

MOD/204/011

PFA CLASSIFICATION A



PFA AIRWORTHINESS INFORMATION

RANS S.6 (all variants) seat harness condition

When Rans S6-ESD G-MYLA crashed following engine failure in 1999, the seat belt broke and the pilot was thrown out and killed. The AAIB considered that the pilot died as a result of a serious head injury which would almost certainly not have occurred had the seat belt remained intact. The AAIB concluded that the seat belt probably broke due to a hard object forming part of, or attached to the pilot's clothing, cutting into the seatbelt stitching in the area where the webbing was doubled back on itself to attach to the release box. The AAIB suggested that the design would be improved if the belt was overlapped the other way in this area so that the vulnerable stitching between the main part of the strap and the overlapped part was not pressing against the pilot's clothing.

The type of harness fitted to G-MYLA was the standard type supplied with the great majority of Rans S6, Rans S6-ESD and Rans S6-116 kits in the period 1990-1998. It is noted that Rans supplied two identical harnesses for installation in the left and right seat positions, i.e. not 'handed'. This means that if the harness is installed per the Rans instructions it is inevitable that the pilot harness will end up overlapping in what AAIB suggest is the undesirable direction, while the passenger side overlap is orientated in the preferred sense.

This appears to have been a unique seatbelt failure and to have been triggered by a freak interaction between the seatbelt and the pilot's clothing. Consequently, acting in consultation with the CAA we have not called for a change in this design of Rans seatbelt, at least at this stage.

Nevertheless in the wake of this accident the PFA have decided to call for an examination of other harnesses of this type fitted to Rans S6 variants to determine whether there any signs of similar problems developing. We therefore call for the following actions.

Mandatory Action Required

1. Be conscious of the possibility of hard trouser belt buckles and the like cutting into the stitching of the harness in an accident, preferably wear flying kit without hard items of this type which could cut into the belt stitching.
2. Regularly examine the harnesses critically for any signs of wear and damage occurring to the stitching of the seatbelt and diagonal strap, particularly in the vicinity of the overlaps where the straps attach to the release buckle. If any signs of deterioration or damage are visible, the harness must be scrapped and replaced with a new one.

Note: Work done on a PFA aircraft must be overseen and signed out by a PFA Inspector

As some of these aircraft are approaching ten years old, the harnesses may be nearing the end of their useful life in any case. We would remind owners that, while aircraft seatbelts of synthetic material are not 'lifed items' as such, they are subject to critical ongoing 'on condition' inspection. When carrying out these inspections it should be borne in mind that particularly with lightweight harnesses such as this, only a small amount of deterioration in strength will render the harness inadequate for the job.