
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/BEECH 35/58 Amdt 5 and issues the following AD under subregulation 39.1 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Beechcraft 35 (Bonanza) Series Aeroplanes**AD/BEECH 35/58
Amdt 6****Empennage Structural Integrity****10/2003**

Applicability: All Model C35, D35, E35, F35, G35, H35, J35, K35, M35, N35, and P35 aircraft.

All Model S35, V35, V35A, and V35B aircraft, that do not have the straight tail conversion modification incorporated in accordance with Supplemental Type Certificate (STC) SA2149CE.

- Requirement:**
1. Verify that the ruddervator balance is within the manufacturer's specified limits as defined in the applicable shop or maintenance manual. If the ruddervator is found outside the specified limits, before further flight, balance the ruddervator control surfaces in accordance with Section 3 of Beech Shop Manual 35-590096B19, or subsequent revisions.
 2. Visually inspect the empennage, aft fuselage, and ruddervator control system for damage, in accordance with the procedures and as specified in the instructions to Beech Kit 35-4017-1 "Kit information Empennage and Aft Fuselage Inspection", as specified in Beech Service Bulletin No. 2188, dated May 1987.
 - a. Repair or replace any damaged parts; and,
 - b. Set the elevator controls, rudder and tab system controls, cable tensions, and rigging.
 3. Accomplish the following actions in accordance with the procedures in the instructions to Beech Kit 35-4017-1 "Kit Information Empennage & Aft Fuselage Inspection", as specified in Beech Service Bulletin No. 2188:
 - a. Visually inspect the fuselage bulkheads at Fuselage Station (FS) 256.9 and FS 272 for damage (cracks, distortion, loose rivets, etc.).
 - b. Visually inspect the fuselage skin around the bulkhead for damage (wrinkles or cracks).
 - c. Repair or replace damaged parts, before further flight, after the inspection where damage is found.

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4. Remove all external stabiliser reinforcements installed during incorporation of either STC SA845GL, STC SA846GL, STC SA1650CE, STC SA2286NM, or STC SA2287NM, as applicable; in accordance with the applicable maintenance information.
 - a. Seal and fill any residual holes with appropriate size rivets.
 - b. The internal stub spar incorporated through STC SA1649CE and STC SA1650CE may be retained.
 - c. The external angles incorporated through STC SA1649CE may also be retained by properly trimming the leading edges section to permit installation of the stabiliser reinforcement referenced in Requirement paragraph 5.a. of this Directive.
 - d. For the Beech Models S35, V35, V35A, and V35B aircraft, the tail-safe external angles that were installed in accordance with STC SA1649CE may be retained and used instead of the stabiliser reinforcement specified in Requirement paragraph 5.a. of this Directive.
5. Accomplish the following in accordance with the instructions to RAC Kit No. 35-4016-3, 35-4016-5, 35-4016-7, or 35-4016-9, as applicable, and as specified in Beech SB No. 2188:
 - a. Install stabiliser reinforcements;
 - b. Set the elevator nose-down trim; and
 - c. Replace the ruddervator tab control cables with larger diameter cables.
6. Verify the accuracy of the aircraft basic weight and balance information and correct any discrepancies, in accordance with the following procedures:
 - a. Weight and Balance Accuracy Method No.1:
 - i. Review existing weight and balance documentation to assure completeness and accuracy of the documentation from the most recent approved weighing or from factory delivery to date of compliance with this Directive.
 - ii. Compare the actual configuration of the aircraft to the configuration described in the weight and balance documentation.

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- iii. If equipment additions or deletions are not reflected in the documentation or if modifications affecting the location of the centre of gravity (eg. paint or structural repairs) are not documented, determine the accuracy of the aircraft weight and balance data in accordance with Method No.2.
- b. Weight and Balance Information Accuracy Method No.2:
 - i. Determine the basic empty weight and centre of gravity (CG) of the empty aircraft using the Weighing Instructions in the Weight and Balance section of the aircraft flight manual/pilot's operating handbook (AFM/POH).
 - ii. Record the results in the aircraft records, and use these new values as the basis for computing the weight and CG information as specified in the Weight and Balance section of the AFM/POH.

Note: FAA AD 94-20-04 R2 Amdt 39-13147 refers.

- Compliance:
- 1. Within 100 hours time in service after 5 January 1995; thereafter before further flight after the ruddervators are repaired or repainted (even if stripes are added or paint is touched up).
 - 2. Unless already accomplished, inspect and set the controls, tension, and rigging within 100 hours time in service after 2 October 2003. Accomplish any repairs and replacements before further flight after the inspection.
 - 3. Within 100 hours time in service after 2 October 2003; thereafter at intervals not to exceed 100 hours time in service.
 - 4. Within 100 hours time in service after 5 January 1995, unless already accomplished.
 - 5. Within 100 hours time in service after 5 January 1995, unless already accomplished.
 - 6. Within 100 hours time in service after 5 January 1995, unless already accomplished. Correct any discrepancies before further flight after the verification.

The compliance times for Requirements 1, 4, 5, and 6 remain unchanged by this issue.

This Amendment becomes effective on 2 October 2003.

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Background: Tests undertaken by the manufacturer with respect to the structural integrity of the empennage, indicated initially that the empennage strength was marginal when the aircraft is operated in certain conditions of the flight envelope.

Amendment 2 removed temporary speed restrictions.

Amendment 3 extended the fuselage bulkhead inspection to all aircraft.

Amendment 4 clarified the intent of Requirement 5.

Amendment 5 was issued as a result of information received by the FAA from the field on the ability to accomplish and understand the existing AD. This amendment condensed and clarified information presented in FAA AD 94-20-04 and removed Beech Models 35, 35R, and B35 aircraft from applicability. The actions that apply to Beech Models 35, 35R, and B35 aircraft are now incorporated in AD/BEECH 35/70 Amdt 1.

Amendment 6 is issued in response to the latest revision of the related FAA AD, which maintains the actions of the previous FAA AD, but makes the repetitive visual inspection of the empennage, aft fuselage, and ruddervator control system, and subsequent actions, a one-time action; and adds repetitive inspections of the fuselage bulkheads.

Amendment 5 of this Airworthiness Directive became effective on 23 January 2003.

Amendment 4 of this Airworthiness Directive became effective on 12 October 1995.

The original issue of this Airworthiness Directive became effective on 20 November 1986.



David Villiers
Delegate of the Civil Aviation Safety Authority

22 August 2003