NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

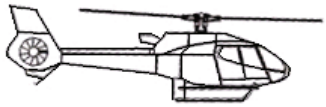
December 3, 2013

STRUCTURES

Group Chairman's Factual Report

WPR12MA034

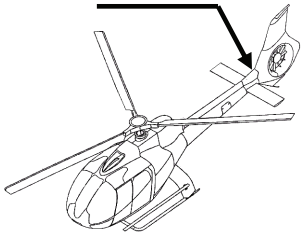
Attachment 2 – Eurocopter Emergency Alert Service Bulletin 53A019
(13 pages)



EMERGENCY
ALERT SERVICE BULLETIN

SUBJECT: FUSELAGE

Check of the tail boom / Fenestron junction frame



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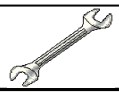
	

AIRCRAFT CONCERNED	NUMBER	Version(s)	
		Civil	Military
EC130	53A019	B4	

Revision No.	Date of issue
Revision 0	2011-06-14

Summary:

Check for cracks in the tail boom/Fenestron junction frame.

Compliance:

Compliance with this ALERT SERVICE BULLETIN is mandatory.

1. PLANNING INFORMATION

1.A. EFFECTIVITY

1.A.1. Helicopters/installed equipment

- Helicopters equipped with a tail boom assembly which does not embody:
. modification 073880 (Reinforcement of the tail boom / Fenestron junction),
or
. RDAS No. 350 53 522 07 or 350 53 521 10 or 350 53 524 10 or 350 53 525 10 or 350 53 526 10 or 350 53 511 11 or 350 53 512 11.

- The helicopter equipped with tail boom assembly number TB 7377 is not concerned by the instructions of this ALERT SERVICE BULLETIN.

NOTE 1

Refer to the aircraft individual inspection log book (MOD record) to identify the actual configuration of the helicopter.

NOTE 2

The tail boom assemblies which are not identified by one of the above-mentioned RDAS numbers and contain a tail boom / Fenestron junction frame riveted with brazier head rivets on the Fenestron side, have embodied modification 073880.

NOTE 3

The RDASs are identified by the marking of their number close to the tail boom identification label, visible from the inside of the rear cargo compartment.

NOTE 4

The helicopters having been subject to compliance with Service Bulletin No. 53-017 ***are concerned*** *by the instructions of this ALERT SERVICE BULLETIN, except for tail boom assembly number TB 7377.*

1.A.2. Non-installed equipment

- Tail boom assemblies not embodying:
. modification 073880 (Reinforcement of the tail boom / Fenestron junction) (See NOTE 2),
or
. RDAS No. 350 53 522 07 or 350 53 521 10 or 350 53 524 10 or 350 53 525 10 or 350 53 526 10 or 350 53 511 11 or 350 53 512 11 (See NOTE 3).

- The tail boom assembly with part number TB 7377 is not concerned by the instructions of this ALERT SERVICE BULLETIN.

1.B. ASSOCIATED REQUIREMENTS

Not applicable.

1.C. REASON

Following the issue of Information Notice No. 2167-I-53, EUROCOPTER has received new reports of cracks in the tail boom/Fenestron junction frame.
The cracks start in the plane of the rivet head countersinks on the RH side of the Fenestron (Detail E, Figure 3) and spread to the web of the frame (Details C and D, Figure 2).

The examination of the parts showed that the cracks were longer than in the previous cases, questioning easy detection of the cracks from the outside as well as the inspection interval to substantiate the strength of the frame.

Consequently, EUROCOPTER renders compliance with this ALERT SERVICE BULLETIN mandatory, whose purpose is to enable a detailed visual check from the outside and the inside of the frame and to schedule its replacement in case a crack is found.

Revision 0 of this ALERT SERVICE BULLETIN will form the subject of an EASA Airworthiness Directive.

1.D. DESCRIPTION

Compliance with this ALERT SERVICE BULLETIN consists in checking for cracks in the tail boom/Fenestron junction frame.

1.E. COMPLIANCE

NOTE 5

In the following paragraphs, use the contact information below to contact the Technical Support Department of the Customer Service:
Tel.: +33 (0)4.42.85.97.16.
Fax: + 33 (0)4.42.85.99.66.
E-mail: airframe.technical-support@eurocopter.com

NOTE 6

EUROCOPTER reminds you that a visual check for cracks is scheduled at the flight-related check (VLV) as per AMM Task 05-40-00,6-1 and makes it possible to detect a crack, if any.

1.E.1. Compliance at the works

Not applicable.

1.E.2. Compliance in service

Helicopters/installed equipment: The work on the helicopter is to be performed by the operator.

a) Within 10 flying hours following receipt of this ALERT SERVICE BULLETIN:
. Comply with paragraph 3.B.1. and 3.B.2. pending compliance with paragraph 3.B.3. and 3.B.4.

Interpretation of results following compliance with paragraph 3.B.1.and 3.B.2.:

1) Presence of a crack entirely crossing the web (c) of frame (a) (See detail D, Figure 2):
. All flights are prohibited.
. For the conditions for returning the helicopter to service, contact the Customer Service Technical Support Department. (See NOTE 5).

2) Presence of a crack crossing part of the web (c) of frame (a):
. All flights are prohibited except for the ferry flight not exceeding 10 flying hours.
. For the conditions for returning the helicopter to service, contact the Customer Service Technical Support Department. (See NOTE 5).

3) Presence of a crack on the outside of frame (a) and no crack in the web (c) of frame (a):
. Comply successively with paragraph 3.B.3. (unless already carried out) and 3.B.4.

4) If no crack is found:
. Flights can be continued.
. Pending compliance with paragraph 3.B.3. and 3.B.4., comply with paragraph 3.B.1. and 3.B.2. at periodic intervals not exceeding 40 flying hours.

b) Within 110 flying hours without exceeding 6 months following receipt of this ALERT SERVICE BULLETIN:
. Comply with paragraph 3.B.3. and 3.B.4. successively.

Interpretation of results following compliance with paragraph 3.B.3. and 3.B.4.:

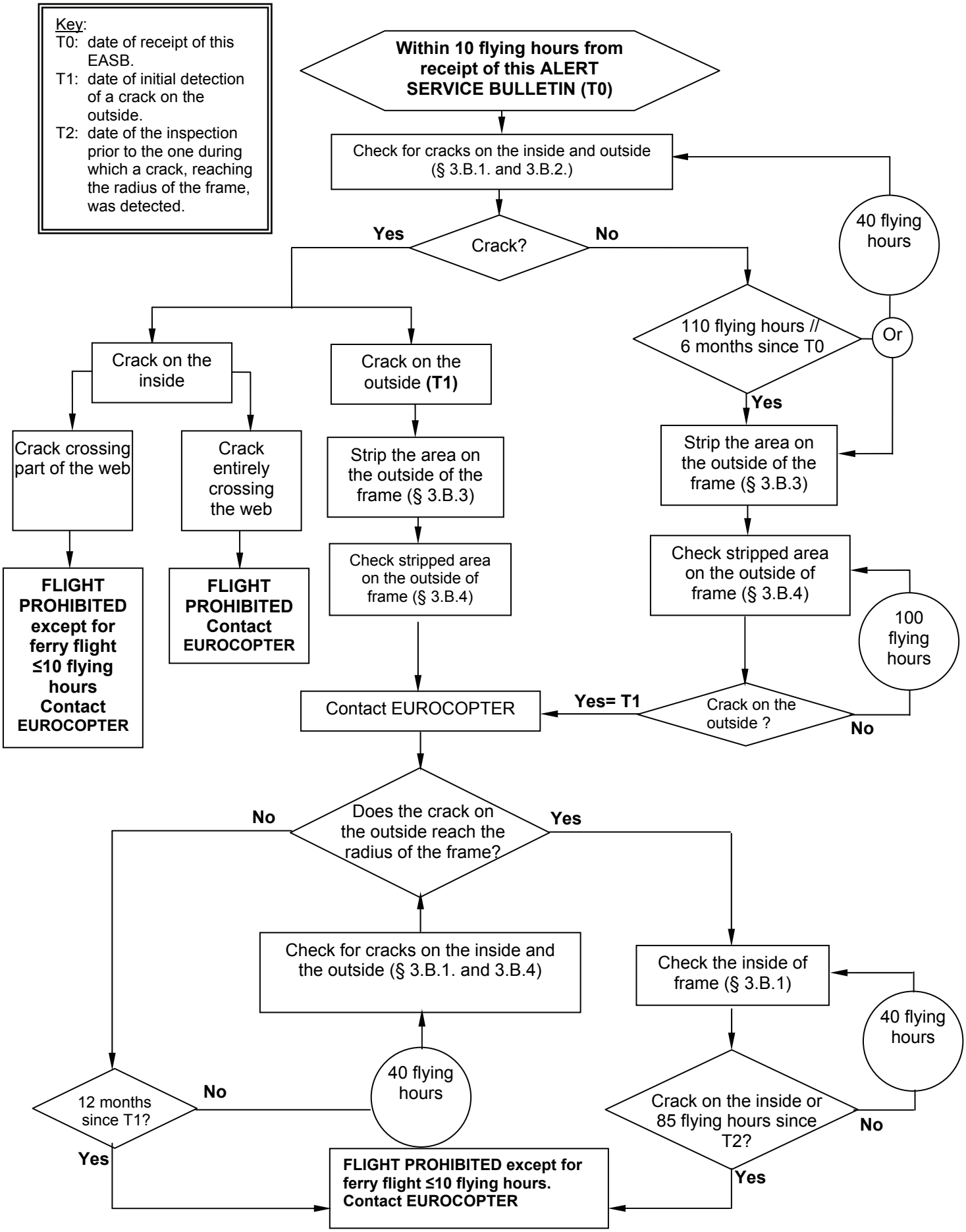
1) Presence of a crack reaching the radius of frame (a) (Figure 3):
. All flights are prohibited beyond 85 flying hours following the inspection (compliance with paragraph 3.B.4. or the flight-related check (VLV)) prior to the one during which a crack, reaching the radius of frame (a), was detected, except for the ferry flight not exceeding 10 flying hours.
. Comply with paragraph 3.B.1. at periodic intervals not exceeding 40 flying hours.
. For the conditions for returning the helicopter to service, contact the Customer Service Technical Support Department. (See NOTE 5).

2) Presence of a crack not reaching the radius of frame (a) (Figure 3):
. All flights are prohibited after 12 months from initial detection of a crack on the outside of the frame, except for the ferry flight not exceeding 10 flying hours.
. Comply successively with paragraph 3.B.1. and 3.B.4. at periodic intervals not exceeding 40 flying hours.
. Inform the Customer Service Technical Support Department. (See NOTE 5).

3) If no crack is found:
. Flights can be continued.
. Comply with paragraph 3.B.4. at periodic intervals not exceeding 100 flying hours.

NOTE 7

The flowchart below is intended to help you understand paragraph 1.E.2.


Key:
T0: date of receipt of this EASB.
T1: date of initial detection of a crack on the outside.
T2: date of the inspection prior to the one during which a crack, reaching the radius of the frame, was detected.
Within 10 flying hours from receipt of this ALERT SERVICE BULLETIN (T0)
Check for cracks on the inside and outside (§ 3.B.1. and 3.B.2.)
Crack?
Yes
No
40 flying hours
110 flying hours // 6 months since T0
Or
Yes
Crack on the inside
Crack on the outside (T1)
Crack crossing part of the web
Crack entirely crossing the web
Strip the area on the outside of the frame (§ 3.B.3)
Strip the area on the outside of the frame (§ 3.B.3)
Check stripped area on the outside of frame (§ 3.B.4)
Check stripped area on the outside of frame (§ 3.B.4)
100 flying hours
FLIGHT PROHIBITED except for ferry flight ≤10 flying hours Contact EUROCOPTER
FLIGHT PROHIBITED Contact EUROCOPTER
Contact EUROCOPTER
Yes= T1
Crack on the outside ?
No
No
Does the crack on the outside reach the radius of the frame?
Yes
Check for cracks on the inside and the outside (§ 3.B.1. and 3.B.4)
Check the inside of frame (§ 3.B.1)
40 flying hours
12 months since T1?
No
40 flying hours
Crack on the inside or 85 flying hours since T2?
No
Yes
Yes
FLIGHT PROHIBITED except for ferry flight ≤10 flying hours. Contact EUROCOPTER

Non-installed equipment:

Before installation on a helicopter:
- comply with paragraph 3.

1.F. APPROVAL

Approval of modifications:

Not applicable.

Approval of this document:

The technical information contained in this ALERT SERVICE BULLETIN Revision 0 was approved on June 10, 2011 under the authority of EASA Design Organization Approval No. 21J.056 for helicopters of civil versions subject to an Airworthiness Certificate.

1.G. MANPOWER

EUROCOPTER recommends that compliance with this ALERT SERVICE BULLETIN be ensured by personnel with the following qualification:

Qualification: 1 Mechanical Engineering Technician or Aircraft Structure Technician (paragraph 3.B.) and/or,
1 suitably trained pilot, qualified in accordance with local regulations (paragraphs 3.B.1., 3.B.2. and 3.B.4.).

The time for the operations is given for information purposes, for a standard configuration.

Time for the operations: Approximately 10 minutes for compliance with paragraph 3.B.1.
Approximately 10 minutes for compliance with paragraph 3.B.2.
Approximately 1 hour for compliance with paragraph 3.B.3. excluding drying time.
Approximately 10 minutes for compliance with paragraph 3.B.4.

1.H. WEIGHT AND BALANCE

Not applicable.

1.I. EFFECT ON ELECTRICAL LOADS

Not applicable.

1.J. SOFTWARE MODIFICATION EMBODIMENT RECORD

Not applicable.

1.K. REFERENCES

The following documents are necessary for compliance with this ALERT SERVICE BULLETIN.

Standard Practices Manual (MTC):
MTC: 20.02.07.403: Applying VERNELEC 43022 varnish.
MTC: 20.04.01.102: Description and use of standard cleaning products for individual parts and on aircraft.
MTC: 20.04.02.401: Stripping organic surface coatings.
MTC: 20.04.05.101: General information concerning painting means and paint touch-ups.
MTC: 20.04.05.402: EPOXY primer P05-P20 scheme.

Aircraft Maintenance Manual (AMM):
AMM: 55-11-00,4-1: Removal/Installation - Horizontal stabilizer

1.L. DOCUMENTS AFFECTED

Not applicable.

1.M. INTERCHANGEABILITY OR MIXABILITY OF PARTS

Not applicable.

2. MATERIAL INFORMATION

2.A. MATERIAL: PRICE - AVAILABILITY - PROCUREMENT

Not applicable.

2.B. INFORMATION CONCERNING INDUSTRIAL SUPPORT

Not applicable.

2.C. MATERIAL REQUIRED FOR EACH HELICOPTER/COMPONENT

Products to be ordered separately:

Refer to the Work Cards and Tasks specified in this ALERT SERVICE BULLETIN and the list below:

Designation	Qty	Product P/N	CM	Item No.
Primer P05	A/R	DHS186-111.20	CM 487	1
Primer P20	A/R	DHS186-111.40	CM 488	2
VERNELEC varnish	A/R	ECS2228.10	CM 514	3

The products can be ordered separately from the INTERTURBINE AVIATION LOGISTICS company.
Website: http://www.interturbine.com
Telephone: +49.41.91.809.300
AOG: +49.41.91.809.444

2.D. MATERIAL TO BE RETURNED

Not applicable.

3. ACCOMPLISHMENT INSTRUCTIONS

3.A. GENERAL

Read and comply with the general instructions concerning painting means and paint touch-ups as per MTC Work Card 20.04.05.101.

3.B. OPERATIONAL PROCEDURE

3.B.1. Inspection of the RH side of the tail boom/Fenestron junction frame from the inside (Figures 1 and 2)

- Check that there is no crack in the web (c) of frame (a) on the RH side (Details C and D, Figure 2) using a light source positioned in front of the opening of the drive shaft tube and by looking through the yaw control opening in the Fenestron (Detail B, Figure 1).

CAUTION

FOR THIS INSPECTION, THE SURFACE OF THE FRAME MUST BE CLEAN.

- If necessary, clean the web (c) of junction frame (a):
  . Remove the horizontal stabilizer as per AMM Task 55-11-00,4-1.
  . Clean junction frame (a) as per MTC Work Card 20.04.01.102.
  . Install the horizontal stabilizer as per AMM Task 55-11-00,4-1.

- Interpret the results in accordance with paragraph 1.E.2. a).

3.B.2. Inspection of the RH side of the tail boom/Fenestron junction frame from the outside before stripping (Figures 1 and 2)

- Check that there is no crack on the external surface of junction frame (a) (Detail A, Figure 1).

- Interpret the results in accordance with paragraph 1.E.2. a).

3.B.3. Stripping the RH side of the tail boom/Fenestron junction frame (Figure 3)

- Strip the RH side of junction frame (a) on Fenestron side, as per Detail E and as per MTC Work Card 20.04.02.401:
  . over a length of at least 270 mm (10.63 in.) from the cowling (b),
  . over the visible width of 45 mm (1.771 in.) from the cowling (b).

- Apply a coat of primer (1) or (2) to the stripped area as per MTC Work Card 20.04.05.402.

- Apply varnish (3) to the stripped area as per MTC Work Card 20.02.07.403.

3.B.4. Inspection of the RH side of the tail boom/Fenestron junction frame from the outside after stripping (Figure 3)

- Check that there are no cracks in the area stripped in accordance with paragraph 3.B.3.

- Interpret the results as per paragraph 1.E.2. b).

3.C. IDENTIFICATION

Identification of this document:

Record initial compliance with this ALERT SERVICE BULLETIN Revision 0 in the helicopter documents.

3.D. OPERATING AND MAINTENANCE INSTRUCTIONS

Not applicable.

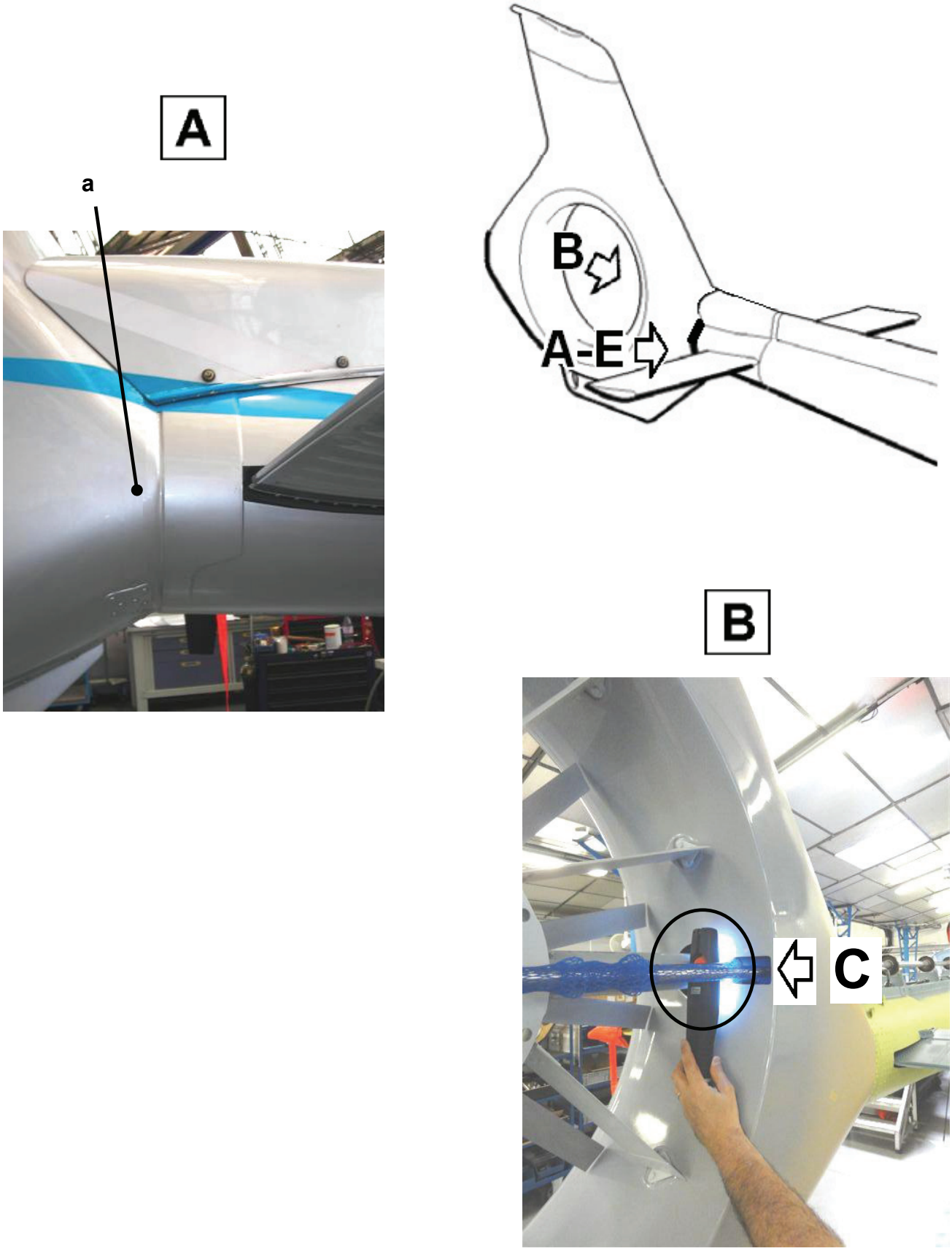
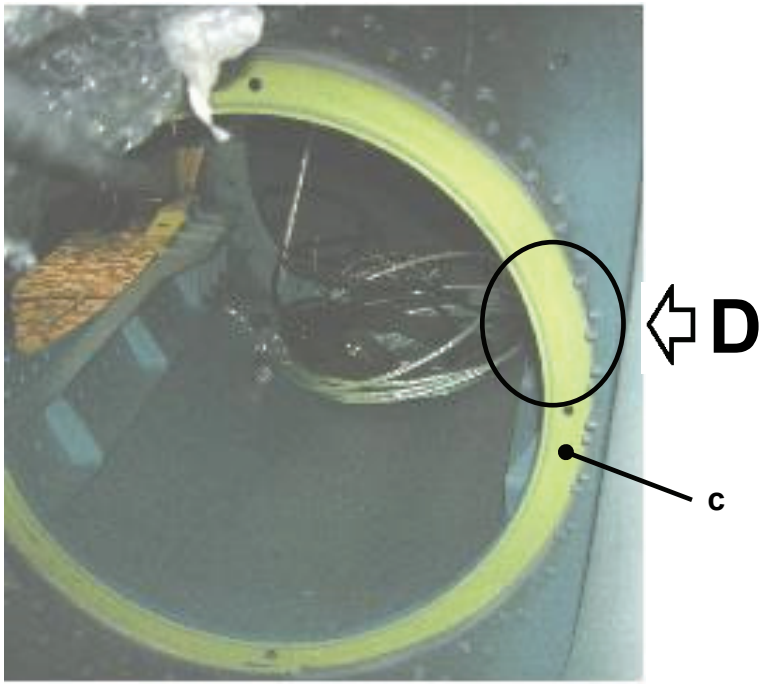


Figure 1

C



D

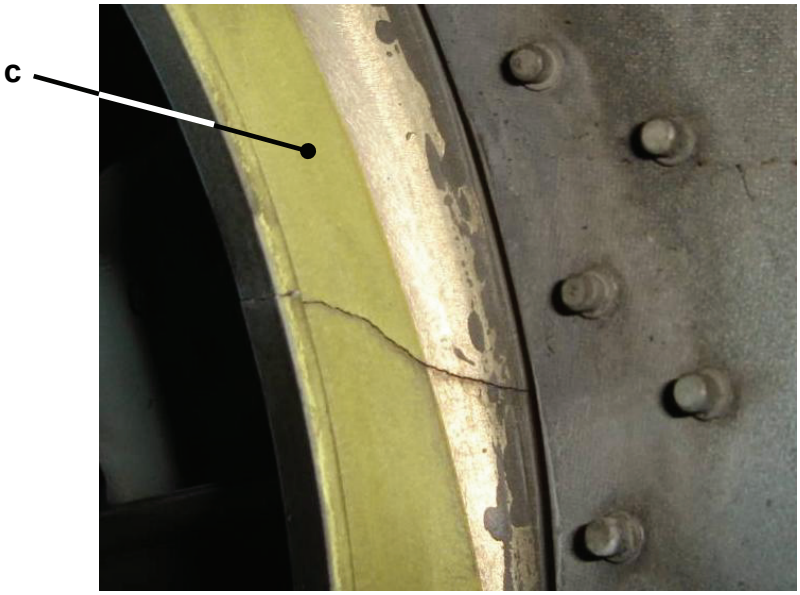


Figure 2

E

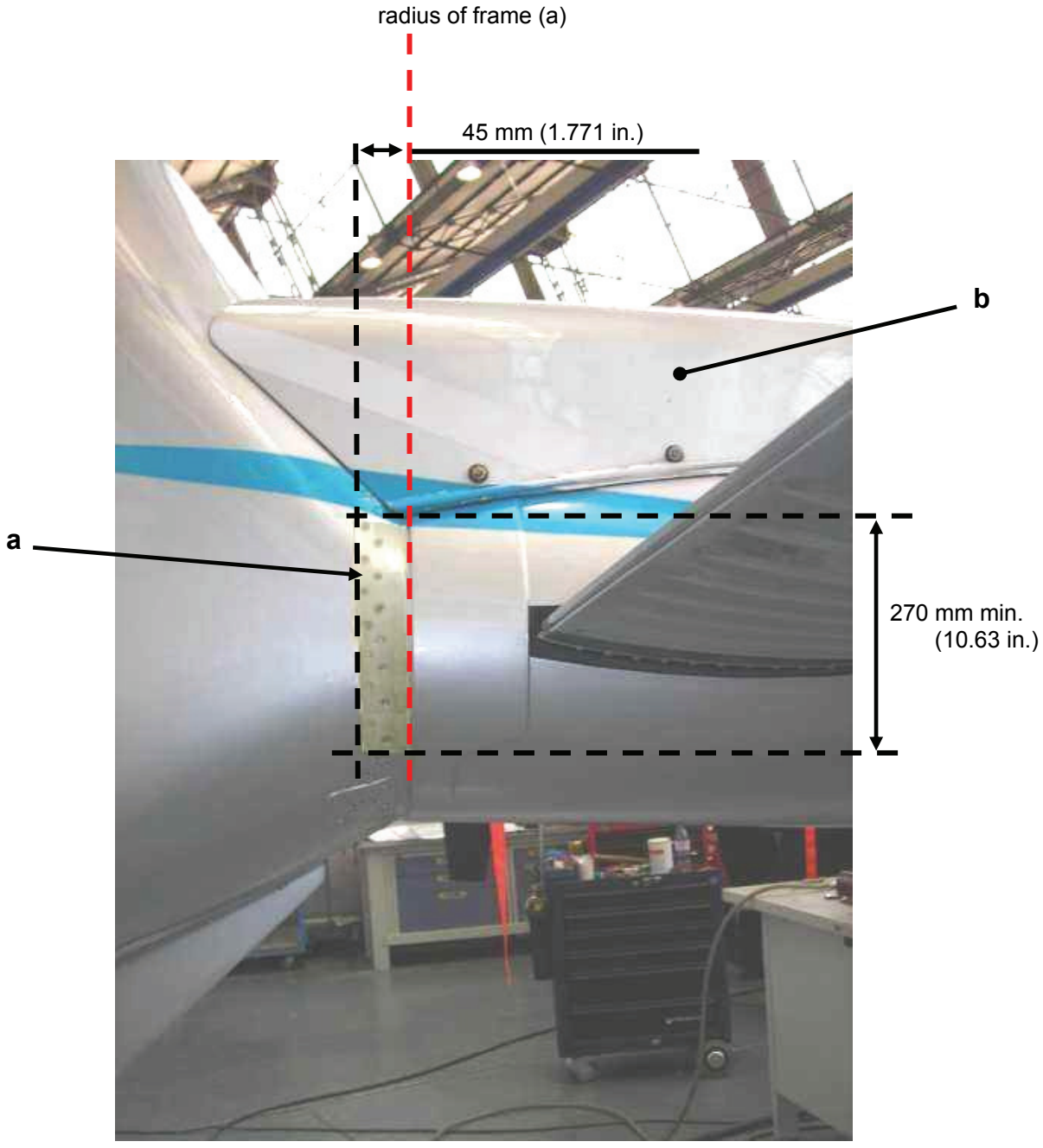


Figure 3