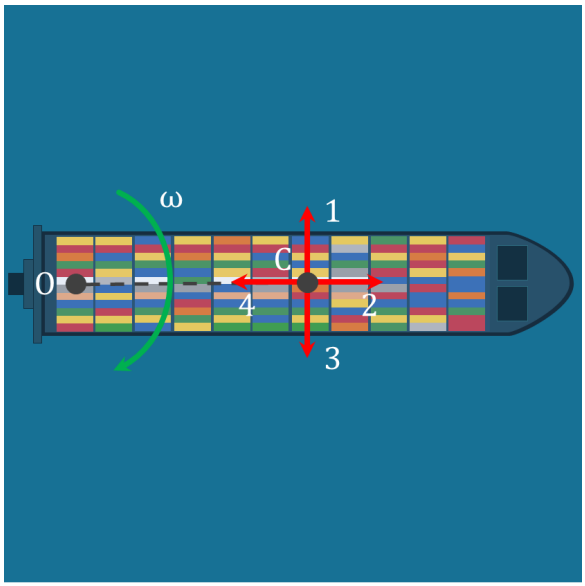
2.7.5 Rotating Ship



Question
A ship is turning around point O with a clockwise angular velocity of 3 rad/s. The captain is walking from point C to the front of the ship with a constant velocity of 5.4 km/h. Does the captain have a Coriolis acceleration during his walk, and if so what is the direction and magnitude of his Coriolis acceleration?
Using known expressions:

$$\mathbf{a}_{cor} = 2\boldsymbol{\omega} \times \mathbf{v}_{rel} \tag{1}$$

Given:
Angular velocity: $\boldsymbol{\omega} = 3\mathbf{k}$ rad/s
Relative velocity: $\mathbf{v}_{rel} = 5.4\mathbf{i}$ km/h $= 1.5\mathbf{i}$ m/s Using the formula:

$$\mathbf{a}_{cor} = 2\boldsymbol{\omega} \times \mathbf{v}_{rel} = 2 * 3\mathbf{k} \times 1.5\mathbf{i} = 9\mathbf{j}m/s \tag{2}$$

So there is a Coriolis acceleration and it is pointing in the same direction as the rotating motion.