



# Aviation Investigation Final Report

<b>Location:</b>	Franklin, Indiana	<b>Accident Number:</b>	CEN18LA269
<b>Date &amp; Time:</b>	July 15, 2018, 17:45 Local	<b>Registration:</b>	N8568F
<b>Aircraft:</b>	Bell 47J	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The commercial pilot was conducting a test flight in conjunction with an annual inspection when the engine lost power about 50 ft above ground level, which resulted in a hard landing. The helicopter was destroyed by a postimpact fire. A witness reported a plume of smoke trailing the helicopter shortly before the accident. Before the day of the accident, the helicopter had not been flown for about 4 years. A postaccident examination of the helicopter revealed no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation, although the engine examination was limited by the postimpact fire damage. Thus, the reason for the loss of engine power could not be determined.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A total loss of engine power for reasons that could not be determined based on the available evidence.

## Findings

<b>Not determined</b>	(general) - Unknown/Not determined
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## Factual Information

### History of Flight

<b>Maneuvering</b>	Loss of engine power (total) (Defining event)
<b>Autorotation</b>	Hard landing
<b>Post-impact</b>	Fire/smoke (post-impact)

On July 15, 2018, about 1745 eastern daylight time, a Bell 47J helicopter, N8568F, was destroyed during a hard landing and a postimpact fire following a loss of engine power near the Franklin Flying Field Airport (3FK), Franklin, Indiana. The pilot was seriously injured. The helicopter was registered to Brown County Tours and operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Day visual meteorological conditions prevailed, and the flight was not operated on a flight plan. The local flight originated from 3FK about 1730.

The pilot reported that the helicopter had not been flown since 2014 and was being test flown in conjunction with an annual inspection prior to return to service. He stated that the engine lost power about 50 ft above ground level, resulting in a hard landing, and a postimpact fire.

A witness reported that the pilot was checking out the helicopter because it had not been flown yet this season. The initial flight was completed without incident and, after the helicopter was fueled, the pilot took off again. The witness did not see the entire flight, but he could hear the helicopter and the engine sounded "smooth." He observed the helicopter flying over the fields north of the airport and subsequently noticed a "plume of white or grey smoke trailing the helicopter." The helicopter subsequently descended into the field.

The helicopter came to rest upright. The aft portion of the tail boom, including the tail rotor assembly, separated and was located about 30 ft from the main wreckage. The main rotor blades remained attached to the hub and were located with the main wreckage. A postimpact fire consumed most of the fuselage structure. The engine sustained thermal damage consistent with the fire.

A postaccident examination conducted by a Federal Aviation Administration inspector did not reveal any anomalies consistent with a preimpact failure or malfunction. However, the engine examination was limited by the postimpact fire damage.

Although the helicopter had not been flown since 2014, maintenance records revealed that annual inspections were completed during that time with the most recent inspection being completed in April 2017. At the time of the accident, an annual inspection was in progress but had not been completed.

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	71, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	March 1, 2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	April 15, 2017
<b>Flight Time:</b>	2000 hours (Total, all aircraft), 150 hours (Total, this make and model), 2000 hours (Pilot In Command, all aircraft), 4 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Bell	<b>Registration:</b>	N8568F
<b>Model/Series:</b>	47J 2A	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	1966	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	3715
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	July 20, 2017 Annual	<b>Certified Max Gross Wt.:</b>	2850 lbs
<b>Time Since Last Inspection:</b>	0 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3618 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	VO-540-B1B3
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	305 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	BAK,656 ft msl	<b>Distance from Accident Site:</b>	12 Nautical Miles
<b>Observation Time:</b>	17:45 Local	<b>Direction from Accident Site:</b>	143°
<b>Lowest Cloud Condition:</b>	Scattered / 8000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 12000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	230°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.98 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 19°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Franklin, IN (3FK)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Franklin, IN (3FK)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	17:30 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Franklin Flying Field 3FK	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	740 ft msl	<b>Runway Surface Condition:</b>	Vegetation
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious	<b>Latitude, Longitude:</b>	39.426387,-86.058334(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sorensen, Timothy
<b>Additional Participating Persons:</b>	Leslie Thompson; FAA Flight Standards; Plainfield, IN
<b>Original Publish Date:</b>	November 6, 2019
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=97769">https://data.nts.gov/Docket?ProjectID=97769</a>

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