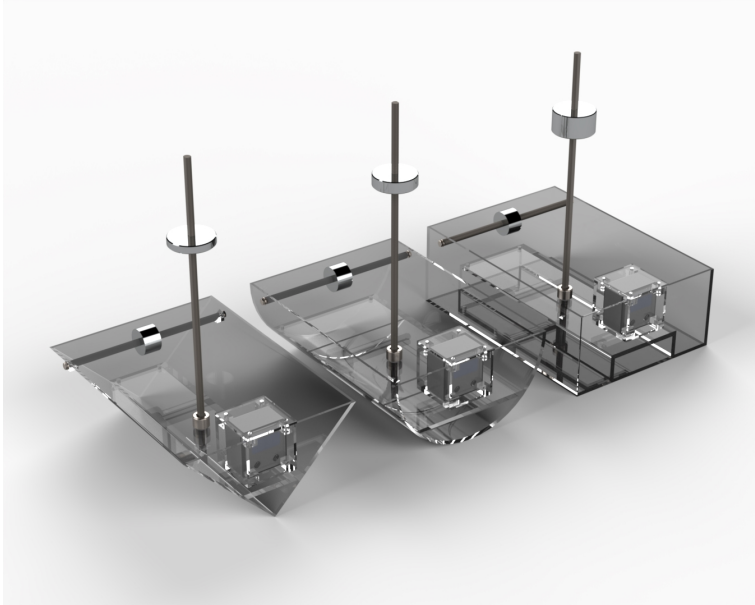


## STABILITY OF FLOATING BODIES

### HB100E



#### 1 study

#### Features

- Experiment provides 3 different hull designs
- Comes complete with set of calibrated weights

#### Description

The variety of floating bodies within this module allows the determination of the metacentre (A midway point between a ship's centre of buoyancy when upright and its centre of buoyancy when tilted). This standalone module contains 3 separate water tanks into which the 3 models supplied can be floated and tested individually but also simultaneously. The tanks and hulls are transparent to aid observation. The model boat hulls are supplied with a flat bottom, curved and triangular form. A central mast is supplied which supports a movable sliding weight. The central mast has a scale engraved on its surface to allow quick and accurate measurement of the weights position and adjustment of the centre of gravity. The angle of heel of each hull is read from an integral digital inclinometer. The horizontal jockey weight is mounted on a threaded shaft which equates one turn of the weight to one millimetre of movement. The weight is marked accordingly to allow ease of measurement. All three measurement devices therefore allow very accurate results to be obtained in a short time span.

#### Related Laws/Applications

- Morrish's Formula
- Archimedes Principle

#### Learning capabilities

- Determination of the metacentric height and the centre of buoyancy by analytical means.
- Calculating the righting moment for angles up to  $10^\circ$
- Experimental determination of the metacentric height

#### Technical Specification

- Stainless steel and plastic components to avoid corrosion
- Integral digital inclinometer:  $\pm 0.1^\circ$  increments. Fully water proof design.
- Individually tailored sliding weights for each hull design
- 3 Transparent water tanks capacity: 18 litres
- Horizontal balance weight range: 160mm
- Vertical balance weight range: 260mm
- Triangle model hull:  $90^\circ$  point angle
- Curved model hull: 200mm semi-circle

**What's in the Box?**

- 18L Water Tank
- Rectangular Hull
- Triangular Hull
- Semi-circular Hull
- Centre of gravity beam

**Weights & Dimensions**

- Triangular model hull: 280(L) x 200(W) x 100(H) mm, 2kg
- Curved model hull: 280(L) x 200mm semi-circle, 2kg
- Flat bottom model hull: 280(L) x 200(W) x 100(H) mm, 2kg
- Tank (x3): 480(L) x 390(W) x 200(H) mm, 2 kg

**Essential Services**

- Clean water source

**Ordering information**

To order this product, please call PA Hilton quoting the following code:  
HB100E

All brand and/or product names are trademarks of their respective owners. Specifications and external appearance are subject to change without notice. The colour of the actual product may vary from the colour shown in the brochure.

Copyright © 2018 P.A. Hilton Limited. All rights reserved. This technical leaflet, its contents and/or layout may not be modified and/or adapted, copied in part or in whole and/or incorporated into other works without the prior written permission of P. A. Hilton Limited. Hi-Tech Education is a registered trade mark of P. A. Hilton Limited.

COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS