

# STABILITY: BALLAST CONTROL OPERATIONS

Provides a good understanding of the theory and practical application of ship stability, particularly the stability of a mobile offshore drilling unit (MODU). Complies with the IADC/NI guidelines for the training of Ballast Control Operators on Mobile Offshore Units, and IMO Resolution A.891 (21). 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. This course covers all stability aspects of IMO Resolution A.891 (21).

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.

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

5 days: Includes the 2-day pre-course preparation for those participants who do not have the required stability training and/or experience; or

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.

## CERTIFICATION

The following Australian Maritime College certificate will be issued to participants who successfully complete the course:

- Ballast Control Operations Stability

Full attendance and participation in ALL activities during the course will satisfy the required performance criteria.

**DURATION:** 5 days (no experience) or 3 days (with experience)

### COURSE AVAILABLE ON DEMAND

This course is available on demand, delivered at various locations. To express interest, please [contact us](#).

## RELATED COURSES

[Stability by Distance - Advanced](#)  
[Stability by Distance - Basic](#)



## COVID-19 VACCINATION

AMC Search (AMCS) is operating a COVID-Safe campus aligned with the protocols and procedures established by the University of Tasmania. The safety and wellbeing of staff, students and the broader community is an absolute priority for the University of Tasmania.

From 15th January 2022, anyone coming to any of our campuses, facilities or events will be required to be fully vaccinated or have a medical exemption. This includes: staff, students, residents in University accommodation, consultants, contractors, volunteers and visitors.

## PAYMENT OPTIONS

Payment methods accepted:

- Register now and pay later (payment required 15 days before the course starts)
- Credit Card (online or via (03) 6324-9850)
- Bank Deposit
- Company sponsorship.

Detailed payment options are available [here](#).

## REGISTRATION TERMS

Face to face courses

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.

AMC Search reserves the right to cancel the course 15 working days prior to the scheduled date if insufficient registrations are received. Any fees paid for cancelled courses will be refunded in full.

When making flight bookings please ensure you book on a fully refundable basis.

Online courses

Payment of course fees, or authorisation to invoice from your company, is required before access to the online learning environment is provided. Please note, it will take between 2-4 business days to provide your access to the online course if you have not studied previously with AMC Search, the Australian Maritime College or the University of Tasmania.

## 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.

## CONTENT - MODU STABILITY

- Introduction to course, handouts, work required.
- Stability definitions on a MODU
- Free Surface effect on a column stabilised vessel
- Simpson's Rules to find the Moment of Inertia and Area under the Curve
- Stability of a twin hulled vessel, BM of a MODU
- GZ Curve. Negative Curve
- Moment of Inertia of a basic shape
- KM Curve for a box, prism and a Cylindrical column
- BM Transverse and Longitudinal and Parallel Axis Theorem
- Finding the Centre of Gravity and Inclining Experiment
- List, Righting levers /Listing levers (moments)
- Negative stability, angle of Loll
- Correcting an angle of Loll
- Data for the "Diamond M. Falcon"
- Anomaly of MCTC data
- Longitudinal stability, MCT1<sup>0</sup>, Trim angles
- Correction to tank soundings
- Trim and draft corrections
- Mooring analysis and effect of cables on stability
- Stability application and daily report
- Differences with a DP vessel
- Water tight and weather tight structures
- Undersea blow out effect on various surface craft
- Wind effect on stability

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

## LAUNCESTON, TAS

Location: Australian Maritime College, Newnham Drive, Newnham, Launceston, Tasmania.

Airport Transfers: Participants arriving at Launceston Airport should make their way to the Australian Maritime College, Newnham Drive, Newnham. Taxi fare from the airport is approximately \$55.00.

Parking: Complimentary car parking is provided on campus in areas designated to AMC Search participants and clients.

Launceston Accommodation: On-campus accommodation in Launceston can be reserved via the online enrollment form. Further accommodation information is available [here](#), together with off-campus options.

## NORFOLK HALL ON-CAMPUS ACCOMMODATION

We offer affordable on-campus accommodation that's ideal if you're taking part in a course at our campus in Launceston, Tasmania.

[Norfolk Hall](#) offers Motel Style accommodation for \$95 per night (bed only). On-campus accommodation in Launceston can be reserved via the online enrolment form.

Norfolk Hall is situated on the main campus of the Australian Maritime College at

Newnham, Launceston, which is where most of our courses take place.

Accommodation at Norfolk Hall provides the following facilities:

- Queen size beds
- En-suite facilities
- Television
- Fridge
- Rooms serviced daily (excluding weekends)

Affordable meals are available at the on-site AMC Cafeteria.

You can reserve a room when you register for your course or via email  
AMCS.courses@utas.edu.au or telephone: +61 3 6324 9850.

## CLIENT PREMISES

This course is portable and available to be conducted on client premises. To discuss, please contact AMCS.Training@utas.edu.au or telephone (03) 6324 9850.