

**ALERT SERVICE BULLETIN**

REVISION NOTICE

**Bell Helicopter** **TEXTRON**

A Subsidiary of Textron Inc.

DATE 08-04-00

**TO: All Owners/Operators of Bell 205B Helicopters**

**SUBJECT: REVISION "B" TO ALERT SERVICE BULLETIN 205B-00-30: (MAIN ROTOR MAST 204-011-450-007/-105 INSPECTION AND RETIREMENT INDEX NUMBER RIN REDUCTION)**

Revision "B" to this bulletin increases the number of masts that will require inspection. It introduces a calculation to adjust the present RIN count by applying factors based on the aircraft model on which the mast was installed when the RIN was accumulated. It also introduces new RIN penalty factors for future operations.

7851 60046 REV 1198

AN APPROPRIATE ENTRY SHOULD BE MADE IN THE AIRCRAFT LOG BOOK UPON ACCOMPLISHMENT  
IF OWNERSHIP OF AIRCRAFT HAS CHANGED PLEASE FORWARD TO NEW OWNER

**ALERT SERVICE BULLETIN**

**Bell Helicopter** **TEXTRON**

A Subsidiary of Textron Inc.

NO. 205B-00-30

DATE 04-24-00

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DATE	08-04-00
REV	B

**MODEL AFFECTED:** 205B

**SUBJECT:** MAIN ROTOR MAST, P/N 204-011-450-007/ -105, INSPECTION AND RETIREMENT INDEX NUMBER (RIN) LIFE REDUCTION

**HELICOPTERS AFFECTED:** All Model 205B helicopters with Main Rotor Mast P/N 204-011-450-007/-105 Installed

**COMPLIANCE:** Part A  
The RIN life of Main Rotor Mast P/N 204-011-450-007/-105 shall be reduced to 265,000 RINs upon receipt of this bulletin. Present RIN count recorded on the mast shall be adjusted. Adjustment factors will be based on the aircraft model on which the mast was installed when the RIN was accumulated.

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**-NOTE-**

Operator's that have exceeded the revised RIN life of 265,000 should contact their local regulatory agency for ferry flight authorization. External lifts are not authorized during this ferry flight.

**Part B**

Provides instructions for RIN counting for all operations after receipt of this bulletin.

**Part C**

All masts prior to and including S/N NFS-52720, NFS-61433 through NFS-61444 and NFS-61457 through NFS-61465 must be inspected for proper radius and burrs in the snap ring groove prior to reaching 100,000 RINs, or no later than December 31, 2001. Masts in excess of 100,000 RIN must be inspected within 10 hours/500 RINs after receipt of this bulletin.

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7851 55102 REV 1105

-NOTE-

The addition of prefix "NFS", "N9", "H", "AC9", "CP", "FA", "H9", "N9", "N19", "AC9", "RH9" and "NC" to the mast serial number was administrative and did not affect the numerical sequence. Operators are to advise Product Support if other S/N prefixes are found in the field.

-NOTE-

This Bulletin supercedes Alert Service Bulletins 205B-90-1 REV A and 205B-95-24 only in regards to main rotor mast retirement and RIN calculation.

**DESCRIPTION:**

Bell Helicopter has recently investigated an in-flight separation of a 212 Main Rotor assembly. The investigation revealed that the mast 204-011-450 failed at the snap ring groove that retains the stabilizer bar dampers.

Bell Helicopter has evaluated different flight operations, and determined that large torque excursions may be caused by any external lifting operation and that any large torque excursion significantly impacts the fatigue life of the mast, and must be considered. Previous ASBs specifically identified "logging" operations as the major contributor in RIN factoring.

**It is extremely important that the existing mast RIN counts be reviewed and verified for accuracy.**

This ASB introduces new instructions for counting future RIN cycles of all 204-011-450 –(All) masts and for adjusting the existing RIN count. The existing RIN count on the mast must be multiplied by 1.2 for those RINs accumulated on a Model 212HP and by 2.0 for those RINs accumulated on a Model 204B.

"RINs that were accumulated prior to, and calculated by, ASB 205-95-65 (when installed on a model 205A/A-1 helicopter) must be adjusted. The portion accumulated through external load lifting must be multiplied by 10 and the portion accumulated through internal load lifting must be multiplied by 5. If the external/internal usage distribution is not known, external lifting must be assumed and a factor of 10 must be applied to all of the RIN accumulated prior to ASB 205-95-65. The RINs accumulated since ASB 205-95-65 must be multiplied by 2.5. RINs accumulated on Models 205B, 212 and UH-1H-II are not affected. RINs for which the model association is unknown shall be assumed to have been accumulated when installed on a model 205A/A-1 helicopter."

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**For all future operations, all external lift events are to be calculated at a penalty of 12 RINs per external lift event. Internal lift events are to be calculated at a penalty of 6 RINs per event.**

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RIN life has been reduced from 300,000 to 265,000 for 204-011-450-007/-105. Hourly life remains the same at 15,000 hours.

An inspection is required on Main Rotor Masts 204-011-450-007/-105, serial number NFS-52720 and prior, to determine the condition of the snap ring groove area. Main rotor masts NFS-52721 and subsequent do not require inspection. The inspection will check for the proper radius of the snap ring groove and for presence of burrs at the groove/spline intersection.

**APPROVAL:**

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

“The Accomplishment Instructions of this Bell Helicopter Alert Service Bulletin regarding the calculation and adjustment of mast RIN are approved by the Manager, FAA Rotorcraft Certification Office as an Alternate Method of Compliance (AMOC) for the mast RIN calculation procedure defined in sections a, e, and Appendix 1 of AD 2000-15-52.”

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**MANPOWER:**

Approximately 6.0 man-hours are required to complete Part C of this bulletin. No additional man-hours are required to complete part A or B of this Bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

**WARRANTY:**

Owners / operators who are required to replace their masts as a result of this ASB will be entitled to a special discounted price for their replacement masts. This discounted price will be based upon RINs used and will be straight line prorated to 300,000 RINs. Credit will range from a minimum of 12% to a maximum of 66%.

**-NOTE-**

Masts currently over 265,000 RIN will receive the 12% discounted price on their replacement mast.

Example: If you have a mast with 117,000 RINs, You will be entitled to a 61% discount on a replacement mast ( $300,000[\text{RINs}] - 117,000 [\text{RINs}] = 183,000 [183,000 / 300,000 = 61\%]$ ). Labor for the inspection (only) is allowed up to \$330. BHTI will also cover the cost of reasonable freight (to and from) if it is necessary to ship your mast to have the inspection performed.

To collect this credit, please complete a Malfunction Report and mail or fax it to the BHTI Warranty Department (fax # 817 280-8898).

-NOTE-

Owners/operators who comply with this ASB after December 31st, 2001 are **NOT** eligible for this Warranty credit.

**MATERIAL:**

**Required Material:**

The following material may be required for the accomplishment of this bulletin, depending on current mast RIN count and determination of inspection results. This part may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
204-011-450-105	Mast	1

**SPECIAL TOOLS:**

None required.

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

BHT-212-IPB Illustrated Parts Manual  
BHT-212-MM Maintenance Manual  
BHT-205B-MM Maintenance Manual  
BHT-212-CR&O Component Repair and Overhaul Manual  
ASB 205B-90-1 Rev A  
ASB 205B-95-24

**PUBLICATIONS AFFECTED:**

BHT-205B-MM Maintenance Manual Chapter 4  
ASB 205B-90-1 Rev A  
ASB 205B-95-24

**ACCOMPLISHMENT INSTRUCTIONS:**

**CAUTION**

For the purpose of calculating RINs, the following definitions shall apply:

**External lift event** - Each lift utilizing the cargo hook, a belly tank or similar external.

**Internal lift event** - Any other takeoff.

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**Part A:**

1. The RIN life of main rotor mast 204-011-450-007/-105 is reduced to 265,000 RINs.

**Part B: - RIN Counting Method**

**WARNING**

It is extremely important that the existing mast RIN counts be reviewed and verified for accuracy. If operators have questions or require assistance in determining current RIN count they are urged to contact Product Support Engineering.

1. Review records and determine present RIN count on mast. Multiply the present RIN count by 1.2 for those RIN accumulated on a Model 212HP and 2.0 for those RINs accumulated on a Model 204B. Multiply the RINs that were accumulated prior to, and calculated by, ASB 205-95-65 (when installed on a model 205A/A-1 helicopter) by 10 for external lifts and 5 for internal lifts. If the external/internal usage is unknown, external lifts shall be assumed. Multiply the RINs accumulated since ASB 205-95-65 by a factor of 2.5. The RINs accumulated on Models 205B, 212 and UH-1H-II are not affected. RINs for which the model association is unknown shall be assumed to have been accumulated when installed on a model 205A/A-1 helicopter. This is the new RIN count on the mast. Retire -007 or -105 mast upon reaching 15,000 hours or 265,000 RIN. Retire -001 mast upon reaching 6,000 hours or 265,000 RINs.

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*E.g. 5,000 (204B) RIN count X 2.0 + 3,000 (205A/A-1, external, prior to ASB 205-95-65) RIN count X 10 + 2000 (205A/A-1, since ASB 205-95-65) RIN Count X 2.5 + 1,000 (212HP) RIN count X 1.2 = 46,200 new RIN count*

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2. For all future operations record the type of lift events accomplished. Apply a 12 RINs penalty for each external lift event and 6 RINs penalty for each internal lift event.

**Part C: - Mast Inspection P/N 204-011-450-007/-105**

-NOTE-

Inspection may result in RIN penalties for presence of a sharp radius or burrs. Indications of a sharp radius will result in a 165,000 RIN penalty. Indications of a burr will result in a 95,000 RIN penalty. If a sharp radius and burrs are found, only the 165,000 RIN penalty should be applied.

1. All main rotor masts 204-011-450-007/-105 S/N NFS-52720 and prior, NFS-61433 through NFS-61444 and NFS-61457 through NFS-61465 must be inspected in accordance with option A or B listed below. Masts in excess of 100,000 RINs must be inspected within 10 flight hours/500 RINs of receipt of this bulletin. Masts S/N NFS-52721 and subsequent do not require inspection.
2. Operators are requested to submit their mast part number, serial number, and inspection findings on main rotor masts 204-011-450-007/-105 to Product Support Engineering at:

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Fax: 450-433-0272

e-mail: psemidium@bellhelicopter.textron.com

-NOTE-

Bell Helicopter recognizes the impact this inspection requirement has on operators. In order to implement this inspection with the least possible impact, operators may choose one of the following methods:

- A) Fly aircraft or ship the mast to an approved inspection station of your choice (see list below). These facilities have been specially trained and provided equipment specifically tailored to the inspection requirements of this ASB.
- B) Use methods approved by your local regulatory agency to inspect for the criteria contained in this ASB.

**Option A – Fly aircraft/ship mast to a specially trained inspection station:**

- 1. Fly aircraft / ship mast to one of the following specially trained locations for inspection (See appendix A for contact information):

- Singapore Technologies
- Helipro
- Fuji Heavy Industries
- Helicentro, LTDA
- SACSA
- Aerotechnica
- Patria Ostermans Aero AB
- Abu Dhabi Aviation
- Bell Helicopter Textron Canada
- Bell Helicopter Textron Ft.Worth
- Petroleum Helicopters Inc.
- Air Logistics

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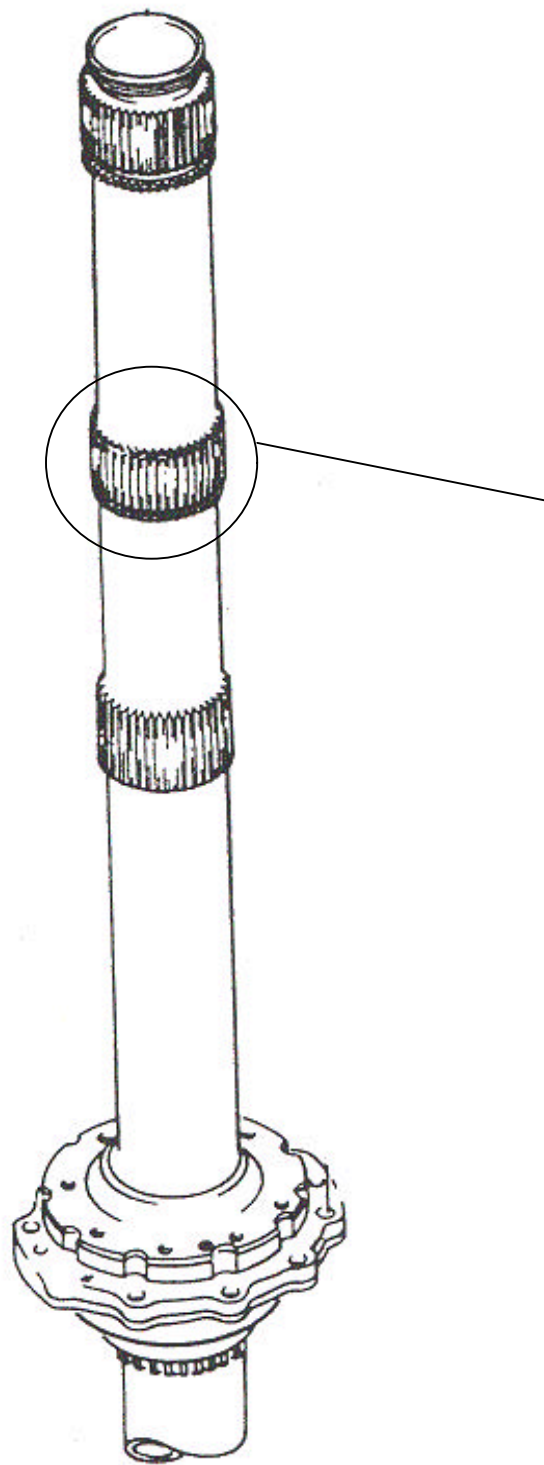
**Option B – Using methods approved by your local regulatory agency, inspect for the following conditions:**

-NOTE-

Inspection can be accomplished without removing the mast from the aircraft, if portable equipment is available, however, the Stabilizer Bar damper support shall be removed to gain access to the spline/snap ring groove area (BHT-212-MM).

- 1. Inspect the mast snap ring upper and lower grooves (entire circumference) for a minimum radius of 0.020 (figure 2, and figure 3 view A-A). Any mast that has indications of a radius less than 0.020 shall apply a 165,000 RIN penalty to the mast.
- 2. Inspect the mast snap ring upper and lower grooves for indications of burrs at all intersections with splines (see figure 3 view A-A, and figure 4). Any mast that has indications of a burr shall apply a 95,000 RIN penalty to the mast. Burr removal should not be accomplished.

3. Masts not exhibiting insufficient radius or burrs in the snap ring groove may continue in service until reaching the revised retirement of 265,000 RINs/15,000 hours.
4. Annotate Historical Service Records showing compliance with this bulletin.



**Inspect area for:**

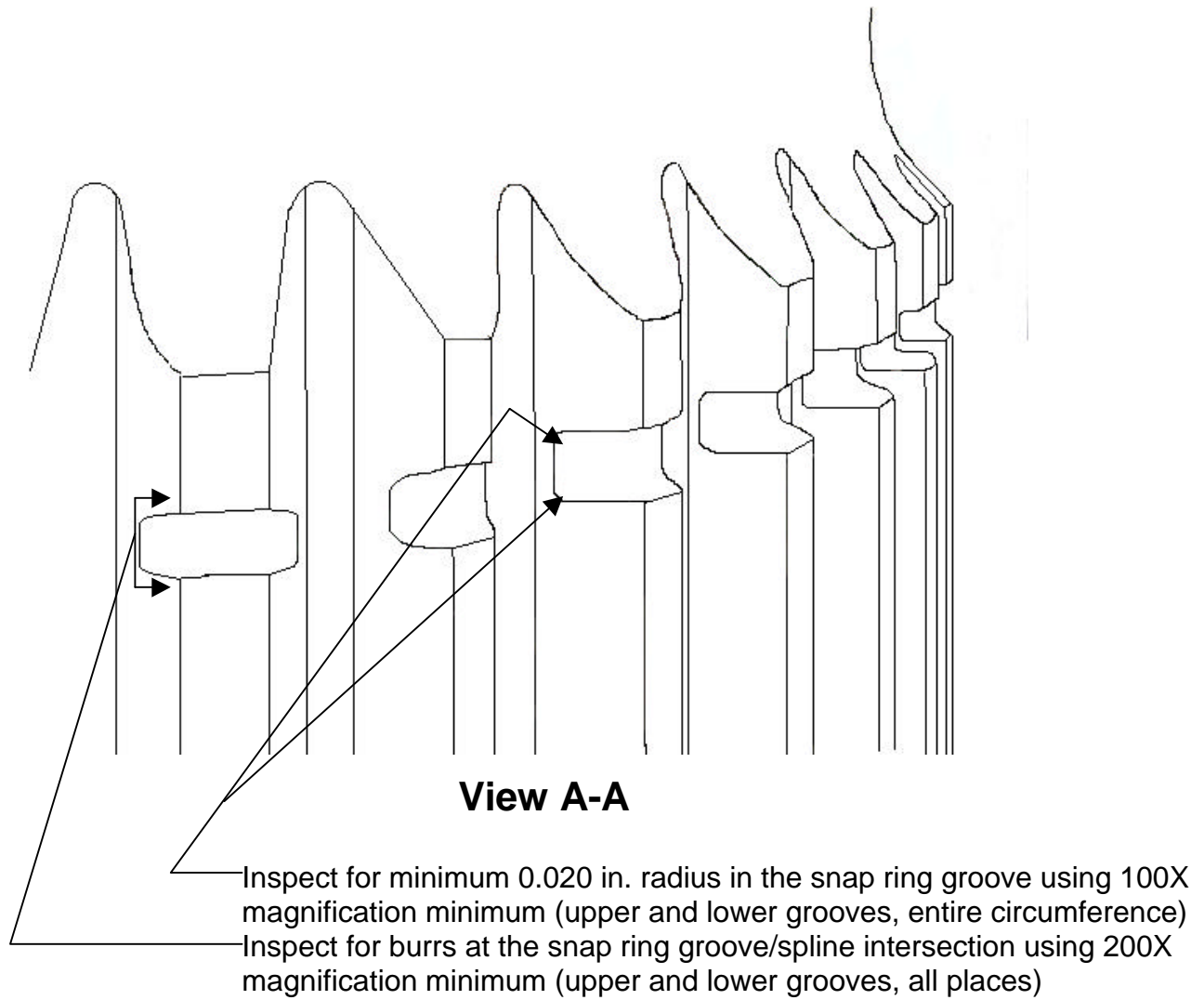
- At 100X minimum magnification  
Minimum radius of 0.020 in the  
upper and lower snap ring groove,  
entire circumference
- At 200X minimum magnification  
Burr in the snap ring groove/spline  
intersection, all places

See view A-A for detail

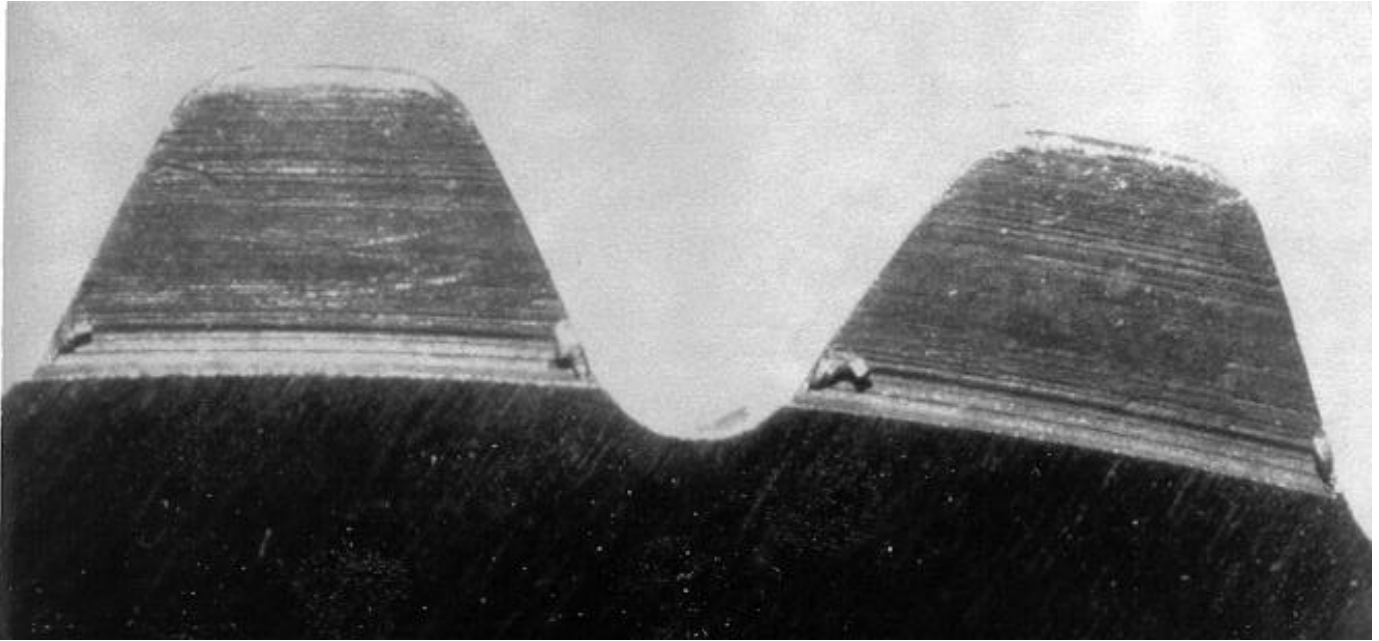
View A

**Figure 1**

Main rotor mast 204-011-450-007/-105



**Figure 2**  
Snap ring groove / spline intersection



**Cutaway View looking down from inside snap ring groove**  
Typical burrs at snap ring groove/spline intersection  
Burrs are to be inspected at 200X minimum magnification

**FIGURE 3**  
Typical Burr at Snap Ring Groove

**Appendix A**  
Mast Inspection Centers

**North America – United States/Canada**

**Bell Helicopter Textron, Inc.**

Logistics Center, Plant 8  
ATTN: CPR Administration  
3000 S. Norwood Dr.  
Hurst TX 76053

Once the mast is shipped to BHTI, please provide the name of the carrier, Air Way Bill Number, Mast Part Number and Serial Number, and ensure that the historical record accompanies the mast inside the crate.

FAX 817.280.2516 or 817-280-3224 or 817-280-8898  
Email: [#Warranty/CPRDept@bellhelicopter.textron.com](mailto:#Warranty/CPRDept@bellhelicopter.textron.com)

**Air Logistics – Louisiana**

Doug Forslund, Director of Maintenance  
4605 Industrial Drive  
New Iberia, LA 70560  
337.365.6771 Fax 337.364.8222  
Email: [djforslund@attglobal.net](mailto:djforslund@attglobal.net)

**PHI – Louisiana**

R.P. Mouton  
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**Bell Helicopter Textron – Canada**

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**Helipro International – Canada**

Bill Davis  
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604.530.6351 Fax 604.532.8489  
Email: [bdavis@acro.ca](mailto:bdavis@acro.ca)

## **Latin America**

### **Aerotecnica – Venezuela**

Carlos Dugarte  
Av. La Estancia  
Torre Las Mercedes  
Piso 2, Ofic. 210  
Caracas, Venezuela 1060  
58-2-575-0965 Fax 992.7390  
Email: [cdugarte@etheron.net](mailto:cdugarte@etheron.net)

### **Helicentro – Colombia**

Harold F. Martinez, Maintenance director  
Autopista Medellin KM 2  
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Santafe de Bogota, Colombia  
571.433.5970 Fax 571.433.5988  
Email: [helicent@colomsat.net.co](mailto:helicent@colomsat.net.co)

### **SACSA – Mexico**

Eduardo Mendez  
Terminal de Aviacion General  
Hangar 2, Zona D  
Aeropuerto Int'l de Mexico  
C. P. 15620 Mexico City D.F., Mexico  
525.32509.89 Fax 525.76302.41  
Email: [sacsamkt@df1.telmex.net.mx](mailto:sacsamkt@df1.telmex.net.mx)

## **Pacific Rim**

### **Fuji Heavy Industries**

Nobuhisa Nakagawa, General Manager  
1418 Kamiyokota – Cho  
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81.28.659.4833 Fax 81.28.659.4853  
Email: [smatsubara@bellhelicopter.textron.com](mailto:smatsubara@bellhelicopter.textron.com)

### **Singapore Technologies Aerospace Ltd**

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540 Airport Rd.  
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**Europe/Middle East**

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