

AIRWORTHINESS BULLETIN

AWB 02-052 Issue : 2
Date : 23 March 2016

1. Effectivity

All aircraft.

2. Purpose

Urgently advise operators, maintainers and pilots of the dangers associated with undetected mud wasp infestation in aircraft, and the circumstances under which they can occur.

3. Background

Mud dauber wasp nests pose a significant safety hazard to all aircraft because they typically remain undetected in aircraft structure, flight controls, drains and flight instrument pitot static systems until during or after take-off. A wasp nest can completely block pitot tubes, fuel tank vents and drains.

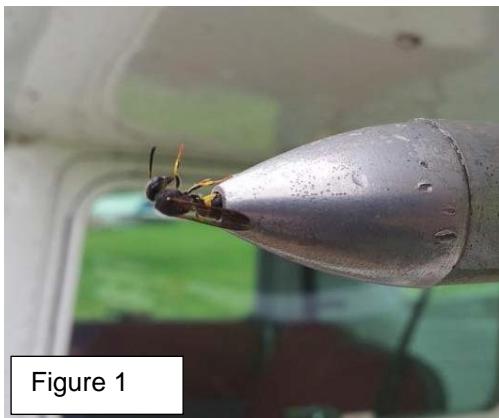


Figure 1



Figure 2

Figure 1. Mud dauber wasp emerging from an uncovered pitot tube.
(Source:backcountrypilot.org)

Figure 2. Australian Mud Dauber Wasp
(Source: BrisbanelInsects.com)



Figure 3

Mud dauber wasps will build a nest in any available cavity.

A recent SDR investigation found a number of wasp nests inside the wing of a Cessna 182, in the cavity formed between the rear spar and the flap fairing, (Figure 3).

There was also one large wasp nest entirely suspended on the flight control cables in the rear fuselage.

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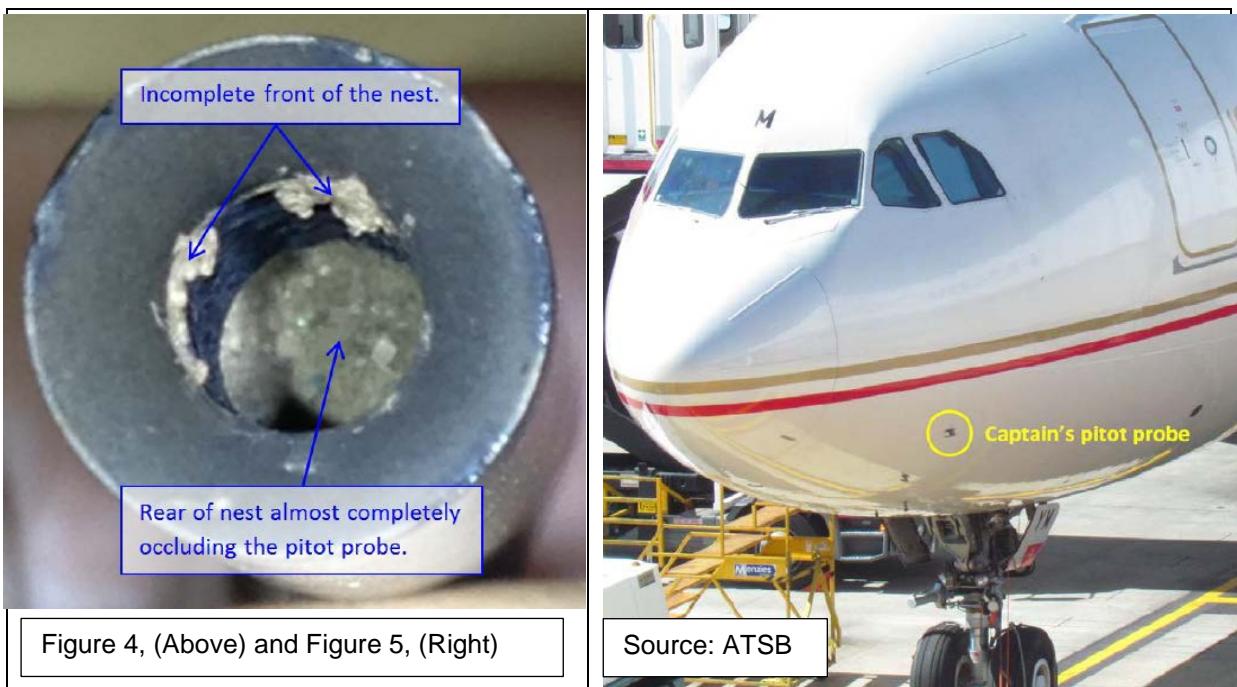
Wasp Nest Infestation - Alert

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Whenever the pitot-static system has been disconnected to clear a blockage, it must be tested for leaks when re-connected, and every 24 months thereafter, in accordance with the requirements of the current Amendment of CAO 100.5 Appendix 1.

Wasp nest and insect blockages in pitot tubes are not limited to small aircraft. Between 2010 and 2015, CASA received approximately 20 SDRs detailing departure gate delays, aborted take-offs and air turn-back occurrences due to wasp nest infestations in the pitot tubes of large aircraft in Australia alone. Overseas reports detail fatal accidents which have been attributed to wasp nests blocking the pitot tube, resulting in loss of airspeed indication.

A typical example occurred in 2013 when an Airbus A330 suffered a rejected take-off in Brisbane, Australia, due to an airspeed indication failure which was only detected during the take-off roll. During the subsequent inspection it was found that the Captain's pitot probe (Figure 5) was almost totally obstructed by an insect nest, consistent with mud-dauber wasp nest residue. (Figure 4)



The residue was built up while the aircraft was on the ground over a two hour period, while the aircraft was parked at the loading gate. The pitot probe covers were not installed by maintenance staff during this time.

While the ATSB Report [AO-2016-212](#) in relation to this occurrence indicates that a mud dauber wasp nest can completely block a pitot tube inside two hours, CASA has received anecdotal evidence which indicates that the mud dauber wasp can build a significant nest capable of completely blocking a pitot tube, vent, or drain in around 20 minutes.

It should also be noted that aircraft equipped with Built In Test Equipment (BITE) may only check the various computers associated with critical flight instruments during pre-take-off testing, and may not check for clear passages in the pitot head or static vents. The investigation of any anomalies flagged by such systems should include a careful inspection for pitot tube blockages, including visual inspection and pitot static testing.

4. Recommendations

CASA recommends that owners and operators review their procedures against the manufacturer's maintenance instructions and recommendations with regard to parking and storage.

In addition:

1. Install pitot / static and vent covers any time the aircraft is parked.
2. Consider installing approved fuel vent screens or removable drain/vent covers and engine compartment blanks, as well as installing tight fitting pitot / static vent covers.
3. In instances where the aircraft has been stored long term in the open air, remove inspection panels before flight as required to inspect unsealed wing and fuselage cavities etc.
4. Continually monitor and remove any wasp nesting sites in the general area where the aircraft is stored or maintained in accordance with appropriate insect control procedures.
5. Be aware that on-ground pre-flight air data module BITE tests and/or computer checks will usually not test pitot probes or static vents for blockages.

5. Reporting

All wasp nest and / or insect infestations and any associated defects or operational difficulties should be reported to CASA via the SDR system.

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6. Enquiries

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

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or in writing, to:

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