



Interagency Aviation Accident Prevention Bulletin



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Subject: Misrigged Flight Controls

Area of Concern: Preflight/Flight Safety

Distribution: All Aviation Operations

Discussion: This bulletin addresses hazards related to misrigged primary and secondary flight controls and emphasizes the importance of thorough post-maintenance preflight inspections and operational checks.

During a post-maintenance check flight in an amphibious float-equipped aircraft, a DOI pilot encountered unusually heavy elevator forces during a waterway takeoff, requiring significant back pressure. After liftoff, the pitch-control difficulty increased, prompting the pilot to divert and land safely on a nearby gravel runway. Inspection revealed the elevator trim system had been installed incorrectly, causing the trim tab to move in the opposite direction and create excessive aerodynamic pressure. This event was reported in a SAFECOM submission [#26-0421](#). In 2023, a USFS pilot experienced a similar event also reported in SAFECOM, [#23-0642](#).



A few days prior to the flight, maintenance personnel completed an annual inspection which was documented in the aircraft logbook (OAS-2 Aircraft Status Log). Multiple discrepancies were corrected. The mechanic replaced the elevator trim actuator, followed maintenance manual procedures, and performed an operational check. However, the manual did not specify the expected direction of trim tab travel, and the mechanic did not notice the incorrect rigging.

The pilot, not fully aware of all the discrepancies or systems addressed during the inspection, followed standard post-annual-inspection flight-check procedures and did not perform an operational check of the trim system before takeoff.

Fortunately, in this event, the pilot was able to maintain control and land safely. The NTSB identified multiple accidents involving misrigged flight controls and trim systems and issued Safety Alert SA-042, "[Mechanics: Prevent Misrigging Mistakes](#)," emphasizing the importance of verifying correct directional movement following maintenance.

Post-Maintenance Check Flights

- Pilots should receive a detailed briefing on all maintenance performed including access to both the aircraft logbook and maintenance work package to understand which systems were serviced.
- Mechanics must follow all applicable maintenance manual procedures and verify that flight control surfaces move in the correct direction. Maintenance manuals often lack specific guidance on how to conduct operational system checks. If uncertain, seek assistance before returning the aircraft to service. Trim tabs generally move opposite to the primary flight control surface they control.
- Following this event, internal supplemental maintenance procedures were implemented covering flight control trim system maintenance, providing clear guidance for operational checks.

Key Takeaway

Maintenance that affects flight controls or trim systems deserves extra attention. Mechanics should verify correct control movement before returning the aircraft to service and pilots should understand all maintenance that was performed so they can focus their inspections and flight checks on the affected systems. Two independent sets of eyes are one of the best defenses against maintenance-induced accidents.

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