DYNAMIC POSITIONING CONFERENCE
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QUALITY ASSURANCE SESSION

IMO Guidelines for Vessels with Dynamic Positioning Systems

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IMO Guidelines for Vessels with Dynamic Positioning Systems

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IMO Guidelines for vessels with DP systems

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IMO sub-committees

Ship Design & Equipment (DE)

Stability & Load Lines & Fishing Vessel Safety (SLF)

Fire Protection (FP)

Ship Design & Construction (SDC)

Ships Systems & Equipment (SSE)
GUIDELINES FOR VESSELS WITH DYNAMIC POSITIONING SYSTEMS

1. The Maritime Safety Committee at its sixty-third session (16 to 25 May 1994), approved the Guidelines for Vessels with Dynamic Positioning Systems, set out at annex to the present circular, as prepared by the Sub-Committee on Ship Design and Equipment at its thirty-seventh session.

2. Member Governments are invited to bring the Guidelines to the attention of all bodies concerned, and apply the Guidelines to new vessels with dynamic positioning systems constructed on or after 1 July 1994, in conjunction with implementation of the provisions of paragraph 4.12 of the 1989 MODU Code as amended by resolution MSC.38(63).

3. Member Governments are also invited to use the proposed model form of flag State verification and acceptance document set out in the appendix to the Guidelines.
A lot has changed in the nearly 20 years since this document was issued...

...if it isn't broke don’t fix it.
Revise the guidelines for vessels with DP systems incorporating improved guidance available in multiple industry guidance documents.
The document is guidance and as such open to interpretation.
“Dynamically positioned vessel (DP-vessel) means a unit or a vessel which automatically maintains its position (fixed location or predetermined track) exclusively by means of thruster force.”
Issues

- Automatic Position Mooring (Posmoor)
- Thruster Assisted Mooring System (TAMS)
“Redundancy means the ability of a component or system to maintain or restore its function when a single failure has occurred.

Redundancy can be achieved for instance by installation of multiple components, systems or alternative means of performing a function.”
“For equipment classes 2 and 3, at least three position references systems should be installed and simultaneously available to the DP-control system during operations”
“When two or more position reference systems are required, they should not all be of the same type, but based on different principles and suitable for the operating conditions.”
“5.2.7 Control of a DP-vessel holding a valid FSVAD should be carried out according to the principles of 1.7 in the MODU Code 1989”

Now superseded by MODU Code 2009 but no difference in 1.7
“Flag State Verification and Acceptance Document (FSVAD) should be issued, after survey and testing in accordance with these guidelines, either by officers of the Administration or an organization duly authorised by it”

DP equipment class
<table>
<thead>
<tr>
<th>IMO equipment class</th>
<th>ABS</th>
<th>BV</th>
<th>CCS</th>
<th>DNV</th>
<th>GL</th>
<th>IRS</th>
<th>KR</th>
<th>LR</th>
<th>NK</th>
<th>RINA</th>
<th>RS</th>
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<tbody>
<tr>
<td>American Bureau of Shipping (USA)</td>
<td>Bureau Veritas (France)</td>
<td>China Classification Society (China)</td>
<td>Det Norske Veritas (Norway)</td>
<td>Germanischer Lloyd (Germany)</td>
<td>Indian Register of Shipping (India)</td>
<td>Korean Register of Shipping (Korea)</td>
<td>Lloyds Register (UK)</td>
<td>Nippon Kaiji Kyokai (Japan)</td>
<td>Registro Italiano Navale (Italy)</td>
<td>Russian Maritime Register of Shipping (Russia)</td>
<td></td>
</tr>
<tr>
<td>DP class notation</td>
<td>DPS-0</td>
<td>DYNAPSO AM/AT</td>
<td>DYNAPSO AUT</td>
<td>DPS 0</td>
<td>DP (CM)</td>
<td>DYNAPSO SAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>DPS-1</td>
<td>DYNAPSO AM/AT R</td>
<td>DP-1</td>
<td>DYNAPSO AUT</td>
<td>DPS 1</td>
<td>DP 1</td>
<td>DP (1)</td>
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</tr>
<tr>
<td>Class 2</td>
<td>DPS-2</td>
<td>DYNAPSO AM/AT</td>
<td>DP-2</td>
<td>DYNAPSO AUTR</td>
<td>DPS 2</td>
<td>DP 2</td>
<td>DP (2)</td>
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</tr>
<tr>
<td>Class 3</td>
<td>DPS-3</td>
<td>DYNAPSO AM/AT RS</td>
<td>DP-3</td>
<td>DYNAPSO AUTRO</td>
<td>DPS 3</td>
<td>DP 3</td>
<td>DP (3)</td>
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</tbody>
</table>

Note: The equivalent to IMO DP class is approximate only because of differences between the various classifications and the allowance for class societies to allow exemptions etc.
Class Societies

- DP Class 2+  \textit{Rolls Royce}
- DP 3 (DP 2)
- DP 4  \textit{MV North Sea Giant}
“For vessels which are a fitted with a dynamic positioning system with centralized manual position control and automatic heading control to maintain the position and heading under the specified maximum environmental conditions.”
Rolls Royce

- 3 operator stations on main bridge
- 4 main DP control cabinets, powered by individual UPS
- 3 main DP controllers running in triple redundant configuration
- 4 sensor groups with sufficient distribution of sensors and position reference systems
- Extended network redundancy
- Thruster interface cabinets with output voting
North Sea Giant

- K-Pos DP-21
- K-Pos DP-11 BU
- K-Pos DP-11/cJoy

“Extremely high redundancy based on low loss concept diesel electric system”
Equipment

- Data communication networks
- Data logger
- Voyage data recorder
- Unified bridge
- Operator station designation
Not explicitly mentioned

- FMEA
- Capability plots
- Ergonomics
- Terminology
Human element

- Two thirds of DPOs have less than 2 years experience
- Training and experience of DPOs is captured in STCW
- But not assessment and certification
- Also not for this document
Guidance

- IMO
- IMCA
- MTS
- GOMO
- USCG
- and others
Thank you

Any questions, comments or thoughts?

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