GSAC

# AIRWORTHINESS DIRECTIVE

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*Inspection and/or modifications described below are mandatory. No person may operate a product to which this Airworthiness Directive applies except in accordance with the requirements of this Airworthiness Directive.*

**Translation of 'Consigne de Navigabilité' ref. : 2001-530(B)**
**In case of any difficulty, reference should be made to the French original issue.**



## AIRBUS INDUSTRIE

## A330 aircraft

Aileron servo-controls - Life limits (ATA 27)

**APPLICABILITY:**

AIRBUS INDUSTRIE A330 aircraft all certified models.

**REASONS:**

The operational life limits of the aircraft servo-controls, and in particular of the ailerons servo-controls given in the Revision 8 of AMM Chapter 05-11-00 Configuration 1 (dated September 15, 1999) are not addressed by the definition of the structural life limits of Safe Life items as defined in Section 9.1 (Life limits/Monitored parts) of the Airworthiness Limitations Section (located in the MPD Section 9) which replaces the aircraft AMM Chapter 05-11. As a result these life limits are removed from the above documents and integrated into this Airworthiness Directive (AD).

The aim of this AD is to require the removal and replacement of the servo-controls when they have reached their operational life limits; this in order to prevent any external hydraulic leakage resulting from end cap and barrel cracks on the aileron servo-controls, which could lead to the loss of both the operating function and the associated hydraulic circuit.

**ACTIONS:**

The following measures are rendered mandatory on the effective date of this AD:

**A) Inboard aileron servo-controls in active mode**

- Prior to accumulation of 6,000 flight hours counted from the date of their initial installation on the aircraft, remove and replace the aileron servo-controls operating in active mode with the following part-numbers 3337457-21, -22 and -23.
- Prior to accumulation of 18,000 flight hours counted from the date of their initial installation on the aircraft, remove and replace the aileron servo-controls operating in active mode with the following part-numbers 3337457-25, -26 and -27.
- Prior to accumulation of 21,600 flight cycles or 32,000 flight hours, whichever occurs first, counted from the date of their initial installation on the aircraft, remove and replace the aileron servo-controls operating in active mode with the following part-numbers 3337457-30, -31, -34, -35, -36, -37, and -38.

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- A demonstrated life limit of 60,000 flight hours is applicable to the aileron servo-controls operating in active mode with the following part-numbers 3337457-59, and -60 have. A follow up of the time accumulated (FH) by these ailerons servo-controls since their origin is necessary.

**B) Outboard aileron servo-controls in active mode**

- Prior to accumulation of 21,600 flight cycles or 32,000 flight hours, whichever occurs first, counted from the date of their initial installation on the aircraft, remove and replace the aileron servo-controls operating in active mode with the following part-numbers 3337458-30, -31, -34, -35, -36, -37 and -38.
- The aileron servo-controls operating in active mode with the following part-numbers 3337458-59 and -60 have a temporary life limit of 60000 flight hours, a follow up of the time accumulated (FH) by these aileron servo-controls since their origin is therefore necessary.

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**Note:** For parts that have been used in several aircraft models or type configurations having different life limit values, calculate the remaining life potential in the present configuration (i) using the following formula:

$$Tr_i = \left[1 - \sum \left(\frac{Ca_j}{Cp_j}\right)\right] \times Cp_i$$

where:

$Tr_i$ = remaining time (flight cycles/flight hours) for configuration i (present configuration).
$Ca_j$ = time (flight cycles/flight hours) accumulated on previous configuration(s) j.
$Cp_j$ = life limitation (flight cycles/flight hours) in previous configuration(s) j.
$Cp_i$ = life limitation (flight cycles/flight hours) in present configuration i.

Calculated total life potential = $(\sum Ca_j + Tr_i)$

When using the above formula $Tr_i$, $Ca_j$, $Cp_j$, $Cp_i$ are expressed in the same unit (flight cycles or flight hours): units can not be mixed in the same calculation.

After this calculation, if the life accumulated by the part in flight cycles or in flight hours exceeds the calculated total life potential in flight cycles or in flight hours, remove the part. If the life accumulated by the part both in flight cycles and in flight hours does not exceed the calculated total life potential in flight cycles and in flight hours, plan to remove the part in order to comply with both calculated total life potentials in flight cycles and in flight hours.

These calculations are required every time a part is moved from an installation to another having different limit values.

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**EFFECTIVE DATE : DECEMBER 08, 2001**