

TECHNICAL BULLETIN
Bell Helicopter **TEXTRON**
A Subsidiary of Textron Inc.

NO 407-98-13

DATE 12-12-98

PAGE NO. 1 of 9

DATE
REV.

MODELS AFFECTED: 407

SUBJECT: **PEDAL STOP, TEMPORARY, AND NEW RIGGING PROCEDURE, INTRODUCTION OF.**

HELICOPTERS AFFECTED: 407 helicopters, Serial Number 53000 through 53337.

[Helicopters Serial Number 53338 and subsequent will have the intent of this bulletin complied with prior to delivery at the decision of the operator.]

COMPLIANCE: At the option of the operator, but in compliance with regulatory authority directives as applicable.

DESCRIPTION:

This Technical Bulletin introduces a temporary stop that limits the maximum distance that the left pedal can travel. This change has no effect on the available right pedal. Operators that choose to install the temporary stop can then increase the V_{NE} to 125 KIAS.

Owners/operators who wish to consider this option are encouraged to review the attached Flight Manual Supplements (FMS) – Performance Values. The temporary stop introduces some degradation in the altitude performance of the 407.

APPROVAL:

The engineering design aspects of this Technical Bulletin are Transport Canada Approved.

MANPOWER:

Approximately two man-hours are necessary to do this bulletin. Man-hours are based on hands-on time and can change with the personnel and available facilities.

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WARRANTY:

Owners/operators who comply with the instructions given in this bulletin are eligible for a special 100% warranty credit toward the kit specified in the "Required Material" section of this bulletin.

To receive this credit:

1. Customers must order the replacement hardware kit from an approved BHTI spares supply source.
2. Comply with the instructions given in this bulletin and install the listed parts no later than 28 February 1999.
3. The owner/operator must send a completed Malfunction Report (MR) to BHT Warranty Administration within 30 days after the completion of this Technical Bulletin. A copy of the BHTI invoice that refers to the hardware kit used to accomplish this Technical Bulletin must be attached to the Malfunction Report (MR).

- NOTE -

Customers who comply with the instructions in this bulletin after 28 February 1999, are **not** eligible for the special warranty credit provisions listed above.

MATERIAL:

Required Material:

The material that follows is necessary to do this Technical Bulletin. You can get the material through your Bell Helicopter Textron Supply Center.

Order **hardware kit CT-407-98-13A** that consists of the parts that follow:

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
407-001-006-101	Stop, Temporary	1
407-070-201-117	Decal, Airspeed Limitation	2 (NOTE)
407-075-015-115	Decal, Vne Restriction	1
407-075-015-117	Decal, Vne Restriction	1
407-075-015-119	Decal, Vne Restriction	1
MS20426AD4-9	Rivet, Solid	2

NOTE: Only one decal is used on the basic aircraft. The second is used on aircraft that are equipped with dual controls. Refer to Part III of this bulletin.

Consumable Material:

The material that follows is necessary to do this Technical Bulletin. If you, the operator, do not have a sufficient stock (bench stock) of this consumable material, you can get it through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>REF. NO. (NOTE 1)</u>
MIL-P-85582TY1CL2	PRIMER (PT)	C-026 (NOTE 2)
MIL-S-81733TYI 2.5 OZ	SEALANT	C-392
MAGNOBOND 6398 PT	ADHESIVE	C-317
METHYL ETHYL KETONE	SOLVENT	C-309 (NOTE 3)
3950 SCOTCHCAL	EDGE SEALER	C-349
ABRASIVE 240 GRIT	ABRASIVE PAPER	S-423 (NOTE 4)

NOTES:

- 1: The C REF. NO. above is a cross-reference found in the Standard Practices Manual.
- 2: As an alternative use Epoxy Polyamide Primer per MIL-P-23377.
- 3: Where the use of MEK is not permitted, use RHO SOLV756.
- 4: For cross-reference to this REF. NO., consult the SRM, Appendix A4.

SPECIAL TOOLS:

Not required.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-407-MM-8, Rev.7, 14 April 1998.

Chapter 67, Flight Control System.

PUBLICATIONS AFFECTED:

BHT-407-MM-8

Chapter 67, Flight Control System.

BHT-407-FM-1, Rev.5, 24 June 1997.

Section 1, Limitations.

Section 4, Performance.

BHT-407-FMS-3, Original, 01 March 1996.

Section 4, Performance.

BHT-407-FMS-4, Original, 01 March 1996.

Section 4, Performance.

ACCOMPLISHMENT INSTRUCTIONS:

PART I – Modification of the Interconnect Bellcrank Assembly

1. Remove the interconnect bellcrank (refer to BHT-407-MM, Paragraph 67-102).
2. Install the stop as follows (refer to Figure 1):
 - a. Put the stop (3, Figure 1) on the bellcrank (1). Make sure that the edges (Note 1) on the stop (3) are flush with the related edges on the bellcrank (1).
 - b. With the stop in position, make sure that the insert (4) of the stop is flush into the bellcrank stop radius (Detail A). If the fit is not correct, sand the irregular edges on the stop insert (4) only until you get the correct fit.
 - c. Put the stop (3) on the bellcrank (1) per steps a. and b. above. Clamp the stop (3) to the bellcrank (1). Use the pilot holes in the stop as a guide; drill two holes, No. 40 drill size, through the bellcrank. Increase the dimension of the two holes to a No. 30 drill size. Drill countersinks for the heads of the rivets on the stop.
 - d. Remove the stop (3). Deburr the holes in the stop (3) and the bellcrank (1). Prime all bare material.

- NOTE -

Do not remove the primer.

- e. Clean the faying surfaces of the stop (3) and the bellcrank (1). Make the faying surfaces rough with abrasive cloth. Use a clean cloth wet with alcohol to clean the stop (3) and bellcrank (1).

- f. Apply adhesive (C-317) to the faying surfaces of the stop (3) and the bellcrank (1). Put the stop per steps a. and b. and hold in place. Install the rivets while the adhesive is wet.
 - g. Remove the excess adhesive. Permit the adhesive to dry at room temperature for 24 hours.
 - h. Seal the edges of the stop (3) and the bellcrank (1). Allow sealant (C-392) to dry at room temperature for 24 hours.
3. Install the interconnect bellcrank (refer to BHT-407-MM, Paragraph 67-104).

PART II – New Directional Controls Rigging Procedure

1. If you make the change to the bellcrank (Part I), you must adjust the rigging of the directional controls (refer to Figure 2).
2. Do a check of the rigging of the directional controls in two locations. If it is necessary to make adjustments, you can use the procedure in the Maintenance Manual, Paragraph 67-94. The rigging procedure is the same, but make the changes that follow (refer to Figure 2).
 - a. Make sure that the directional pedal angle (BHT-407-MM, Paragraph 67-94, Step 2 and Figure 67-24, Detail A) is **now 46° +/- 0.5** with the temporary stop installed. The value without the stop was **56°**. If the dimensions is not **46° +/- 0.5**, adjust the value.
 - b. Make sure that the mean tail rotor blade angle (BHT-407-MM, Paragraph 67-94, Steps 15 to 20 and Figure 67-25, View B-B) is now **18.7° to 19.7°** with the temporary stop installed. The value without the stop was **27.5° to 28.5°**. If the mean angle is not **18.7° to 19.7**, adjust it (refer to BHT-407-MM, Paragraph 67-94, Step 18).

PART III – Instrument Markings and Placards

CAUTION

VAPORS OF MEK CAN BE HARMFUL TO HEALTH AND CAN CAUSE THE INTERIOR CABIN TRIM TO DEFORM. SUPPLY PROPER VENTILATION AT ALL TIMES.

CAUTION

DO NOT USE PAINT THINNER OR MEK ON INTERIOR TRIM PANELS.

- NOTE -

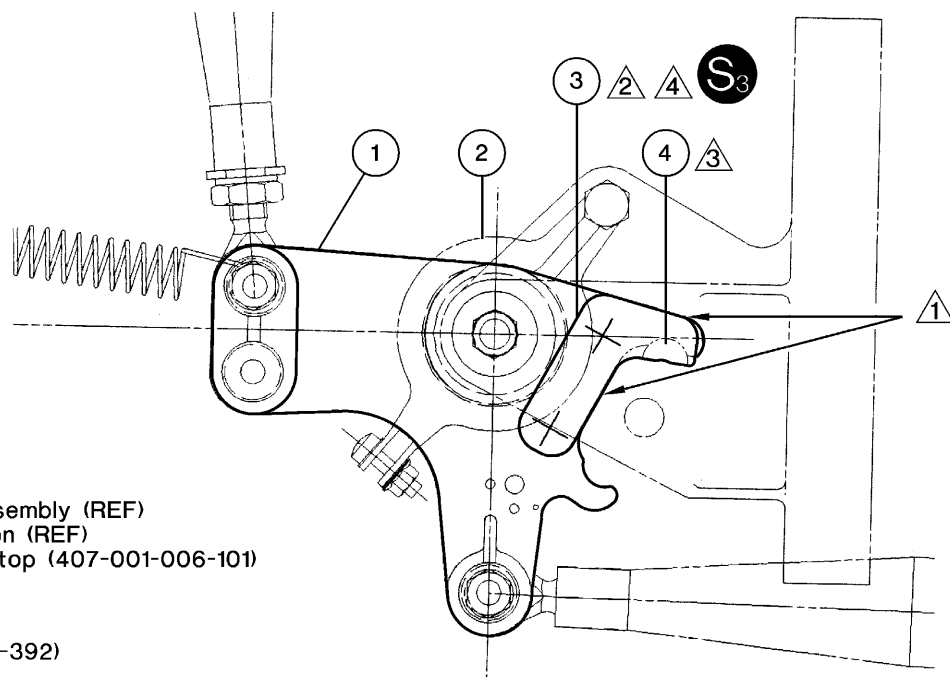
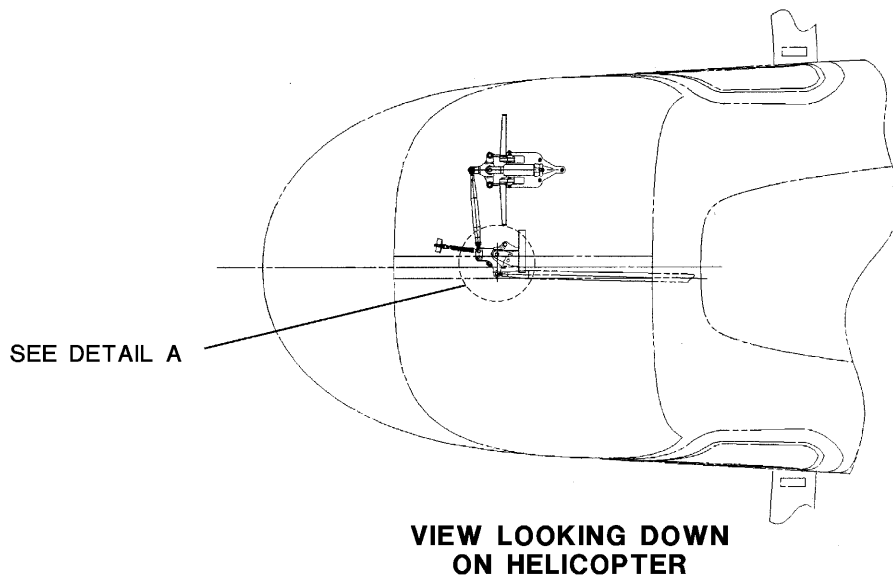
Remove the decal adhesive that stays with aliphatic naphtha.

1. Change the decal, Airspeed Limitations (5, Figure 3) as follows:
 - a. Remove the airspeed limitation decal found on the overhead trim panel near the windshield.
 - b. Lift one corner of the decal with a sharp knife and remove it.
 - c. Remove the decal adhesive that stays with aliphatic naphtha.
 - d. In the location of the removed decal, install the new adhesive-backed decal.
 - e. Apply edge sealer (3950 scotchcal) to the edges of the decal.

- NOTE -

On the helicopters supplied with the dual control kit, P/N 407-706-702-ALL, one more decal is installed on the co-pilot side of the overhead trim panel. Replace this decal with the new decal. Refer to Step 1.

3. Install temporary markings (1, 2, and 3) on the airspeed indicator glass face (4) as shown on Figure 3.
4. Make an entry in the helicopter historical record to show that this Technical Bulletin is completed.
5. Make an entry in the record of the Technical Bulletins in the Maintenance Manual.



LEGEND

- 1. Bellcrank assembly (REF)
- 2. Clamp, friction (REF)
- 3. Temporary stop (407-001-006-101)
- 4. Insert



SEALANT (C-392)

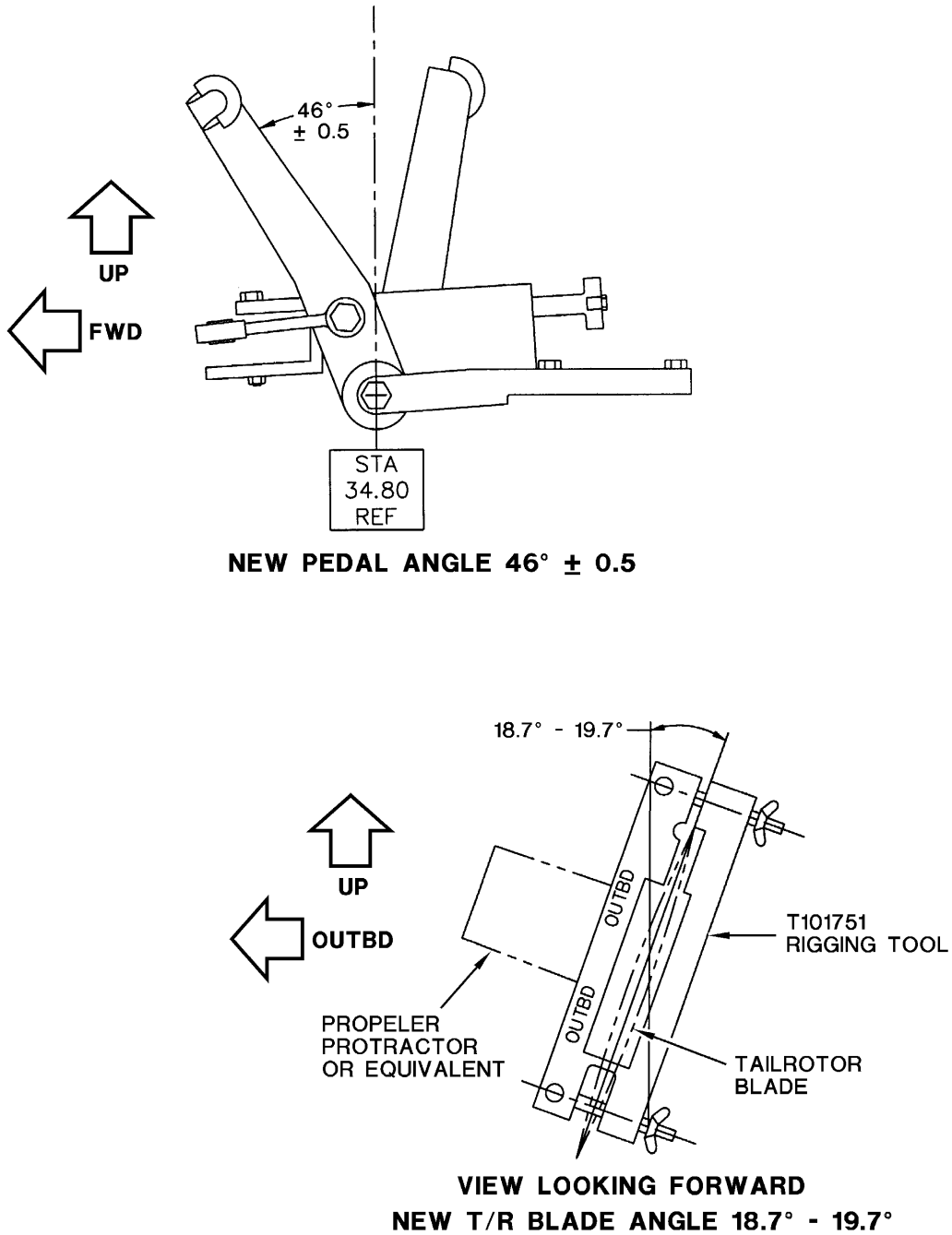
NOTES

- 1. Edges of temporary stop must be flush with corresponding edges of the bellcrank.
- 2. Install temporary stop (3) with adhesive (C-317) and MS20426AD4-9 rivet (2 REQ'D)
- 3. If fit of temporary stop insert (4) to bellcrank (2) stop radius is not correct, sand the irregular edges on the stop insert (4) only until you get the correct fit.
- 4. Seal edges of temporary stop (3) and bellcrank (1).

DETAIL A

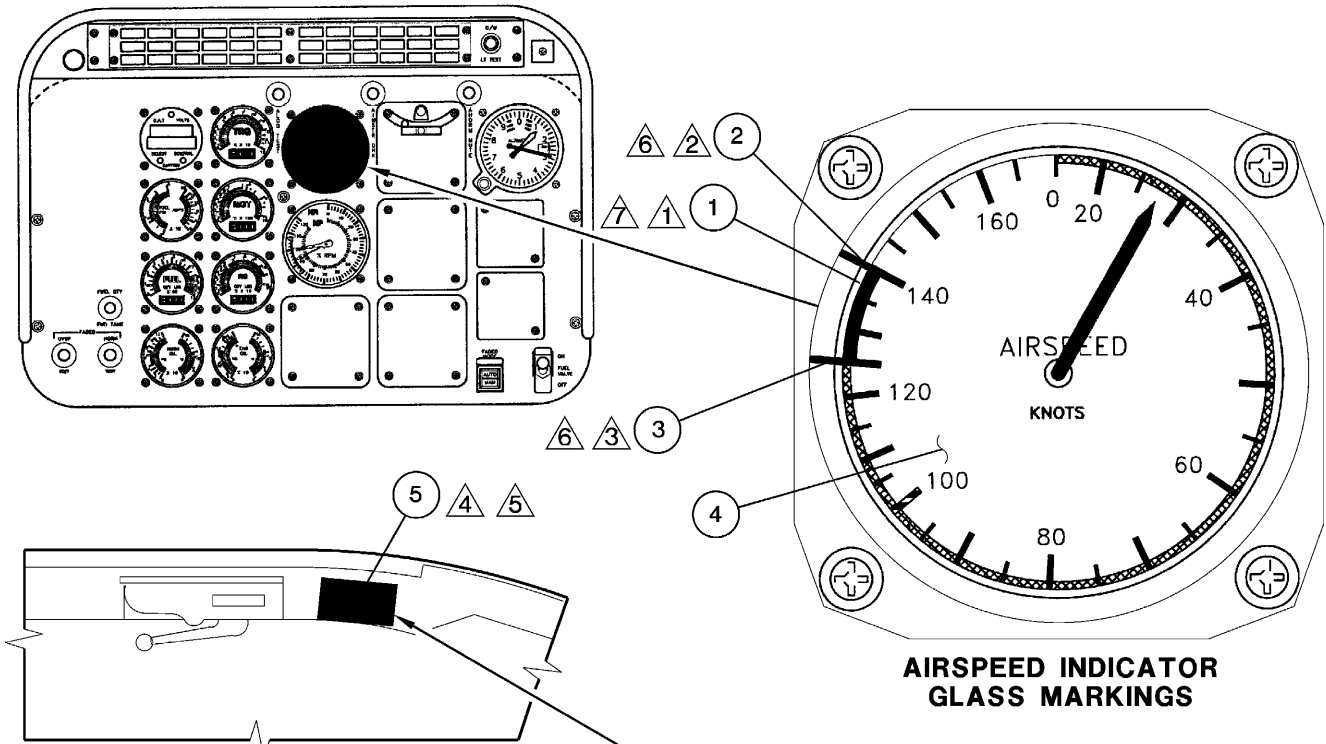
RTB01001

Figure 1. Modification of the Interconnect Bellcrank Assembly



RTB01002

Figure 2. New Directional Controls Rigging Procedure



**OVERHEAD TRIM PANEL
VIEW LOOKING INBOARD
RIGHT SIDE**

LEGEND

1. Decal 407-075-015-115 (BLACK)
2. Decal 407-075-015-119 (WHITE)
3. Decal 407-075-015-117 (TRANSLUCENT, LIGHT TOMATO RED)
4. Airspeed indicator glass face
5. Decal 407-070-201-117

407 AIRSPEED LIMITATIONS - KNOTS - IAS											
OAT C°	PRESSURE ALTITUDE FT X 1000										
	0	2	4	6	8	10	12	14	16	18	20
52	123	-	-	-	-	-	-	-	-	-	-
40	125	120	116	111	-	-	-	-	-	-	-
20	125	125	120	115	110	105	101	96	91	-	-
0	125	125	125	120	115	110	105	100	95	90	85
-20	125	125	125	125	120	115	110	105	100	95	90
-40	122	118	113	108	104	99	95	90	86	82	78
MAXIMUM AUTOROTATION VNE 100 KIAS											

NEW AIRSPEED LIMITATION DECAL

NOTES

1. Apply decal on the cover glass to cover green arc.
2. Apply decal on the cover glass to cover the red V_{NE} mark at 140 Knots.
3. Apply decal on the cover glass to cover the V_{NE} mark at 125 Knots.
4. Apply edge sealer (3950 Scotchcal) to edges of the decal.
5. If you have the dual controls installed, one more decal is installed on the co-pilot side.
6. Decals (2, 3) to exceed glass periphery as shown to prevent rotation of the cover glass.
7. Trim to fit.

RTB01003

Figure 3. New Airspeed Limitation Decal and Airspeed Indicator Glass Markings