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**Product Name :**  
Natural Vibration On A Ship

**Product Code :**  
LBNY-0005-1870003



### **Description :**

The Natural Vibration on a Ship model can be used to measure and record the natural frequencies and modes of a model ship. This simple, idealised ship shape makes it easier to approach the problem mathematically. The experiment-based vibration analysis is an essential component in shipbuilding design and development. The plastic model ship has nine ribs and an elliptical line plan. The model ship is attached to a rigid cross-member by springs. The enclosed box cross-section with high rigidity means the natural frequency of the cross-member is negligibly high. The Natural Vibration on a Ship model unit helps students take their first steps in the field of experimental vibration analysis or modal analysis of structures. Using this trainer, the dynamic behaviour of a ship structure is studied, teaching students the fundamentals of experimental vibration analysis. In this manner, the transfer functions for various points of the model ship can be generated step by step. These can be used to determine the vibration modes for various natural frequencies. An electrodynamic vibration exciter causes the model ship to vibrate. A function generator produces the excitation signal, which can be adjusted in amplitude and frequency. An arbitrarily positionable acceleration sensor measures the model's response to the excitation signal.

### **Features:**

- Simple ship form simplifies the mathematical approach
- Different excitation signals possible
- Dynamic behaviour of a ship structure
- Optional excitation and measuring points.

### **Technical Specification :**

Frame with height-adjustable cross-member for attaching the model

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High natural frequency of the cross-member owing to enclosed box cross-section with high rigidity and low weight  
Vibration behaviour of a model ship in air and in water  
Ship Model mounted on springs; vibration excitation and acceleration measurement at any point  
Capacitive acceleration sensor with measuring amplifier, freely positionable  
Vibration exciter with power amplifier and function generator: sinusoidal, triangular or rectangular signal.  
Plastic model ship with elliptical lines plan and 9 ribs.



**Laboratory Instrument India**