SAFETY INFORMATION 8/2022

28 March 2022

PITOT PROBES OBSTRUCTION ON GROUND AND PITOT COVER HAZARD

Purpose:

This Safety Information (SI) is to inform aircraft maintenance crew of the efforts to be made in order to protect Pitot probes on ground, and at recommending flight crew to accurately check the condition of Pitot probes before flight, and to carry out the abort/reject take-off procedure when airspeed indication is detected unreliable.

Background:

Recently, the European Union Aviation Safety Agency has noticed an alarming trend in the number of reports of unreliable speed and altitude indications during the first flight(s) following the aircraft leaving storage due to the Covid-19 pandemic. These abnormalities are caused by contaminated air data systems. It has also been noticed that contaminated air data systems related events occur when the aircraft is parked for a time period of less than 48 hours or even in aircraft in transit and on the ground for periods of less than 12 hours.

Discussion:

Pitot static systems provide critical air data information to the aircraft and the pilots during flights. To sense airspeed, the vast majority of aircraft use a Pitot tube. Oncoming air enters the tube and is routed to the airspeed indicator or the air/data sensor. That's where the air's pressure is measured and compared with ambient or static, then translated into knots or some other measurement and displayed on the instrument panel. The Pitot tube itself is mounted somewhere on the aircraft's exterior. As such, it is exposed to the elements, whether the aircraft is airborne or parked.

Insects can cause rejected take-off or in-flight turn-back events and there are other potential sources of Pitot obstruction. "A mud dauber wasp can build a significant nest capable of completely blocking a Pitot probe, vent, or drain in around 20 minutes" according to an airworthiness bulletin issued by the Australian Civil Aviation Safety Authority (CASA) following an investigation of an in-service occurrence. But it is not only insect activity that can be the cause of Pitot blockage. Pitot probe inlet obstruction by insect, dust, dirt or any materials (sand) is the main root cause of rejected take-off or in-flight turn-back events due to airspeed discrepancy.

Pitot probe protection using manufacturer's approved covers is the most effective way to prevent Pitot obstruction on ground. Unfortunately, having the Pitot cover in place is a hazard to flying if not removed before flight. During the pre-flight exterior check, crew should pay particular attention to the condition of probes and ensure that the cover is removed.

Recommended Action:

Operators are recommended to raise maintenance and flight crew awareness on this potential issue by reminding them the importance of:

a) protecting Pitot probes with covers as soon as necessary;
b) always look at the Pitot probes carefully during the pre-flight exterior inspection and check that all of the covers are removed before flight. Ensure there is no damage to the Pitot probe and that the general condition is good;
c) monitoring airspeed indications during the take-off roll and announcing any abnormalities, such as unusual airspeed trend or absence of airspeed indications (usually a Pilot Monitoring duty);
d) conducting the required coordinated airspeed checks during the take-off roll, ensuring that the airspeed indicators agree;
e) carrying out abort/reject take-off procedure if an airspeed anomaly is detected;
f) performing the related abnormal/non-normal procedure (e.g. “Airspeed Unreliable”) in case abnormalities or disagreement are detected in flight;
g) operators should also consider including the unreliable air data scenario into the operator’s post Covid-19 re-qualification simulator programme;
h) the operator’s policy on take-off briefings should be re-assessed to consider the issues highlighted in this Safety Information.

For further information, please refer to the following documents:

a) Contamination of Air Data Systems During Aircraft Parking and / or Storage due to the COVID-19 Pandemic.
b) CASA Airworthiness Bulletin - AWB 02-052 Issue 6 - 14 July 2021 – Wasp Nest Infestation - Alert

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DATUK CAPTAIN CHESTER VOO CHEE SOON

Chief Executive Officer

for Civil Aviation Authority of Malaysia

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