Aviation Investigation Final Report

Location:	OXNARD, California	**Accident Number:**	LAX01LA154
Date & Time:	April 22, 2001, 15:42 Local	**Registration:**	N75343
Aircraft:	Piper PA-22-135	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane made an off field forced landing following a loss of engine power during climb out from a touch-and-go landing. The pilot had practiced touch-and-go landings for over an hour and experienced no difficulties with the airplane. After a break, he completed another preflight inspection and practiced more landings. As the airplane climbed through 200 feet on the fourth takeoff, the engine made a clunking noise and stopped producing power. He steered the airplane to an open field and landed on soft dirt, but the airplane dug in and damaged the wings, stabilizer, landing gear, and propeller. The engine had accumulated about 1,860 hours since it had been manufactured in 1953, and the factory had no record of it returning since that time. The engine had accumulated about 910 hours since a field overhaul in 1960, and about 255 hours since a "top overhaul" in 1970, when the exhaust valves were replaced. All cylinders were undamaged except cylinder No. 3, which exhibited extensive mechanical damage. The exhaust valve for cylinder No. 3 fractured and separated where the valve stem transitions to the valve head. The fracture surfaces on the valve pieces were obliterated by the mechanical damage. The piston face exhibited mechanical damage over most of its surface, which contained two holes. The corresponding push rod was slightly bent, but there was no evidence of the valve sticking.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The fracture and separation of the number 3 cylinder exhaust valve head resulting in a loss of engine power and a forced landing. A factor in the accident was the soft field where the forced landing occurred.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) ENGINE ASSEMBLY,VALVE,EXHAUST - FRACTURED
2. (C) ENGINE ASSEMBLY,VALVE,EXHAUST - SEPARATION

Occurrence #2: FORCED LANDING
Phase of Operation: LANDING

Findings
3. (F) TERRAIN CONDITION - SOFT
4. SOFT FIELD LANDING/PROCEDURE - ATTEMPTED - PILOT IN COMMAND

Factual Information

On April 22, 2001, at 1542 hours Pacific daylight time, a Piper PA-22-135, N75343, made an off field forced landing following a loss of engine power during climb out from Oxnard, California. The owner was operating the airplane under the provisions of 14 CFR Part 91. The private pilot and one passenger were not injured; the airplane sustained substantial damage. The personal, local flight departed Oxnard about 1515. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot submitted a written statement. He filled the airplane with fuel and completed a preflight inspection. He practiced touch-and-go landings for over an hour and experienced no difficulties with the airplane. After a break, he completed another preflight inspection and practiced more landings. As the airplane climbed through 200 feet on the fourth takeoff, the engine made a clunking noise and stopped producing power. He steered the airplane to an open field and landed on soft dirt. The airplane dug into the soft dirt and sustained damage to the wings, stabilizer, landing gear, and propeller.

The engine was an O-290-D2, serial number 6571-21. An engine logbook entry on April 11, 1960, recorded a field overhaul at a tachometer time of 951 hours. An entry on August 1, 1970, recorded a "top overhaul" at a tachometer time of 1,603 hours, and noted that the exhaust valves were replaced. The tachometer read 1,861.57 at the time of the accident.

Textron Lycoming was a party to the investigation. An investigator from Lycoming examined the engine under the supervision of a Safety Board investigator. According to archived Lycoming records, the engine had been manufactured on November 9, 1953, and they had no record of it returning to the factory since that time.

The investigator removed the top spark plugs and examined the cylinders with a lighted bore scope. All cylinders were undamaged except cylinder No. 3, which exhibited extensive mechanical damage. The investigator removed this cylinder.

The exhaust valve for cylinder No. 3 fractured and separated where the valve stem transitions to the valve head. The fracture surfaces on the valve pieces were obliterated by the mechanical damage. The piston face exhibited mechanical damage over most of its surface, which contained two holes. The investigator observed that the corresponding push rod was slightly bent, but he did not observe evidence of the valve sticking. The valve stem measured approximately 13/32 inches, which met original factory specifications.

Pilot Information

Certificate:	Private	**Age:**	50,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 14, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	May 19, 2000
Flight Time:	1020 hours (Total, all aircraft), 300 hours (Total, this make and model), 1020 hours (Pilot In Command, all aircraft), 45 hours (Last 90 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N75343
Model/Series:	PA-22-135	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1927
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 30, 2000 Annual	**Certified Max Gross Wt.:**	1950 lbs
Time Since Last Inspection:	30 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1861 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-290-D2
Registered Owner:	STEVAN BATINIC	**Rated Power:**	135 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	OXR,43 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	15:22 Local	**Direction from Accident Site:**	60°
Lowest Cloud Condition:	Clear	**Visibility**	9 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.2 inches Hg	**Temperature/Dew Point:**	15°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	OXNARD, CA (OXR)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	15:15 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	OXNARD OXR	**Runway Surface Type:**	Asphalt
Airport Elevation:	43 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	25	**IFR Approach:**	None
Runway Length/Width:	5950 ft / 100 ft	**VFR Approach/Landing:**	Touch and go

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	34.189579,-119.170974(est)

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	SAM BELKNAP; Federal Aviation Administration; Van Nuys, CA MARK PLATT; Textron Lycoming; Van Nuys, CA
Original Publish Date:	November 28, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52111