

NAVIGATION AIDS FOR MODERN FLEETS



**MSE121
Marine &
Shipping
Engineering**

COURSE TITLE

NAVIGATION AIDS FOR MODERN FLEETS

COURSE DATE/VENUE

07– 11 September 2020

Amsterdam, Netherlands

COURSE REFERENCE

MSE121

COURSE DURATION

05 Days

DISCIPLINE

Marine & Shipping Engineering

COURSE INTRODUCTION

The aims of the training at this level are to equip candidates with the fundamental knowledge and skills needed to keep a safe navigational watch and to use radar, automatic radar plotting aids (ARPA), electronic chart display and information systems (ECDIS), automatic identification systems (AIS) and other electronic aids to maintain safety of navigation.

COURSE OBJECTIVE

Upon successful completion of this course, the delegates will be able to:

- ✓ Examine the fundamental of modern ship navigation aids techniques and its procedures and assess reliability, accuracy and limitations as part of Integrated Navigation Systems
- ✓ To examine and evaluate the application of new technology to the safe navigation and control of the ship

COURSE AUDIENCE

- Staff from all port related fields
- Staff from all shipping related fields

COURSE CONTENT

DAY 1

- Introduction - ECDIS functions, capabilities and limits - Data contents and structure - IMO Performance Standards.
- IMO carriage requirements - Backup, database updating, RCDS mode - Legal, regulatory, liability, safety and economic issues- IMO model course on ECDIS training - Special applications: VTS, SAR, etc.
- ECDIS sensors: GPS, gyro, log- ECDIS and radar- ECDIS and Track Control- ECDIS and AIS - AIS and radar

DAY 2

- Introduction to Satellite navigation-GPS Characteristics- GPS Satellite orbits- GPS – Architecture - GPS Principle idea of work – Satellites Ranging - Determining the position of a satellite- Determination of the user's position
- Satellite frequencies- GPS modernization - Coded signals - determined the atmosphere delay - Navigation message- Determination of the user's velocity - GPS - Sources of Error.
- Datum Difference – DGPS Principle idea of work- the methods of getting the DGPS corrections – the advantage, disadvantage and accuracy of the system.

DAY 3

- Introduction (why do we need a VDR?) - purpose of the VDR – overview of VDR system - the configuration of the equipment - The final data storage medium- Annual performance test
- VDR Carriage requirements S-VDR Carriage requirements - IMO requirements for VDR data - The uses of VDR - Performance evaluation
- Case study (the passenger ship Al Salam Boccaccio 98 accident)

DAY 4

- Introduction - Echo sounder (description & principles) – Echo Sounder (description & principles) - Echo sounder transducers types- Echo sounders operation, apply the information correctly.
- Echo sounders errors - Doppler speed log modes (WTM – BTM) – Doppler speed log principles of work.
- Janus configuration - Doppler speed log (Krupp configuration) - The uses of the log, its advantages and accuracy.

DAY 5

- Introduction and AIS System Overview - General Objectives of AIS –
- AIS – Essential Ship's Data - AIS "Messages"- AIS Installation and Display - SOLAS AIS Carriage Requirements - Advanced Applications of AIS.
- AIS Channels, Propagation, Coverage - Position Report - Ship's Data – AIS Data: Navigational Status – AIS Target Tracking and Collision Avoidance - Inherent Limitations of AIS - Guide Lines for the Operational Use of Universal Shipborne AIS Introduction to LRIT - overview of the operational concept of LRIT and its aspects – Introduction to BNWAS – Description of the basic operational sequence of events once BNWAS is operational – its performance standards. What is BNWAS?

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

\$6,150 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions

