

Q36

ATPL Solutions - Effect of Weight Removal/ Addition

$$\begin{aligned} \text{New CG} &= \frac{\text{New Moment}}{\text{New total weight}} = \frac{\text{Old Moment} + \text{Moment Added}}{\text{Old Weight} + \text{Weight Added}} = \frac{5,549,242 - 140 \times 257.8}{19,836 - 140} \\ &= \frac{5,549,242 - 36,092}{19,696} \\ &= \frac{5,513,150}{19,696} \\ &= \mathbf{279.912} \end{aligned}$$

$$\begin{aligned} \text{Converting to \% MAC} &= \frac{279.912 - 253.964}{90.197} \\ &= \mathbf{28.77\%} \end{aligned}$$

→ answer (c) is correct!