



US Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: ACTION: Review and Concurrence, Equivalent Level Of Safety for FAR 23.677 (a)(d); ACE-99-03 **Date:** March 23, 1999

From: Manager, Airplane Certification Office, ASW-150 **Reply to Attn. of:** Chuck Porter, (817) 222-5148

To: Manager, Project Support Section, ACE-112

Issue: Request for an equivalent level of safety finding to Federal Aviation Regulations (FAR) Part 23.677 (a) for the Air Tractor Inc. Model AT-802A airplane.

Background: Air Tractor Inc. is in the process of certifying a new Aileron Trim System on the Model AT-802A. FAR 23.677(a) requires a means to indicate to the pilot the position of the trim device with respect to the range of adjustment. This normally is accomplished with an aileron trim position indicator in the cockpit. An aileron trim position indicator is not provided.

Discussion: With the aileron trim fully deflected, the aileron control forces are less than 3 pounds at airspeeds of 140 mph IAS and below. At the highest Vne (222 mph IAS) and with the aileron trim tab fully deflected, the aileron control forces are well within the FAR 23.143 temporary force limits for a stick control airplane (30 pounds). The final FAA approved Flight Manual would require the pilot to reduce airspeed to a maximum of 140 mph IAS following a runaway aileron trim.

In view of the above, we recommend that the electric aileron trim system be approved without an aileron trim position indicator in the cockpit as required by FAR 23.677(a) based on a finding of equivalent level of safety. This equivalent level of safety would be granted for the following reasons:

- a. At Vne, the aileron control forces are well within the temporary limits with the aileron tab fully deflected.
- b. Below 140 mph IAS, the aileron control forces are less than 3 pounds with the aileron tab fully deflected.
- c. Takeoffs and landings may be safely accomplished with the aileron tab fully deflected.

For further questions or comments, please contact Mr. Chuck Porter at (817) 222-5148.

for 
Michele M. Owsley

Concurrence:



Michael Dahl
Manager, Standards Office, ACE-110

for 
Michael Gallagher
Manager, Small Airplane Directorate, ACE-100