



MEMORANDUM for RECORD

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Date: October 6-7, 2017
Wreckage Examination
NTSB Accident Number: ERA18FA005 – Bardstown, KY

HISTORY OF FLIGHT

On October 5, 2017, about 1830 eastern daylight time, an experimental, amateur-built BC Ultra Pup, N484HC, collided with terrain following a go-around at Samuels Field Airport (BRY), Bardstown, Kentucky. The airplane was substantially damaged. The private pilot was fatally injured. The airplane was registered to and operated by the pilot under the provisions of 14 *Code of Federal Regulations* Part 91. Day, visual meteorological conditions prevailed, and no flight plan was filed for the local, personal flight. The flight originated about 1815.

AIRCRAFT INFORMATION

The high-wing, single-engine, two-seat, tandem cockpit airplane incorporated a tailwheel landing gear. The airplane was equipped with a Revmaster 2100-D, 65-horsepower reciprocating engine, which was modified for aviation applications from a Volkswagen air-cooled engine core. The engine was fitted with a Tennessee Propellers fixed pitch wooden propeller. The airplane was built in 2013 and was purchased by the pilot in May, 2017. The total airframe time was 54.3 hours. A condition inspection was completed on September 22, 2017, at 52.4 hours total time.

WRECKAGE EXAMINATION

General:

The airplane crashed in a soybean field, about 1,635 ft northeast of the departure end of runway 3. Aircraft heading at rest was 120 deg. The airplane came to rest in a near vertical nose down attitude at the location of initial ground impact. There was no fire. All components of the airplane were accounted

for at the accident site. Flight control continuity was confirmed from all flight control surfaces to the cockpit controls.

Impact Location (Soybean field): 37°49'28"N 085°29'36"W

Elevation: 652 feet

Wreckage Heading 120°

Airframe Exam:

Hobbs: 54.3 hours

General:

- The airplane came to rest in a near vertical, nose down attitude. The initial impact point and the final resting point were collocated.
- All flight control surfaces were observed.
 - All primary flight control surfaces remained attached.
- The airplane was not equipped with wing flaps or a stall warning system.
- Flight control cable continuity was confirmed to all flight controls.
 - The elevator control cables were observed attached to the aft bell crank at the torque tube and at the forward push pull tube under the floor.
 - The rudder control cables were observed attached to the rudder bell crank at the tail of the aircraft and at the rudder pedals at the cockpit area.
 - Right and left aileron control cables were observed attached to the attach points on both ailerons. All cables were attached at the control sticks. The balance cable was intact.
 - The elevator trim control cable was continuous from the trim lever at the rear cockpit seat position to the trim tab. The trim lever was full aft and the tab was full tab down; however, there was deformation of the area due to impact. There was no elevator trim friction adjustment installed.
- Landing gear:
 - The main landing gear remained attached to the fuselage. The support struts on both main landing gear were bent and broken.
 - The main tires were in a like new condition.
 - The main tire wheel brakes were normal in appearance.
 - The tail wheel assembly was in a like new condition.
- Fuel system:
 - Fuel was present in the right wing leading edge tank. No fuel was present in the left wing tank. The lines from both tanks were found disconnected and were leaking fuel after recovery to the hangar.
 - Fuel ON/OFF valve broken free from instrument panel and found loose in wreckage. Pre-accident position could not be determined.
 - All fuel lines from wing tanks to engine were clear and unobstructed.

- Fuel tank vents were unobstructed.
- Fuel, clear and blue in color, was found in the fuel gascolator. About 2 ounces for fuel were observed in the strainer bowl and there was no water or debris present.
- Fuel tank caps were observed securely attached and undamaged.
- Approximately 1 gallon of clean, blue colored fuel was recovered from the right fuel tank.
- Fuselage:
 - Fuselage frame buckled immediately aft of aft cockpit seat.
 - Forward fuselage frame crushed against engine, engine firewall deformed against engine and engine mount.
- Empennage:
 - Rudder was undamaged. Upper rudder hinge pin was in place; however, cotter pin was missing.
 - Vertical stabilizer undamaged.
 - Horizontal stabilizer undamaged.
 - Elevator undamaged.
 - Elevator trip tab: full tab down defection.
- Wings:
 - Left wing: Leading edge twist in upward direction about 15 deg.
 - Left wing tip fairing broken free and held on by wing skin.
 - Forward to aft direction crushing signatures on left wing leading edge.
 - Left wing fuel tank intact.
 - Left wing lift struts remained attached and undamaged.
 - Right wing: Leading edge twist in downward direction about 20 deg.
 - Forward to aft direction crushing signatures on right wing leading edge.
 - Right wing fuel tank intact.
 - Right wing lift struts remained attached and undamaged.
- Aft seat 4-point harness was cut by rescue personnel. The seat belt buckle remained connected.
- ELT was observed.
 - Ameri-King
 - AK-450
 - Battery Exp: 12/2022
 - The unit was in the armed position and was activated.

Engine Exam:

- The engine was examined on 10/7/2017 on 4-21-2017 at a hangar at BRY.
- The carburetor remained secured to the engine. The intake system remained attached to the carburetor. The air filter was clean and unobstructed.

- The 4 aviation spark plugs were removed for inspection. The fine wire electrodes were normal in wear and color when compared to a Champion Check-A-Plug chart.
- The cylinder rocker covers were removed for the examination. The engine was rotated smoothly by hand-turning the propeller hub. No internal restrictions or unusual noises were noted. Compression and suction were observed on all cylinders and valve action was correct.
- The ignition harness leads were intact and undamaged. The magneto was not removed or examined due to airframe damage.
- The engine contained an undetermined amount of oil.
- The carburetor was attached and appeared undamaged. The mixture and throttle cables remained attached.