Aviation Investigation Final Report

Location:	SAN DIEGO, California	**Accident Number:**	LAX03LA133
Date & Time:	March 16, 2003, 14:20 Local	**Registration:**	N1169S
Aircraft:	Schweizer SGS 1-34	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The glider landed hard on a dirt strip, which caused damage to the fuselage, forward bulkhead, and stringers. The gliderport is a publicly owned field situated on top of a mesa along the coastline; the west boundary of the airstrip is a 400-foot sandstone cliff that drops almost vertically to the Pacific ocean. The pilot attempted to land downwind on runway 9 with a 13-knot tailwind. He noted that while turning onto the base leg, his approach was high. To counteract the lift produced by the cliff, he deployed full spoilers. Still high, the pilot put the glider into a slip configuration to lose altitude. The pilot stated that the airspeed was 48 knots. He continued to hold the full spoiler, full slip condition until he felt he had attained the appropriate altitude to make a normal landing. He neutralized the flight controls, and retained full spoiler input. The glider landed hard. The pilot stated that the combination of flying from a lift to a no lift condition, the high downwind ground speed, and the rolling terrain contributed to his misjudging the sink rate, which resulted in a hard landing. The pilot did not report any pre-impact mechanical malfunctions or failures with the glider. Winds at the time of the accident were from 230-degrees at 13 knots.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's misjudgment of the landing flare and descent rate. A contributing factor was the pilot's misjudged speed and distance.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. WEATHER CONDITION - TAILWIND
2. (C) DISTANCE/SPEED - MISJUDGED - PILOT IN COMMAND
3. (C) DESCENT - MISJUDGED - PILOT IN COMMAND
4. (C) FLARE - IMPROPER - PILOT IN COMMAND

Factual Information

On March 16, 2003, at 1420 Pacific standard time, a Schweizer SGS 1-34, N1169S, landed hard on a dirt strip at Torrey Pines Gliderport (CA84), San Diego, California. Associated Glider Clubs of Southern California, Ltd., operated the glider under the provisions of 14 CFR Part 91. The commercial glider pilot, the sole occupant, was not injured; the glider sustained substantial damage. Day visual meteorological conditions prevailed, and a flight plan had not been filed. The local area flight departed CA84 about 1330.

A routine aviation weather report (METAR) generated by an Automated Surface Observation System (ASOS) at Montgomery Field Airport, San Diego, California (located 7 nautical miles northwest of the accident site), indicated about 10 minutes prior to the accident winds were 230-degrees at 13 knots.

The Torrey Pines Gliderport is a publicly owned field. CA84 is situated on top of the Torrey Pines Mesa, along the coastline of the Pacific Ocean. The 400-foot sandstone cliffs rise almost vertically from Black's Beach.

In a written statement, the pilot reported that he departed CA84 by winch launch, into favorable meteorological conditions. After 45 minutes of uneventful flight, he decided to land. On the first pass, he decided the area was too congested with paragliders and hang-gliders, to execute a safe landing pattern. He made a second pass along the cliff in an effort to allow the traffic to clear the area. The pilot stated that he began an approach in accordance with "standard Torrey Pines procedures, heading northbound… 600 [feet] msl, 300 [feet] agl."

As traffic had cleared the area, he turned west, towards the ocean, and entered the downwind. During the turn to the base leg, he noted that the glider appeared to be "slightly high for the approach." He deployed full spoilers. He noted that the full spoilers weren't providing a sufficient amount of sink to counter the lift produced by the cliff. He then applied a full slip using full right rudder and left aileron. He checked his airspeed, 48 knots; 2 knots below best glide speed. He continued to hold a full spoiler, full slip condition until he "felt" he was on the proper glide slope. The pilot then neutralized the flight controls, and retained the full spoiler input. The glider landed hard.

The pilot stated he thought that the combination of flying from a lift to a no lift condition, the high downwind ground speed, and rolling terrain in the area, contributed to his misjudging the sink rate created by the full spoiler, full slip approach, which resulted in a hard landing. The glider incurred damage to the fuselage, forward bulkhead, and stringers. The pilot did not report any pre-impact mechanical malfunctions or failures with the glider.

Pilot Information

Certificate:	Commercial	**Age:**	49,Male
Airplane Rating(s):	None	**Seat Occupied:**	Center
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	None None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 23, 2002
Flight Time:	162 hours (Total, all aircraft), 6 hours (Total, this make and model), 139 hours (Pilot In Command, all aircraft), 11 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	**Registration:**	N1169S
Model/Series:	SGS 1-34	**Aircraft Category:**	Glider
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	69
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	April 1, 2002 Annual	**Certified Max Gross Wt.:**	840 lbs
Time Since Last Inspection:	100 Hrs	**Engines:**	0
Airframe Total Time:	3466.2 Hrs as of last inspection	**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	Associated Glider Clubs of SO CA Ltd	**Rated Power:**	
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SAN,78 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	13:51 Local	**Direction from Accident Site:**	343°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	Broken / 2400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.81 inches Hg	**Temperature/Dew Point:**	16°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SAN DIEGO, CA (CA84)	**Type of Flight Plan Filed:**	None
Destination:	SAN DIEGO, CA (CA84)	**Type of Clearance:**	None
Departure Time:	13:30 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Torrey Pines Gliderport CA84	**Runway Surface Type:**	Asphalt
Airport Elevation:	372 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	09	**IFR Approach:**	None
Runway Length/Width:	1500 ft / 30 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

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:**	32.89389,-117.233329

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Wayne Laner; Federal Aviation Administration; San Diego, CA
Original Publish Date:	December 28, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=56835