

# Find the weight and CG of the O<sub>2</sub> Station

## 1. Formula to Find the weight of O<sub>2</sub> Due to Pressure

$$\frac{\text{Bottle PSI}}{\text{Max Bottle PSI}} \times 6.4 \text{ (Weight of O}_2 \text{ at Max Capacity)}$$

Example:

$$\frac{\text{Current PSI 1,500}}{\text{Max Bottle PSI 2,000}} \times 6.4 = 75\% \text{ of } 6.4 = \mathbf{4.8 \text{ lbs}}$$

## 2. Formula to Find CG Change Due to Pressure

According to the O<sub>2</sub> Supplement, the CG of the O<sub>2</sub> station varies between 262.3" (Empty) and 265.3" (Full) – an additional 3 inches between empty and full.

$$\frac{\text{Bottle PSI}}{\text{Max Bottle Pressure}} \times 3" + 262.3"$$

Example:

$$\frac{\text{Current PSI 1,500}}{\text{Max Bottle PSI 2,000}} \times 3 = 2.25" + 262.3" = \mathbf{264.5}$$

Therefore, in this example the O<sub>2</sub> station weight would be 4.8 lbs plus the weight of the tank of 17.3 lbs totaling 22.1 lbs. The CG would be 264.5.

To most easily accomplish this in Foreflight, create two O<sub>2</sub> Stations in the Aircraft Tab. One titled "Oxygen Tank" with an arm of 265.3 and weight of 17.4 pounds per POH. The CG and weight of the tank are unaffected by pressure. The slider should be set to "Include in BOW" as the POH Equipment List, says the tank is included in the Basic Empty Weight.

The second O<sub>2</sub> station titled "Oxygen Weight" should have an arm of 265.3 and weight of 6.4 lbs merely as a starting point, however the weight and CG would need to be entered as above in the Weight & Balance section of the Aircraft Tab for each flight since the weight and CG of the O<sub>2</sub> cannot be changed other than under the Aircraft tab.