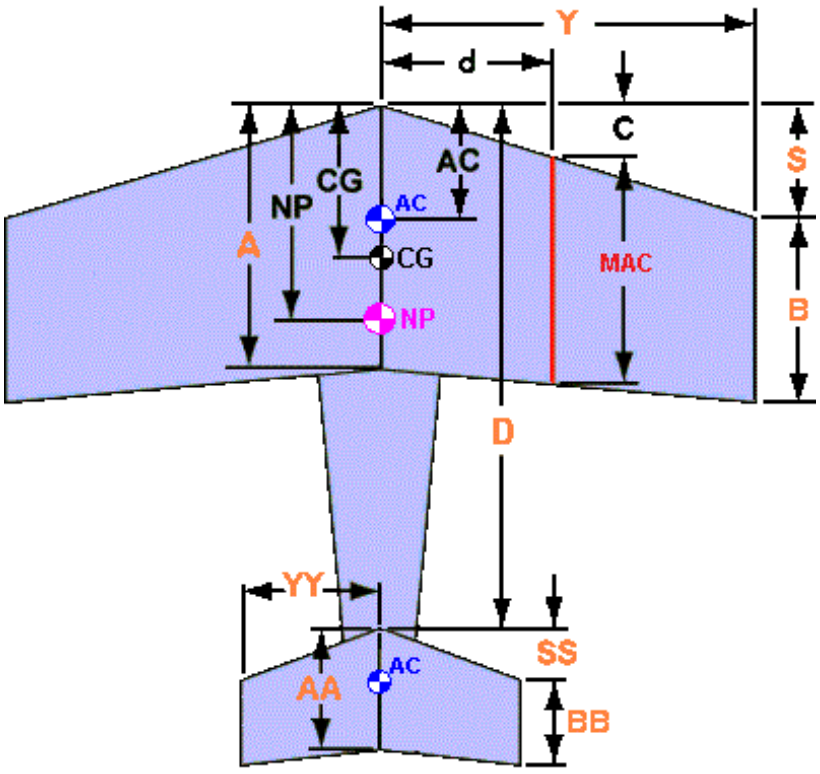
Aircraft Center of Gravity Calculator

Aerodynamic Center (AC), Mean Aerodynamic Chord (MAC), Center of Gravity (CG), Neutral Point (NP) and Wing Area

Wing Root Chord (A):	22
Wing Tip Chord (B):	4.5
Wing Sweep Distance (S):	7
Wing Half Span (Y):	20
Stabilizer Root Chord (AA):	6.5
Stabilizer Tip Chord (BB):	3
Stabilizer Sweep Distance (SS):	2.375
Stabilizer Half Span (YY):	14.5
Distance between both LE's (D):	20.5
Stabilizer Efficiency*:	Low
Enter Static Margin, then Click	7 %
Mean Aerodynamic Chord MAC =	15.18
Sweep Distance at MAC (C) =	2.73
From Root Chord to MAC (d) =	7.8
From Wing Root LE to AC =	6.52
From Wing Root LE to NP =	7.24
From Wing Root LE to CG =	6.18
Wing Area =	530
Stabilizer Area =	137.8
Wing Aspect Ratio =	3.02
Tail Volume Ratio, Vbar =	0.28

Enter the variables at left using the same units for all entries.
For an aircraft to be stable in pitch, its **CG** must be forward of the Neutral Point **NP** by a safety factor called the **Static Margin**, which is a percentage of the **MAC** (Mean Aerodynamic Chord).
Static Margin should be between 5% and 15% for a good stability.



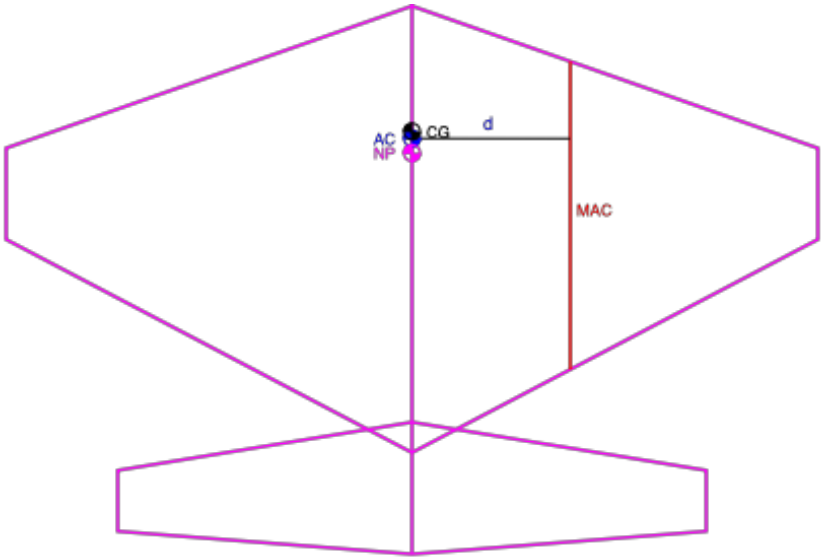
Low Static Margin gives less static stability but greater elevator authority, whereas a higher Static Margin results in greater static stability but reduces elevator authority.
Too much Static Margin makes the aircraft nose-heavy, which may result in elevator stall at take-off and/or landing.
Whereas a low Static Margin makes the aircraft tail-heavy and susceptible to stall at low speed, e. g. during the landing approach.
* Choose Low Stabilizer Efficiency if the stab is close to the wing's wake or behind a fat fuselage in disturbed flow. Choose T-tail for most gliders.

For wings with **two** different panels click here
For wings with **three** different panels click here
For wings with **four** different panels click here
For wings with **five** different panels click here

Calculate Wing Loading

Wing Area :	sq. in 530	sq. dm 34.2
Aircraft Weight :	ounces 80.1	grams 2268
Max Lift Coefficient :	Max Cl. 1.0	
Calculate		
	oz/sq.ft	g/sq.dm

WING LOADING :	21.76	66
CUBIC LOADING :	oz/cubic.ft 11.34	
STALL SPEED :	mph 22.8	Km/h 36.7
Clear		



<< Back to Stability Concepts