

IMPROVE OPERATIONAL
PERFORMANCE BY RAISING CREW
SKILL LEVELS THROUGH DNV
CERTIFIED TRAINING MODULES

WWW.CASTROL.COM/MARINE



IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.



Marine



THE ADDED VALUE:

MORE EFFICIENT, RELIABLE VESSEL OPERATION THROUGH BETTER TRAINED, MORE KNOWLEDGEABLE AND CAPABLE CREWS WITH GOOD UNDERSTANDING OF MARINE LUBRICANT APPLICATIONS.

THE CHALLENGES YOU FACE:

- Maintaining the high quality crews your fleet depends on when faced with an ageing workforce and a lack of new experienced engineers entering the sector
- An increasing skills gap in today's marine industry

In a recent survey conducted by the Institute of Engineering and Technology, 55% of those polled had problems recruiting experienced, well-trained members of staff. Many felt that the problem would only get worse, and that they would still be unable to recruit the right people in five years' time.



A COMPLETE, EASY-TO-FOLLOW TRAINING PROGRAMME UNIQUE TO CASTROL MARINE; ONLINE AND PAPER-BASED TRAINING CREATED SPECIFICALLY TO ADDRESS THE RECOGNISED SKILLS SHORTAGE IN THE MARINE INDUSTRY.

COMPRISES:

- 11 paper-based modules; supporting 1½ hour interactive training DVD with video and animations; e-books and online videos
- Trackable online assessment tool accessed via www.castrol.com/marine
- Three-level certification: Pass, Pass with Merit and Pass with Distinction
- Globally available, individually-tailored training seminars

E-ACADEMY:

Castrol e-Academy allows the course to be completed online with module e-books and video guidance, as well as online assessment that enables you to track participation.





ESSENTIAL BENEFITS FOR YOUR FLEET

- **CERTIFICATION:** CERTIFIED TECHNICAL COMPETENCY FOR ALL CREW MEMBERS INVOLVED WITH ONBOARD MECHANICAL EQUIPMENT AND LUBRICANT APPLICATIONS
- **CONSISTENCY:** CONSISTENT LEVELS OF CREW SKILLS AND KNOWLEDGE ACROSS VESSELS
- **RELIABILITY:** POTENTIAL FOR IMPROVED RELIABILITY OF SHIPBOARD MECHANICAL EQUIPMENT THROUGH IMPROVED CREW COMPETENCY
- **KNOWLEDGE:** CREWS WITH CLEAR UNDERSTANDING OF THE IMPORTANCE OF THE CORRECT USE OF MARINE LUBRICANTS
- **COST REDUCTION:** POTENTIAL TO AVOID COSTLY EQUIPMENT FAILURES THROUGH IMPROVED CREW COMPETENCY



SPECIAL FEATURES OF CASTROL ACADEMY

“CASTROL ACADEMY, AMONG OTHERS, PLAYS A VITAL ROLE IN FURTHERING MARITIME SKILLS AND EXPERTISE AND WILL INCREASINGLY PLAY A MAJOR ROLE ON THE INTERNATIONAL STAGE AS THE MARITIME INDUSTRIES EMERGE FROM RECESSION AND SEEK TO EXPAND. DNV IS DETERMINED TO BE PART OF THIS PROCESS.”

Lars Markusson, Project Manager, Det Norske Veritas
DNV is one of the world's leading classification societies



Castrol Academy has been reviewed by Det Norske Veritas and is satisfied that the course is in compliance with the DNV Standard for Certification of Learning Programmes



EFFECTIVE: Multiple formats for effective learning: Simple but thorough paper-based training modules plus added DVD aid and online assessment tool

EASY: Easy-to-use with no time limits, crews can learn as they go

EXPERT: Created exclusively by Castrol Marine, built on our vast industry and lubricant expertise

THOROUGH: Everything from basic skills such as ship types, lubrication and working with base oils to more advanced skill sets such as engine operation, machinery installation and power transmission

TRACKABLE: Built-in management tool to monitor crew member participation

The Institute of Marine Engineering, Science & Technology (IMarEST) officially recognises Castrol Academy. Castrol Marine and IMarEST are working together to promote training and continued professional development within the marine industry.





MODULES

Module 1 **SHIP TYPES**

This module provides an overview of the different ship types that use Castrol products. On completing this module, your crew will be able to:

- Explain the most important technical terms used to describe ships
- Describe the various types of cargo vessel
- Use the idea of cargo-carrying capacity to distinguish between different vessels
- Give a brief description of the most important types of passenger, service, fishing, military and specialist ships

Module 2 **MACHINERY INSTALLATIONS**

Descriptions of the machinery commonly used in many ships where lubrication plays an important role, including types of vessel-specific machinery. On completing this module, your crew will be able to:

- Identify machines that are used in virtually every type of ship, such as the main and auxiliary engines and steering gear
- Describe equipment used on specific ship types, for example refrigeration plant, or pressure systems in liquefied gas carriers

Module 3 **ENGINES**

A guide to the main types of marine propulsion unit, including low, medium and high speed 2-stroke and 4-stroke diesel engines, steam turbines, gas turbines and electric and hydraulic propulsion motors. On completing this module, your crew will be able to:

- Describe the design and operation of 2-stroke and 4-stroke diesel engines, including slow speed, medium speed and high speed types
- Outline the design and operation of steam turbines, gas turbines and electric and hydraulic propulsion motors
- Explain the reasons why particular propulsion systems are used in particular types of ship

Module 4 **POWER TRANSMISSIONS**

The purpose, design and use of components of power transmission systems, including propellers, water-jet pumps, shafts and bearings, thrust bearings, gearboxes, clutches and couplings. On completing this module, your crew will be able to:

- Explain how various types of propulsion units produce movement of the ship
- Describe the various components of the power transmission system
- Explain which components are needed in each of the different propulsion systems
- Outline the factors that affect the positioning, use and maintenance of each component

Module 5 **AUXILIARY EQUIPMENT**

A guide to the five main groups of ancillary shipboard equipment and relevant lubrication schedules. On completing this module, your crew will be able to:

- Describe the purpose of the various items of auxiliary equipment
- Classify them into five main groups
- Use lubrication schedules to identify which equipment is found on a particular ship
- Use the lubrication schedules to identify which lubricant each item requires

Module 6 **BASICS OF LUBRICATION**

A valuable overview of the purpose of lubrication and the properties of oils and greases, including the basic physics of friction. On completing this module, your crew will be able to:

- Explain how friction occurs when two surfaces pass over each other
- Describe how lubricants can reduce friction
- Explain the other benefits of using lubricants
- Describe the properties of various types of lubricating oils and greases



MODULES

Module 7 **BASE OILS**

An introduction to the base oils from which lubricants are derived including the production of mineral base oils, the three basic hydrocarbon groups and factors affecting correct base oils selection. On completing this module, your crew will be able to:

- Identify different types of base oil
- Explain how mineral base oils are derived by refining petroleum
- Describe the three basic hydrocarbon groups found in petroleum
- Outline the ways in which the products of the refinery are further treated by solvent extraction, de-waxing and finishing
- Describe the factors that must be considered when selecting base oils

Module 8 **ADDITIVES**

A guide to the additives mixed with base oils to enhance their properties and improve their performance, including physical and chemical characteristics. On completing this module, your crew will be able to:

- Describe additives that change the physical characteristics of oils
- Describe additives that change the chemical characteristics of oils
- Explain how each additive works
- Give examples of each type of additive

Module 9 **FUELS AND SPECIFICATIONS**

A look at fuels used in ships' main propulsion systems, including ISO and CIMAC specifications, fuels selection criteria and fuel problems such as sulphur, catalyst fines and asphaltenes. On completing this module, your crew will be able to:

- Describe the two main types of fuel
- Explain how the ISO and CIMAC specifications are used to define the characteristics of fuels
- Outline the main factors to be considered when selecting a fuel
- Describe problems caused by the presence of sulphur, catalyst fines, vanadium and asphaltenes in fuels and liner lacquering

Module 10 **LUBRICATION SELECTION**

This module describes the key factors affecting lubricant selection, including the choice of base oils and additives and the use of product data sheets. On completing this module, your crew will be able to:

- Explain how the choice of base oils and additives affects the properties of particular products
- Describe the factors that must be considered when selecting oils for different purposes
- Use Product Data Sheets to select an oil with particular properties

Module 11 **USED OIL ANALYSIS**

A guide to the vital importance of Used Oil Analysis in shipboard machinery maintenance regimes to improve efficiency and cut costs, including sampling procedures and results interpretation. On completing this module, your crew will have an understanding of:

- Used Oil Analysis services
- The different tests and why they are carried out
- Sampling procedures
- Result interpretation
- Reporting

We are continually updating the Castrol Academy programme. For the very latest information, please visit www.castrol.com/marine



To find out more about Castrol Marine lubricants please visit: www.castrol.com/marine



Castrol Marine
Technology Centre
Whitchurch Hill
Pangbourne
Reading
RG8 7QR

Telephone: +44 (0) 118 9843311
www.castrol.com/marine

CM143
03/12

All products and services supplied are provided under Castrol Marine's standard conditions of sale. You should consult your local Castrol Marine representative if you require any further information. Castrol and the Castrol logo are the trade marks of Castrol Limited, used under licence. Produced by BP Marine Limited.

Registered office: Chertsey Road, Sunbury-on-Thames, Middlesex. TW16 7BP United Kingdom.
Registered in England & Wales, no 01214291.

© 2012 BP Marine Ltd. All rights reserved.

IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.

