	AIRWORTHINESS DIRECTIVE No F-2005-037	Distribution: A	Issue date: March 02, 2005	Page : 1/2
Direction générale de l'aviation civile France GSAC publication	This Airworthiness Directive is published by the DGAC on behalf of EASA, Airworthiness Authority of the State of Design for the affected product, part or appliance.		<i>Translation of « Consigne de Navigabilité » of same number. In case of difficulty, reference should be made to the French issue.</i>	
	<p align="center">No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive, unless otherwise agreed with the Authority of the State of Registry.</p>			
Corresponding foreign Airworthiness Directive(s): Not applicable		Airworthiness Directive(s) replaced: 1997-122 cancelled by its Revision 4		
Person in charge of airworthiness: TURBOMECA		Type(s): TURMO IV engines		
Type certificate(s) No. M8 TCDS No M8				
ATA chapter: 72	Subject: Inspection/Replacement of centrifugal compressor			

1. EFFECTIVITY:

This Airworthiness Directive (AD) refers to TURBOMECA turboshaft engines TURMO IV A and TURMO IV C. These engines equip SA 330 F, G and J PUMA helicopters.

2. REASONS:

The detachment of one or more blade pieces from the centrifugal compressor inducer, due to fatigue cracks on these blades, has caused several cases of power loss or in-flight engine shutdown.


The experience gained on the fleet in service shows that the fatigue crack initiation time is longer on EZ12CNDV12 compressor inducers not equipped with TU 197 (introduction of inducer made of 17.4 PH) than on TU 197 - modified compressor inducers (combined or not with TU 215 - shot-peening and polishing of the inducer and impeller assembly made of 17.4 PH)

TURBOMECA has developed the TU 191 and TU 224 modifications consisting in using inducers made of painted EZ12CNDV12 material for which the probability of a crack initiating is even less than with non-painted EZ12CNDV12 material.

This Airworthiness Directive cancels Airworthiness Directive DGAC No. 1997-122 R3 which is cancelled. Taking into account the in-service experience, it modifies the inspection frequency requested for those engines without any TU 191, TU 197, TU 215 and TU 224 modifications.

3. MANDATORY ACTIONS AND COMPLIANCE TIMES:

Compliance with this AD is required as indicated, unless already done, from the effective date of this AD.

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Within 50 flying hours or within 6 months (whichever occurs first), in accordance with the Mandatory Service Bulletin TURBOMECA No. A249 72 0100 Revision 5, inspect the centrifugal compressor in order to check that there is no corrosion, nor any cracks with the following frequency:

- 200 hours if the engine has no TU 191, TU 197, TU 215 and TU 224 modifications.
- 750/K hours⁽¹⁾ if the engine has been equipped with TU 197 or TU 215
- 1 000 hours if the engine has been equipped with TU 191 or TU 224.

4. REFERENCE PUBLICATION:

TURBOMECA Mandatory Service Bulletin No. A249 72 0100 Revision No. 5.

5. EFFECTIVE DATE:

March 12, 2005.

6. REMARK:

For questions concerning the technical contents of this AD's requirements, contact:

TURMO IV Support Operators
TURBOMECA
40220 TARNOS - France
Fax number: 33 (0)5 59 74 45 72.

7. APPROVAL:

This AD is approved under EASA reference No 2005-1910 dated February 22, 2005.

⁽¹⁾ The coefficient K represents the number of actuations per flying hour:

$$K = \frac{\text{Number of passages at a speed lower than 83\% of the gas generator maximum rating}}{\text{Mission flying hours number}}$$