EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

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

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DATE: August 19, 2002
AD #: 2002-17-51

Send to all U.S. owners and operators of Agusta S.p.A. Model A109E helicopters.

This superseding Emergency Airworthiness Directive (AD) is prompted by a failure of a tail rotor blade that resulted in a forced auto-rotative landing. The failure of the tail rotor blade was due to a fatigue crack. This condition, if not detected, could result in the failure of a tail rotor blade and subsequent loss of control of the helicopter.

The FAA has reviewed Agusta Alert Bollettino Tecnico No. 109EP-30, Revision A, dated July 25, 2002 (BT), which describes procedures for checking and inspecting both sides of the tail rotor blades, part number (P/N) 109-8132-01-111, for a crack and reducing the helicopter never exceed speed (Vne).

On July 9, 2002, the FAA issued Emergency AD 2002-14-51, which applies to Agusta Model A109E and A119 helicopters. That AD requires, before each flight, visually checking each tail rotor blade on both sides for a crack. That AD also requires, within 5 hours time-in-service (TIS) and thereafter at intervals not to exceed 5 hours TIS, inspecting each tail rotor blade for a crack with a 5x or higher magnifying glass. If you are unable to determine by the visual inspection whether there is a crack, the AD requires conducting a dye penetrant inspection. Replacing any cracked tail rotor blade with an airworthy blade is also required before further flight. That AD was prompted by the failure of a tail rotor blade resulting in a forced auto-rotative landing. The failure of the tail rotor blade was due to a fatigue crack.

Since the issuance of AD 2002-14-51, the manufacturer determined, and we agree, that reducing the Vne is necessary to reduce the tail rotor loading. The reduction in Vne supports the increase in the visual inspection interval from 5 hours TIS to 25 hours TIS. Further, we have determined that additional modifications are necessary for the Agusta Model A119 helicopters that are not required for the Model A109E helicopters, so we are superseding AD 2002-14-51 and issuing a separate AD for each model.

The Ente Nazionale per l'Aviazione Civile (ENAC), the airworthiness authority for Italy, notified the FAA that an unsafe condition may exist on these helicopter models. The ENAC advises of the failure of a tail rotor blade that resulted in a forced auto-rotative landing. The ENAC classified the BT as mandatory and issued AD No. 2002-384, dated July 29, 2002, to ensure the continued airworthiness of these helicopters.

This helicopter model is manufactured in Italy and is type certificated for operation in the United States under the provisions of 14 CFR 21.29 and the applicable bilateral agreement. Pursuant to the applicable bilateral agreement, the ENAC has kept the FAA informed of the situation described above. The FAA has examined the findings of ENAC, reviewed all available information, and determined that AD action is necessary for products of these type designs that are certificated for operation in the United States.

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

- Installing a placard in the helicopter and marking the airspeed indication at 140 knots indicated airspeed (KIAS) to indicate a reduction in the helicopter Vne of 28 KIAS before further flight;
- Visually checking the tail rotor blades on both sides for a crack before each start of the helicopter engines;
- Visually inspecting the tail rotor blades with a 5x or higher magnifying glass within 25 hours TIS and thereafter at intervals not to exceed 25 hours TIS, and anytime an increase in vibration occurs, and conducting a dye-penetrant inspection if you are unable to determine by the visual inspection whether or not there is a crack; and
- Replacing any cracked tail rotor blade with an airworthy tail rotor blade before further flight.

The actions must be accomplished in accordance with the BT described previously.

An owner/operator (pilot) may perform the visual check required by paragraph (b) of this AD and must enter compliance with that paragraph into the helicopter maintenance records in accordance with 14 CFR 43.11 and 91.417(a)(2)(v). A pilot may perform this check because it involves only a visual check for a crack in the tail rotor blade and can be performed equally well by a pilot or a mechanic.

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.

2002-17-51 AGUSTA S.p.A.: Docket No. 2002-SW-42-AD. Supersedes Emergency AD 2002-14-51, Docket No. 2002-SW-35-AD.

Applicability: Model A109E helicopters, with tail rotor blade, part number 109-8132-01-111, installed, certificated in any category.

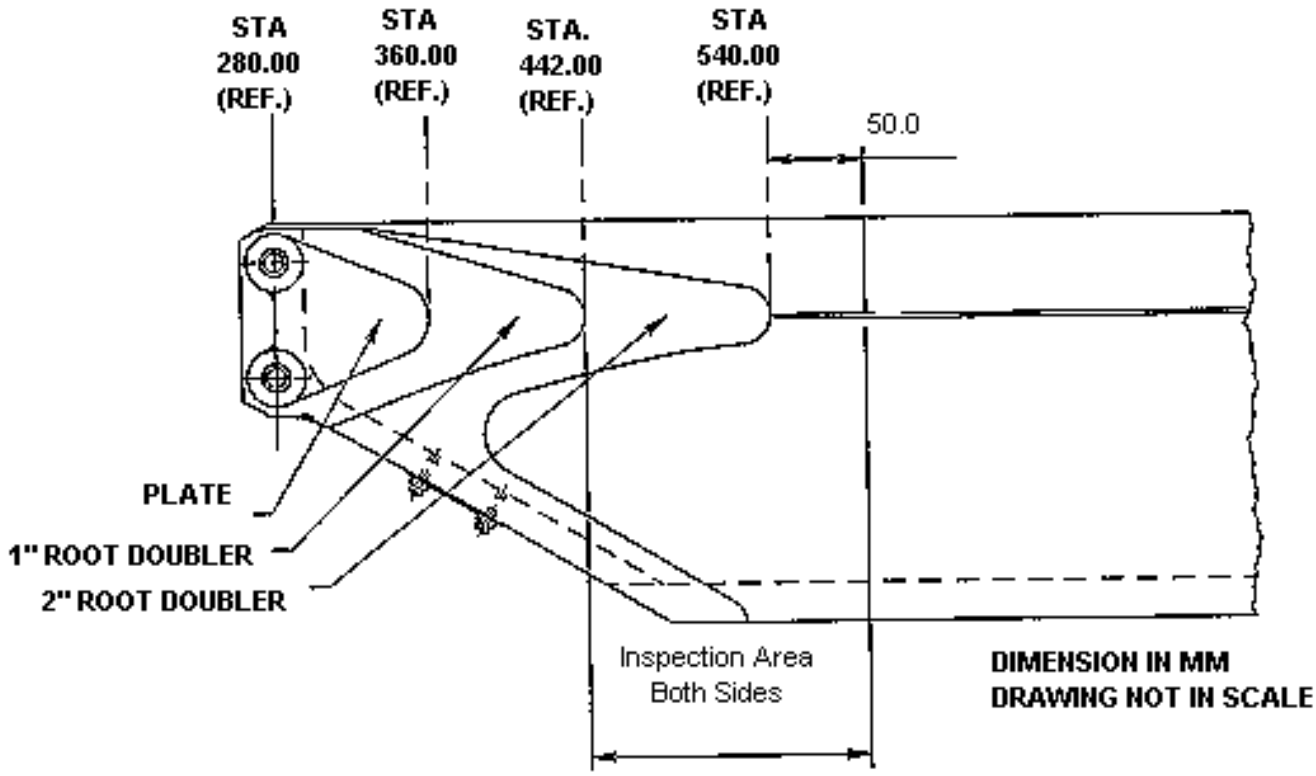
Note 1: This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent failure of the tail rotor blade and subsequent loss of control of the helicopter, accomplish the following:

(a) Before further flight, install a placard in the helicopter and mark the airspeed indicator at 140 knots indicated airspeed (KIAS) to indicate a reduction in the helicopter never exceed speed (Vne) of 28 KIAS in accordance with the Compliance Instructions, Part I, of Agusta Alert Bollettino Tecnico No. 109EP-30, Revision A, dated July 25, 2002 (BT).

(b) Before each start of the helicopter engines, visually check both sides of each tail rotor blade for a crack in the area depicted in Figure 1 of this AD. An owner/operator (pilot) holding at least a private pilot certificate may perform this visual check and must enter compliance with this paragraph into the aircraft maintenance records in accordance with 14 CFR 43.11 and 91.417(a)(2)(v). See Figure 1:



Part Number 109-8132-01-111 Tail Rotor Blade

FIGURE 1

Note 2: Paint irregularities on the tail rotor blade may be due to a crack.

(c) Within 25 hours time-in-service (TIS), and thereafter at intervals not to exceed 25 hours TIS, and anytime there is an increase in vibration levels, using a 5x or higher magnifying glass, visually inspect each tail rotor blade for a crack before further flight in accordance with the Compliance Instructions, Part III, paragraphs 1. through 5., of the BT. Reporting to Agusta Service Engineering is not required. If you are unable to determine by the visual inspection whether there is a crack, dye penetrant inspect the tail rotor blade for a crack in accordance with the Compliance Instructions, Part III, paragraph 6., of the BT.

(d) Replace any cracked tail rotor blade with an airworthy blade before further flight.

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Regulations Group, Rotorcraft Directorate, FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Regulations Group.

Note 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Regulations Group.

(f) Special flight permits will not be issued.

(g) Copies of the applicable service information may be obtained from Agusta, 21017 Cascina Costa di Samarate (VA) Italy, Via Giovanni Agusta 520, telephone 39 (0331) 229111, fax 39 (0331) 229605-222595.

(h) **Emergency AD 2002-17-51, issued August 19, 2002, becomes effective upon receipt.**

Note 4: The subject of this AD is addressed in Ente Nazionale per l'Aviazione Civile (Italy) AD No. 2002-384, dated July 29, 2002.

FOR FURTHER INFORMATION CONTACT: Jim Grigg, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Rotorcraft Standards Staff, Fort Worth, Texas 76193-0110, telephone (817) 222-5490, fax (817) 222-5961.

Issued in Fort Worth, Texas, on August 19, 2002.

David A. Downey,
Manager, Rotorcraft Directorate,
Aircraft Certification Service.