

Continuing Airworthiness Notice – 08-001



Measuring Tapes used for Aircraft Centre of Gravity Calculation

21 October 2016

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:

Measuring tapes used to determine the centre of gravity (CG), and the weight and balance of an aircraft.

Purpose:

To advise aircraft maintainers that they must be familiar with the units of measurement marked on the measuring tape when determining the weight and balance of an aircraft.

Background:

This Continuing Airworthiness Notice (CAN) is prompted by a report received by the CAA of finding a measuring tape with two measuring scales printed on it. One scale is marked in mm, and a second scale marked in units of 1/33m, which was mistaken to be 1" increments.

This 1/33m scale on this tape was inadvertently used, resulting in an incorrect CG calculation which required a 15lb weight in the tail of the aircraft. A heavier propeller had been installed on the aircraft, so it appeared that a counterweight would be necessary.

However, the engineer subsequently used another measuring tape and calculated a different CG value, which aligned with other aircraft of the same type. Further investigation revealed that the second scale on the tape marked in units of 1/33m is a Japanese unit of length known as the shaku, where 3.3 shaku is equivalent to one metre. For further detail refer to the photograph.

Requirements:

Those performing maintenance apply their training, knowledge and experience when performing the required tasks. Maintenance engineers must be familiar with the units of measurement marked on measuring tapes used to determine the weight and balance of an aircraft

The units of measurement and the suitability of a measuring tape is left to the discretion of the Licensed Aircraft Engineer who certifies the aircraft for release-to-service. The CAA has no recommendation at this time.

Note:

Measuring tapes are used to determine the CG, and the weight and balance of an aircraft. When the aircraft CG, and/or the weight is outside the acceptable range, the aircraft may not be able to sustain flight, or it may be impossible to maintain level flight.

Enquiries regarding this Continuing Airworthiness Notice should be sent to:

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White measuring tape - With a scale marked as $1/33m$, which can be mistaken to be 1" increments.

Yellow measuring tape - With a correct 1" increment scale.