

### Homework Problem H15.B

**Given:** A catamaran pontoon boat is made up a pair of hulls that are to be idealized as rectangular parallelepipeds with dimensions of  $(t \times L \times H)$ , where  $L$  is the length of each hull (the dimension into the page in the figure shown below). The boat is to carry a heavy slab of material with a weight of  $W$ . The weight of the boat can be considered to be negligible as compared to the slab.

**Find:** Determine the minimum hull dimension  $t$  such that the draft of the boat,  $D$ , does not exceed  $D_{max}$ .

Use the following parameter values in your work:  $L = 15$  ft,  $W = 1500$  lb,  $D_{max} = 15$  in and  $\rho g = 62.4$  lb/ft<sup>3</sup>.

