



A Textron Company

## ALERT SERVICE BULLETIN

**505-20-15**

**PSL#294**

19 June 2020

**MODEL AFFECTED:** 505

**SUBJECT:** ENGINE OIL TANK P/N SLS-065-100-037,  
INSPECTION OF

**HELICOPTERS AFFECTED:** Serial numbers 65011 through 65132, 65134  
through 65144, 65146 through 65148, 65151  
through 65193, 65195 through 65205, 65207  
through 65218, 65221 through 65225, 65227  
through 65259, 65261 through 65263, 65265  
through 65270, 65272, 65276 through 65278, 65280  
through 65291, 65294, 65296 through 65300.

[Serial number 65133, 65145, 65149, 65150, 65194,  
65206, 65219, 65220, 65226, 65260, 65264, 65271,  
65273 through 65275, 65279, 65292, 65293, 65295,  
65301 and subsequent will have the intent of this  
bulletin accomplished prior to delivery.]

**COMPLIANCE:**

**PART I** Within 300 flight hours or 12 months whichever occurs first after the release date of this bulletin and every 300 flight hours or 12 months thereafter until **PART IV** can be accomplished.

**PART II** Before next flight if a crack is found less than 0.050 inch (1.27mm) after accomplishment of **PART I**.

**PART III** Before next flight if a crack is found greater than 0.050 inch (1.27mm) after accomplishment of **PART I**.

**PART IV** At the discretion of the operator or as instructed in **PART III**.

## **DESCRIPTION:**

Bell has become aware of a condition where some engine oil tanks may have developed crack(s) in the bend radius of the mounting attachment flanges during the manufacturing process.

**PART I** of this Alert Service Bulletin introduces a repetitive inspection of the engine oil tank mounting attachment flanges for possible cracks.

**PART II** of this bulletin provides repair instructions following the inspection completed under **Part I** for damage (cracks) found in mounting attachment flanges with a length less than 0.050 inch (1.27mm).

**PART III** of this bulletin provides repair instructions following the inspection completed under **Part I** for damage (cracks) found in mounting attachment flanges with a length greater than 0.050 inch (1.27mm).

**PART IV** of this bulletin provides instructions to perform fluorescent penetrant inspection (FPI) to all attachment mounting flanges as a terminating action to this bulletin.

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 Transport Canada Civil Aviation (TCCA) approved.

## **CONTACT INFO:**

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering  
Tel: 1-450-437-2862 / 1-800-363-8023 / [productsupport@bellflight.com](mailto:productsupport@bellflight.com)

## **MANPOWER:**

Approximately 0.5 man-hour is required to complete PART I of this bulletin.  
Approximately 1.0 man-hour is required to complete PART II of this bulletin.  
Approximately 2.5 man-hour are required to complete PART III of this bulletin.  
Approximately 2.5 man-hour are required to complete PART IV of this bulletin.  
This estimate is 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 this bulletin will be eligible to receive warranty labor associated with Part III, and Part IV. Bell has recently introduced enhancements to the “My Bell Portal” which allocates specific warranty entitlement for an aircraft by serial number. The Product Service Letter (PSL) number which will be listed below the bulletin number on the introduction page is going to be a required field when submitting a claim on the [Bulletins Tab](#) for replacement parts, labor, and/or freight. If you receive an ASB or TB that does not have a PSL number, then there is no warranty entitlement for that bulletin.

Labor entitlement: Yes, Part III; \$215.0  
Part IV; \$215.0

To receive labor, under warranty:

- Comply with the instructions contained in this Bulletin no later than the applicable date in the “compliance section”.
- The PSL number identified in the bulletin will require you to enter this number which will validate warranty entitlement for the selected aircraft. Please ensure that you use the [Bulletin tab](#) on the warranty section in MyBell to file your claim.

**NOTE:** Customers who fail to comply with the instructions in this Bulletin within the twelve (12) months from date of issuance, will not be eligible for the special warranty listed above.

## MATERIAL:

### Required Material:

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

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>
NAS1149C0316R	Washer	AR (1)
MS27039C1-09	Screw	AR (1)
NAS1149C0363R	Washer	AR (1)

**NOTE 1:** Required at any location where the mounting attachment flange of the oil tank is trimmed to remove a mounting hole.

### 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 Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>	<u>Reference *</u>
2010-05919-01	Sealing compound	6 OZ (1)(2)	C-353
2400-00003-00	Lubricating oil	1 QT (1)(2)	C-010/C-011
2100-00345-00	Chemical film material for aluminum	1 QT (1)(2)	C-100
2230-00559-00	Primer epoxy polyamide, high-solids	9 OZ (1)(2)	C-204
2900-05806-00	Abrasive Cloth or Paper	Each (1)	C-406
2100-00061-00	Acetone	1Gal (1)	C-316

\* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

**NOTES:**

1. The quantity indicated is the format the product is delivered in. The actual quantity required to accomplish the instructions in this bulletin may be less.
2. These materials are required to accomplish the repair if necessary.

**SPECIAL TOOLS:**

None required.

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

BHT-505-MM Maintenance Manual, Chapters 12, 53 and 79  
 BHT-ALL-SPM Standard Practices Manual, Chapters 3 and 4

**PUBLICATIONS AFFECTED:**

None affected.

**ACCOMPLISHMENT INSTRUCTIONS:**

**PART I: Inspection of oil tank mounting flange.**

-NOTE-

As an alternative to the repetitive inspection introduced in Part I, it is acceptable to perform a FPI to all attachment mounting flanges to confirm the absence of crack(s) using instructions and materials detailed in the Standards Practices manual (BHT-SPM-ALL) as a terminating action to this bulletin.

1. Prepare the helicopter for maintenance.
2. Remove transmission fairings 432BR and 432AL to gain access to the engine oil tank (Figure 1), (DMC-505-A-53-40-01-00A-520A-A and DMC-505-A-53-40-02-00A-520A-A).
3. Inspect without removing the tank from the firewall, as follows:
  - a. Clean the surface of the three mounting attachment flanges in the affected area (Figure 2) with acetone (C-316). Cracks will typically originate at the edge of the mounting flange.
  - b. Visually inspect the three mounting attachment flanges from the forward side of the oil tank for cracks in the radius with a strong light source and a 10x power magnification (Figure 2).
4. If no crack(s) are found, go to step 8.
5. If 2 or more cracks are found on one mounting attachment flange with a length exceeding 0.050 inch (1.27mm), remove and replace oil tank (DMC-505-A-79-10-01-00A-520A-A) and (DMC-505-A-79-10-01-00A-720A-A).
6. If no more than 2 crack(s) are found per mounting attachment flange with a length less than 0.050 inch (1.27mm) proceed with repair in **PART II**.
7. If one crack is found per mounting attachment flange with a length greater than 0.050 inch (1.27mm) proceed with repair and inspection in **PART III**.
8. Make an entry in the helicopter logbook and historical service records indicating findings and compliance with **PART I** of this Alert Service Bulletin.
9. Carry out this repetitive inspection not to exceed 300 hours cumulative flight time or 12 months, whichever occurs first.

**PART II: Repair instructions for crack(s) in mounting attachment flange less than 0.050 inch (1.27mm) in length**

1. If no more than 2 cracks (2) are found per mounting attachment flange (maximum 6 total, one at each end) and the length of any single crack does not exceed 0.050 inch (1.27 mm), without removing the tank from the firewall proceed as follows;

- a. Using a round smooth file, blend the edge of mounting attachment flange to remove 0.010 inch (0.254mm) of material past the end of the crack. Maximum material removal after repair is 0.060 inch (1.524 mm). Deburr sharp edges, remove debris and loose material.
  - b. Using a strong light source and a 10x power magnification inspect the repaired area to confirm the crack has been completely removed.
  - c. Apply chemical film (C-100) to the repaired area of the mounting attachment flange(s) using instructions and materials detailed in Chapter 3 of Standard Practices Manual (BHT-ALL-SPM).
  - d. Refinish the repaired areas of the mounting attachment flanges by applying two coats of epoxy polyamide primer (C-204) using instructions and materials detailed in Chapter 4 of Standards Practices manual (BHT-SPM-ALL).
2. Make an entry in the helicopter logbook and historical service records indicating findings and compliance with **PART II** of this Alert Service Bulletin.
  3. Carry out the repetitive inspection in accordance with **Part I** not to exceed 300 hours cumulative flight time or 12 months, whichever occurs first.

**PART III: Repair instructions for crack in mounting attachment flanges greater than 0.050 inch (1.27mm) in length and inspection instructions.**

1. If no more than 1 crack is found per mounting attachment flange (maximum 3 total) and the length exceeds 0.050 inch (1.27 mm), proceed as follows;
  - a. Remove oil tank assembly (DMC-505-A-79-10-01-00A-520A-A).

**WARNING**

Use adequate protective equipment to keep from personal injury while trimming or cutting.

**CAUTION**

To avoid producing excess heat to the attachment mounting flange, weld bead, and oil tank, do not use high speed power cutting tools to trim the attachment mounting flange. Use care not to damage oil tank while trimming or cutting.

**CAUTION**

If after trimming it is found that the crack extends into weld bead between the mounting attachment flange and oil tank, contact BHT Product Support for further instruction.

-NOTE-

A single crack in mounting attachment flanges longer than 0.050" (1.27 mm) shall be trimmed but not to exceed the repair dimensions in (Figure 3). Repair trimming can be applied to any of the six indicated locations from Figure 2 as required with the maximum of one repair per mounting attachment flange.

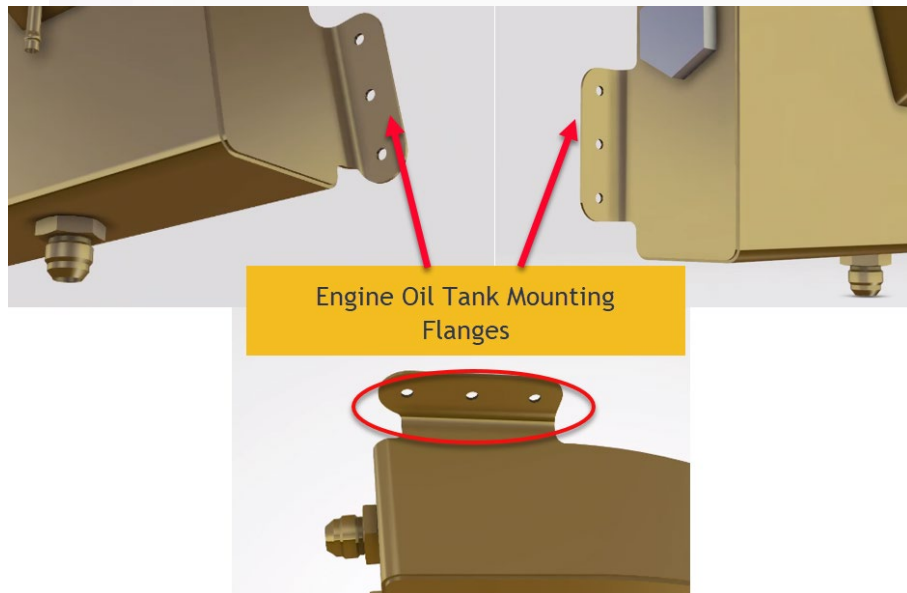
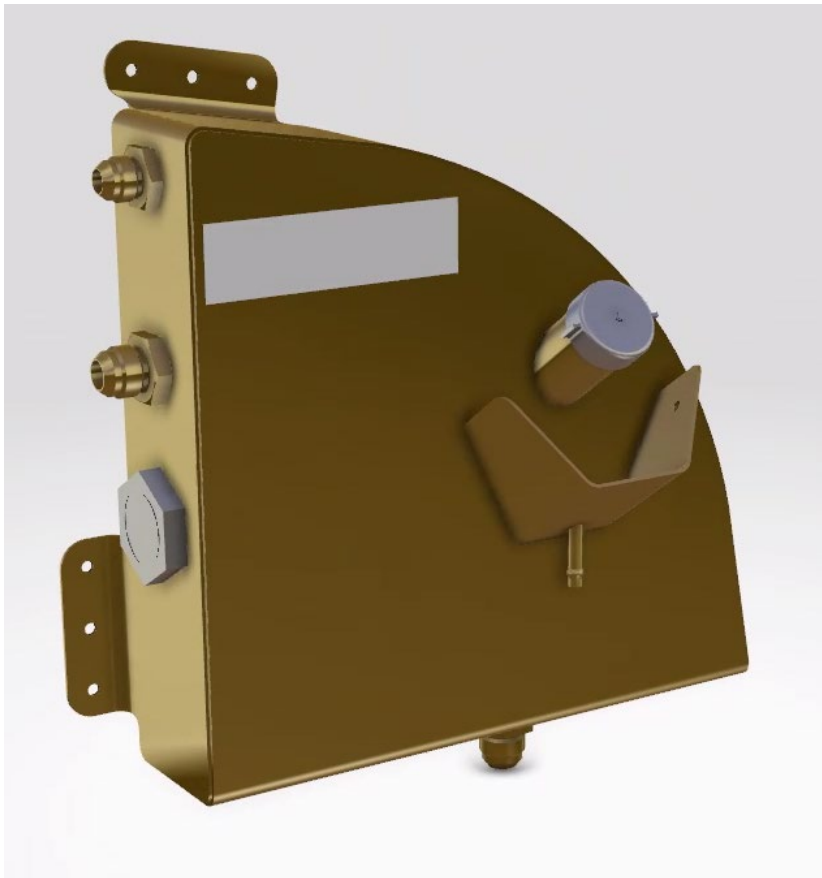
- b. Manually trim the mounting attachment flange to completely remove the crack. Remove approximately 0.010 inch (0.254mm) of material past the end of the crack but not beyond to dimensions shown in Figure 3. Deburr sharp edges, remove debris and loose material.
2. To confirm the removal of damage and absence of cracks to the repaired attachment mounting flanges, do PART IV before next flight.
3. Apply chemical film (C-100) to the repaired area of the mounting attachment flange(s) using instructions and materials detailed in Chapter 3 of Standard Practices Manual (BHT-ALL-SPM).
4. Refinish the repaired areas of the mounting attachment flanges by applying two coats of epoxy polyamide primer (C-204) using instructions and materials detailed in Chapter 4 of Standards Practices manual (BHT-SPM-ALL).
5. If the flange repair required enough material removal to eliminate one of the attachment holes, use the previously removed attachment screw with an additional washer to compensate for the removed flange section. This will prevent the screw from bottoming on the shank at installation.
6. Install oil tank assembly (DMC-505-A-79-10-01-00A-720A-A).
7. Replenish engine oil system (DMC-505-A-12-10-05-00A-212A-A).
8. Carry out an oil system leak check. (DMC-505-A-79-00-00-00A-364A-A).
9. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART III** Alert Service Bulletin.

#### **PART IV: Inspection of oil tank mounting flanges.**

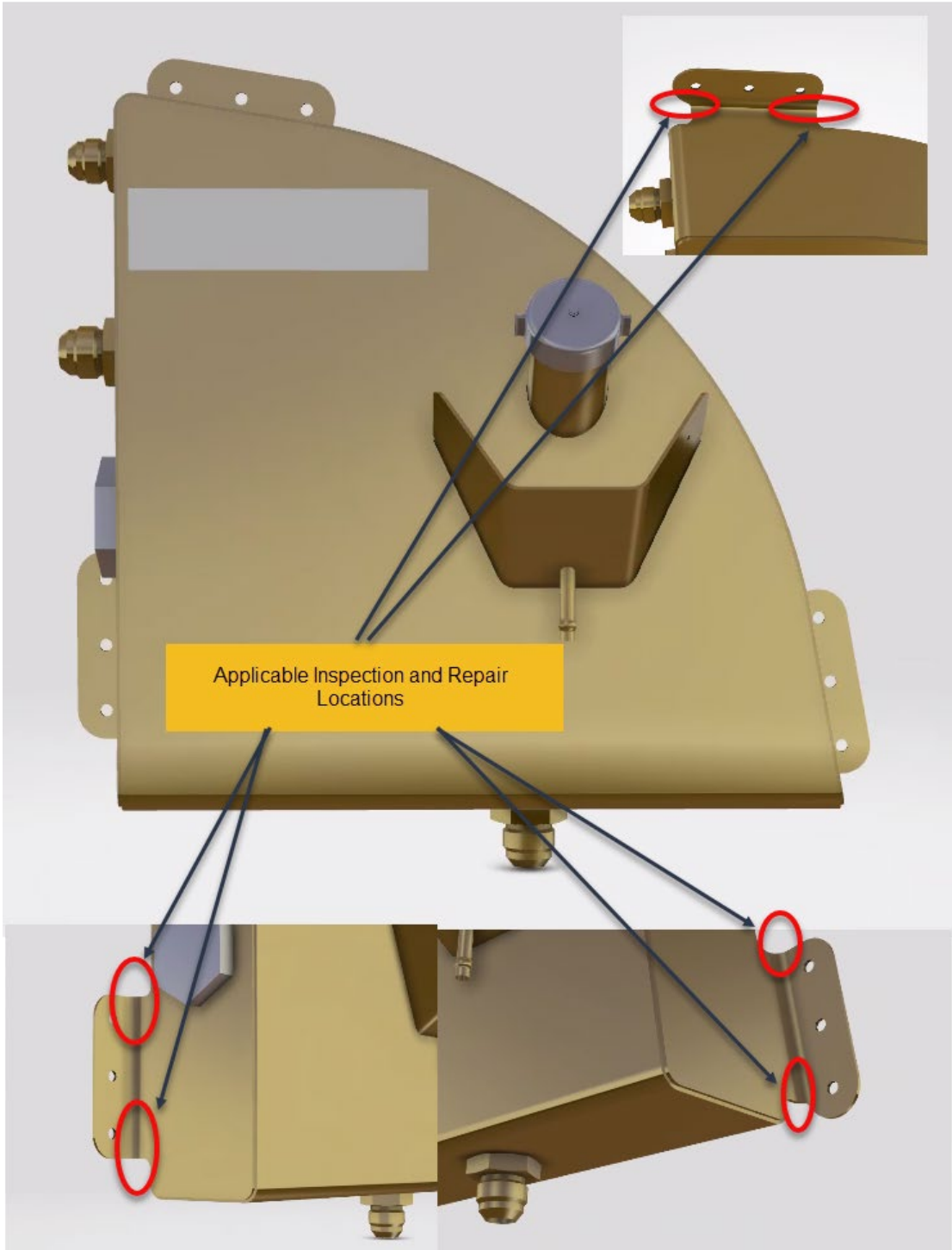
1. Prepare the helicopter for maintenance.

2. Remove transmission fairings 432BR and 432AL to gain access to the engine oil tank (Figure 1), (DMC-505-A-53-40-01-00A-520A-A and DMC-505-A-53-40-02-00A-520A-A).
3. Remove oil tank assembly (DMC-505-A-79-10-01-00A-520A-A).
4. Perform FPI to forward and aft side including the weld bead of all attachment mounting flanges to confirm the absence of crack(s) in the area to be inspected shown in Figure 2 using instructions and materials detailed in Chapter 6 of Standards Practices manual (BHT-SPM-ALL)
5. If cracks are found, repair per **PART II** or **PART III**. If no cracks are found or cracks are repaired refinish areas per steps 3 and 4 of **PART III**.
6. Install oil tank assembly (DMC-505-A-79-10-01-00A-720A-A).
7. Replenish engine oil system (DMC-505-A-12-10-05-00A-212A-A).
8. Carry out an oil system leak check. (DMC-505-A-79-00-00-00A-364A-A).
9. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART IV** Alert Service Bulletin.

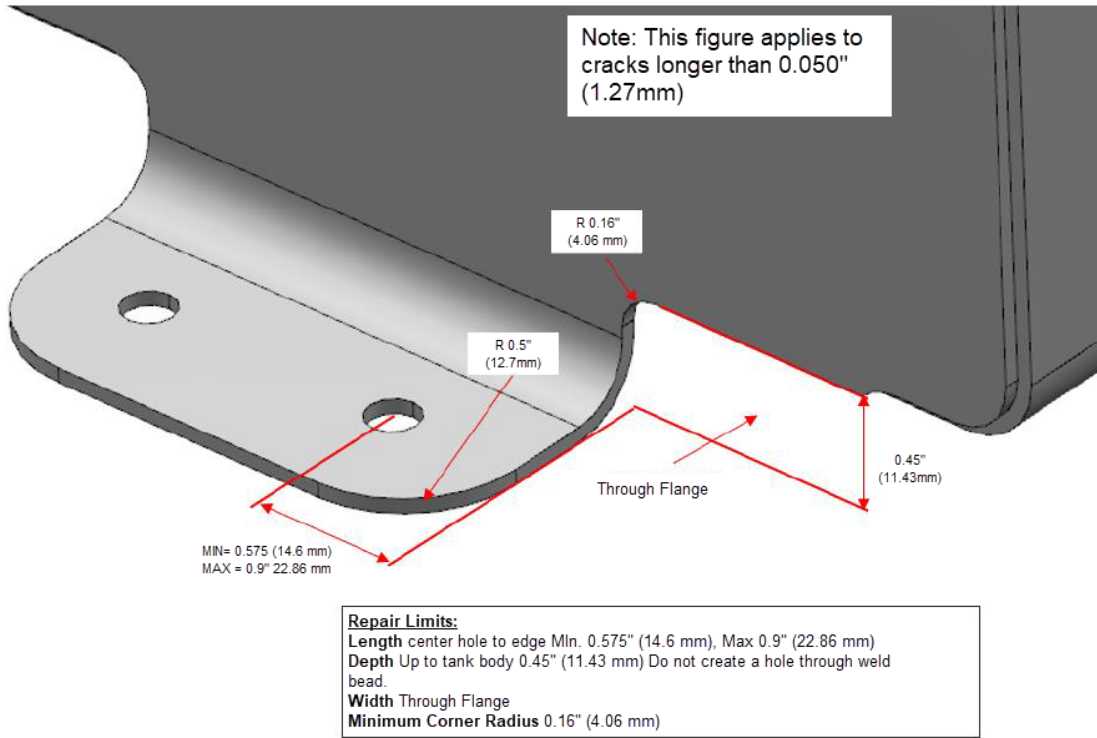




**FIGURE 1 – Oil tank**



**FIGURE 2 – Area to be inspected**



**FIGURE 3 – Maximum repair cut dimensions**



**FIGURE 4 – Minimum cut required for screw installation**