



NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety

POSTACCIDENT AIRCRAFT EXAMINATION

July 7, 2020

A. ACCIDENT CEN20LA136

Location: Audubon, Iowa
Date: March 31, 2020
Time: 1626 Central Daylight Time (CDT)
Operator: Ride the Sky Helicopters
Aircraft: Robinson R44
Registration: N107EH

B. PARTICIPANTS or GROUP NAME:

Use the table below for field notes where you will need signatures for concurrence. Field Notes will be OUO and not released.

I <u>concur</u> that the contents within the following "Field Notes", accurately reflects the information gathered during the examination.		
NAME	SIGNATURE	DATE
John Brannen National Transportation Safety Board Denver, Colorado		

C. SUMMARY

On March 31, 2020, about 1626 central daylight time, a Robinson R44 helicopter, N107EH, was destroyed when it impacted wires and terrain while maneuvering at low altitude near Audubon, Iowa. The pilot and passenger were fatally injured. The helicopter was operated as a Title 14 Code of Federal Regulations Part 91 aerial observation flight.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

The helicopter was examined after it had been relocated to a secure facility.

1.1 Fuselage

The main wreckage was composed of the engine, main rotor gearbox, steel tube frame structure and the remains of the cabin section. The entire structure that remained exhibited evidence of impact and fire damage. The cabin section was almost completely missing/consumed by fire. Of the components that remained, no evidence of pre-impact deficiencies were found, but the extent of the damage precluded an extensive examination. The main rotor mast and the main rotor blade grips remained attached. At the top of the mast, just below the rotor head, was a large wire, consistent with a powerline, wrapped around the mast about 2 complete turns. The helicopter tailboom was separated from the forward structure but remained predominately intact with the tail rotor still attached. There was evidence of fire damage to the forward portion of the tailboom.



Figure 1: Overall view of the main wreckage



Figure 2: View of powerline wires wrapped around rotor head



Figure 3: View of the helicopter tailboom during examination.

1.2 Control System

Due to the level of destruction to the helicopter an comprehensive examination of the control system was not possible. However; examination of available components did not reveal any anomalies.

2.0 Engine Examination (Reciprocating 1, copy for additional)

Lycoming 10-540-AE1A5, SN L-29525-48A

Annual Inspection 3/27/2020

Engine Total Time,1906.2

The engine was still located in the steel tube cage of the fuselage and exhibited extensive impact and fire damage. After removal of the fan mounted to the crankshaft, the engine was able to be

rotated. Valve train continuity, and compression and suction on all cylinders was verified. The engine fuel controls had extensive fire damage and could not be tested. The engine magnetos were removed and could not be rotated, Partial disassembly of the magnetos showed that the internal plastic components of both magnetos had melted, precluding functional testing of the magnetos. No preimpact anomalies could be determined.



Figure 4: View of the helicopter engine during examination.