

Robinson R44 Series Helicopters

AD/R44/10
Amdt 1

Main Rotor Blade

14/98
DM

Applicability: Model R44 helicopters, serial numbers 0002 through 0486, with main rotor blades part number (P/N) C016-1 installed.

- Requirement:
1. Inspect the main rotor blade skin around both inboard trim tab alignment rivets as follows, referring to Figure 1 of this Directive:
 - (a) Remove all paint around both rivets, exposing an area of approximately $\frac{3}{4}$ inch in diameter, at the inboard trim tab on the top and bottom of each blade (four places per blade). Use 180 grit or finer abrasive paper, followed by 600 grit or finer paper to eliminate coarse sanding marks. Sand only in a spanwise direction. Do not use chemical paint strippers.
 - (b) Inspect the blade skin around the rivets on the blade upper and lower surfaces (four locations) using a dye penetrant method.

Note 1: Chordwise cracks in the paint up to 2 inches long which are located along either inboard or outboard edge of the trim tab are acceptable.

- (c) Clean the sanded areas prepared with 111-trichloroethane or methyl ethyl ketone and then apply clear lacquer to seal the unpainted areas.

Note 2: Do not bend the inboard main rotor blade tabs from their present position or utilise them for any subsequent blade tracking adjustment.

2. Thereafter, using a 5-power or higher magnifying glass, visually inspect the upper and lower blade skin surfaces around the inboard trim tab rivets (four locations) for cracks.
3. Replace main rotor blades P/N C016-1 with main rotor blades P/N C016-2.

Note 3: Robinson Service Bulletin SB-28, dated 18 June 1998, refers.

Note 4: Installation of a set of main rotor blades, P/N C016-2, constitutes terminating action for the requirements of this Directive.

Note 5: FAA Priority Letter AD 98-22-16 refers.

- Compliance:
1. Unless already accomplished, within 5 hours time in service after November 4 1998.
 2. Before the first flight of each day, or at intervals not to exceed 5 hours time in service, whichever occurs first.
 3. Replace the main rotor blade before further flight if a crack, other than as described by Note 1, is found when inspected as per requirement 1 or 2, otherwise replace before 1 December 1998.

SCHEDULE OF AIRWORTHINESS DIRECTIVES

This amendment becomes effective on 4 November 1998.

Background: The FAA received a report of an incident in which a pilot heard a loud noise and felt severe vibrations while hovering, resulting in a forced landing. Upon inspection, a crack was found in a main rotor blade that started at the mid-span inboard trim tab and ran chordwise to the spar where it turned along the spar for about an inch. The crack originated from a trim tab alignment rivet hole in the blade skin.

Subsequent investigations revealed that the manufacturing process utilised to drill the trim tab alignment rivet holes in the main rotor blade skin can allow a fatigue crack to originate at these holes and propagate in the skin. This condition, if not corrected, could result in failure of the main rotor blade and subsequent loss of control of the helicopter.

This amendment adds a requirement to replace the affected main rotor blades. Examination of the cracked main rotor blade has indicated that a crack may develop in any of the affected blades. As it has not been possible to determine how quickly the crack progressed, it is not possible to maintain the airworthiness of the blade through inspection. It is therefore necessary to remove the affected main rotor blades from service.

The initial issue of this Airworthiness Directive became effective on 5 June 1998.

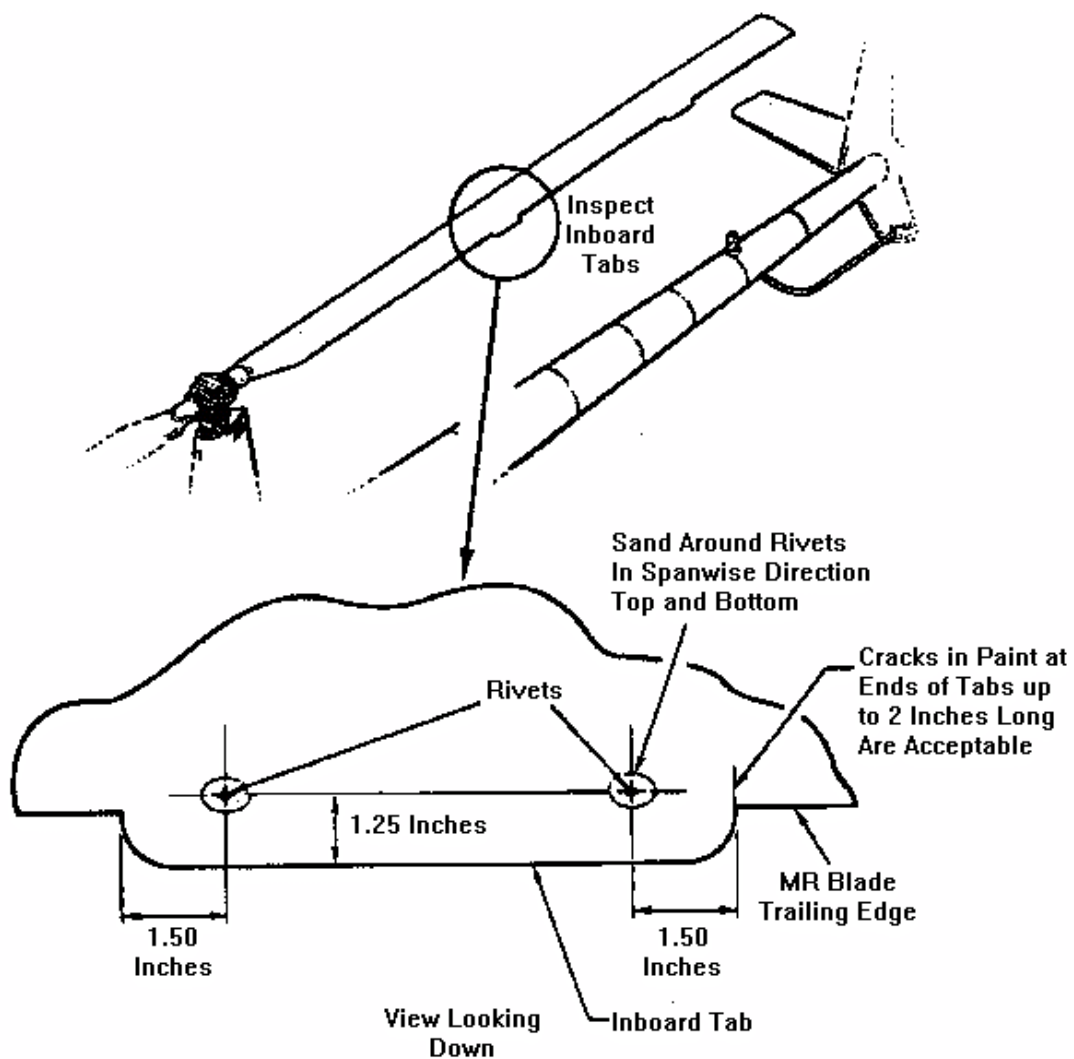


Figure 1