



National Transportation Safety Board Aviation Accident Data Summary

Location:	Kalispell, MT	Accident Number:	SEA05LA189
Date & Time:	09/01/2005, 2030 MDT	Registration:	N12QJ
Aircraft:	Ballhagen/Shyrock Q-2	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

Just prior to the flight, the pilot, who was five hours into a ten hour experimental aircraft flight test regimen, readjusted the valve lash in the Subaru engine that powered the subject aircraft. At the beginning of the flight, he took off and climbed to about 1,000 feet above ground level (agl). After he rolled out on downwind, his ground crew contacted him on the aircraft radio to advise him that the aircraft's engine appeared to have been missing and running rough during the takeoff and initial climbout. About the time that the pilot received the radio transmission, the aircraft's engine quit producing power, and he decided to continue on around the pattern in order to execute a forced landing on the runway from which he had departed. As he turned from base to final, the pilot realized that he might not be able to stretch the glide to the end of the runway, but he elected to attempt to do so. When the aircraft descended to about 25 feet agl, its airspeed slowed to the point where it stall/mushed into the terrain about one-quarter of a mile off the end of the runway. In a post accident inspection, it was determined that the valve clearance in the engine had been set with a gap so small that when the internal engine temperature began to increase the exhaust valves in each cylinder did not completely close. Without the closure of the valves, sufficient compression was not created in the cylinders, and the engine stopped producing power.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot/owner's improper setting of the engine's valve clearance, leading to the failure of the exhaust valves to fully close and a total loss of power while on a VFR downwind, and the pilot/owner's failure to maintain sufficient airspeed as he tried to extend his power-off glide to the approach end of the runway.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings

1. (C) ENGINE ASSEMBLY, VALVE, EXHAUST - OPEN
2. (C) MAINTENANCE, ADJUSTMENT - IMPROPER USE OF - OWNER/PILOT MECHANIC

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings

3. STALL/MUSH - INADVERTENT - PILOT IN COMMAND
4. (C) AIRSPEED(VREF) - NOT MAINTAINED - PILOT IN COMMAND
5. TERRAIN CONDITION - GROUND

Pilot Information

Certificate:	Private	Age:	57
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	None
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:	1056 hours (Total, all aircraft), 220 hours (Total, this make and model), 1010 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Ballhagen/Shyrock	Registration:	N12QJ
Model/Series:	Q-2	Engines:	1 Reciprocating
Operator:	David G. Hudak	Engine Manufacturer:	Subaru
Operating Certificate(s) Held:	None	Engine Model/Series:	EA81-1.8L
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Weather Information Source:	Pilot
Lowest Ceiling:	None	Wind Speed/Gusts, Direction:	5 knots / , 340°
Temperature:	24° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kalispell, MT (MT95)	Destination:	(MT95)

Airport Information

Airport:	Flathead Sky Ranch (MT95)	Runway Surface Type:	
Runway Used:	NA	Runway Surface Condition:	
Runway Length/Width:			

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	48.128333, -114.348611		

Administrative Information

Investigator In Charge (IIC):	Orrin K Anderson	Adopted Date:	02/28/2006
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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