



COURSE DETAILS

NI KEY TECHNICAL DP PERSONNEL TRAINING – DP VESSEL MAINTAINERS’ PART ONE THEORY

COURSE CODE: DPVM

CERTIFICATION (APPROVALS): Nautical Institute

COURSE OVERVIEW AND PURPOSE

Nautical Institute Training and Certification Scheme For Key Technical DP Personnel (The DP Vessel Maintainer’ Course) has been developed to cover IMCA M 117 - The Training and Experience of Key DP Personnel section 6.4 Training Courses for Key Technical DP Personnel and Appendix Two and Appendix Three. The scheme also taking into consideration the following documents: OCIMF Dynamic Positioning Assurance Framework Risk-Based guidance 2016, OCIMF DP FMEA Assurance Framework Risk Based Guidance 2020, MTS- Guidance for Professional Development of DP Personal -PDDP2 and the Nautical Institute course “DP Knowledge for technical staff”.

This course is designed to provide technical staff with the knowledge required to understand the redundancy concept for DP operations. The course is for technical staff that have a good knowledge of ships systems and therefore only covers the redundancy aspect of on-board systems to ensure safe DP operations.

A DP vessel depends on redundancy of all systems on-board to ensure Safe operations. Technical staff need to be able to identify the correct redundant setup of all systems, identify loss of redundancy in any system and therefore understand when a vessel may have to suspend operations. Also, they should be knowledgeable of the type and purpose of documentation associated with DP operations, DP operations manual that is part of the operator safety management system. Charterer specific instructions, Equipment manuals, Failure modes and Effects Analysis (FMEAs) and capability plots and other DP documents onboard as per IMCA M 109 - A Guide to DP-related documentation for DP vessels.

COURSE AIMS

To provide the student the following:

- Understanding of the theoretical and practical operation of DP systems;
- Technical understanding of the component parts of the DP and associated systems;



- An understanding of the limitations of equipment and the effects of equipment failures;
- An understanding of the limitations and the effects of incorrect operation of the systems;
- An understanding of work which can safely be undertaken with and without the help of equipment manufacturers, and more importantly, when to stop before affecting the vessels capability to perform DP operations or redundancy;
- The ability to fault find within the DP system and its components;
- Familiarisation with FMEAs and the philosophy of system redundancy;
- An improved ability to operate the Engine Room and DP equipment in a safe and competent manner;
- An understanding of MTS vessel design philosophy and MTS fundamentals;
- An understanding of cross connections and effect on redundancy
- This course covers DP knowledge and vessel / Type Specific onboard equipment training.

COURSE OBJECTIVES

The following is a list of the objectives which should be attained by trainee's by the completion of the DP Vessel Maintainer course:

- General Overview of DP (History, DP vessels, Theory of DP control)
- The Power System (Fuel systems, generators, bus-tie requirements, electrical distribution systems and cabling)
- The Thruster System (Thruster Drive and Auxiliary Systems)
- Control Systems and Sensors (DP Computer system/Joystick System, Position reference systems, Hardware Software and Sensors, DP Sensor systems)
- Documentation (FMEA, Capability plots, Management of Change Procedures, System and Equipment Manuals, Hazards, Incident Reporting, Planned Maintenance)
- Manning, training and DP Emergency drills (ER watch-keeping, team work)
- DP Operation and effects on DP system (safe DP operation CAM/ASOG/TAM and TAGOS, SIMOPS)
- Lessons learned (Common causes of DP incidents, information required when reporting system problems)



COURSE COMPETENCY

To be issued a Key Technical DP Personnel Certificate (The DP Vessel Maintainer' Course Certificate) you must be serving as part of the vessel technical staff i.e. Engineer or ETO.

The Nautical Institute will also accept anyone on a case by case basis that holds a technical officer's position on any DP vessel. This does not include ratings.

The training centre theory part and NI online exam for the course may also be attended by relevant shore-based technical staff and DPO and technical cadets to improve their knowledge and they can be issued a certificate of completion (Theory Only).

Note: The course certificate and NI DPVM log book will be issued to the participants who successfully complete the course and pass an online exam at the training centre.

In NI DPVM logbook in which his/her course is entered, the trainee will also recorded DP sea time, task completion and Statement of Suitability.

In order to avoid deterioration of skills during the training period, all elements of the DP training scheme shall be completed within two years. The two year rule applies for those who enter the schemes from 2021.

PREREQUISITES

- Passport
- Photo
- Certificate of Competency as set at STCW Reg. III/1 – III /2 – III/3 – III/6 Engine and Reg. III/6 for ETOs.

RATIO OF STUDENTS/INSTRUCTORS/EQUIPMENT

The ratio for the Key Technical DP Personnel training – DP Vessel Maintainers' Part One Theory course is:

Maximum of eight students to one instructor.

NUMBER OF HOURS

The course duration shall be a minimum of five days with a minimum of 34 hours instruction, simulator time and assessments. 100% attendance and participation in the course is required.



The distribution of the training is divided as follows:

Theoretical hours: 25,5 Practical hours: 8,5 Total hours: 34

STATEMENT OF THE TRAINING METHODOLOGY

The course will be theory and NI “B” class simulator based and will give the participant an overview of DP operation and the effects of system and component failures. On completion of this course participants will understand the general arrangements for DP systems and the principles of operation of the equipment. Participants will gain an understanding of the importance of the interaction between the system components and the modes of operation.

The course consists theory and practical exercises structured around the safe operation of DP Ships, DP classes, design of DP installations, propulsion machinery, auxiliary system, power generation machinery.

The course is set up to allow developing some of the course contents into computer-based or simulator based training. The student-to-instructor ratio will be a maximum of 8 students to one instructor in order to ensure proper learning. However a case may be made for up to 12 students depending on the equipment available and extra support staff.

This course requires the ability to read and interpret ships drawings, typical product specifications, job sheets, procedures, material labels and safety information as provided to operators. Writing is required to the level of completing workplace forms. The course shall be delivered in English.

EXPLANATION OF THE ASSESSMENT SYSTEM

Candidates are required to undertake a practical assessment administered by the Centre. The following are to be part of a practice exam on the Class “B” simulator:

- Identify a thruster pitch feedback/rpm error on DP screen
- Identify a thruster’s command error
- Identify a position reference system fault, failure or degradation
- Identify a sensor fault or failure
- Identify a power plant configuration where the redundancy concept could be defeated
- Identify a scenario where the vessel is being operated beyond its redundant limits so the WCFDI is defeated
- Identify an alternative thrusters or power configuration (thrusters or generator not available) and determine whether or not the redundancy concept is intact or defeated. Can operations be conducted?
- Describe actions with reference to ASOG/CAMO/TAM in response to an equipment status change



A online assessment will be completed by each student at the end of the course.

The online exam is composed of multiple-choice questions and shall be completed in 1 hour 30 minutes. The online assessment is consist of 40 questions and shall be completed with a pass mark of 70%.

Students who fail at the first attempt can have another two attempts within six months of the first attempt; however, the second attempt must be undertaken within 96 hours of the first attempt. Failing these three initial attempts, the student is required to repeat the DP Vessel Maintainer Course and undertake the assessment again.

The NI will administer an online assessment. Participants successfully completing both assessments will be issued with a course completion certificate and NI Dynamic Positioning Vessel Maintainer's logbook in which his/her courses, DP sea time, task completion and Statement of Suitability as a DPVM are recorded.