



Ballast Control Operations Stability Course

Course Fee

Course fees are determined by participant experience, number of participants and duration required

Course Duration

6 day: Candidates with no previous stability experience

4 days: Candidates with previous stability experience

Contact Details

- Catherine Wilson
General Manager-Operations
C.Wilson@amc.edu.au
(03) 6324 9852
- Emilie Donovan
Course Administration Manager
E.Donovan@amc.edu.au
(03) 6324-9863
- Estelle Hudson
Training Administrator
E.Hudson@amc.edu.au
(03) 6324-9853
- Anita Robson
Training Administrator
A.Robson@amc.edu.au
(03) 6324-9858
- Website:
www.amcsearch.com.au
- Postal address:
AMC Search Ltd
Locked Bag 1400 Launceston
Tas 7250
- Delivery address:
University of Tasmania
Goods Inwards
AMC Search Ltd (1400)
Newnham Drive, Newnham
Tas 7248

The purpose of this course is to train Installation Managers, Barge Supervisors or Ballast Control Operators on board floating platforms (MODUs) to have a good appreciation of the stability of their craft, to understand the inherent dangers and how to combat any loss of buoyancy that may result from damage. To appreciate the forces of nature in the marine environment and to compensate for these forces in maintaining a safe, firm and level drilling platform. This course covers all stability aspects of IMO Resolution A.891 (21).

Course Aim

The aim of this course is to give participants a good understanding in the theory and practical application of ship stability, particularly the stability of a mobile offshore drilling unit (MODU).

By stability we mean the ability of a floating unit to remain upright and to resist the forces of the marine environment, the ability to measure the degree of dynamic stability of the unit and to calculate the draft, trim and list of the unit when weights -are added, removed and shifted on board.

Because of the standard in Australia the course will be conducted in the metric measurement system, however, one section will be devoted to the conversion of metric to imperial measurement, for those participants that will be working on flag vessels that are measured and tabulated in that system.

The course includes familiarisation in the use of the stability computer and a clear understanding of the information given by the computer, which is, after all, only as accurate as the information fed in initially. The stability computer is only an elaborate calculating machine, and before we ask it to perform participants must know how these calculations are compiled, be it only in a simplified form.

The International Maritime Organisation now recommends that key personnel assigned to mobile offshore drilling units are trained in the principles of stability. This course is designed to fulfil this recommendation covering all the stability details outlined in the IMO Resolution A 891 (21).

Duration

35 hours (conducted over 5 days)

Includes the 14 hour pre-course preparation for those participants who do not have the required stability training and/or experience.

or

21 hours (conducted over 3 days)

This course is designed for participants who possess the required stability training and/or experience, or those who have successfully completed the pre-course preparation.

Pre-course Preparation

Two days of basic stability for those without the necessary pre-requisite stability training and/or experience.



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Course Pre-Requisites

6 days- no pre-requisites required
4 days-stability experience

Content

Basic Stability

- Terminology and Definitions
- Density and Specific Gravity of a liquid
- The Law of Flotation, $\Delta = V \times \delta$, TPC
- Centre of Gravity; Centre of Buoyancy.
- Finding areas and centres of various shapes.
- Reserve Buoyancy,
- Basic Loadlines.
- Transverse Stability,
- Stable, Neutral and Unstable Equilibrium.
- The Metacentre; Righting Levers.
- The vertical shift of Gravity,
- Adding weights; Lifting weights.
- Taking Moments to find a centre.
- Horizontal shift of Gravity, Small angles of List,
- Basic free surface understanding.
- Stability of a box shape.
- 'I' the Moment of Inertia
- Hydrostatic Particulars of a vessel.
- Basic understanding of Longitudinal Stability.

MODU Stability

- Introduction to course, handouts, work required.
- Stability definitions on a MODU
- Free Surface effect on a column stabilised vessel
- Moment of Inertia of a basic shape
- Simpson's Rules to find the Moment of Inertia and Area under the Curve
- KM Curve for a box, prism and a Cylindrical column
- BM Transverse and Longitudinal and Parallel Axis Theorem
- Stability of a twin hulled vessel, BM of a MODU
- Finding the Centre of Gravity and Inclining Experiment
- GZ Curve. Negative Curve
- List, Righting levers /Listing levers (moments)
- Use of the Radian with trim and list calculations for small angles



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- Negative stability, angle of Loll
- Correcting an angle of Loll
- Hydrostatic Data given for a MODU
- Data for the "Diamond M. Falcon"
- Trimming levers
- Anomaly of MCTC data
- Longitudinal stability, MCT1⁰, Trim angles
- Tank calibration tables
- Correction to tank soundings
- Reduction of stability handling heavy weights with cranes
- Trim and draft corrections
- Mooring analysis and effect of cables on stability
- Ice and Snow calculations on stability
- Stability application and daily report
- Rolling periods, Synchronous rolling
- Differences with a DP vessel
- Damage Stability
- Loss of stability on grounding
- Water tight and weather tight structures
- Angle of down flooding
- Undersea blow out effect on various surface craft
- Wind effect on stability
- IMO's MODU Code

Course Times

0900-1700 (*may vary on individual timetables*)

Certificate

Participants who satisfactorily complete the course will be issued with an AMC Certificate.

Delivery Strategy

The course will be delivered by classroom theory sessions.

Assessment Strategy

This course will conclude with a written examination that is designed to test both the student's theory and practical knowledge of the subject. With regard to any calculations in this examination we expect participants to remember only the basic stability formula. It is understood that completing calculations under examination conditions can be traumatic, we therefore do not always expect 100% correct answers, however, what is expected is that participants show that



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they comprehend the method of the calculation and the theory behind the solution of the problem.

Safety Information

Course participants are requested to note the following safety information: Enclosed footwear must be worn at all times. The AMC Occupational Health & Safety requirements will be adhered to throughout the course. Government regulations prohibit smoking in classrooms or within 10 metres of buildings.

Application

Online via: <http://www.amcsearch.com.au/courses/>

This facility provides for course fees to be paid by a secure online transmission of your credit card details. Credit card payments are processed using eWAY secure online payment technology. Mastercard, Visa, Amex and Diners are accepted.

On-Campus Accommodation

Norfolk Hall is self check-in, and offers motel style accommodation with queen or king size beds, television, fridge and ensuite bathroom facilities. Rates are: \$85 per night. All meals are available for purchase from AMC Cafeteria. For further information and to make a reservation, please contact a short course team member, or refer to:

<http://www.amcsearch.com.au/home/accommodation/>

Terms

1. To secure your enrolment, payment of 50% of the course fee is required. Cancellations up to 15 working days prior to the scheduled date will be accepted without penalty. Cancellations less than 15 working days will be subject to 100% cancellation fee.
2. AMC Search reserves the right to cancel the course if insufficient registrations have been received by seven days from commencement of course. Any fees paid for cancelled courses will be refunded in full.
3. When making flight bookings please ensure you book on a fully refundable basis.