



National Transportation Safety Board Aviation Accident Final Report

Location:	Green Valley, AZ	Accident Number:	SEA08LA001
Date & Time:	10/02/2007, 1030 MST	Registration:	N6291D
Aircraft:	Cessna 172N	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None

Flight Conducted Under: Part 91: General Aviation - Instructional

Analysis

During cruise flight, the engine suddenly started to run rough and backfire periodically. The pilot attempted to troubleshoot the rough-running engine without success and decided to initiate a precautionary landing to a nearby road. During the landing roll, the airplane struck two road signs and a barbwire fence, substantially damaging the left and right wings. Examination of the engine revealed that the number three cylinder exhaust rocker arm was disconnected from the cylinder due to the rocker arm hold down nut backing off.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to the separation of the number three cylinder exhaust rocker arm.

Findings

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

Findings

1. (C) ENGINE ASSEMBLY,ROCKER ARM/TAPPET - SEPARATION

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

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings

2. (F) OBJECT - SIGN
3. (F) OBJECT - FENCE

Factual Information

On October 2, 2007, at 1030 mountain standard time, a Cessna 172N, N6291D, sustained substantial damage during a precautionary landing subsequent to a partial loss of engine power near Green Valley, Arizona. The two occupants, the private pilot and passenger, were not injured. The aircraft was operated as a visual flight rules (VFR) personal flight under the provisions of Title 14, CFR Part 91. The airplane was owned by Tucson Aeroservice Center of Marina, Arizona. Visual meteorological conditions prevailed and no flight plan was filed. The local flight originated from Marana Regional Airport, Tucson, Arizona, approximately 30 minutes prior to the accident.

In a written statement, the pilot reported that during cruise flight, the engine began to run rough and periodically backfire. The pilot attempted to troubleshoot the rough running engine without success and initiate a precautionary landing to a nearby road. The airplane struck two road signs and a barbwire fence during the landing rollout.

Examination of the engine, by the Operator and a Federal Aviation Administration (FAA) Inspector, revealed that the number three cylinder exhaust rocker arm was disconnected from the cylinder due to the rocker arm hold down nut backing off. Review of aircraft maintenance records showed that 13.4 hours prior to the accident, the number one and three cylinders were removed to facilitate repairs to the cylinder hold down studs.

Pilot Information

Certificate:	Private	Age:	50, 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 With Waivers/Limitations	Last Medical Exam:	02/01/2006
Occupational Pilot:		Last Flight Review or Equivalent:	09/01/2007
Flight Time:	300 hours (Total, all aircraft), 250 hours (Total, this make and model), 250 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Cessna	Registration:	N6291D
Model/Series:	172N	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	17272697
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	09/01/2007, 100 Hour	Certified Max Gross Wt.:	2300 lbs
Time Since Last Inspection:	13.3 Hours	Engines:	1 Reciprocating
Airframe Total Time:	3958.4 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-320-H2AD
Registered Owner:	Tucson Aeroservice Center Inc	Rated Power:	160 hp
Operator:	Georg Domogala	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Scattered	Temperature/Dew Point:	25° C / 12° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Light and Variable, Variable	Visibility (RVR):	
Altimeter Setting:	29.96 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	MARANA, AZ (AVQ)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1000 MST	Type of Airspace:	

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		

Administrative Information

Investigator In Charge (IIC): Dennis J Hogenson **Adopted Date:** 03/31/2008

Additional Participating Persons: Chris Clark; Federal Aviation Administration; Scottsdale, AZ

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.nts.gov/pubdms/>.

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