown. The pilot had a really difficult time with crosswind landings to the point where he instructed the pilot not to fly in crosswinds exceeding 5-10 MPH and also recommended that on each approach he should only use partial flaps if there was any wind at all. His remaining concern was the pilot's ability to complete a go-around (balked landing) as he struggled with conducting those. It was because the pilot was behind the aircraft and had an issue with his basic control ability on the aircraft. He would provide the pilot instruction on tasks and be specific that he needed him "to do this or do that" and sometimes the pilot would acknowledge and complete it as he was directed, and that other times it was as if the pilot did not hear him or was not wishing to complete it in another way. The pilot would continue in doing a task the way he had previously conducted it and acted as if there was no problem with the way the task or maneuver was being conducted. Mr. Miller would become frustrated because he could not get through to the pilot what he needed for him to accomplish and that he had confronted him about it and had a long discussion with the pilot in regard to what was needed from him during their time training together. He said the pilot was quiet and soft spoken and never had any issue with the recommendations, but that he seemed to always be "behind the aircraft" and that the pilot "did not have the air sense he needed" to fly on days that were not calm conditions with good weather. Mr. Miller stated he made a strong recommendation that the pilot was to obtain additional training and proficiency to continue his improvement with general flight skills. Mr.

Miller stated he did not ever seem distracted by work or home issues or anything else and that the pilot was always focused and prepared when he showed up for flight training. The pilot always seemed to do well on the knowledge portions of the training and understood the concepts well, but that it was difficult for the pilot to demonstrate those skills in the airplane. The pilot did have difficulty holding heading and altitude which wasn't based on focus or attention that he could see, and that though he drifted on course and altitude, it generally never exceeded the limitations a private pilot would be expected to hold. He said this could be due to him (Mr. Miller) constantly correcting him verbally on the heading and altitude though as he would not let him go off of course or altitude beyond the limitations. He did train the pilot on emergency training for engine out procedures, but that it was minimal because the pilot struggled a lot with it due to his inability to stay ahead of the aircraft. He said they completed a few simulated power-off approaches and that he did not push the training any further than that because the pilot struggled with it. With regards to the high-performance airplane endorsement, he felt the pilot was a weak airman with his skills, but that he felt the pilot was safe to operate the C-182 airplane in fair weather. He stated that he did not work with the pilot on utilizing the autopilot very much because he wanted him to be proficient in flying the airplane himself. He stated the autopilot training they completed was very basic and included how to disconnect the autopilot system. The pilot had asked him if he could provide him instrument training at some point because the pilot had told him that he was on his way home from North Carolina or Alabama once and had "scared himself" when he encountered weather. His final note to share was that the pilot had texted him 3 days before his accident and had asked him to provide him his flight review. Mr. Miller said at the time he declined because he had COVID and was unable to schedule it with him. However, Mr. Miller stated that he had planned for the flight review to be 10-15 hours for because he felt that it was what the pilot needed to become more proficient in the airplane.

E. AIRCRAFT INFORMATION

2005 Cessna 182T, s/n: 18281717.
Purchased by pilot on: 9/30/2020
Logbook info: Most recent annual inspection was completed on March 4, 2021, but ProAv Aircraft Services, at tach time 716.8 hours.

F. ACCIDENT SITE AND EXAMINATION SUMMARY

Accident site was located in Heath, Ohio, elevation 918 ft MSL, coordinates 40.038324° / -82.399166°. The accident site about 2.5 nm and magnetic heading 074° from the end of runway 9 at Newark-Heath Airport (VTA). The airplane impacted a densely wooded area in a wings level, nose low attitude. Impact marks were observed on trees to the southwest of the main wreckage. From the initial tree impact to the end of the debris path was about 230 yards and oriented 064° magnetic. The initial tree impact was about 50 ft high with corresponding airplane debris on the ground beginning near that point. The right wing was about 70 ft from the initial impact and found on the left side of the debris path. About 30 tree branches and limbs were observed in the debris path that had been cut by the propeller blades. There were many broken tree limbs and impact marks in the trees along the debris path, and most of the limbs had been broken 25 to 50 ft high.

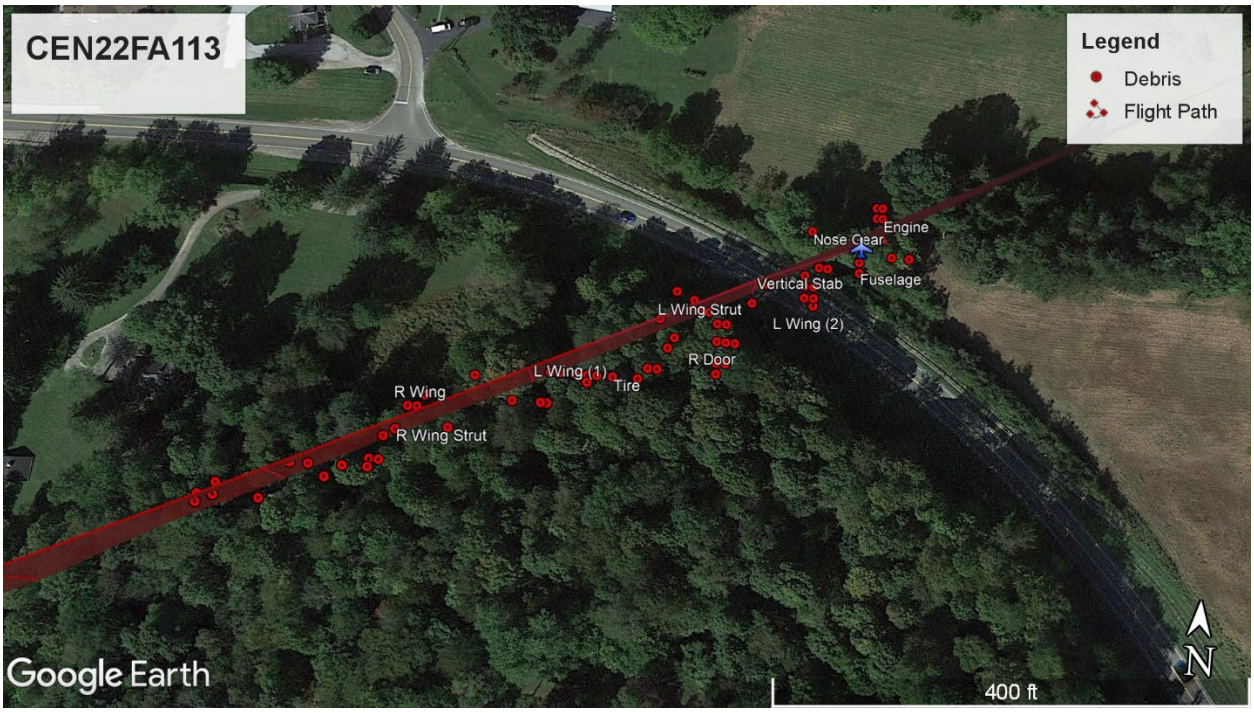

Figure 4. End of flight path with airplane debris marked along the wreckage path.

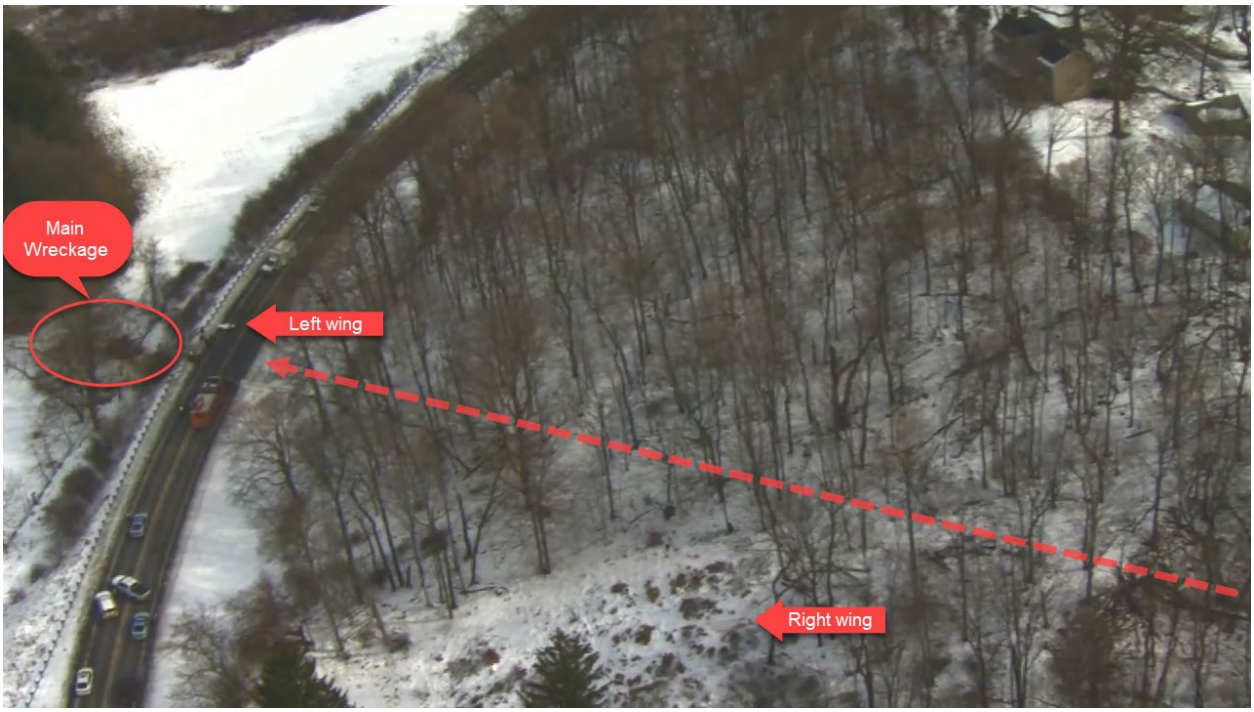

Figure 5. Aerial view of the accident site with the wreckage path parked in red.

Figure 6. This photo was taken facing back toward the initial impact point (circled in yellow) and shows a hole in the trees above the debris field, which is circled in red. The hole in the trees corresponds with airplane debris and broken tree limbs in the woods directly underneath.

Airframe (N716MC / Cessna 182T / s/n 18281717)

The right wing separated near the beginning of the debris field and was found on the left side of the debris path. There was a large round (~12in diameter) indentation in the leading edge of the wing near the wing root. There was several other small round indentations in the leading edge. The flap and aileron remained attached. The wing strut was separated at both connection points and was found nearby the right wing. The portions of the fuselage, right elevator, left aileron and wing pieces, and other small debris were found in the initial debris path southwest of the road. The right elevator had a large round indentation in the outboard leading edge. There was an impact mark on the north side of the road and continued into the dirt and guardrail. The vertical stabilizer and left elevator remained attached to each other and were wrapped around the guardrail. A portion of the left wing separated from the rest of the wing and was found in the initial debris field. The piece consisted of a middle leading edge section of the wing, a portion of the flap, and most of the aileron. The leading edge had a large round indentation. The right door was found next to the fence at the engine of the wooded area, close to the road. Most of the left wing strut was separated and found in an open area just south of the road. The leading edge sustained impact damage and the strut was bent mid span with a corresponding round

indentation. Most of the left wing and a small piece of the wing strut had separated from the fuselage and was found on the road just east of the vertical stab. A few feet north of the guardrail there were recently cut tree branches similar to propeller cuts. The fuselage and engine continued to the northeast and down an embankment. The guardrail sustained damage and scraps on the front and bottom sides. Likely that the fuselage slid under the guardrail as it continued northeast. The top of the fuselage, top of the left elevator, top and leading edge of the vertical stabilizer, and top of the left wing sustained scrapes and damage impacting the road and terrain. The rear fuselage featured an upward bend near the "C" in N-number marking on the right side. The top of the cockpit area was crushed/peeled aft and had scrape marks. The front left (pilot) seat was completely separated from the seat rails and was found about 5 ft from the cockpit. The 3-point seatbelt remained buckled and the webbing was cut by first responders and multiple locations. The webbing was stretched at the buckle, anchor point, and the inertia reel. The airbag was deployed. The front right seat remained attached to the seat rails in the cabin but was impacted damaged. The rear seats remained attached and in place. The key remained in the ignition and the ignition was positioned to BOTH.

Examination of the airframe revealed that the flight control cables were all separated in tension overload. All control cable ends remained attached to the respective controls and control surfaces. All cables were traced and were continuous through multiple overload separations. There were no anomalous separation or issues noted with the flight controls. The fuel selector handled was positioned to BOTH. The handle had been separated from the selector valve. The valve had the flat portion facing front and the semi-circle facing rear. According to Textron this corresponds to the BOTH position. The firewall fuel strainer was unremarkable and remained attached to the firewall. There was a small amount of fuel that exited the strainer bowl when removed. The screen was clear of contaminants. The engine control cables were separated and sustained impact damage. The throttle cable and control knob remained inside the guide in the instrument panel. The flap selector handle was UP. The flap actuator jackscrew was screwed IN with no threads visible. According to Textron, this corresponds to flaps retracted.

There were no preimpact mechanical malfunctions or anomalies with the airframe that would have precluded normal operation.

Engine (Lycoming IO-540-AB1A5 / s/n: L-30862-48E)

The engine was a six-cylinder air cooled, direct drive, horizontally opposed, fuel injected, naturally aspirated engine with a rating of 230HP @ 2400RPM.

As first viewed, the engine was impact separated from the airframe fuselage and was found approximately 20 feet beyond the fuselage. The engine separated from the firewall and continued beyond the fuselage to the north and came to rest near a group of trees. One large tree had an impact mark and cut marks about 20 ft high. One propeller blade separated and was found in front of the engine. The other two propeller blades remained attached to the propeller hub. The engine came to rest partially on top of the engine cowling. The engine mount was connected to the engine but was cut free from the aircraft firewall. The engine was initially examined on the ground before being placed on the back of a small lifting crane to finish the examination. The engine displayed impact damage primarily to the bottom of the engine and on the left-rear side.

The No. 6-cylinder head was impact separated from the cylinder barrel. The barrel remained attached to the crankcase. The cylinder barrel was damaged from the impact forces at the point where the cylinder head sheared from. A portion of the cylinder head remained wedged with the cylinder barrel and No. 4 cylinder. The remainder of No. 6 cylinder was found beside the engine at the accident location. The oil level gauge was missing from the engine and was not recovered. The oil sump had a hole in the left rear portion of it from impact forces. The intake tubes remained attached to cylinder Nos. 1-5. The exhaust stacks remained attached to cylinder Nos. 1-5. The exhaust muffler was impact separated from the engine and was found in two pieces in the debris field. The engine accessories were removed first and documented as described above. The cylinder valve covers were removed, and the valve springs were inspected. On first rotation, the engine was capable of rotating when light force was applied to the propeller. The engine rotated approximately 300 degrees before rotation stopped. Crankshaft continuity was confirmed to the back of the engine. A borescope inspection of all attached cylinders revealed no abnormalities. The propeller was partially removed to alleviate interference from a slightly bent starter ring gear assembly and crankcase, but the result remained the same. The accessory housing was removed, and no discrepancies were noted. The oil pump rotated and pumped oil. The propeller was rotated by hand and would achieve 300 degrees of rotation after the accessory housing removal. No. 4 cylinder and the remainder of No. 6 cylinder were removed and the propeller was capable of full rotation. The piston of the No. 6 cylinder was hitting the top of the cylinder barrel that was bent over from impact forces, preventing crankshaft rotation. Valve action was noted on the remaining cylinders once the No. 6 cylinder barrel was removed. Valve action was noted on No. 4 cylinder during the first rotation attempts, prior to its removal. Nothing was found during the examination that would have precluded the engine from making power prior to the impact sequence. The top spark plugs remained installed in their respective cylinder heads with the lead wire caps attached, with the exception of the No. 6 top plug that was not recovered. The bottom spark plugs were not removed, except for cylinder Nos. 2 and 4 to facilitate cylinder removal. The bottom No. 6 plug was not located. The spark plugs that were removed displayed normal coloration when compared to the Champion Aerospace AV-27 Check-A-Plug chart. The starter remained attached to the front of the engine and displayed minor impact damage. The unit was partially engaged as a likely result of the impact forces. The vacuum pump remained installed onto the accessory housing of the engine. The unit was removed for further examination. The unit pumped air when rotated by hand. This aircraft was equipped with two belt-driven alternators on the front of the engine. A-183713 was partially separated from the engine. A-184126 remained attached to the engine. Both alternator belts were found around the starter ring gear assembly in whole condition. The ignition harness was severely damaged during the impact sequence. The left-hand magneto was impact separated and destroyed by the impact sequence. The right-hand magneto remained attached to the engine accessory housing and was removed for further examination. The unit produced spark at all leads. The fuel injector unit was impact separated from the engine and was found with the main fuselage of the aircraft, connected to the fuel pump via the pump to injector line. The throttle cable was disconnected from the unit. The mixture cable remained attached to the unit. The throttle plate of the fuel injector was observed in the fully opened position at the mishap location. The fuel inlet screen was removed for further examination and found to be clean. The fuel injector unit was opened for further examination. Liquid fuel was found inside of the unit and the diaphragms remained intact and undamaged. The fuel flow divider remained attached to the top of the engine. The fitting going to the No. 1 cylinder was impact separated from the manifold assembly. The flow divider was removed and

opened for further examination. Fuel was present within the unit and the diaphragm was intact. The fuel injector bodies remained installed in their respective cylinder heads with the exception of the No. 6 cylinder nozzle. The No. 6 cylinder nozzle stripped from the head of the cylinder during the impact sequence and remained connected to the fuel line This nozzle was removed and inspected; it was found unobstructed. The remaining nozzles were not removed for the examination. The engine diaphragm fuel pump was destroyed by the impact forces. The plunger and flange portion of the pump remained installed in the engine accessory housing with the safety wire present. The fuel pump body was found near the aircraft fuselage connected to the fuel injector unit. The pump was opened for further examination and the diaphragms were found intact. The unit did pump as expected when actuated by hand. A large quantity of oil leaked out of the engine during the recovery process. A hole in the oil pan was found near the suction screen location on the left-hand rear side of the engine. The suction screen remained installed in the case and was safety wired in place. The screen was found to be clean with no obstructions when removed. The oil filter remained installed on the back of the engine and safety wired in place. The oil filter was not opened during the examination.

Propeller

The three-bladed metal propeller remained attached to the crankshaft flange. One of the three blades was impact separated from the propeller assembly. A second blade of the propeller was missing the tip of the blade. All three blades displayed leading edge damage and “S” bending consistent with power being provided from the engine. The propeller spinner dome remained attached to the propeller hub and was crushed. The propeller governor remained attached to the front of the engine. The governor assembly was not removed during this engine examination. The propeller control cable was not identified during the examination. The cable was separated from the governor at the unit.

There were no preimpact mechanical malfunctions or anomalies with the engine or propeller that would have precluded normal operation.