



CONTINUING EDUCATION AND TRAINING SERIES

# Aircraft Weight and Balance

*This 2-day course provides participants with an understanding of the regulatory system within Australia and its application to aircraft weight and balance and continuing airworthiness. The course is intended for Engineers requiring competency training and individuals involved with the "Aircraft Weight Control Authority" CAO 100.28. The course includes discussions on case studies and practical examples.*

Tuesday 10th – Wednesday 11<sup>th</sup> September 2024  
9:00am—5:00pm

Venue:  
MEMKO - L28, 303 Collins Street, Melbourne,  
VIC 3000, Australia



Course managed by MEMKO Aviation, Aerospace and Defence,  
ABN 73 619 452 470

# COURSE REGISTRATION

## Aircraft Weight and Balance

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

**Registrations close Friday 30th August 2024**

Email this form with your payment details to:

MEMKO A.A.D.  
Email: [training@memko.com.au](mailto:training@memko.com.au)

### Payment Method:

- Bank transfer (\$1,650) to MEMKO AAD P/L BSB 033-060 Ac 437512
- Charge my credit card:

Visa     MasterCard    Amount: \$ 1,650

Number: \_\_\_\_\_ CVC: \_\_\_\_\_

Card expiry: \_\_ / \_\_ Cardholder Name: \_\_\_\_\_

**Cardholder's Signature:** \_\_\_\_\_

For further info, please contact MEMKO on 03-8605 7777 or [training@memko.com.au](mailto:training@memko.com.au)  
Tax invoices/receipts will be emailed to above email address.

## COURSE OUTLINE

The weight and the balance of an individual aircraft are important parameters, which need to be controlled for that aircraft to fly safely.

Airworthiness Design Standards require aircraft designers to determine and specify limits for the weight and an allowable range for the centre of gravity to ensure that the aircraft, if operated within these limits, can be flown safely.

The weight and balance of an aircraft is constantly varying. Different payloads will cause changes on a flight-to-flight basis. Fuel-burn causes weight and balance changes within a single flight.

Modifications and repairs to the aircraft and even the accumulation of dirt and debris over an extended period of time will change the weight and balance of an aircraft during its service life.

In normal operation, the Pilot in Command is required to ensure that the aircraft is correctly loaded for each mission. The pilot can only do this if provided with accurate information, on the Weight and Balance Limits, together with the current Weight and Balance of the Empty aircraft, and the effect of the possible loading configurations, which apply to the aircraft.

Provision of this data is the responsibility of an "Aircraft Weight Control Authority" who is person duly authorised under the Civil Aviation Safety Regulations CAO 100.28.

This short course on Aircraft Weight and Balance covers the information, which is needed by a Weight Control Authority when exercising his duties.

The course covers:

- 1.) The design aspects, which set the weight and balance limitations for the aircraft. The requirements contained in the Designs Standards for aircraft and helicopters will be introduced and examples given which describe the effects of operating an aircraft with adverse weight and balance conditions.
- 2.) Weight and Balance Theory including the fundamental concepts of a "Equilibrium, and Moment Balance Calculation". The various computational, graphical and tabular methods, which are commonly used to present Weight and Balance information in Flight Manuals, will be presented and evaluated. Worked examples will be provided and students will be asked to develop such systems for candidate aircraft in student exercises.
- 3.) The procedures required to weigh an aircraft and to determine its empty weight, and centre of gravity will be covered. The need for correct preparation of the aircraft, together with requirements for scales and the different types of load cells used in electronic scales will be discussed and practical demonstrations and student exercises will be used to demonstrate these techniques.

## COURSE LECTURER

**Mr Alan Kerr**

Chief Engineer, **The Aeronautical Design Service**

Alan Kerr graduated from UQ with a BE (Mech, 1st Class Honours) in 1974, and an MSc in Aircraft Design in 1983 from the Cranfield Institute of Technology UK. He served for 12 years in the RAAF as an Engineering Officer with responsibilities for maintenance and structural airworthiness on MIRAGE III,-111, and F/A18 aircraft. After leaving the RAAF, Alan worked in various positions in General Aviation until becoming a CASA Authorised Person for Reg 35 approvals in 1989. Major projects that Alan worked on between 1989 and 1993 include the certification of JABIRU and SKYFOX aircraft, and the development of a full fatigue life management program for the 26-seat Nord 262/Mohawk, which was a 26-seat turboprop used by a Regional Airline. In 1993 Alan contracted to promote and implement the bonded repair technology developed for the RAAF by AMRL. Between 1993 and 1998 Alan worked in the US where he was involved with the development and application of bonded repairs on C141, C5, F-16, H47, and AH64 aircraft. After returning to Australia in 1998, Alan recommenced working as a CASA authorised person. Currently located on the Sunshine Coast, Alan's work is primarily involved in the development and approval of Modifications, Repairs, via CASR 21M approvals, and STC's.

## COURSE ACCREDITATION

All participants will receive a certificate of completion after full attendance of the course.

## COURSE FEES

Fee for this 2-day course is \$1,500 plus GST. This includes course notes, morning and afternoon tea/coffee and lunches.

Course fees will be returned less a \$50 administration fee, upon receipt of a written cancellation notice before Friday 30th August 2024.

MEMKO reserves the right to cancel the course, in which case participants will be notified and the course fee will be returned in full, this includes COVID-19 related circumstances. Because of this, please hold off booking flights and accommodation until the course is confirmed.

**Places are limited.**

Please note the course notes will be delivered in an eBook format. iPads will be provided to access the material. Participants are welcome to bring their own laptops.