



## **TECHNICAL BULLETIN**

**505-24-31**  
6 February 2025

**MODEL AFFECTED:** 505

**SUBJECT:** ENGINE OIL TANK SIGHT GLASS, INSPECTION AND REWORK OF

**HELICOPTERS AFFECTED:** Serial numbers 65011 through 65499.

[Serial number 65500 and subsequent will have the intent of this bulletin accomplished prior to delivery.]

**COMPLIANCE:** At customer's option.

### **DESCRIPTION:**

Bell has been made aware that some 505 oil tanks SLS-065-100-037 and -065 have been manufactured with excessive sealant applied to the sight glass threads during installation. The excessive sealant squeezes out the back side of the sight glass and creates a dam (Figure 1), which traps oil at the bottom of the sight glass and presents a false oil level indication (Figure 2). In most cases reported to Bell, this false oil level is clearly below the MIN line. Since the engine oil level check is called out in the 505 Flight Manual postflight check, we encourage operators and maintainers to top up the engine oil per the 505 Maintenance Manual when the oil level is found below the MIN line during the postflight check.

This TB provides procedures to inspect the engine oil tank sight glass for the presence of excessive sealant. If sealant is found to be exceeding the limit specified in this TB, the sight glass should be removed and re-installed per the procedure in this TB.

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

**MANPOWER:**

Approximately 4.0 man-hours are required to complete this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

**WARRANTY:**

There is no warranty credit applicable for parts or 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 Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>
SLS-065-100-065	Engine Oil Tank Assy	AR (1, 2)
SLS-065-100-133	Sight Glass	AR (3, 4)
101017-002	Sight Glass	AR (4)

**NOTES:**

1. Required only if replacing the complete engine oil tank assembly.
2. Replaces SLS-065-100-037 in accordance with TB 505-21-28.
3. Required only if the original sight glass is damaged. In case of sight glass thread damage, inspection of the oil tank boss threads should be carried out to determine its serviceability.
4. 101017-002 replaces SLS-065-100-133.

**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>
2010-00134-00	SEALING COMPOUND	A/R (1)	C-308
2110-00010-00	ALIPHATIC NAPHTHA	A/R (1)	C-305
POLYGONE 300- AG GEL	SEALANT REMOVER	A/R (1, 2)	C-264
	CLEANING CLOTH	A/R (1)	C-516
	SYRINGE	A/R (1)	COMMERCIAL

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

**NOTES:**

1. As required.
2. PolyGone 310-AG (Aviation Grade) replaces PolyGone 300-AG

**SPECIAL TOOLS:**

None required.

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

BHT-505-IPB, Illustrated Parts Breakdown  
 BHT-505-MM, Maintenance Manual  
 BHT-505-FM-1  
 BHT-505-FM-2  
 TB 505-21-28

**PUBLICATIONS AFFECTED:**

BHT-505-IPB, Illustrated Parts Breakdown  
 BHT-505-MM, Maintenance Manual

## ACCOMPLISHMENT INSTRUCTIONS:

1. Park the helicopter on level ground and prepare the helicopter for maintenance.
2. Remove the transmission fairing 432BR and 432AL to gain access to the engine oil tank (DMC-505-A-53-40-02-00A-520A-A and DMC-505-A-53-40-01-00A-520A-A).

**-NOTE-**

Reduce the engine oil level to the MIN line (pre TB 505-21-28, reduce the oil level to the ADD 1 QT line instead). Further reduction of 13.5 oz (0.4 liter) of engine oil will bring the oil level below the sight glass.

3. Reduce the engine oil quantity through the filler port using a syringe to bring the engine oil level below the sight glass.
4. Inspect the sight glass and make sure there is no oil trapped at the bottom of the sight glass (Figure 2).
  - a. If there is no oil trapped at the bottom of the sight glass, go to step 23.
  - b. If there is oil trapped at the bottom of the sight glass, go to the next step.
5. Measure the Dimension H shown in Figure 2 and make sure it is less than 0.125 inch (3.175 mm).
  - a. If the Dimension H is less than 0.125 inch (3.175 mm), go to step 23.
  - b. If the Dimension H is greater than 0.125 inch (3.175 mm), go to the next step.
6. Remove the engine oil tank assembly (DMC-505-A-79-10-01-00A-520A-A).

**CAUTION**

Do not exceed 200°F when applying heat to the oil tank.

7. Apply heat surrounding the sight glass evenly to soften the sealant.

**CAUTION**

Make sure good grip is achieved when loosening the sight glass. Damage may occur if the socket slips. If it is difficult to break the sealant, apply more heat to soften it further. Do not exceed 200°F when applying heat to the oil tank.

8. Loosen the sight glass with a 1 $\frac{3}{4}$  6-point socket.

**CAUTION**

Metal tools could potentially damage the threads if used to remove the cured sealant. Use plastic scraper and avoid pushing the sealant residue into the oil tank. Sealant remover (C-264) may be used for removing the cured sealant from the threads. Limit the application of the sealant remover (C-264) to the threads only.

9. Thoroughly remove the cured sealant from the sight glass and the oil tank sight glass boss.
10. Clean the sight glass threads and the sight glass boss threads with aliphatic naphtha (C-305) and cleaning cloth (C-516).
11. Inspect the sight glass threads and the sight glass boss threads for damage and replace with new parts as necessary.

**-NOTE-**

If the oil tank is contaminated with the sealant residue or other debris, flush it with Aliphatic naphtha (C-305).

12. Inspect the oil tank for sealant residue and other debris and flush it as necessary.

-NOTE-

Shop air should go through a 10-micron filter and the air pressure should not exceed 40 PSIG.

13. Dry the oil tank and the sight glass with shop air.
14. Apply sealant (C-308) to the top 0.25 inch (6.35 mm) of the sight glass threads and the bottom face of the hex per Figure 3.
15. Wet install the sight glass into the oil tank sight glass boss.

-NOTE-

Make sure the etched lines in the sight glass align with the 'MIN' and the 'MAX' markings on the oil tank level decal. Pre TB 505-21-28, the markings are MIN OIL LEVEL and ADD 1 QT instead. If it is difficult to align them, install a new sight glass (Figure 4) and etch the lines after.

16. Tighten the sight glass one eighth of a turn past the sharp rise in torque.
17. Fair the sealant squeeze-out around the sight glass hex and allow the sealant to cure.

-NOTE-

Installing caps (AN929-8W QTY 1 and AN929-10W QTY 2) on all ports is recommended to avoid spillage, but it is acceptable to install one cap only at the bottom port for the following task.

-NOTE-

The purpose of step 18 and 19 is to verify correct installation of the sight glass before installing the oil tank to the aircraft. If cap AN929-10W is not available for the bottom port, you may verify correct installation of the sight glass after installing the oil tank on the aircraft by skipping steps 18 and 19 and carrying out steps 20 and 21 after step 22.

18. Install cap AN929-10W on the outlet fitting at the bottom of the engine oil tank.
19. Secure the engine oil tank in the upright position on a flat surface.
20. Fill the engine oil tank with engine oil to the MIN line (pre TB 505-21-28, fill to the ADD 1 QT line instead).

-NOTE-

If you have installed the new sight glass 101017-002, repeat steps 3 and 4 only to make sure there is no oil trapped at the bottom of the sight glass. Step 5 is not applicable to the sight glass 101017-002 because it has a much smaller observation window.

21. Repeat steps 3 through 5 to make sure the dimension H is less than 0.125 inch (3.175 mm).
22. Install the oil tank (DMC-505-A-79-10-01-00A-720A-A).

-NOTE-

Go through the entire procedure in step 23 including the operational test of the power plant and the leak check of the oil system (especially at the sight glass).

23. Replenish the engine oil system (DMC-505-A-12-10-05-00A-212A-A).
24. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.

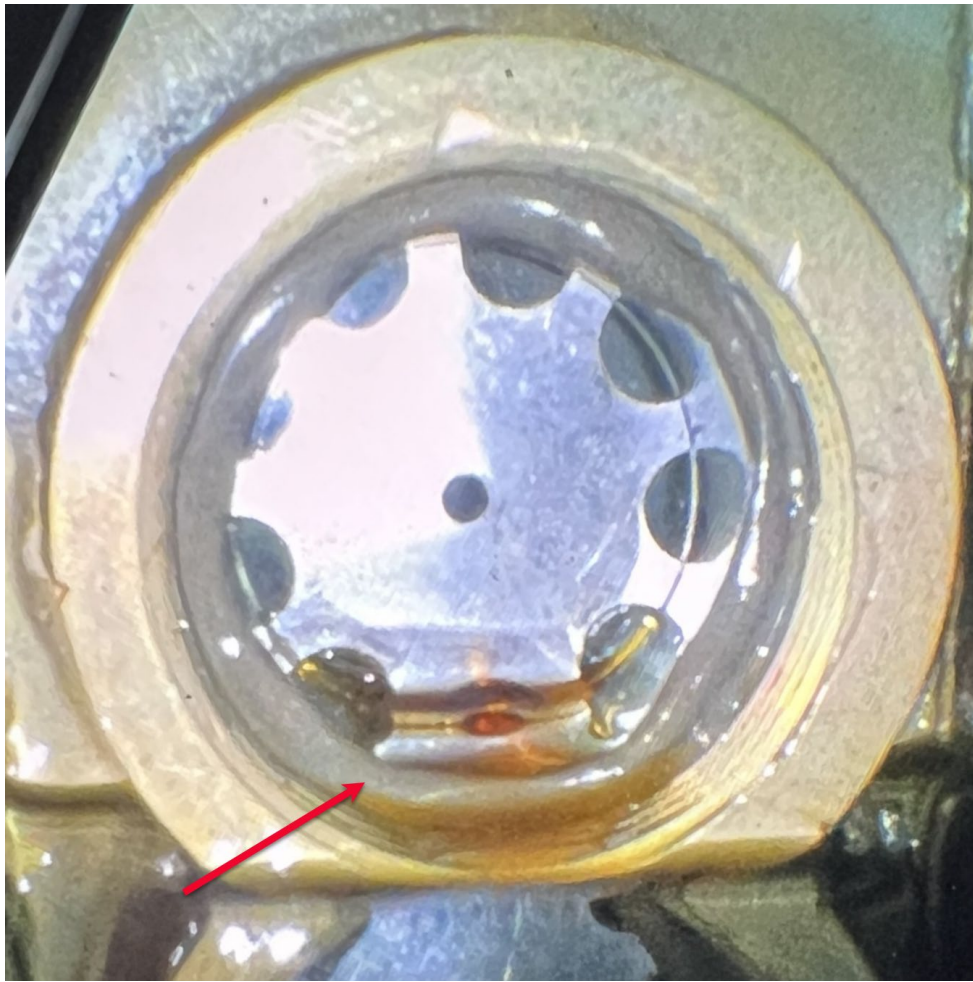


Figure 1 – Internal View of the Sight Glass with Excessive Sealant Shown





Figure 2 – External View of the Sight Glass with Oil Trapped at the Bottom

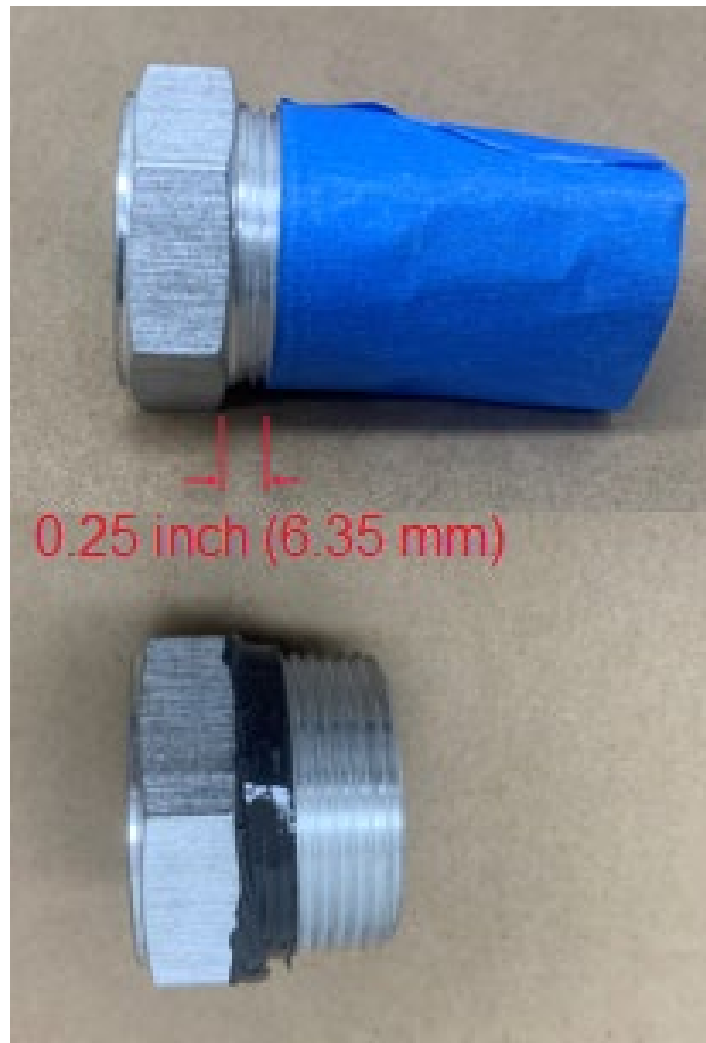


Figure 3 – Sealant Application to the Sight Glass Threads



Figure 4 – Sight Glass 101017-002