Australian Government
Civil Aviation Safety Authority

AIRWORTHINESS BULLETIN

Yak 52 Trim-Tab Failure

AWB 55-009 **Issue** : 1
Date : 25 October 2012

1. Effectivity

All operators and owners of Yak 52 aircraft (manufactured by both Yakovlev & Aerostar), both those in the Experimental and Limited CoA categories.

2. Purpose

To alert operators and maintainers to the potential for failure of the elevator trim-tab, which has been attributed to the over-tightening of locking nuts at the end of the push-pull rod.

3. Background

A recent incident was reported to CASA where the elevator trim-tab unit suffered a structural failure in the push-rod, triggering an episode of violent airframe vibration which itself caused the trim-tab to break into several pieces. The vibration also caused considerable damage to the elevator which has had to be replaced.

Figure 1: Damaged trim-tab from below

Figure 2: Damaged trim-tab from above

Whilst the cause of the failure has not been formally determined, advice from some operators has focused on the push-pull rod attachment, and in particular the prospect that the locking nut may have been over-tightened at some point in the aircraft's life. Such over-tightening leads to the crushing of the inner elastic material which could lead to reduction in strength of the attachment, itself having the potential to cause the fitting to fail.

The maintenance manual makes mention of inspecting the trim-tab area, but it does not specifically provide any inspection requirements for the attachment point.

4. Recommendations

1. Operators are recommended to talk with their LAME as well as the aircraft manufacturer about the trim-tab issue in order to determine any suitable course of action.

2. It's recommended that Operators make contact with other operators of the Yak 52 aircraft, through such forums as the Warbirds Association, to share any insights or discoveries associated with the trim-tab issue.

3. If operators and/or maintainers discover defects on the trim-tab mechanism and attachment, as well as any other defects with the aircraft of any nature, submit a Service Difficulty Report (SDR) to CASA. This information is used by CASA to monitor inherent technical issues with aircraft, and is the basis for issuing airworthiness advice, such as this Bulletin.

5. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

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