Aviation Investigation Final Report

Location:	CALIFORNIA CITY, California	**Accident Number:**	LAX98FA235
Date & Time:	July 17, 1998, 15:07 Local	**Registration:**	N7215L
Aircraft:	PZL-Bielsko SZD 50-3	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The purpose of the flight was to familiarize the second pilot with a new type of glider that he had not previously flown. The first pilot was authorized to perform checkouts for the private flying club. The tow plane released the glider about 2 miles from the departure airport at 2,000 feet agl. The pilot of another glider reported that his attention was attracted to the accident aircraft about 15 minutes later, when the glider was about 4 miles distant, by the sun glistening off the wings as the aircraft spun in a nose low attitude. It completed approximately three turns before impacting the ground. Examination of the wreckage did not reveal any evidence of preimpact failure or malfunction of the aircraft.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the first and/or second pilot to obtain and maintain control of the aircraft after stalling and entering a spin.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. STALL/SPIN - ENCOUNTERED
2. (C) AIRCRAFT CONTROL - NOT OBTAINED/MAINTAINED - FLIGHTCREW

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

Factual Information

HISTORY OF FLIGHT

On July 17, 1998, at 1507 hours Pacific daylight time, a PZL-BIELSKO Model SZD 50-3 glider, N7215L, was destroyed when it impacted terrain while maneuvering 2 miles west of the California City, California airport. The commercial licensed first pilot and the airline transport licensed second pilot were fatally injured. Visual meteorological conditions prevailed for the personal flight that originated from California City about 1448.

The pilot of another glider, flying about 4 miles north of the accident location, reported his attention was drawn to the accident aircraft by the sun glistening off the wings as the aircraft spun, nose low, approximately 3 revolutions before impacting the desert floor. He acknowledged difficulty seeing the aircraft at that distance but believed that the pitch attitude was 80 to 90 degrees nose down. He did not see the spin entry maneuver and was uncertain of the direction of the spin.

The aircraft was owned and operated by a private flying club. According to a spokesman for the operator, both pilots met Federal Aviation Administration (FAA) licensing regulations to pilot the glider. The flying club had an additional requirement, however, that prior to a pilot flying a type glider not previously flown, the pilot must fly an orientation flight with another pilot who is qualified in the type. The purpose of the accident flight was to familiarize the second pilot with the new type glider, which he had not previously flown. The two pilots had performed one flight with the second pilot in the front seat and were on a second flight with him in the back seat when the accident occurred.

The aircraft was towed aloft at 1448 and was released about 4 minutes later, at 2,000 feet agl, approximately 2 miles southwest of the airport. A damaged wristwatch, found in the wreckage, was stopped at 1507.

Other pilots reported that conditions for soaring were weak due to winds aloft which dissipated thermals, and said that the accident aircraft probably did not get above 5,000 feet (2,600 feet agl). Another pilot also commented that he had discussed with his flying companion whether or not to fly that day because of the temperature. It was about 105 degrees on the ground and in the cockpit it would be hotter. He decided to go ahead and fly and reported that there were about five gliders in the air at the time of the accident. A third pilot reported that there were strong dust devils in the area that day and speculated that perhaps encountering a dust devil induced a stall and spin.

PERSONNEL INFORMATION

According to another flying club member, the first pilot had a stroke 2 years ago and had been inactive in the club. He started flying again about August 1997 and, although his flight instructor certificate was expired, was authorized by the club to perform initial and 6-month check flights for club members. He did not hold an airman's medical certificate. The pilot was the president of the club.

According to other club pilots who had performed check rides with the pilot, he did not normally perform spins as part of the checkout but did perform stalls, stalls from turns, stalls with controls crossed, and secondary stalls during stall recovery. Recovery from the stall or incipient spin was made immediately at the stall break.

The second pilot had recently joined the club and was employed as a pilot by a FAR Part 121 air carrier. According to his wife, he had acquired most of his flying experience in the U.S. Air Force where he was an instructor pilot in F-4's and F-16's. He had been with the airline for about 8 years and had learned to fly gliders in Hawaii during layovers there. According to the pilot's brother, the second pilot had done one-turn spins in a Grob glider in Hawaii but he wore a parachute while doing it. His brother does not think he would have intentionally spun the Puchacz without wearing parachutes.

AIRCRAFT INFORMATION

The aircraft was manufactured in Poland in May 1997 and was certificated there in aerobatic category under JAR Part 22.

A weight and balance calculation by the Safety Board investigator, using empty weight and center of gravity information from the airplane flight manual and occupant weights from the autopsy, showed the aircraft within the approved weight and center of gravity limits.

METEOROLOGICAL INFORMATION

At 1346, the weather at Mojave, 8 miles southwest, was clear; visibility 25 miles; winds from 200 degrees at 5 knots with gusts to 25 knots; and the temperature was 104 degrees Fahrenheit. A police sergeant, who was among the first responders to the accident scene, reported that the temperature was between 105 and 110 degrees and the wind was westerly at 5 knots.

WRECKAGE AND IMPACT INFORMATION

The aircraft impacted in a level area of the desert floor covered with bushes about 3 feet tall and typically spaced 10 feet apart. The location is at latitude 35 degrees 08.76 minutes north, and longitude 118 degrees 03.09 minutes west (GPS). The elevation is approximately 2,450 feet.

According to an early responder to the accident, the occupants were found in the cockpit with

their seat belts and shoulder belts fastened. They were not wearing parachutes.

All of the aircraft was present at the accident site. The fuselage, lying upright, was oriented approximately 195 degrees (magnetic), and the cockpit area was crushed aft to the wing leading mid-chord and structurally disintegrated. The fuselage tailcone was collapsed on the left side approximately 2 feet aft of the wing trailing edge and was split open along the upper seam. The empennage was intact although there were several stocks of dried vegetation, typically 1/4 to 1/2 inch in diameter, poked vertically through the left horizontal stabilizer.

The wing was lying bottom side up over the fuselage approximately 3 feet aft of its normal attachment station and was oriented approximately east west. The wing remained attached to the fuselage by the upper fuselage fiberglass skin although the wing attachment bulkheads were separated from their fuselage attachment and were loose in the wreckage. The spoiler and aileron control transfer tubes were present but disconnected from their mating receptacles in the wing. The wing spars remained mated at the center section by the center pin and the receptacles of the spar tip pins to the mating wing roots.

Approximately 6 feet in front of the crushed nose of the aircraft was a hole 3 feet in diameter and 8-12 inches deep which contained the nosewheel and canopy Plexiglas. Extending to the southeast from this hole was a mark in the dirt equal approximately to the thickness and span of the wing and which had a hole in the soil at its southeast end, 1 foot in diameter and 6 inches deep. There was a second mark extending from the center hole to the west that was approximately equal to the span of the wing. This second mark in turn had a parallel mark near its midpoint and about 2 feet south which was equal in length to the spoiler. There was another small hole in the dirt under the inverted left wing, about 4 feet outboard of the fuselage. The hole was about 6 inches wide, 1-foot long and 6 inches deep.

The left wing tip had a dirt abrasion to the forward 1/2 of the tip chord. Over the span of the left wing was a family of 45-degree cracks at approximately 18-inch intervals. Within the family of cracks there were four major fractures involving rupture of the upper and lower skins, disbonding of the skins, and disintegration of the spar. The first of these fractures was about 4 feet outboard of the wing root running on an angle from inboard forward to outboard aft. The spar in this area was disintegrated and the aileron push-pull tube was broken at this location. Both ends of the broken rod were crippled on the lower surface and stretched in the downward direction on the upper surface. The spoiler push-pull tube was bent smoothly downward about 20 degrees over a 36-inch span in this area. The remaining three major fractures were spaced approximately equidistant over the span of the wing in a similar inboard forward to outboard-aft orientation with the outermost passing through the aileron midspan. The left aileron inboard hinge pin was separated from its retainer and the aileron was fractured at midspan. Additionally, there was a family of "chevron" fractures in the upper and lower skin of the wing leading edge forward of the spar. The tears in the fiberglass skin were at angles normal to the laminate fiber's weave. The spoilers, disconnected from the transverse tube at the wing root, were extended approximately 1 inch.

The right wing had dirt marks on the bottom surface and a crack in the wing leading edge over the outboard 3 feet. The aileron and spoiler flight controls were continuous. The spoilers were in the fully extended position. The sheet metal web of the lower surface spoiler was bent aft and smoothly deformed around the two spoiler actuator rods. The deformed spoiler web prevented retraction into its cavity in the wing. The center and aft retainers for the outboard spoiler pivot bolt was torn loose in their fiberglass reinforcements.

In the fuselage, the aileron and elevator flight controls were mechanically continuous except for several separated rod end fittings in the cockpit area. All of the separated rod ends exhibited bending in the area of the separations. The front and rear cockpit control sticks were separated at their bases and the fracture surfaces exhibited a uniform gray appearance. The rudder flight control cables were continuous except for a broken turnbuckle end at the right rear rudder pedal that was accompanied by bending at the fracture. The spoiler control was mechanically continuous to the lateral torque tube behind the cockpit and the pitch trim was continuous from the cockpit control to the trim tab surfaces.

A roll of coiled coax cable approximately 8 inches in diameter was found loose in the fuselage behind the main landing gear wheel well. The coax cable ran to the rear fuselage through fittings impregnated into the top of the fuselage fiberglass. The unused portion of the cable was tied into the coil. Examination of the cable coil did not reveal any fresh marking or evidence of binding or chaffing on the otherwise dirty cable.

MEDICAL AND PATHOLOGICAL INFORMATION

The Kern County Sheriff Coroner performed autopsies on the two pilots and the FAA's Civil Aeromedical Institute performed toxicological analyses. On the coroner's report of autopsy of the first pilot is the comment: "On the right hand in the thenar web is extensive soft tissue contusion." On the report of the second pilot, performed by the same pathologist, is reported: "Multiple contusions are on the hands and knuckles."

ADDITIONAL INFORMATION

The aircraft wreckage was released to AIG Aviation, agent for the insurer, on July 30, 1998.

Pilot Information

Certificate:	Commercial	**Age:**	51,Male
Airplane Rating(s):	None	**Seat Occupied:**	Front
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	None Unknown	**Last FAA Medical Exam:**	
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1668 hours (Total, all aircraft), 80 hours (Total, this make and model), 1613 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PZL-Bielsko	**Registration:**	N7215L
Model/Series:	SZD 50-3 SZD 50-3	**Aircraft Category:**	Glider
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	B-2108
Landing Gear Type:		**Seats:**	2
Date/Type of Last Inspection:	August 21, 1997 Annual	**Certified Max Gross Wt.:**	1256 lbs
Time Since Last Inspection:	271 Hrs	**Engines:**	Unknown
Airframe Total Time:	271 Hrs	**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	SO CALIF DOUGLAS SOARING ASSN	**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:	MHV ,2787 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	14:46 Local	**Direction from Accident Site:**	215°
Lowest Cloud Condition:	Clear	**Visibility**	25 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots / 25 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	40°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CALIFORNIA CITY, CA (L71)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	14:48 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	35.149497,-117.91912(est)

Administrative Information

Investigator In Charge (IIC):	Parker, Richard
Additional Participating Persons:	GARY E BARNARD; VAN NUYS , CA
Original Publish Date:	February 16, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=43183