



Large Angle Stability System - NA8-10

SHIPS VIBRATIONS TEST MODEL - NA4

The NA4-10 Ships Vibrations Test Model (right) is designed to enable students to investigate a simple model hull form for resonance phenomena. It may be used in conjunction with the optional Armfield Flotation Tank or any suitable customer supplied tank. Many of the principal phenomena associated with ship resonant vibration are clearly demonstrated.

At a more advanced level the distribution of mass and second moment of area may be calculated and using a Young's Modulus value for the material of the ship shaped beam, the natural frequencies may be estimated by a simple tabular method or other means and compared with the measured value.

LARGE ANGLE STABILITY SYSTEM - NA8

The NA8-10 Large Angle Stability System (above) is designed for the study of ship hydrostatics and stability. A comprehensive manual provides hydrostatic stability and other data for ship models and includes a number of experiments which are useful to students. Exercises are conducted on a 1/70 scale model of a general cargo vessel of 28000 tonnes ship mass. Rolling, righting and the effects of flooding various compartments may be studied. Optional alternative ships models are also available for study.



Ships Vibrations Test Model - NA4-10



* Excluding DM range

SHIPS VIBRATIONS TEST MODEL – NA4



Ships Vibrations Test Model - NA4

DEMONSTRATION CAPABILITIES - NA4

In air to:

- > Investigate modal characteristics of a simple suspended ship shaped box girder
- > Produce a resonance curve
- > Produce the amplitude curve of a 2-node and 3-node flexural model
- > Illustrate the influence of mass and its distribution upon natural flexural frequencies

In water to:

- > Measure the influence of added virtual mass on natural frequency
- > Illustrate the effect of the addition and distribution of sand ballast on the natural frequency
- > Calculate the added virtual mass by different methods and compare with experimentally measured influence using a Schlick-type formula

OPTIONAL ACCESSORY - NA4

NA4-11 Flotation Tank for NA4-10

REQUIREMENTS - NA4

Electrical supply:

NA4-10-A: 220V-240V/1ph/50Hz, 2A

NA4-10-B: 120V/1ph/60Hz, 4A

Free water surface, if NA4-11 Flotation Tank not ordered

OVERALL DIMENSIONS - NA4-10 ONLY

Height: 1.44m

Width: 2.66m

Depth: 1.17m

SHIPPING SPECIFICATION - NA4-10 ONLY

Volume: 1.0m³

Gross weight: 75kg

ORDERING SPECIFICATION - NA4

- Apparatus designed to enable students to investigate a simple model hull form for resonance phenomena.
- The apparatus comprises an experimental model hull, a rigid supporting frame, a vibrator (complete with signal generator and power amplifier) and an optional Flotation Tank (order code NA4-11).
- The experimental model is flat bottomed, wall-sided and open topped. It has an elliptical plan form.
 - > Length to Beam ratio 8:1
 - > Length to Depth ratio 12:1
- Used to demonstrate the principle phenomena associated with ship resonant vibration.
- Can be used to investigate resonance phenomena in both air and water.

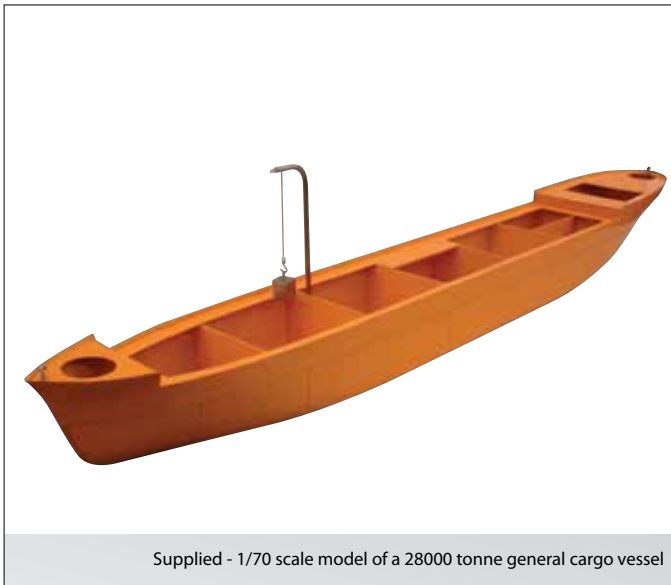
LARGE ANGLE STABILITY SYSTEM - NA8



Large Angle Stability System - NA8-10

DEMONSTRATION CAPABILITIES - NA8

- > Inclining experiment
- > Influence of a free surface
- > Influence of a suspended mass, (with the optional crane ship model)
- > Effect of flooding various compartments
- > Rolling experiments



Supplied - 1/70 scale model of a 28000 tonne general cargo vessel

OPTIONAL SHIP MODELS - NA8

See optional accessories.

OVERALL DIMENSIONS - NA8-10 ONLY

Height:	2.17m
Width:	2.66m
Depth:	1.95m

SHIPPING SPECIFICATION - NA8-10 ONLY

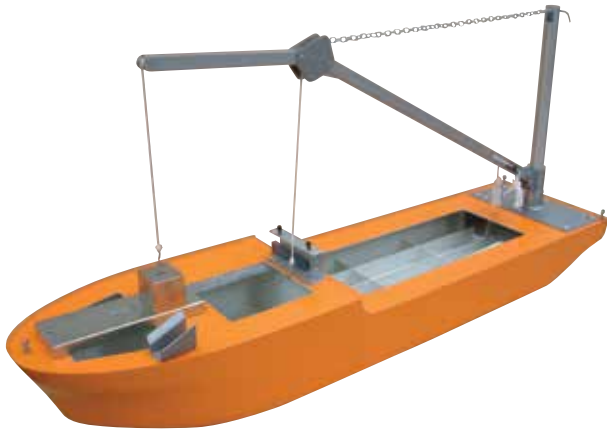
Volume:	3.0m ³
Gross weight:	550kg

ORDERING SPECIFICATION - NA8

- Apparatus designed to enable students to study ship hydrostatics and stability.
- Supply includes a water tank, a floating ship model, a dynamometer and a clinometer.
- The model supplied is a 1/70 scale model of a 28000 tonne general cargo vessel.
 - > It includes a number of transverse watertight bulkheads in representative positions.
 - > The compartments are fitted with individual flooding valves.
 - > The model is constructed of glass reinforced plastic (GRP).
 - > Models of other ships are available as optional accessories.
- The dynamometer measures the righting moment of the model.
- It holds the model at any angle of heel within the range, with the model either free to trim or with heeling axis kept horizontal.
- It exerts no vertical force on the model.
- It is floor standing, with castors and is supplied complete with counterweights.
- Battery powered clinometer measures the inclination of the model, over the range of 0 to 45 degrees.



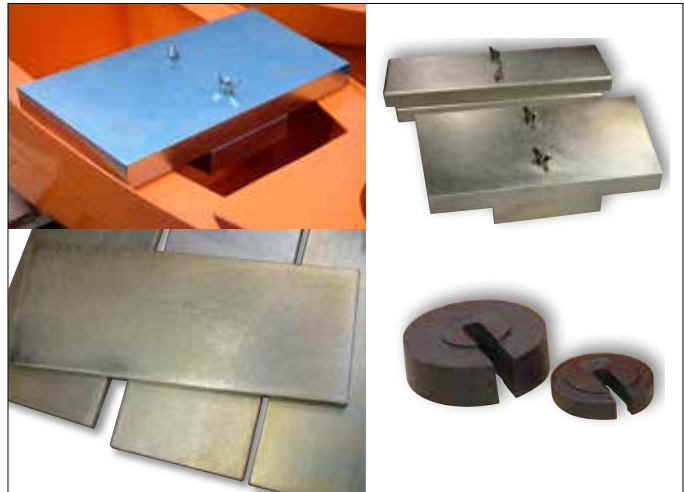
NA8-14 Trawler Model



NA8-15 Crane Ship Model



NA8-16 Rectangular Barge Model



Weights and counterweights supplied for use with NA8 and models.



NA8 Clinometer, supplied

OPTIONAL ACCESSORIES - NA8

NA8-14 Trawler Model:

A 1/25 scale model of an ocean going trawler of 850 tonnes ship mass constructed in glass reinforced plastic (GRP). The hull is fitted with a number of transverse watertight bulkheads in their correct positions. Flooding valves are fitted.

NA8-15 Crane Ship Model:

A 1/50 scale model of a crane ship typical of those used in off-shore industries. The hull is ballasted and fitted with a moveable derrick supplied with a number of masses for suspension.

NA8-16 Rectangular Barge Model:

Moulded in GRP, dimensions 2200 x 400 x 250mm and fitted with internal bulkheads, supplied with a collection of ballast and trimming weights.



* Excluding DUM range

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