National Transportation Safety Board
Aviation Accident Final Report

Location:	Boulder City, NV	**Accident Number:**	LAX01LA231
Date & Time:	07/01/2001, 0705 PDT	**Registration:**	N737SH
Aircraft:	Cessna 172N	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	4 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane nosed over during a forced landing following a loss of engine power while in cruise flight. The engine lost power 2 days prior to the accident due to an internal magneto timing problem. The magneto timing was reset and the airplane was returned to service. A post accident examination of the engine revealed the magneto contact points would not open. The magneto was retimed and found to operate normally. According to the maintenance records, a 100-hour inspection took place 3.1 hours prior to the accident. The earlier magneto maintenance adjustment took place at an unknown time between the 100-hour inspection and the accident flight.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the loss of engine power while in cruise flight due to the mechanic's improper magneto timing.

Findings

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

Findings
1. (C) IGNITION SYSTEM,IGNITION POINTS - NOT OPERATING
2. (C) MAINTENANCE,ADJUSTMENT - IMPROPER - COMPANY MAINTENANCE PERSONNEL

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings
3. TERRAIN CONDITION - SOFT

Occurrence #4: NOSE OVER
Phase of Operation: EMERGENCY LANDING

Factual Information

On July 1, 2001, at 0705 Pacific daylight time a Cessna 172N single engine airplane, N737SH, nosed over during a forced landing near Boulder City, Nevada. The forced landing was precipitated by a loss of engine power during cruise flight. The private pilot and three passengers were not injured, and the airplane sustained substantial damage. The airplane was registered to a private individual and was operated by Westair Aviation, North Las Vegas, Nevada, under the provisions of 14 CFR Part 91. The personal flight departed Boulder City at 0655, and was destined for North Las Vegas. Visual meteorological conditions prevailed, and a flight plan was not filed.

According to a Federal Aviation Administration (FAA) inspector who responded to the accident site, during the pilot's preflight he had visually estimated 15 gallons of fuel in each tank prior to departure from North Las Vegas earlier that day. A substantial amount of fuel was observed at the accident site. The inspector also stated that the airplane had made a forced landing due to a loss of engine power at Jean, Nevada, on June 29, 2001.

The airplane sustained structural damage to it wings and empennage. The Lycoming O-320-H2AD engine (serial number L-5102-76T) had accumulated 302.2 total hours since its last overhaul.

The airplane was relocated to the facilities of Air Transport, Phoenix, Arizona, where on July 24, 2001, an FAA inspector, along with an investigator from Textron Lycoming, examined the engine. The engine remained attached to the airframe at the engine mount, and appeared relatively undamaged. The top spark plugs were removed, examined, and compared to the Champion Check-A-Plug A-27 chart. The spark plug electrodes were mechanically undamaged and exhibited coloration consistent with normal operation. Thumb compression was confirmed in the proper firing order when the propeller was rotated manually. The dual magneto was found secured to its mounting pad with the distributor cap and wires in place. Both "P" leads were secure in their respective ports. A magneto synchronizer was attached at the magneto "P" leads to check the magneto to engine timing. The magneto timing check indicated the left and right points were not opening. The magneto distributor cap was removed to provide a visual examination of the contact assemblies. During manual rotation of the propeller, the points were examined and found not to be opening as the magneto cam rotated.

The magneto (part number D4RN-3000, serial number 1268803G) was removed from the engine and was taken to Homes Aviation, Chandler, Arizona, for further examination. It was confirmed that the points would not open during cam rotation. It was also placed on a test bench and no sparks were noted through the ignition harness. The facility then reset the contacts and timing and retested the magneto. The magneto was found operationally functional after the contact and timing work.

A review of the maintenance records revealed the engine underwent its last 100-hour inspection on June 28, 2001, at an airplane total time of 7,270.5 hours, and 299.1 hours since the engine overhaul The inspection occurred 3 operating hours prior to the accident. On June 30, 2001, a maintenance entry indicates the magneto internal timing was reset in accordance with the manufacturer's maintenance manual. The airplane and engine total time was not indicated with this maintenance action. At the time of the accident, the airplane had accumulated a total time of 7,273.6 hours.

Pilot Information

Certificate:	Private	**Age:**	26, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	12/02/1999
Occupational Pilot:		**Last Flight Review or Equivalent:**	09/07/2000
Flight Time:	92 hours (Total, all aircraft), 10 hours (Total, this make and model), 39 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N737SH
Model/Series:	172N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	172-69636
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	06/28/2001, 100 Hour	**Certified Max Gross Wt.:**	2300 lbs
Time Since Last Inspection:	3.1 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	7273.6 Hours at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-H2AD
Registered Owner:	Henry Schlesinger	**Rated Power:**	150 hp
Operator:	Westair Aviation	**Operating Certificate(s) Held:**	None
Operator Does Business As:	Westair Aviation	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	KLAS, 2205 ft msl	**Distance from Accident Site:**	19 Nautical Miles
Observation Time:	0656 PDT	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Few / 10000 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	Broken / 20000 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.89 inches Hg	**Temperature/Dew Point:**	32°C / 4°C
Precipitation and Obscuration:			
Departure Point:	Boulder City, NV (61B)	**Type of Flight Plan Filed:**	None
Destination:	North Las Vegas, NV (VGT)	**Type of Clearance:**	None
Departure Time:	0655 PDT	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	36.033333, -114.933333

Administrative Information

Investigator In Charge (IIC):	George E Petterson	**Report Date:**	04/28/2004
Additional Participating Persons:	Tom McWorter; Federal Aviation Administration; Las Vegas, NV Mark W Platt; Textron Lycoming; Van Nuys, CA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		