

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013

The Aircraft

Category: E-LSA
Builder: Raymond Siebring / Aviation Education Initiative
Manufacturer: ITEC
Model: Maverick SP
Serial #: MS9003
FAA Registration: N94MV
Aircraft Total Time: 54.2 Hrs.

The Pilot

Raymond Siebring
Medical: 1st Class
Aeronautical Licenses & Ratings Held: Airplane Single Engine Land Commercial
Instrument Pilot, Private Pilot Powered Parachute, Certified Flight Instrument
Instructor (CFII), Certified Flight Instructor Sport Pilot Powered Parachute,
Seaplane, Airframe & Powerplant
History: No previous accidents, license suspension or enforcement action
Time in Type: 91.6 Hrs.
Time in Model: 13.7 Hrs.
Total Time: 1645.4 Hrs.

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013

The Accident

On May 10th the pilot departed Vernon Regional airport runway 5 at 0836. On takeoff the aircraft experienced a hard left turning tendency, right pedal was introduced to correct the left turn and pilot then attempted to trim right to counteract the left turn and release right pedal. Pilot then released all left trim. Pilot then had control and continued flying fairly straight ahead but had decided to end flight and return to airport. Pilot turned crosswind then down wind to head back toward the airport.

At approximately 500 AGL on base turn to final turn the aircraft experienced a left tip or wing stall resulting in an incipient spin to the left. Pilot immediately introduced right pedal and full power to arrest the spin, rotation ceased after one 360 degree rotation. At a high sink rate and critically low altitude, the aircraft was directed away from population and contacted a chain link fence with the back left tire, then landed in a nose up attitude. The aircraft proceeded 28ft from first point of contact (fence) into a tree line at full power at 0842. After full stop the pilot turned off the aircraft at full power. Passenger exited aircraft unassisted. Pilot was assisted in egress from aircraft. Aircraft was secured and ELT turned off.

Injuries:

Ray Siebring (Pilot) suffered minor cuts and bruises, two compression fractures in lower back and a sprained ankle.

Ed Haashdyk (Passenger) No injury, soreness in back

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013

Investigation and Analysis

1. It was found by pictures, video and post flight inspection, that the aircraft was out of CG for pilot weight and not set properly per POH. Incorrect CG setting were referenced from a custom chart pilot had and resulted in a nose high attitude.

(See Picture 011 attached to this report)

2. It was found by pictures, video and post flight inspection that a loop over or line was twisted on the left C3 lower line to an out board trailing line, essentially causing a large pressure not. This pressure knot caused a large wing deformation and dissymmetry of lift on the left side of the wing. This wing deformation on the left side of the wing caused the hard left turning tendency.

(See pictures 001 – 010 attached to this report)

3. It was observed by pictures and video that disturbed air was encountered as indicated by a sudden change in wind noise, engine noise and ground track. This disturbed air may have been mountain ridge turbulence from leeward side but its exact source is not known. This disturbed air was the final cause that induced the un-commanded left turn stall / spin.

(See picture 014 attached to this report)

Outcome and Conclusion

It is believed that up to 3 items culminated together caused this accident.

1. The twisted lines, deformed the left side of wing, caused a dissymmetry of lift resulting in a severe left turning tendency. The pilot then added right steering to arrest the turn. The aircraft was then flying in a flared condition causing low airspeed and a high power situation. This resulted in a dirty airfoil and unstable condition as the engine was using extra power to maintain altitude.

2. The center of gravity was adjusted incorrectly causing a higher nose up attitude. This resulted in an unstable condition as the engine was using extra power to maintain altitude because of incorrect line of thrust.

The culmination of these two items stacked together resulted in an unstable aircraft that was flying at a low airspeed, high drag, high angle of attack, and almost stalled condition.

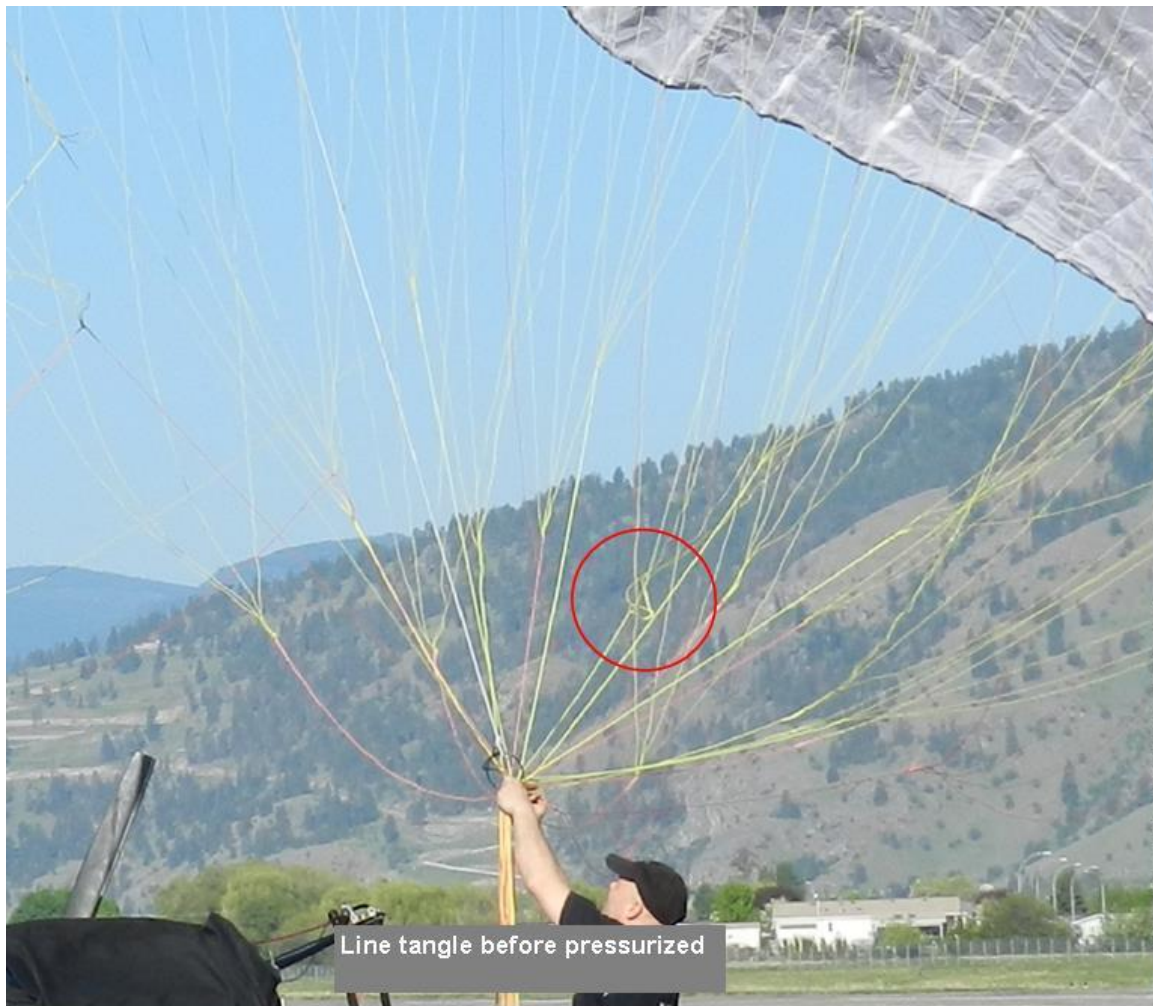
3. Turbulence was verified at the time of the stall from video. The aircraft was flying in an almost stalled configuration, a turn or turbulence is believed to be the last event that put the aircraft in a stall resulting in a single rotation incipient spin.

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013

Recommendations

1. It is essential that the POH (Pilot Operating Handbook) is followed during CG adjustment during wing setup.
2. On powered parachutes, it is essential that all lines are clear and tangle free before takeoff power is applied.
3. Completely verify you have a uniform flying wing before takeoff power is applied.
4. After airborne if problem is realized & if terrain allows, land straight ahead avoiding unnecessary turns.
5. When flying in mountainous areas, be critically aware of leeward downdraft and mountain wave possibilities.
6. When flying in the airport pattern environment, be critically aware of what other turbulence aircraft can produce, such as wingtip vortices.

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



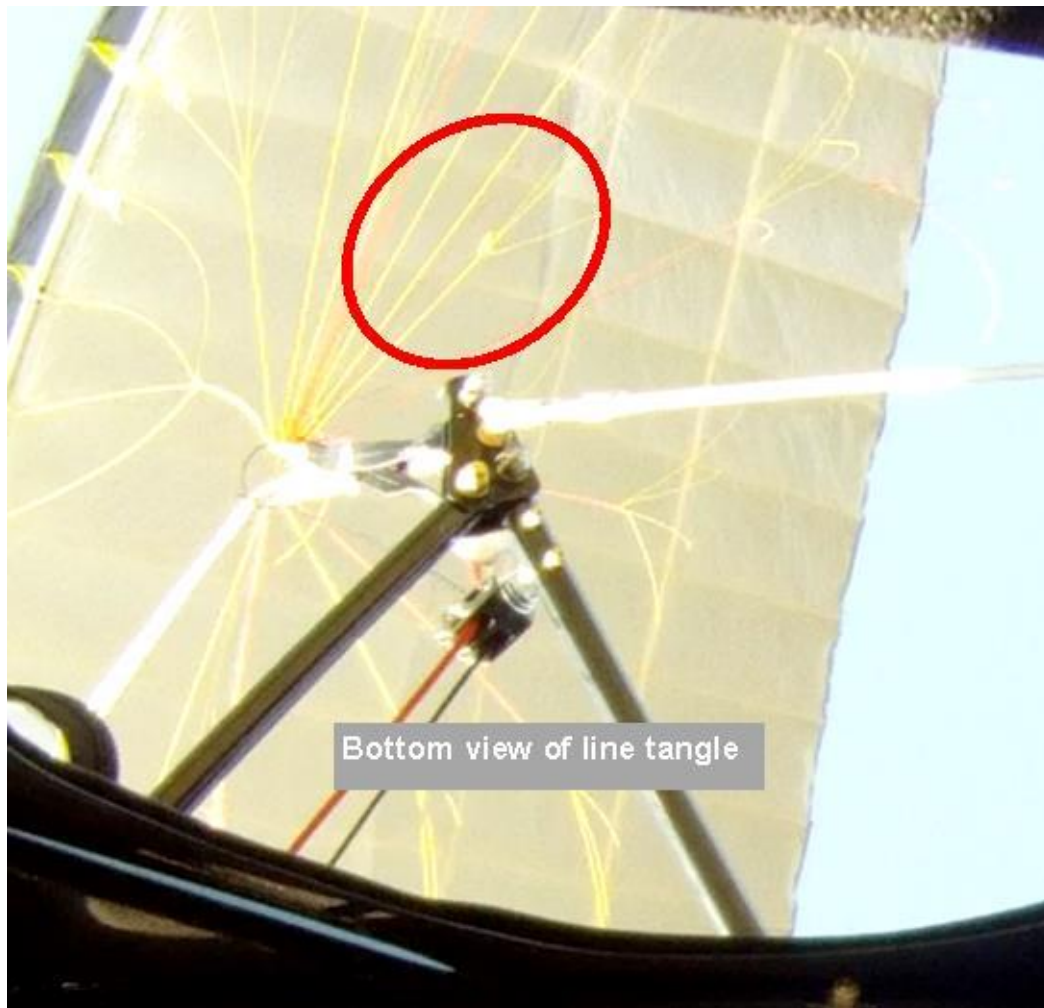
Picture 001 initial line tangle

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



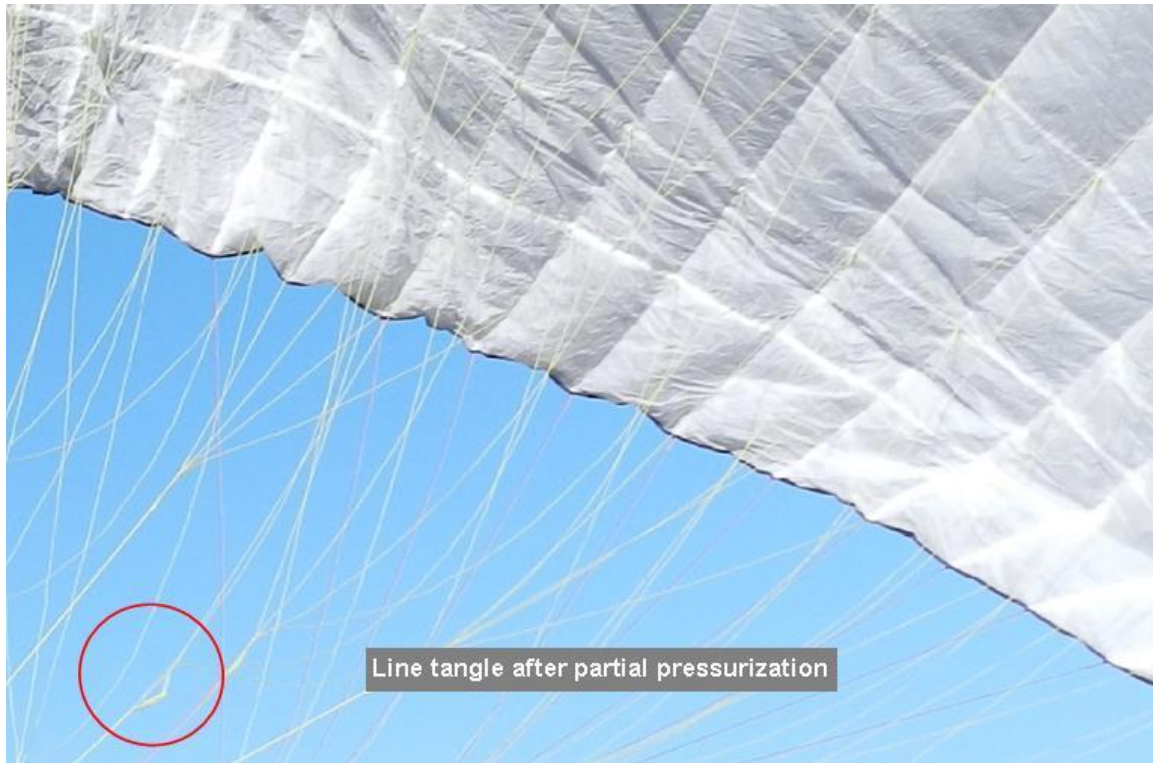
Picture 002 initial line tangle close up

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 003 bottom (pilot) view of line tangle

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 004 Partial pressurized line tangle

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 005 Mast view of tangle

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 006 Wing Deformation

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



On takeoff roll - Wing deformation as a result of pressure knot

Picture 007 Wing Deformation Side view

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Tangle point- Lower line C3 tangled with outer lines creating a pressure knot

Picture 008 Post accident line analysis shows tangle point

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



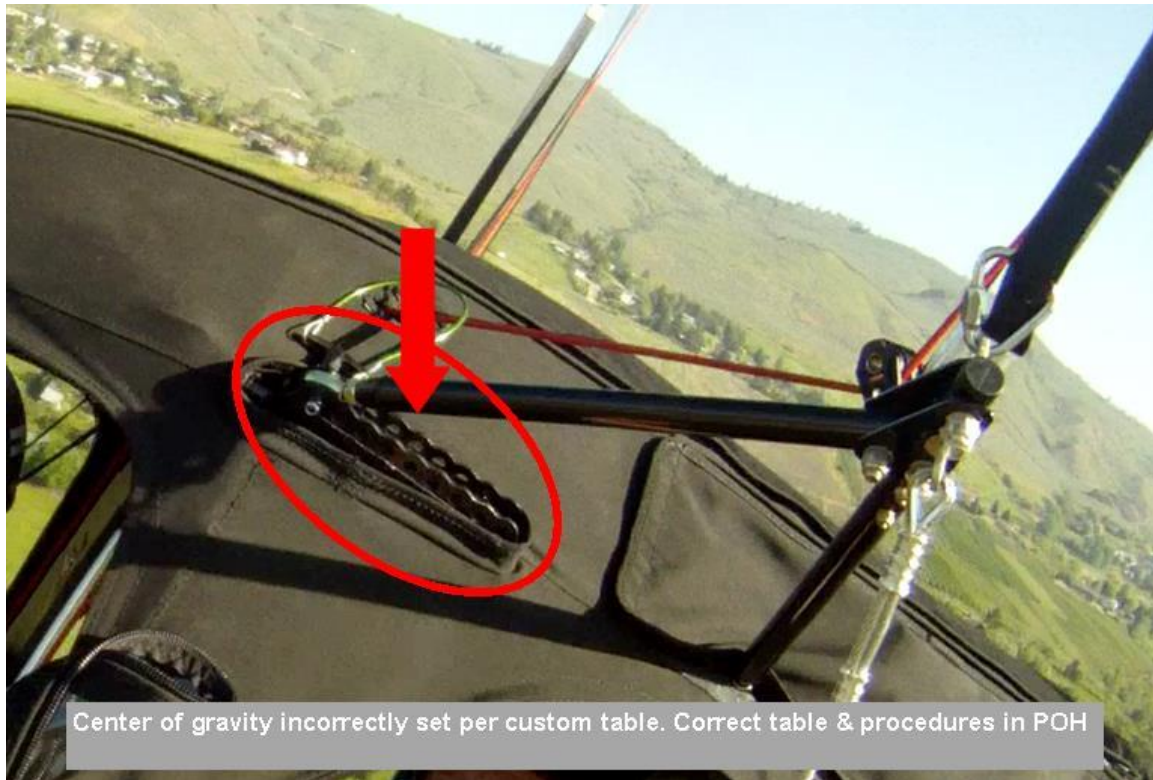
Picture 009 Dimple in left wing indicates how severe the wing deformation was

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 010 Left wing deformation closer view

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013

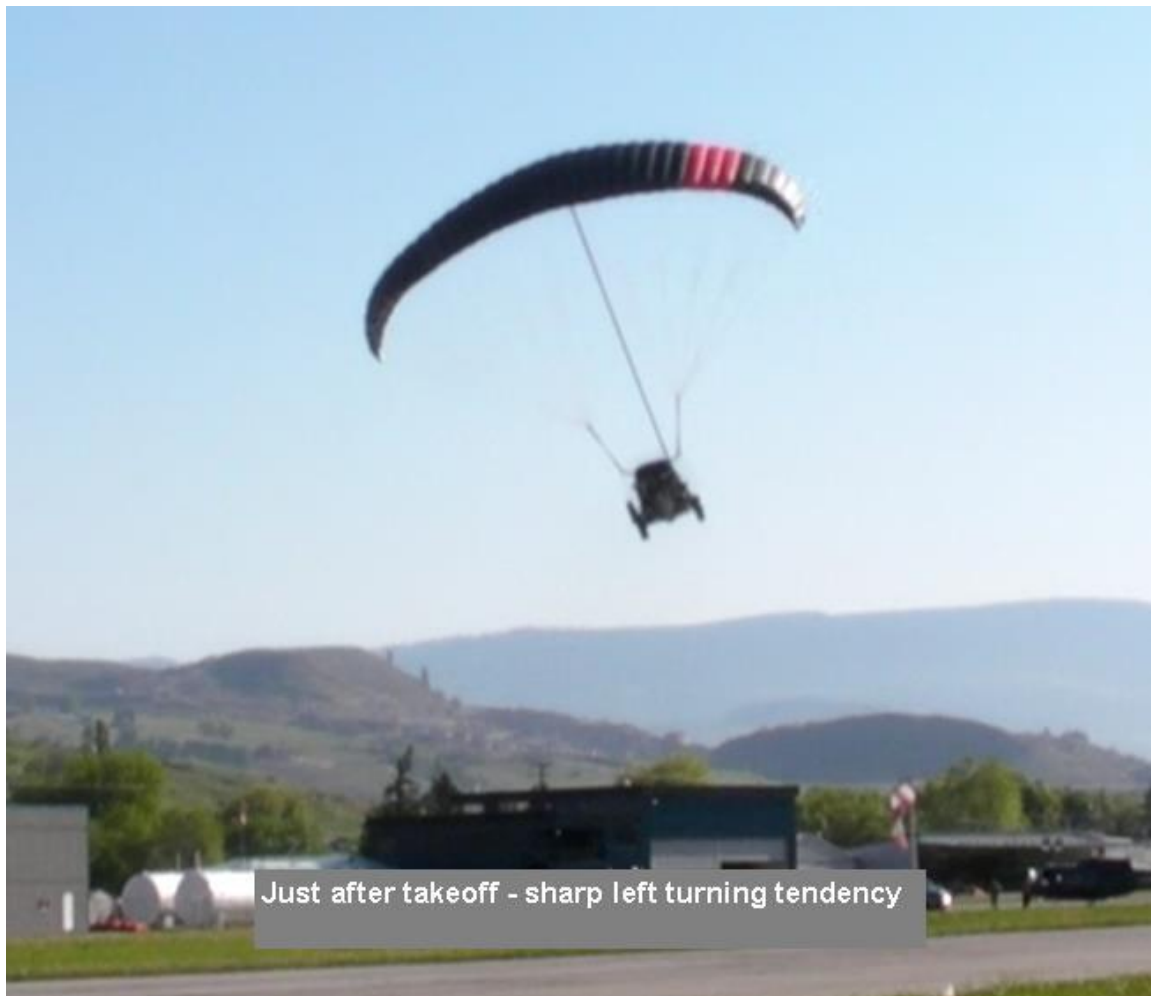


Picture 011 Incorrectly set CG arm created a higher than normal nose high attitude. Arrow points to the proper selection of CG hole.



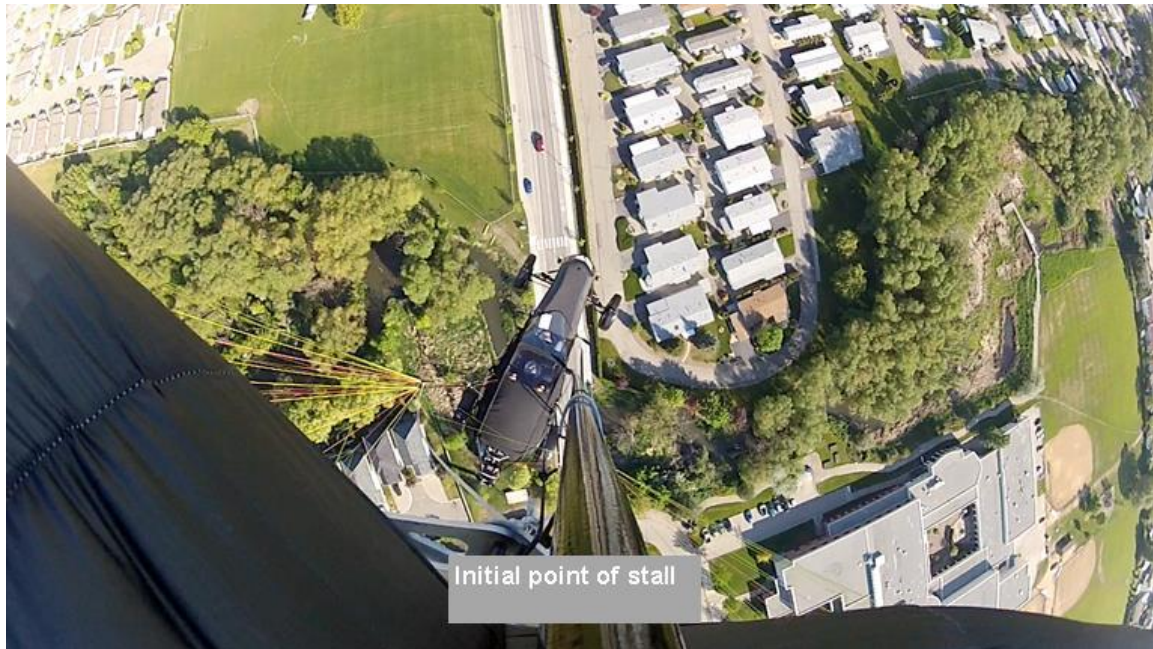
Picture 012 Initial take off and immediate left turning tendency

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 013 Shortly after take-off and immediate left turning tendency

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 014 Video reveals a sudden sound difference in the wind and a loss of forward ground track. The shift in the wind results in the stall / spin



Picture 015 Stall / Spin developed quickly and immediate full power and opposite controls were applied even before full development was complete.

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013

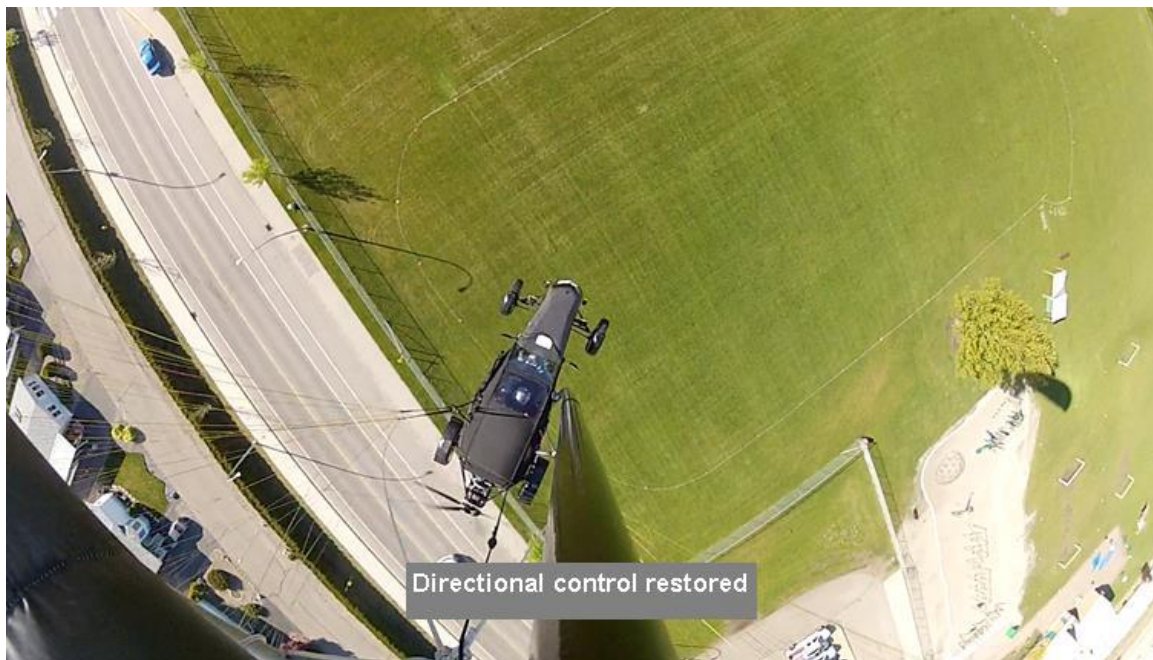


Picture 016 Unloaded Wing in stall

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 017 Retaining ring floating up illustrates the high sink rate experienced

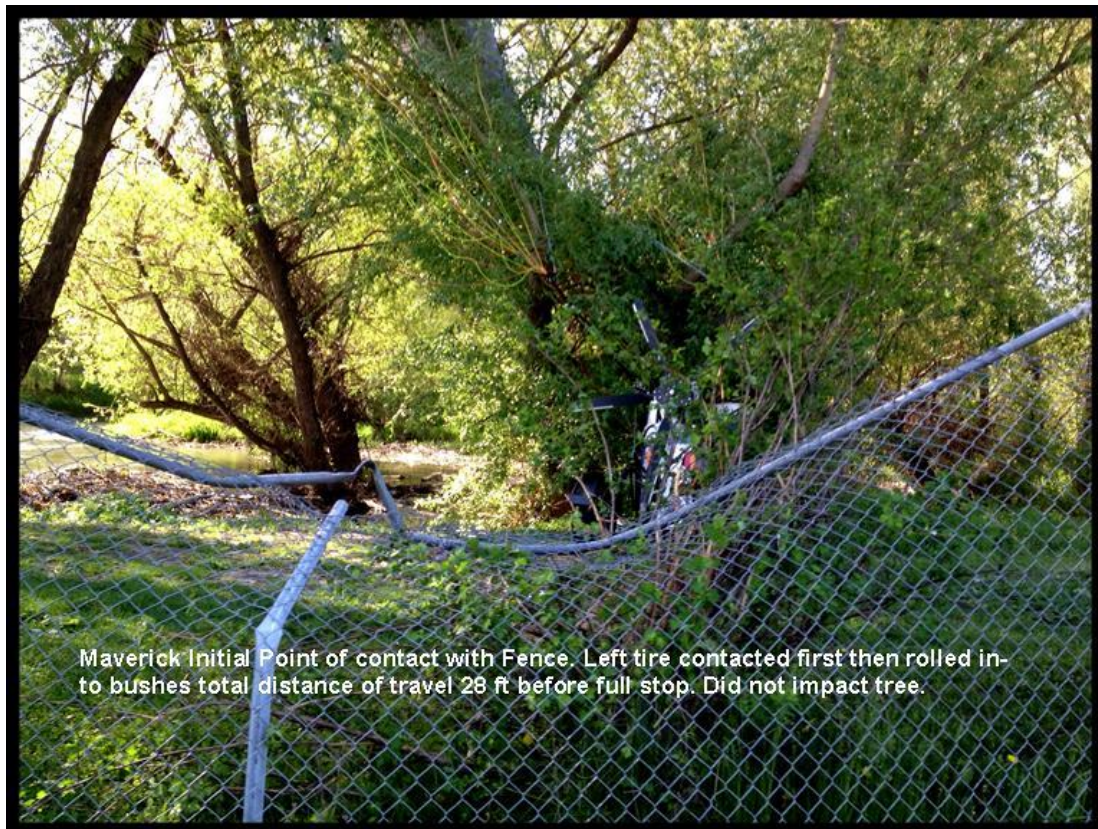


Picture 018 Directional control restored but at high sink rate & critically low altitude, choice of impact zone is made.

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



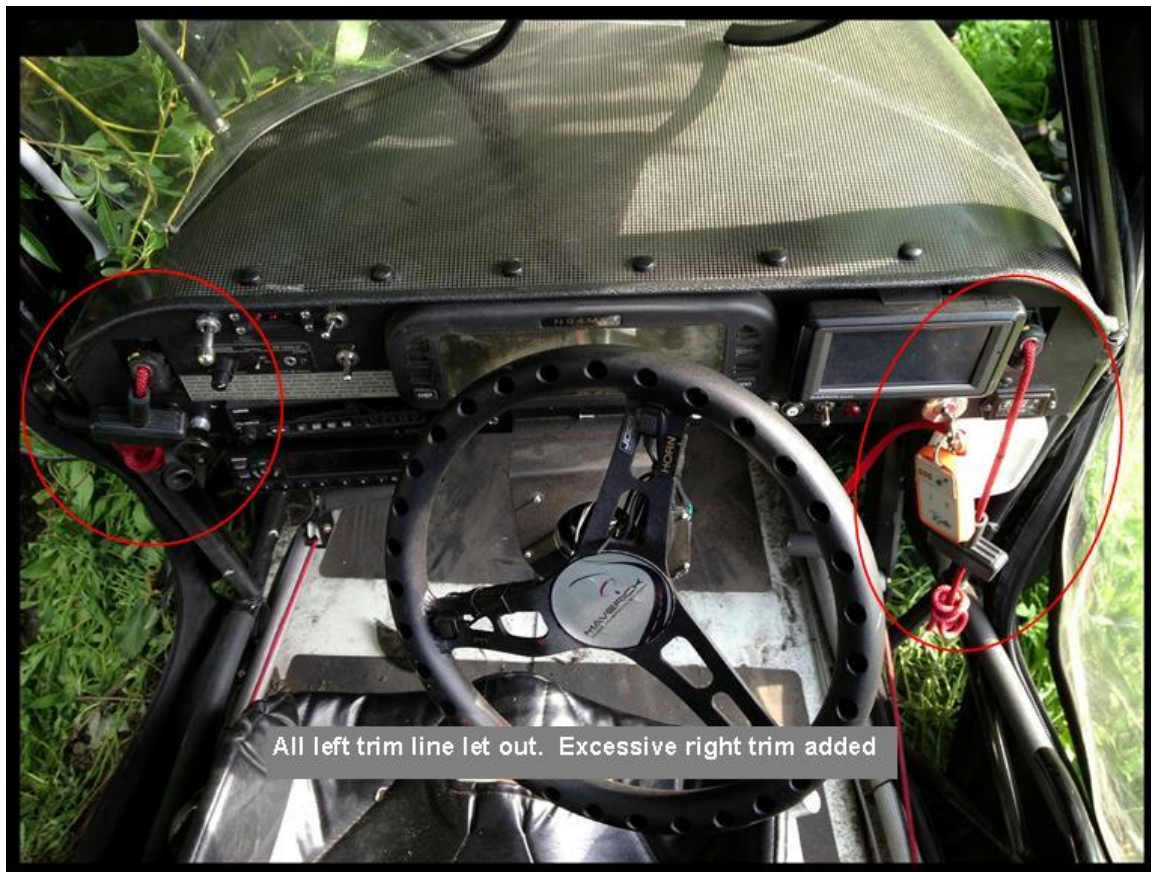
Picture 019 At a high sink rate but in a landing configuration, aircraft impacts fence with rear left tire



Maverick Initial Point of contact with Fence. Left tire contacted first then rolled in- to bushes total distance of travel 28 ft before full stop. Did not impact tree.

Picture 020 View from fence of direction of impact

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



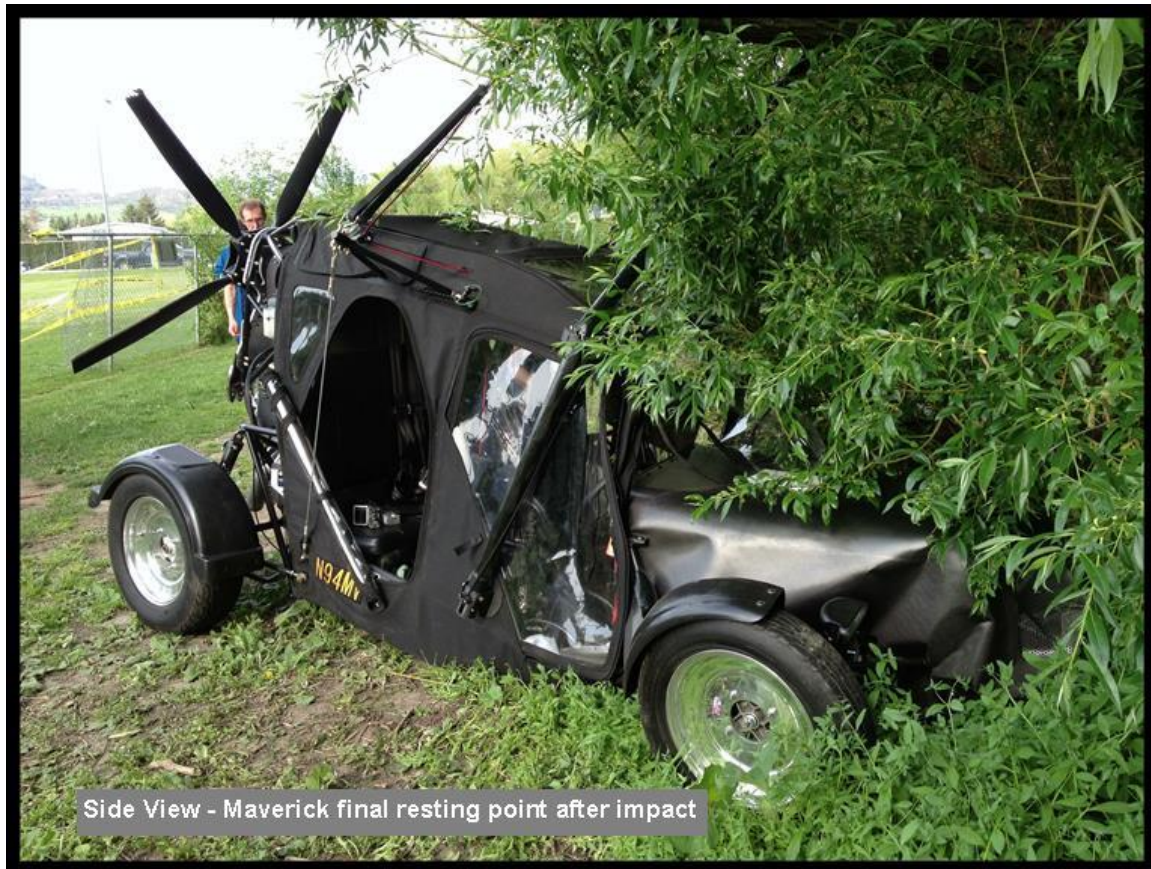
Picture 021 Line trim positions at time of accident

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 022 Propeller Tips separated by contact with fence

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 023 Side view of Maverick post impact

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



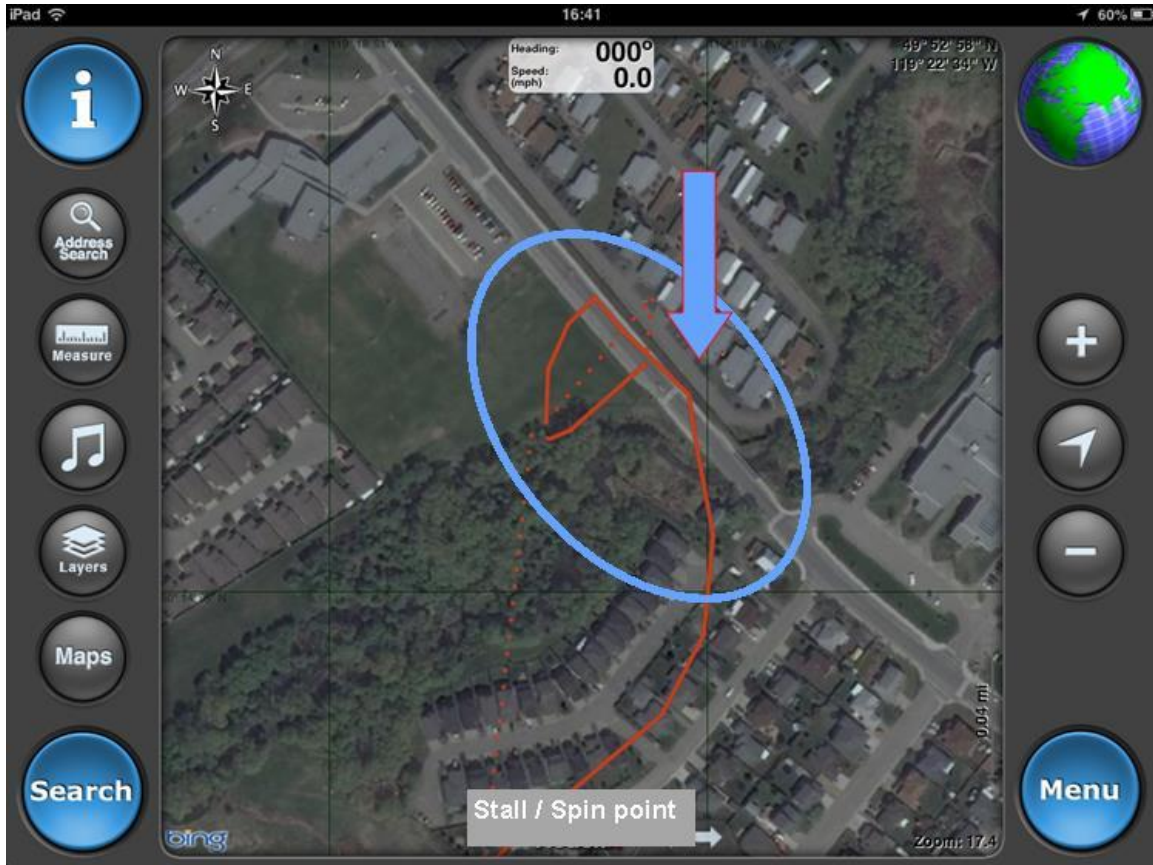
Picture 024 Complete ground taxi & flight path

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 025 Flight path of takeoff and immediate left turn

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 026 Flight path of Stall / Spin

This report prepared by Troy Townsend and Ray Siebring on May 17, 2013



Picture 027 Performance data of flight. Flight data continued to record after initial flight and accident. Flight data totals include an additional 22 1/2hrs of recording post crash movement including transport of Maverick from scene of impact.