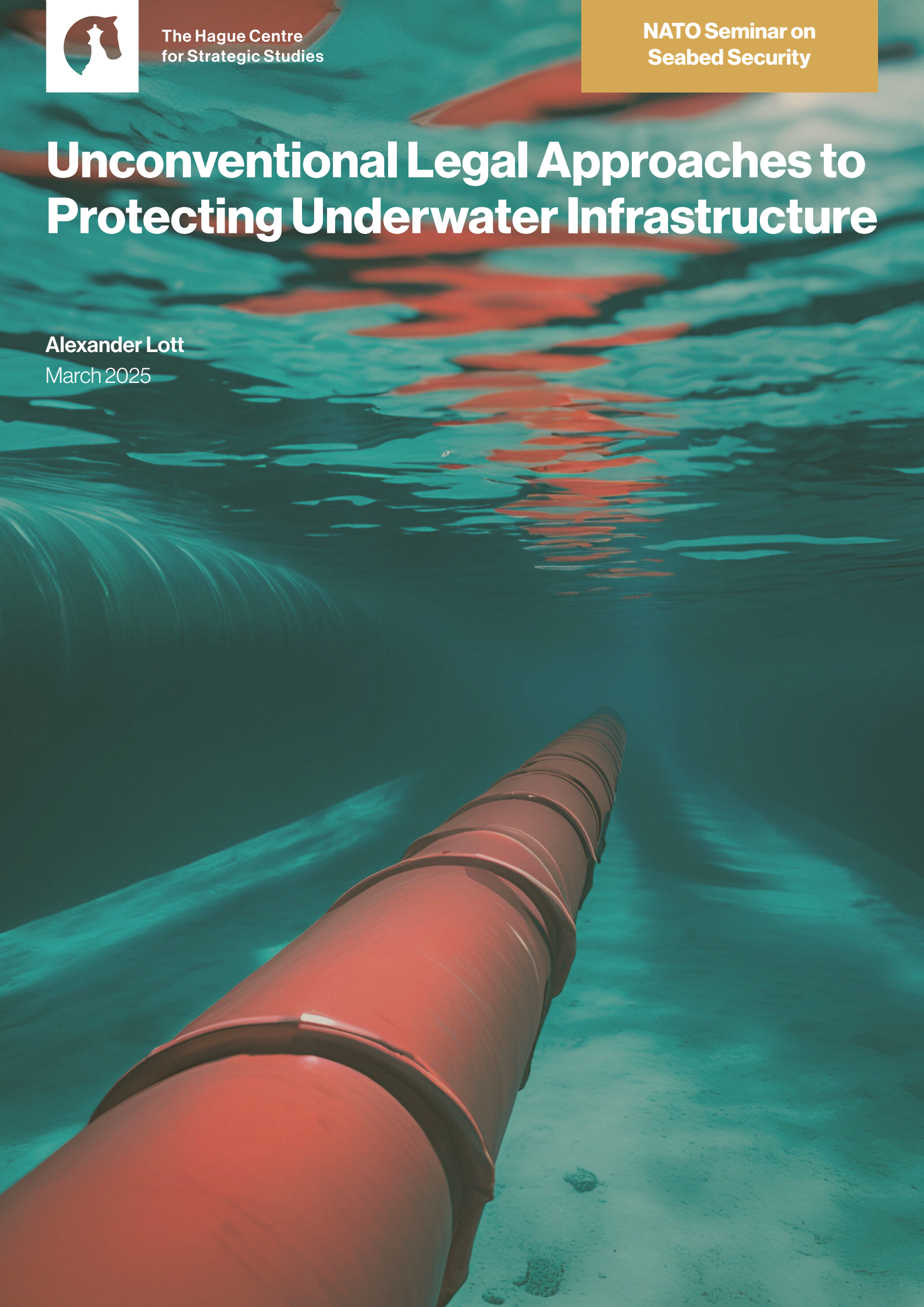

The Hague Centre for Strategic Studies

NATO Seminar on Seabed Security

Unconventional Legal Approaches to Protecting Underwater Infrastructure

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March 2025

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for Strategic Studies

Unconventional Legal Approaches to Protecting Underwater Infrastructure

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Abstract

The international law of the sea grants hardly any protection to underwater infrastructure that is located outside the limits of the territorial sea. The current protection regime of cross-border submarine cables rests mostly on the 1884 Paris Convention. The 1884 Convention enables the limited number of its States Parties to merely check the documents and question the crew of ships flying under their flag for suspected cable cuts. There are no treaty provisions that would explicitly address the protection of submarine pipelines.

In this context, this contribution explores unconventional legal approaches that have the potential to close the security gap regarding the protection of underwater infrastructure based on the peacetime legal framework of maritime law enforcement. Arguably, any effective measures to increase the protection of critical underwater infrastructure would likely somewhat negatively impact the freedom of navigation.

The potential use of measures debated in this study stem from a wide range of legal concepts, including piracy, terrorism, marine environmental protection in relation to pipeline ruptures, universal jurisdiction, plea of necessity, safety zones, the legal regime of straits, and compulsory pilotage. Depending on the political will, these legal concepts can be employed by coastal States in time-critical situations where they need to decide on interdicting a ship suspected of damaging underwater infrastructure in their maritime area.

1. Introduction

The Western societies are much more dependent on maritime connections than their land-based rivals China, Russia, and Iran. For example, the Government of the United Kingdom (UK) notes that: "Approximately 95% of all UK imports and exports by volume are moved by sea and virtually all data entering and leaving the UK travels by subsea cable."[1] A robust legal framework was adopted for the protection of maritime trade under the United Nations Convention on the Law of the Sea (UNCLOS).[2] The UNCLOS ensures the freedom of navigation and its related concepts of the right of transit passage and the right of archipelagic sea lanes passage that apply in international straits and in archipelagic waters.

By contrast, the drafters of the UNCLOS granted hardly any protection to underwater infrastructure. Submarine pipelines and power cables as well as telecommunications cables that carry 95 to 99 percent of intercontinental data flows were left unprotected from intentional or accidental damage. In this context, this contribution seeks to map unconventional legal solutions that might have the potential to close this security gap.

Moreover, practically speaking, submarine cables are difficult to protect against intentional cutting either by means of anchor-dragging commercial ships or specialised military operations. For example, the submarine cables of Norway, Sweden, Finland, the UK, France, Taiwan, and others have repeatedly been cut in recent years, likely by foreign ships in their maritime area. In some cases, such cuts have led to disruptions to the internet and banking services in the affected coastal areas. In other cases, such as the Christmas Day 2024 cable cuts in the Gulf of Finland, they threaten the electricity supply of an entire region and lead to prolonged electricity price hikes for consumers. For example, had Finland not stopped the anchor-dragging oil tanker Eagle S that cut a power cable and many data cables in the Gulf of Finland on the Christmas Day 2024, then the ship would have likely cut the other remaining power cable connecting the Baltic States to Finland, thereby threatening the Baltic States' synchronization with the Continental European electricity grid in February 2025.

Like many other coastal States, the Baltic Sea coastal states are highly dependent on submarine cables for their internet connections. The Nord Stream explosions of September 2022, the Balticconnector incident of October 2023, the C-Lion1 incident of November 2024, and the Christmas Day 2024 cable cuts, followed by the January 2025 Swedish-Latvian cable cut in the Baltic Sea underscore the vulnerability of Western States to intentional damage caused to their critical offshore infrastructure. In 2023, a Chinese bulker carrier dragged its anchor along the seafloor of the Gulf of Finland for close to 200 km, damaging a Baltic Sea gas pipeline. The suspiciously analogous acts by foreign commercial ships in November 2024, the Christmas Day 2024, January 2025, and February 2025 demonstrate how foreign adversaries may collect valuable intelligence on the resilience of Baltic offshore infrastructure.[3]

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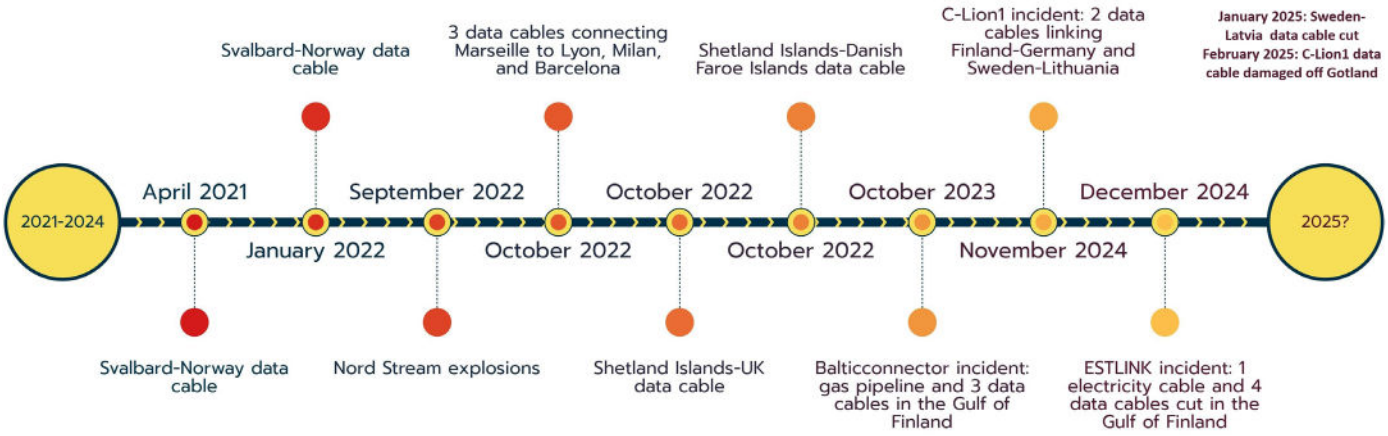
1 Gov.uk, 'Embracing the ocean: a Board of Trade paper', *UK Government Home Page*, 10 March 2022.

2 United Nations Convention on the Law of the Sea (opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3.

3 Isabella Kwai, Christina Anderson, Johanna Lemola, 'Europe Vows to Step Up Baltic Sea Security After a New Cable Break' The New York Times, 21 February 2025.

Figure 1. Timeline of cable cuts and pipeline damages in Europe 2021-2024 (own work, Infografix software)



The dragging of the anchor proves that some objects can be effectively damaged by more primitive means, whereas sometimes more specialised equipment is required (e.g., the Russian special force on underwater warfare). Such information can then be used to cut off the energy and telecommunications connections of a particular region (e.g., the partly enclaved Baltics or Taiwan) either in hybrid warfare or for enforcing a blockade.

In these incidents, sabotage cannot be excluded.[4] But this paper is limited to examining the potential legal basis for interdicting commercial ships based on the peacetime legal framework of maritime law enforcement.

[4] On the meaning of sabotage, see John Tramazzo, 'Sabotage in Law: Meaning and Misunderstandings', *Articles of War*, 23 June 2023. On the application of sabotage in respect of the Nord Stream explosions, see Alexander Lott, 'The Protection of Critical Undersea Infrastructure within and beyond the Limits of the Territorial Sea under the Jus ad Bellum and Jus in Bello', in Alexander Lott (ed.), *Maritime Security Law in Hybrid Warfare* (Leiden/Boston: Brill/Nijhoff, 2024), 125–154.

2. The Legal Loopholes

The UNCLOS, widely considered as the Constitution of the Oceans, left certain areas of the law of the sea loosely regulated. One such area is the protection of critical offshore infrastructure outside the limits of the territorial sea. According to the dominant view, Article 113 of UNCLOS, which regulates the breaking or injury of a submarine cable or pipeline, does not provide for universal jurisdiction. Criminal jurisdiction can be implemented by the relevant coastal State, and only if the cable is damaged by a national of the coastal State or a ship flying its flag.[5]

At the time of the drafting and adoption of the UNCLOS (1973-1982), the use of the internet was mostly a privilege of a few government and university employees. By the time the UNCLOS entered into force (1994), the internet was gradually becoming the cornerstone of everyday life in Western societies, supported by the massive laying of submarine telecommunications cables on the seafloor. Apparently, the drafters of UNCLOS did not anticipate such a landslide societal change. By now, these cables serve as the lifelines of our contemporary internet-based world economy.

The current protection regime of inter-continental submarine cables rests mostly on Article 10 of the 1884 Paris Convention.[6] The United States considers Article 10 to reflect customary international law.[7] It is unclear if the European states would be interested in adopting a similar position.

Article 10 of the 1884 Paris Convention might enable the coastal State to board a commercial ship suspected of damaging a submarine cable if it reflects customary international law. The customary law-status would ultimately be for a court or tribunal to decide. Alternatively, based on the literal interpretation of Article 10, an argument might be made that boarding and questioning the crew can be enforced by a coastal State party to the treaty against a flag State that is not party to the treaty.[8] But given the unclear legal status of this provision and very limited State practice in its implementation, it is unlikely that any European coastal State is currently interested in testing the limits of Article 10 of the 1884 Paris Convention against a commercial ship flagged under a State not party to the 1884 Convention, especially given that boarding authorities would be only entitled to check the ship's documents and question the crew.

Robert Beckman has concluded that "[i]t is evident ... that there are serious security gaps in the current legal regime and that neither the 1884 Cable Convention nor UNCLOS adequately address the issue of intentional damage caused to submarine cables".[9] Beckman has stressed the need for a new global treaty on the protection of submarine cables "wherever the act took place, whatever the nationality of the perpetrator, and regardless of their motive or purpose" to close the current gaps in the legal framework.[10] However, in the foreseeable future, it is rather unlikely that States would reach common political will to conclude such a treaty.

What additional legal basis could permit the coastal State's enforcement measures against a ship suspected of damaging submarine cables?

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5 International Law Association, 'Submarine Cables and Pipelines under International Law: Third Interim Report 2024', 16.

6 Convention for the Protection of Submarine Telegraph Cables (adopted 14 March 1884, entered into force 1 May 1888).

7 ILA 2024 Report, 16.

8 Efthymios Papastavridis, *The Interception of Vessels on the High Seas, Contemporary Challenges to the Legal Order of the Oceans* (Oxford: Hart, 2013), 34.

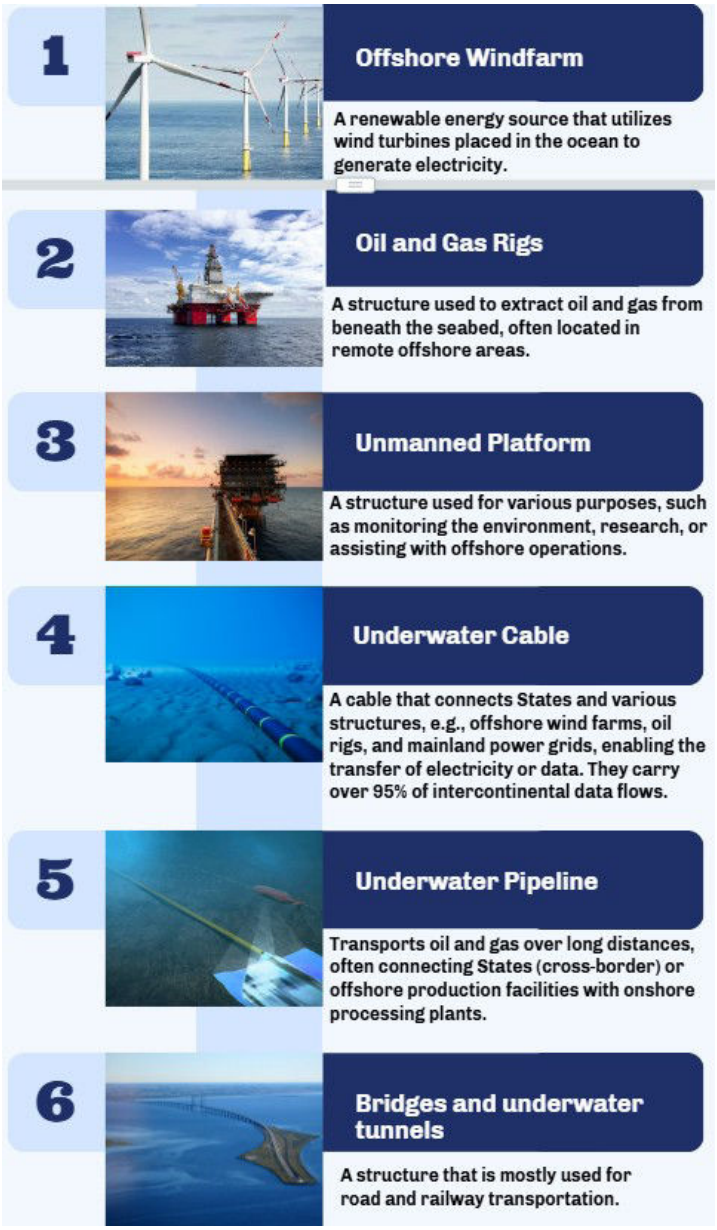
9 Robert Beckman, 'Protecting Submarine Cables from Intentional Damage', in David Burnett, Tara Davenport, and Robert Beckman (eds.), *Submarine Cables – The Handbook of Law and Policy* (Leiden/Boston: Brill, 2013), 289. On the security gap, see also, e.g., Tara Davenport, 'The protection of submarine cables in Southeast Asia: The security gap and challenges and opportunities for regional cooperation', *Marine Policy* 171 (2024), 6.

10 Beckam, 'Protecting Submarine Cables from Intentional Damage', 288.

3. Safety Zones

First, I have proposed elsewhere[11] that States could reconsider interpreting the UNCLOS in a way that it does not prohibit the establishment of safety zones around cross-border submarine cables and pipelines in the exclusive economic zone (EEZ).

Figure 2. Potential application of safety zones to protecting offshore infrastructure (own work, Piktochart software)



[11] See Lott, 'The Protection of Critical Undersea Infrastructure...', 129–136.

According to the dominant view, it is permitted to establish safety zones around and above such subsea facilities as artificial islands, installations and structures, whereas submarine cables and pipelines are excluded from the scope of Article 60(4) of the UNCLOS. For example, the 2024 report of the International Law Association's (ILA) Committee on Submarine Cables and Pipelines found that safety zones are not permitted around cables and pipelines as they do not qualify under the definition of installations and structures.[12]

Nonetheless, Denmark,[13] New Zealand,[14] and Australia[15] seem to use safety zones around submarine cables and pipelines also in the EEZ. Notably, though, the relevant sections of the Australian legislation have been amended to have limited application to foreign nationals and foreign-flagged ships.[16]

In the case of pipelines, one could argue that the enforcement of coastal State laws in response to a pipeline rupture that causes pollution to the marine environment is supported by the textual reading of the UNCLOS (Arts. 56(1)(b)(iii), 79(2) and 221 in combination with Art. 111(2)). In response to a pipeline rupture, the coastal State may commence the hot pursuit within an unspecified, but reasonable time. In this context, the establishment of a safety zone around submarine pipelines in the EEZ might not be legally relevant. It would rather serve as a deterrence as it would indicate the coastal State's determination to interdict a ship that has damaged a pipeline in its EEZ.

By contrast, the establishment of safety zones around cross-border submarine cables would call for a different and more dynamic interpretation of the international law to close the security gap in the EEZ. In practice, the coastal State's enforcement measures would be used in exceptional cases and only in relation to ships that are suspected of damaging critical offshore infrastructure. Thus, they would not have a negative impact on the freedom of navigation of ships that do not drag their anchor or trawl in the area around a cross-border submarine cable. Therefore, the potential legal bases for such enforcement measures are discussed next.

12 ILA 2024 Report, 22-23.

13 Denmark's Order no. 939 of 27 November 1992 on the protection of submarine cables and submarine pipelines. Offshore Safety Act (Act no. 125) of 6 February 2018.

14 New Zealand's Submarine Cables and Pipelines Protection Act 1996, Public Act 1996 No. 22, Section 12.

15 Australia's Telecommunications Legislation Amendment (Submarine Protection) Bill 2013, Sections 3a, 36–38, 44A.

16 See Holly Elizabeth Matley, 'Closing the gaps in the regulation of submarine cables: lessons from the Australian experience', *Australian Journal of Maritime & Ocean Affairs* 11, no. 3 (2019), 165-184.

4. Environmental Protection, Plea of Necessity, Piracy, Terrorism

If an act against critical offshore infrastructure constitutes a hybrid attack, then the entire operation targets the so-called legal loopholes identified above. To create deterrence and legal resilience against such operations, the coastal State should be ready to implement enforcement measures against the suspected ship even if it results in creating a precedent that would be subject of an assessment by a court or tribunal.[17]

For example, the coastal State may use her right of hot pursuit against a ship that has caused an oil spill or gas leakage because its anchor has damaged a submarine pipeline (Arts. 79(2) and 221 in combination with Art. 111(2) UNCLOS) on the grounds of protecting and preserving of the marine environment (Art. UNCLOS). But a similar right does not exist in relation to submarine cables that a ship damages. This is because the breaking or damaging of a cable does not cause marine environmental pollution.

In the *Arctic Sunrise* case, the Annex VII Arbitral Tribunal demonstrated its willingness to consider potential legal bases for Russia's law enforcement measures beyond the scope of the UNCLOS and based on general international law.[18] In this context, coastal States may consider taking enforcement measures against suspected foreign ships based on the customary law of the plea of necessity.[19]

Complementary legal bases for coastal States to act in response to damage to critical offshore infrastructure outside the territorial sea might stem from the concepts of piracy (Art. 101, UNCLOS) and terrorism. However, when applied in practice, they also have significant limitations.

The Annex VII Arbitral Tribunal found in the *Arctic Sunrise* case that "[a]n essential requirement of Article 101 is that the act of piracy be directed 'against another ship'".[20] Nonetheless, Article 101(a)(ii) of UNCLOS still clearly stipulates that piracy consists of acts against property in a place outside the jurisdiction of any State. Submarine cables meet the definition of property, and they are mostly located outside the jurisdiction of any State. Thus, the concept of piracy could, in principle, be interpreted dynamically.[21]

However, the provision also stipulates that piracy needs to include the following elements: "any illegal acts of violence or detention, or any act of depredation, committed for private ends". It might be more difficult to meet these criteria, since the damaging of submarine cables and pipelines is mostly not committed for private ends, even if it might be considered an act of violence. In the context of hybrid warfare at sea, States rather than private actors benefit from the breaking or damaging of critical offshore infrastructure of their perceived adversaries.

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17 Henrik Ringbom, 'Tuhoista epäiltyihin aluksiin olisi voitava puuttua, sanoo professori: "Uuden uhan valossa pitää tehdä uusia tulkintoja"', *Helsingin Sanomat*, 21 November 2024.

18 Annex VII Arbitral Tribunal, Arctic Sunrise Arbitration (the Netherlands v. the Russian Federation), Award of 14 August 2015, para. 235.

19 Article 25 of the Draft Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries, 2001, UN GA A/56/10, 2001; in the context of the Balticconnector incident, see the discussion in Henrik Ringbom and Alexander Lott, 'Sabotage of Critical Offshore Infrastructure: A Case Study of the Balticconnector Incident', in Lott (ed.), 186-187.

20 Arctic Sunrise Arbitration, Award of 14 August 2015, para 238.

21 See ILA 2024 Report, 17; Jacques Hartmann, 'Piracy and Undersea Cables: An Overlooked Interpretation of UNCLOS?' EJIL: Talk!, 6 March 2025.

Yet if the coastal State has information that the suspected ship's crew members might have been paid for damaging property in the EEZ or on the high seas by anchor-dragging, then this could bring their actions under the definition of piracy. This would grant the coastal State universal jurisdiction for interdicting the ship. Nonetheless, this matter is complicated by the fact that when conducting hybrid operations, States tend to seek to maintain plausible deniability for their involvement in the operations to avoid their responsibility for internationally wrongful acts. To overcome this problem, it might be possible to assert the right of seizure under Articles 101(a)(ii), 103, and 105 of UNCLOS by entirely disregarding the subjective element of the crew members and by simply interpreting the private ends requirement as one opposed to public ends. Yet this could have unintended consequences. For example, it would bring within the scope of piracy ordinary fishermen on board trawlers that cause most accidental cable cuts globally.

Under the Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA) and its 2005 Protocol, an offence includes the discharge of explosives from a ship or the use of a ship in a manner that causes death or serious injury or damage.[22] However, the coastal State cannot board the suspected ship without the express authorization of the flag State (Art. 8bis(5)(c) of the SUA Protocol). Similar limitations apply under the Convention for the Suppression of Terrorist Bombings.[23]

Yet in the *Arctic Sunrise* case, the Annex VII Arbitral Tribunal indicated that it might be lawful for the coastal State to take additional preventive enforcement measures in the EEZ against a suspected terrorist attack:

> One of the rights of a coastal State in its EEZ that may justify some form of preventive action against a vessel would derive from circumstances that give rise to a reasonable belief that the vessel may be involved in a terrorist attack on an installation or structure of the coastal State. Such an attack, if allowed to occur, would involve a direct interference with the exercise by the coastal State of its sovereign rights to exploit the non-living resources of its seabed. It is not, however, necessary for this Tribunal to determine the extent of any power to take such preventive action. This is because on the facts here there was no reasonable basis for Russia to suspect that the *Arctic Sunrise* was engaged in or likely to engage in terrorist acts.[24]

In the EEZ, coastal States can also make a more proactive and coordinated use of the possibility to board ships suspected of intentionally damaging submarine cables based on the captain's consent for the verification of the ship's documents and cargo. The U.S. *Commander's Handbook on the Law of Naval Operations* makes it clear that this practice is well-rooted in international law.[25] But this would have a rather limited effect, since this right does not permit the coastal State to inspect the vessel nor adopt additional enforcement measures. Furthermore, presumably only a handful of suspected ship captains would be willing to provide such consent.

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22 Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf (adopted 10 March 1988, entered into force 1 March 1992; Protocols adopted 14 October 2005, entered into force 28 July 2010), Art 3bis(1)(a)(i)(iii).

23 International Convention for the Suppression of Terrorist Bombings (adopted 15 December 1997, entered into force 23 May 2001) 2149 UNTS 256. See also the ILA 2024 Report, 52.

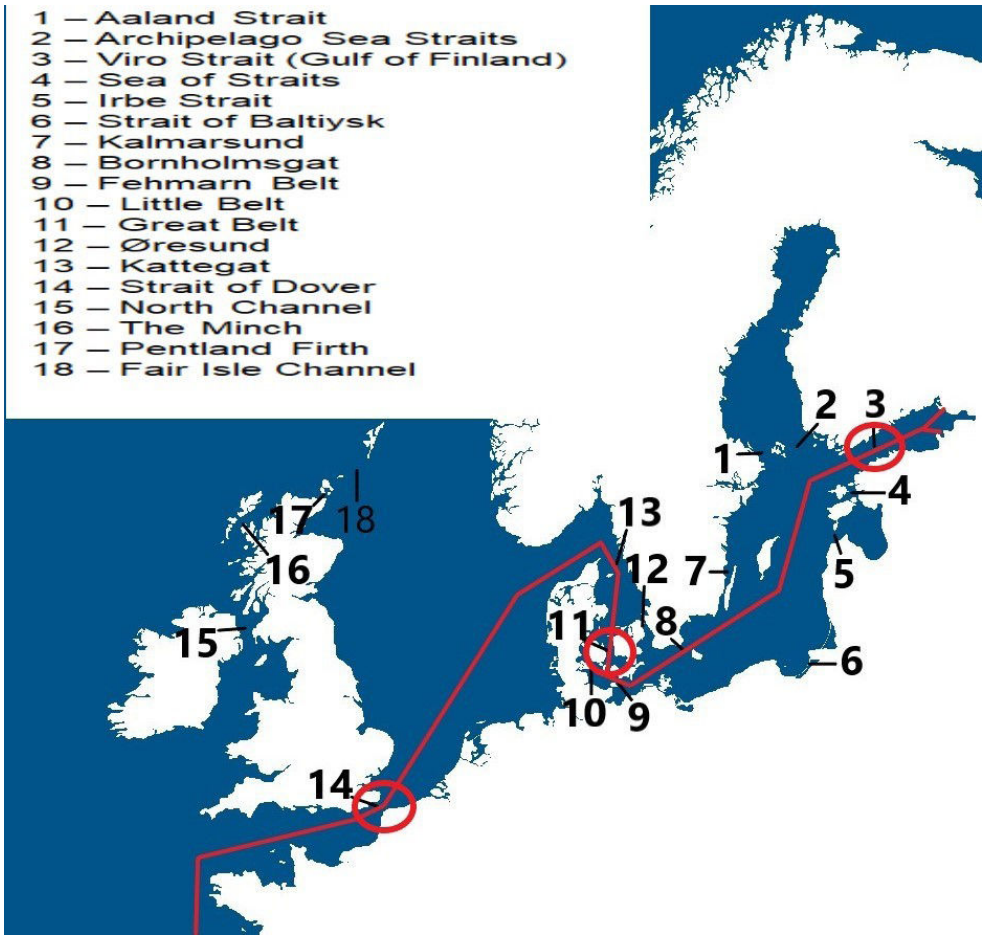
24 Arctic Sunrise Arbitration, Award of 14 August 2015, para. 314.

25 *The Commander's Handbook on the Law of Naval Operations* (Norfolk: US Navy, US Marine Corps, US Coast Guard, 2022), 4-7. See also the discussion in Martin Fink, 'The Right of Visit for Warships: Some Challenges in Applying the Law of Maritime Interdiction on the High Seas', *Military Law and Law of War Review* 49, no. 1-2 (2010), 34-35.

5. The Special Circumstances of the Legal Regime of International Straits

In addition to the previously discussed claim of necessity, the potentially most effective legal basis for adopting enforcement measures against ships suspected of damaging submarine cables in semi-enclosed seas might stem from the legal regime of straits under Part III of the UNCLOS. In the Baltic Sea context, the legal regime of straits is more nuanced because of the long-standing treaty applicable to the Danish Straits. Is Denmark entitled to enforce its domestic laws in the Great Belt or Øresund against a ship suspected of having damaged critical offshore infrastructure in the Baltic Sea?

Figure 3. The Russian Shadow Fleet's Route to/from the Atlantic (own work, basemap Marineregions.org, 2010)



The key question here is how to interpret the 1857 Copenhagen Convention. Article I(1) stipulates that: "No ship for the future shall under any pretext whatsoever be seized or subjected to any stoppage on its way through the Sound and the Belts."[26] Erik Brüel concluded in his seminal monograph on international straits that "it seems illogical to say that it prevents Denmark carrying out civil arrests".[27]

Thus, it can be argued that Denmark has a limited control over commercial ships transiting through the Danish Straits under the 1857 Copenhagen Convention and Article 35(c) of UNCLOS. In the *Case Concerning Passage Through the Great Belt* before the International Court of Justice, Denmark maintained (and Finland appeared to concur) that, in general, the right of (strait-specific non-suspendable) innocent passage applies to the Great Belt.[28]

The question thus arises whether the Copenhagen Convention excludes Danish enforcement measures against non-innocent passage in the Belts or Øresund?

Brüel writes that:

> What the treaty prevents are measures which force *all* vessels to stop, especially those which have no connection whatever with the land but are merely passing by. The right to make arrests, even apart from the fact that the question will hardly arise in one out of 10,000 ships, affords no opportunity for evading the provisions of the treaty: It therefore seems compatible with the principle of the freedom of passage which is laid down in the treaty.[29]

Brüel concludes that "Denmark should be recognised as possessing a right to make civil arrests on board vessels which are passing through".[30] If a civil arrest that depends on civil law claims over a particular ship is possible in the Danish Straits, then Denmark and Sweden might also be entitled to enforce their laws against a ship that has violated the rules of innocent passage in the Great Belt or Øresund.

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26 Treaty between Great Britain, Austria, Belgium, France, Hanover, Mecklenburg-Schwerin, Oldenburg, Netherlands, Prussia, Russia, Sweden and Norway, and the Hanse Towns, on the one part, and Denmark, on the other part, for the Redemption of the Sound Dues (adopted 14 March 1857, entered into force 31 March 1857). United Nations Treaty Collection, United Nations Convention on the Law of the Sea: Declarations made upon signature, ratification, accession or succession or anytime thereafter, Denmark's declaration upon the ratification of the UNCLOS on 16 November 2004; Sweden's declaration upon signing the UNCLOS on 10 December 1982 and ratifying it on 25 June 1996. Both available at https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en#EndDec.

27 Erik Brüel, *International Straits. A Treatise on International Law, vol. II. Straits Comprised by Positive Regulations* (London: Sweet & Maxwell, 1947), 44.

28 Denmark's Counter-Memorial in the Passage through the Great Belt Case (Finland v. Denmark) Copenhagen: Government of the Kingdom of Denmark 1992, 3ff. UNCLOS Art. 45.

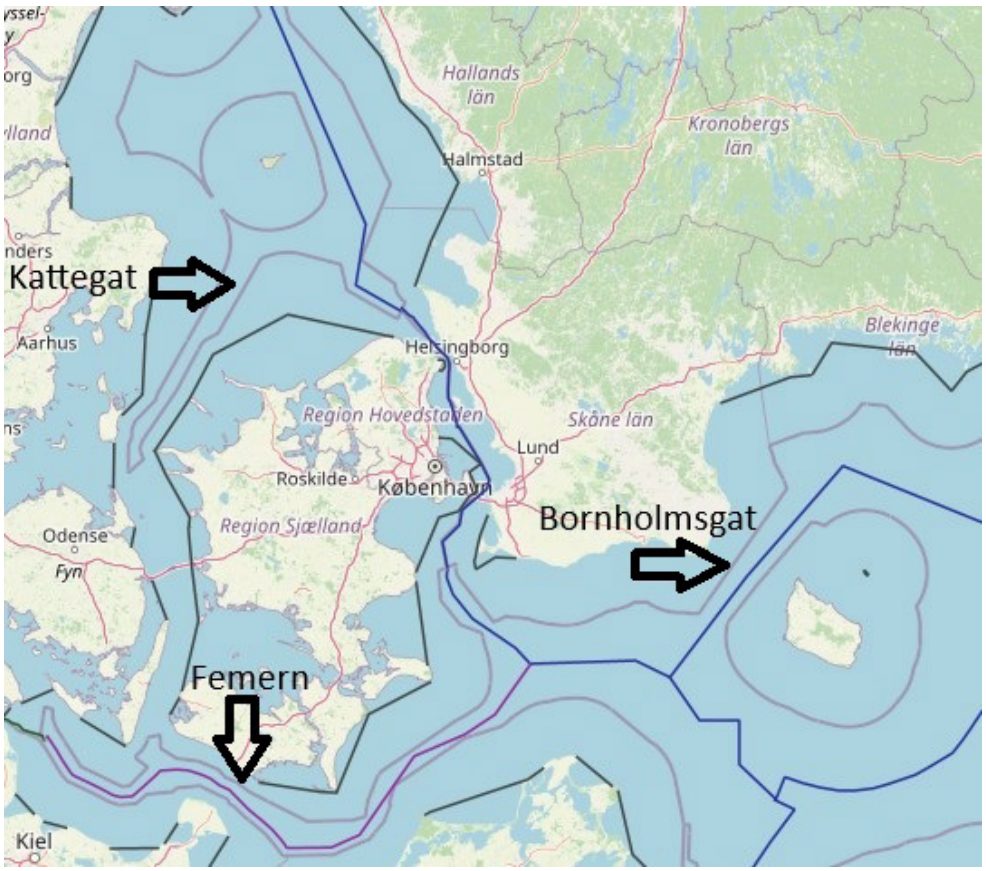
29 Brüel, *International Straits*, 44-45.

30 Ibid, 45.

6. The Abolition of Voluntarily Established EEZ Corridors in International Straits?

In any event, the Great Belt and Øresund are not the only straits that commercial ships need to use on their long journey to or from the Russian Baltic Sea ports. The southern Baltic strait States Denmark, Sweden, and Germany have established EEZ corridors so-to-say artificially, by way of limiting under their domestic laws the outer extent of their territorial sea in the Kattegat and Femern straits and Bornholmsgat. Those straits would be otherwise located entirely within the limits of the territorial sea. An EEZ corridor has been also established by Estonia and Finland in the Gulf of Finland (the Viro Strait[31]). The Viro Strait bears strategic importance as it allows Russia's aircraft and ships to navigate freely between the Russian mainland and the Kaliningrad exclave without crossing any neighbouring State's territory.

Figure 4. EEZ Corridors in the Kattegat, Femern, Bornholmsgat (base map: OpenStreetMap)



[31] On the popular use of the term 'Viro Strait' elsewhere, see Patrick Wintour, 'UK and Finland discuss further efforts to stop Russia's shadow oil fleet', *The Guardian*, 21 May 2024; Stephen J. Thorne, 'Russia's shadow tanker fleet skirts sanctions, fuels war—and more', *Legion*, 22 May 2024.

If these EEZ corridors would be abolished, then navigation through these straits would not be subject of the right of innocent passage. Instead, the right of transit passage would apply. This would bring about significant negative consequences to the coastal States. If the right of transit passage would apply to the relevant straits because of the abolishment of the EEZ corridors, then the Russian military aircraft would have a larger room of manoeuvre in the area. For example, they could possibly lawfully fly over the Viro Strait just a couple of kilometres from Helsinki or Tallinn. Currently, foreign aircraft cannot enter the sovereign airspace over these strait States without prior permission. Similarly, the Russian warships, including submarines could cross the strait in the vicinity of the capitals if the current passage regime in the Viro Strait would be abolished, likely leading to the applicability of the transit passage regime.

For such reasons, the Danish, Swedish, German, Finnish, and Estonian practice in establishing EEZ corridors in their less than 24-NM-wide straits is a reasonable one. It limits the spatial extent of the strait States' sovereign maritime area. But in many respects, it increases the maritime space over which they functionally exercise sovereignty. This means that the coastal State exercises control over its sovereign airspace and territorial sea. There cannot be any unconsented-to overflights by foreign aircraft and a coastal State is allowed to employ defensive measures against the incursions of submarines, for example by using depth charges.

Nonetheless, the question remains if the abolishment of an EEZ corridor in an international strait would increase the range of enforcement measures that a Baltic Sea coastal State could adopt against a ship suspected of intentionally damaging offshore infrastructure? In my view, the answer to this question is affirmative. The abolishment of an EEZ corridor would increase the coastal State's enforcement rights in the area against foreign-flagged ships.

States bordering straits are required not to hamper the right of transit passage (Art 44 of UNCLOS) and are allowed to exercise their jurisdiction only to a very limited extent over ships and aircraft entitled to the right of transit passage (see Art 42 of UNCLOS). However, Article 233 of UNCLOS provides that if a foreign commercial ship has committed a violation of the laws and regulations of the coastal State relating to the safety of navigation or the regulation of maritime traffic in the strait, causing or threatening major damage to the marine environment of the strait, then the strait States may take appropriate enforcement measures. Most authorities (Virginia Commentaries,[32] Alexander Proelss' commentaries,[33] Hugo Caminos[34]) agree that the wording of Article 233 of the UNCLOS enables the coastal State to take enforcement measures against a ship in response to a threat of major environmental damage. Consequently, the ship could be boarded, inspected, and, if necessary, arrested by the coastal State's authorities pursuant to Article 233 of the UNCLOS.

In the context of anchor-dragging ships belonging to the sanctions-busting Russian shadow fleet, the relatively recent State practice of the UK potentially bears relevance. In July 2019, the British Overseas Territory of Gibraltar's 3-NM-wide territorial sea was the site of a UK enforcement operation that involved the boarding by the UK Royal Marines and Gibraltar law enforcement officials of a Panama-flagged Iranian oil tanker Grace 1.[35] The tanker Grace 1 carried approximately 2 million barrels of Iranian oil to Syria in breach of the sanctions.

32 Myron H. Nordquist, Neal R. Grandy, Shabtai Rosenne, Alexander Yankov (eds), *United Nations Convention on the Law of the Sea, 1982: A Commentary. Articles 192 to 278, Final act, Annex 6* [Volume 4] (Leiden: Brill/Nijhoff, 1990), 390-391.

33 Vasco Becker-Weinberg, 'Article 233', in Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: a commentary* (Munich: C.H. Beck/Hart/Nomos, 2017), 1565-1566.

34 Hugo Caminos, Vincent P. Cogliati-Bantz, *The Legal Regime of Straits: Contemporary Challenges and Solutions* (Cambridge: Cambridge University Press, 2014), 286-287. For a different view, see, e.g., Jon M Van Dyke, 'Rights and Responsibilities of Straits States', in David D. Caron, Nilüfer Oral (eds.), *Navigating Straits: Challenges for International Law* (Leiden/Boston: Brill/Martinus Nijhoff, 2014), 40–41.

35 See, e.g., 'Iran oil tanker: Gibraltar orders release of Grace 1' *BBC*, 15 August 2019.

It was detained in the Strait of Gibraltar that is subject to the regime of transit passage. Gibraltar's law enforcement authorities launched investigations which confirmed that at the time of its detention the Grace 1 was carrying oil to Syria. This was regarded as a violation of the EU sanctions on Syria and, from the UK perspective, might have amounted to a breach of the right of innocent passage or transit passage. Grace 1 was released over a month later, in August 2019, on the condition that she will not travel to Syria which both the captain of the ship and the flag State confirmed.

According to the strait-specific Article 233 of the UNCLOS, it is not a precondition for taking enforcement measures against a foreign ship in transit passage that environmental damage has already occurred. By contrast, absent of the oil spill or gas leakage, it appears that this is not possible under Article 220 that is applicable in the EEZ. Therefore, the wording of Article 233 is much more flexible than that of Article 220.

It seems to me that, should an EEZ corridor be abolished, then under Article 233 of UNCLOS, the coastal State may board, inspect, and, if necessary, seize a foreign ship caught dragging its anchor, if it threatens to, for example, damage the Balticconnector pipeline in the Gulf of Finland.[36] There is no clear time limit set for preventive action, so it is possible to respond in a timely manner, thereby also preventing cable cuts in, for example, the Gulf of Finland.

[36] For a more nuanced SWOT analysis of the potential abolishment of the EEZ corridor in the Gulf of Finland, see Alexander Lott, 'Mida tooks territoriaalmere piiri laiendamine Soome lahes?' *ERR* (14 February 2025).

7. Compulsory Pilotage in International Straits?

In addition, it should be noted that, in 2005, the International Maritime Organization (IMO) recognized both the Baltic Sea and the Torres Strait as particularly sensitive sea areas.[37] This begs the question that has not been discussed so far, namely, in the rather unlikely event of the potential abolishment of the EEZ corridor in the Gulf of Finland, could Estonia and Finland follow the example of Australia that established compulsory pilotage in the Torres Strait or Italy that established compulsory pilotage in the Strait of Messina? Australia established compulsory pilotage in the Torres Strait in 2006,[38] following the IMO's support to a voluntary pilotage in the Torre Strait and the Great Barrier Reef areas.[39] Practically speaking, the previous maritime casualties, severe winter navigation conditions, and busy maritime traffic in the Gulf of Finland point to the direction that there would be some merit in such a proposal.

Figure 5. Overlapping Territorial Sea in the Gulf of Finland if the EEZ Corridor is Abolished (base map: MarineRegions.org)

37 See the International Maritime Organization homepage, 'List of adopted PSSAs'.

38 Australian Maritime Safety Authority, 'Marine order 54—Coastal pilotage: Guidance for coastal pilots and vessels requiring a coastal pilot'. See also Donald R. Rothwell, 'International Straits', in Donald R. Rothwell, Alex G. Oude Elferink, Karen N. Scott, Tim Stephens (eds.), *The Oxford Handbook of the Law of the Sea* (Oxford: Oxford University Press, 2015), 130.

39 IMO Resolution MEPC.133(53) adopted on 22 July 2005 and see IMO Document MEPC53/24/Add.2.

Compulsory pilotage in the Torres Strait is controversial. For example, Stuart Kaye found in 1997 that the proposals to establish such a system in the Torres Strait are not in conformity with the right of transit passage and, in particular, Article 44 of the UNCLOS.[40] Robert Beckman concludes that this system violates the right of transit passage in the Torres Strait and also contravenes the IMO's 2005 above-referred resolution.[41] The United States and Singapore have protested against the establishment of compulsory pilotage in the Torres Strait, but, in practice, ships have complied with the system, at least partly because they would otherwise lose their right to enter Australia's ports. [42]

However, the establishment of compulsory pilotage in the Gulf of Finland would have to be preceded by the abolishment of the EEZ corridor in the area. It would create new opportunities for conducting hybrid operations against Estonia and Finland. This would be the case even if Estonia and Finland would, hypothetically, not recognise the applicability of the right of transit passage in the area as a result of the abolishment of the EEZ corridor, for example, due to the small size of the Russian EEZ north of Gogland Island and given that most ships and aircraft do not use it on their journey to or from the Russian territory. In any event, Russia could voluntarily limit the outer extent of its territorial sea in the Gulf of Finland to create a larger EEZ in the area.

Instead, Estonia and Finland might argue in favour of the applicability of the right of non-suspendable innocent passage in the area (Art 45(2) of the UNCLOS), thereby likely paving the way for the applicability of conflict-prone parallel passage regimes in the strait. In the latter case, Estonia and Finland could follow the example of Italy that imposed, in 1985, compulsory pilotage in the Strait of Messina where the right of non-suspendable innocent passage applies.[43]

The compulsory pilotage would also have to be approved first by the IMO. For a number of reasons, this is unlikely to happen. Yet, at least in theory, by way of implementing compulsory pilotage based on the port State jurisdiction, Estonia and Finland could essentially avoid the anchor-dragging of foreign-flagged ships in the Gulf of Finland. It would be possible to follow the Australian practice to the extent that ships not complying with a hypothetical compulsory pilotage in the Gulf of Finland would lose their right of access to the Finnish and Estonian ports, but potentially also to the ports of other European Union Member States. In essence, this might enable to replace the current extensive national and NATO naval operations (e.g., the Baltic Sentry) in the area with a pilotage mission.

Could the hypothetical establishment of compulsory pilotage be used as a pretext for imposing similar navigational restrictions by Russia, China, and Iran in their maritime areas? Russia, in any case, restricts passage rights in the Northern Sea Route based on Article 234

40 Stuart B. Kaye, *The Torre Strait* (Dordrecht: Kluwer/Nijhoff, 1997), 85.

41 Robert C. Beckman, 'PSSAs and Transit Passage—Australia's Pilotage System in the Torres Strait Challenges the IMO and UNCLOS', *Ocean Development & International Law* 38 (2007), 351-2.

42 See, e.g., Sam Bateman, Michael White, 'Compulsory Pilotage in the Torres Strait: Overcoming Unacceptable Risks to a Sensitive Marine Environment', *Ocean Development & International Law* 40 (2009), 184-203.

43 Caminos and Cogliati-Bantz, *The Legal Regime of Straits*, 53. See also Jan Jakub Solski, 'The 'Due Regard' of Article 234 of UNCLOS: Lessons From Regulating Innocent Passage in the Territorial Sea', *Ocean Development & International Law* 52, no. 4 (2021), 412.

of the UNCLOS,[44] in the Kerch Strait,[45] as well as in its territorial sea in the Gulf of Finland.[46] China's maritime area does not include any significant straits that would be subject to the regime of transit passage or non-suspendable innocent passage. Imposing compulsory pilotage in the wide EEZ of the Taiwan Strait is not possible, since, unlike the voluntarily established EEZ corridors in the Baltic Sea straits, the Taiwan Strait is much wider than 24 nautical miles as measured from the Chinese and Taiwanese straight baselines.

Iran has not indicated any interest in following Australia's or Italy's example by way of establishing compulsory pilotage in the Strait of Hormuz.[47] There is no reason to believe that a hypothetical compulsory pilotage in the Gulf of Finland would change that state of affairs. In any case, the compulsory pilotage would be based on port State jurisdiction. Different from the situation in the Baltic Sea, the Mediterranean Sea, and the Torres Strait in which case ships sailing in the area are at least generally interested in visiting, at some point of time, the European and Australian ports, the closure of Iranian ports to those ships that do not comply with compulsory pilotage in the Strait of Hormuz would presumably have a minimal effect on maritime commerce.

44 See Jan Jakub Solski, 'The Northern Sea Route in the 2010s: Development and Implementation of Relevant Law', *Arctic Review on Law and Politics* 11 (2020), 383–410.

45 Alexander Lott, 'The Passage Regimes of the Kerch Strait—To Each Their Own?', *Ocean Development & International Law* 52, no. 1 (2021), 64-92.

46 Alexander Lott, 'The (In)applicability of the Right of Innocent Passage in the Gulf of Finland – Russia's Return to a Mare Clausum?', *The International Journal of Marine and Coastal Law* 36 (2021), 241-262.

47 On the regime of navigation in the Strait of Hormuz, see, e.g. Alexander Lott and Shin Kawagishi, 'The Legal Regime of the Strait of Hormuz and Attacks Against Oil Tankers: Law of the Sea and Law on the Use of Force Perspectives', *Ocean Development & International Law* 53, no. 2-3 (2022), 123-135.

8. Conclusion

From a legal perspective, any effective measures for closing the current security gap in relation to the protection of critical underwater infrastructure would likely somewhat negatively impact the freedom of navigation. This seems to be the price States would have to pay for safeguarding the underwater choke points of the internet and energy transportation outside the limits of the territorial sea.

This contribution explored several unconventional legal solutions to increasing the legal resilience of underwater infrastructure outside the limits of the territorial sea. They relate to, *inter alia*, piracy, terrorism, marine environmental protection measures against pipeline ruptures, universal jurisdiction, plea of necessity, safety zones, the legal regime of straits, and compulsory pilotage. Depending on the political will, these legal concepts could potentially be employed by coastal States in time-critical situations in which they need to decide on interdicting a ship suspected of damaging underwater infrastructure in its maritime area. Thus, they could contribute to closing the current security gap in the current legal framework in relation to suspected intentional damage to offshore infrastructure outside the limits of the territorial sea.

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