



Airworthiness Bulletin

AWB 32-029 Issue 1 – 10 Nov 2025

Supplementary Type Certificated Amphibian Float Main Gear Slide Wear in Marine Environments

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 aircraft with amphibian landing gear float systems installed under WIPAIRE Supplementary Type Certificate, all series.

2. Purpose

The purpose of this AWB is to bring to the attention of all operators and maintainers of aircraft with amphibian landing gear float systems, installed under WIPAIRE Supplementary Type Certificate, that operation in a marine environment requires greater vigilance to ensure reliability of the landing gear and the actuating system.

3. Background

A recent water landing accident in a marine environment of a de Havilland (Viking Air Limited) DHC-2 Beaver amphibian float, with one main gear wheel stuck in the fully extended position, resulted in the aircraft becoming submerged inverted after touchdown on the water, with the aircraft yawing sharply in the direction of the extended main gear wheel before nosing over.

The ATSB investigation report - AO-2024-055 into the accident found that the hydraulically retractable main landing gear on one side of the aircraft remained extended on landing.

The subject aircraft was fitted with an amphibian gear advisory system (AGAS) position annunciating system to alert the pilot of an asymmetric gear configuration. In addition to the AGAS, a left wing-mounted mirror was fitted to allow pilot observation of the main gear position.

The ATSB investigation reported that extensive corrosion was found on the contact surface of the main gear slide tube at the location where the main gear carriage sits when the main gear is in the full extended position.

On disassembly, the ATSB noted the anodised surface of the slide tube exhibited wear consisting of longitudinal marks caused by the movement of the main gear carriage, in addition to two distinct corrosion bands around the periphery of the slide tube where the main gear carriage sits at the fully extended position, reference Figure 1.

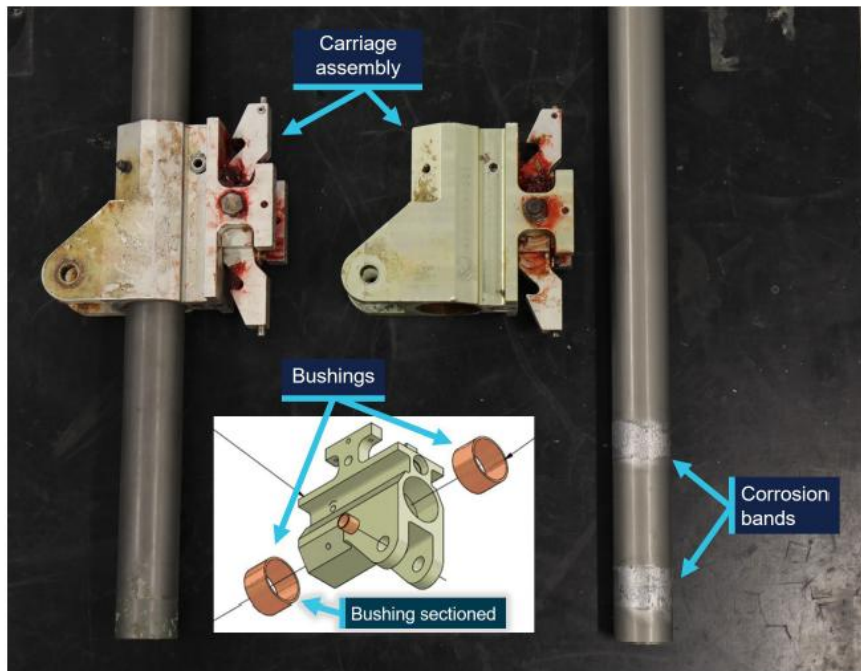


Figure 1. Source ATSB investigation report - AO-2024-055 (used with permission, annotated by the ATSB).

Further investigation by the ATSB found that the main gear carriage bushings, on examination, identified areas where the PTFE sliding surface was not present, exposing the sintered bronze layer of the bushings which also exhibited evidence of scoring, refer Figure 2.



Figure 2. Source ATSB investigation report - AO-2024-055 (used with permission).

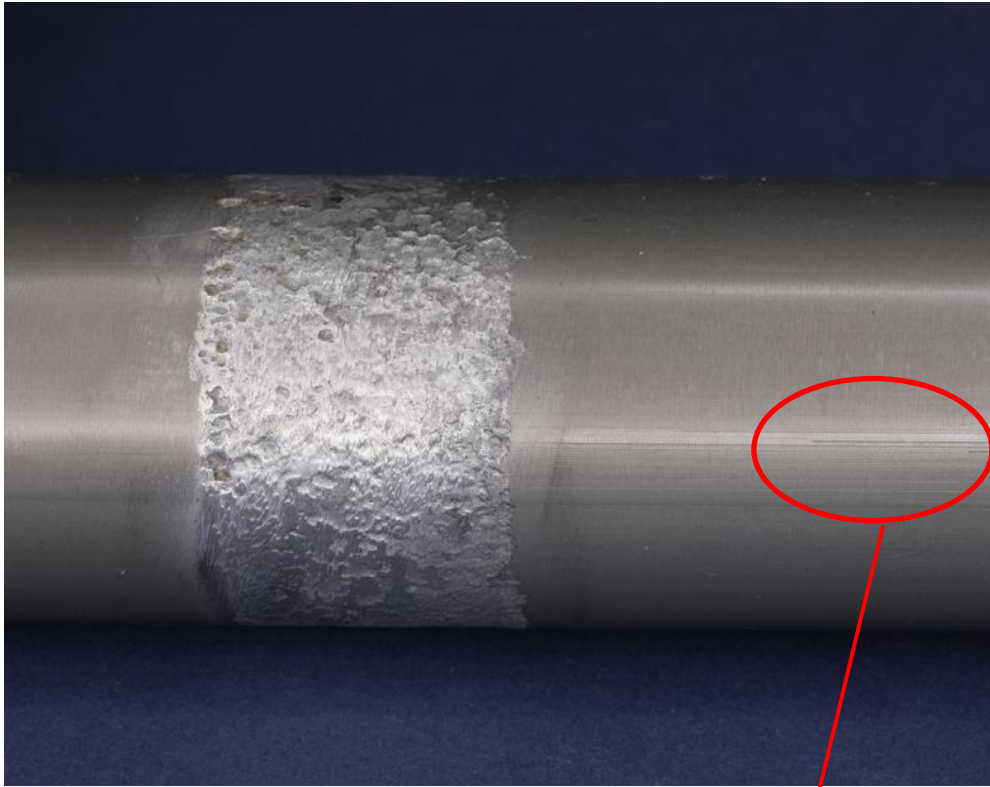


Figure 3. Corrosion Band under main gear carriage bushing, with longitudinal scoring of slide tube anodised surface evident. Source ATSB investigation report - AO-2024-055 (used with permission).

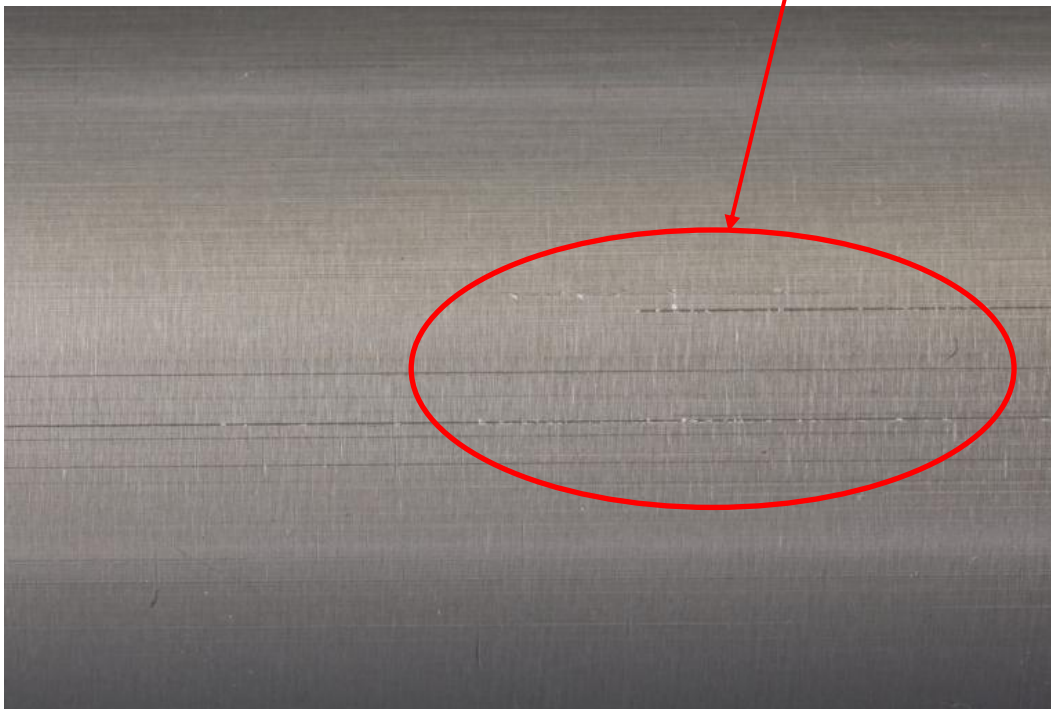


Figure 4. Close up view of Figure 3 longitudinal scoring of slide tube anodised surface with evidence of exposed base metal inside red circle. Source ATSB investigation report - AO-2024-055 (used with permission).



The ATSB investigation report - AO-2024-055 summarised;

‘The slide tube corrosion pattern was consistent with galvanic corrosion between the exposed bushing bronze layer and the aluminium slide tube base metal, in the presence of salt from coastal operations’.

Supplemental Type Certificate (STC) Holder Advice

The STC holder has published a service letter, see References, to advise operators and maintainers of sticking main gear actuators due to corrosion on the slide tube, noting that;

‘This corrosion is partially caused by gravel or debris from the Main Landing Gear tires eroding through the hard anodised surface of the Slide Tube, exposing metal which is more susceptible to corrosion.’

The service letter recommends that;

‘Change service intervals on the Main Gear Actuators to every 25 hours. Clean the slide tube with clean solvent to remove any build-up of dry or dirty lubricants. Inspect the slide tube for erosion and/or nicks and protrusions caused by gravel or debris being thrown by the Main Landing Gear tires. Grease the Actuator Mechanism (with the approved grease) and wipe the slide tube down with a clean rag soaked in lubricant. Follow inspection procedures for greasing landing gear zerks’

4. Recommendations

For maintainers of an aircraft fitted with an amphibian landing gear float system operated in a marine environment, it is recommended when carrying out the scheduled inspection that particular attention be paid to;

- Support the aircraft so that the main gear carriage can be moved away from the fully extended position.
- Ensure the main gear carriage can be hydraulically moved away from the fully extended position and is not seized in position.
- Carry out a visual inspection of each main gear slide tube’s hard anodised surface for evidence of wear, erosion/nicks/protrusion damage that exposes the parent aluminium beneath the anodised surface, caused by entrapment of grit (gravel/sand/debris) in the carriage bushings and to inspect each slide tube for evidence of corrosion,
- If evidence of wear/damage/corrosion of the slide tube is found, it is recommended to take appropriate action to restore serviceability.

Note: Possible disassembly of the main gear carriage may be required to inspect the condition of the carriage bushing surfaces for wear if wear/damage/corrosion of the slide tube is found.

- For aircraft that may be laid up for a period, it is recommended that the above movement check, visual inspection and lubrication be performed before the aircraft is returned to service.
- For operators of the aircraft that utilise approved pilot maintenance authorisations (MA) for washing down aircraft with clean fresh water at the end of the day, and



for lubricating the amphibian landing rear systems in marine environments - it is recommended that particular attention be given to ensure accessible areas of the main gear slide tube is wiped down with a clean cloth soaked in the approved lubricant.

- Additionally, for maintainers and pilot maintenance authorisations holders - when servicing the main gear carriage with grease, it is recommended to ensure that each grease zerk fitting is not blocked so that clean grease can be pumped into the zerk fitting and that clean grease is observed to extrude out of the carriage bushings at the slide tube interface.

5. Reporting

Findings of wear or corrosion on amphibian landing gear float systems should be reported to CASA as a major defect under regulation 51A of the Civil Aviation Regulations (CAR) (1988) or division 42.C.4 of the Civil Aviation Safety Regulations (CASR) (1998), as applicable.

Reports to CASA can be submitted online via CASA's online [Defect Reporting System \(DRS\) Portal](#) or via [Form 404](#). Guidance on how to submit a report can be found on the [CASA website](#) and within [CASA Advisory Circular 20-06](#).

The supplementary type certificate holder, Wipaire Inc., and the FAA should also be notified to facilitate global monitoring of the issue.

6. References

- ATSB investigation report – AO-2024-055 'Landing Gear malfunction and collision with water involving de Havilland Canada DHC-2 Beaver, VH-OHU'. Dated 10 November 2025
- Wipaire Service Letter: #80 'AT-802 Fire Boss Slide Tube Corrosion' Dated 4 June 2006

7. Enquiries

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

AirworthinessBulletin@casa.gov.au

or in writing, to:

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National Operations and Standards
Civil Aviation Safety Authority
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