BGA Airworthiness and Maintenance Procedure	AMP 1-7
WEIGHING GLIDERS	

Version 2	5th January 2024

Introduction

Every glider has to be operated within its approved weight and balance limitations. To achieve this, the glider must be periodically weighed. The result of the weighing informs the cockpit placard used by the pilot.

For most gliders, there are three key considerations; all up weight v empty weight, non-lifting component weight, and the centre of gravity (CofG) forward and aft limits.

Modern gliders can be flown in a variety of configurations, eg different wing spans and fuel load and need to be considered during weighing.

Weighing requirements

Gliders operating under the BGA CAO are to be weighed on the following occasions:

- Newly certified (e.g. by the manufacturer)
- After modification action when required.
- After major repair, recovering or refinishing (e.g. by the repairer)
- Every 10 years.

Extended cockpit weight limitations

During the Part 21 airworthiness transition, the BGA approved extended cockpit weight operations were carried through as an approved transition modification. Note: this only applies to gliders that were in the BGA airworthiness system prior to transition to Part 21. Gliders that have not been transitioned from legacy BGA airworthiness requirements are not eligible (for example, a newly imported glider). Gliders that can utilize the extended cockpit weight limitation must have an Aircraft Flight Manual amendment issued by the BGA that refers to the relevant BGA data sheet.

Non-Lifting Parts.

Non-lifting components are everything other than the wings (including winglets); the fuselage and tailplane are the non-lifting components. The non-lifting component weight is the sum of the fuselage (inc fuel, etc), tailplane, and pilot weight. Note: this is about weight and not CofG.
A simple method of calculating the weight of non-lifting components is to weight the wings separately prior to weighing the complete glider.

Calculating and recording weighing data

Most owners and inspectors use verified weighing calculation software or a spreadsheet in compliance with the maintenance/flight manual. Note: be extremely careful about using unverified weighing calculation software or spreadsheets.

The following AMP 1-7 appendices have been verified and are available for use.

a. Single seat weighing schedule
b. Two seat weighing schedule
c. Glider cockpit placard

Weighing procedure

Ensure access to the current maintenance/flight manual as relevant and previous weighing data for gross error checking during the weighing process.

Ideally the weighing should be carried out in a closed hangar to prevent the generation of wing lift forces.

Two suitable and calibrated load cells. Check the required configuration (winglets, wingtips, different spans, etc) and equipment (e.g. instruments, batteries, etc). A parachute is part of the pilot weight.

The weighing front point is usually the main wheel. The rear point is usually the tail skid or tail wheel. The tail is lifted to bring the sailplane to the required weighing attitude before positioning the rear weighing load cell.

Balance the wings and record the weights registered by the front and rear load cells. Consider any weighing equipment that may affect the load cell reading. Whilst the sailplane is still in the weighing position, drop a plumb bob from the front and rear weighing points, and the sailplane datum point to the ground, and measure the distances of the front and rear weighing points from the datum point.