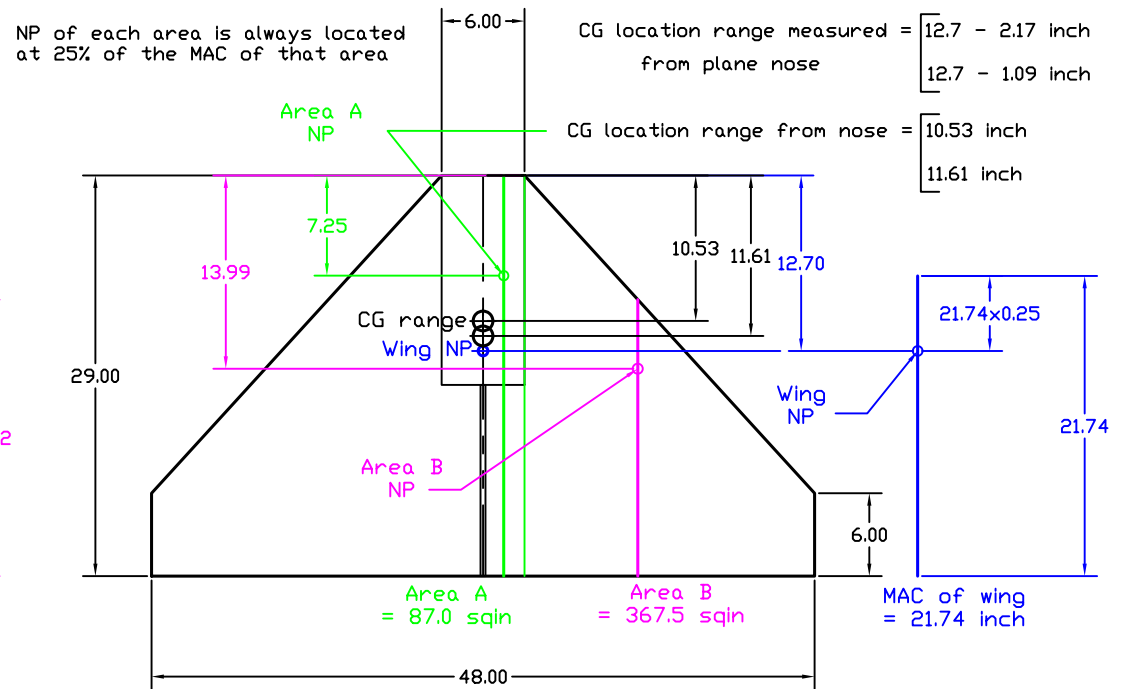


Wing CG should be located at 15 to 20% of the wing MAC, which equals 10 to 5% forward of wing NP

$$\text{CG location range along wing MAC} = \begin{cases} 0.10 \times 21.74 \text{ inch} \\ 0.05 \times 21.74 \text{ inch} \end{cases} \text{ (forward of NP)}$$

$$\text{CG location range along wing MAC} = \begin{cases} 2.17 \text{ inch} \\ 1.09 \text{ inch} \end{cases} \text{ (forward of NP)}$$



NP of each area is always located at 25% of the MAC of that area

$$\text{CG location range measured from plane nose} = \begin{cases} 12.7 - 2.17 \text{ inch} \\ 12.7 - 1.09 \text{ inch} \end{cases}$$

$$\text{CG location range from nose} = \begin{cases} 10.53 \text{ inch} \\ 11.61 \text{ inch} \end{cases}$$

$$\text{Wing NP location} = \frac{(\text{Area A} \times \text{NP location area A}) + (\text{Area B} \times \text{NP location area B})}{(\text{Area A} + \text{Area B})}$$

$$\text{Wing NP location} = \frac{(87.0 \times 7.25) + (367.5 \times 13.99)}{(87.0 + 367.5)}$$

$$\text{Wing NP location} = 12.70 \text{ inch from nose}$$

$$\text{Wing MAC} = \frac{(\text{Area A} \times \text{MAC of area A}) + (\text{Area B} \times \text{MAC of area B})}{(\text{Area A} + \text{Area B})}$$

$$\text{Wing MAC} = \frac{(87.0 \times 29.00) + (367.5 \times 20.02)}{(87.0 + 367.5)}$$

$$\text{Wing MAC} = 21.74 \text{ inch}$$