

3.5

$$\frac{T}{T_{vso}} = 0.369 M_{\infty}^{-0.305}$$

$$T = T_{vso} \cdot 0.369 M_{\infty}^{-0.305} = 50000 \cdot 0.369 \cdot 0.6^{-0.305} = \boxed{21560 \text{ lbf}}$$

1.4

$$h_p = 10000 \text{ ft} \quad V_{IAS} = 100 \text{ kt}$$

$$V_{CAS} = V_{IAS} + \Delta V \rightarrow 6 = 106 \text{ kt}$$

This is a low Mach #

$$V_{TAS} = \frac{V_{CAS}}{\sqrt{\sigma}} \Rightarrow \sigma = \frac{P}{P_0} = \frac{P_{10000 \text{ ft}}}{P_{SSL}} = \frac{1.7556}{2.37} = 0.741$$

$$= \frac{106}{\sqrt{0.741}} = \boxed{122 \text{ kt}}$$

