

FLIGHT DESIGN USA SAFETY DIRECTIVE No.15

Revision 1

Trim Tab Reinforcement

Safety Alert

Flight Design USA

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Changes

- Some of the wording has been changed for clarity.
- The statement that the speed limitation is applicable "until the mandated procedure has been completed" was inserted.

Discussion

Recently a CTSW 2007 exhibited significant stick vibration in pitch during high speed flight. The aircraft remained controllable, and, after slowing down, the vibration stopped. The investigation ruled out the balancing of the trim tab as these are mass balanced at the factory in accordance with detailed flutter and ground vibration tests and analysis. The investigation did determine that a pitch control vibration could result from the debonding in the area of the Trim Tab Bracket (Part No. KA 3011110) from the trim tab (anti-servo tab) as evidenced by a crack located at the attachment point. (Fig. A)



Fig. A: Inspection area: Trim tab control horn attachment point
(Seen from underneath the stabilator)

Corrective Action

Flight Design is mandating an immediate inspection of the Trim Tab Bracket attachment area, with special consideration to the composite structure of the trim tab. The inspection will be performed before the next flight, and thereafter, prior to the first flight of the day. When inspecting the trim tab, the surface should be submitted to a gentle load by hand in order to expose any potential damage.

If cracks are found in the area of bonding (attach point) (Fig. A), the aircraft must not be flown until the mandated reinforcement procedure has been completed.

Regardless whether cracks are found, all aircraft listed in this Safety Directive are subject to the modification procedure within the next 25 flight hours, or at the next maintenance interval, whichever occurs first.

As an additional precaution, the maximum airspeed for the affected aircraft will be limited to V_H , 120 KIAS (maximum speed in level flight with maximum continuous power) in all regimes of flight including descending flight until the mandated procedure has been completed.

Procedure

The reinforcement procedure consists of reinforcing the point at which the control horn is bonded to the trim tab by the addition of specifically designed part manufactured by Flight Design (WA 3011011). The part is glued (bonded) to the control rod bracket and the lower trim tab surface with resin and delivers a secondary load path for the trim tab control forces.

The modification can be done without removing the trim tab, and does not require painting. (Figs.B1 & B2)

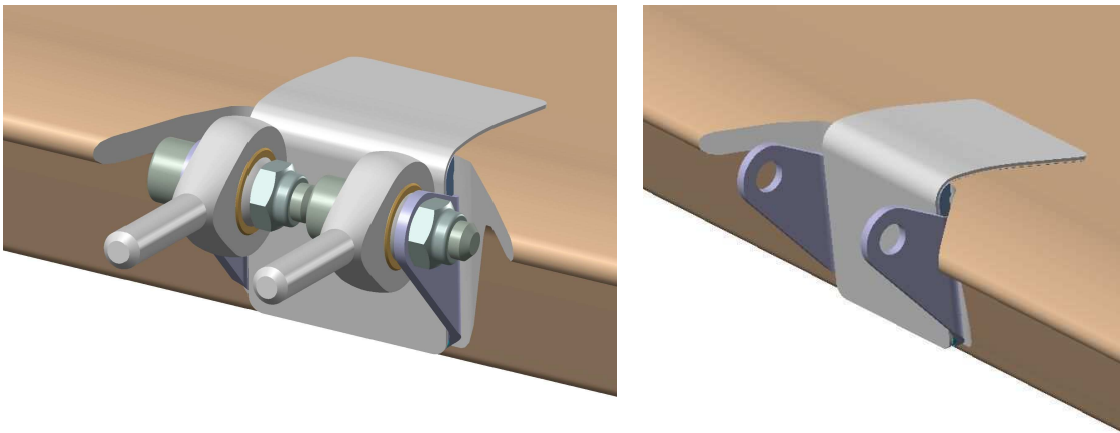


Fig B1 & B2: Reinforcement installed to the trim tab
(Tab shown bottom surface facing up)

The procedure shall be completed according to Flight Design document: [070625- Trim Tab Reinforcement Procedure](#) that accompanies this Safety Directive, and supplemented by the Maintenance Manual.

The task specific training will consist of consulting with the nearest Distributor prior to performing the modification

Cost

The procedure will be performed for free at the nearest Flight Design dealership. Should an owner decide to have the work done locally, a credit of \$ 150.00 will be issued upon return of a written confirmation that the task has been performed according to the FD procedure. The task specific training will consist of consulting with the nearest Distributor prior to performing the modification.

The reinforcement part will be supplied at no cost by Flight Design and will be obtained by the owner at the dealership level.

Reminder

Flight Design reminds the Owners/Operators of Flight Design aircraft that compliance with all Safety Directives, Aircraft Operating Instructions, and Maintenance Manuals as well as the reporting of any and all Safety of Flight or Service Difficulties by the Owner/Operator is *mandatory* for the operation of an S-LSA aircraft.