
Large yachts — Quality assessment and acceptance criteria — Dynamic positioning on large yachts

*Grands yachts — Évaluation de la qualité et critères d'acceptation —
Positionnement dynamique sur les grands yachts*





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Foreword

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Dynamic positioning (DP) systems are common on ships and platforms in the offshore oil and gas industry. System reliability and positioning accuracy are of vital importance for ensuring safe operation at sea. These aspects are therefore an integral part of the vessel design, the operational procedures and the personnel requirements. The DP system reliability is expressed in the vessel class notation. The specific DP notations as defined by classification societies are usually derived from the IMO definitions for equipment Class 1, Class 2 and Class 3, indicating the level of redundancy in the DP system.

The application of DP systems on large motor yachts is a more recent trend. There is a need for a clear definition of the specific capabilities and the necessary equipment for large yachts with a DP system. The intended use of a DP system on board a large yacht is different from application in the offshore industry. The DP system on a yacht is intended for recreational use. The use of the DP system is considered recreational when the DP operation is not mission critical, its duration is relatively short (hours, rather than days) and the weather conditions are relatively mild.

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1 Scope

This document specifies the minimum requirements for dynamic positioning (DP) systems on large yachts intended for recreational use (i.e. not mission critical, short duration, mild weather). This document provides minimum requirements for equipment, as well as a calculation method to quantify the DP stationkeeping capability and guidance on testing and personnel requirements.

2 Normative References

There are no normative references in this document.

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

dynamic positioning system

DP system

complete installation necessary for dynamically positioning a large yacht

Note 1 to entry: The dynamic positioning (DP) system includes a *power system* (3.2), *thrusters* (3.3) and a *DP control system* (3.4)

[SOURCE: MSC.1/Circ.1580: 2017, 1.2.11 — modified, “vessel” replaced by “large yacht”, and second sentence condensed into Note 1 to entry.]

3.2

power system

components and systems necessary to supply the *dynamic positioning system* (3.1) with power

Note 1 to entry: The power system includes prime movers and associated systems, generators, switchboards, cabling, UPS systems and power management systems.

[SOURCE: MSC.1/Circ.1580: 2017, 1.2.20 — modified, second sentence condensed into Note 1 to entry.]

3.3

thruster

devices providing thrust force to control the position of the large yacht

Note 1 to entry: Thrusters can include dedicated thrusters, such as transverse tunnel thrusters and auxiliary thrusters, as well as the main propulsion if controlled directly by the *dynamic positioning system* (3.1).

3.4 dynamic positioning control system DP control system

control components and systems, hardware and software necessary to dynamically position the large yacht

Note 1 to entry: The DP control system includes a computer system, a control station, sensors and all necessary cabling and network connections.

[SOURCE: MSC.1/Circ.1580: 2017, 1.2.10 — modified, “vessel” replaced by “large yacht”, and second sentence condensed into Note 1 to entry.]

3.5 sensor

device including at least one position reference system, one heading sensor and one wind speed and direction sensor

Note 1 to entry: Optional sensors can include additional position reference systems, as well as additional types of sensors.

3.6 joystick control

system offering manual position and heading control of the vessel from the dynamic positioning control station

3.7 dynamic positioning operator DP operator DPO

crew member with the specific task to operate the *dynamic positioning (DP) system* ([3.1](#)) and monitor its correct operation from the DP control station

Note 1 to entry: DP operators have received an internationally standardized DPO training and certification.

3.8 dynamic positioning class notation DP class notation

code to indicate the level of redundancy present in a *dynamic positioning system* ([3.1](#))

Note 1 to entry: Class notations are generally derived from the IMO equipment class notations Class 1 (no redundancy), Class 2 (all components redundant) and Class 3 (all components redundant and physically separated). Examples of the classification society guidelines can be found in References [\[2\]](#) and [\[3\]](#).

3.9 dynamic positioning capability plot DP capability plot

graphical representation of the results of a static dynamic positioning capability analysis

Note 1 to entry: For each wind direction the plot shows the maximum wind speed at which the vessel can maintain its position and heading, using the available thrusters to counteract the environmental loads. Examples of calculation methods to determine such plots can be found in References [\[4\]](#) and [\[5\]](#).

4 Application

This document provides a common frame of reference that can be used by yacht designers, equipment manufacturers, yacht builders and yacht owners. It is noted that this document is not intended as a replacement for specific dynamic positioning (DP) class notations, as provided for commercial ships by classification societies.