



NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety

ACCIDENT/ENGINE EXAM FIELD NOTES

June 20, 2022

A. ACCIDENT WPR22FA215

Location: Buckeye, Arizona
Date: June 18, 2022
Time: 0654 mountain standard time (MST)
Operator: Daniel Keen, Owner
Aircraft: Beech E-35
Registration: N-13AR

B. PARTICIPANTS:

IIC: Dan Baker
 National Transportation Safety Board
 Tucson, Arizona

Participant: Frank Waterhouse
 Federal Aviation Administration
 Scottsdale, Arizona

Participant: Henry Soderlund
 Textron Aviation
 Wichita, Kansas

C. SUMMARY

On June 18, 2022, at 0655 mountain standard time, a Beech E-35 airplane, N13AR, was destroyed when it was involved in an accident near Buckeye, Arizona. The flight instructor and student pilot were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

Automatic Display Surveillance – Broadcast (ADS-B) data indicates that the accident airplane departed runway 19 at Glendale Municipal Airport (GEU), Glendale, AZ about 0625. After departure the airplane made a left turn out to the east briefly, then back right to a SE heading before turning right again and traveling west-northwest, making one jog to the southeast briefly then back to a west-northwest heading. At about 0645, the airplane passed south of the Buckeye Municipal Airport (BKK), then turned right to a northerly heading. When the airplane was about 5 miles north-northwest of BKK, it made a descending 270° turn to the left, then turned right and traveled southbound consistent with a straight in approach to runway 17 at BKK. The aircraft track and altitudes were consistent with a low approach before the airplane made a right turn about midpoint of runway 17 and continued to a downwind heading. The flight track then angled to the northeast before it indicated an increase in the right turn until track data was lost at about 0654, near the reported wreckage location northwest of the approach end of runway 17 (figures 1-3).

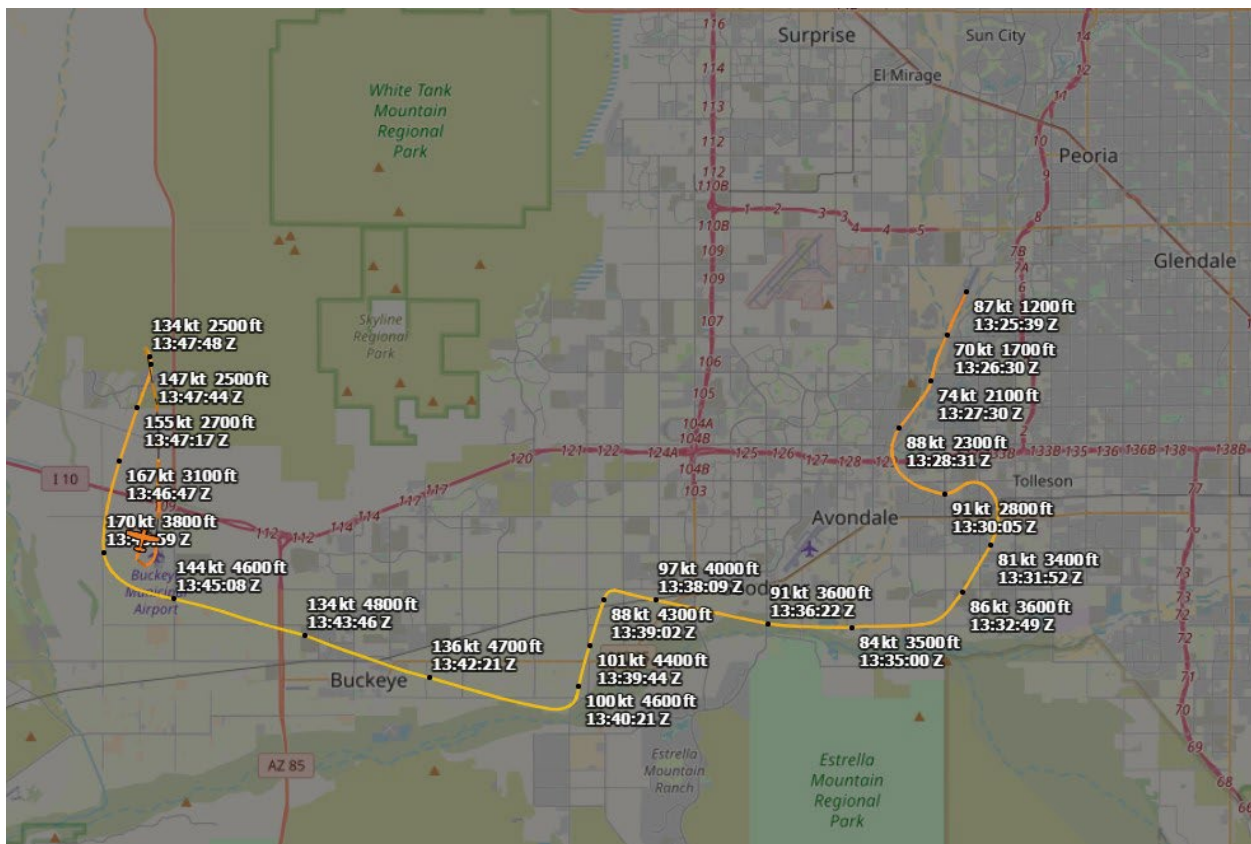


Figure 1 – ADS-B Flight Track



Figure 2 – Flight Path (VirTower Generated)

Note: The airport (BKK) was equipped with a VirTower airport operations tracking system. Airport personnel provided the image in figure 1 showing the accident airplane's flight path. Personnel were unable to provide the source data for flight path depicted in the image.

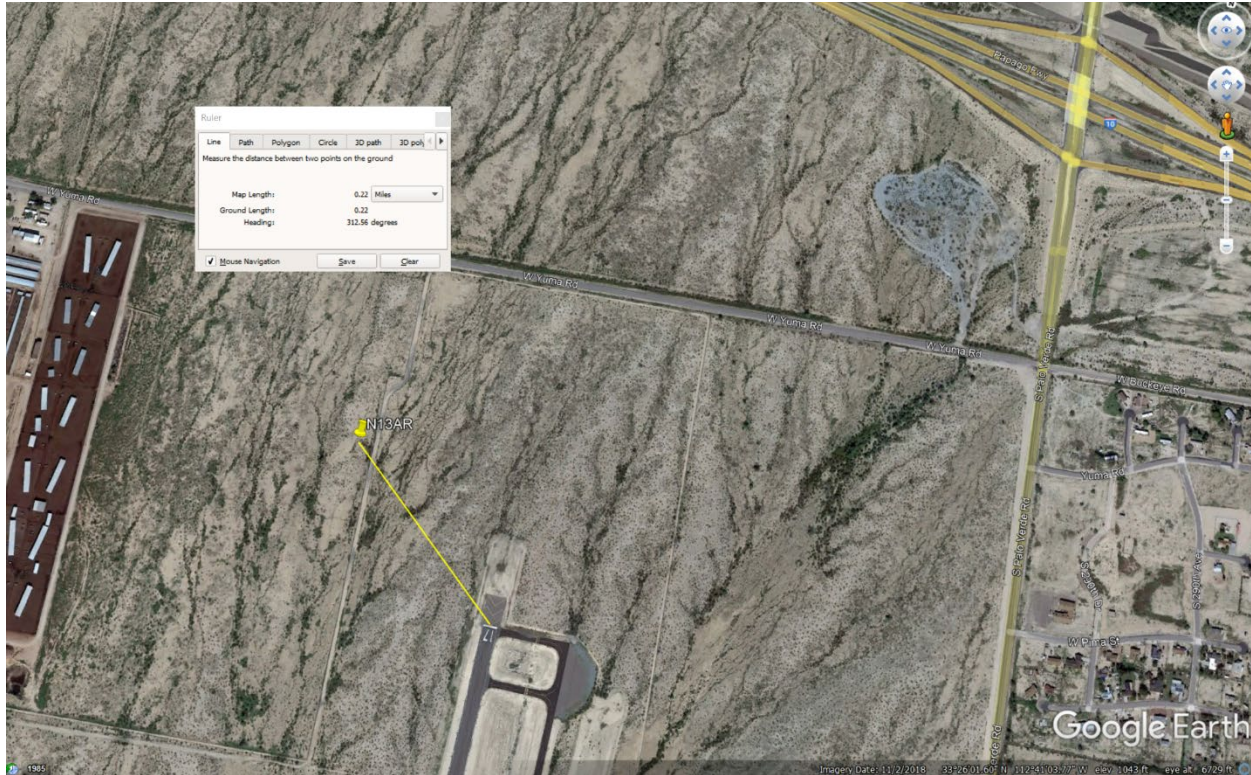


Figure 3 – Accident location

D. DETAILS OF THE INVESTIGATION

1.0 Accident Site

The airplane impacted flat, sparsely vegetated desert terrain bearing 313° and .22 miles from the approach end of runway 17 (figure 3). The aircraft impacted left wing first followed by the engine. A propeller cut mark was observed in the dirt near the engine impact crater. The aircraft then came to rest nose down on a heading of 158° . A post impact fire consumed a majority of the fuselage. The outboard 1/3 of the left wing along with a majority of the left aileron separated during the impact sequence. Both wing leading edges exhibited aft crushing damage with the left wing being crushed further aft.



Figure 4 - Main Accident Site



Figure 5– Impact Crater and Propeller Strike Mark

2.0 Airframe Examination

The fuselage and cockpit from the firewall aft to about two feet forward of the empennage was consumed by post impact fire. Cockpit instrumentation, switches, and controls were mostly destroyed by fire. Flight control continuity was verified to all control surfaces. The aileron interconnect cable was fractured in the cabin and the left elevator aft push/pull tube was fractured at the elevator rod end consistent with impact damage. The left and right flaps were in the retracted position and the position of the flap control handle could not be determined. All landing gear were in the extended position. The position of the landing gear handle could not be determined.

3.0 Engine Examination

An examination of the engine was conducted at a secure location following the recovery of the wreckage. Engine continuity was verified by rotating the propeller and observing movement of the accessory drive gears on the back of the engine. The valve covers were removed, and valve train continuity and movement were verified at each cylinder when the propeller was rotated. The top spark plugs were removed from each cylinder and thumb compression was verified at each cylinder. Each spark plug displayed normal burn signatures when compared to a Champion Aerospace Spark Plug guide.

The left magneto was consumed by fire. The right magneto was heat damaged. The accessory housing was partially melted. The engine accessories were fire and/or heat damaged. The two, aft cylinder 1 thru bolt nuts were loose. Each cylinder was examined internally with a borescope; no abnormalities were noted. No pre-impact anomalies were noted during the engine examination that would have prevented the normal production of power.

4.0 Propeller Examination

Both propeller blades exhibited leading edge polishing and chordwise scratches. One blade was bent aft about 45° near the midpoint of the blade and was loose on the hub. The second blade was bent aft about 80° about 1/3 the length of the blade outward from the hub. See Figure 6.



Figure 6 – Propeller Blades and Engine

5.0 Witness Statements

No witnesses to the accident were identified during the on-scene portion of the investigation.