

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Extra EA 300/L, G-ZEXL	
<b>No &amp; Type of Engines:</b>	1 Lycoming AEIO-540-L1B5 piston engine	
<b>Year of Manufacture:</b>	2006	
<b>Date &amp; Time (UTC):</b>	14 November 2008 at 1547 hrs	
<b>Location:</b>	Sywell Aerodrome, Northamptonshire	
<b>Type of Flight:</b>	Formation Aerobatic Training	
<b>Persons on Board:</b>	Crew - 1	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - N/A
<b>Nature of Damage:</b>	Shattered canopy and minor damage to the tail plane and rudder	
<b>Commander's Licence:</b>	Commercial Pilot's Licence	
<b>Commander's Age:</b>	42 years	
<b>Commander's Flying Experience:</b>	4,755 hours (of which 615 were on type) Last 90 days - 119 hours Last 28 days - 14 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

### Synopsis

An unsecured fuselage panel detached during a maximum energy manoeuvre. The panel struck and destroyed the canopy and caused damage to the aircraft. The pilot was protected effectively by the use of a helmet.

### History of the flight

The aircraft was on its seventh flight following a 150 hr maintenance inspection. The previous six flights, flown over a nine-day period, had involved relatively low energy manoeuvring. Three 'A' checks as well as pilot pre-flight walkrounds had been conducted in this period with no relevant defects being noted. The incident flight, conducted over the aircraft's base airfield with ground safety precautions in place, was a

formation display practice. As the aircraft conducted a maximum performance 'break', a three-foot square section of the forward fuselage detached. This fuselage section impacted the canopy, causing it to shatter, before the panel struck the rear fuselage and tail. The pilot immediately terminated the display and landed safely.

### Loss of fuselage panel

Following the incident, the operator established that there was no damage to the holes for four screws that secured the front horizontal edge of the fuselage panel, known as the 'turtle deck'. A review by the operator found photographs from before the fourth flight following maintenance (the first on the day of the incident); the four screws appear to be missing in this

photograph. It is therefore likely that the screws were either not correctly replaced following maintenance or were removed for unknown reasons at some point prior to the photograph being taken.

### **Maintenance action**

The missing four screws secure a composite panel. The maintenance organisation stated that the correct technique for securing this panel was to replace the screws to “finger tight”, then after adjusting the panel’s positioning, torque the screws to the required value. As part of their release to service, the maintenance organisation conducts a final inspection which includes

touching every panel and the inspector running their hand along screw lines. The maintenance organisation considers that the flexibility of the panel could have resulted in no screw head protrusion, even if torque to the screws had not been correctly applied.

### **Use of protective headgear**

The pilot, who was occupying the rear of the two tandem seats, was wearing a full ‘bone dome’ style helmet. Following the incident, the helmet had witness marks from contact with the Perspex canopy as it shattered. It is likely that the use of this helmet protected the pilot from a significant head injury.