Find Wing CG Location

Trova

The CG of a wing can be figured both graphically and via the below calculations. You will need to input the measurements and viola, the MAC and CG location will appear…MAGIC!!!
To find your CG you must determine the MAC (Mean Air Chord) or average chord of your wing. You will then need to input the desired CG percentage. The resulting measurement is aft of the leading edge at the MAC. You will then need to run a line perpendicular to the wing's root line that intersects the MACs CG location.
Clear as mud; right??? Draw it out graphically just to make sure.
Take a look at the diagrams, I hope it makes sense.
I'd like to thank George from the PALOS R/C Flying Club for the updated formulas.
http://www.palosrc**********

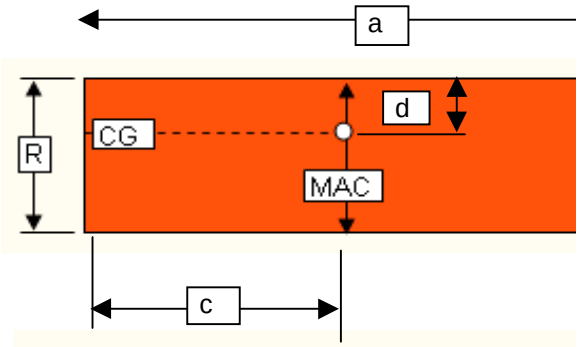
Il CG dell'ala può esse
inserire le misure e cor
Per trovare il CG bisog
bisognerà inserire la pe
La misura risultante si
linea perpendicolare al
fango, giusto??? Tracc
Vorrei ringraziare Geor
http://www.palosrc*****

CG= % of MAC for balance point (Norm 25-30%)

Il Centro di Gravità p

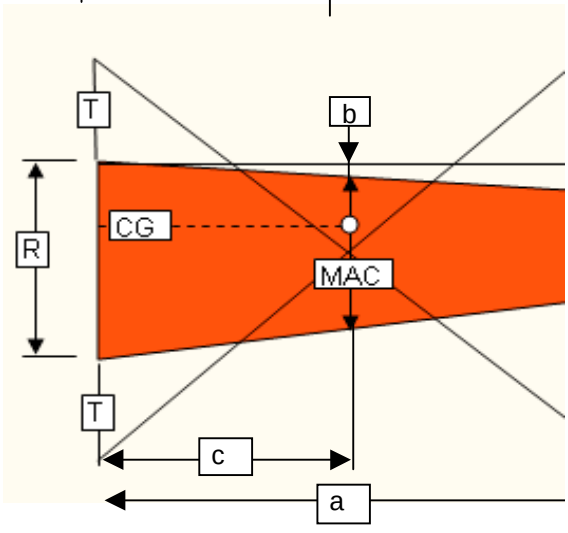
Constant Chord Wing:

Root Chord (R)		0
Tip Chord (T)		0
Wing Half Span	(a)	0
Desired CG % of MAC		30%
MAC		#DIV/0!
MAC distance from root	(c)	#DIV/0!
Balance Point @ Root Chord	(d)	**#DIV/0!**



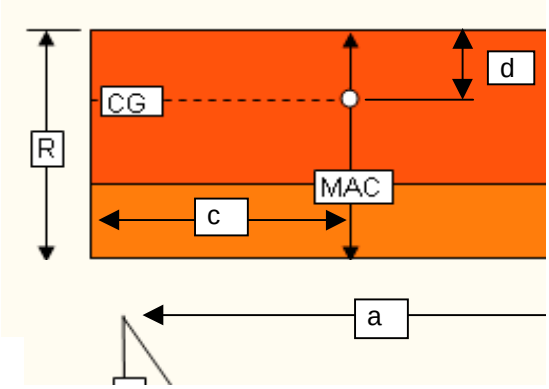
Tapered Wing:

Root Chord (R)		650
Tip Chord (T)		124
Sweep Distance (S)		426
Wing Half Span	(a)	675
Desired CG % of MAC		30%
Sweep Distance @ MAC	(b)	164,75
MAC		446,58
MAC distance from root	(c)	261,05
Balance Point @ Root Chord	(d)	**298,72**



Constant Chord Bipe:

Root Chord (R)		
Tip Chord (T)		0
Wing Half Span	(a)	
Desired CG % of MAC		30%
MAC		#DIV/0!
MAC distance from root	(c)	#DIV/0!
Balance Point @ Root Chord	(d)	**#DIV/0!**

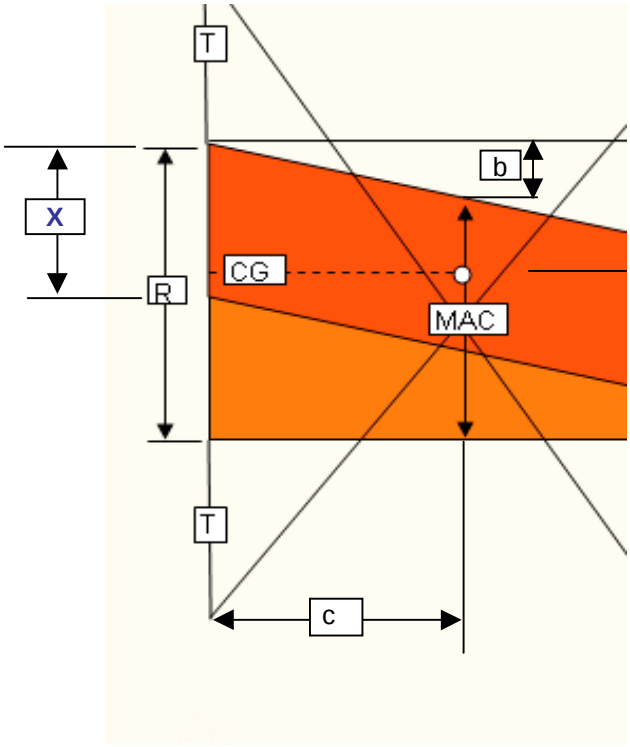


Per me procedura troppo semplificata
VEDERE A LATO MIA MODIFICA

Bent Wing Bipe:

Root Chord (R)		
Tip Chord (T)		
Sweep Distance (S)		0,00
Wing Half Span	(a)	
Desired CG % of MAC		30%
Sweep Distance @ MAC	(b)	#DIV/0!
MAC		#DIV/0!
MAC distance from root	(c)	#DIV/0!
Balance Point @ Root Chord	(d)	**#DIV/0!**

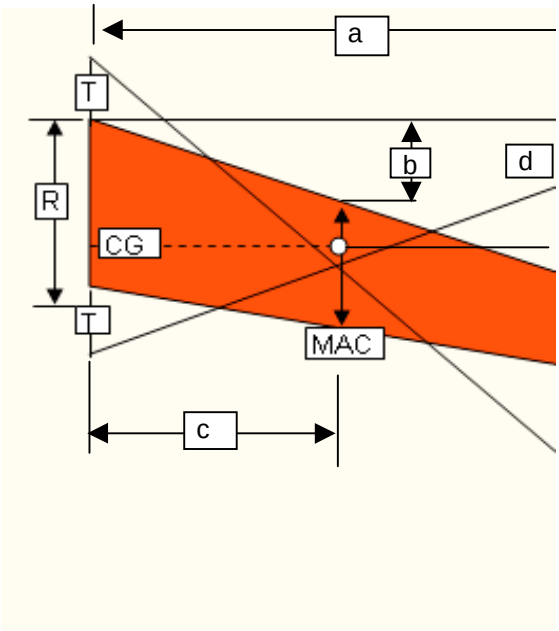
Per me procedura troppo semplificata
VEDERE A LATO MIA MODIFICA



Tapered Swept Wing:

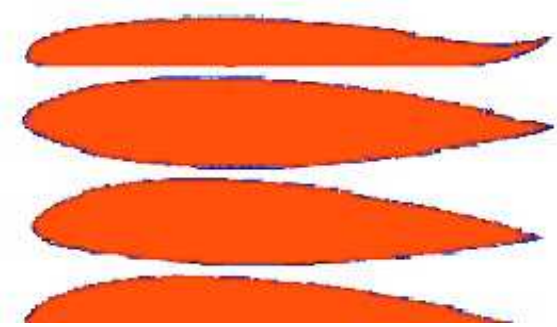
Root Chord (R)		
Tip Chord (T)		
Sweep Distance (S)		
Wing Half Span	(a)	
Desired CG % of MAC		30%
Sweep Distance @ MAC	(b)	#DIV/0!
MAC		#DIV/0!
MAC distance from root	(c)	#DIV/0!
Balance Point @ Root Chord	(d)	**#DIV/0!**

NOTE:
(For Forward Swept Wing Distance "S"
needs to be input as a negative (-) number
I.e. -5. If the 'Balance Point @ Root Chord'
is positive, the CG is aft of the root LE, if negative
the CG point is forward of the root LE)



AUTORE
Airplane Design Calculator ©
V1.4, Aug 98
Lee B. Van Tassle

per uso personale
stralci, traduzione e modifiche
by GpM-BS (e figlia Cristina)
oct 2005



		Desired CG **posizione**
Autostabile	0,200-0,250	**20-25**
Biconvesso Simmetrico	0,250-0,280	**25-28**
Biconvesso Asimmetrico	0,270-0,300	**27-30**
Piano Convesso	0,300-0,330	

Piano Convesso	0,300-0,330	30-33
Concavo Convesso	0,330-0,350	33-35

ı la posizione del CG dell'ala

re rappresentato sia graficamente che tramite i seguenti calcoli. Bisognerà
ne per magia compariranno le posizioni di MAC e CG.
ına determinare il MAC (Corda media aeronautica) o corda media dell'ala. Poi
ercentuale desiderata di CG.
troverà all'interno dell'ala sul MAC. Successivamente si deve tracciare una
la radice dell'ala che interseca la posizione del CG sul MAC. Chiaro come il
ciatela solo per sicurezza. Guardate i diagrammi, spero che siano chiari.
·ge del PALOS R/C Flying Club per le formule aggiornate.
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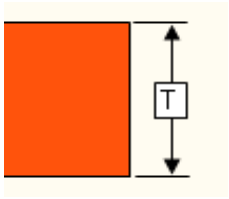
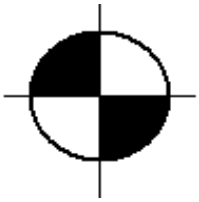
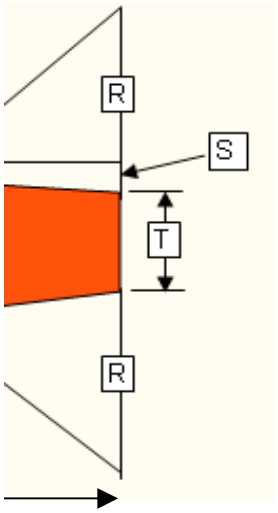
er il bilanciamento è ugauale ad una % della Corda
Aeronautica Media (normalmente 25-30%)
Dipende dal profilo alare (vedere figura finale)

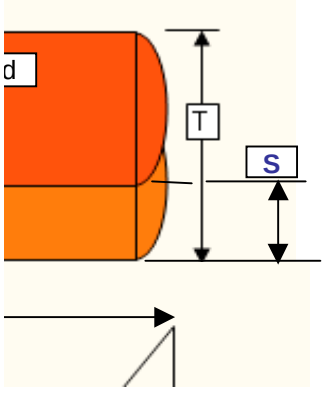


monoplano
ala rettangolare

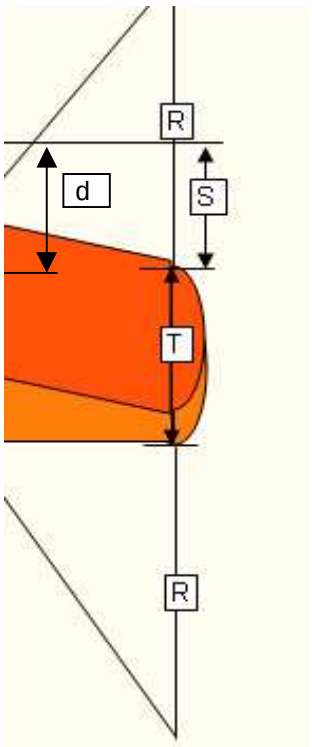




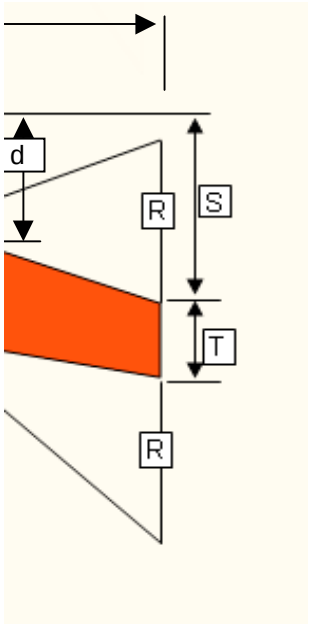
monoplano
ala trapezia
o a delta



biplano ali
rettangolari
uguali diritte
MODIFICA di GpM-BS
-idem-
Scalamento: (S) 75
-idem-
Balance Point @ Root Chord (d) **15**



biplano ali
quadrilatere a corda uguale
superiore inclinata
inferiore diritta
MODIFICA di GpM-BS
-idem-
Corda singola ala (X) 150
-idem-
Balance Point @ Root Chord (d) **-30,0**



monoplano
ala a freccia

NOTE:
Per disallineamento (delle corde) in avanti, il valore (S)
deve essere immesso come negativo (es -5).
Se il 'Balance Point @ Root Chord' (d) è positivo
il CG è dietro al bordo di attacco dell'ala
se (d) e negativo il CG è davanti al bordo stesso.

Root Chord (R) **corda iniziale**	
Tip Chord (T) **corda finale**	
Sweep Distance (S) **disallineamento (delle corde)**	
Wing Half Span **semilunghezza (frontale) ala**	**a**
Desired CG % of MAC **posizione del CG in % MAC**	
Sweep Distance @ MAC **disallineamento del MAC**	**b**
MAC	

ɜ % of MAC
del CG in % MAC

nedi consigliati in
al profilo dell'ala

valori r
base

corda aerodinamica media	
MAC distance from root **distanza del MAC dalla radice ala**	**c**
Balance Point @ Root Chord **bilanciamento dal bordo dell'ala**	**d**