Aviation Investigation Final Report

Location:	EUSTIS, Florida	**Accident Number:**	MIA97LA211
Date & Time:	July 12, 1997, 15:15 Local	**Registration:**	N9927J
Aircraft:	Schweizer SGS-1-26B	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The flight was tracking northward, when the pilot said he experienced 'minimal lift' at an altitude of about 4,000 feet mean sea level (msl). A ground witness said there was a cumulus cloud in the vicinity just before the accident. The pilot said that when he got near the cloud the lift increased, at first to about 300 feet per minute (fpm), then to about 600 fpm. As the glider passed 4,000 feet msl, there was a rapid rate of increase to over 1,000 fpm. The pilot estimated that the glider climbed from 4,000 feet msl to about 6,200 feet msl in about 20 seconds. At peak altitude the right wing separated from the glider, at the root. The pilot said he believed the wing separated upward, and made contact with the top of the canopy. He attempted numerous combinations of control imputes. The glider yawed, rolled and pitched with little response to the controls, and finally became upright in a high yaw rate condition. The glider impacted in a thick stand of 80-to 100-foot tall pine trees. The reported cloud bases at the time of the accident were reported to be 4,300 feet msl. The floor of the Class B airspace was 3,000 feet msl at the location of the accident, and the aircraft was operating at the time of the accident without gyro instruments. A section of the right wing front spar was sent to the NTSB Materials Laboratory, Washington, DC, for examination. The examination revealed that the fracture features and deformations were all consistent with 'overstress separations.' No evidence of fatigue or any type of cracking was found.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: an in-flight separation of the right wing, and subsequent impact with trees. Factors in this accident were thermal lift and turbulence in clouds.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: MANEUVERING

Findings
1. (F) WEATHER CONDITION - THERMAL LIFT
2. (F) WEATHER CONDITION - TURBULENCE IN CLOUDS

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: MANEUVERING

Findings
3. (C) WING - SEPARATION

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. OBJECT - TREE(S)

Factual Information

On July 12, 1997, about 1515 eastern daylight time, a Schweizer SGS-1-26B glider, N9927J, registered to a private owner, crashed after an in-flight separation of the right wing at Eustis, Florida. Visual meteorological conditions prevailed at the time and no flight plan was filed for the Title 14 CFR Part 91 local personal flight. The airline transport-rated pilot was not injured. The airplane was destroyed. The flight had originated from the Mid-Florida Airport, about 1 hour and 30 minutes before the accident.

The flight was tracking northward, when the pilot said he experienced "minimal lift" at an altitude of about 4,000 feet mean sea level (msl). A ground witness said there was a cumulus cloud in the vicinity just before the accident. The pilot said that when he got near the cloud the lift increased, at first to about 300 feet per minute (fpm), then to about 600 fpm. As the glider passed 4,000 feet msl, there was a rapid rate of increase to over 1,000 fpm. The pilot estimated that the glider climbed from 4,000 feet msl to about 6,200 feet msl in about 20 seconds.

At peak altitude the right wing separated from the glider, at the root. The pilot said he believed the wing separated upward, and made contact with the top of the canopy. He attempted numerous combinations of control imputes. The glider yawed, rolled and pitched with little response to the controls, and finally became upright in a high yaw rate condition. The glider impacted in a thick stand of 80- to 100-foot tall pine trees.

The reported cloud bases at the time of the accident were reported to be 4,300 feet msl. The floor of the Orlando Class B airspace was 3,000 feet msl at the location of the accident, and the aircraft was operating at the time of the accident without gyro instruments.

A section of the right wing front spar was sent to the NTSB Materials Laboratory, Washington, DC, for examination. The examination revealed that the fracture features and deformations were all consistent with "overstress separations." No evidence of fatigue or any type of cracking was found.

Pilot Information

Certificate:	Airline transport	**Age:**	70,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	**Seat Occupied:**	Front
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 21, 1997
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	27000 hours (Total, all aircraft), 20000 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	**Registration:**	N9927J
Model/Series:	SGS-1-26B SGS-1-26B	**Aircraft Category:**	Glider
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	346
Landing Gear Type:	Hull	**Seats:**	1
Date/Type of Last Inspection:	December 1, 1996 Annual	**Certified Max Gross Wt.:**	600 lbs
Time Since Last Inspection:		**Engines:**	Unknown
Airframe Total Time:		**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	DIANE C. BLAKE	**Rated Power:**	
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

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:	Scattered / 4300 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	34°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(X55)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	13:45 Local	**Type of Airspace:**	Class D

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	28.8502,-81.680702(est)

Administrative Information

Investigator In Charge (IIC):	Yurman, Alan
Additional Participating Persons:	BENJAMIN H HARRIS; ORLANDO , FL
Original Publish Date:	February 2, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=38313