

HUMS Tool Best Practice

S92 Tail Rotor Pitch Change Shaft



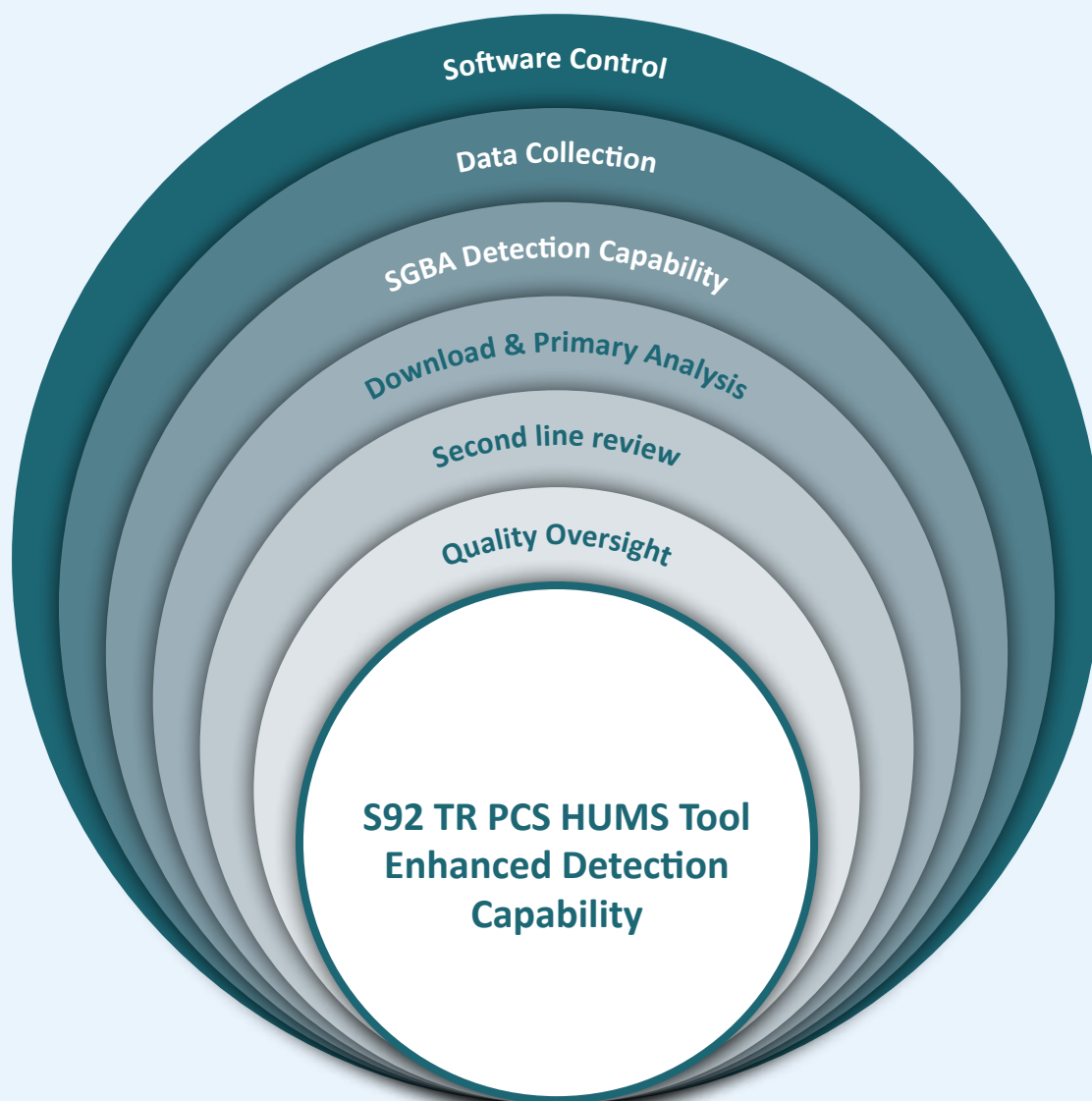
HeliOffshore
Safety Through Collaboration

Issued June 2017

This document is a type-specific appendix to HeliOffshore's Global Health and Usage Monitoring Systems (HUMS) Best Practice Guidance – [click here to view the guide](#)

It contains best practice that will enable operators to manage the SGBA Tail Gearbox Bearing Energy Analysis Tool related tasks for the Tail Rotor Pitch Change Shaft (TR PCS) Bearing.

TR PCS Safety Barriers in place



Software control

- Use the latest SGBA TGB Bearing Energy Analysis Tool as the primary HUMS software for monitoring the TR pitch change shaft.
- Operators should have a system in place to get the latest version of the HUMS software.
- The operator should have a management of change process in place to issue the software version promptly. This would include formal communication and where required training to all certifying staff to be aware of the changes.

Data Collection

Under normal circumstances the automatic data capture rate is every 8 minutes when the aircraft is operating at level attitude, over 60 KIAS and engine 1 and 2 torque is greater than 45%.

New installation

- The aircraft is clear for initial 'X' flight hours of operation. The operator shall attempt to collect as many data points on the "Tail Trans" option within the MFD, utilizing a combination of automatic and Forced HUMS data captures.
However, consideration should be made to ensure data collection across the other components is not compromised.
- If the required number of data points (nominally 115) has not been captured within the initial 'X' hours of operation, Sikorsky should be contacted.

Post Alert

- Ensure compliance with the Sikorsky AMM.
- When adjusting the 'Reset Alert Date' ensure the date and time set is at a point immediately after the last red acquisition.
- If the last data point is red then the tool will show insufficient data in the 'Result' box. The subsequent flight should provide the required one data point for sufficient data, assuming the correct flight regime profile is met.

'X' – As aligned with Sikorsky's approved maintenance data

SGBA Detection Capability

The latest SGBA algorithm is more sensitive. It targets vibration characteristics that are unique to the Pitch Change Shaft bearing and uses these to provide advanced warning.

Download & Primary Analysis

As per HeliOffshore HUMS Best Practice Guidance, HUMS download and analysis should continue to be conducted at every return to the main operating base.

- For this particular situation, where the SGBA Tool is being used with sufficient data, the TGB Bearing Energy Analysis Tool should be reviewed as if a close monitored item Type 'A'.
- The maximum flight hour interval shall not exceed that detailed within the Sikorsky AMM.
- Verify the sensor is passing the sensor data quality check within Mechanical Diagnostics/Accelerometers/ Tail Gearbox Bearing and no TGB sensor failures indicated on the BIT type report under Reports section'.
- Verify the time and date of the last acquisition from the latest flight and certify the status is satisfactory. This information should be kept with the aircraft records.
- The aircraft must not be dispatched for CAT flight if the time since last acquisition, or combination of the time since last accusation and the next flight exceeds the maximum flight hour interval as detailed within the Sikorsky AMM.
- If the tool has triggered a 'Recommended inspection' result, action as per Sikorsky AMM immediately.
- 'Reset Alert Date' – refer to 'Data collection > Post alert' on the left.
- 'Maintenance Date' reset should not be carried out unless directed by Sikorsky.

Second line Review

- TGB Bearing Energy Analysis should be included as a part of the daily second line HUMS analysis defined in the HeliOffshore HUMS Best Practice Guidance.
- If there has been a 'Reset Alert Date' action carried out since the last second line review, verify approved maintenance data has been used. Where applicable, ensure the 'Reset Alert Date' is set to a point immediately after the last red acquisition.

Quality oversight

This process should be included as a part of the normal audit programme.