

EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

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

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DATE: February 7, 2002
2002-03-51

Send to all U.S. owners and operators of Hamilton Sundstrand Corporation Model 568F-1 Propellers.

This Emergency Airworthiness Directive (AD) is prompted by a report that a Hamilton Sundstrand propeller blade failed on an Aerospatiale ATR42-500 airplane. The failure occurred shortly after takeoff. The airplane was able to return safely to the point of departure. The position 5 blade failed outboard of the counterweight mounting flange. Additional damage to the propeller, engine, and nacelle was found. Root cause investigation has determined that the fracture began at an area of corrosion on the metallic portion of the blade just above and opposite the counterweight mounting flange. Engineering evaluation of the blade population that is susceptible to corrosion-induced fatigue has determined that the affected blades must be replaced, starting with the oldest blades first, to prevent blade failure.

This condition, if not corrected, could result in blade failure due to corrosion-induced fatigue, which could result in blade separation and possible loss of airplane control.

Since an unsafe condition has been identified that is likely to exist or develop on other propellers of this same type design, this AD requires replacement of propeller blades, part numbers (P/N's) R815505-2 and R815505-3, that have a serial number (SN) lower than FR429, with serviceable propeller blades.

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958) pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2002-03-51 Hamilton Sundstrand Corporation: Docket No. 2002-NE-02-AD

Applicability:

This airworthiness directive (AD) is applicable to Hamilton Sundstrand Corporation (formerly Hamilton Standard Division) model 568F-1 propellers with blade part numbers (P/N's) R815505-2 and R815505-3, with a serial number (SN) lower than FR429, installed. These propellers are installed on, but not limited to, Aerospatiale ATR 42-400 and -500 and ATR 72-212 and -500 airplanes.

Note 1: AD applies to each propeller identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For propellers 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 (c) 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:

Compliance with this AD is required as indicated, unless already done.

To prevent blade failure due to corrosion-induced fatigue, which could result in blade separation and possible loss of airplane control, do the following:

(a) For propeller blades P/N's R815505-2 and R815505-3, replace the blade using the SN range and compliance times specified in the following Table:

Blade Removal Time Requirements

If the SN of the propeller blade is -	Then replace the blade by the earlier of -
(1) Lower than FR183.	8 days or 80 flight hours (FH) after receipt of this AD.
(2) FR 183 to FR265.	21 days or 210 FH after receipt of this AD.
(3) FR 266 to FR341.	36 days or 360 FH after receipt of this AD.
(4) FR 342 to FR428.	52 days or 520 FH after receipt of this AD.

(b) Procedures for removing the propeller blade and installing a serviceable blade can be found in Hamilton Sundstrand Maintenance Manual P5206.

Alternative Methods of Compliance

(c) 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, Boston Aircraft Certification Office (ACO). Operators must submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Boston ACO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Boston ACO.

Special Flight Permits

(d) Special limited flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) for a nonrevenue flight to a location where the requirements of this AD can be done.

Effective Date

(e) **Emergency AD 2002-03-51, issued February 7, 2002, becomes effective upon receipt.**

FOR FURTHER INFORMATION CONTACT: Frank Walsh, Aerospace Engineer, Boston Aircraft Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7158; fax (781) 238-7170.

Issued in Burlington, Massachusetts on February 7, 2002.

Francis A. Favara,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.