

# GA1312

*Posted on 02.09.2022 by Steve Forward*

**Category:** [General Aviation](#)

**Report Title** Obstructed Trim Controls

## Initial Report

Immediately following rotation, the aircraft [an EV97] continued to pitch upward rapidly. Significant forward control inputs were required to keep the aircraft within flight envelope. Pre-flight checks indicated no obstructions or issues with trim control. In addressing the issue, it was found that the passenger seatbelt had become entangled in the trim control lever during boarding, but only compromised the control when the passenger moved during the take-off sequence. This pulled the elevator trim to its maximum deflection, forcing a significant nose up movement. The seatbelt adjuster was jammed in the trim groove and required significant force to remove. Following removal of the seatbelt from the trim control, the aircraft did not exhibit any unusual control movements and the flight continued without incident.

During pre-flight checks, the trim displayed no issues and on visual inspection it was not immediately obvious that the passenger seatbelt was fouling the controls. A physical check of seatbelts is now included in the pre-flight checks, as well as increased consideration of the trim movement. I understand that the EV97 trim is known by the CAA, or at least by AAIB – they've flagged it to owners a few times as being powerful if inadvertently hit, and they suspect but cannot prove that it was contributory to some loss of control incidents. I haven't read any reports before of the seatbelt obstructing the mechanism. The trim lever is located between the seats, in the same area the seatbelt hard connections are located.

## Comment

Trim 'runaway' is not one of those things that everyone thinks about when they run through their contingencies brief prior to take-off, and it's certainly a salutary lesson for us all. Startle-factor might be an issue if something like that happens but we should always be ready for things to go wrong as we get airborne, and one of those things could be control force issues. In such circumstances, holding the aircraft attitude steady against adverse control inputs whilst getting away from the ground is the key advice. The LAA and BMAA have previously separately evaluated the EV97's trim during flight test programmes and concluded that although it is known to be fast-acting and powerful, it can be counteracted by pilot input at all times. More generally, seatbelt security is an important pre-flight/pre-take-off check, especially without a passenger, and best practice is to

ensure that seatbelts (and other equipment/items) are secured properly with no loose ends that might get caught in controls etc.

## Key Issues

### Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

**Awareness** – inputs or cues not assimilated or sought (positive visual and functional check of controls and trims before take-off)

**Communication** – information flow (passenger briefing about care to avoid fouling of controls or trims by straps/clothing etc)

**Complacency** – assumptions (positive visual and functional check of controls and trims before take-off)

**loss\_of\_awareness**Awareness

**poor\_communication**Communication

**complacency**Complacency



