

**ALERT SERVICE BULLETIN**



A Textron Company

NO. 430-09-43

DATE Oct 30, 2009

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DATE
REV

**MODEL AFFECTED:** 430

**SUBJECT:** REVISED OPERATING LIMITS, INTRODUCTION OF

**HELICOPTERS AFFECTED:** Model 430 helicopters serial number 49001 through 49129

**COMPLIANCE:** Immediately upon receipt of this bulletin.

**DESCRIPTION:**

In the last few years, Bell Helicopter has received reports of main transmission generating metal particles. Subsequent transmission teardown revealed significant mechanical damage to the sun gear and planetary pinion gears. Several parts were received at Bell for evaluation but none of these parts revealed physical or material inconsistencies.

Further investigation revealed that although the aircraft may be operating within the limits listed in the current flight manual, damage to the transmission planetary pinion gears and mating gears may occur due to excessive mast bending which causes planetary system misalignment.

This bulletin introduces a revision to the Flight Manual which includes a revised VNE airspeed limits decal. In addition, the manual also includes a revised restricted center of gravity envelope along with a secondary VNE airspeed limits decal. Airspeed limits listed on the secondary decal will apply for the duration of a flight whenever the aircraft is loaded with a C of G within the crosshatched area of the new restricted center of gravity envelope.

**APPROVAL:**

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

**MANPOWER:**

Approximately 2.0 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

**WARRANTY:**

Owners / Operators of Bell Helicopters who comply with the instructions in of this Bulletin will be eligible to receive credit for the decals required per the materials section in this bulletin.

To receive this credit:

- Comply with the instructions contained in this Bulletin no later than the applicable hours in the “compliance section” of this ASB, or before 31 December 2009.
- Purchase the required decals from a Bell approved source.
- Submit an MMIR to the Bell Warranty Department.

Customers who fail to comply with the instructions in this Bulletin before the 31 Dec 2009 are not eligible for the special warranty credit listed above. There is no 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><u>Part Number</u></b>	<b><u>Nomenclature</u></b>	<b><u>Quantity</u></b>
430-075-208-123	Decal	1 per A/C – Note 1
430-075-208-125	Decal	1 per A/C – Note 2
430-075-208-127	Decal	1 per A/C – Note 1
430-075-208-129	Decal	1 per A/C – Note 2

Note 1: Decal required for regular or high skid gear equipped aircraft.

Note 2: Decal required for retractable gear equipped aircraft.

**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.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
TT-N-95,TYII 1GAL	Aliphatic Naphtha	A/R	C-305
3950 SCOTCHCAL	Decal Sealer	A/R	C-349
299-947-066,TY1 4OZ	Adhesive	A/R	C-301

**SPECIAL TOOLS:**

None required

**WEIGHT AND BALANCE:**

Not affected

**ELECTRICAL LOAD DATA:**

Not affected

**REFERENCES:**

BHT-430-MM  
BHT-430-FM-1  
BHT-ALL-SPM

**PUBLICATIONS AFFECTED:**

BHT-430-MM  
BHT-430-FM-1  
BHT-430-FMS-1  
BHT-430-FMS-2  
BHT-430-FMS-10

**ACCOMPLISHMENT INSTRUCTIONS:**

**For all aircraft.**

1. Carefully remove compass correction card holder from existing location on the overhead headliner panel. Retain all parts. Refer to Figure 1.

**-NOTE-**

For aircraft equipped with heated windshield kit, locate the card holder below the 31-030-52F12 decal.

2. Install previously removed compass correction card holder on the lower portion of the headliner panel. Refer to Figure 2 for new location details. Bond card holder to panel with adhesive (C-301)

**A) For aircraft equipped with retractable landing gear.**

**-NOTE-**

Considering that the revised operating limits must be applied without delay, it is acceptable to cut a copy of the decals from pages 8 or 9 of this bulletin and affix them temporarily on the overhead panel until the new decals are received and permanently installed per step 3 of this bulletin

3.
  - a) Remove existing airspeed limitation decal P/N 430-075-208-121 from the overhead console. Use a sharp pointed knife to lift one corner of the decal and then remove the decal.
  - b) Remove the decal adhesive that remains with aliphatic naphtha (C-305).
  - b) Install primary VNE decal P/N 430-075-208-125 in the location of the decal previously removed. Refer to figure 2. Seal edge of decal with sealer. (C-349)
  - c) Install secondary VNE decal P/N 430-075-208-129 on the center portion of the headliner. Refer to figure 2. Seal edge of decal with sealer. (C-349)

**B) For aircraft equipped with standard or high skid landing gear.**

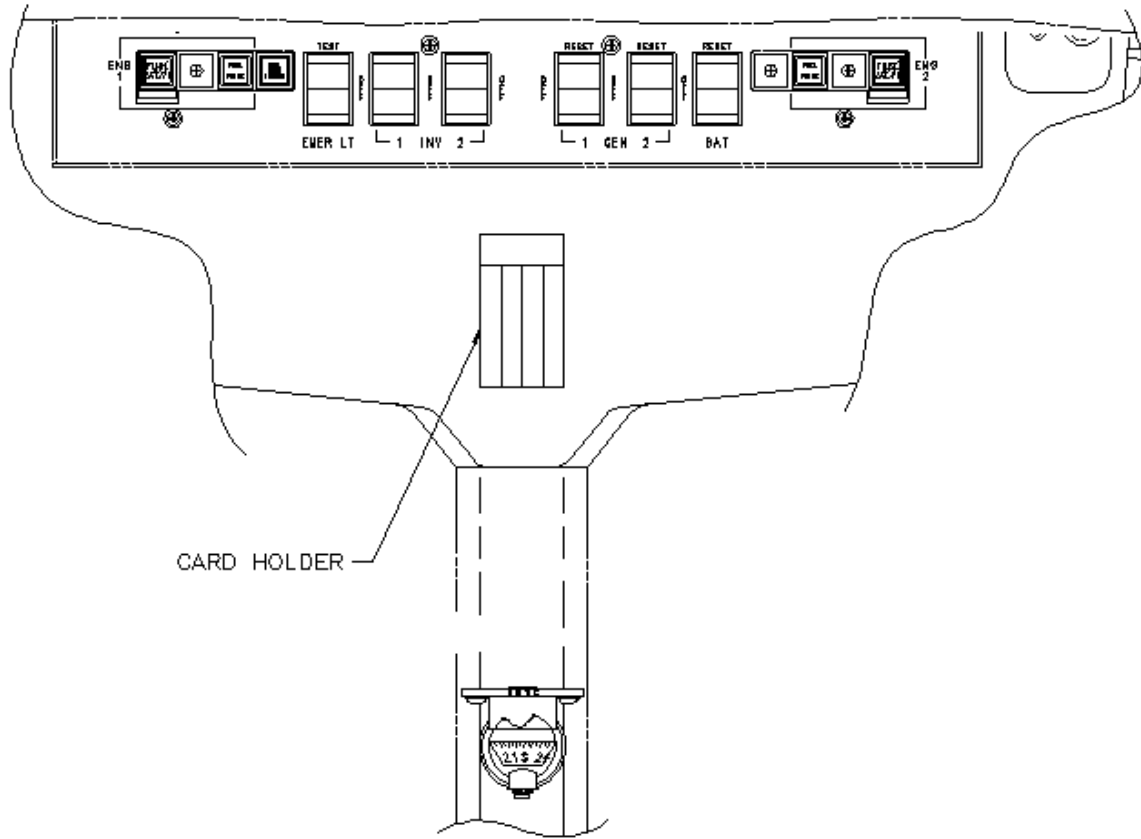
**-NOTE-**

Considering that the revised operating limits must be applied without delay, it is acceptable to cut a copy of the decals from pages 8 or 9 of this bulletin and affix them temporarily on the overhead panel until the new decals are received and permanently installed per step 3 of this bulletin

3.
  - a) Remove existing airspeed limitation decal P/N 430-075-208-119 from the overhead console. Use a sharp pointed knife to lift one corner of the decal and then remove the decal.
  - b) Remove the decal adhesive that remains with aliphatic naphtha (C-305).
  - c) Install primary VNE decal P/N 430-075-208-123 in the location of the decal previously removed. Refer to figure 2. Seal edge of decal with sealer. (C-349)
  - d) Install secondary VNE decal P/N 430-075-208-127 on the center portion of the headliner. Refer to figure 2. Seal edge of decal with sealer. (C-349)

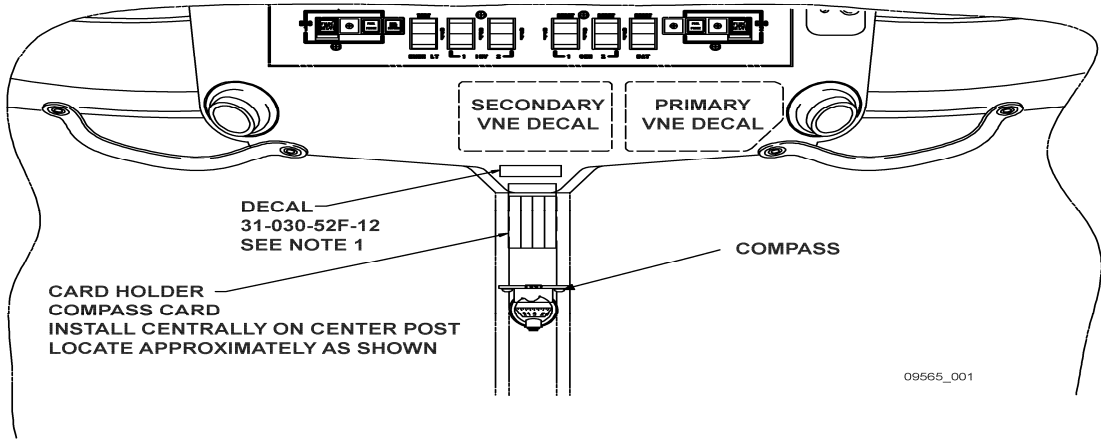
**For all aircraft**

4.
  - a) Insert BHT-430-FM-1 Revision 18 Dated 1 September 2009
  - b) Insert BHT-430-FMS-1 Revision 6 Dated 1 September 2009
  - c) Insert BHT-430-FMS-2 Revision 3 Dated 14 October 2009
  - d) Insert BHT-430-FMS-10 Revision 3 Dated 14 October 2009
  - e) Annotate the helicopter records to reflect compliance with this bulletin



Existing overhead panel lay-out

Figure 1



Note 1: Decal installed only on aircraft equipped with heated windshields

**Reworked overhead panel lay-out**

**Figure 2**

PRIMARY PLACARD	OAT	PRESSURE ALTITUDE FT X 1000												AUTOROTATION VNE 80 KIAS
	°C	0	2	4	6	8	10	12	14	16	18	20		
	52	148												
VNE AIRSPEED LIMITS— BASIC HELICOPTER (INDICATED AIRSPEED IN KTS)	40	150	144	137	130									
	30	150	147	140	133	126	119							
	20	150	150	143	136	129	122	114	107	100				
	10	150	150	147	140	133	125	118	111	104	96	89		
	0	150	150	150	143	136	128	121	114	107	99	92		
	-10	150	150	150	145	133	131	123	116	109	101	94		
	-15	144	144	144	141	129	127	123	118	110	103	96		
	-20	133	133	133	133	125	117	117	114	111	105	97		
	-25	120	120	120	120	118	112	109	106	103	100	98		
	-30	110	110	110	110	110	102	99	96	93	91	88		
	-35	100	100	100	100	100	90	88	85	82	79	76		
	-40	95	95	95	95	95	82	75	72	68	65			

VNE IS RESTRICTED FOR CERTAIN MISSION LOADING CONDITIONS FROM FS 247 TO FS 255. SEE SECONDARY PLACARD.

Decal P/N 430-075-208-123

SECONDARY PLACARD	OAT	PRESSURE ALTITUDE FT X 1000											
	°C	0	2	4	6	8	10	12	14	16	18	20	
RESTRICTED CG RANGE	52	120											
	40	120	120	120	120								
	30	120	120	120	120	116	109						
VNE AIRSPEED LIMITS— BASIC HELICOPTER (INDICATED AIRSPEED IN KTS)	20	120	120	120	120	119	112	104	97	90			
	10	120	120	120	120	120	115	108	101	94	86	79	
	0	120	120	120	120	120	118	111	104	97	89	82	
	-10	120	120	120	120	120	120	113	106	99	91	84	
	-15	120	120	120	120	119	117	113	108	100	93	86	
	-20	120	120	120	120	115	107	107	104	101	95	87	
	-25	110	110	110	110	108	102	99	96	93	90	88	
	-30	100	100	100	100	100	92	89	86	83	81	78	
	-35	90	90	90	90	90	80	78	75	72	69	66	
	-40	85	85	85	85	85	72	65					

AUTOROTATION VNE 80 KIAS

Decal P/N 430-075-208-127

Standard or high skid landing gear decals

Figure 3



PRIMARY PLACARD	OAT	PRESSURE ALTITUDE FT X 1000												AUTOROTATION VNE 80 KIAS
	°C	0	2	4	6	8	10	12	14	16	18	20		
	52	148												
VNE AIRSPEED LIMITS- BASIC HELICOPTER (INDICATED AIRSPEED IN KTS)	40	150	144	137	130									
	30	150	147	140	133	126	119							
	20	150	150	143	136	129	122	114	107	100				
	10	150	150	147	140	133	125	118	111	104	96	89	GEAR EXTENSION & RETRACTION VLO 120 KIAS	
	0	150	150	150	143	136	128	121	114	107	99	92		
	-10	150	150	150	145	133	131	123	116	109	101	94		
	-15	144	144	144	141	129	127	123	118	110	103	96		
	-20	133	133	133	133	125	117	117	114	111	105	97		
	-25	120	120	120	120	118	112	109	106	103	100	98		
	-30	110	110	110	110	110	102	99	96	93	91	88		
	-35	100	100	100	100	100	90	88	85	82	79	76		
	-40	95	95	95	95	95	82	75	72	68	65			

VNE IS RESTRICTED FOR CERTAIN MISSION LOADING CONDITIONS FROM FS 247 TO FS 255. SEE SECONDARY PLACARD.

Decal P/N 430-075-208-125

SECONDARY PLACARD	OAT	PRESSURE ALTITUDE FT X 1000												
	°C	0	2	4	6	8	10	12	14	16	18	20		
	52	120												
RESTRICTED CG RANGE	40	120	120	120	120									
	30	120	120	120	120	116	109							
VNE AIRSPEED LIMITS- BASIC HELICOPTER (INDICATED AIRSPEED IN KTS)	20	120	120	120	120	119	112	104	97	90				
	10	120	120	120	120	120	115	108	101	94	86	79		
	0	120	120	120	120	120	118	111	104	97	89	82		
	-10	120	120	120	120	120	120	113	106	99	91	84		
	-15	120	120	120	120	119	117	113	108	100	93	86		
	-20	120	120	120	120	115	107	107	104	101	95	87		
	-25	110	110	110	110	108	102	99	96	93	90	88		
	-30	100	100	100	100	100	92	89	86	83	81	78		
	-35	90	90	90	90	90	80	78	75	72	69	66		
		-40	85	85	85	85	85	72	65					

GEAR EXTENSION & RETRACTION VLO 120 KIAS  
AUTOROTATION VNE 80 KIAS

Decal P/N 430-075-208-129

Retractable landing gear decals

Figure 4