



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Chandler, AZ	<b>Accident Number:</b>	WPR11LA246
<b>Date &amp; Time:</b>	06/02/2011, 2000 MST	<b>Registration:</b>	N101MY
<b>Aircraft:</b>	SCOTTISH AVIATION SERIES 100 MDL 101	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The pilot reported that the engine surged and sustained a partial loss of engine power during a local night flight. He attempted to restore engine power, but was unsuccessful and made a forced landing to an open field where the airplane impacted a ditch, collapsing the landing gear and bending the firewall during the landing roll. The pilot said that the entire flight was performed with the fuel selector on the "BOTH" position and that when the engine first began to surge, the fuel gauges registered a quarter of capacity in each tank.

The fuel system consisted of inner and outer interconnected tanks in each wing, which supplied fuel through a non-return valve to a fuel selector, a filter, and a booster pump grouped together near the front left seat, then through the engine-driven pump to the injector unit. Unusable fuel in each wing is 0.5 gallons. Airplane recovery personnel said that no fuel was found in the left wing tanks and about 8 gallons of fuel were found in the right wing tanks, although the gear collapse may have allowed fuel to migrate from the high wing to the low wing. The airplane was examined and no fuel system discrepancies were found. The engine was test run in the airframe and it started and ran normally.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power during cruise flight for reasons that could not be determined because postaccident examination did not reveal any anomalies that would have precluded normal operation.

## Findings

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Not determined	Not determined - Unknown/Not determined (Cause)
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## Factual Information

On June 2, 2011, about 2000 mountain standard time, a Scottish Aviation, Series 100 MDL 101, N101MY, experienced a partial loss of engine power during cruise flight about 4 miles east of Chandler, Arizona. The pilot made a forced landing in an open field. During rollout, the airplane's nose gear collapsed upon overrunning a ditch in the soft terrain, and the firewall was bent. The airplane was substantially damaged. Neither the airline transport pilot nor passenger was injured. The airplane was owned by the pilot, and it was operated under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed. No flight plan was filed for the local area personal flight that originated from Chandler about 1915.

The pilot reported to the National Transportation Safety Board investigator that the airplane was equipped with two interconnected fuel tanks in each wing. When the engine surged and power was lost, both of the wings' fuel tank gauges registered about 1/4-full. The pilot stated that he attempted to reacquire engine power, but he was not successful. As the airplane's altitude decreased, he redirected his attention to executing the forced landing. The pilot said that the entire flight was performed with the fuel selector on the "BOTH" position.

Airplane recovery personnel reported to the Safety Board investigator that no fuel was found in the left wing tanks. About 8 gallons of fuel were found in the right wing tanks.

According to the Pilot's Operating Handbook, the fuel system consists of an inner and outer interconnected tank in each wing supplying fuel through a non-return valve to a fuel selector, a filter and a booster pump grouped together beneath the floor in front of the left hand front seat and thence through the engine-driven pump to the injector unit. The fuel selector is marked FUEL. OFF-L (ie, Left tank) - BOTH - R (ie, Right tank). Unusable fuel on either wing is 0.5 gallons.

On June 15, the airplane was examined by Federal Aviation Administration inspectors, who reported that no fuel system discrepancies were found. The engine was test run in the airframe and it started and ran normally.

## History of Flight

Approach	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-landing roll	Nose over/nose down

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	64, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	Seatbelt
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Without Waivers/Limitations	<b>Last Medical Exam:</b>	04/12/2010
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	02/21/2011
<b>Flight Time:</b>	28000 hours (Total, all aircraft), 300 hours (Total, this make and model), 20000 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	SCOTTISH AVIATION	<b>Registration:</b>	N101MY
<b>Model/Series:</b>	SERIES 100 MDL 101	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Experimental; Aerobatic	<b>Serial Number:</b>	166
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	08/14/2010, Conditional	<b>Certified Max Gross Wt.:</b>	2350 lbs
<b>Time Since Last Inspection:</b>	13 Hours	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4815 Hours	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-360-A1B6
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	200 hp
<b>Operator:</b>	On file	<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Condition of Light:	Dusk
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Light and Variable, Variable	Visibility (RVR):	
Altimeter Setting:		Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; In the Vicinity - No Precipitation		
Departure Point:	Chandler, AZ (CHD)	Type of Flight Plan Filed:	None
Destination:	Chandler, AZ (CHD)	Type of Clearance:	None
Departure Time:	1915 MST	Type of Airspace:	

## Airport Information

Airport:	Chandler Municipal (CHD)	Runway Surface Type:	
Airport Elevation:	1243 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

## 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):	Wayne R Pollack	Adopted Date:	01/15/2013
Additional Participating Persons:	Bill Sapp; Federal Aviation Administration; Scottsdale, AZ		
Publish Date:	01/15/2013		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=79294">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=79294</a>		

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