

Accident 2015162

Skylark 3b accident at long Mynd

The glider had a faster than normal all out on the winch. The tail rapidly pitched down, and while moving forward struck a clump of earth, possibly containing a rock. As the glider got airborne the pilot discovered he had no elevator control. He released at 200 or so feet and subsequently turned to find a landing area back on the airfield, with limited control (just ailerons and airbrakes) he crashed with very minor injuries.

The tail of the glider is not very resistant to tail strikes. In this case the metal spoon had very little flexibility causing the tail skid to fail. That failure transferred the load into the sternpost which also failed through the lower rudder hinge and elevator pulley assembly which prevented any effective pilot rudder/elevator inputs having any effect. The fin stayed attached, but in a very weakened and flexible state.

Upon examination after the accident, there was no indication that this glider had any pre existing fault that could encourage the tailskid or sternpost to fail.

This glider had a very comprehensive maintenance history and started life as a Skylark 3 in 1956 and was modified to become a Skylark 3b. None of the mods were to the tail area, it would appear later versions of the Skylark after the 3b had a far more tailstrike resistant design.

In hindsight the pilot could have controlled the glider in pitch with the still connected trimmer, which on a Skylark is particularly powerful compare to modern gliders. He had never considered how to control the glider in pitch with a disconnected elevator.

The pilot did not go through the scenario of a disconnected control in his pre flight self briefing, which is not unreasonable.

On many a check flight I have performed with experienced pilots, rather than just make them do a normal landing, I have often got them to practice landing the glider on just rudder, trim and airbrake. The results have been mixed and the students always leaned and enjoyed the experience. (In Falkes in gusty weather, many lose control as soon as they open the spoilers)

When I was taught about flying new types this was always part of the self type conversion brief to myself. A few ASW20 have taken off with no elevators connected, only to land successfully using the flap as pitch control. The Pik 20D does the same.

Perhaps the TEM of an initial type conversion should consider control problems and the options to deal with these scenarios during type conversions.

Conclusion

The back end of this glider was not capable of withstanding a heavy tail strike. It would be possible to modify the weaker versions of Skylarks to be more resistant to damage, by

changing the tailskid design to that of later Skylarks. We are looking into where to find the Slingsby drawings to enable owners the option to accomplish this. See notice to inspectors below.

Operationally I recommend that any gliders that tend to pitch rapidly onto the tail on all out, have a tail holder to ensure the tail starts on the ground. At Lasham the Vintage gliding have done this for many years. For initial type conversions the pilot should consider the options available to control the glider in the event of a disconnected or control restriction.

Gordon MacDonald

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This glider suffered a tail strike on a slightly snatched winch launch, the tailskid and lower sternpost on this Skylark 3 failed.

This resulted in the pilot losing all elevator and rudder control during the rest of the launch and subsequent crash.

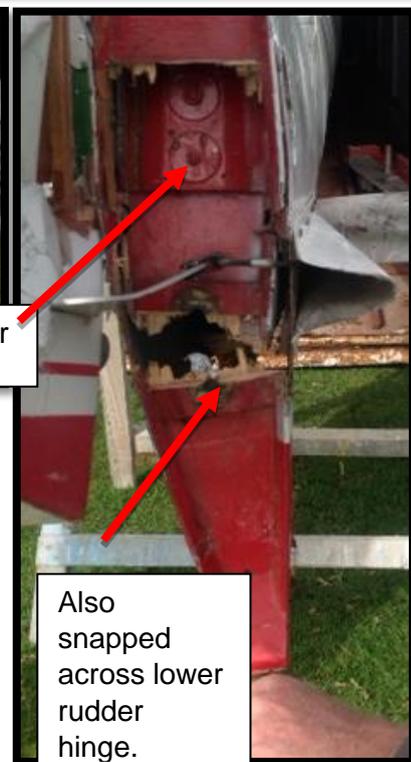
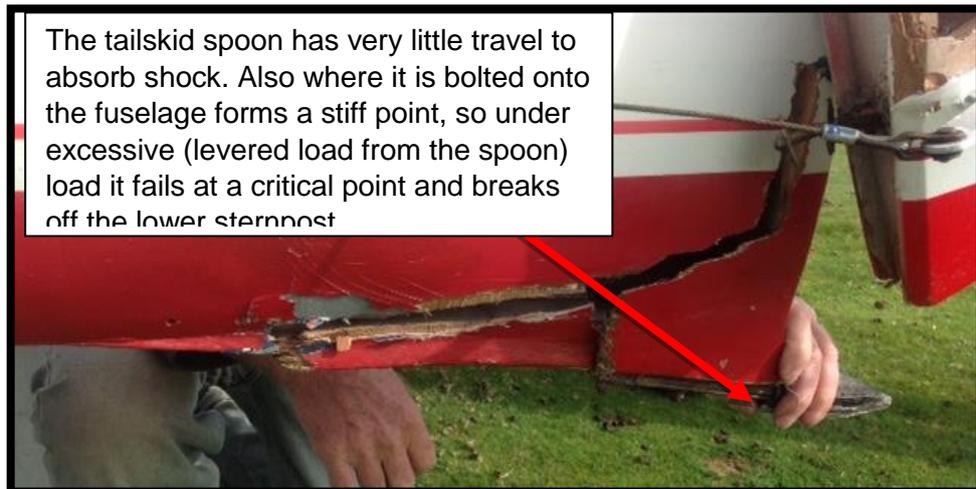
There is no indication of any pre accident damage or glue failure on this glider when inspected after the accident. It is fair to say the original design of tailskid and short leaf spring provide almost no cushioning at all, if the tail strikes the ground.

On later versions of Skylarks the design was changed, presumably to make the tailskid more able to withstand a tail strike.

The newer design has a much longer leaf spring and a fairing in front of the tailskid retention bolts to stop the bolts catching on rocks etc.

If you have the old design, then you can modify it to the newer design.

Operationally, the Vintage gliding people at Lasham always have somebody hold the tail on the ground prior to all out to prevent a tail strike.





This is a Skylark 2 that has been modified to a later Slingsby build standard. It is believed this is a far more durable design. I will publish the drawings in the compendium as soon as we get them.