Ship measurement

Displacement

Gross Register Tonnage

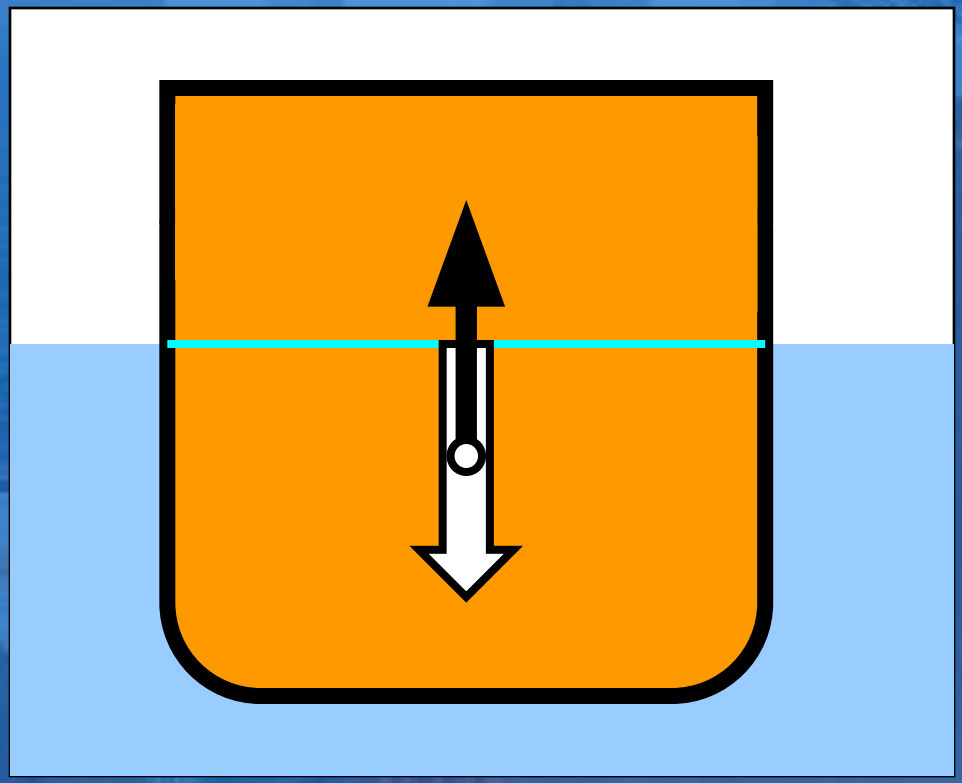
Net Tonnage

Deadweight Tonnage

Length and Breadth

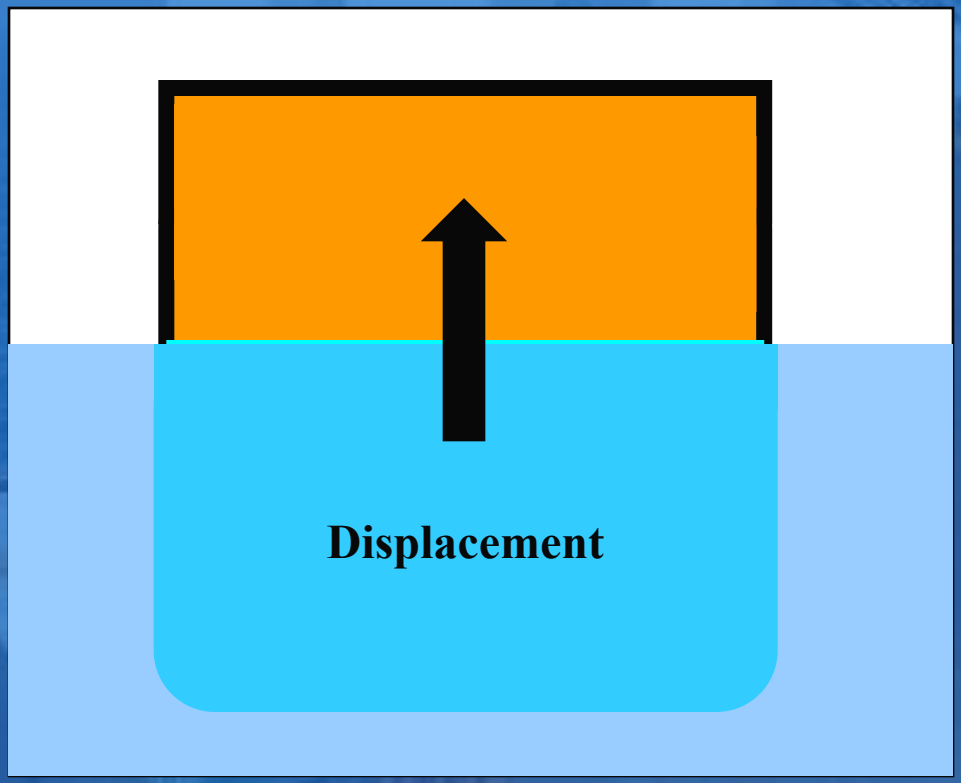
Height and Draft

Archimedes' principle



"A ship displaces
a weight of water that is
equal to its own weight."

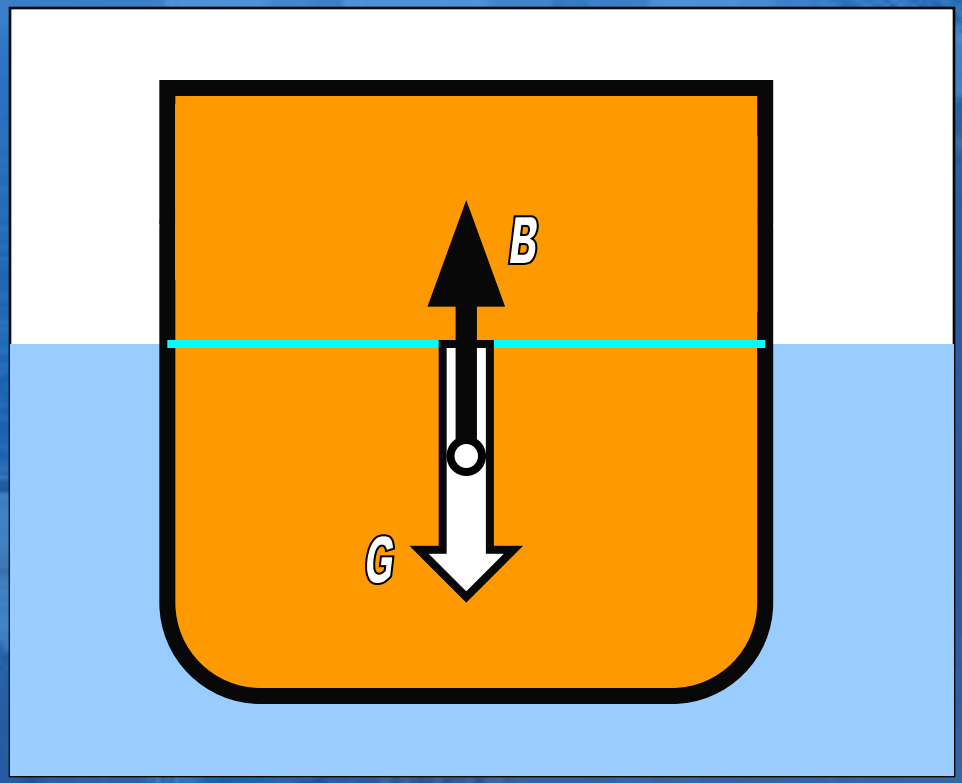
Archimedes' principle



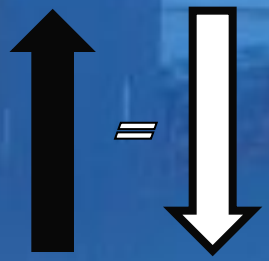
Therefore ……

a vessel will experience an *upthrust* that is equal to the *weight* of the *displaced water.*

Buoyancy and gravity



When Buoyancy (B) is equal to Gravity (G) the vessel will float.



Displacement

The *weight* of a vessel and her *contents,*

or

the *weight* of the displaced watermass.

Gross tonnage

- Gross tonnage equals the entire volume of the *enclosed spaces* of the ship.

Net tonnage

- Net tonnage can be calculated by *deducting* the spaces that are *not* used for *cargo* from the *gross tonnage*.

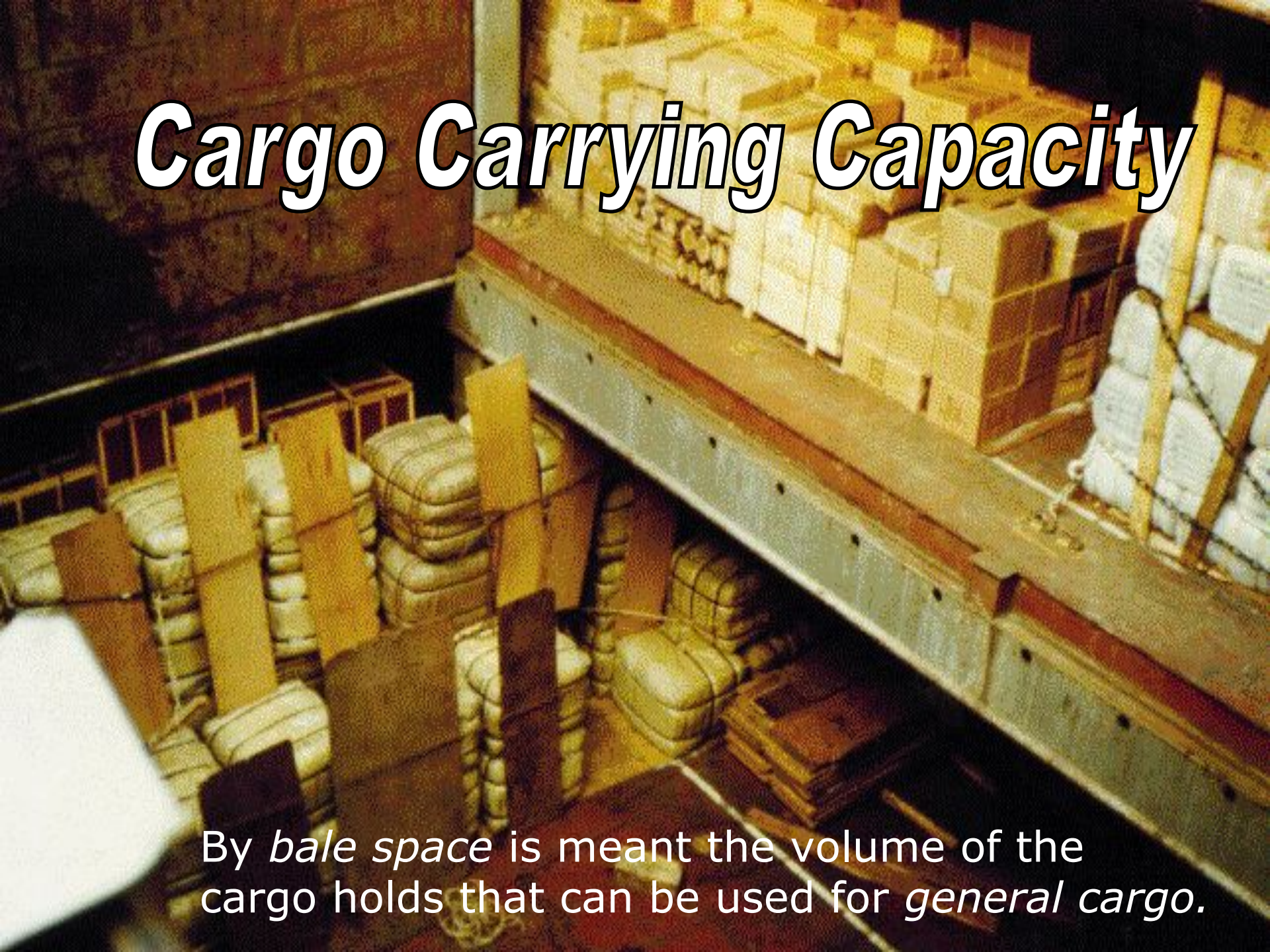
Harbour Dues

- *Harbour dues* are usually calculated according to the gross tonnage, but some ports use the vessel's net tonnage.

Deadweight

- By *deadweight* is understood the weight of the vessel's contents:
- *cargo* -
  bunkers - (fuel / lubricating oil / ballast water / fresh water/ potable water)
  equipment -
  stores.

Cargo Carrying Capacity



By *bale space* is meant the volume of the cargo holds that can be used for *general cargo.*

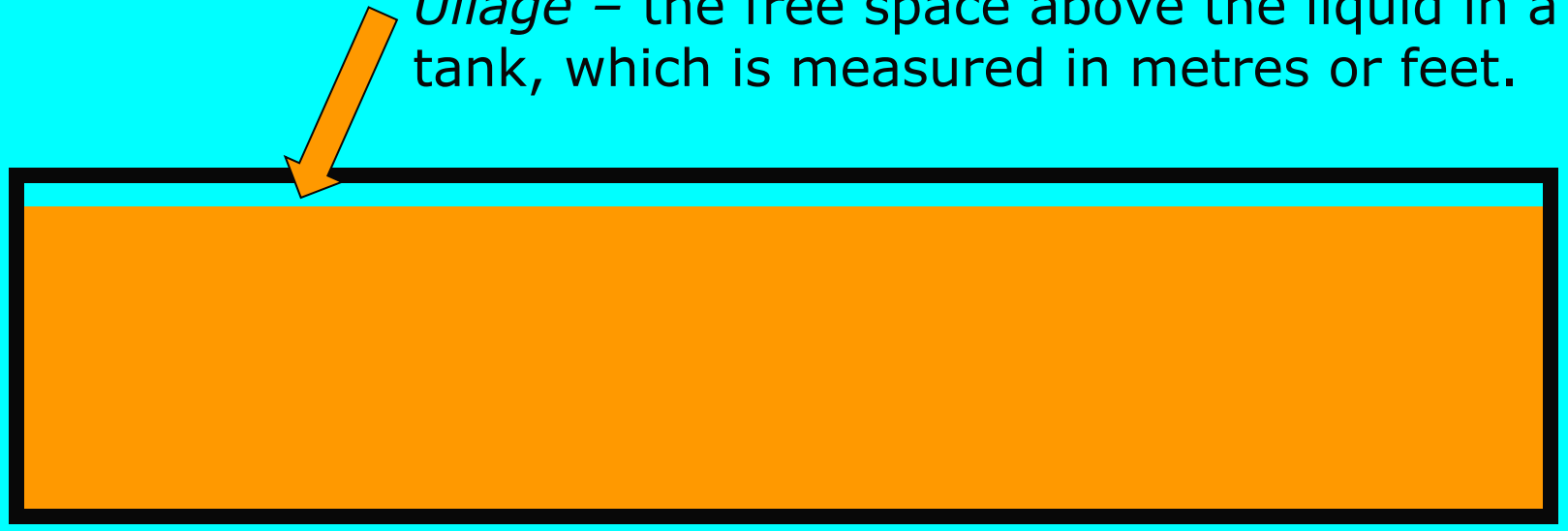
Cargo Carrying Capacity

By *grain space* is meantthe volume of the cargo holds that can be used for bulk cargo.

s

Cargo Carrying Capacity

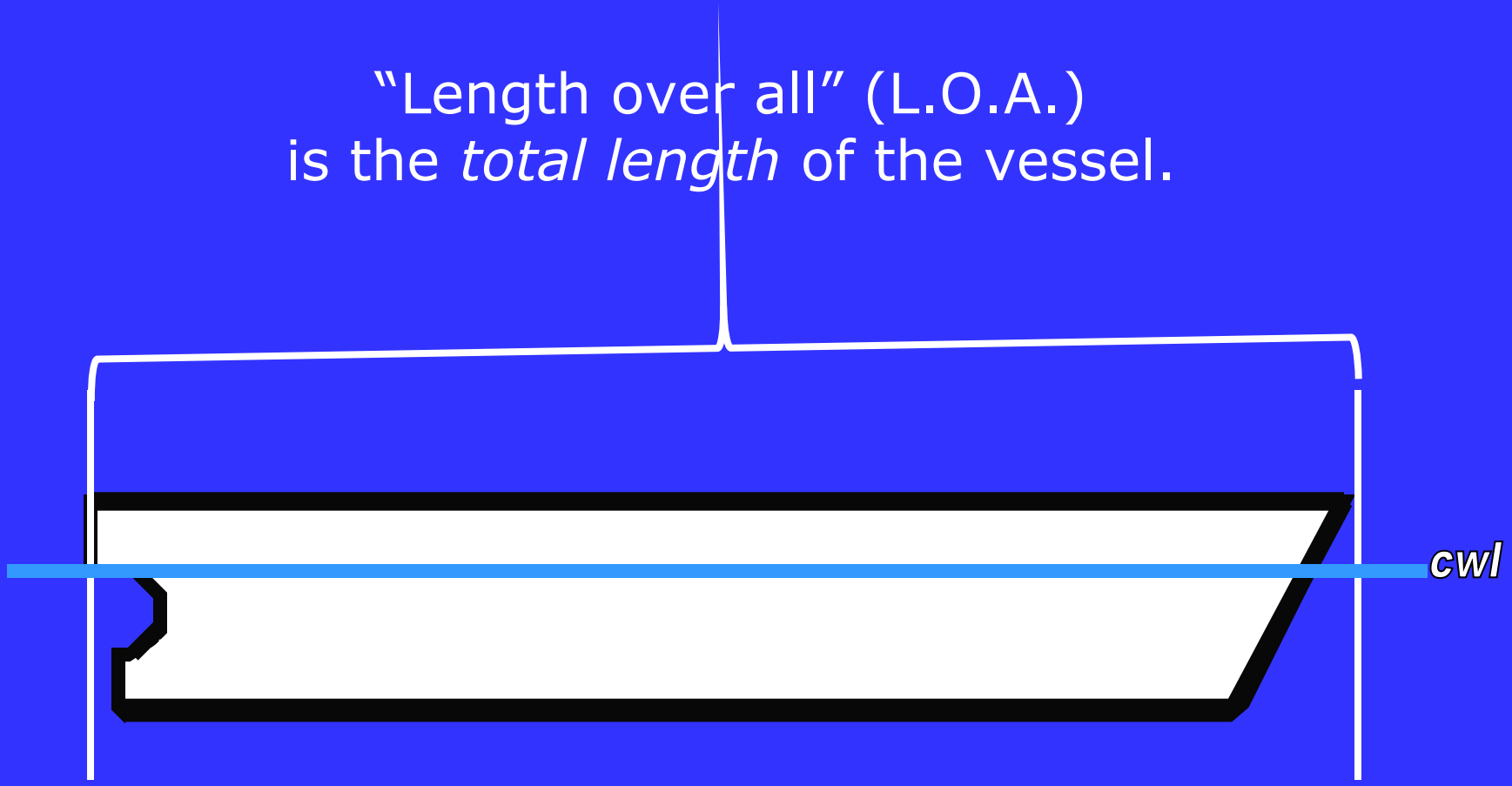
Ullage – the free space above the liquid in a tank, which is measured in metres or feet.



By *Oil Space* is understood 98% of the total volume of the wet bulk tanks.

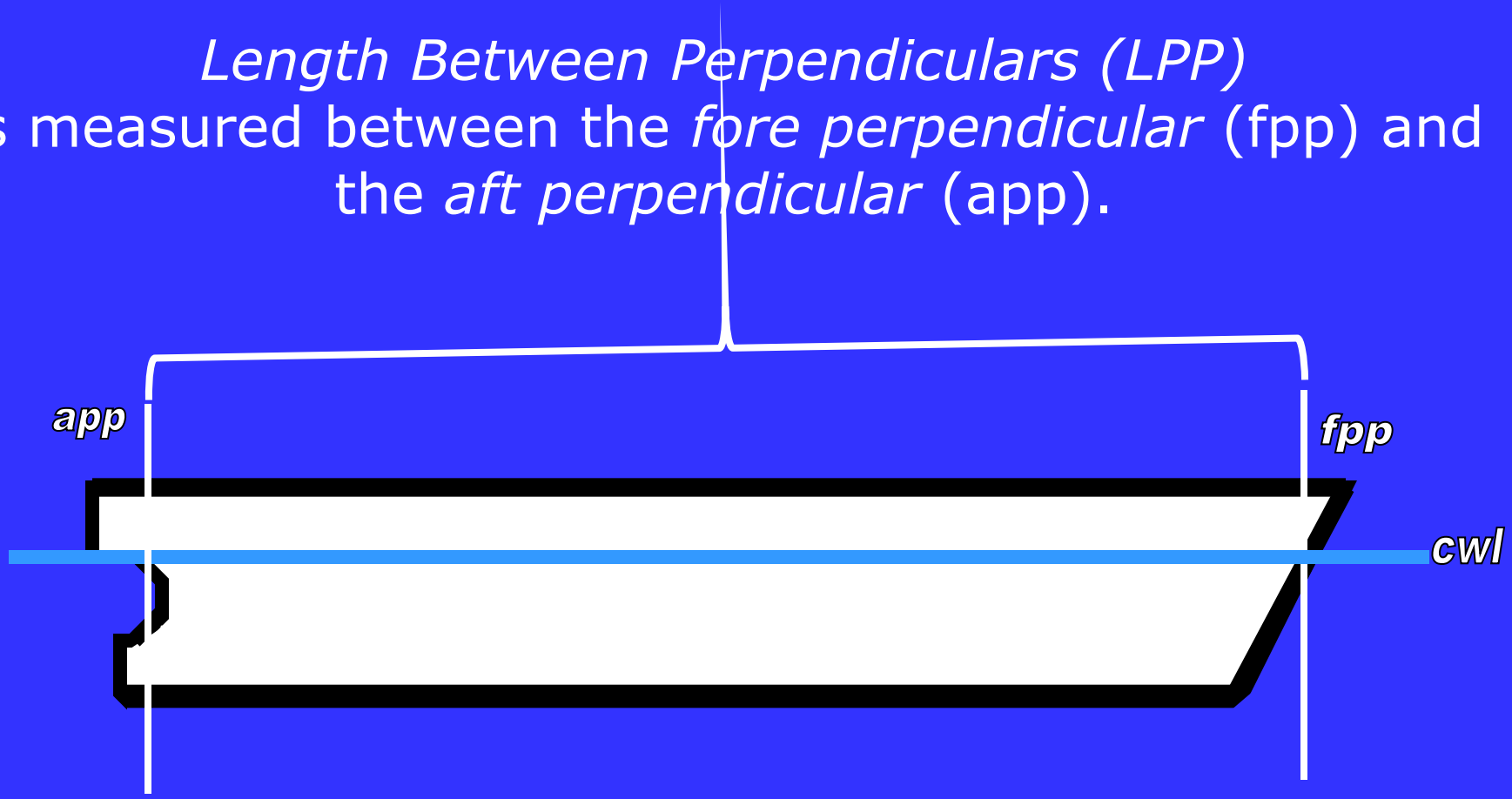
Length over all

"Length over all" (L.O.A.)
is the *total length* of the vessel.



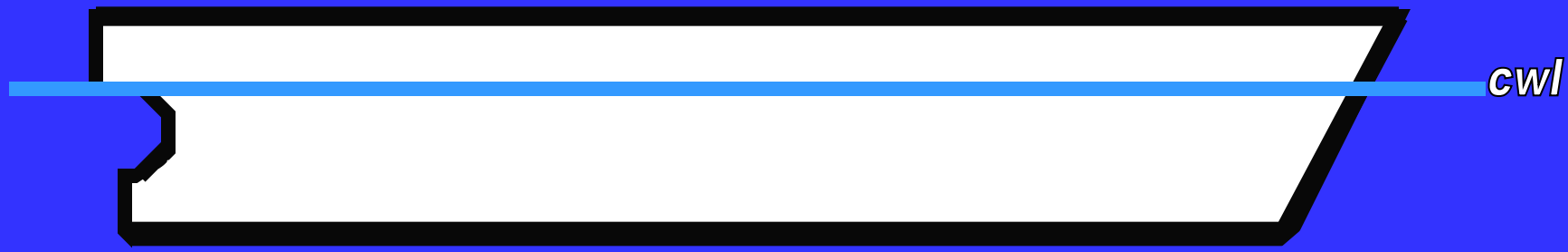
Length Between Perpendiculars

Length Between Perpendiculars (LPP)
is measured between the *fore perpendicular* (fpp) and
the *aft perpendicular* (app).



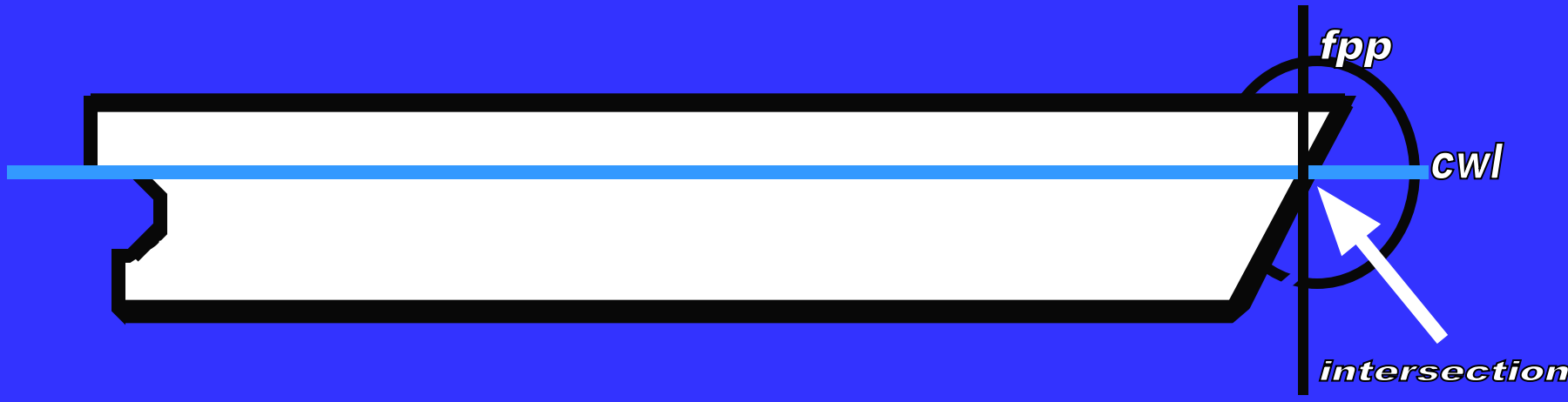
Construction waterline

The *Construction Waterline (CWL)* or *Summer Loadline* is the line to which the ship may be loaded in summer.



Fore perpendicular

The *fore perpendicular* is the vertical line through the *intersection* of the CWL and the *stem.*



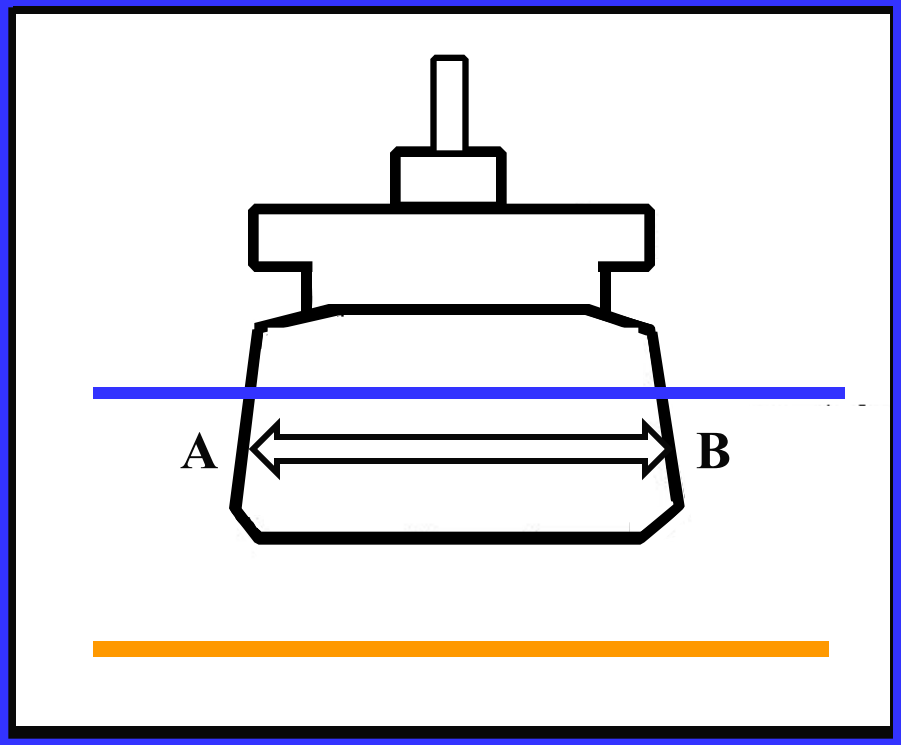
Aft perpendicular

The *aft perpendicular* goes through the *rudderstock.*

LPP

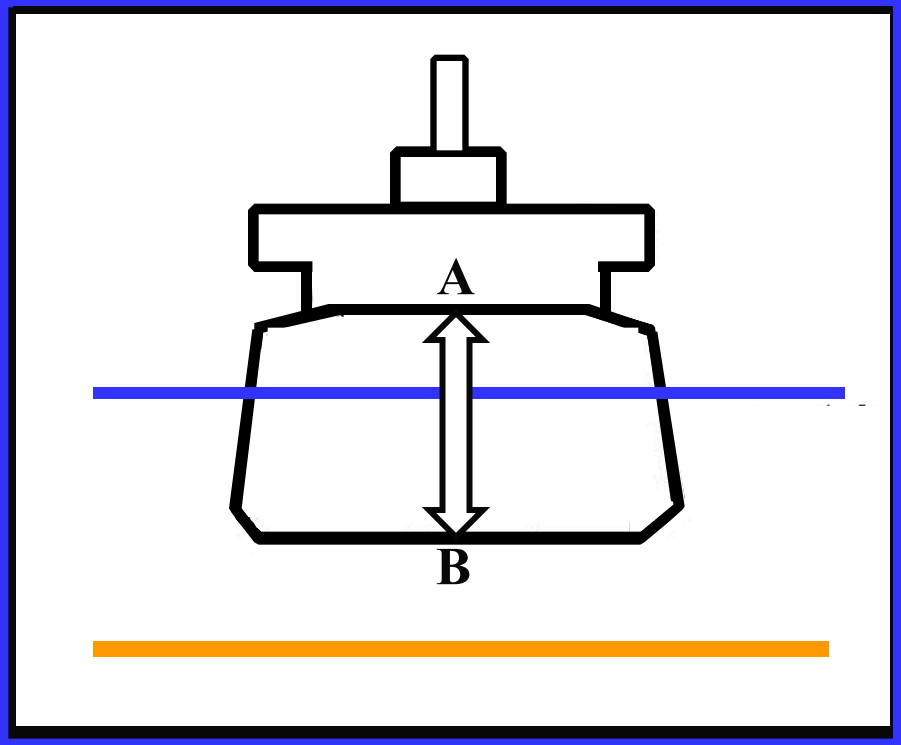
Ship dimensions

Moulded breadth



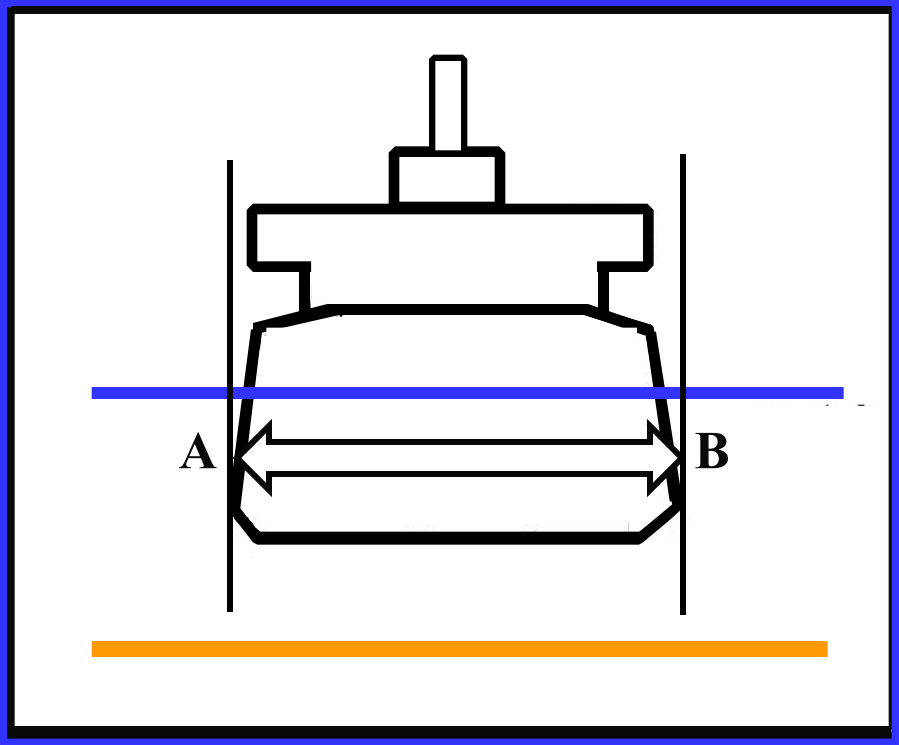
Horizontal distance between the insides of the *moulds* (A-B).

Moulded depth



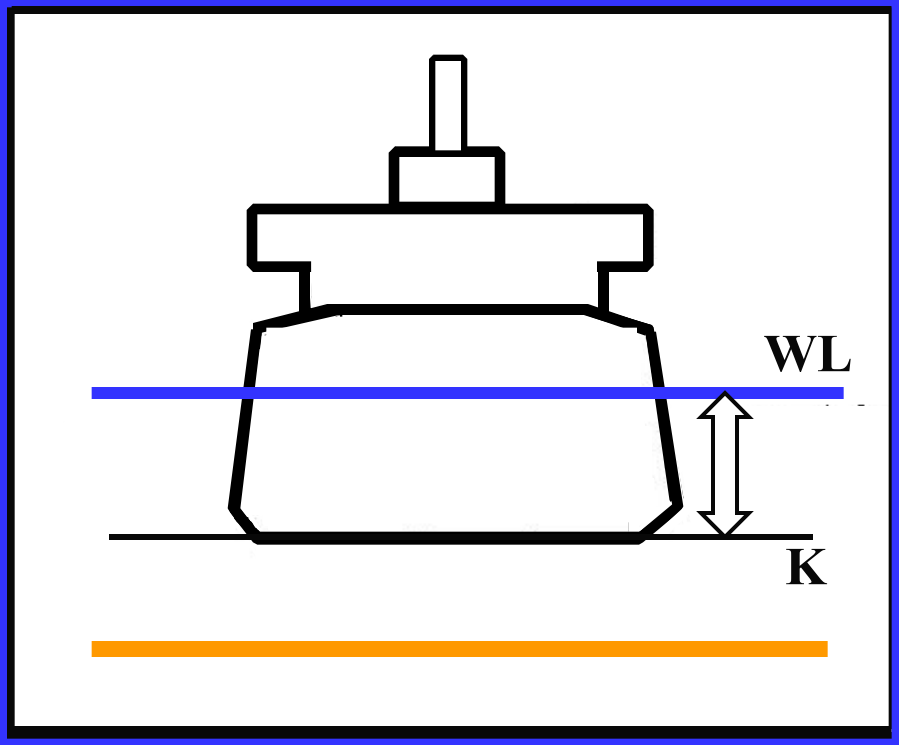
Vertical distance between the insides of the *moulds* (A-B).

Beam



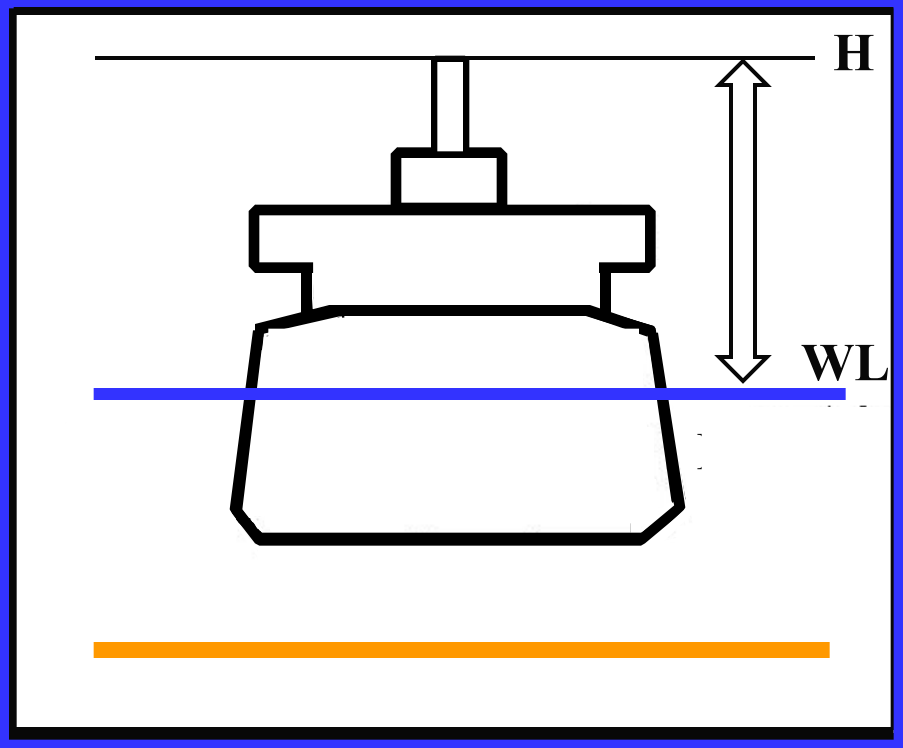
By *beam* is meant the *extreme breadth* of the vessel (A-B).

Draft



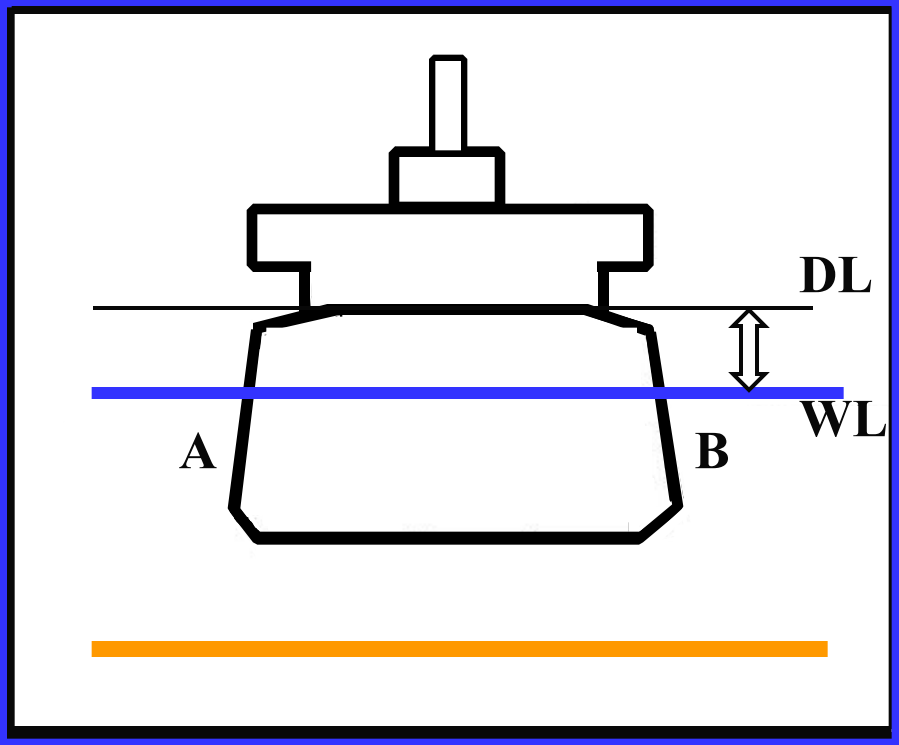
Distance from the *bottom* of the *keel* to the *surface* of the water (WL - K).

Air draft



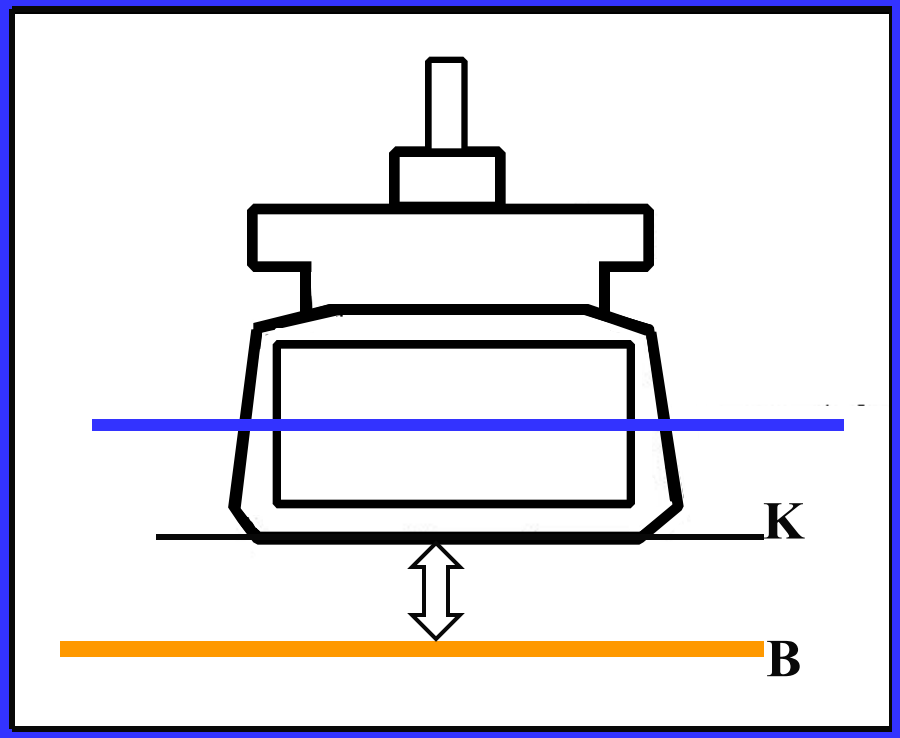
Distance from the waterline to the highest point of the vessel (WL - H).

Freeboard



Distance between deckline and waterline (DL - WL).

Underkeel clearance (UKC)



Distance between keel and sea-bed (K - B).

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