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**AIRWORTHINESS**

**ADMINISTRATION**

**AIRCRAFT: MASS AND BALANCE REQUIREMENTS**

Λ Indicates changes.

Λ This AIC replaces AIC 60A5 dated 00-11-15.

**1. GENERAL**

1.1 Regulations Part 91.07.11 (4) & (5) of the Civil Aviation Regulations (CAR's) 1997, as amended, states no person may operate any South African registered aeroplane or helicopter unless its current mass, when empty, has been established by means of a mass-meter and its centre of gravity computed within the preceding five years.

1.2 The mass and centre of gravity data as supplied by manufacturers in respect of new aircraft shall be acceptable for the purposes of this Part for the first five year period; provided that the mass, when empty, was established by means of a mass-meter.

**2. ESTABLISHMENT OF MASS, EMPTY**

**2.1 Mass-meter**

The mass-meter which is to be used shall have been certified by a Government Assize Officer within the period of 12 months immediately preceding the date of determination of mass of the aircraft, except that test results obtained from the South African Bureau of Standards or similar body, in respect of electronic mass-meters which are being used to determine the mass of aircraft will also be acceptable to the South African Civil Aviation Authority.

**Λ2.2 Empty mass**

The empty mass of an aircraft shall include the power plant and any engine coolant, unusable fuel, total oil, total hydraulic fluid, any fixed ballast and all items of fixed equipment.

**2.3 Procedure to establish mass**

- (a) Remove excessive dirt, grease and moisture from the aircraft.
- (b) To compute the centre of gravity, place the aircraft in a level flight attitude, as prescribe by the manufacturer.
- (c) Establish the mass inside a closed building to prevent mass-meter errors, which may be introduced owing to wind.

Λ(d) Ensure that the requirements set out in paragraph 2.1 above, have been met.

Λ(e) Use mass-meters in accordance with the instructions prescribed by the manufacturer of the specific mass-meter. The mass-meters must be positioned at the stations called out by the manufacturers of the aircraft. The points shall be clearly indicated in the mass and balance report, and be in accordance with the individual manufacturers specifications.

(f) Obtain the necessary publications i.e. Maintenance Manual, Flight Manual, etc before commencing with the procedures.

- (g) *Ensure the aircraft conforms to the approved equipment list (Any extra items must be removed or added to the list).*

### **3. MASS AND BALANCE REPORT**

3.1 *The mass and balance report shall include at least the following information:*

- (a) *aircraft nationality and registration letters, make, model and serial number;*
- (b) *date mass was determined and centre of gravity computed;*
- (c) *the datum point used;*
- (d) *the necessary calculations: (A specimen mass and balance report is given in FAA Advisory Circular AC 43.13-1 B);*
- (e) *The signature and approval number of the person who is responsible for establishing of the mass and computing the centre of gravity, applicable publications Part number used; and*
- Λ(f) *A copy of the mass and balance report must be submitted to the CAA and an entry made in the applicable aircraft logbook.*

**ΛNOTE:** *In performing this maintenance Regulation Part 43.02.2 of the Civil Aviation Regulations 1997, as amended, must be complied with.*

### **4. AIRCRAFT DOCUMENTATION**

- 4.1 *The person responsible for determining the mass and computing the centre of gravity of the aircraft shall make an appropriate entry in the airframe logbook of the aircraft concerned. The date of the entry shall coincide with the date appearing on the mass and balance report.*
- 4.2 *The person referred to in the preceding paragraph shall also ensure that an equipment list which has been approved by the Commissioner is available, certified and up to date and that the new mass and balance data is entered in the appropriate documentation of the aircraft concerned.*
- 4.3 *If an approved equipment list is not available for the aircraft concerned, such a list shall be compiled and submitted to the CAA for approval.*

## **COMMISSIONER FOR CIVIL AVIATION**