Aviation Investigation Final Report

Location:	Auburn, California	**Accident Number:**	WPR20FA077
Date & Time:	January 24, 2020, 09:56 Local	**Registration:**	N50249
Aircraft:	Stinson V77	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed on a local flight with two passengers. Several witnesses reported that they heard the airplane's engine backfiring and sputtering and subsequently heard the engine quit. The surviving passenger, who was seated in the front right seat, stated that the engine lost power and there was nowhere to land. The airplane subsequently impacted heavily wooded terrain about 1 mile from the departure airport.

Postaccident examination of the engine revealed that the No. 7 cylinder intake valve was stuck open. The No. 2 cylinder front spark plug was defective, and the Nos. 2- and 4-cylinders' ignition wires were frayed, worn, and displayed arcing, which likely led to erratic operation or a lack of ignition in these two cylinders. The culmination of these issues most likely led to the engine running rough, backfiring, and subsequently losing total power.

An annual inspection was accomplished on the airframe and engine about 2 months before the accident. General maintenance practices and the inspection should have identified the anomalies that were found during the postaccident engine examination.

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 a combination of mechanical engine anomalies. Contributing to the accident was inadequate maintenance that failed to identify the engine anomalies.

Findings

Aircraft	Recip eng cyl section - Failure
Aircraft	Recip eng wiring - Damaged/degraded
Aircraft	Spark plugs/igniters - Damaged/degraded
Environmental issues	Mountainous/hilly terrain - Contributed to outcome
Personnel issues	Scheduled/routine maintenance - Maintenance personnel

Factual Information

History of Flight

Enroute	Loss of engine power (total) (Defining event)
Enroute	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial	**Age:**	55,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	May 10, 2019
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 650 hours (Total, all aircraft)		

Pilot-rated passenger Information

Certificate:	Private	**Age:**	Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	February 21, 2018
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 1532 hours (Total, all aircraft)		

Pilot-rated passenger Information

Certificate:	Private	**Age:**	30,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 2 None	**Last FAA Medical Exam:**	February 21, 2019
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 250 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Stinson	**Registration:**	N50249
Model/Series:	V77 No Series	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	77-458
Landing Gear Type:	Tailwheel	**Seats:**	
Date/Type of Last Inspection:	December 1, 2019 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Pratt & Whitney
ELT:	Installed	**Engine Model/Series:**	985
Registered Owner:		**Rated Power:**	450 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KAUN,1531 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	09:55 Local	**Direction from Accident Site:**	251°
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:	30.19 inches Hg	**Temperature/Dew Point:**	14°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Auburn, CA (AUN)	**Type of Flight Plan Filed:**	None
Destination:	Auburn, CA (AUN)	**Type of Clearance:**	None
Departure Time:	09:40 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal, 1 Serious	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Fatal, 1 Serious	**Latitude, Longitude:**	38.959445,-121.06583(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert		
Additional Participating Persons:	Joseph Mitchell; Federal Aviation Admnistration; Sacramento, CA		
Original Publish Date:	May 19, 2022	**Investigation Class:**	3
Note:			
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=100856		

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