

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Extra 330SC, OO-SDJ
<b>No &amp; Type of Engines:</b>	1 Lycoming AEIO 580 B1A piston engine
<b>Year of Manufacture:</b>	2009 (Serial no: N/K)
<b>Date &amp; Time (UTC):</b>	23 July 2019 at 1125 hrs
<b>Location:</b>	Wickenby Aerodrome, Lincolnshire
<b>Type of Flight:</b>	Private
<b>Persons on Board:</b>	Crew - 1                      Passengers - None
<b>Injuries:</b>	Crew - None                      Passengers - N/A
<b>Nature of Damage:</b>	Fabric detached from rear fuselage
<b>Commander's Licence:</b>	Private Pilot's Licence
<b>Commander's Age:</b>	38 years
<b>Commander's Flying Experience:</b>	906 hours (of which 250 were on type) Last 90 days - 25 hours Last 28 days - 5 hours
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot

## Synopsis

During an aerobatic flight the pilot felt an unusual vibration through the left rudder pedal. He aborted the flight and, after landing, found that the fabric covering the rear fuselage had torn disrupting the airflow around the rudder. The cause for the fabric failure could not be identified.

## History of the flight

The pilot was performing an aerobatic flight overhead of Wickenby Aerodrome, Lincolnshire. Approximately ten minutes into the flight, whilst performing a vertical climb manoeuvre, he felt a significant vibration in the left rudder pedal. He immediately aborted the manoeuvre and brought the aircraft into level flight. He reduced the speed and monitored the level of vibration, which did not significantly diminish. He therefore decided to land the aircraft. After landing the pilot found that the fabric that covered the rear fuselage had ripped and that the loose fabric had been flapping in the airflow around the left side of the fuselage, inducing the rudder vibration (Figure 1).

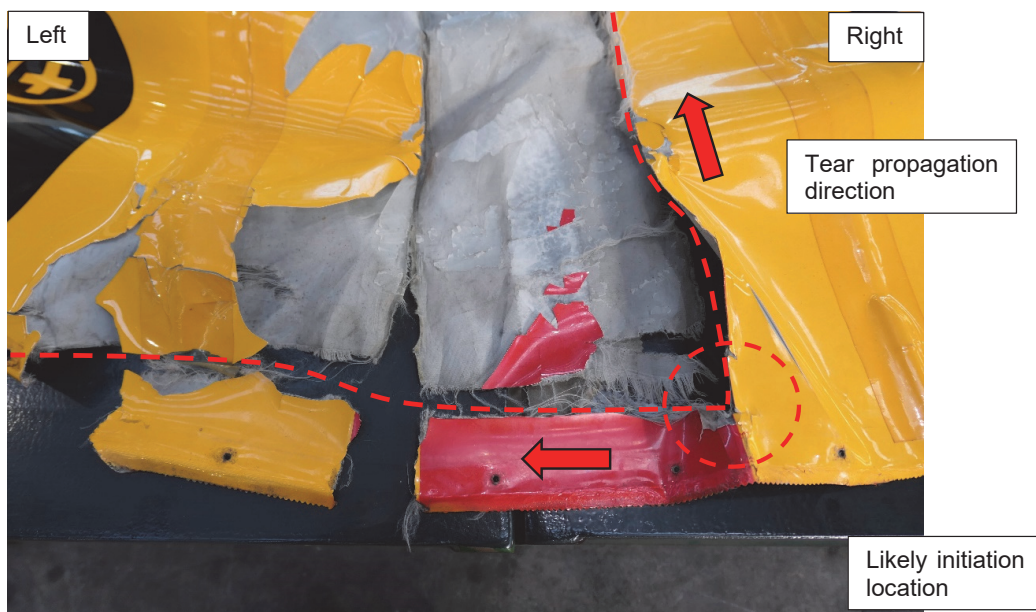
The pilot had completed normal pre-flight inspections and did not identify any damage to the fabric prior to the flight.



**Figure 1**

Rear fuselage of OO-SDJ showing extent

The Ceconite 102 fabric was removed from the aircraft and sent to the AAIB for further examination. This identified that the failure was likely to have initiated at the front of the fabric panel adjacent to the right lower stringer which runs along the tubular steel spaceframe rear fuselage. Initially a lateral and axial tear is likely to have occurred, which would have progressed rearward along the stringer (Figure 2), until it met the skin surrounding the tail cone. The cause for the initial material failure could not be positively identified.



**Figure 2**

OO-SDJ removed fabric.

Note: fabric laid flat with forward edge toward the bottom of the image

**AAIB comment**

In this instance the loose fabric caused sufficient aerodynamic disruption to be felt by the pilot through the rudder pedals. With the loose fabric exposed to the airflow it is likely that further tearing would have occurred, leading to possible entanglement with the control surfaces. The prompt action by the pilot in aborting the flight showed positive and timely decision making in light of an abnormal aircraft characteristic.