

EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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DATE: March 18, 2004
AD #: 2004-06-52

Send to all U.S. owners and operators of Robinson Helicopter Company Model R22, R22 Alpha, R22 Beta, and R22 Mariner helicopters.

This Emergency Airworthiness Directive (AD) is prompted by two accidents that occurred in Australia and Israel that were attributed to failure of the main rotor blade (blade). Investigation revealed that corrosion from water penetration initiated a fatigue crack in a blade. Information from the accident investigations revealed that the cracked blades manifested an increase in helicopter vibration. Following a track-and-balance of the blades, the vibrations would go back to normal for a short time and then slowly increase again until blade failure occurred. This condition, if not prevented, could lead to a fatigue crack, blade failure, and subsequent loss of control of the helicopter.

This unsafe condition is likely to exist or develop on other helicopters of the same type design. Therefore, this AD requires:

- Within 10 hours time-in-service (TIS) or 30 days, whichever occurs first, track-and-balancing blades that are 5 years old or have 1,000 hours TIS;
- Replacing the blades with airworthy blades before further flight if an abnormal increase in vibration occurs within 5 hours TIS after the last track-and-balance;
- Within 10 hours TIS or 30 days, whichever occurs first, for helicopters with blades, part number (P/N) A016-1, replacing the blades with airworthy blades other than blades, P/N A016-1, on or before reaching 2,000 hours TIS;
- Within 10 hours TIS or 30 days, whichever occurs first, for helicopters with blades, P/N A016-2, replacing the blades with airworthy blades other than blades, P/N A016-1, on or before reaching 2,200 hours TIS or 10 years, whichever occurs first; and
- Within 10 hours TIS or 30 days, whichever occurs first, determining the age of each blade and revising the component history card or equivalent maintenance record for blades, P/N A016-2, by adding a 10-year retirement life to the current 2,200 hours TIS retirement life.

This AD revises the Airworthiness Limitations section of the applicable maintenance manual by adding a new retirement life of 10 years to the current 2,200 hours TIS retirement life. The blades must be retired upon reaching 2,200 hours TIS or 10 years, whichever occurs first.

This rule is issued under 49 U.S.C. Section 44701 pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2004-06-52 ROBINSON HELICOPTER COMPANY: Docket No. 2004-SW-01-AD.

Applicability: Model R22, R22 Alpha, R22 Beta, and R22 Mariner helicopters, with a main rotor blade (blade), part number (P/N) A016-1 or A016-2, installed, certificated in any category.

Compliance: Required as indicated.

To prevent a fatigue crack, blade failure, and subsequent loss of control of the helicopter, accomplish the following:

(a) Within 10 hours time-in-service (TIS) or 30 days, whichever occurs first, for helicopters with blades that are 5 years old or have 1,000 hours TIS, track-and-balance the blades.

(b) Before further flight, if an abnormal increase in vibration occurs within 5 hours TIS after the last track-and-balance, replace the blades with airworthy blades other than blades, P/N A016-1.

(c) Within 10 hours TIS or 30 days, whichever occurs first, for helicopters with blades, P/N A016-1, replace the blades with airworthy blades other than blades, P/N A016-1. Compliance with the current life limit of 2,000 hours TIS for blade, P/N A016-1, is required.

(d) Within 10 hours TIS or 30 days, whichever occurs first, for helicopters with blades, P/N A016-2, replace the blades with airworthy blades other than blades, P/N A016-1, on or before reaching 2,200 hours TIS or 10 years, whichever occurs first.

(e) Within 10 hours TIS or 30 days, whichever occurs first, unless accomplished previously, revise the component history card or equivalent maintenance record for blades, P/N A016-2, by adding a 10-year retirement life to the current 2,200 hours TIS retirement life.

(f) Within 10 hours TIS or 30 days, whichever occurs first, determine the age of each blade:

(1) For blades that have an Airworthiness Approval tag or a "yellow tag", the time begins on the date stated on the tag.

(2) For blades that have no tag, the time begins on the date stated on the original Airworthiness Certificate as documented in the aircraft maintenance logbook.

(g) This AD revises the Airworthiness Limitations section of the applicable maintenance manual by adding a new retirement life of 10 years to the current 2,200 hours TIS retirement life. The blades must be retired upon reaching 2,200 hours TIS or 10 years, whichever occurs first.

Note: Robinson Model R22 Maintenance Manual, dated January 16, 2004, contains the revised Airworthiness Limitations section.

(h) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Los Angeles Aircraft Certification Office, Transport Airplane Directorate, FAA, for information about previously approved alternative methods of compliance.

(i) Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the helicopter to a location where the requirements of this AD can be accomplished provided that abnormal vibration is not present.

(j) Emergency AD 2004-06-52, issued March 18, 2004, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: Fred Guerin, Aviation Safety Engineer, FAA, Los Angeles Aircraft Certification Office, Airframe Branch, 3960 Paramount Blvd., Lakewood, California 90712, telephone (562) 627-5232, fax (562) 627-5210.

Issued in Fort Worth, Texas, on March 18, 2004.

S. Frances Cox, Acting Manager
Rotorcraft Directorate, Aircraft Certification Service

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