

SSDR mishap

Last November the rear rigging wires of an SSDR trike disconnected from the keel tube when the securing bolt dropped out in flight. The pilot managed to land the aircraft safely but the wing and propeller were severely damaged. The nut and bolt must have been present during the pilot's pre-flight inspection; disconnected rear wires would have been immediately noticeable. An AAIB report surmises that the nut vibrated loose in flight and the bolt fell out due to vibration and gravity.

According to the report, the wires became detached about five minutes after take-off. The pilot quickly realised what had happened and applied back pressure on the base bar to keep tension on the front wires and maintain structural integrity. The pilot could only apply limited pitch control; the engine was not shut down for fear of unbalancing the aircraft. The pilot landed back at the airfield they had just left, where calm conditions allowed minimal base bar movement during the approach. Once lift was lost on landing the front wires went slack and the wing fell forwards, eventually contacting the propeller.

The manufacturer has since replaced the bolt with a longer item with a castellated nut and cotter pin. The Pilot's Operating Manual now includes a requirement for pilots to specifically check this fitting during their pre-flight inspection.

This incident should remind all pilots of the importance of pre-flight inspection. Such inspections should include confirming that Nyloc nuts have enough bolt thread fully through the nylon locking section. An industry rule of thumb is that there should be at least two threads protruding through the nut. It is unwise to depart from the standard practice of replacing Nyloc nuts when they have been used once.

The pilot reported, "This was the fourth flight on my wing. A pre-flight had been conducted along with full control checks; nothing felt unusual and a normal take-off and departure ensued. When the rear control bar wires hit my shoulders I looked up, confirmed the situation and assessed what to do next. Am I still flying? Yes! Do I have control? Yes! Don't upset the situation. An old NASA phrase popped into my head: "Keep calm and work the problem." I considered a field landing but didn't want to make any more turns than necessary, so I made a gentle one towards the airfield. Once lined up on final I made an emergency call and settled into a gentle approach to the grass. The wing showed no signs of being unstable and I even had pitch response to round out and flare. What will I take away from this situation? This type of Nyloc fastener is used on thousands of aircraft and could have happened to any aircraft I had flown in the last 30 years. Will I continue to check my nuts? Yes, but in a different way, on any aircraft I fly.'

Full report:

www.gov.uk/government/publications/aaib-publications/aaib-publications