Aviation Investigation Final Report

Location:	Santa Monica, California	**Accident Number:**	WPR23FA073
Date & Time:	December 22, 2022, 15:18 Local	**Registration:**	N7032X
Aircraft:	Cessna 150A	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Fatal, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During taxi to the runup area, the pilot noticed what he described as a reluctance of the airplane to move, and that its performance seemed sluggish. The pilot subsequently canceled the departure request and taxied to the hangar to troubleshoot the anomaly. While troubleshooting the anomaly, which included adding air to the tires, the pilot performed a magneto check and a carburetor heat check and observed the engine RPM decrease within normal limits. After the second preflight runup, he considered the airplane to be airworthy, taxied onto runway 21, and departed to the southwest. After making a right turn to the northwest along the beach and climbing to about 1,025 ft above ground level (agl), the engine lost power, and the pilot made a 180° left turn to return to the airport.

Unable to make the runway, the pilot made a forced landing to the southeast and attempted to land on the beach. However, the main landing gear contacted the shallow waves, and the airplane nosed over on the shoreline.

Postaccident examination of the airplane's engine revealed an oil starvation event that occurred at the No. 1 piston connecting rod bearing journal. The No.1 connecting rod separated into 5 identifiable pieces that were recovered from the crankcase. The Nos. 2, 3, and 4 crankshaft connecting rod bearings and journals showed various stages of thermal damage and discoloration. The reason for the oil starvation could not be determined.

While it is likely that the sluggish performance experienced by the pilot during taxi was the beginning of the engine failure, the loss of engine power resulted in a forced landing and subsequent nose over along the shoreline.

Probable Cause and Findings

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

A failure of the No. 1 piston connecting rod bearing journal due to oil starvation for reasons that could not be determined, which resulted in a complete loss of engine power.

Findings

Aircraft	(general) - Malfunction
Aircraft	Recip engine power section - Failure

Factual Information

History of Flight

Enroute-climb to cruise	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Nose over/nose down

On December 22, 2022, about 1518 Pacific standard time, a Cessna 150, N7032X, sustained substantial damage when it was involved in an accident near Santa Monica Municipal Airport (SMO), Santa Monica, California. The pilot sustained minor injuries, and the passenger was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that the accident flight was to be local, following a route northwest along the Pacific Ocean coastline with a pilot-rated passenger. The pilot reported that after topping off the airplane's fuel tanks, the airplane seemed "sluggish" during the taxi to runway 21. The pilot canceled his takeoff request, taxied to his hangar, and shut down the engine to troubleshoot the anomaly. Initially he believed that it may have been due to low tire pressure, so he verified the tire pressure and started the engine. While taxiing from the hangar to the runway, a magneto check and carburetor heat check were within normal limits. The pilot contacted ground control, taxied to the runway, and departed runway 21 to the southwest. During the initial climb, about 575 ft agl, the pilot intercepted the coast near Ocean View Park and turned to the right to follow the coastline northwest (Figure 1).

ADS-B data indicated that four minutes into the flight, while over Sunset Beach, the airplane had climbed to 1,025 ft agl with a consistent airspeed of about 70 mph. The pilot reported that he ensured that the carburetor heat was off, the mixture was rich, the throttle was in the maximum position, and that the ignition switch was in the Both position. Subsequently, he heard what he described as a "bang" and made a left 180° turn. The pilot contacted the SMO tower controller and attempted to return to SMO. However, the airplane's descent rate increased, and the pilot initiated a forced landing to the shoreline about 2,200 ft south of the Santa Monica Pier. The airplane touched down heading south in the shallow water of the shoreline and nosed over.

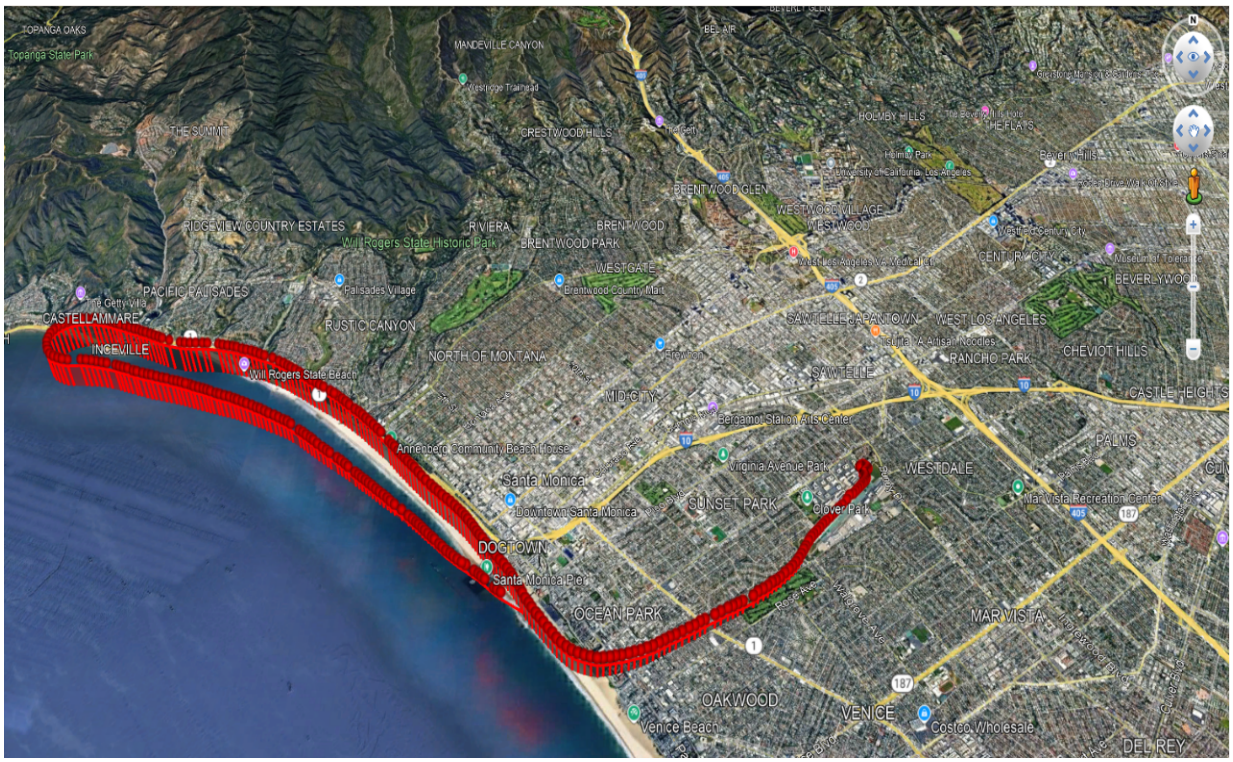

Figure 1: View of the accident airplane's ADS-B flight path

Passenger Information

Certificate:	Commercial	**Age:**	95,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Pilot Information

Certificate:	Private	**Age:**	78,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	BasicMed With waivers/limitations	**Last FAA Medical Exam:**	June 17, 2022
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 26, 2022
Flight Time:	(Estimated) 830 hours (Total, all aircraft), 668 hours (Total, this make and model), 669 hours (Pilot In Command, all aircraft), 4 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N7032X
Model/Series:	150A	**Aircraft Category:**	Airplane
Year of Manufacture:	1960	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	15059132
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	August 2, 2022 Annual	**Certified Max Gross Wt.:**	1600 lbs
Time Since Last Inspection:	4.9 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3348.9 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	O-200-A
Registered Owner:	On file	**Rated Power:**	100 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Examination of the aircraft maintenance logbooks revealed that the annual inspection was completed four months before the accident. At the time of the annual inspection, the engine time since overhaul was 1,737.0 hours and the engine total time was 3,344.0 hours. The engine logbook indicated that an overhaul was completed August 28, 1970, and a top overhaul was completed in 1972. After the annual inspection, there were no additional logbook entries. The engine manufacturer recommended time between overhaul is 1,800 hours or 12 years.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KSMO,175 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	15:23 Local	**Direction from Accident Site:**	69°
Lowest Cloud Condition:	Clear	**Visibility**	9 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	17°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Santa Monica, CA	**Type of Flight Plan Filed:**	None
Destination:	Santa Monica, CA	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	Class D

Airport Information

Airport:	SANTA MONICA MUNI SMO	**Runway Surface Type:**	
Airport Elevation:	169 ft msl	**Runway Surface Condition:**	Soft;Wet
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Minor	**Latitude, Longitude:**	34.006042,-118.49441

Examination of the accident site revealed evidence consistent with the airplane heading southeast when the main landing gear contacted water along the shoreline and subsequently nosed over. The airplane came to rest with the nose of the airplane oriented toward the northwest, the right wing oriented west toward the ocean, and the left wing oriented east

toward the shore. The upper fuselage and both wings were submerged in water along the shoreline. The airplane was subsequently pulled to shore by first responders to prevent the current from pulling the airplane further into the ocean. The engine mounts sustained substantial damage.

Examination of the recovered wreckage revealed that no holes in the engine crankcase. All accessories remained attached to the accessory case and revealed no impact damage. None of the rocker covers revealed gross deformations. The air induction housing sustained impact damage, and the exhaust assemblies sustained minor damage. Initially, the propeller could not be turned by hand, and exhibited binding and restriction when rotated in the opposite direction; subsequent binding remained when rotated in the direction of rotation. The propeller spinner was crushed and remained attached to the propeller flange by only two of the six hub bolts. About 5 quarts of oil were extracted from the oil sump.

The No. 1 piston was seized to the cylinder and the piston skirt had damage to the upper and lower sections in alignment with piston rod movement. The No.1 piston rod and bearing were separated from the crankshaft and the connecting rod endcap and bearing remained in the crankcase. The connecting rod bolts were stretched, and the nuts remained attached to each bolt, but the bolt heads were separated and not present. The oil sump was removed and contained residual oil and metallic fragments.

The crankcase halves were disassembled, and the crankshaft main bearings were intact and showed normal operational wear. The crankcase halves showed no signs of fretting or main bearing shift in the bearing saddle areas. The crankcase oil galley plugs were removed, and the oil galleys were free from obstruction. Internal mechanical damage was observed at the Nos. 1 and 2 cylinder bays.

The Nos. 2, 3, and 4 connecting rod ends were removed to observe the condition of the rod bearings. The No. 2 connecting rod bearings revealed thermal discoloration and metal deformation consistent with oil starvation. The No. 3 cylinder connecting rod bearings displayed thermal discoloration and metal deformation, with one bearing seized to the connecting rod. The No. 4 cylinder connecting rod bearings revealed only thermal discoloration.

The oil filter was removed and cut open; the filter screen was unremarkable. The oil pump was removed and disassembled revealing no anomalies to the gear or the internal pump housing. The oil filter adapter was present, secure, and revealed no anomalies. The oil filter adapter housing was disassembled, and the fiber gasket was intact with no visible damage. The oil filter adapter housing components were undamaged including the copper crush gasket located on the spool. The engine sump oil pickup tube appeared unimpeded.

Administrative Information

Investigator In Charge (IIC):	Hicks, Michael
Additional Participating Persons:	Richard Lewandowski; FAA; Los Angeles, CA
Original Publish Date:	January 29, 2025
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=106489