

ALERT SERVICE BULLETIN

REVISION NOTICE

Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

DATE 08-04-00

TO: All Owners/Operators of Bell 212 Helicopters

SUBJECT: REVISION "B" TO ALERT SERVICE BULLETIN 212-00-106: (MAIN ROTOR MAST 204-011-450-007/-105/-113/-119 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. 212-00-106
DATE 04-24-00
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DATE 08-04-00
REV B

MODEL AFFECTED: 212

SUBJECT: MAIN ROTOR MAST, P/N 204-011-450-007/ -105/ -113/ -119, INSPECTION AND RETIREMENT INDEX NUMBER (RIN) LIFE REDUCTION

HELICOPTERS AFFECTED: All Model 212 helicopters with Main Rotor Mast P/N 204-011-450-007/-105/-113/ -119 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. The RIN life of Main Rotor Mast P/N 204-011-450-113 and -119 shall be reduced to 240,000 RINs upon receipt of this bulletin. Present RIN life 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.

B

-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 RINs must be inspected within 10 hours/500 RINs after receipt of this bulletin.

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-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 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 212-90-64 REV B and 212-95-97 with regard to main rotor mast retirement and RIN calculation only.

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 10 RINs per external lift event and internal lift events are to be calculated at a penalty of 5 RIN per event for the -007 and -105 mast. For the -113 and -119 mast, 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. The -113 and -119 mast is reduced from 275,000 to 240,000. Hourly life remains the same at 15,000 and 13,000 hours for the 204-011-450/-007/-105 and -113/-119 masts used on the 212HP, respectively.

An inspection is required on Main Rotor Masts 204-011-450-007/-105/-113/-119, serial number NFS-52720 and prior, NFS-61433 through NFS-61444, and NFS-61457 through NFS-61465 to determine the condition of the snap ring groove area. Main rotor masts NFS-52721 and subsequent do not require this 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[RINs] – 117,000 [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 or -119	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-212-CR&O Component Repair and Overhaul Manual
ASB 212-90-64
ASB 212-95-97

PUBLICATIONS AFFECTED:

BHT-212-MM Maintenance Manual Chapter 4
ASB 212-90-64
ASB 212-95-97

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 load carrier.

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. The RIN life of main rotor mast 204-011-450-113 and -119 is reduced to 240,000 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 10 RIN penalty for each external lift event and 5 RIN penalty for each internal lift event for the -007 and -105 mast. For the -113 and -119 mast used on the 212HP apply a 12 RIN penalty for each external lift event and 6 RIN penalty for each internal lift event.

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Part C: - Mast Inspection P/N 204-011-450-007/-105/-113/-119

-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/-113/-119 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/-113/-119 to Product Support Engineering at:

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Fax: 450-433-0272
e-mail: psemedium@bellhelicopter.textron.com

-NOTE-

Bell Helicopter recognizes the impact this inspection requirement has on our 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):

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- 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

Option B –

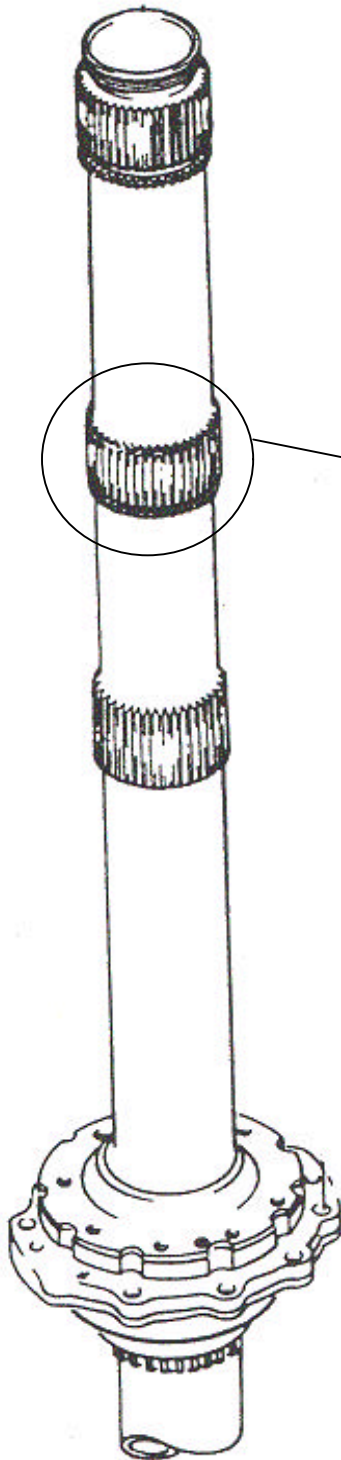
Using methods approved by your local regulatory agency, inspect for the following conditions:

-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.



View A

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

Figure 1

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

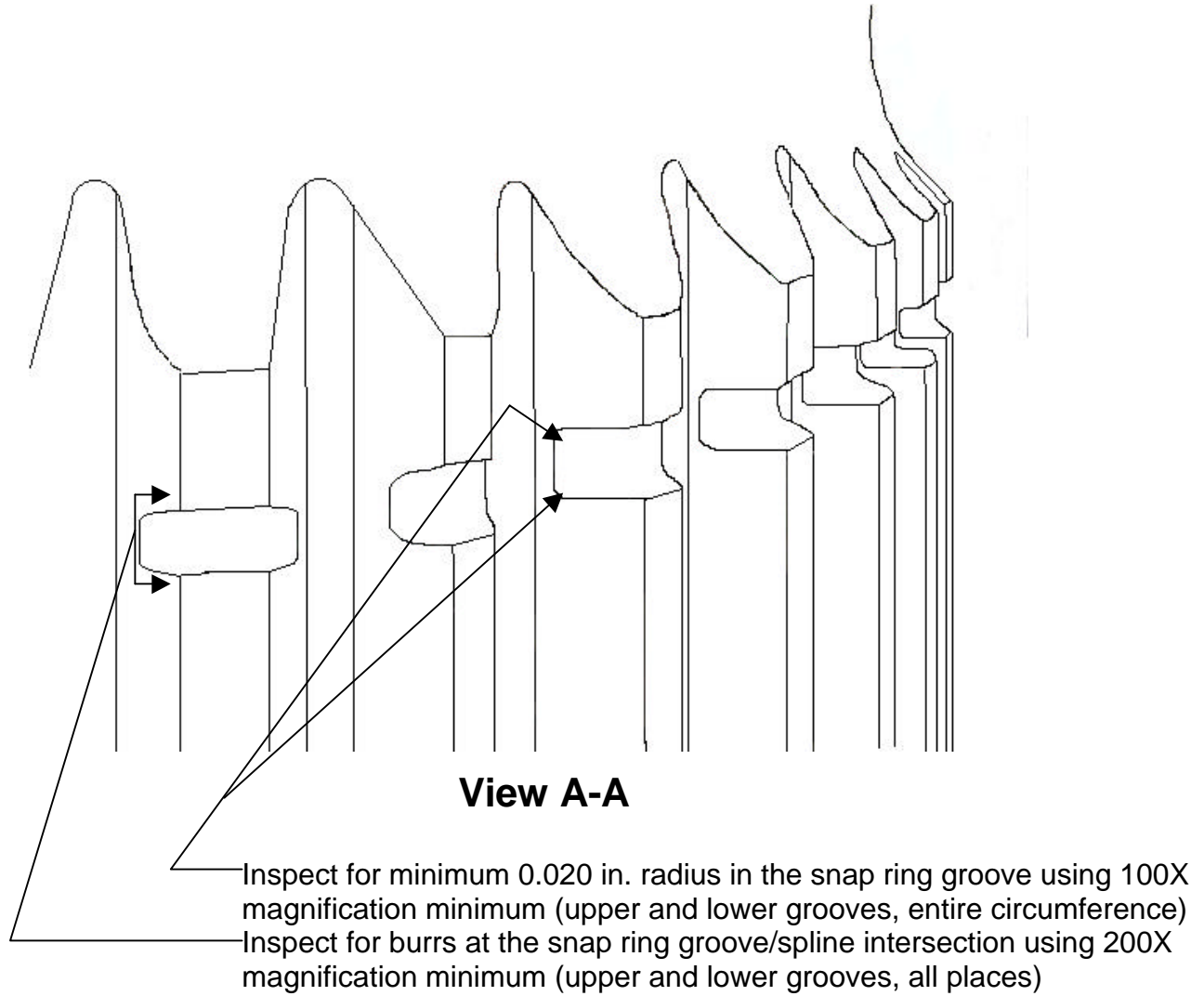
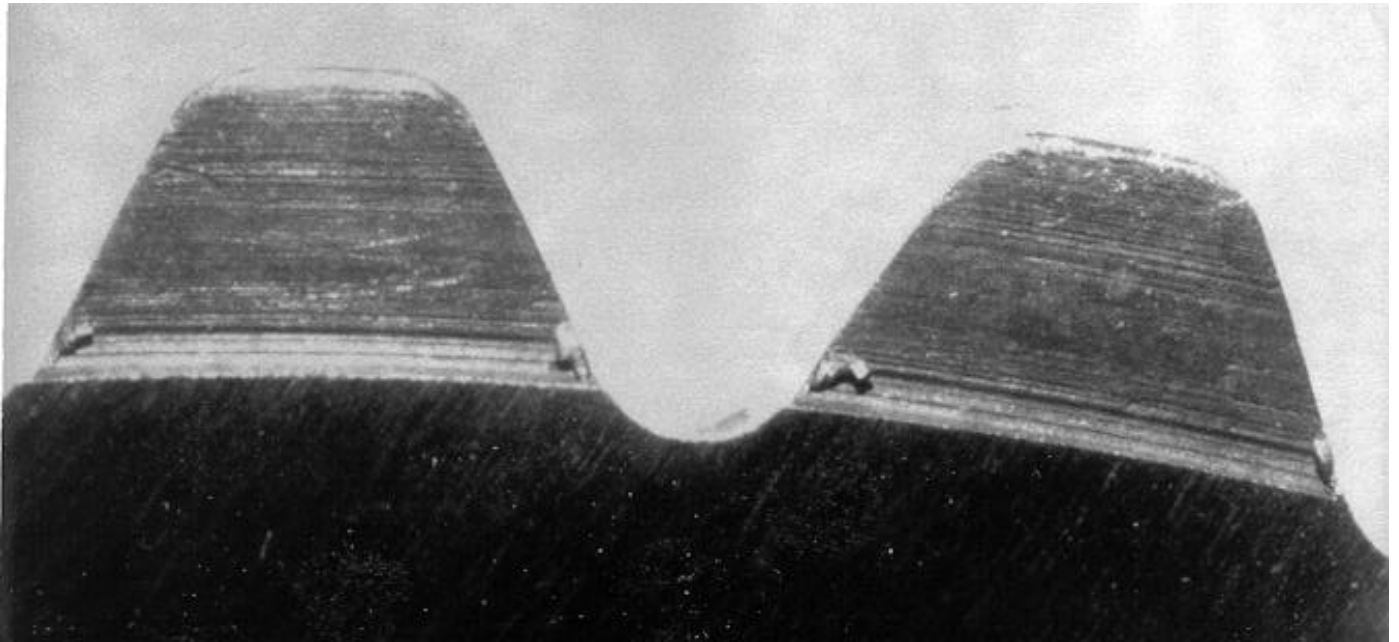


Figure 2
Snap ring groove / spline intersection



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

Air Logistics – Louisiana

Doug Forslund, Director of Maintenance
4605 Industrial Drive
New Iberia, LA 70560
337.365.6771 Fax 337.364.8222
Email: djforlund@attglobal.net

PHI – Louisiana

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Aerotecnica – Venezuela

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Helicentro – Colombia

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Pacific Rim

Fuji Heavy Industries

Nobuhisa Nakagawa, General Manager
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Utsunomiya City, Tochigi
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Email: smatsubara@bellhelicopter.textron.com

Singapore Technologies Aerospace Ltd

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540 Airport Rd.
Paya Lebar
Singapore 539938
65-480-6800 Fax 65.482-0245
Email: yuensang@st.com.sg

Europe/Middle East

Patria Ostermans Aero AB

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