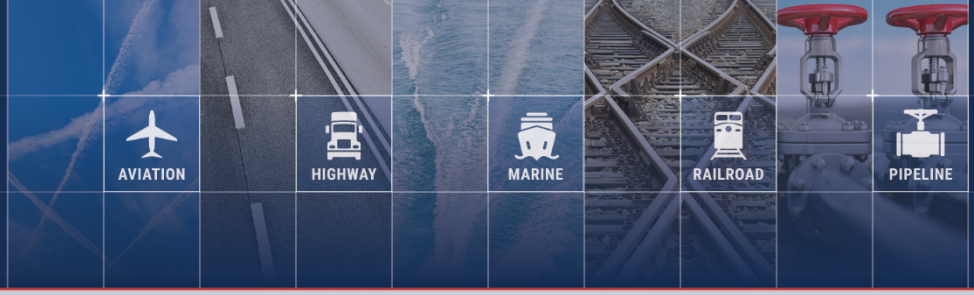

Aviation Investigation Final Report

Location:	Mesa, Arizona	**Accident Number:**	WPR23LA006
Date & Time:	October 1, 2022, 05:43 Local	**Registration:**	N24067
Aircraft:	Bell 47G2	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, while in cruise flight about 2,300 ft mean sea level, the helicopter's engine lost power and he initiated an autorotation and landed on a residential street. During the landing sequence, the pilot increased the collective to reduce the descent rate to clear obstacles, which resulted in a loss of rotor rpm and a hard landing that damaged the tail boom.

Postaccident examination of the helicopter revealed a low amount of fuel in each tank. The pilot stated that there were no preimpact mechanical malfunctions or failures with the helicopter that would have precluded normal operation. The pilot did not report how much fuel was onboard the helicopter at the time of departure, and the extent of his preflight fuel planning could not be determined. Based on the available information, it is likely that the engine lost total power as a result of fuel exhaustion.

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 due to fuel exhaustion.

Findings

Personnel issues	Use of equip/system - Pilot
Aircraft	Fuel - Fluid management
Aircraft	Fuel - Fluid level
Environmental issues	Tree(s) - Response/compensation
Environmental issues	Pole - Response/compensation

Factual Information

History of Flight

Enroute-cruise	Fuel exhaustion (Defining event)
Enroute-cruise	Loss of engine power (total)
Autorotation	Off-field or emergency landing

On October 1, 2022, about 0543 mountain standard time, a Bell 47G helicopter, N24067, was substantially damaged when it was involved in an accident near Mesa, Arizona. The pilot was not injured. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that, while returning back to the airport following a flight of about 1 hour, and while at an altitude about 2,300 ft mean sea level, the engine lost power and he initiated an autorotation and landed on a residential street. During the landing sequence, the pilot increased the collective to reduce the descent rate to clear obstacles (a tree and a pole), which resulted in the loss of rotor rpm and a subsequent hard landing, during which the tail boom sustained substantial damage.

Postaccident examination of the helicopter by a Federal Aviation Administration inspector revealed a low amount of fuel in each tank (about a minimum of 3 gallons). Law enforcement visually inspected the fuel tanks and observed less than one gallon of fuel in each tank.

The helicopter's fuel was carried in two gravity-fed tanks mounted on each side of the engine. The tanks' total fuel capacity was 43 gallons, with 41 gallons of usable fuel.

The pilot stated that there was "very little fuel in the tanks" following the accident and that there were no preimpact mechanical malfunctions or failures that would have precluded normal operation of the helicopter. The pilot did not report how much fuel was onboard the helicopter at the time of departure, and the extent of his preflight fuel planning could not be determined.

Pilot Information

Certificate:	Private	**Age:**	66,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	May 21, 2021
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	December 19, 2020
Flight Time:	(Estimated) 1085 hours (Total, all aircraft), 351 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	**Registration:**	N24067
Model/Series:	47G2	**Aircraft Category:**	Helicopter
Year of Manufacture:	1953	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1220
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	April 21, 2022 Annual	**Certified Max Gross Wt.:**	2450 lbs
Time Since Last Inspection:		**Engines:**	1
Airframe Total Time:	7302.9 Hrs as of last inspection	**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dawn
Observation Facility, Elevation:	KFFZ,1389 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	05:54 Local	**Direction from Accident Site:**	53°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.83 inches Hg	**Temperature/Dew Point:**	24°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chandler, AZ (CHD)	**Type of Flight Plan Filed:**	None
Destination:	Chandler, AZ (CHD)	**Type of Clearance:**	None
Departure Time:	04:45 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	33.399798,-111.82771(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert
Additional Participating Persons:	Raymond Adams; FAA; Scottsdale, AZ
Original Publish Date:	April 25, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=106056