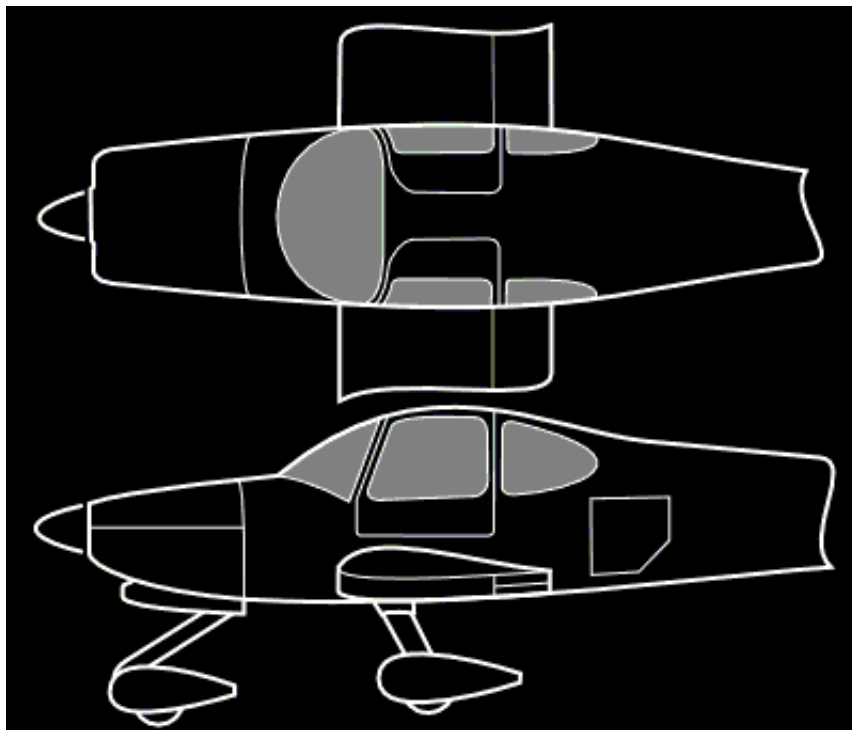


How to Create Weight and Balance Files

This FAQ will explain how to create the AIRCRAFT.AFB and AIRCRAFT.AFD files for the weight and balance feature.

The AIRCRAFT.AFB file is a Windows Bitmap file. Its size is 400x340 and it has an 8 bit depth (256 colors). You can easily create this in Windows Paint or similar program. Also note that it must have a black background as shown in the sample below. Typically you start with a 3 view of the airplane and modify to fit the bitmap size.



The AIRCRAFT.AFD file is a simple text file that contains the weight and balance information for the specific airframe. You will need to know various weights and moment arm dimensions. The first part of the file is information that is for the aircraft as a whole, and then each of the succeeding sections describes a W&B item. It is usually best to start with an existing file and modify the numbers.

The table below shows the minimum fields that are required for the AIRCRAFT.AFD file and explains what each line is for. Note that each field consists of a name and a value separated by a comma. The name must not have any spaces.

Line #	File Contents	Explanation
1	# Weight and balance configuration file, # Caution: Do not remove or add any records prior to the Stations line., # Caution: The DESC field for the fuel tanks must be TANK1, TANK2, etc.,	This is a comment for the system maintainer. This is not read by the program, but you should pay attention to what it says.
2	AIRCRAFT, Van's RV-10	This is the aircraft description that is displayed on the W&B page
3	MAX_GROSS_WEIGHT, 2700	Gross weight of the aircraft from the placard
4	DESIGN_CG_LOWER, 107.8	Lower limit of the CG envelope, from the
5	DESIGN_CG_UPPER, 116.2	Upper limit of the CG envelope
6	CG_LOWER_X, 173	This is the X pixel position to draw the green CG line on the bitmap. You will adjust it so that it looks correct on the bitmap.
7	CG_UPPER_X, 193	Same for upper.
8	WEIGHT_UNITS, lbs	This can be "lbs" or "kgs" depending on standard or metric.
9	LENGTH_UNITS, in	Can be "in" or "cm"
10	LIQUID_UNITS, gal	Can be "gal" or "ltr"
11	LIQUID_DENSITY, 6.0	Set this to the density of the fuel in your tanks. 100LL is 6.02 lbs/gal. If using metric units, use 0.72 kgs/ltr.

The rest of the file describes the characteristics of each 'station'. Each section is 7 lines, and each field is formatted as a name, comma, and value as in the header lines. Please note that the "Empty Aircraft" and "Minimum Fuel" sections are required. If these sections are omitted, none of the W&B calculations will be correct. Once the sections are entered into the file, the quantity, length, x, and y fields can be edited on the AFS unit from the Stations page under the Weight and Balance page.

Line #	File Contents	Explanation
1	DESC, Pilot	This is the description of the station. For the fuel tanks this must be "TankN" where N is 0-9 and case does not matter (TANK3 is OK). The limit for the description after the comma is 96 characters, but practically you should limit yourself to 24 or less. The descriptions may contain spaces, for example: "Left Rear Passenger"
2	QUANTITY, 170	This is the default weight (in lbs or kgs) of the station. This number is what shows up on the W & B page.
3	LENGTH, 114.5	The moment arm (in in or cm) from the datum.
4	TYPE, solid	This is "liquid" for tanks, and "solid" for all others.
5	X, 205	This is X pixel position of the data entry field on the W & B page. Editable on the Stations page.
6	Y, 118	Ditto for Y.
7	NEXTLINE, 0	This is a required line as a break between sections. It should ALWAYS be the last line of the section.

