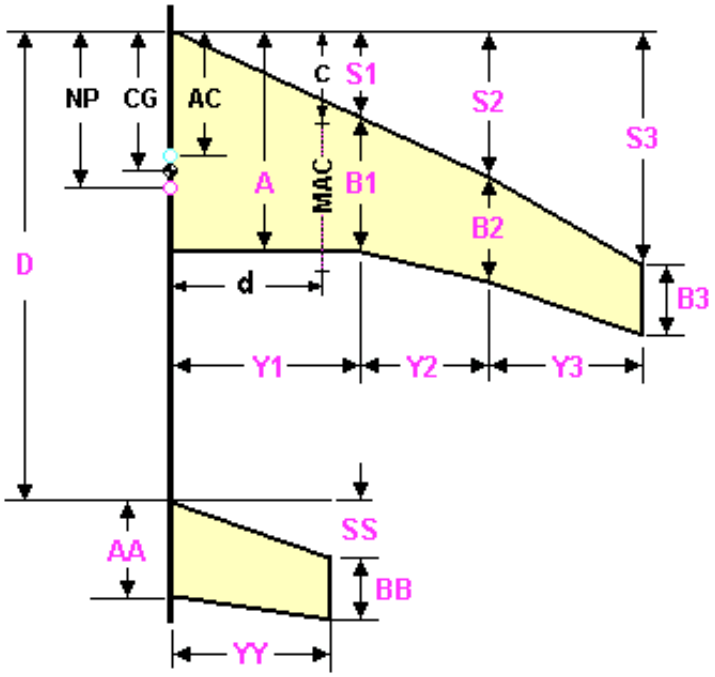
Aircraft Center of Gravity Calculator

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

Wing Root Chord (A):	600
Panel Chord1 (B1):	300
Panel Chord2 (B2):	250
Wing Tip Chord (B3):	100
Wing Sweep Distance1 (S1):	0
Wing Sweep Distance2 (S2):	70
Wing Sweep Distance3 (S3):	300
Wing Panel Span1 (Y1):	1900
Wing Panel Span2 (Y2):	100
Wing Panel Span3 (Y3):	187
Stabiliser Root Chord (AA):	450
Stabiliser Tip Chord (BB):	200
Stabiliser Sweep Distance (SS):	0
Stabiliser Half Span (YY):	950
Distance between both LE's (D):	1700
Stabiliser Efficiency*:	Low ▼
Enter Static Margin, then Click	15 %
Mean Aerodynamic Chord MAC =	450.88
Sweep Distance at MAC (C) =	7.05
From Root Chord to MAC (d) =	921.8
From Wing Root LE to AC =	119.77

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 Stabiliser Efficiency if the tail is close to the wing's wake or behind a fat fuselage in disturbed flow.

For wings with a single panel click here
For wings with two different panels click here

From Wing Root LE to NP =	320.15
From Wing Root LE to CG =	252.51
Wing Area =	1830450
Stabiliser Area =	617500
Wing Aspect Ratio =	10.45
Tail Volume Ratio, Vbar =	1.25

For wings with four different panels click here

Calculate Wing Loading

	sq. in	sq. dm
Wing Area :	2837	183
	ounces	grams
Aircraft Weight :	879	24900
	Max Cl.	
Max Lift Coefficient :	1.14	
	oz/sq.ft	g/sq.dm
WING LOADING :	44.62	136
	oz/cubic.ft	
CUBIC LOADING :	10.05	
	mph	Km/h
STALL SPEED :	31	49.9

Clear

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