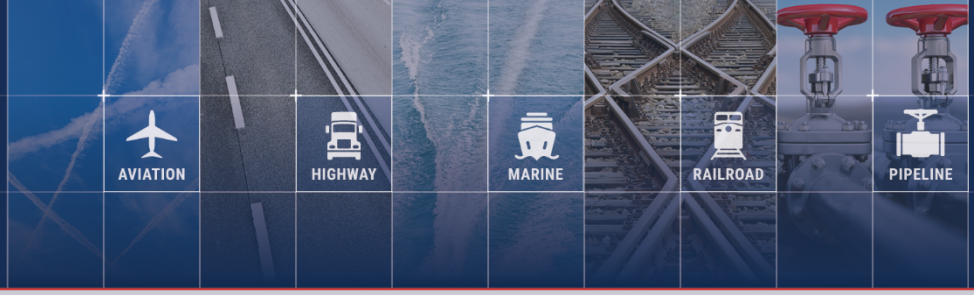

Aviation Investigation Final Report

Location:	Perris, California	**Accident Number:**	WPR12LA417
Date & Time:	September 13, 2012, 13:20 Local	**Registration:**	N936LS
Aircraft:	SEYMOUR SKYRANGER	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During cruise flight in the experimental amateur-built airplane, the pilot heard a "bang" sound, and the airplane immediately began to descend and roll to the left. He applied opposing aileron and right rudder control inputs and was able to regain partial control; however, as the descent progressed, the airplane's turn rate began to increase. The airplane struck the ground in a left-wing-low attitude, sustaining substantial damage. Examination of the airframe did not reveal any failures or anomalies that would have precluded normal operation.

Although postaccident examination of the wreckage revealed two separated cables (a wing brace and an elevator trim tab cable), physical evidence indicated that the cable separations most likely occurred during the accident sequence. Additionally, if the elevator trim tab cable had separated in flight, the movement of the trim tab to the up position likely would not have resulted in the flight control difficulties experienced by the pilot. Thus, it was not possible to determine why the airplane departed controlled flight and why the pilot was unable to regain control.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A loss of aircraft control during cruise flight for reasons that could not be determined because postaccident examination did not reveal any anomalies that would have precluded normal operation.

Findings

Not determined	(general) - Unknown/Not determined
Personnel issues	Aircraft control - Pilot
Aircraft	Directional control - Not attained/maintained

Factual Information

History of Flight

Enroute-cruise	Unknown or undetermined (Defining event)
Enroute-cruise	Loss of control in flight
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On September 13, 2012, about 1320 Pacific daylight time, an experimental light-sport Seymour Skyranger, N936LS, experienced an in-flight loss of control near Perris, California. The pilot/builder was operating the airplane under the provisions of 14 Code of Federal Regulations Part 91. The sport pilot sustained minor injuries, and the airplane sustained substantial damage. The personal flight departed Corona Municipal Airport, Corona, California, about 1240, with a planned destination of Perris Valley Airport, Perris. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot reported that during cruise flight, he heard a "bang" sound, and the airplane immediately began to descend and roll to the left. He applied both right aileron and right rudder control inputs, and was able to regain partial control. He elected to land the airplane in a field rather than activate the ballistic recovery parachute; however, as the descent progressed, the airplane's turn rate began to increase. He became concerned that the airplane was too low to activate the parachute, and that it may become entangled in the rigging cords, so he braced for impact. The airplane struck the ground in a left-wing-low attitude, and the pilot was able to egress unaided.

Pilot Information

Certificate:	Sport Pilot	**Age:**	76
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Sport pilot None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 4, 2011
Flight Time:	1533 hours (Total, all aircraft), 1050 hours (Total, this make and model), 1533 hours (Pilot In Command, all aircraft), 33.5 hours (Last 90 days, all aircraft), 7.9 hours (Last 30 days, all aircraft), 2.2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	SEYMOUR	**Registration:**	N936LS
Model/Series:	SKYRANGER	**Aircraft Category:**	Airplane
Year of Manufacture:	2004	**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special); Special light-sport (Special)	**Serial Number:**	SKR0306325
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	January 13, 2012 Condition	**Certified Max Gross Wt.:**	1212 lbs
Time Since Last Inspection:	68 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1066 Hrs at time of accident	**Engine Manufacturer:**	ROTAX
ELT:	C91A installed, activated, did not aid in locating accident	**Engine Model/Series:**	912UL
Registered Owner:	On file	**Rated Power:**	80 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane was built by the pilot, and issued its experimental light-sport certificate in December 2006. Since that time it had accrued a total of 1,066 flight hours. The last conditional inspection was completed on January 13, 2012, 68 flight hours prior to the accident.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	RIV,1536 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	13:55 Local	**Direction from Accident Site:**	33°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.98 inches Hg	**Temperature/Dew Point:**	37°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Corona, CA (AJO)	**Type of Flight Plan Filed:**	None
Destination:	Perris, CA (L65)	**Type of Clearance:**	None
Departure Time:	12:40 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Perris Valley L65	**Runway Surface Type:**	
Airport Elevation:	1413 ft msl	**Runway Surface Condition:**	Dry
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	33.777221,-117.344718(est)

The airplane came to rest in a corral adjacent to a residence. The airplane remained in a nose-down attitude, sustaining crush damage to the forward fuselage. The nosegear had been separated, and the engine, firewall, and left main landing gear had become displaced aft. The left wing was bent upwards about 10 degrees at the lift strut, and sustained crush damage to the leading edge tip. The remaining structure was largely intact and examined by an FAA inspector who responded to the accident site.

Tests and Research

The airplane was recovered to a hangar by friends of the owner, and subsequently examined by the NTSB investigator-in-charge.

Control continuity was established from the cockpit controls through to the respective control surfaces, with the exception of the elevator trim tab. The trim tab was positioned on the right elevator, and had been modified by the owner with the addition of a spring connecting the upper trim horn to the elevator spar. The trim control cable had pulled through its control fitting in the lower footwell, and as such, the spring had pulled the trim tab to the full-up position. The owner stated that he installed the spring to prevent the tab from fluttering in the event of a control cable failure.

All major structural members were intact, with damage limited to bending and crush damage centered around the forward fuselage.

The left wing internal brace cable, which connected the aft spar at the outboard trailing edge to the forward spar at the inboard leading edge, had separated where it entered its outboard crimp fitting. The cable was sent to the NTSB Office of Research and Engineering for analysis.

Examination revealed that the cable was a 7 x 7 wire rope type, composed of seven strands and seven wires per strand. Each fractured wire, 49 in total, was examined using a stereomicroscope. The fractured wire surfaces had either a cup and cone morphology or a slanted morphology approximately 45 degrees to the wire longitudinal axis. Both morphologies were consistent with an overstress fracture, with no indications of wear or rubbing of the wires inside the sleeve.

Examination by both the FAA inspector at the accident site, and NTSB investigator-in-charge at the follow up examination, did not reveal any mechanical anomalies with the airframe that would have precluded normal operation.

Administrative Information

Investigator In Charge (IIC):	Simpson, Eliott
Additional Participating Persons:	Jon H Weston; Federal Aviation Adminstration FSDO; Riverside, CA
Original Publish Date:	January 30, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85026