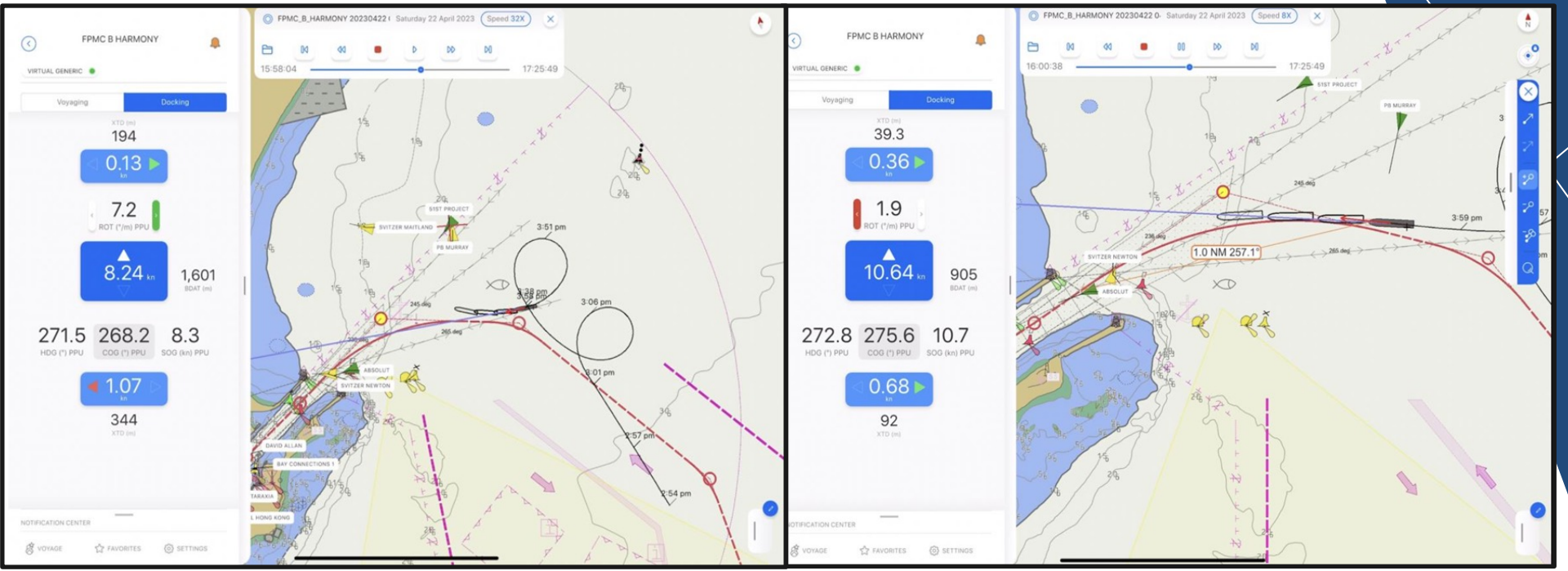
OVERRIDEABLE POWER LIMITATION
The Australasian Experience

Captain Josephine Clark
President, AMPI

26th IMPA Congress, Rotterdam

AUSTRALASIAN MARINE PILOTS INSTITUTE

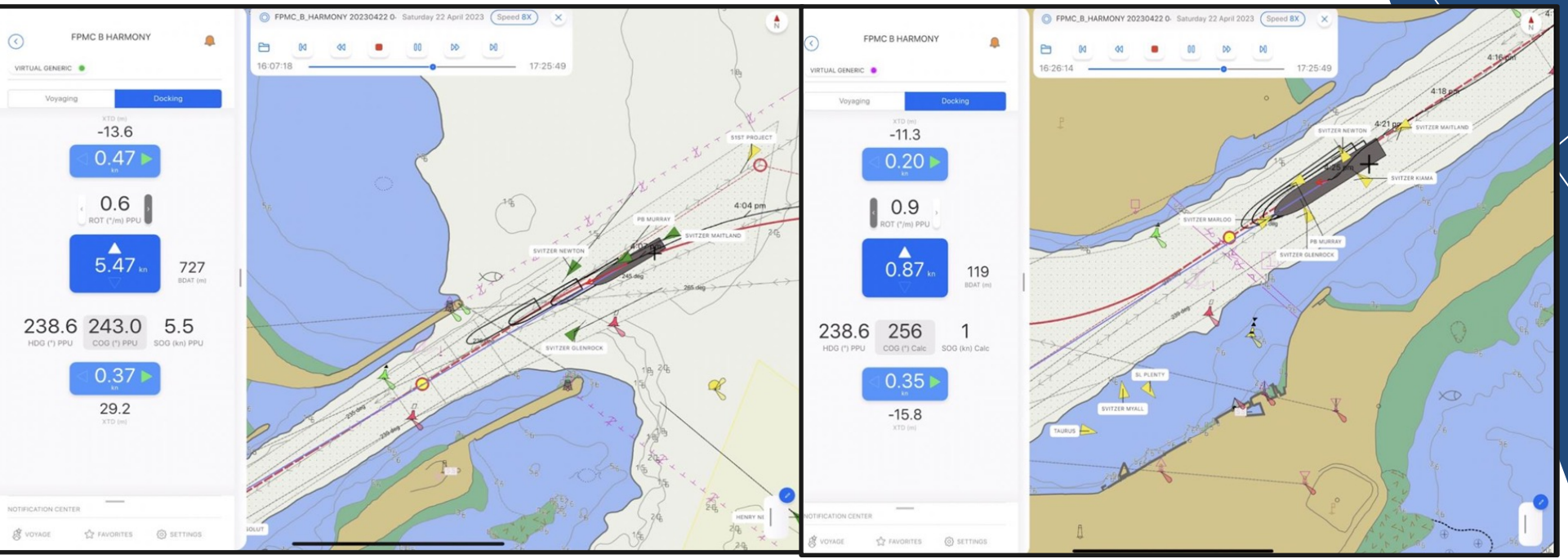
Newcastle Incident – 22 April 2023 (1)



Cape size bulk carrier. Loa 295 x 46m. Draft 8.9m. Built 2012

AUSTRALASIAN MARINE PILOTS INSTITUTE

Newcastle Incident – 22 April 2023 (2)



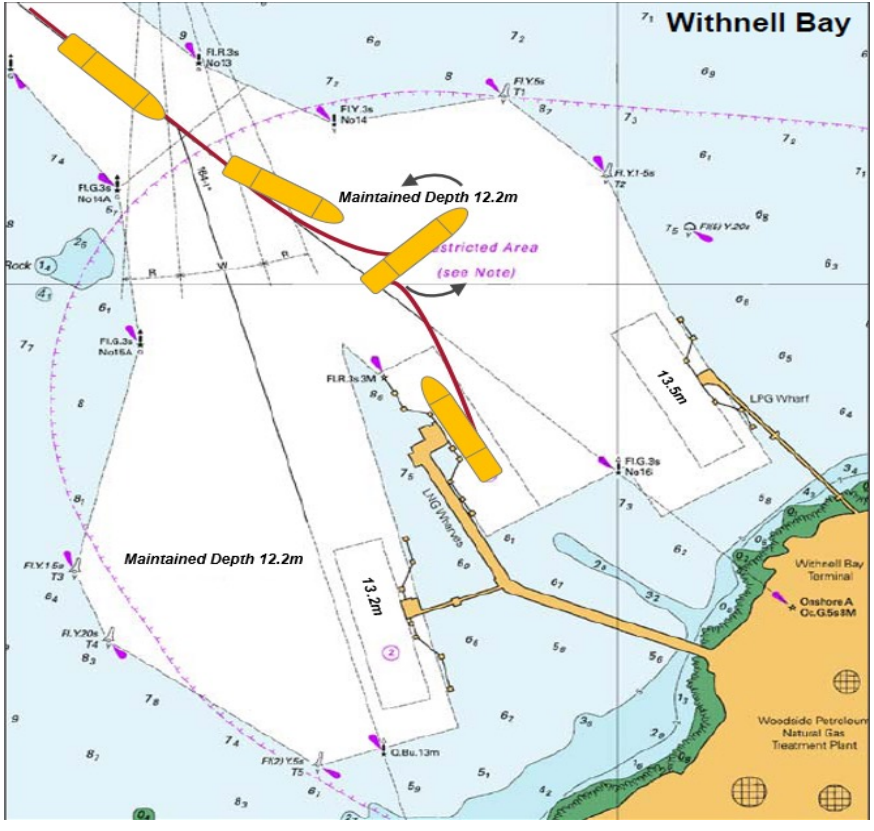
AUSTRALASIAN MARINE PILOTS INSTITUTE

Woodside LNG Incident – 22 December 2023

LNG carrier

Loa 285 x 43m

Built 2007



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Tidal Stream Restrictions in the Heads

Vessel/Draught	Slack to 2 kts		Greater than 2 up to 3kts		Greater than 3kts up to 4kts		Greater than 4kts up to 5kts		Greater than 5kts	
	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb
All Vessels		Vessels NOT constrained to the Great Ship Channel must attain a speed double that of an adverse predicted stream.								
High power/12.1m or less Constrained to GSC. Inbound and Outbound.										
High Power/Over 12.1m Inbound.										
High Power/Over 12.1m Outbound.										
High Power ≥ 310m LOA (non Pax) Inbound / Outbound Constrained to GSC										
High Power ≥ 310m LOA (non Pax) Inbound Not Constrained					*	*				
High Power ≥ 310m LOA (non Pax) Outbound Not Constrained										
Container Ships constrained to GSC Outbound with AS #										
Container Ships constrained to GSC Inbound with AS #					*					
Low Power Bulk or Similar/12.1m or less Constrained to GSC Inbound					*					
Low Power Bulk or Similar/12.1m or less Constrained to GSC Outbound						*				
Low Power Bulk or Similar/Over 12.1m Inbound										
Low Power Bulk or Similar/Over 12.1m Outbound										
Tankers/12.1m or less Constrained to GSC. Inbound and Outbound.	*	*	*	*						
Tankers/Over 12.1m Inbound	^	^ *								
Tankers/Over 12.1m Outbound	^ *	^								

** When the adverse tidal stream is 3kts vessel's must attain a speed of 12kts before reaching abort points 2nm, off Pt Lonsdale or North of Hovell.*

 # Containership has an automatic load function which reduces the main engine rpm when the load increases and has an effect on manoevrability.

^ Suezmax Tanker equal to or greater than 14 metre draft slack water (<1 knot flood/ebb) transit only subject to DUKC

Ports Victoria – Victorian NtM

PORTS VICTORIA

Victorian Notice to Mariners

The following Notice to Mariners is published for general information

Australia – Victoria

No. 161 - 2024

PORT OF MELBOURNE & GEELONG
VESSELS EQUIPPED WITH ENGINE OR SHAFT POWER LIMITERS

Date: **19 April 2024**

Refers: **N/A**

Details: Mariners are advised that the following **Operational Instruction** will take effect from **29 April 2024**.

Operational Instruction No. 01 - 2024

REQUIREMENTS FOR VESSELS EQUIPPED WITH ENGINE OR SHAFT POWER LIMITERS

Charts & Publications affected: Harbour Master's Directions – Melbourne Edition 13.1, September 2023

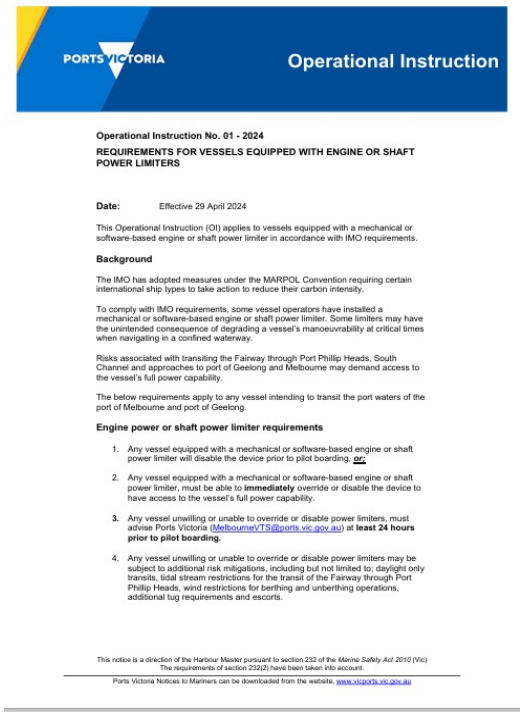
Further notice: No further notice will be issued.

Nick Ellul
Harbour Master
Geelong

Warwick Laing
Harbour Master
Melbourne

This notice is a direction of the Harbour Master pursuant to section 232 of the *Marine Safety Act 2010* (Vic)
The requirements of section 232(2) have been taken into account.

Ports Victoria Notices to Mariners can be downloaded from the website, www.vicports.vic.gov.au



PORTS VICTORIA

Operational Instruction

Operational Instruction No. 01 - 2024

REQUIREMENTS FOR VESSELS EQUIPPED WITH ENGINE OR SHAFT POWER LIMITERS

Date: Effective 29 April 2024

This Operational Instruction (OI) applies to vessels equipped with a mechanical or software-based engine or shaft power limiter in accordance with IMO requirements.

Background

The IMO has adopted measures under the MARPOL Convention requiring certain international ship types to take action to reduce their carbon intensity.

To comply with IMO requirements, some vessel operators have installed a mechanical or software-based engine or shaft power limiter. Some limiters may have the unintended consequence of degrading a vessel's manoeuvrability at critical times when navigating in a confined waterway.

Risks associated with transiting the Fairway through Port Phillip Heads, South Channel and approaches to port of Geelong and Melbourne may demand access to the vessel's full power capability.

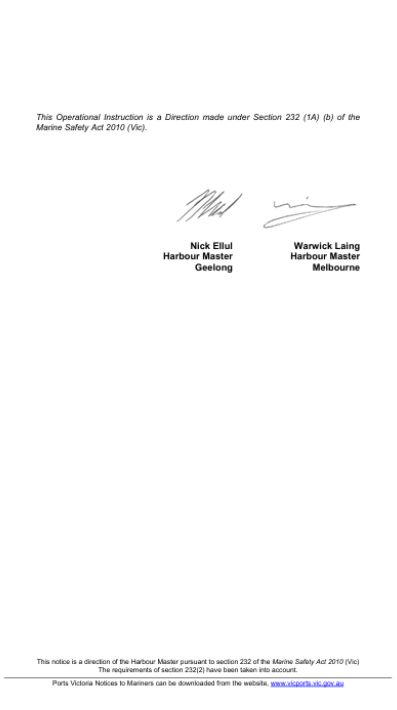
The below requirements apply to any vessel intending to transit the port waters of the port of Melbourne and port of Geelong.

Engine power or shaft power limiter requirements

1. Any vessel equipped with a mechanical or software-based engine or shaft power limiter will disable the device prior to pilot boarding, **or**,
2. Any vessel equipped with a mechanical or software-based engine or shaft power limiter, must be able to **immediately** override or disable the device to have access to the vessel's full power capability.
3. Any vessel unwilling or unable to override or disable power limiters, must advise Ports Victoria (MelbourneVTS@ports.vic.gov.au) at **least 24 hours prior to pilot boarding.**
4. Any vessel unwilling or unable to override or disable power limiters may be subject to additional risk mitigations, including but not limited to; daylight only transits, tidal stream restrictions for the transit of the Fairway through Port Phillip Heads, wind restrictions for berthing and unberthing operations, additional tug requirements and escorts.

This notice is a direction of the Harbour Master pursuant to section 232 of the *Marine Safety Act 2010* (Vic)
The requirements of section 232(2) have been taken into account.

Ports Victoria Notices to Mariners can be downloaded from the website, www.vicports.vic.gov.au



This Operational Instruction is a Direction made under Section 232 (1A) (b) of the Marine Safety Act 2010 (Vic).

Nick Ellul
Harbour Master
Geelong

Warwick Laing
Harbour Master
Melbourne

This notice is a direction of the Harbour Master pursuant to section 232 of the *Marine Safety Act 2010* (Vic)
The requirements of section 232(2) have been taken into account.

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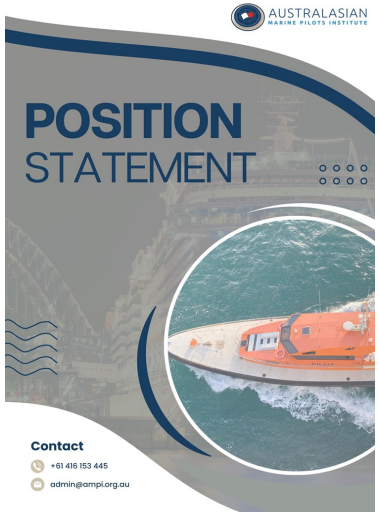
AMPI Position Statement – 02/24



2-2024 Engine Power Limiters - Recommendations

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.

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).

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).

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.

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 overrideable power limiter (OPL) system installed which limits the engine or shaft power accordingly.

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.

1.4 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 601 (Recommendation on the provision and the display of manoeuvring information on board 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.

AMPI - Article

THE CRITICAL BALANCE: Safety and Sustainability in Pilotage Areas - *By Nic Gardner and Matthew Williams*

On the 19th of November 2016, the bulk carrier Nenita boarded a pilot, weighed anchor and headed out. As they rounded a bend in the river at full ahead, the engine revs dropped from 90 rpm to 48 and continued falling. At 25 rpm, the ship lost steerage. 14 minutes after the trouble started, Nenita ran aground.

In Nenita's case, the problem was a combination of a cracked cylinder cooling jacket and an automatic load program; however, at a more immediate level, the problem was insufficient engine power to control the ship in the prevailing conditions at the time it was needed.

Few mariners would argue against the fact that sufficient engine power to control a ship is essential for safety. In strong winds and currents, narrow channels, or close quarters, insufficient power can only lead to accidents. In considering power problems on ships, there are three main types:

1. Permanent de-rating, generally in relation to the optimisation of a ship for slow steaming;
2. Load programs, which delay access to power to help manage the impact on ancillary systems; and
3. Overridable power limitation systems (OPL) used for compliance with the IMO's Energy Efficiency Existing Ship Index (EEXI) requirements.

While permanent de-rating and load programs have advantages and disadvantages and can pose their own challenges, this article focuses solely on OPL systems used to enable a ship to comply with EEXI.

On the 1st of September 2023, Houston Pilots sent out a notice regarding delays in the ability to override engine power limitation (EPL) and shaft power limitation (ShaPoLi) devices, or inability to override these devices, noting, "In some cases, these limiters may reduce ship manoeuverability in a confined channel...to an unacceptable level." Under the Houston Pilots Navigation Safety Guidelines, the Master or OOW must be able to immediately override these devices from the bridge; ships where this is impossible will be subject to transit risk mitigations, such as daylight restrictions, additional pilotage, and tugs. Regardless of whether this notice results from problems already encountered, precautions like these will only become more common.

What are the EEXI regulations?

In 2018 the Marine Environment Protection Committee of the International Maritime Organization (IMO) adopted the Initial IMO Strategy on Reduction of GHG 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.

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 (EEDI); and the other addressing operational carbon intensity (CII).

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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.

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, 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 overrideable power limiter (OPL) system installed which limits the engine or shaft power accordingly.

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.

Carbon Intensity Indicator (CII) is the colloquial term for the operational carbon intensity reduction requirement. This relies on data about fuel consumption, cargo carried and distance travelled to calculate an estimate of the carbon intensity of a ship in operation. This is more complex than EEXI and does not directly drive the use of overridable power limitations so is not discussed further in this article. Nevertheless, in terms of impact on the operation of ships, CII is expected to have a much more significant effect on the operation of ship than EEXI between now and 2030.

What are engine and shaft power limiters?

The EEXI regulations are goal-based: they regulate outcomes, and simply state that the attained EEXI of a ship shall be less than or equal to the required EEXI of that ship. In the short time between the regulations' entry into force in November 2022, and the first surveys verifying compliance, engine and shaft power limitation was the most cost-effective and simplest option. Unlike other energy saving devices which benefit EEDI/EEXI performance, OPL is not invasive, is low cost and can be delivered to ships quickly.

OPL systems addressed in the Guidelines are EPL and ShaPoLi. Generally, EPL limits main engine power by controlling the fuel index, either with a mechanical stop, or by adjusting the engine control system in combination. In contrast, ShaPoli uses sensors and an electronic control unit to limit the power transmitted by the shaft to the propeller.

Both systems are used to limit power to a level at which the ship's attained EEXI equals the ship's required EEXI.

In normal conditions, most ships operate well below 100% MCR, and in fact at eco-speeds below the percentage of MCR at which a power limit might be set. However, there are circumstances where power demand can and does approach 100% MCR: strong winds or currents, narrow channels, to avoid a collision or grounding, when manoeuvering in harbour, or when involved in a SAR incident. For ships with OPL systems, this is where override functions come in.

What are override functions?

The 2021 Guidelines provide for EPL and ShaPoLi systems incorporating an override. In exceptional circumstances, the override function allows the Bridge Team to access the reserve of power above the pre-defined engine power limit in order to handle emergency situations requiring the use of additional power (power reserve). In an ideal world, ships with overridable power limitation would carry two sets of manoeuvring charts/posters on the bridge: one showing the characteristics when the engine or shaft is limited, and one for when it is not. Unfortunately, this is not required, and therefore is rarely the case.

The 2021 Guidelines state that overridable ShaPoLi and EPL, "... can only be overridden by the ship's master or [OOW] for the purpose of securing the safety of a ship or saving life at sea, consistent with regulation 3.1 of MARPOL Annex VI." It goes on to specify a subset of scenarios that would be covered by regulation 3.1: adverse weather, ice-infested waters, search and rescue operations, avoidance of pirates, and engine maintenance. Notably, the 2021 Guidelines do not explicitly list close-quarters manoeuvring or berthing as a valid reason, even if the use of the power reserve would could be entirely consistent with securing the safety of the ship. Furthermore, the 2021 Guidelines are ambiguous on permitting pre-emptive override of the limit as a precaution, even though it is recognised in the reporting provisions of the 2021 Guidelines that the power limit may be overridden but the power reserve not used. More significantly, the 2021 Guidelines do not require that the system be capable of being overridden immediately or from the bridge. From the perspective of safety, this is a glaring omission because the result is an inevitable delay in the availability of the reserve of power if it is needed.

Is delayed access to full engine power really a problem?

Even if a ship has sufficient main engine power, if the power is not available when it's needed, it may as well not exist. According to the European Maritime Safety Agency, the main events resulting in damage to ships in 2022 were "loss of control - loss of propulsion power." Australia had similar issues: in 2022, of the 347 occurrence types related to ship control and navigation, 82 (23.6%) were associated with ship handling/loss of control and 40 (11.5%) with berthing or unberthing. While the hazard of loss of propulsion power is not the same as the hazard of insufficient propulsion power at the moment that you need it, there are times when insufficient power at a critical point during manoeuvring presents the same risk, and would be likely to lead to similar outcomes.

Would access to immediate OPL on the bridge solve the problem?

There is no doubt that requiring immediate access to the power reserve, or explicitly allowing pre-emptive unlimiting would reduce the risk of a ship having insufficient main engine power at a time when it needs it. However, technical arrangements are not the whole story. Access to an immediate override will not change the human factors. Even if the bridge team can—technically—override the EPL or ShaPoLi system, they may still be unable or unwilling to do so, regardless of what the onboard management manual for the OPL states.

While there are not yet any official reports, pilots share anecdotes of Masters and Bridge Teams not knowing how to override the EPL or ShaPoLi systems, or not realising they are allowed to override it. In the case of electronically controlled engines and ShaPoLi where a password is required to access the power reserve, at times the only way to get the password is to contact the designated person ashore (DPA), with all the delays that entails.

Has this happened before?

EPL isn't the first regulatory change that has increased the risk of propulsion power issues. While EPL is a recent threat with no officially reported incidents–yet–we can look at existing technology for some idea of what to expect.

The transition to low-sulphur fuel oil under IMO 2020 regulations led to an increasing number of P&I claims. These related to main engine-failure related incidents in sulphur emission control areas (SECAs), and warnings that main engines may not attain the expected speed when using low-sulphur fuel oil. Out-of-control ships damaged berths, locks, bridges, other ships, and more, while pilots in ECAs and the US Coast Guard reported a marked increase in incidents after implementing fuel grade changes.

While total loss of propulsion poses obvious problems, the case of the Nenita demonstrates that inadequate power can also lead to serious incidents. Engine power management systems (aka load programs) have nothing to do with EEXI and have been around for have been around for several decades. They optimise fuel efficiency and manage ancillary systems by delaying access to MCR, which can at times adversely affect the ship's operational flexibility in a similar way to OPL.

The interplay of low-sulphur fuel oil, and load programs and EPL and ShaPoLi introduces novel challenges. These systems, designed to optimise fuel consumption and reduce emissions, must now also account for the critical need for sufficient power in demanding navigational situations. The balancing act between environmental concerns and navigational safety is more precarious than ever, with the risk of underpowered ships in critical moments posing a significant threat.

What next?

As with everything at sea, the devil is in the details. Crew training, reasonable procedures that limit on-board administration, a clear understanding of who on board has the authority to make decisions about overriding OPL, and companies trusting their Masters and Bridge Teams would go some way towards managing the non-technical issues.

Although the EEXI regulations and OPL are considered an integral part of a more sustainable maritime industry, they create significant challenges for ship manoeuvrability and safety, particularly in pilotage areas. The upcoming IMO review by January 1, 2026, is an opportunity to reassess these regulations and ensure environmental goals do not compromise navigational safety; however, certain changes should be made far sooner.

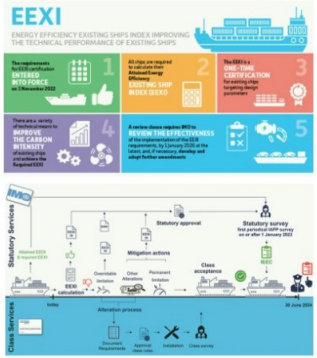
In a submission to MEPC 81, the ICS, IMPA and IHMA proposed a series of changes to the regulations that include:

- making the reserve power immediately available in situations which may endanger the safe navigation of the ship;
- allowing the precautionary un-limiting of the EPL/ ShaPoLi in advance of situations that may endanger the safe navigation of the ship; and
- requiring the pilot card, wheelhouse poster and manoeuvring booklet to show the manoeuvring characteristics both when the ship has full shaft and engine power available, and when it is limited.

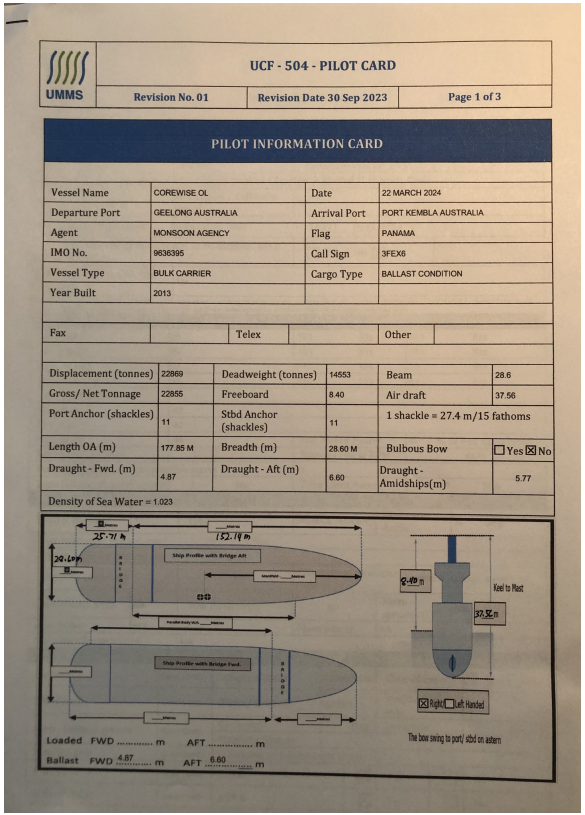
As we transition to a more sustainable future, the maritime industry must find solutions that balance environmental responsibility and navigational safety.

This article is dedicated in honour of our good friend and colleague Captain Sangmin Goag who presented on EEXI and Engine Power Limiters at the AMPI Asia-Pacific 2023 Conference in Perth.

We have been informed that Captain Sangmin sadly passed away in February 2024, we have expressed our collective condolences to his family through the President of the Korean Marine Pilots Association.



Pilot Card amended as per IMO Resolution A.601(15)



UMMS

UCF - 504 - PILOT CARD

Revision No. 01	Revision Date 30 Sep 2023	Page 1 of 3

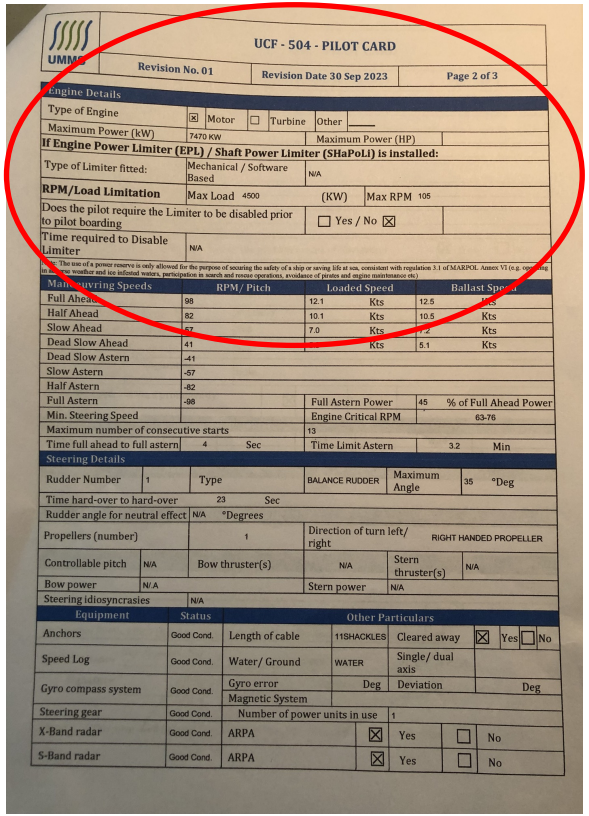
PILOT INFORMATION CARD

Vessel Name	COREWISE OL	Date	22 MARCH 2024
Departure Port	GEELONG AUSTRALIA	Arrival Port	PORT KEMBLA AUSTRALIA
Agent	MONSOON AGENCY	Flag	PANAMA
IMO No.	9636395	Call Sign	3FEX6
Vessel Type	BULK CARRIER	Cargo Type	BALLAST CONDITION
Year Built	2013		

Fax		Telex		Other	

Displacement (tonnes)	22869	Deadweight (tonnes)	14553	Beam	28.6
Gross/ Net Tonnage	22855	Freeboard	8.40	Air draft	37.56
Port Anchor (shackles)	11	Stbd Anchor (shackles)	11	1 shackle = 27.4 m/15 fathoms	
Length OA (m)	177.85 M	Breadth (m)	28.60 M	Bulbous Bow	☐ Yes ☒ No
Draught - Fwd. (m)	4.87	Draught - Aft (m)	6.60	Draught - Amidships(m)	5.77

Density of Sea Water = 1.023



UMMS

UCF - 504 - PILOT CARD

Revision No. 01	Revision Date 30 Sep 2023	Page 2 of 3

Engine Details

Type of Engine	☒ Motor	☐ Turbine	Other ____		
Maximum Power (kW)	7470 KW		Maximum Power (HP)		

If Engine Power Limiter (EPL) / Shaft Power Limiter (SHaPoLi) is installed:

Type of Limiter fitted:	Mechanical / Software Based	N/A		
RPM/Load Limitation	Max Load 4500	(KW)	Max RPM 105	
Does the pilot require the Limiter to be disabled prior to pilot boarding	☐ Yes / No ☒			
Time required to Disable Limiter	N/A			

Note: The use of a power reserve is only allowed for the purpose of securing the safety of a ship or saving life at sea, consistent with regulation 3.1 of MARPOL Annex VI (e.g. operating in adverse weather and ice infested waters, participation in search and rescue operations, avoidance of pirates and engine maintenance etc)

Manoeuvring Speeds	RPM / Pitch	Loaded Speed	Ballast Speed
Full Ahead	98	12.1 Kts	12.5 Kts
Half Ahead	82	10.1 Kts	10.5 Kts
Slow Ahead	67	7.0 Kts	7.2 Kts
Dead Slow Ahead	41	Kts	5.1 Kts
Dead Slow Astern	-41		
Slow Astern	-57		
Half Astern	-82		
Full Astern	-98	Full Astern Power	45 % of Full Ahead Power
Min. Steering Speed		Engine Critical RPM	63-76
Maximum number of consecutive starts		13	
Time full ahead to full astern	4 Sec	Time Limit Astern	3.2 Min

Steering Details

Rudder Number	1	Type	BALANCE RUDDER	Maximum Angle	35 °Deg
Time hard-over to hard-over	23 Sec				
Rudder angle for neutral effect	N/A °Degrees				
Propellers (number)	1	Direction of turn left/ right	RIGHT HANDED PROPELLER		
Controllable pitch	N/A	Bow thruster(s)	N/A	Stern thruster(s)	N/A
Bow power	N/A	Stern power	N/A		
Steering idiosyncrasies	N/A				

Equipment	Status	Other Particulars			
Anchors	Good Cond.	Length of cable	11SHACKLES	Cleared away	☒ Yes ☐ No
Speed Log	Good Cond.	Water/ Ground	WATER	Single/ dual axis	
Gyro compass system	Good Cond.	Gyro error	Deg	Deviation	Deg
		Magnetic System			
Steering gear	Good Cond.	Number of power units in use	1		
X-Band radar	Good Cond.	ARPA	☒ Yes	☐ No	
S-Band radar	Good Cond.	ARPA	☒ Yes	☐ No	

EPL Record of temporary override

Fwd: OYSTER BAY | 48 - De-activation EPL notice - Port Kembla, Australia

Caution: This email originated from outside of the **Wilhelmsen Organization.**

Good day Mr. Igor,

1. Please find attached EPL activation record which kindly forward to PSC and to attending Pilot.
2. The de-activation of the EPL will be carried out prior boarding Pilot, as he may use the vessel maximum speed if he require, Moreover, Master will also verbally mention to Pilot during our Master/Pilot exchange information,

quote
The vessels main engine has an over-ridable engine power limit (EPL) in place restricting the maximum available engine power to satisfy the EEXI (Energy Efficiency Existing Vessels Index) rules. Vessel is at liberty to bypass or over-ride the EPL as per class approved "Onboard Management manual for EPL" (OMM for EPL) under certain conditions and is obliged to report such instances to vessels Flag State via Class as well as Port State Control of arrival port since departure last port.
unquote

Thanks & Brgds,

Capt. Teddy Salas Jr.
MASTER M/V OYSTER BAY

Record of over-riding EPL temporarily

	Voyage (From-To)	Time (UTC) when the Power reserve was used	GPS Position when the Power reserve was used (Lat/ Long))	Ship Speed	Wind Speed (Beaufort number)	Wave Height (m)	Ice condition (Yes/ No)	Reason for using the power reserve	Supporting evidence	Time when the Power reserve was reactivated or replaced/ re-instated.	Position when the Power reserve was reactivated or replaced/ re-instated.	Chief Engineer to confirm data is also available in MOP event Log and inform Ship Manager if not	EPL Limiter value in System after re-instating EPL (kW)	Master (Signature)	Chief Engineer (Signature)
1	TIANJIN, CHINA EVERETT, USA	0820H 07-11-23	Ø48°10.98N X123°17.11W	12.4	3	1	NO	ARRIVAL	PAPERLESS RECORDER	0906H 04/12/23	Ø54°25.4'N X131°28.6'W	YES	1364		
2	PRINCE RUPERT, CA INCHEON, SOUTH KOREA	1437H 25-12-23	Ø37°03.4N X125°14.4E	4.5	2	0.2	NO	ARRIVAL	PAPERLESS RECORDER	0900H 27-12-23	Ø37°17.2'N X126°16.1'E	YES	4876		
3	INCHEON, KOREA LANSHAN, CHINA	0226H 31-12-23	Ø35°04.2'N X119°36.2E	0	Ø	0.5	NO	ARRIVAL	PAPERLESS RECORDER	1323H 05-01-24	Ø35°03.8N X119°43.0E	YES	3122		
4	LANSHAN, CHINA STEWART, CANADA	1556H 23-01-24	Ø54°20.0N X131°27.3'W		2	1.0	NO	ARRIVAL	PAPERLESS RECORDER	0453H 07-02-24	Ø54°20.2'N X131°09.6'W	YES	4730		
5	PRINCE RUPERT, CA LANSHAN, CHINA	1303H 27-02-24	Ø35°21'59"N X119°38'11'E	8.2	3	0.2	NO	ARRIVAL	PAPERLESS RECORDER	1612H 04-03-24	Ø35°3'8"N X120°27'0"E	YES	3854		
6	LANSHAN, CHINA YEOSU, SOUTH KOREA	0900H 06-03-24	Ø34°43.834'N X127°50.182'E	5.6	7.1	1.0	NO	ARRIVAL	PAPERLESS RECORDER	0414H 08-03-24	Ø34°45.58'N X127°48.36E	YES	2457		
7	YEOSU, S. KOREA SOSAKI, JAPAN	0115H 09-03-24	Ø34°01.182'N X130°50.85'E	7.4	3	0.4	NO	TRANSIT JAPAN COAST	PAPERLESS RECORDER	0842H 09-03-24	Ø33°13.263'N X132°01.942'E	YES	3840		
8	YEOSU, S. KOREA SAKI, JAPAN	2146H 10-03-24	Ø33°18.425N X133°18.367'E	6.8	3	0.5	NO	ARRIVAL	PAPERLESS RECORDER	0625H 13-03-24	Ø33°18.061'N X133°17.27'E	YES	4675		
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1. Ship Manager to be informed after the EPL has been put on over-ride and when re-installed
2. Above information on when over-ride, reasons etc. to be also recorded in Deck and Engine Log book
3. To send a copy of this form to Ship Manager every month by email

Thank you


EEXI LOAD
LIMITATION
L.TEST ACTIVE CANCEL
CANCELLED
EXCEEDED
SPEED & TIME TABLE FOR MANUEVERING