Aviation Investigation Final Report

Location:	Orofino, Idaho	**Accident Number:**	SEA02LA071
Date & Time:	April 21, 2002, 10:30 Local	**Registration:**	N56GB
Aircraft:	Brunger Osprey II	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After performing on-ground test runs of the recently purchased experimental amphibious aircraft, the pilot took off in order to perform maneuvers that would help him become familiar with the feel and performance of the airplane. After performing maneuvers for about 55 minutes, the pilot established the aircraft on a five-mile straight-in final approach for a full-stop landing. As he reduced the power below 2,000 rpm, he applied full carburetor heat. About one mile from the end of the runway, the engine started to run rough and then quit. During the attempted forced landing, the pilot, who does not hold a seaplane rating, flared too high, and while he was attempting to correct for the misjudged height, one of the aircraft's wings impacted the water and sustained substantial damage. A post-accident inspection of the engine revealed that the carburetor heat warm air collection shroud was approximately half the size of the equivalent shroud used on Lycoming O-320 series engines mounted on certified aircraft. In addition is was discovered that the carburetor heat box butterfly valve fit loosely and did not have sealing material on its edge. The inspection also revealed that a number of coils of the support wire inside that scat tubing that directs hot air to the carburetor throat had collapsed. Using the FAA/DOT Carburetor Icing Probability Chart, it was determined that at the time of the accident, the aircraft was operating in ambient conditions that were conducive to moderate icing at cruise power and serious icing a glide power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The aircraft's inadequate carburetor heat air box system, leading to an accumulation of ice in the carburetor throat during final approach to landing. Factors include carburetor icing conditions, the pilot's failure to correctly judge the height of the aircraft above the landing surface, and the pilot's total lack of experience in executing water landings.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings
1. (C) FUEL SYSTEM,CARBURETOR - ICE
2. (C) CARBURETOR HEAT,AIR BOX - INADEQUATE
3. (F) WEATHER CONDITION - ICING CONDITIONS

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. (F) FLARE - MISJUDGED - PILOT IN COMMAND
5. (F) LACK OF TOTAL EXPERIENCE IN TYPE OPERATION - PILOT IN COMMAND

Factual Information

On April 21, 2002, approximately 1030 Pacific daylight time, an experimental Osprey II amphibious airplane, N56GB, sustained substantial damage during an attempted forced landing on the Clearwater River, near Orofino, Idaho. The commercial pilot, who was the sole occupant, was not injured, but the aircraft, which was owned and operated by the pilot, sustained substantial damage. The 14 CFR Part 91 pleasure flight, which departed Orofino Municipal Airport about 60 minutes earlier, was being operated in visual meteorological conditions. No flight plan had been filed. The ELT, which was activated by the impact, was turned off after the aircraft was recovered.

According to the pilot, he recently purchased the experimental aircraft, which had accumulated about 80 hours total time since it was manufactured, and this was his first flight in it as sole manipulator of the controls. He performed high-speed taxi tests the previous day, and also prior to takeoff on the day of the accident. After departing the airport, he proceeded to an area about five miles to the west, where he practiced various flight maneuvers in order to become comfortable with the aircraft's feel and response. After completing these maneuvers, he established a straight-in descending final approach to the easterly runway. As he reduced the engine power below 2,000 rpm, he applied full carburetor heat. About one mile from the airport, the aircraft's engine began to run rough, and soon thereafter stopped producing power. At that point, the pilot turned on the electric fuel pump, checked the mixture, and tried pumping the throttle. Being unable to restart the engine, and believing that he could not stretch his glide to the end of the runway, he attempted a forced landing on the nearby river. During the landing, the pilot, who does not hold a seaplane rating, flared too high and during his attempt to correct for the misjudged height, one wing impacted the surface of the water.

An FAA Airworthiness Inspector conducted a post-accident inspection of the engine and its subsystems, and discovered that the aircraft's carburetor heat system was inadequate to supply sufficient warm air to the carburetor throat. In addition to the fact that the hot air collection muff was approximately half the size of those found on type-certificated aircraft with the same series Lycoming O-320 engine, the carburetor heat box butterfly valve fit loosely and did not have sealing material on the edge that separated cold air from hot. The inspector also found that some of the support wire in the scat tubing that delivered the hot air to the carburetor throat had collapsed.

It was also determined that according to the FAA/DOT Carburetor Icing Probability Chart, the ambient conditions at the time of the accident were conducive to moderate icing at cruise power and severe icing at glide power.

Pilot Information

Certificate:	Commercial	**Age:**	53,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	April 1, 2001
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	April 8, 2001
Flight Time:	700 hours (Total, all aircraft), 2 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Brunger	**Registration:**	N56GB
Model/Series:	Osprey II	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	56
Landing Gear Type:	Retractable - Tricycle; Amphibian	**Seats:**	2
Date/Type of Last Inspection:	October 13, 2001 Condition	**Certified Max Gross Wt.:**	1570 lbs
Time Since Last Inspection:	16 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	80 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-E3D
Registered Owner:	David K. Parker	**Rated Power:**	150 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:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 10000 ft AGL	**Visibility**	20 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Orofino, ID (S68)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	09:30 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	46.480548,-116.120964(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Grant Web; FAA FSDO
Original Publish Date:	October 24, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=54571