

Continuing Airworthiness Notice – 00-001



BRM Aero Bristell Aircraft Variants – Operating Limitations

26 August 2020

Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains non-regulatory information and guidance that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91 - CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

BRM Aero Bristell aircraft variants, all S/N.

These aircraft variants in New Zealand either have a Special Category – LSA Airworthiness Certificate, or a Microlight Class 2 Flight Permit.

Bristell aircraft are known by a range of model designations, but most commonly NG4 and NG5. They were initially manufactured by the Roko Aero, or Rokospol companies, but since 2012 have been manufactured by BRM Aero.

Purpose:

This Continuing Airworthiness Notice (CAN) is issued to notify pilots and operators of Bristell aircraft variants of some airworthiness concerns that have been raised regarding aspects of their operation.

Specifically, CASA has published a Safety Advisory Notice prohibiting intentional stalling of the aircraft when used for commercial flight training, or any manoeuvring which could lead to a stall and unintentional spin.

In addition, the UK Light Aircraft Association (LAA), which is the administering body for aircraft operating on a Permit to Fly in the UK, have published an Airworthiness Alert regarding incorrect weight and balance calculation arms in the Pilot Operating Handbook (POH).

Background:

There have been several recent Bristell aircraft accidents in which examples appear to have got into a flat spin from which the occupants were unable to recover.

One of these accidents occurred in Australia. Arising from investigations of the accident CASA has issued Safety Advisory Notice 01-2020 issue 2, dated 28 July 2020, which applies to Bristell aircraft being used in flying training operations and prohibits “conducting an intentional stall of the aircraft, or from performing any flight training activities that could reasonably lead to an unintended stall (for example, performance limit turns which occur at high angle of bank, high angles of attack and low airspeed).” This notice was an update from an earlier version in which the prohibition was only advisory. The notice is available on the CASA website at:

<https://www.casa.gov.au/aircraft/aircraft-safety/safety-advisory-notice-bristell>

The imposed operating limitations are based upon the risk that affected aircraft may not meet the spinning requirements specified in ASTM F2245 Section 4.5.9.

Another accident occurred in Ireland. During that investigation, which is not yet completed, the Air Accident Investigation Unit Ireland (AAIU) identified a discrepancy in the Pilot Operating Handbook (POH) / Aircraft Operating Instructions (AOI) for the Bristell NG4 and NG5. The concern identified is related to the moment arm identified in the POH / AOI for the pilot and passenger. This is stated in the manual as 600mm from the datum. The accident aircraft was identified as having a moment arm closer to 780mm. A further review of another NG4 aircraft in Ireland identified a similar issue and discrepancy in the moment arm. As a result, the Irish Aviation Authority contacted all the individual aircraft owners to advise them of the finding.

The Irish AAIU engaged the Air Accident Investigation Branch (AAIB) in the UK to seek out some further clarification of the issue in respect to NG 5 aircraft operating in the UK, as there are no other NG5's operating in Ireland. A weight and balance review was undertaken by the AAIB in conjunction with the UK LAA. As a result of that review the UK LAA issued an Airworthiness Alert in respect to Bristell NG5 aircraft.

UK Light Aircraft Association (LAA) Airworthiness Alert LAA/AWA/20/18, dated 20 July 2020, pertains to the change in the pilot and passenger moment arm measurement to be used in pre-flight centre of gravity calculations. The UK LAA Airworthiness Alert is available at: http://www.lightaircraftassociation.co.uk/engineering/Bristell_NG5.pdf

The Irish AAIU Preliminary Accident Report dated 18 July 2019 for BRM Aero, Bristell NG5, G-OJCS, is available at <http://www.aaiu.ie/sites/default/files/report-attachments/Preliminary%20Report%202019-008.pdf>

The on-site examination of the wreckage of Bristell NG5, G-OJCS indicated that the aircraft impacted the ground at a high vertical speed in a nearly level attitude whilst rotating anticlockwise about the yaw axis.

There is also available a recently published report on another accident which occurred in Portugal. While the circumstances are not identical it does provide a lot of useful information and background data on the Bristell aircraft. The report is available at: <http://www.gpjaa.gov.pt/>

As a result of these actions the BRM Aero company has worked with the LAA to review the moment arms used in the flight manual for pilots and passengers. BRM Aero has issued Safety Alert Bulletin No. ALL-SA-0-0-0-0001-2020 initial issue, dated 7 August 2020 to revise the weight and balance details for the aircraft. This corrects the pilot/passenger moment arm and changes the aircraft datum to be the firewall, which is easier to measure moment arms from. Amendments to all AOI have been issued for all individual serial numbers, which incorporates these revised weight and balance details.

All operators of Bristell aircraft should have incorporated the AOI revision with new weight and balance section.

Recommendation:

The CAA strongly recommends that, while the issue is still under review by CASA, operators of Bristell aircraft should not carry out any manoeuvres that may lead to an aerodynamic stall of the aircraft – either intentionally or unintentionally.

The CAA also recommends that all pilots should inform any passenger of the details of this CAN before commencement of a flight.