



# Aviation Investigation Final Report

<b>Location:</b>	Bozeman, Montana	<b>Accident Number:</b>	SEA01LA058
<b>Date &amp; Time:</b>	March 4, 2001, 13:00 Local	<b>Registration:</b>	N1635M
<b>Aircraft:</b>	Avia Stroitel AC-5m	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

Prior to takeoff in a powered glider, the pilot opened and closed the canopy a number of times in order to communicate with members of his ground crew. When he was given clearance for departure, he closed the canopy one last time, but inadvertently did not get the latching mechanism fully engaged. After liftoff, as the aircraft climbed to about 30 feet above the runway, the canopy unexpectedly swung open. The pilot's attention was then momentarily diverted to the open canopy, and when he looked back toward the front of the aircraft, it was just about to impact the surface of the runway in a nose-down attitude. It was later determined that he had not reviewed his checklist just prior to departure to ensure that he had accomplished all critical items.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper remedial action upon experiencing the unexpected opening of the aircraft's canopy during the initial part of the takeoff climb. Factors include his attention being diverted to the open canopy, his failure to use a checklist to ensure he did not miss any critical pre-takeoff actions, his failure to lock the canopy, and the unintentional opening of the canopy after liftoff.

## Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: TAKEOFF - INITIAL CLIMB

#### Findings

1. (C) REMEDIAL ACTION - IMPROPER - PILOT IN COMMAND
2. (C) DIVERTED ATTENTION - PILOT IN COMMAND
3. (F) CHECKLIST - NOT USED - PILOT IN COMMAND
4. (F) WINDOW,CANOPY - NOT SECURED
5. (F) WINDOW,CANOPY - OPEN

## Factual Information

On March 4, 2001, approximately 1300 mountain standard time, an experimental/exhibition Avia Stroitel AC-5m motorized glider, N1635M, impacted the runway during takeoff from Gallatin Field, Bozeman, Montana. The commercial pilot, who was the sole occupant, received serious injuries, and the aircraft, which was owned and operated by Russia Sailplanes, Inc., sustained substantial damage. The local 14 CFR Part 91 flight was being operated in visual meteorological conditions. No flight plan had been filed.

According to the pilot, this was the first flight of this make and model aircraft within the United States. Witnesses reported that when the aircraft, which was taking off under its own power, reached about 30 feet above the runway surface, the canopy flipped open. Soon after the canopy came open, the aircraft pitched up and then nosed into the runway surface. According to the pilot, he opened and closed the canopy a number of times while waiting for departure in order to communicate with his ground crew. When he closed the canopy the last time, he did not get it fully latched, and a couple of seconds after the aircraft lifted off, the canopy was sucked open. The pilot's attention was then momentarily diverted to the canopy, which rotates to the side upon opening. When he again looked back straight ahead, the aircraft was just about to impact the runway in a nose-down attitude. It was later determined that the pilot had not reviewed his checklist just prior to departure in order to ensure that he had not missed any critical items.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	54, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Single
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Glider	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	August 1, 2000
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	August 23, 2000
<b>Flight Time:</b>	2400 hours (Total, all aircraft), 0 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Avia Stroitel	<b>Registration:</b>	N1635M
<b>Model/Series:</b>	AC-5m	<b>Aircraft Category:</b>	Glider
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	003
<b>Landing Gear Type:</b>		<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	Condition	<b>Certified Max Gross Wt.:</b>	660 lbs
<b>Time Since Last Inspection:</b>	5 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	5 Hrs at time of accident	<b>Engine Manufacturer:</b>	Zanzottera
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	MZ-35
<b>Registered Owner:</b>	Bill Ard	<b>Rated Power:</b>	27 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	Russia Sailplanes	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	0°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Bozeman, MT	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	13:00 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	Gallatin Field BZN	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	4480 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	30	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	9500 ft / 150 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious	<b>Latitude, Longitude:</b>	45.770256,-110.930267(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Anderson, Orrin
<b>Additional Participating Persons:</b>	Robert C Speicher; Helena FSDO
<b>Original Publish Date:</b>	July 30, 2001
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=51859">https://data.ntsb.gov/Docket?ProjectID=51859</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).