



# Airworthiness Bulletin

## AWB 64-003 Issue 1 - 11 December 2025

### Bell 47 HAC Tail Rotor Blade Leading Edge

An Airworthiness Bulletin is an advisory document that alerts, educates and makes recommendations about airworthiness matters. Recommendations in this bulletin are not mandatory.

#### 1. Effectivity

All Bell 47 series rotorcraft and its derivatives that are fitted with P/N - HAC-47-3 tail rotor blades, under FAA Supplemental Type Certificate (STC) number SR09066RC.

#### 2. Purpose

Issue 1 of this Airworthiness Bulletin (AWB) is published in order to:

Inform operators and maintainers of the potential loss of the P/N - HAC-47-3 tail rotor blade leading edge abrasion strip; and

Recommend that operators and maintainers take proactive, airworthiness actions to mitigate the associated risks.

#### 3. Background

An Australian operator of the Bell 47 rotorcraft recently reported a major defect to CASA, stating loss of the leading edge abrasion strip of the tail rotor blade whilst in operation. The occurrence was reported as follows:

- The pilot heard a 'thud' followed by high vibration in the tail rotor pedals.
- The pilot made an immediate and successful emergency landing.
- After shutdown, inspections found:
  - o loss of the leading edge abrasion strip of the tail rotor blade; and
  - o four (4) gearbox mounting studs missing which were subsequently found on the ground near the landing site; and
  - o tail rotor control cable idler dislodged from its mount.
- The operator reported that there was nil evidence to suggest a tail rotor strike.

The leading edge abrasion strip can be either stainless steel (prior to August 1998) or nickel (from August 1998 onwards). The strip is bonded to the blade primary structure with a urethane impact cushion. In addition, the nickel strip is mechanically fastened via a tab that runs along most of the strip. The occurrence aircraft was fitted with tail rotor blades with nickel abrasion strips.

The suspected cause of the occurrence is that disbonding of the urethane cushion has reduced the dynamic load bearing capacity of the assembly, leading to the loss of the abrasion strip and partial loss of the urethane impact cushion.



It is likely that the subsequent vibrations caused by the unbalanced tail rotor then caused the gearbox mounting studs to shear off and dislodge the control cable idler from its mount.

At the time of the occurrence, the blade had completed 500 hours of the life limit of 4,000 hours.

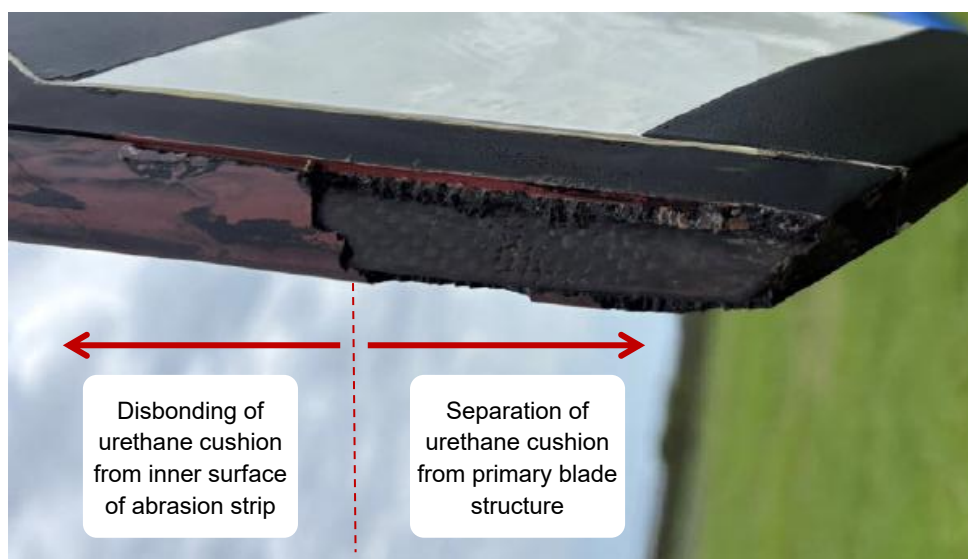


Figure 1. Close up of damaged tail rotor blade leading edge

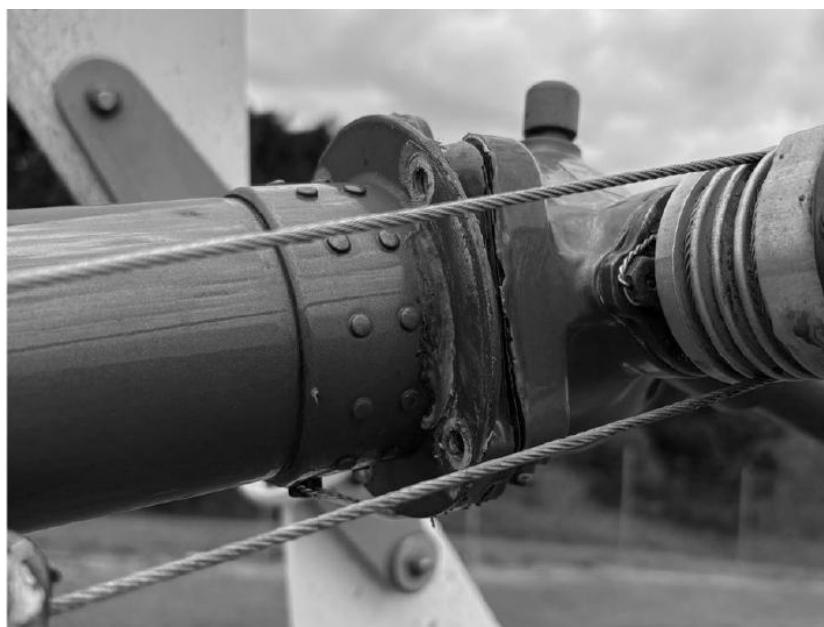


Figure 2. The gearbox mounting studs were found to have sheared off



Figure 3. The four missing mounting studs were found on ground, close to the landing site

In response, the operator has grounded their fleet to conduct a one-off, fleetwide inspection. In addition, the operator will be conducting a daily (pre-flight) inspection, plus a detailed visual inspection and tap-check of the leading edge during each rotorcraft's 50-hour periodic scheduled maintenance check.

#### 4. Recommendations

CASA recommends that operators consider implementing a proactive inspection regime to ensure the safety of their pilots and operations:

- A daily / preflight inspection of the tail rotor blade leading edge; and
- A detailed visual inspection (DVI) and / or non-destructive inspection (NDI) to be done during the periodic scheduled maintenance inspections for the aircraft.

**Note:** Refer to regulation 2A of the Civil Aviation Regulations (CAR) (1988) for the definition of "*approved maintenance data*".

CASA also recommends that maintainers conducting tap-tests, take into account the unique acoustic properties of the leading edge due to the urethane cushion and seek assistance from the STC holder or an appropriately approved Part 21M or Part 21J entity where required.

CASA also recommends that operators review the procedures in the rotorcraft flight manual for the loss of the tail rotor and the HAC STC ICA's discussion about 'pedal buzz'; and disseminate the information about this occurrence to their pilots.



## 5. Reporting

Findings of disbonded abrasion strips must be reported to CASA as a major defect, under Regulation 51A of the Civil Aviation Regulations (1988) and Division 42.C.4 of the Civil Aviation Safety Regulations (1998), as applicable. For further guidance on how to submit a report, refer to CASA Advisory Circular 20-06 which is available on the CASA website.

The STC holder should also be notified to facilitate global monitoring of the issue.

## 6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link email address:

[AirworthinessBulletin@casa.gov.au](mailto:AirworthinessBulletin@casa.gov.au)

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