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1. Preamble

1.1. Pilot associations and port authorities around the world are increasingly reporting concerns around engine power limiters that have been installed on ships to reduce greenhouse gas emissions. To comply with the requirements of the Energy Efficiency Ship Index (EEXI) and Carbon Intensity Indicator (CII) ships have retrofitted Shaft Power or Engine Power Limitation (SHaPoLi/EPL) systems, which use either load-limiting/automated acceleration limit software programs, mechanical-based limits (governor) or electronic systems.

1.2. Manoeuvring in complex pilotage waters with numerous environmental factors may necessitate immediate access to the full manoeuvring power range of the main engine.

1.3. In 2018 the Marine Environment Protection Committee of the International Maritime Organization (IMO) adopted the Initial IMO Strategy on Reduction of GHG (Greenhouse Gas) Emissions from Ships (resolution MEPC.304(72)). This strategy included strengthening the Energy Efficiency Design Index (EEDI) and developing technical and operational energy efficiency measures for existing ships.

1.4. The Initial IMO Strategy called for short-term measures to reduce the carbon intensity (the amount of carbon dioxide emitted by tonne mile) of international shipping. The IMO developed two indexes for inclusion in Chapter 4 of MARPOL Annex VI: one addressing the design carbon intensity under specified conditions (EEXI); and the other addressing operational carbon intensity (CII).

1.5. EEXI requires that a ship of 400 gross tonnage and above which is already in service achieves carbon intensity by design (attained EEXI) which is less than or equal to the carbon intensity by design that is required for that type and size of ship (required EEXI). The required EEXI is calibrated to drive ships already in service to achieve the same design carbon intensity as if they were new ships complying with the energy efficiency design index (EEDI).

1.6. Since 2013, EEDI has required new ships to achieve progressively more substantial reductions in design carbon intensity. For most ship types subject to EEXI, the catch-up point is EEDI Phase 2, which requires most new ships constructed after 1 January 2020 to be 20% less carbon intensive by design than the average ship in the period from 1999 – 2009. Since the IMO's Fourth GHG Study in 2020 noted that slow steam meant the majority of bulk carriers, tankers and container ships were already slow steaming, the effect of EEXI is not so much to reduce the carbon intensity or environmental impact of ships at sea, but to

remove incentives for owners and operators to retain older tonnage, and to not invest in the latest eco-ships.

1.7. Both EEDI and EEXI rely on a formula which estimates the design carbon intensity based on main and auxiliary engine power, specific fuel consumptions and fuel oil carbon factors,[1] allowances for energy-saving devices, the deadweight tonnage of the ship and a reference speed. For ships in service, the attained EEXI is calculated for the ship. If it is already equal to or less than the required EEXI, no further action is necessary; if not, the calculation is re-run iteratively to determine the level of main engine power that allows the ship to comply. The ship then needs to have an overridable power limiter (OPL) system installed which limits the engine or shaft power accordingly.

1.8. To support the use of OPL, the IMO adopted the 2021 Guidelines on the shaft/engine power limitation system to comply with the EEXI requirements and use of a power reserve (resolution MEPC.335(76), as amended) – hereafter the Guidelines. Unlike the EEXI regulations in MARPOL Annex VI, the Guidelines are non-mandatory. Therefore, flag states have some flexibility in implementing OPL requirements on ships flying their flag.

1.9. There are three main types of engine power limitations on ships:

i. Permanent de-rating, generally in relation to the optimisation of a ship for slow steaming.

ii. Load programs, which delay access to power to help manage impact on ancillary systems; and

iii. Overridable power limitation systems (OPL) used for compliance with the IMO's Energy Efficiency Existing Ship Index (EEXI) requirements.

2. Position

2.1. Whilst in pilotage waters the main engine must be available to immediately respond to the full range of manoeuvring commands as per the Pilot card.

2.2. To comply with IMO Resolution A.601 (15) Provision and Display of Manoeuvring Information Onboard Ships which states that "Manoeuvring information should be amended after modification or conversion of the ship which may alter its manoeuvring characteristics or extreme dimensions" and provide up to date information on their engine manoeuvring characteristics and provide such details to the pilot upon boarding and/or in pre-arrival notifications to the port authority.

2.3. The Pilot Card should identify if a power limiter is engaged, the time required for overriding the power limitation systems and the ships maximum power (both with and without the limiter applied).

2.4. Masters, Officers and Engineers should be trained in the use of the override function of engine power limiters onboard their ships and understand that the override may be required in pilotage waters.

2.5. Masters should proactively inform the pilot of any engine power limitations.

2.6. Port Authorities and/or pilotage service providers are recommended to update their pre-arrival information forms and MPIX forms to include some, or all, of the following questions:

i. Can the Main Engine/s attain the posted manoeuvring power (RPM's) without delay?

ii. Does the ship have any EEXI/EEDI Engine Power Limitations for manoeuvring?

iii. Are you familiar with the override feature for your Engine Power Limiter (if fitted)?

2.7. If a ships manoeuvrability is significantly compromised, Harbour Masters, Marine Pilots and Port Authorities may apply extra control measures including additional escort or harbour towage, tidal and timing restrictions and in some cases rejection of the ship as unsuitable for pilotage.