Problem 1.13
This problem is from "Advanced Fluid Mechanics Problems" by A.H. Shapiro and A.A. Sonin

Accelerometer
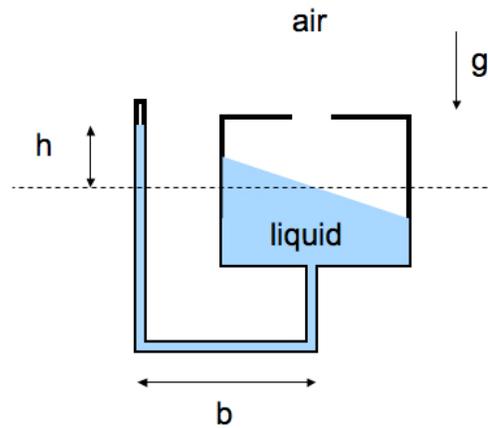
It is a proposed to use the type of system shown in the sketch as an accelerometer for measuring the horizontal acceleration, a_x, and to obtain a_x from the formula

$$a_x = \frac{h}{b}g, \tag{1.13a}$$

where g is the gravitational acceleration.

- (a) Derive the formula used for a_x and state all assumptions clearly. Why doesn't the mass density of the liquid appear in the formula.

- (b) Under what circumstances would this be a good method of determining a_x, and under what conditions could it be not so good? Suggest improvements in the device.

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