

Compare F.2 with F.8

$$C_D S = C_{D,wing} S (1 + K_{wing} C_L^2) + C_{D,fuse} S_{fuse} (1 + K_{fuse} \alpha_{deg}^2) \quad (F.2)$$

...

$$\frac{1}{e} = (1 + \delta) + \pi A R C_{D,wing} K_{wing} + \pi C_{D,fuse} K_{fuse} \frac{(AR + 3)^2}{0.12 AR} \frac{S_{fuse}}{S} \quad (F.8)$$

$$\alpha_{deg} = C_L \frac{d\alpha_{deg}}{dC_L}$$

Substitute into F.2

$$C_D S = C_{D,wing} S (1 + K_{wing} C_L^2) + C_{D,fuse} S_{fuse} \left(1 + K_{fuse} \left(C_L \frac{d\alpha_{deg}}{dC_L} \right)^2 \right)$$

Solve F.1 for C_L^2 and substitute into formula

$$C_D S = \left(C_{D,0} + \frac{C_L^2}{\pi e AR} \right) S \quad (F.1)$$

$$\frac{C_D S}{S} = C_{D,0} + \frac{C_L^2}{\pi e AR}$$

$$\frac{C_D S}{S} - C_{D,0} = \frac{C_L^2}{\pi e AR}$$

$$\frac{C_L^2}{\pi e AR} = \frac{C_D S}{S} - C_{D,0}$$

$$C_L^2 = \pi e AR \left(\frac{C_D S}{S} - C_{D,0} \right)$$