
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/BEECH 35/70 and issues the following AD under subregulation 39.1 (1) of CAR 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 35/70**
Amdt 1**Airspeed Restriction****1/2003**

Applicability: Models 35, A35, B35, and 35R aircraft, all serial numbers.

Requirement: 1. Fabricate a placard that restricts the never exceed speed (Vne) to no more than 144 miles per hour (MPH) or 125 knots (KTS) indicated airspeed (IAS), and install this placard on the instrument panel within the pilot's clear view. The placard should utilise letters at least 2.54mm (0.10-inch) in height and contain the following words:

“Never exceed speed, Vne, 144 MPH (125 KTS) IAS”

2. Mark a red line on the airspeed indicator glass at 144 MPH (125 kts) and mark a white slippage mark on the outside surface of the airspeed indicator between the glass and the case.
3. Insert a copy of this Directive into the Limitations Section of the aircraft flight manual.
4. Visually inspect the empennage, aft fuselage, and ruddervator control system for damage in accordance with the procedures in paragraphs (5)(a) through (5)(f) of the Accomplishment Instructions section of Raytheon Service Bulletin No. SB 27-3358, Issued February 2000, and use a digital ultrasonic skin tester or equivalent skin tester or direct methods that utilise callipers and micrometers.
 - a. Part of this is an inspection of the aft fuselage skin for wrinkles or cracks. Specific skin thicknesses are presented in Figures 1 and 2 of this Directive. The skin thickness measurement is not repetitive.
 - b. The inspection and setting of the travels on the elevator and elevator trim tabs are not repetitive.
 - c. Repair or replace any damaged parts and set the elevator controls, rudder and tab system controls, cable tensions, and rigging.

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5. 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.
 - (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.
6. Inspect the aft fuselage, ruddervator, and related systems for acceptable condition in accordance with the procedures in the Accomplishment Instructions section of Raytheon Service Bulletin No. SB 27-3358. Accomplish the rebalancing in accordance with Section 3A(8) of the service bulletin and use the procedure in Section 3 of Beech Shop Manual 35-590096B19 (or subsequent revision).
 - a. Repair or replace any parts found unacceptable as specified in the Requirement document.

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- b. Rebalance the ruddervators to the new specifications that reduce the upper limit from 19.8 to 18 inch-pounds (tail heavy). This is not necessary initially if it can be positively verified in the logbook that the ruddervators meet the limits specified in the Requirement document:
 - (i) To positively show this, the entry must indicate that the ruddervator is within the specified limits and list the details of the balancing.
 - (ii) This must include the balancing methods used and the amount of weights and washers used.
- c. Discontinue the placard and operating limitations of Requirements 1, 2, and 3 of this Directive.

Skin Thickness – Raytheon Aircraft (Beech) Models 35, 35R, A35, and B35

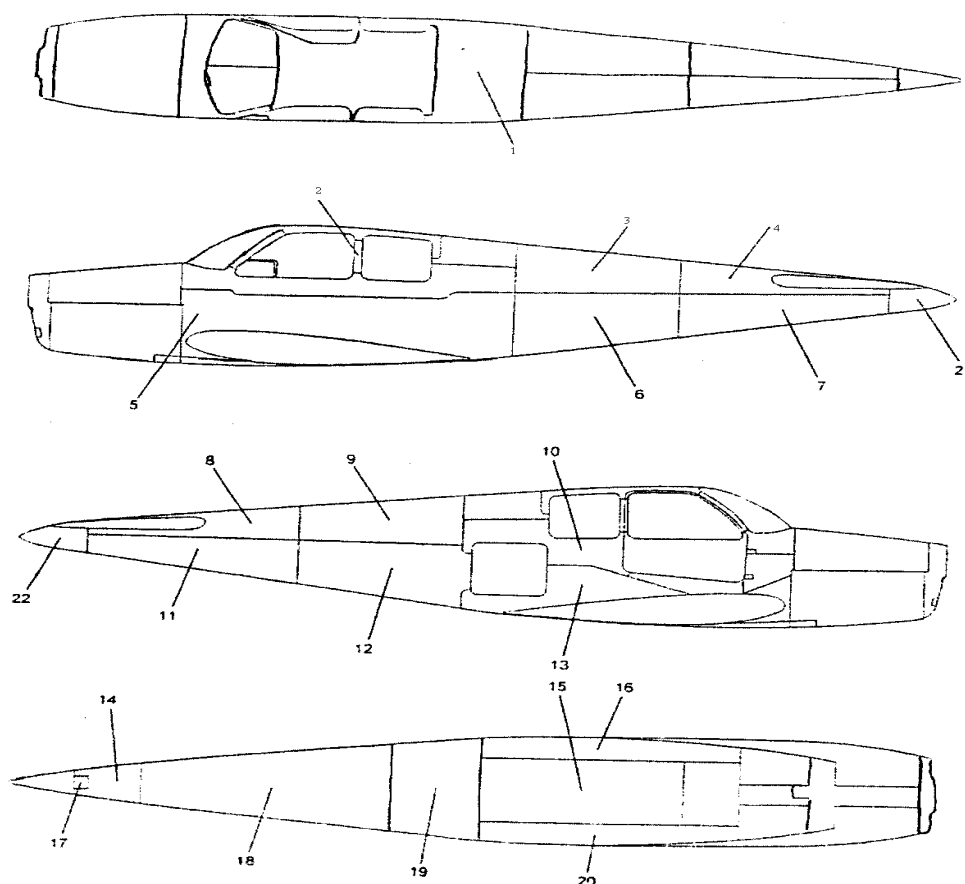


Figure 1

CIVIL AVIATION SAFETY AUTHORITY

SCHEDULE OF AIRWORTHINESS DIRECTIVES

Beechcraft 35 (Bonanza) Series Aeroplanes

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Skin Thickness - Raytheon Aircraft (Beech) Models 35, 35R, A35, and B35

INDEX NUMBER	PART NUMBER	SKIN THICKNESS	SKIN TOLERANCE	LOCATION	EFFECTIVITY
1	35-410006-26	0.016	See ANSI AA H35.2(M)		
2	35-410006-20	0.025	See ANSI AA H35.2(M)		
3	35-410008-2	0.016	See ANSI AA H35.2(M)	FS 151-FS272	D-1 through D-15
	35-410008-2	0.016		FS 151 - FS233.5	D-16 through D- 1574
	35-410008-20	0.016		FS 151 - FS 207	D-1575 & After
4	35-410008-18	0.025	See ANSI AA H35.2(M)	FS 233.5-FS 272	D-16 through D-1574
	35-410008-22	0.025		FS 207 - FS 272	D-1 575 & After
5	35-410006-6	0.025	See ANSI AA H35.2(M)		D-1 through D-1500
	35-410359-2	0.025			D- 1501 & After
6	35-410007-2	0.016	See ANSI AA H35.2(M)	FS 207– FS272	D-1 through D-1574
	35-410007-24	0.016			D-1575 & After
	35-410007-24	0.020			Class 111
7	35-410007-26	0.020	See ANSI AA H35.2(M)	FS 207 - FS 272	D-1575 & After
8	35-410009-12	0.025	See ANSI AA H35.2(M)	FS 233.5 - FS 272	D-16 through D-1574
	35-410009-18	0.025		FS 207 - FS 272	D- 1575 & After
9	35-410009-2	0.016	See ANSI AA H35.2(M)	FS 151 -IFS272	D-1 through D-15
	35-410009-2	0.016		FS 151 - FS 233.5	D-16 through D- 1574
	35-41009-16	0.016		FS 151 - FS 207	D-1575 & After
10	35-410006-22	0.025	See ANSI AA H35.2(M)	FS 207 - FS 27-1	
11	35-410010-18	0.020	See ANSI AA H35.2(M)		D-1575 & After
12	35-410010-2	0.016	See ANSI AA H35.2(M)	FS 15 1 - FS 272	D-1 through D-1574
	35-410010-16	0.016		FS 151 - FS 233.5	D-1575 & After
	35-410010-16	0.020		FS 151 - FS 207	Class III
13	35-410006-8	0.025	See ANSI AA H35.2(M)		D-1 through D-1500
	35-410359-4	0.025			D-1501 & After
14	35-41002-IBSC	0.032	See ANSI AA H35.2(M)		
15	35-410006-42	0.020	See ANSI AA H35.2(M)		D-1 through D-1500
	35-410359-6	0.020			D-1501 & After
16	35-410006-34	0.020	See ANSI AA H35.2(M)		D-1 through D- 1500
	35-410359-8	0.020			D-1501 & After
17	35-410012-2	0.016	See ANSI AA H35.2(M)		
18	35410011-2	0.016	See ANSI AA H35.2(M)		
19	35-410006-40	0.016	See ANSI AA H35.2(M)		
	35-410014BSC	0.016			Record Change
20	35-410006-32	0.020	See ANSI AA H35.2(M)		D-1 through D-1500
	35-4 103 359-10	0.020			D-1501 & After
21	TAILCONE				
22	TAILCONE				

Figure 2

Beechcraft 35 (Bonanza) Series Aeroplanes

AD/BEECH 35/70 Amdt 1 (continued)

Note: FAA AD 2002 -21-13 Amdt 39-12920 refers.

Compliance: Requirements 1, 2, and 3: Within 10 hours time in service after 8 July 1998.

Requirement 4: Within the next 100 hours time in service after the last inspection required by FAA AD 94-20-04 (AD/BEECH 35/58 Amdt 4) or within 25 hours time in service after 23 January 2003, whichever occurs later, and thereafter at intervals not to exceed 100 hours time in service. Accomplish any repairs, replacements, and adjustments before further flight after the applicable inspection.

Requirement 5: Within the next 100 hours after 23 January 2003, unless already accomplished as previously required by AD/BEECH 35/58 Amdt 4. Correct any discrepancies before further flight after the verification.

Requirement 6: Within 3 years after 23 January 2003, unless already accomplished. Accomplish any repair or replacement before further flight after the inspection. Accomplish any ruddervator rebalancing before further flight after the inspection, unless previously accomplished within the last 100 hours time in service, and thereafter when the ruddervators are repaired or repainted (even if stripes are added or paint is touched up).

The compliance time for Requirements 1, 2, and 3 remains unchanged by this issue.

This Amendment becomes effective on 23 January 2003.

Background: The FAA received reports of several incidents of in-flight vibrations on Beech Model 35, A35, B35, and 35R aircraft. These incidents are unrelated to AD 94-20-04 (AD/BEECH 35/58 Amdt 4), which currently requires, among other things, balancing the ruddervators (off the aircraft) anytime the ruddervator is repaired or repainted. Of the 10 incidents since AD 94-20-04 became effective, 7 of the affected aircraft had ruddervators that were balanced and 3 had ruddervators that were out-of-balance.

Post-flight inspections of the aircraft involved in the incidents have revealed cracked bulkheads and wrinkled skin in the aft fuselage; and broken spars, broken hinges, and bent skin on the stabilisers and ruddervators.

Model 35, A35, B35, and 35R aircraft are equipped with “V-tails” that have a narrow chord stabiliser without reinforcing cuffs. The FAA’s preliminary investigation reveals the possibility of an unstable flutter mode in the 160 to 170 MPH range for the affected aircraft. The unstable mode is not likely to occur on other Beech aircraft models with “V-tail” configurations.

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AD/BEECH 35/70 Amdt 1 (continued)

Amendment 1 is issued in response to a new FAA AD which was prompted by the manufacturer developing inspection and modification procedures that, when accomplished on the affected aircraft, will eliminate the need for the operating limitations. This Directive retains the operating limitations for the affected aircraft until the recently developed inspection and modification procedures are accomplished. This Directive also requires repetitive inspections of the fuselage structure.

The original issue of this Airworthiness Directive became effective on 8 July 1998



David Alan Villiers
Delegate of the Civil Aviation Safety Authority

29 November 2002