

# SERVICE BULLETIN

## MANDATORY No. 05.84

**SUBJECT:** TIME LIMITS  
Monitoring of Horizontal Stabilizer Spar Tubes.

Corresponds to MOD: Not applicable.

### LIST OF EFFECTIVE PAGES

- (1) Page Revision Code  
 - R: Revised, to be replaced  
 - N: New, to be inserted  
 - D: Deleted, to be destroyed

| CHAP/Sequence No. | Ind. | PAGE | DATE  | (1) | CHAP/Sequence No. | Ind. | PAGE | DATE | (1) |
|-------------------|------|------|-------|-----|-------------------|------|------|------|-----|
| 05.84.P5          |      | 01   | 98-05 | N   |                   |      |      |      |     |
| 05.84             |      | 1    | 98-05 | R   |                   |      |      |      |     |
| 05.84             |      | 2    | 98-05 | R   |                   |      |      |      |     |
| 05.84             |      | 3    | 98-05 | R   |                   |      |      |      |     |
| 05.84             |      | 4    | 98-05 | R   |                   |      |      |      |     |
| 05.84             |      | 5    | 98-05 | R   |                   |      |      |      |     |

| LIST OF APPROVED REVISIONS |                   | REVISION No 2 APPROVED   |
|----------------------------|-------------------|--------------------------|
| No.                        | Date              | Date : December 19, 1997 |
| 0                          | December 27, 1990 |                          |
| 1                          | February 25, 1991 |                          |



1. PLANNING INFORMATION

A. Effectivity

Alouette III helicopter versions : 316 B, 3160, 316 C, 319 A and 319 B.

- Equipped with horizontal stabilizers fitted with spars : P/N 3160.35.30.031.1 and P/N 3160.35.30.031.2 (Refer to paragraph 1C1 for identification).

B. Reason

This Service Bulletin, classified Mandatory, forms the subjects of the 49th Alouette III Airworthiness Directive, Revision 1.

Revision 1 to this Service Bulletin, which forms the subject of Revision 1 49th Alouette III Airworthiness Directive, gives more details regarding the second touch-up operation (paragraph 1C6c).

Revision 2 of this Service Bulletin which forms the subject of Revision 2 of the 49th Alouette II Airworthiness Directive is intended :

- to treat crackings in the protective coating of horizontal stabilizer spar tubes in paragraph 1C4,
- to update this Service Bulletin.

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Introduction of a monitoring procedure of the spars in order to prevent efficiently fatigue cracks caused by the presence of corrosion and/or fretting.

C. Description

1) Identification of the tubes

a) Tube P/N 3160.35.30.031.1

- PRE MOD 1033 :

External Protection Coating : cadmium plating + P50-range top coat shade.

b) Tube P/N 3160.35.30.031.1

- PRE MOD 629 and 1033 :

External Protection Coating : Pyrolac 611 bis.  
Inner face Protection Coating : P50 + dull white finish.

- POST MOD 1166 :

External Protection Coating : Pyrolac 611 bis + 610.  
Inner face Protection Coating : 880A + P50 + dull white finish.

c) Tube P/N 3160.35.30.031.2

External Protection Coating : 880A + Pyrolac 611 bis + colorless 610.  
Inner face Protection Coating : 880A + 611 bis + "chamois" 610 shade.

2) Work preparation

- Remove the two half-sections of the horizontal stabilizer.
- Remove the spar tube after precisely identifying the location and positioning of the tube (upper section, lower section).
- Clean the spar surface using a solvent that does not strip off the paint.

3) Areas to be checked (Figure 1)

The whole tube and in particular the embedded portions on either side of left-hand and right-hand fittings (A), and on the periphery of the tube (Figure 1 - DETAIL).

4) Operational procedures

Using a tenfold magnifying glass, inspect the surface condition of the tube within the area described as per paragraph 1C3.

If no defect can be detected on the protection coating (corrosion pitting or fretting marks, scratches, crazing of the paint), install the assembly back on aircraft. R

NOTE : Crazing : Fine cracking of the paint due to corrosion pitting on the base metal. R

If some defects can be observed :

CAUTION : TUBE P/N 3160.35.30.031.1 PRE MOD 1033 (REFER TO PARAGRAPH 1C1a) : SHOULD THEN BE SCRAPPED.

For all other types of tubes (paragraphs 1C1b and 1C1c), an identification of these defects should be performed.

In the event of crazing of the paint, rub with 200 grid abrasive paper down to base metal, before identifying the defects. R  
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5) Defect identification :

Using a tenfold magnifying glass (see photograph on page 5), identify the defects as follows :

Diameter : In order to cause the tube to be discarded, the diameter of pittings should be greater than or equal to 0.5 mm (i.e. 0.05 mm actual diameter).

6) Corrective action on the defects

a) If the defects observed do not bring about the scrapping of the tube :

- Strip off the tube of its paint as per MTC.
- Perform a dye penetrant inspection on the tube as per MTC in order to detect any possible fatigue cracks.

b) If there are some cracks : scrap the tube.

c) If there are no cracks : do the applicable touch-ups to correct the defects (corrosion, fretting) in the following manner :

- Sand the tube lengthwise with Grit 200 abrasive paper in order to eliminate them.

1st touch-up : maximum depth : 0.15 mm

- Blend radius : 50 times the depth of rework.
- Perform a dye penetrant inspection on reworked area as per MTC.
- Should some marks still remain or cracks become visible : scrap the tube.
- If no more mark is to be seen (neither any crack) : then perform the second touch-up operation.

2nd touch-up : mandatorily trim the surface 0.15 mm deep, beyond the dimension measured following the 1st touch-up operation

- Blend radius : 50 times the depth of rework.
- Sand using Grit 600 abrasive in the finishing phase.
- Apply protective coating over the touch-up as specified below :
  - . 1 layer of P5OSF phosphatizing primer.
  - . 1 layer of Celomer 7835 epoxy primer.

NOTE : 1) The reconditioning operation described as per paragraph 1C6c is to be performed but only once in the reworked area.

2) Total reworked depth after the two touch-ups have been performed must not exceed 0.30 mm.

#### 7) Installation of the tube and horizontal stabilizers

Install the assembly back on aircraft after setting the tube in its original position, as was identified during removal (paragraph 1C2).

Systematically replace rubber rings P/N 3160S.23.11.088 and Teflon washers P/N 3160S.23.11.098.

REMINDER : The torque of the castellated nut is to be checked after the first 5 flying hours.

#### D. Compliance

EUROCOPTER considers that compliance with the instructions contained in this Service Bulletin is mandatory :

At the work : Not applicable.

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Retrofit action : - By the Operator within the next 50 flying hours after receipt of this Service Bulletin.  
- Then every 200 flying hours or every 12 months.

Identification : Record embodiment of Revision 2 of this Service Bulletin in the aircraft documents (Log Card), as well as the serial number of the spar tube that has been checked.

#### E. Approval

Approved by Bureau Véritas by Amendment procedure December 27, 1990.

Approval is limited to civil version helicopters subject to Airworthiness Certificate.

The technical information contained in Revision 2 of this Service Bulletin was approved on December 19, 1997 under the authority of DGAC Design Organisation Approval No. F.JA01.

F. Manpower

Qualification : Not applicable.

G. Material - Cost - Availability

Lead times and prices will be provided the order acknowledgment form.

H. Tooling - Cost - Availability

Not applicable.

I. Weight and balance

- Weight : Not applicable.

- Moment : Not applicable.

J. Effect on electrical loads

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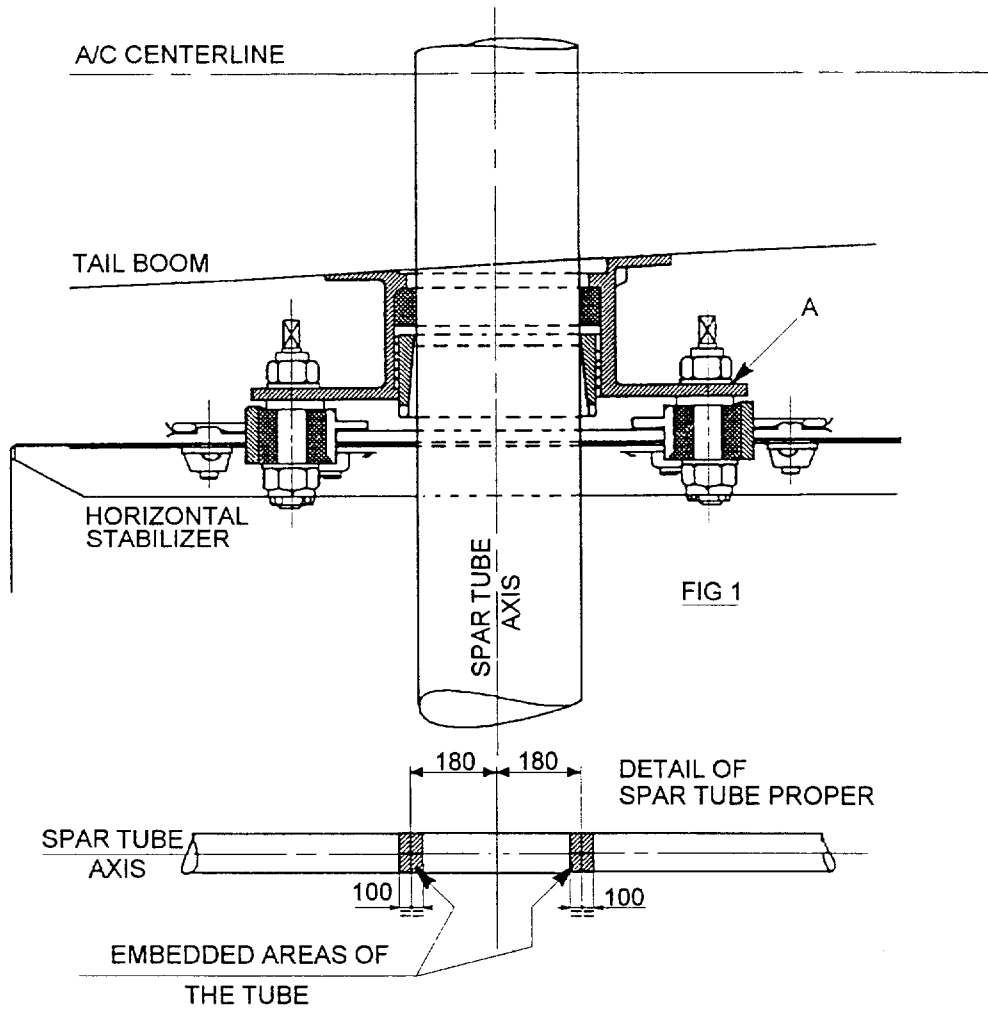
Not applicable

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K. References

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Not applicable.



Aspect of corrosion pittings seen with an approximately tenfold magnifying glass.

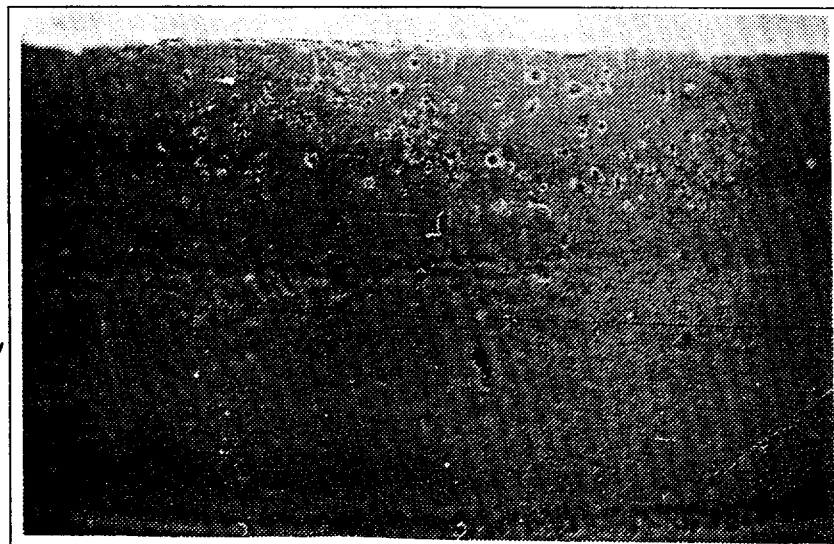


FIGURE 1

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