



# SAILPLANE - POWERED SAILPLANE WEIGHING RECORD

GFA Form W1  
June/2006

Weighed by: .....

Place: .....

Date: ..... / ..... / .....

Scales used: .....

Level Ref: .....

Datum: .....

## SAILPLANE - POWERED SAILPLANE DETAILS

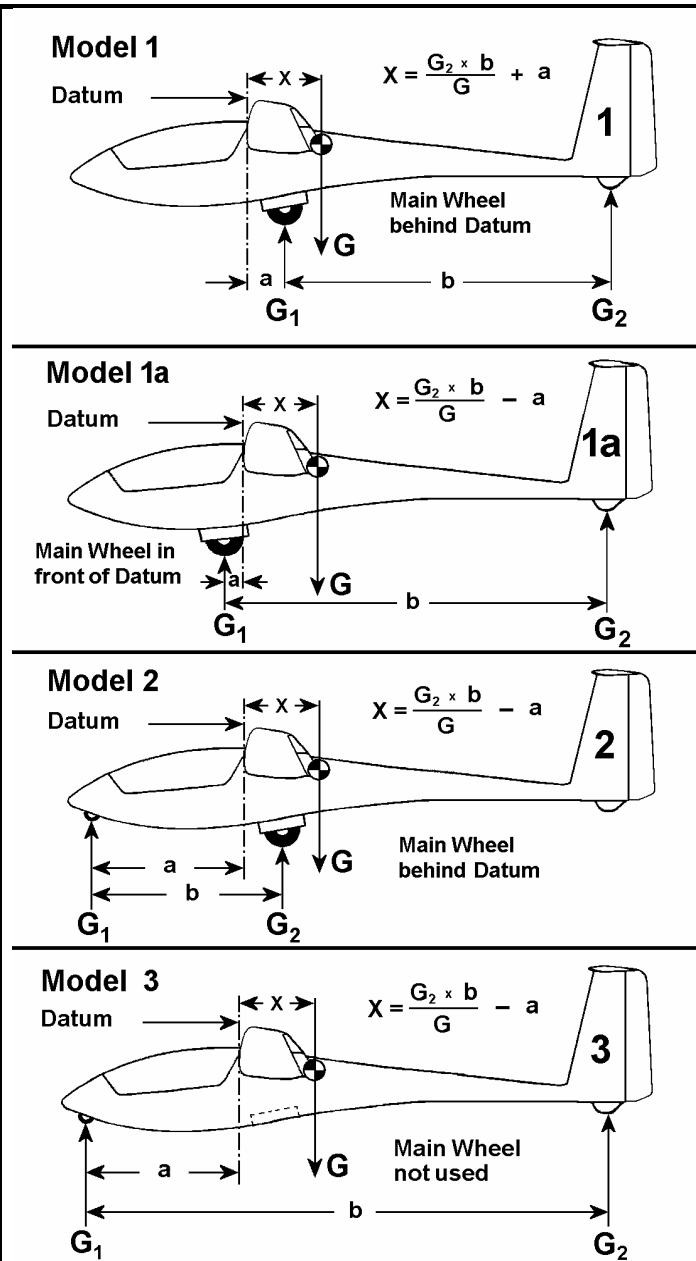
Type	Serial number	C of R. No. <b>G</b>	Reg. <b>VH -</b>	Other Marks
------	---------------	----------------------	------------------	-------------

## EQUIPMENT LIST - ITEMS FITTED TO, OR NORMALLY CARRIED IN SAILPLANE

Qty.	Airspeed indicator (Knots)	Qty.	Mechanical Variometer	Qty.	Seat Cushions	Qty.	Unusable Fuel
	Altimeter (Feet)		Electric Variometer		Back Rest		Tachometer
	Compass		Air Data Computer		Head Rest		Engine Controller/Monitor
	Radio		GPS		Tie Down Kit		CO Detector
	Battery		Data Logger		Tail Parachute		Rear view Mirror/s
	Oxygen equipment		Other instrument		Water Ballast Bags		Other Engine Instrument

### WEIGHING MODELS

### MEASUREMENTS AND CALCULATIONS



All dimensions are to be taken as positive

Left Wing		Right Wing	
Winglet	kg	Winglet	kg
Outer Panel	kg	Outer Panel	kg
Inner Panel	kg	Inner Panel	kg
Total Left Wing	kg	Total Right Wing	kg
Tail wheel Tricycle landing gear		Add Left Wing →	
$G_1$ Left + $G_1$ Right = $G_1$	kg	Add main pin/s * (See manual)	
Nose wheel Tricycle landing gear		Total - Wings Structure weight	
$G_2$ Left + $G_2$ Right = $G_2$	kg	kg	
Total Empty Weight $G$	kg	$a + b$ Type 1 Only	mm
Less Total - Wings Structure weight	kg	Dimension $a =$ (Datum to $G_1$ )	mm
Weight of Non-Lifting Parts, empty $G_3$	kg	Dimension $b =$ ( $G_1$ to $G_2$ )	mm
* Note: Some designs require main pin/s weight to be in non-lifting parts.		$\frac{G_2 \times b}{G} =$	mm
Type 1 only, $X = \frac{G_2 \times b}{G} + a =$		mm	
Types 1a, 2, 3, $X = \frac{G_2 \times b}{G} - a =$		mm	

### LOGBOOK ENTRY

Empty weight	kg	Arm	mm
Weight of Non-lifting Parts, empty		kg	
Weighed by:			Date:

STRIKE OUT MODELS NOT USED

## **The New GFA Form W1 for weighing of Sailplanes and Powered Sailplanes**

Form W1 has been substantially revised to incorporate lessons learned and to allow for the weighing of powered sailplanes (motor gliders) using 3 pad scales. The new form can be identified by the date (June 2006) in the top right corner. Please discard any superseded Form W1's that you may have. Note that Form W2 is unchanged.

### **Marks**

A box is provided for "Other marks". This is intended for those few gliders which have markings other than the VH registration letters (foreign gliders for example).

### **Equipment list**

The equipment list has been expanded so that just about everything we can think of has a place to record it.

You should be careful when weighing any glider to make sure you know what was in it at the time of weighing. Items like water bags and tail parachutes are often left out either in error or deliberately to get a lower empty weight. If the operator wants these items left out, make sure the placards in the glider are clear the these items are not included in the weight and balance placard/s. In extreme cases you may have to provide two sets of W&B data, one with them in and one with them out.

### **Weighing models**

A few sailplane types weighed on mainwheel and tailwheel/bumper actually have the mainwheel ahead of the wing root leading edge datum. This has given rise to some mistakes as in using the old form dimension "a" becomes negative. Also cases have occurred where dimension "b" was taken from the datum instead of between the fulcrums. Dimension b is *always* between fulcrums in all models.

The new W1 provides for **Model 1a** where the main wheel is ahead of the datum and a box is provided to insert "a + b". This is intended mainly to act as a reminder not to measure "b" wrongly.

Where an aircraft has its main wheel position at, or very close to, the empty C of G position it is strongly recommended to use **Model 3**.

### **Tricycle Undercarriage**

For tricycle undercarriage motor gliders (Grob, Dimona etc.), provision has been made for the use of three pad weighing equipment. G<sub>1</sub> left and right boxes have been provided for tail draggers (models 1 & 1a) and G<sub>2</sub> left and right boxes for nose draggers (model 2).

For ordinary single wheel gliders the "left" and "right" boxes are just ignored.

### **Main Pins**

The main pin/s may be included in the wing structure weight unless otherwise stated in the manufacturer's maintenance manual. A box is provided for entry of this item unless the manual indicates they are part of the non-lifting parts total.

Please report any problems or possible improvements to the CTOA at the secretariat.

Note: Form W2 is not changed at this time.

# SAILPLANE WEIGHT AND BALANCE SUMMARY

GFA FORM W2

TYPE: ..... S/NO:..... REG VH - .....

DATUM: .....

EMPTY WEIGHT TAKEN FROM:.....

CENTRE OF GRAVITY LIMITS: FORWARD ..... AFT.....

MAXIMUM WEIGHT OF NON LIFTING PARTS.....

ITEM NO.	ITEM	ARM mm	WEIGHT REMOVED (-)	WEIGHT ADDED (+)	ITEM MOMENT	TOTAL WEIGHT	TOTAL ARM	TOTAL MOMENT
0	EMPTY SAILPLANE	_____						
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

**PLACARDING INFORMATION:**

MAXIMUM TAKEOFF WEIGHT: ..... kg

EMPTY WEIGHT: ..... kg

MINIMUM PILOT WEIGHT ..... kg

MAXIMUM PILOT WEIGHT ..... kg

MAXIMUM LOAD IN FUSELAGE ..... kg

**COMMENTS:**

SIGNED:..... 1109 G:..... DATE:.....