2-10 For the conditions of equilibrium to be satisfied, the horizontal forces on the mast must add to zero, and the vertical forces must also add to zero. Use the horizontal force condition to determine the magnitude of the tension, T in the longer wire, and then solve for the force that the deck exerts on the mast.

$F_x = 800$ [N] cos 60˚ - T cos 45˚ =0 Solving for T we get T= 800 [N] × (0.5) / (0.707) = 566 [N].

$F_y = -800 \sin 60^\circ - T \sin 45 - Mg + F_{deck} = 0$. Solving, $F_{deck} = 800$ [N]× (0.87) + 566 [N] × (0.707) + 80 [kg] × 9.8 m/s^2 = 1880 [N]. The correct answer is (B).