



No.	CF-1981-25R6	1/4
Issue Date	3 December 2001	

AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to **Canadian Aviation Regulation (CAR) 593**. Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H**, the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft. Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard**.

This AD has been issued by the Continuing Airworthiness Division (AARDG), Aircraft Certification Branch, Transport Canada, Ottawa, telephone (613) 952-4357.

Number: CF-1981-25R6

Subject: Raytheon Aircraft Company (formerly Beech) – Wing Main Spar

Effective: 31 December 2001

Revision: Supersedes Airworthiness Directive CF-81-25R5.

- Applicability:**
- (i) All Raytheon Beech Models 65 (L-23F), 65-80, 65A80, 65A80-8800, 65-88, 65B80, A65, A65-8200 and 70 "Queen Air" aircraft;
 - (ii) All Raytheon Beech Models 65-90, 65A90, 65A90-1 (U-21A, U-21G, JU-21A, RU-21A, RU-21D, RU-21H), 65A90-2 (RU-21B), 65A90-3 (RU-21C), 65A90-4 (RU-21E, RU-21H), B90, C90, C90A (S/N LJ-1063 through LJ-1087), and E90 "King Air" aircraft except those fitted with Beech Wing Modification Kit No. 90-4077-1S; and
 - (iii) All Raytheon Beech Models 100, A100 (U-21F), A100A and B100 "King Air" airliner aircraft except those fitted with Beech Wing Modification Kit No. 100-4007-1S.

Compliance: Compliance is required as indicated.

Background: In-flight wing failure has occurred as a result of fatigue failure of the lower outboard forward wing panel attachment fitting, and fatigue cracks have been found in the lower forward wing spar structure. This revision is issued to add a new STC SA01-122 to the list of Transport Canada approved wing strap modifications and reflect the new Canadian Aviation Regulations (CARs) regarding qualification requirements for non destructive testing.

Corrective Actions: To detect cracks and reduce the possibility of wing structural failure, inspect the lower forward wing main spar structural components in accordance with the procedures, and at the intervals specified in Tables I and II below. Note that, although this directive only specifies intervals of inspection of the Site 1 lower forward attach fittings, the remaining 12 of 16 wing attachment fittings must be inspected in accordance with the Raytheon Beechcraft Structural Inspection and Repair Manual, Part Number 98-39006 Revision A4, dated 1 May 1987, (hereafter referred to as the "Beech SIRM").

Inspection Sites

Inspection sites on the wing lower forward spars are identified in Table I below, which is to be read in conjunction with the appropriate section of the Beech SIRM.

Inspections of the lower forward spar structure are required on both sides of the aircraft at the following sites:

TABLE I

Inspection Sites

1. Inboard and outboard wing attachment fittings.
2. Inboard and outboard wing fitting to spar cap attachment.
3. Spar cap in each wheel well.
4. Spar cap in each nacelle, inboard of wheel well.
5. Lower surface of spar cap from nacelle to fuselage.
6. Four fastener holes in spar cap at each wing root.
7. Structure under center section subfloor between forward and aft spars.
8. Outboard wing lower forward spar cap from wing attachment fitting to tie-down.

Inspection Procedures

Inspection procedures to be followed must be in accordance with those defined for each site in the aforementioned Beech SIRM. Fluorescent penetrant and Eddy current inspections required must be conducted by qualified personnel in accordance with CARs 571 Schedule I.

TABLE II

Inspection Frequencies

INSP. SITE	A/C MODEL	A/C MOD STATUS ***	INITIAL INSPECTION ***	SUBSEQUENT INSPECTION	NOTE
1 & 2	ALL MODELS	U N S T R A P P E D	Upon reaching 2000 " <u>effective flying hours</u> "; or For aircraft previously inspected per AD CF-81-25R5, within 500 " <u>effective flying hours</u> " or 12 months, whichever occurs first, from last inspection of Site 1.	At intervals not to exceed 500 " <u>effective flying hours</u> " or 12 months, whichever occurs first.	*
		S T R A P P E D	Upon reaching 2000 " <u>effective flying hours</u> "; or For aircraft previously inspected per AD CF-81-25R5, within 1000 " <u>effective flying hours</u> " or 24 months, whichever occurs first, from last inspection of Site 1.	At intervals not to exceed 1000 " <u>effective flying hours</u> " or 24 months, whichever occurs first.	**
3 - 8	ALL MODELS	UNSTRAPPED & STRAPPED	As per Beech SIRM	As per Beech SIRM	

NOTES

- * Effective flying hours on UNSTRAPPED aircraft = $N + 5L$
 ** Effective flying hours on STRAPPED aircraft = $N + 2.5L$

where N = flying hours in normal operation
 L = flying hours in low level operation

Low level operation is defined as flight operation below 2500 ft above ground level, except for landing and take off. It includes pipeline survey, power transmission line survey, navigation facilities inspection, or any similar low level role where the aircraft is implicitly subjected to accelerated fatigue damage due to inherent gusty conditions or frequent manoeuvre loading, as opposed to a