Aviation Investigation Final Report

Location:	SANTA BARBARA, California	**Accident Number:**	LAX99LA067
Date & Time:	January 3, 1999, 16:27 Local	**Registration:**	N3585V
Aircraft:	Cessna 140	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was performing touch-and-go landings and had just lifted off to climb on the runway heading when the engine abruptly lost power at 150 feet above ground level. The pilot attempted to execute a turn and lower the nose to maintain airspeed. The engine was faltering and producing partial power, then cycling and producing no power. The pilot did not have sufficient altitude to make the runway and the airplane nosed over and came to rest in a marsh located near the runway. Examination of the engine found that the right magneto to engine timing was 17 degrees before top dead center of cylinder number one. The Lycoming engine data plate specifies that the engine to magneto timing be set at 25 degrees. The left magneto was inoperative and further investigation found that the primary coil circuit was internally shorted. Review of the maintenance records disclosed that the last annual inspection was accomplished on May 5, 1998, about 40 hours prior to the accident. No entries were found detailing maintenance on the magnetos after the annual.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to an internal left magneto coil primary circuit short. Factors were insufficient altitude and inadequate terrain to make an emergency landing.

Findings

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

Findings
1. (C) IGNITION SYSTEM,MAGNETO - SHORTED
2. (C) IGNITION SYSTEM,MAGNETO - TIMING IMPROPER

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings
3. ALTITUDE - INADEQUATE

Occurrence #3: NOSE OVER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
4. TERRAIN CONDITION - SOFT

Factual Information

On January 3, 1999, at 1627 hours Pacific standard time, a Cessna 140, N3585V, nosed over and came to rest inverted in a marsh following a touch-and-go landing attempt at the Santa Barbara, California, airport. The airplane sustained substantial damage, and the commercial pilot/owner and his passenger received minor injuries. The flight was being flown under CFR Part 91 when the accident occurred. The personal flight originated in Santa Paula, California, at 1550, and a flight plan was not filed for the flight. Visual meteorological conditions prevailed at the time of the accident.

The pilot reported that he was cleared for touch-and-go's on runway 15L. He stated he had just lifted off and was proceeding to climb on the runway heading when the engine power "abruptly reduced to no power" at 150 feet agl. He said he executed a gradual turn to the right, and lowered the nose to maintain forward airspeed. He said that the engine was faltering and producing partial power, and then no power. He said the airplane struck the ground with a slight nose low attitude.

The airplane was removed from the site and relocated to a nearby aircraft wreckage yard. At the request of the Safety Board, the wreckage was examined under the supervision of a Van Nuys, California Flight Standards District Office aviation inspector and a Textron Lycoming engine representative. According to the Textron Lycoming engine representative, the engine did not display any evidence of premishap catastrophic mechanical malfunction or fire.

The bottom spark plugs were removed and examined by the engine representative. He noted that the spark plug electrodes were undamaged from any foreign object ingestion. The crankshaft was rotated by hand utilizing the propeller, and was free and easy to rotate in both directions. Thumb compression was observed in proper order on all four cylinders.

The right magneto was found securely clamped. The magneto to engine timing was observed at 17 degrees before top dead center (BTDC) of cylinder number one. The Lycoming engine data plate specifies the engine to magneto timing be at 25 degrees BTDC.

The left magneto, S4LN-21, 10-51360-37, s/n 0010469 was found securely clamped. The impulse coupling was heard clicking during rotation of the crankshaft. During the magneto to engine timing check, the timing light would not illuminate on the syncrophaser during rotation of the crankshaft. The magneto to engine timing could not be ascertained. The magneto was removed for further examination. The drive was observed to be intact and properly saftied. The contact assembly (points) was undamaged and was observed to operate normally during hand rotation of the drive. Further examination of the magneto coil revealed that the primary circuit was internally shorted. A complete copy of the Textron Lycoming report is appended to this report.

Review of the maintenance records disclosed that the last annual inspection was accomplished on May 5, 1998, about 40 hours prior to the accident. No entries were found detailing maintenance on the magnetos after the annual.

The wreckage was released to the registered owner at the conclusion of the engine examination on March 1, 1999.

Pilot Information

Certificate:	Commercial	**Age:**	51,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	August 28, 1997
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1044 hours (Total, all aircraft), 800 hours (Total, this make and model), 982 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N3585V
Model/Series:	140 140	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	14750
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	May 5, 1998 Annual	**Certified Max Gross Wt.:**	1450 lbs
Time Since Last Inspection:	40 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	817 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed	**Engine Model/Series:**	O-235-C1
Registered Owner:	RUSSELL T. EVANS	**Rated Power:**	108 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SBA ,10 ft msl	**Distance from Accident Site:**	
Observation Time:	16:39 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	18°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SANTA PAULA , CA (SZP)	**Type of Flight Plan Filed:**	None
Destination:	(SBA)	**Type of Clearance:**	VFR;VFLF
Departure Time:	15:50 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	SANTA BARBARA AIRPORT SBA	**Runway Surface Type:**	Asphalt
Airport Elevation:	10 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15L	**IFR Approach:**	None
Runway Length/Width:	4179 ft / 75 ft	**VFR Approach/Landing:**	Touch and go

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	Childress, Deborah
Additional Participating Persons:	JOEL HARRIS; VAN NUYS , CA MARK PLATT; VAN NUYS , CA
Original Publish Date:	June 23, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45561