Aviation Investigation Final Report

Location:	Riverside, California	**Accident Number:**	LAX07LA031
Date & Time:	November 12, 2006, 12:28 Local	**Registration:**	N5348K
Aircraft:	Ryan Navion B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During the takeoff climb the engine lost power and the pilot made a forced landing in an open field. About 50-100 feet agl, with no remaining runway, the engine began to run rough. Shortly thereafter the engine lost all power. The pilot stated that he had already raised the landing gear before the engine began to run rough. He lowered the landing gear and made the forced landing in the field. The landing gear was only partially extended when the airplane touched down. Post accident examination revealed that air was leaking into the fuel system through worn seals in the fuel selector valve and gascolator. The Type Certificate Holder for the airplane issued Service Bulletin (SB) 101A, which recommended inspection of the fuel selector valve for leaks that allow air intrusion. An annual inspection had taken place 4 hours prior to the accident. Inspection of the airframe logbooks revealed no record of SB 101A having been performed.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A leak in the fuel selector valve and gascolator that resulted in fuel starvation on takeoff due to air leakage into the fuel system. A contributing factor in the accident was the inadequate annual inspection performed by other maintenance personnel.

Findings

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

Findings
1. (C) FUEL SYSTEM,SELECTOR/VALVE - WORN
2. (C) FUEL SYSTEM,GASCOLATOR - LEAK
3. (F) MAINTENANCE,ANNUAL INSPECTION - INADEQUATE - OTHER MAINTENANCE PERSONNEL
4. MAINTENANCE,SERVICE BULLETIN/LETTER - NOT COMPLIED WITH - OTHER MAINTENANCE PERSONNEL

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

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

Findings
5. TERRAIN CONDITION - OPEN FIELD
6. LANDING GEAR - COLLAPSED

Factual Information

On November 12, 2006, at 1228 Pacific standard time, a Ryan Navion B, N5348K, experienced a loss of engine power during the takeoff initial climb from runway 6 and made a forced landing in an open field near Flabob Airport (RIR), Riverside, California. The commercial pilot/owner operated the airplane under the provisions of 14 CFR Part 91 as a personal flight. The airplane sustained structural damage to the fuselage and wings. The pilot and a private pilot passenger were not injured. Visual meteorological conditions prevailed for the local area flight, and no flight plan had been filed. The flight was destined for El Monte Airport (EMT), El Monte, California.

The National Transportation Safety Board investigator-in-charge (IIC) interviewed the pilot. The pilot reported that the day before the accident he had flown from EMT to Corona Municipal Airport (AJO), Corona, California, and refueled the airplane. He then flew back to EMT. On the day of the accident, they had departed for EMT earlier that morning to attend an airshow at RIR. There were no problems encountered with the flight the day before or the earlier flight to RIR.

The pilot reported that the run-up at RIR for the return flight to EMT was normal. About 50-100 feet above ground level (agl), with no remaining runway, the engine started to sputter. The pilot stated that he had already retracted the landing gear before the engine began to run rough. Shortly after the engine began to sputter it lost all power; the pilot placed the landing gear in the down position and noted that they were losing altitude. He chose an open field to make the emergency landing, and reported that the landing gear was only partially extended when the airplane touched down in the open field. The landing gear collapsed after touchdown, which caused damage to the wings and fuselage; the airplane came to rest upright and was lying on one of its wings. The propeller also struck the ground.

A Federal Aviation Administration inspector performed a post accident examination of the airplane on December 5, 2006. The examination revealed that an excessive amount of air was leaking into the fuel system through worn seals in fuel selector valve. The investigator also observed air leaking into the fuel system through the gascolator gasket.

Service Bulletin No. 101A, dated August 23, 2005, was issued by the type certificate holder, Sierra Hotel Aero, Inc., regarding the fuel system fuel selector valve, serial number NAV-4-002 thru NAV-4-2561. The Service Bulletin states:

"Previous design has a history of wear, causing internal leakage, valve step air ingestion and improper valve selector positioning. Internal leakage of the valve is suspected in several cases resulting in inadvertent fuel transfer between main and auxiliary tanks. Improper valve selector positioning and air ingestion has been implicated in several crashes - some fatal. The

improper positioning is more likely to occur as detents in the original body wear, making positive tank selection less obvious."

According to the airframe logbook, the airplane had a total time of 4,839.2 hours. An annual inspection had been completed on November 1, 2006, and the airplane had flown approximately 4 hours since the inspection. There was no indication in the logbook that the service bulletin had been performed.

ADDITIONAL INFORMATION

Sierra Hotel Aero, Inc., issued mandatory Service Bulletin No. 106A on May 1, 2007, which addressed an inspection of the fuel selector valve at every annual inspection unless terminating action had been accomplished through compliance of Navion Service Bulletin No. 101A. (http://www.navion.com/servicebulletins/SB%20106A.pdf)

Pilot Information

Certificate:	Commercial	**Age:**	47,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	October 1, 2006
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 1, 2006
Flight Time:	1726 hours (Total, all aircraft), 1359 hours (Total, this make and model), 1699 hours (Pilot In Command, all aircraft), 18 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Information

Certificate:	Private	**Age:**	52,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3	**Last FAA Medical Exam:**	June 1, 2006
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Ryan	**Registration:**	N5348K
Model/Series:	Navion B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	NAV-4-2248B
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	November 1, 2006 Annual	**Certified Max Gross Wt.:**	2850 lbs
Time Since Last Inspection:	4 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4839.2 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	GO-480
Registered Owner:	Gabriel A Lopez, Trustee	**Rated Power:**	295 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:	RIV,1535 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	11:55 Local	**Direction from Accident Site:**	131°
Lowest Cloud Condition:	Clear	**Visibility**	30 miles
Lowest Ceiling:	Broken / 20000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	21°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Riverside, CA (RIR)	**Type of Flight Plan Filed:**	None
Destination:	EL MONTE, CA (EMT)	**Type of Clearance:**	None
Departure Time:	12:17 Local	**Type of Airspace:**	

Airport Information

Airport:	FLABOB RIR	**Runway Surface Type:**	Asphalt
Airport Elevation:	764 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	06	**IFR Approach:**	None
Runway Length/Width:	3200 ft / 50 ft	**VFR Approach/Landing:**	None

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:**	38.039611,-121.350502(est)

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Jon Weston; Federal Aviation Administration ; Riverside, CA Christopher Gardener; Sierra Hotel Aero, Inc.; South St. Paul, MN
Original Publish Date:	December 20, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=64860