



**TECHNICAL BULLETIN**

**412CF-17-109**  
21 February 2017

**MODEL AFFECTED:** 412CF

**SUBJECT:** NEW TAIL ROTOR BLADE P/N 412-016-100-115,  
INTRODUCTION OF.

**HELICOPTERS AFFECTED:** Serial numbers 46400 through 46499.

**COMPLIANCE:** At customer's option.

**DESCRIPTION:**

This bulletin introduces a new tail rotor blade 412-016-100-115, which is a modified version of tail rotor blade 212-010-750. The modification incorporates two composite straps of unidirectional glass fiber reinforced tape, bonded to the interior upper and lower spar walls. The purpose of the composite straps is to mitigate any crack propagation in the blade. The new blade is differentiated by part number only and cannot be intermixed with the 212-010-750 tail rotor blade.

Tail rotor blade 412-016-100-115 color scheme is green with red/white/red stripes at the tip. This is the same color scheme as tail rotor blade 212-010-750-141.

As an alternate, tail rotor blade 412-016-100-111 may be used when replaced in sets. This blade is differentiated by part number and a white with black stripes paint scheme.

Tail rotor blades 412-016-100-115 and 412-016-100-111 have the same 5000 hour airworthiness retirement life as the 212-010-750 tail rotor blades.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

**APPROVAL:**

The engineering design aspects of this bulletin are FAA/ODA approved.

**CONTACT INFO:**

For any questions regarding this bulletin, please contact:

Bell Helicopter Product Support Engineering - Medium Helicopters  
Tel: 450-437-6201 / 1-800-363-8028 / psemedium@bh.com

**MANPOWER:**

Approximately 8.0 hours hands-on time is required. No added man-hours are necessary when the tail rotor blades are replaced at the scheduled replacement time. This estimate is based on hands-on time, and may vary with personnel and facilities available.

**WARRANTY:**

There is no warranty credit applicable for parts or labor associated with this bulletin.

**MATERIAL:****Required Material:**

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<b>Part Number</b>	<b>Nomenclature</b>	<b>Qty</b>	<b>Remarks</b>
412-016-100-115	Tail Rotor Blade	2	Note 1
412-016-100-111	Tail Rotor Blade (alternate)	2	Note 1
140-007-33R32E6	Washer, Chamfered	8	
MS21250-04034	Bolt	4	
20-065-08036C	Bolt	4	Note 2
20-065-08038C	Bolt	4	Note 2
42FLW-428	Nut	4	
MS14183P-4	Washer	4	
140-060-4	Washer, Countersunk	4	Note 2
NAS6604H1	Bolt	2	Note 2
NAS6604H3	Bolt	2	Note 2
NAS6604H5	Bolt	2	Note 2
NAS6604H7	Bolt	2	Note 2
NAS6604H9	Bolt	2	Note 2
NAS6604H10	Bolt	2	Note 2
212-011-708-105	Pitch Horn Assy	2	Note 3
212-011-717-105	Pitch Horn Assy (Alternate)	2	Note 3

**NOTES:**

1. 412-016-100-115 is green with red/white/red stripes at the tip. 412-016-100-111 is white with black stripes. Either part number tail rotor blade can be used but they must be installed in pairs.
2. Maximum quantity listed. Refer to BHT-412-CR&O for combinations and procedures.
3. Pitch Horn Assy 212-011-708-105 or 212-011-717-105 must be used if Tail Rotor Pitch Links 212-310-701-101 are used (refer to TB 412CF-01-53).

**Consumable Material:**

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<b><u>Part Number</u></b>	<b><u>Nomenclature</u></b>	<b><u>Qty</u></b>	<b><u>Reference *</u></b>
2400-00017-00	Grease (Mobil 28)	1	C-001
2100-00044-00	CPC Grade 1	1	C-101
2100-09016-02	CPC Grade 2	1	C-104
2110-07015-00	Dry Cleaning solvent	1	C-304
1650-03296-00	Safety Wire (0.032")	1	C-405
COMMERCIAL	Lubricating Oil (Piston Engine)	1	C-031
COMMERCIAL	Lubricating Oil (Light Machine Oil)	1	C-040

\* C-XXX numbers refer to the consumables list in BHT-ALL-SPM Standard Practices Manual. May include multiple part numbers for each C-XXX number. Please refer to the Consumables List Home Page of the online publications. ([www.bellhelicopter.net](http://www.bellhelicopter.net))

**SPECIAL TOOLS:**

Refer to BHT-412-CR&O.

## WEIGHT AND BALANCE:

<u>Weight</u>	<u>Longitudinal</u>		<u>Lateral*</u>	
	<u>Arm</u>	<u>Moment</u>	<u>Arm</u>	<u>Moment</u>
+3.7 Lbs	480.2 in.	+1777 in-Lbs	15.0 in.	56 in-Lbs
+1.7 kgs	12197 mm	+204.9 kg x mm/100	381 mm	6.4 kg x mm/100

\* In lateral calculations, - is left and + is right.

## ELECTRICAL LOAD DATA:

Not affected.

## REFERENCES:

BHT-412CF-IPB  
C-12-146-000/MY-001 Illustrated Parts Breakdown  
C-12-146-000/MF-001 Maintenance Manual  
BHT-412-CR&O Component Repair and Overhaul Manual  
BHT-ALL-SPM Standard Practices Manual  
C-12-146-000/MW-001 CH146 Weight and Balance Instructions  
TB 412CF-01-53 Improved Tail Rotor Pitch Links

## PUBLICATIONS AFFECTED:

BHT-412CF-IPB  
C-12-146-000/MY-001 Illustrated Parts Breakdown

## ACCOMPLISHMENT INSTRUCTIONS:

1. Prepare helicopter for maintenance.
2. Remove the tail rotor hub and blade assembly as per C-12-146-000/MF-001, Chapter 64.
3. Disassemble the tail rotor hub and blade assembly as per BHT-412-CR&O, Chapter 64.

**-NOTE-**

During assembly of tail rotor hub and blade assembly use a combination of new hardware as described in this Technical Bulletin and existing hardware.

4. Re-assemble the tail rotor hub and blade assembly with the new tail rotor blades and hardware as per Figure 1 and BHT-412-CR&O, Chapter 64.

**-NOTE-**

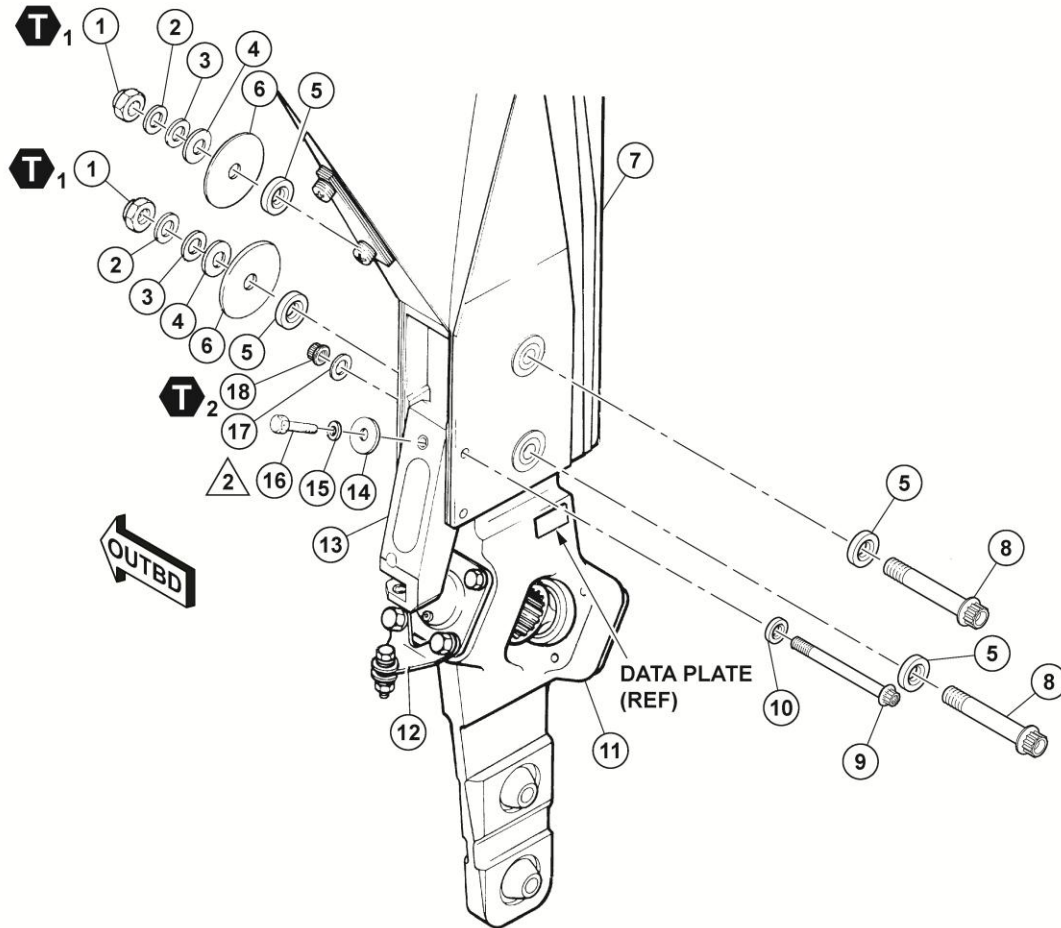
Blade retaining bolts and pitch horn retaining bolts have different torques than previous bolts. Refer to Figure 1 and BHT-412-CR&O, Chapter 64 for the proper torques.

5. Carry out static balance of the tail rotor hub and blade assembly as per BHT-412-CR&O, Chapter 64.
6. Re-install the tail rotor hub and blade assembly as per C-12-146-000/MF-001.

**CAUTION**

Tail rotor blades 412-016-100-115 and 412-016-100-111 are approximately 2 pounds heavier, therefore cannot be interchanged with the previous 212-010-750 tail rotor blades.

7. Re-identify tail rotor hub and blade assembly as 212-011-701-155FM.
8. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.





TAIL ROTOR HUB AND BLADE CONFIGURATION  
WITH TAIL ROTOR BLADES  
412-016-100 INSTALLED

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Figure 1 (Sheet 1 of 2)

1. Nut
2. Washer
3. Washer
4. Washer
5. Chamfered Washer (140-007-33R32E6)
6. Washer
7. Tail rotor blade (412-016-100-115 or -111)
8. Bolt (20-065-08036C or 20-065-08038C)
9. Bolt (MS21250-04034)
10. Countersunk washer (140-060-4)
11. Tail rotor hub
12. Tail rotor balance bracket
13. Tail rotor pitch horn (212-011-708-105 or 212-011-717-105)
14. Washer
15. Washer
16. Bolt
17. Washer (MS14183P-4)
18. Nut (42FLW-428)

 1 45 TO 54 FT-LBS  
(61 TO 73 Nm)

 2 130 TO 150 IN-LBS  
(14.7 TO 17.0 Nm)

#### NOTES

1. During reassembly reuse existing hardware except where new part number is listed.
-  2 Use required length of bolt (NAS6604H1 through NAS6604H10) as determined during static balance procedure, refer to BHT-412-CR&O.

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**Figure 1 (Sheet 2 of 2)**