



## **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Central Region

November 5, 2021

# **INVESTIGATION SUMMARY**

**CEN21FA290**

## A. ACCIDENT

Location: Cleburne, Texas  
Date: June 24, 2021  
Aircraft: N9261L; American Aviation (Grumman) AA-1A Trainer  
NTSB IIC: Joshua Lindberg, CEN

On June 24, 2021, at 1714 central daylight time, an American Aviation AA-1A airplane, N9261L, was destroyed when it was involved in an accident near Cleburne, Texas. The pilot and one passenger were 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 NTX FSDO – Darren Pittacora

## C. PERSONNEL/AIRCRAFT INFORMATION

### PERSONNEL INFORMATION

Pilot: Nick R Duran [REDACTED] 20 y/o  
Cert/medical: [REDACTED] Private pilot on 6/1/2020. Second class medical, no limitations.  
200 flight hours as of 6/23/21  
Right seat 3-point harness was found buckled at accident site, but the inboard lap belt mounting bracket was pulled loose from the floor. Pilot was ejected and found about 10 ft right (east) of the fuselage.

Passenger: Felipe Lopez [REDACTED]. Was still restrained by 3-point harness at accident site and remained mostly in the left seat.

### AIRCRAFT INFORMATION

The aircraft was a 1971 American Aviation AA-1A airplane, N9261L, s/n: AA1A-0161.  
Registered owner was also the pilot. Equipped with a Lycoming O-320-D3G, s/n L-13738-39A

Maintenance Logbook Review – Annual inspection completed 6/15/2021 by Jamie Treat A&P IA [REDACTED] at Hobbs: 263.4 / Tach: 239.2 / ETSMOH: 522.3

## D. ACCIDENT SITE AND EXAMINATION SUMMARY

An inflight video from the passenger was uploaded to Snapchat. A screen recording of the video was sent to the IIC after the accident. The video started by showing the left wing, then panned right to show the inside of the cockpit, then showed the pilot in the right seat. The pilot had his left hand on the control yoke, a tabled connected to the yoke, and a cell phone in his left hand. The canopy is open about 8 to 10 inches. Based on the instruments the airplane was about 1,960 ft above mean sea level (msl). The vertical speed indicator showed about 400 to 500 fpm climb.

The airspeed indicator showed about 100 to 105 knots. Based on the geographical landmarks, this video was taken at 17:03:58, which was about 6 minutes after takeoff just south of Cleburne, TX, while headed northeast toward Keene, TX.

There were no recorded ATC communications. Flight track data showed that the airplane departed Cleburne Regional Airport (CPT), about 1658 and proceeded south then northeast toward Keene, Texas. After the airplane made one full circle over Keene, it proceeded west and overflow CPT. The airplane continued west about 2,600 ft mean sea level (msl) for another 3 miles. During the last 10 seconds of the recorded data, the flight tracked showed a hard right turn followed by a left descending spiral toward the ground. Figure 1 shows the flight path.

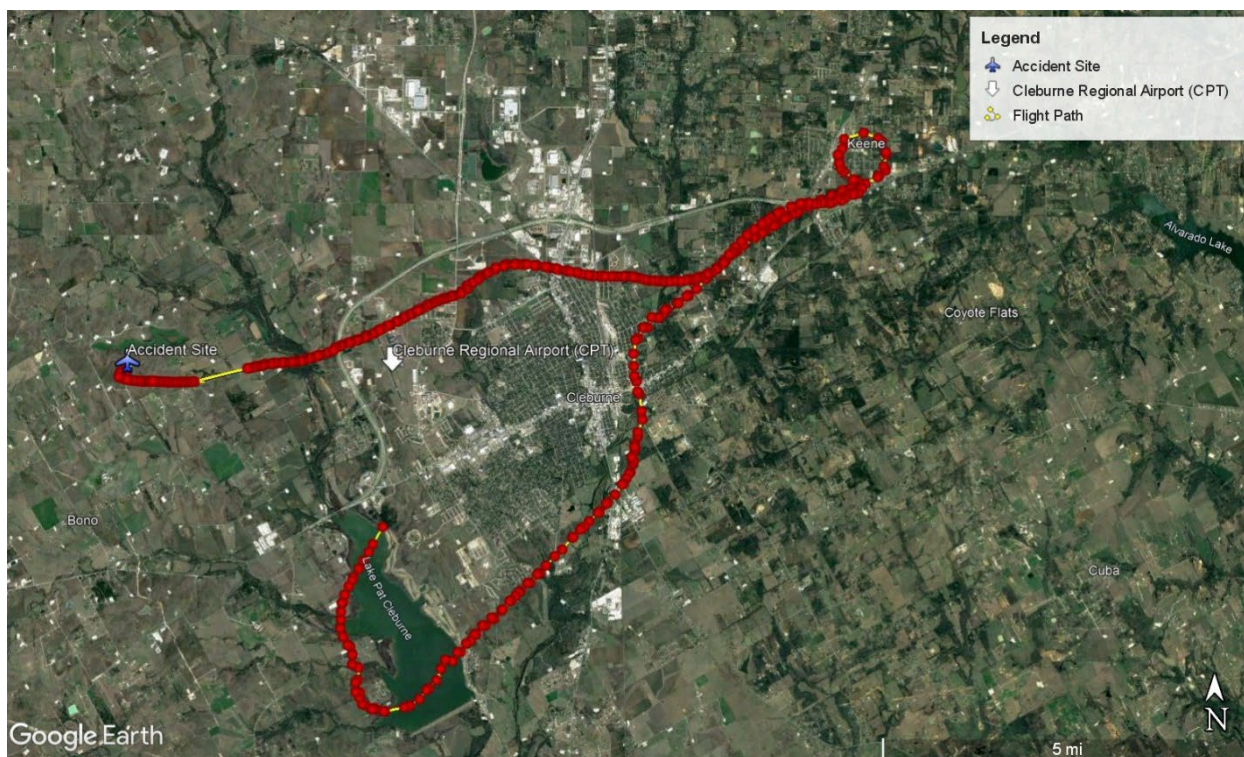


Figure 1. Flight Path

The airplane came to rest in a rural field and partially on a gravel road (Figure 2). The first impact area was a ~10 ft straight line disturbance in the dirt, which contained red glass near the outboard tip. The next impact areas were two small craters that contained paint chips and debris. The impact marks corresponded with the left wing, left landing gear, and engine/propeller. The airplane came to rest just to the right of the impact marks. All major components of the airplane were found at the accident site with the main wreckage.





Figure 2. Aerial view of main wreckage. Left wing impact mark noted

#### Airframe

The fuselage, empennage, and wing remained mostly intact and attached. The top rear of the fuselage was bent back and up and exhibited rearward crushing on the leading edge. The fuselage and empennage were distorted to the left. Both wings exhibited leading edge damage and crushing. The right wingtip was detached from the wing and exposed the main and auxiliary fuel tanks. The left wing impacted the terrain and left straight impact mark in the ground. Pieces of the left wing navigation light were found at the left end of the impact mark. The engine compartment, firewall, and forward fuselage were distorted down and to the left. As confirmed by first responder photos, the airplane cover and red tow bar were found inside the baggage area and were not outside of the airplane.

The canopy frame was found on the forward right side in front of the right wing. The windscreen and canopy plexiglass was mostly broken away and scattered to the east (right side). The left side of the canopy frame was bent inboard about 30" from the aft end. The area where it bent corresponded with the canopy being near full aft during impact. The left side canopy track was separated from the fuselage. It contained a screw-type friction lock which was mostly unscrewed or loose. The track piece also contained a placard that indicated the ½ open canopy point and stated "130 MPH MAX WITH CANOPY ½ OPEN. NO FLIGHT WITH CANOPY FULL OPEN." The left rear fuselage, under the left rear window, contained impact witness marks and damage similar to the shape of the lower canopy frame and rails.

Note: an exemplar AA-1A airplane was examined to compare to the accident airplane canopy damage and witness marks. When the canopy was slide full aft, the frame and rails aligned with the rear fuselage underneath the rear window and above the accent paint line. When the canopy was only slightly opened, then rails did not reach back to the rear fuselage.

The pilot was seated in the right seat during the flight. After the accident sequence, the pilot was found ejected from the airplane and about 10 ft off the right wing tip. The right seat lap belts left side strap was pulled loose from the floorboard, but buckle remained fastened to the lap belt and shoulder harness. The passenger was seated in the left seat during the flight. After the accident, the passenger remained in the left seat with the seatbelt fastened.

The fuel selector handle remained attached to the surrounding plastic casing with tank location placards. The handle pointed down and right, which was an area that did not correspond with a fuel tank position. Since the handle was broken from the rest of the selector assembly, its post-accident position was unreliable. The internal plastic ball valve was damaged and also unreliable. The fuel lines associated with fuel selector valve were clear of contaminants.

The cockpit controls were impact separated un multiple locations. The flight control cables from the cockpit to the rudder, elevator and trim were all intact and continuous. The elevator and rudder control cables remained attached to their respective rear bellcrank assemblies. The aileron control cables from the to the horn assemblies and torque tubes. The torque tubes remained attached to the aileron control surfaces. The flap torque tubes remained attached to each flap, but the flap position could not be determined.

The engine controls remained installed in the panel and were all found at the full forward positions, but the engine had been forced forward away from the firewall during the accident sequence. The cables and linkages remained intact and continuous to the engine. The firewall and instrument panel sections remained attached to each other and were distorted forward away from the seats.

#### Engine (Lycoming O-320-D3G, s/n L-13738-39A)

- The engine was partially separated from the firewall and several engine mounts were impact separated. The engine remained mostly intact with overall impact damage signatures.
- There was evidence of oil covering the engine and pooling on the ground below. The oil dipstick was partially impact separated and an oil level reading was not possible. The oil sump was mostly intact and attached; it had one impact hole in the bottom and several large cracks.
- The valve covers remained installed and mostly undamaged. The push rods were intact and mostly undamaged. The rocker arms were intact and unremarkable.
- All ignition leads remained attached to their respective park plugs. Two spark plugs were impact separated. 4 additional spark plugs were removed and exhibited normal shape and combustion signatures.
- The starter ring gear and starter sustained impact damage.

- The propeller remained attached to the crankshaft flange via two bolts. The other bolts were fractured and loose.
- The propeller blades exhibited scoring on the blade faces. One blade was bent aft about mid span with no leading edge damage. The other blade was mostly straight and exhibited leading edge gouges and chordwise scratches near the tip.
- Both magnetos were impact damaged. The right magneto was dislodged from its mount and fractured in half. The left magneto remained attached to its mount and was fractured in half. The ignition leads remained attached to each respective magneto cap.
- The carburetor was impact separated from its mount but remained attached and secured to the fuel lines. The butterfly valve was found near fully open and was stuck in position due to impact damage. The jet was intact and unremarkable. The throttle and mixture controls remained securely attached at their respective control arms. The fuel inlet screen was free of debris. The floats were in place and undamaged.
- The fuel pump was cracked open but remained attached to its mount. The fuel lines remained installed. Disassembly of the fuel pump revealed that the rubber diaphragm was unbroken, and there were no visible obstructions. One spring inside the fuel pump was displaced.
- One electric boost pump remained attached to the firewall. Another electric boost pump was found in the field to the right of the airplane.
- The oil pump was impacted separated and the screen was found on the ground nearby. The suction and pressure screen were clear of contaminants.
- The vacuum pump was partially attached to the mounting pad (via two bolts) and sustained impact damage and distortion. Disassembly showed the carbon vanes were impact damaged.
- The intake and exhaust tubes were impact damaged and crushed around the engine.
- The air intake was crushed and damaged. The filter element remained installed in the metal frame. There were no large blockages in the intake duct behind the airbox.
- The crankshaft and camshaft were unable to rotate due to the damage.
- The cylinders were examined using a lighted borescope and photos were taken of each.

#### **E. Engine Data Monitor (EDM)**

Manufacturer/Model: JPI EDM-900

Serial Number: 06403

The JPI EDM was sent to the NTSB Vehicle Recorders Laboratory for examination and data extraction due to the impact damage sustained in the accident. The accident flight data was extracted, and a full review of the data is contained in the Specials Factual Report in the docket.

- At 16:53 the engine is started
- Between 16:57 and 16:58 there is an increase in RPM and other parameters consistent with a ground run-up
- At 16:58:30 the engine parameters increase consistent with a takeoff

- Between 16:59 and 17:09 the data appears normal with no abnormalities
- At 17:09:40 the EGT, CHT, oil pressure, RPM, manifold pressure fuel flow and horsepower all decrease slightly for about 40 seconds. The shock cool rate increased from 0°/min to 25°/min, then back to 0°/min after 48 seconds. This timeline corresponded to the flight track data where the airplane made a tight left 360° turn over Keene, TX
- At 15:10:50 all parameters appeared to level off and were normal, albeit slightly lower than before the maneuver
- At 17:13:30 the data shows a significant reduction in engine power evidenced by a simultaneous rapid decrease in EGT, CHT, oil pressure, RPM, manifold pressure fuel flow and horsepower. The shock cooling rate again rapidly increased from 0°/min to 42°/min. This timeline corresponded to the end of the flight track data where the airplane descended in a left spiral toward the ground. Of interest is the manifold pressure data which depicts a much lower barometric pressure (inHg) during this event consistent with a closed throttle plate. Conversely, a loss of engine power at throttle plate setting closer to wide open throttle (WOT), would register a closer to barometric value. Additionally, the fuel pressure value remained nominal. The data stream suggests a commanded reduction in power. The data stream prior to this appears nominal, consistent with normal operation.

## **F. WITNESS AND FAMILY STATEMENTS**

A witness located near the accident site observed the accident airplane before the crash. He stated that he lives near the accident site and sees airplanes flying above his house all the time. The airplanes are usually small and fly around the area west of the airport. It is not unusual for the airplanes to climb and descend quickly. On the afternoon of the accident, between 4:30 and 5:30pm, he saw a silver airplane flying straight down toward the ground. He did not notice if the airplane was rotating or not. Since his view was blocked and he did not see the airplane impact the ground, he wasn't sure if it had crashed. He drove around looking for the airplane but did not find it. Later he saw law enforcement at the accident site.

Summary of a conversation with the pilot's father: he stated that the pilot flew with the canopy open when the weather required additional airflow into the cockpit. If it was cold outside, then he did not open the canopy. If it was warm outside, then he would open the canopy to increase airflow and cool the cabin. The canopy was frequently opened while on the ground to get more airflow. The pilot would always manipulate the canopy by himself and did not request assistance from passenger. The cockpit was small enough that the pilot could reach over and easily move the canopy by himself. The pilot liked to do this himself to make sure equal pressure was applied to both sides and the canopy would move smoothly. If there was unequal pressure applied, then the canopy could jam on one side. The pilot was always in control of manipulating the canopy and never appeared to have any issues with it inadvertently moving backward in flight. He did notice that the canopy would sometimes move forward in flight, and the pilot would have to adjust it backward as necessary. He would adjust the black friction lock to help keep the canopy in place. He added that the passenger was a known family acquaintance and had never flown in an airplane before. The pilot was taking the passenger on a quick local flight as his first experience in an airplane.