



National Transportation Safety Board Aviation Accident Final Report

Location:	PAUL, ID	Accident Number:	SEA99LA079
Date & Time:	06/01/1999, 1200 MDT	Registration:	N1665S
Aircraft:	Snow S2C	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot reported that after the airplane lifted off, it was not flying as well as it had on the previous six flights that morning. The pilot immediately opened the emergency dump which also controls the rate of application. The pilot reported that as he flipped the metal tab out of the way of the dump handle, the tab would not flip clear of the handle because of interference with the seat frame. The pilot was aware of this problem, however, he stated that he could hold the stop up with one finger and force the handle around the stop. The airplane continued to fly in ground effect as the pilot continued to try to dump the load. About one mile off the end of the airstrip, the airplane collided with a slight rise in the terrain. The pilot stated that he thought that he could have cleared the rise if he could have dumped the load more quickly. The type certificate data sheet for this aircraft indicates a gross weight of 4,400 pounds. The pilot reported that he was not aware of the requirement, and had not demonstrated the maximum set gross weight for the conditions to the FAA per Part 137 certification. The pilot reported that he estimated the weight of the load based on visual volume that had been previously weighed (approximately 1,000 to 1,100 pounds). The density altitude was estimated and determined to be approximately 5,684 feet at the time of the accident which utilized the pilot's estimated temperature. The weather reporting facility closest to the accident site reported a temperature 10 degrees warmer than the pilot's estimate. Utilizing the weather reporting facility, the density altitude would have been about 6,277 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inaccurate weight and balance calculations, and his delay in jettisoning the load which resulted in his failure to clear rising terrain. Contributing to the accident was the high density altitude, and the pilot's intentional operation with known deficiencies in equipment.

Findings

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

Findings

1. (C) AIRCRAFT WEIGHT AND BALANCE - INACCURATE - PILOT IN COMMAND
2. (C) LOAD JETTISON - DELAYED - PILOT IN COMMAND
3. (C) ALTITUDE - INADEQUATE - PILOT IN COMMAND
4. TERRAIN CONDITION - RISING
5. (F) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - INTENTIONAL - PILOT IN COMMAND
6. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE

Factual Information

On June 1, 1999, at 1200 mountain daylight time, a Snow S2C, N1665S, registered to and operated by Mustang Aviation as a 14 CFR Part 137, aerial application flight, collided with the terrain shortly after takeoff from a private airstrip near Paul, Idaho. Visual meteorological conditions prevailed at the time and no flight plan was filed for the local flight. The airplane was substantially damaged and the commercial pilot, the sole occupant, was not injured.

During a telephone interview and subsequent written statement, the pilot reported that this was the seventh flight of the day, and that the load (approximately 1,000 to 1,100 pounds of dry fertilizer), was based on visual volume that had been previously weighed the day before. The pilot reported that he had flown 18 flights the day before under similar temperature conditions (62 degrees F) and load volume without incident.

The pilot reported that after the airplane lifted off, he felt that the airplane was not flying as well as it had on the previous flights that day. The pilot stated that he immediately opened the emergency dump which also controls the rate of application. The pilot reported that as he flipped the metal tab out of the way of the dump handle, the tab would not flip clear of the handle because of interference with the seat frame. The pilot reported that at the rate that was set for the application, it would take about three miles to empty the hopper. The pilot reported that he was aware of this problem, but he could hold the stop up with one finger and force the handle around the stop. The pilot reported that he was flying the airplane in ground effect and trying to move the dump handle around the stop, when the airplane collided with a rise in the terrain. The main landing gear contacted the ground first, followed by the left wing. The main landing gear collapsed and the airplane came to rest 90 degrees from the direction of travel, and about 50 yards from the initial impact point. The accident site was about one mile from the end of the airstrip. The pilot stated that if he could have dumped more of the load more quickly, he probably could have flown over the rising terrain.

The type certificate data sheet for this aircraft's serial number indicates a gross weight of 4,400 pounds. The pilot reported that he was not aware of the requirement, and had not demonstrated the maximum set gross weight for the conditions to the Federal Aviation Administration per Part 137 certification.

A Federal Aviation Administration Inspector from the Boise, Idaho, Flight Standards District Office, responded to the accident site and documented the aircraft's emergency dump system. The inspector reported that the design of the system in the aircraft is different than the manufacturers drawings.

At 1153, the Twin Falls airport, located 36 miles west of Paul, was reporting a temperature of 72 degrees F, and 29.81" Hg. The elevation at Twin Falls is 4,151 feet. Utilizing the temperature and pressure altitude from Twin Falls, the density altitude at Paul would have been approximately 6,277 feet. Utilizing the pilot's estimated temperature of 62 degrees, the density altitude would have been approximately 5,684 feet. The elevation at Paul is 4,300 feet.

Pilot Information

Certificate:	Commercial	Age:	50, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Center
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	11/18/1998
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	456 hours (Total, all aircraft), 20 hours (Total, this make and model), 384 hours (Pilot In Command, all aircraft), 83 hours (Last 90 days, all aircraft), 56 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Snow	Registration:	N1665S
Model/Series:	S2C S2C	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Restricted	Serial Number:	1238C
Landing Gear Type:	Tailwheel	Seats:	
Date/Type of Last Inspection:	01/03/1999, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:	20 Hours	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	R-985
Registered Owner:	SPAULDING AERIAL APPLICATION	Rated Power:	450 hp
Operator:	SPAULDING AERIAL APPLICATION	Operating Certificate(s) Held:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	15 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	17° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1200 MDT	Type of Airspace:	Class G

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
Total Injuries:	1 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	DEBRA J ECKROTE	Report Date:	08/03/2000
Additional Participating Persons:	NICK WEBBER; BOISE, ID		
Publish Date:			
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).