MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Problem Set 11

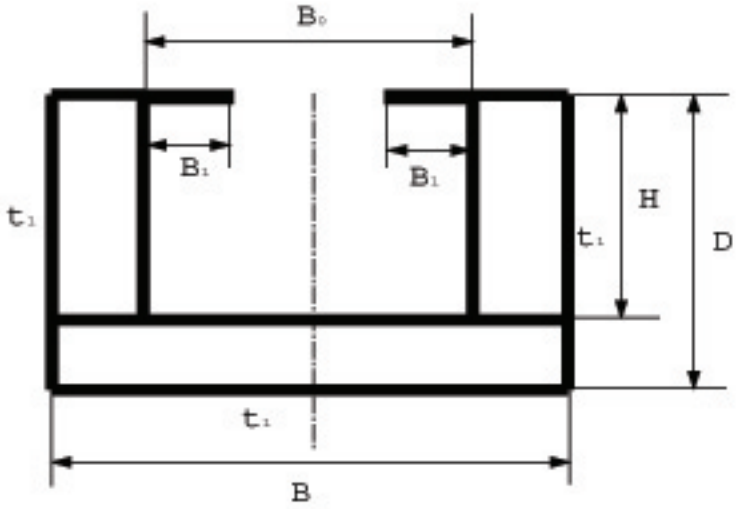
14.42,14.46 and the problem below.

1. A typical cross section of an idealized ship is shown in Figure 1. If the ship is subjected to a torque of $4 \times 10^6 N \cdot m$ about the longitudinal axis, compute

   (a) the shear stress distribution on the cross section.

   (b) the magnitude and location of maximum shear stress.

   Here, the shear modulus is $G = 1.2 \times 10^{11} Pa$.



B = 25m D = 15m H = 10m
B₀ = 15m t₁ = 20mm t₂ = 16mm
B₁ = 3m
The thickness is t₂ unless mentioned.

Figure 1: A diagram for problem 1