Aviation Investigation Final Report

Location:	Wurtsboro, New York	**Accident Number:**	NYC01FA071
Date & Time:	January 28, 2001, 15:00 Local	**Registration:**	N814CU
Aircraft:	Schempp-Hirth Discus CS	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses reported the glider was on a left base leg to land, in a nose high attitude. Prior to reaching the point where the pilot would normally have turned to final, the glider entered a left turn. During the turn, the angle of bank increased to at least 60 degrees and the nose dropped to about 45 degrees down. The glider impacted the ground nose down, in a descending left turn. No evidence of a pre-existing failure or malfunction was found with the airframe. Bends found in the pushrods of the left wing spoiler and aileron were consistent with the ailerons displaced for a right bank, at the time of impact.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain airspeed, which resulted in an inadvertent stall/spin while on base leg.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - BASE TURN

Findings
1. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
2. STALL/SPIN - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
3. TERRAIN CONDITION - OPEN FIELD

Factual Information

HISTORY OF FLIGHT

On January 28, 2001, a Schempp-Hirth, Discus CS glider, N814CU, was substantially damaged while attempting to land at Wurtsboro Airport, Wurtsboro, New York. The certificated private pilot was fatally injured. Visual meteorological conditions prevailed for the personal flight. No flight plan had been filed for the local flight conducted under 14 CFR Part 91.

According to witnesses, the pilot had flown earlier in the day in a Schweizer 2-33 with a friend for about 1 1/2 hours. During the flight, he noticed that lenticular clouds were building and elected to fly his own glider next. He was towed aloft to 3,000 feet msl (2,500 feet agl), and released. He was next observed to return to the airport area after about 1 1/2 hours of flight.

The pilot performed a high-speed pass down runway 23, and either touched the runway momentarily, or was very close to it. He then pulled up to about 500 feet agl, and entered a left crosswind, followed by a downwind for runway 23. The traffic pattern appeared normal to the observers.

While on base leg, the glider was observed to enter a left turn prior to having reached a position from which the turn to final would normally have been made. The left turn increased in bank angle, the nose dropped and the glider disappeared from view. Some of the witnesses said the glider appeared slow and was in a nose up attitude. The bank angle was estimated to be in excess of 60 degrees, and the nose down attitude at least 45 degrees.

One witness, an experienced glider pilot, thought the maneuver more closely resembled a steep spiral, rather than a spin.

The accident occurred during the hours of daylight at 41 degrees, 36.140 minutes north latitude, and 74 degrees, 27.126 minutes west longitude.

PERSONNEL INFORMATION

The pilot held a private pilot certificate for single engine land airplanes and glider aero tow. His last airman medical certificate from the Federal Aviation Administration (FAA) was issued on June 24, 1987. The pilot did not hold, nor was he required to hold an FAA airman medical certificate to operate a glider.

The pilot's logbook was not recovered and his total flight experience and recency of experience were not determined.

According to the pilot's application for his glider rating on June 30, 1997, he reported his total fight experience as 100 hours in airplanes and 92 hours in gliders. He listed his pilot-in-command flight experience as 75 hours in airplanes and 73 hours in gliders. The pilot's flight experience from the date of the application to the date of the accident was not determined. He was estimated to have accumulated an additional 200 hours for a total flight experience of 400 hours, with 300 hours in gliders.

AIRCRAFT INFORMATION

The glider was a 1998 Shempp-Hirth, Discus CS, and had been purchased new by the pilot. The glider was issued an experimental (exhibition) airworthiness certificate. A check of FAA records found no record that operations specifications had ever been issued for the glider.

The maintenance logbooks were not recovered, and the date and type of last inspection, along with total airframe hours, were not determined. However, based upon the pilot's flight experience, the glider was estimated to have accumulated about 200 hours at the time of the accident.

METEOROLOGICAL INFORMATION

The airport operator reported the winds were from the west/northwest at 15 knots. The 1455 weather observation from Sullivan County Airport, 17 nautical miles (nm) at 305 degrees magnetic, reported winds from 280 degrees true at 12 knots with gusts to 16 knots. The 1454 weather observation from Montgomery County Airport, 10 nm at 130 degrees magnetic, reported winds from 280 degrees true at 12 knots with gusts to 17 knots, winds variable from 260 degrees to 250 degrees.

WRECKAGE AND IMPACT INFORMATION

The glider was examined at the accident site on January 28, 2001, by the Safety Board and personnel from the FAA. The approach end of runway 23 was 1,100 feet, 270 degrees magnetic from the accident site. The glider had impacted a swamp, covered with snow and ice over water. The glider came to rest upright, on a heading of about 270 degrees. The aft fuselage was separated about 2/3 of the way between the trailing edge of the wings and the end of the tail, and restrained by the rudder flight control cables. The cockpit had been crushed. However, it retained its basic shape.

The rudder was cable-actuated and all other flight controls were push rod-activated. Flight control continuity was confirmed between the rudder pedals and the rudder. It was also confirmed to the ailerons. The flight control system under the pilot's seat was distorted, but intact.

The wing attach pin was found in place and pinned. When the wings were removed, flight control continuity was confirmed between the wing attach points and the flight controls in the

wings.

The airbrake control handle and the right wing airbrake were found in the stowed position. The left wing airbrake was extended about one inch. When pushed down to the stowed position, or pulled to the fully extended position and released, it returned to about one inch of extension.

The airbrakes were actuated by a cockpit control through a series of linkages to the spoilers in the wings. All connections were attached. Extension took place when the pushrod in the wing was pulled inboard. With all connections attached, it was impossible to extend a single spoiler only.

Examination of the left wing revealed it was crushed on the outboard leading edge and pushed rearward. Compression damage was found on the inboard trailing edge of the left wing. The pushrods in the vicinity of the wing crush were bent forward, with the greater bend on the aileron pushrod. The bend occurred 14 inches outboard of the inside butt plate on the left wing. The bend in the airbrake pushrod was of sufficient magnitude to act as a partial extension of the left wing airbrake. The bend would not allow the airbrake to return to a stowed position.

When the left wing aileron was placed in a trailing edge up position (left roll), neutral, and trailing edge down (right roll) positions, the bend in the aileron pushrod was located 1.5 inches, 1 inch, and 0.5 inches respectively outboard of the bend on the airbrake pushrod.

MEDICAL AND PATHOLOGICAL INFORMATION

The toxicological testing report from the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, was negative for drugs and alcohol for the pilot.

On January 29, 2001, an autopsy was conducted on the pilot by the Coroner/Pathologist, Sullivan County, New York.

The pilot's wife reported that her husband was born with a vision problem. His eyes did not work together, and he had problems with depth perception.

ADDITIONAL INFORMATION

The glider was equipped with a global positioning navigation system (GPS), with a downloadable memory. No data was recorded for the accident flight.

Glider pilots who were familiar with the flight characteristics of the Discus were interviewed. They used words like, "outstanding", and "superb" to describe the flight characteristics. Onset of a stall was described as noticeable with mushy flight controls and a pronounced nose high attitude.

The glider was described as hard to spin and would require the flight controls to be held off center to maintain the spin.

The aircraft wreckage was released to Wurstboro Airport authorities on January 28, 2001.

Pilot Information

Certificate:	Private	**Age:**	52,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Expired	**Last FAA Medical Exam:**	June 24, 1987
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	400 hours (Total, all aircraft), 200 hours (Total, this make and model), 350 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schempp-Hirth	**Registration:**	N814CU
Model/Series:	Discus CS	**Aircraft Category:**	Glider
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	252-CS
Landing Gear Type:	Retractable - ; Hull	**Seats:**	1
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	1125 lbs
Time Since Last Inspection:		**Engines:**	0
Airframe Total Time:	200 Hrs at time of accident	**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	MGJ,365 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	14:54 Local	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots / 17 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.14 inches Hg	**Temperature/Dew Point:**	-1°C / -12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wurtsboro, NY (N82)	**Type of Flight Plan Filed:**	None
Destination:	Wurtsboro, NY (N82)	**Type of Clearance:**	None
Departure Time:	13:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Wurtsboro N82	**Runway Surface Type:**	Asphalt
Airport Elevation:	560 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	23	**IFR Approach:**	None
Runway Length/Width:	3593 ft / 60 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	41.602222,-74.452224

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	Colleen McGrady; FAA - Albany FSDO; Albany, NY
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Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=51396