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DAMAGES TO SUBMARINE CABLES AND PIPELINES IN TIMES OF PEACE AND WAR: THE NORD STREAM SABOTAGE

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Abstract

The 2022 Nord Stream sabotage put a spotlight on the vulnerability of submarine infrastructure like cables and pipelines, emphasising the need for protection against intentional damage. This work reviews and identifies gaps in the international legal frameworks governing the security of critical undersea infrastructure in times of peace and war, proposing solutions to address these gaps. First, it discusses UNCLOS provisions relevant in times of peace, the insufficiency of existing legal design and state practice, and the potential application of the law of piracy. In wartime scenarios, like Russia's invasion of Ukraine, states must resort to international humanitarian law. Eventually, neutral states like Germany may be able to resort to state responsibility, to political sanctions or even to the use of force. This work concludes by remarking on the convergence of different international law disciplines to effectively tackle complex security challenges to submarine cables and pipelines.

Keywords: Submarine cables and pipelines, Nord Stream, Law of the Sea, Piracy, International Humanitarian Law.

I. Introduction

On 26 September 2022, pressure dropped in the Nord Stream gas pipeline after several explosions were heard. Multiple leaks were subsequently identified (view Annex 1), and theories speculating about intentional damage – *sabotage* – began to spread. Although no state or non-state actor has claimed responsibility, a few suspects have already been named, ranging from a private pro-Ukrainian group to the Russian or American governments.[2] Be it as it may, this incident challenged the domestic and international security of many European states.

Submarine cables and pipelines constitute a resource facilitating very different economic activities in contemporary societies. They enable communication and transport of crude oil and natural gas, which influence the quality of life, but they are not invulnerable, either due to their technical characteristics or to the coveted prize that they represent. Therefore, any risk and threat jeopardising this infrastructure is a threat to modern states and the activities that rely on them.

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[2] Charlie Cooper, 'Who blew up Nord Stream?' (*Politico*, 8 March 2023) <https://www.politico.eu/article/vladimir-putin-kremlin-russia-who-blew-up-nord-stream-2/> accessed 11 July 2024.

Already in 1871, Samuel Morse addressed a letter to the Telegraphic Conference asking it to declare 'that in war as in peace the telegraph in the air and under the water should be regarded as a sacred thing, protected by unanimous consent against all attack or damage.'[3] Since then, our reliance on communications cables has only increased. Much more recently, the United Nations General Assembly's omnibus resolutions 76/72 and 77/248 on the oceans and the law of the sea called upon states to enact laws and regulations 'addressing the breaking or injury of submarine cables or pipelines beneath the high seas done wilfully or through culpable negligence by a ship flying its flag or by a person subject to its jurisdiction, in accordance with international law, as reflected in the Convention' (§189 of Resolution 77/248). The UN is concerned with the safety and security of communication and high-voltage power cables and pipelines, but it leaves it to the states to punish their citizens involved in their cutting or damage.

The discretion of public authorities with regard to this topic should not be mistaken for a lack of awareness (despite Beckman criticising their low level of knowledge and understanding).[4] For example, a recent in-depth report of the European Parliament stated that '[t]he submarine data cable network is the core critical infrastructure of the digital age.'[5] So did the British House of Lords, which asserted that '[s]ubsea cables are a critical element of the UK's communications infrastructure.'[6] Likewise, as revealed by Wikileaks, the United States Department of State featured several submarine pipelines and cables in a secret file identifying the critical infrastructure of foreign countries, like the Strait of Gibraltar Maghreb-Europe gas pipeline, the Trans-Med Gas Pipeline, or the C2C Cable Network undersea cable landing in Shanghai.[7]

At the end of the day, despite the sensitive nature of critical undersea infrastructure, efforts in the domain of international law have fallen short.[8] Therefore, the research question that this work seeks to answer can be formulated in the following terms: How are submarine cables and pipelines currently being secured at the international level, and what challenges does their protection present in both times of peace and war? Notably, we will dissect the tools that international law offers in cases like the Nord Stream sabotage. In this sense, we will argue that the answer can be found in the extant law of the sea, the law of piracy and international humanitarian law, and their interpretation.

Our focus will lie on the protection against intentional, malicious acts, hence on security issues and, more specifically, on physical security, with the exclusion of cyber security. International law instruments on the protection of submarine infrastructure have, until now, been developed with safety concerns in mind (e.g., accidental breakings caused by fishermen),[9] but the growing dependence of the global economy on

[3] Travers Twiss, 'Submarine telegraph cables' (1880) *The Nautical Magazine* XLIX, no. XI, 879.

[4] Robert C Beckman, 'Protecting Submarine Cables from Intentional Damage – The Security Gap' in Douglas R Burnett, Robert C Beckman and Tara M Davenport (eds), *Submarine Cables: The Handbook of Law and Policy* (Brill 2013).

[5] Christian Bueger, Tobias Liebetrau & Jonas Franken, *Security threats to undersea communications cables and infrastructure – consequences for the EU* (2022) European Parliament, 12.

[6] International Relations and Defence Committee, *UNCLOS: the law of the sea in the 21st century* (2022) United Kingdom House of Lords.

[7] United States Department of State, 'Request for information: Critical foreign dependencies (critical infrastructure and key resources located abroad)' (*Wikileaks* 2009), accessed 21 February 2023.

[8] Not in vain, undersea infrastructure security has been called 'an understudied element of international security' [Bueger, Liebetrau & Franken (n 5) 13].

[9] For example, while drafting its 1956 Articles, the International Law Commission considered an amendment that would have entitled States 'to establish a safety zone of 250 metres on either side of these pipelines in which ships are not to anchor and trawlers are forbidden to fish.' Even though it was finally rejected because it would limit freedom of navigation and fishing and the existing provision would suffice to address this concern, it evidences some of the main interests that shaped current international law.

submarine infrastructure increases the need for effective protection against wilful threats. Critical undersea infrastructure is indeed a coveted target in times of peace and war, yet little attention has been devoted to the tools that can ensure their adequate security. Accordingly, we aim to shed some light on the possible qualification of these damages and on the measures that states can viably undertake in response. Lastly, we shall note that even though references to the law of the use of force and state responsibility are made for the sake of completeness, their in-depth analysis escapes the scope of this work.

The plan of the work is as follows: first, we will review the contemporary relevance of submarine cables and pipelines and comment on security issues that concern them. Then, we will review the baseline legal regime of these critical infrastructures as contained in the United Nations Convention on the Law of the Sea (UNCLOS). Further, we will consider the treatment of damages produced in times of peace as a new form of piracy. Finally, we will assess the status of such damages in times of war.

The present work has been developed using a legal methodology. The research process has involved the comprehensive and systematic review and analysis of a variety of sources, including bibliographic materials, relevant documents, and normative sources.

II. The Veins of the Modern World

II.1. Evolution and Contemporary Relevance of Submerged Connections

Infrastructure is frequently overlooked due to its embeddedness with other social and technical systems, which is the reason why it has been described as invisible.[10] The case of submarine communication and power cables and pipelines is special. In fact, not only is it integrated into other networks, but it is also under the surface and, what is more, under the sea. Therefore, it is hidden from view and difficult to access, which leads to a triple invisibility of these crucial components of modern society.[11] The present section reviews the evolution and relevance of this infrastructure to make it visible to the reader before discussing the security challenges that it faces.

Key technological developments that have relied on wired connections include the telegraph, telephone, radio, and internet. These innovations have necessitated the extensive use of submarine cables, especially for reliable long-distance communication.

In line with Carter et al., we can identify three successive periods of submarine cable expansion: the telegraph era (1850-1920), the telephone era (1920-1980), and the post-1988 era, marked by the dominance of fibre-optic cables which offer higher capacity and lower cost.[12] Despite the proliferation of satellites ('a necessary adjunct' to submarine telecommunications), [13] 'more than 98 per cent of international Internet, data and telephone traffic' still travels through these underwater cables.[14]

For an account of the evolution of the international law on submarine cables and pipelines, see J Ashley Roach, Tara Davenport & Danae Azaria, *Submarine Cables and Pipelines under International Law – Interim Report* (2020) International Law Association.

[10] Geoffrey C Bowker & Susan L Star, *Sorting things out: Classification and its consequences* (MIT Press 1999) 25.

[11] Christian Bueger & Tobias Liebetrau, 'Protecting hidden infrastructure: The security politics of the global submarine data cable network' (2021) *Contemporary Security Policy* 42, no. 3, 391-413.

[12] Lionel Carter, Douglas R Burnett, Stephen Drew, Graham Marle, Lonnie Hagadorn, Deborah Bartlett-McNeil & Nigel Irvine, *Submarine Cables and the Oceans – Connecting the World* (2009) ICPC/UNEP/UNEP-WCMC (UNEP-WCMC Biodiversity Series, no. 31) 11-16.

[13] Idem 16.

[14] United Nations Secretary General, *Oceans and the Law of the Sea Report* (2015) para 53.
As of 2023, the consulting firm TeleGeography, which maintains an updated map of all public submarine cables, reported nearly 1.4 million kilometres of submarine cables in service all around the world. TeleGeography's map is available at https://www.submarinecablemap.com/ or in Annex 2.

Everything, from emails and phone calls to financial operations and video streaming, goes through these invisible veins of the modern world. Moreover, apart from civil uses, communication cables also serve scientific and military purposes.

Besides, power cables have been crucial for connecting islands and national grids, initially to reduce diesel usage and later to trade surplus energy, including linking to offshore energy sources like oil, gas, and wind turbines.[15]

Finally, pipelines are another critical infrastructure type and vary in use and technical specifications – like their size, materials and laying or repairing techniques – beyond transporting hydrocarbons (oil and gas), pipelines also transfer water and waste, among other essential products. In addition, they have grown from the 16 kilometres laid in 1954 in the Gulf of Mexico and now extend over one hundred thousand kilometres.[16]

Nord Stream, the case that guides this work, is paradigmatic. From the point of view of international relations, its strategic importance lies in the fact that, as the European Commission has asserted, '[e]nergy policy is often used as a foreign policy tool.'[17] The relations between the European Union and Russia cannot be properly understood if their gas relations are overlooked: in 2019 Russia accounted for 43 per cent of the EU's total gas imports, a significant part of which came through Nord Stream 1.[18] The EU sought the diversification of its energy sources in vain, and its internal demand led it to accept the 'Trojan horse' of a Nord Stream extension, which has been identified as a potential target in Russia's hybrid war against Ukraine.[19]

II.2. International Security of Submarine Cables and Pipelines

Critical undersea infrastructure faces various hazards, which can broadly be categorised into two types: 'safety', which refers to accidental risks, and 'security', which encompasses all forms of malicious threats.[20]

Safety risks, comprising 60 to 70 per cent of global damage to submarine cables according to the International Cable Protection Committee (ICPC),[21] are mostly due to unintentional human action, namely anchoring and fishing.[22] For instance, an anchor can be dragged for long distances damaging submarine infrastructure in its path.[23] Or in case of emergency, it may be dropped carelessly. Fishing gear

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[15] Tara M Davenport, 'The Installation of Submarine Power Cables under UNCLOS: Legal and Policy Issues' (2013) *German Yearbook of International Law* 53, 107-148.
[16] China National Petroleum Corporation, *Submarine Oil and Gas Pipeline Technology* (2015).
[17] European Commission, *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy* (COM(2015) 80 final, 2015).
[18] Martin Russell, *The Nord Stream 2 pipeline: Economic, environmental and geopolitical issues* (2021) European Parliament.
[19] Loïc Simonet, *Les pipelines en droit international et dans les relations internationales* (Editions A. Pedone 2021).
[20] Ludovic Pièrre-Cambacédès & Claude Chaudet, 'The SEMA referential framework: Avoiding ambiguities in the terms 'security' and 'safety'' (2010) *International Journal of Critical Infrastructure Protection* 3, 55-66.
[21] The International Cable Protection Committee has led civil demands to protect the everyday functioning of submarine cables and has raised awareness about their issues. It was established in 1958 as an industrial association (since 2010 it accepts governmental members) and enjoys consultative status at the United Nations since 2018 [International Cable Protection Committee, *ICPC History* (2022) accessed 21 February 2023].
[22] International Cable Protection Committee, *Government Best Practices for Protecting and Promoting Resilience of Submarine Telecommunications Cables* (2022); Carter, Burnett, Drew, Marle, Hagadorn, Bartlett-McNeil & Irvine (n 12) 45.
[23] Lars Fischer, 'Frequent Breaks in Undersea Pipelines Mean Fixes Are Possible for Nord Stream' (*Scientific American*, 5 October 2022) accessed 24 February 2023.

can also damage these vital networks, either through seafloor erosion or interference with installation or repair facilities.[24]

Alongside these human-origin risks, we may include natural hazards (especially, landslides, turbidity currents from earthquakes, tsunamis, and hurricanes), adding up to around 10 per cent of all cable breaks.[25] Security risks, while less frequent, include any intentional action aimed at damaging submarine infrastructure, like piracy and sabotage.

Since the telegraphic era, cable piracy has been a major concern. Pirates target both cables and other infrastructure and activities ancillary to these submarine connections, like cable-laying ships.[26]

Furthermore, the fear of terrorism and sabotage is now widespread. Scholars and policymakers increasingly agree that '[t]he potential for sabotaging undersea cables during times of conflict, as part of the grey zone or hybrid warfare operations or by transnational terrorism and organised crime exists, but such incidents have not been confirmed yet.'[27] Even though the responsibility for the explosion of the Nord Stream twin underwater pipelines channelling Russian gas to Germany remains unknown and the intelligence services of different countries blame each other,[28] the malicious nature of the event is unequivocal. In this context, the presence of ships of unfriendly nations close to critical infrastructure can be unsettling.[29]

Finally, as Samuel Morse hinted in the 19th century, cables and pipelines can become military targets in times of war. Belligerent states can deliberately cut cables or pipelines, thus preventing them from delivering the communications, power, or resources that they are set to transmit.[30] Submarine cables were extensively targeted during the First and Second World Wars, although they have not been deliberately attacked by navies since 1945.[31] In contrast, pipelines are still being hit in the context of hostilities, as in the Niger Delta in 2016, where secessionist militants blew one of the main sources of income of Nigeria,[32] or again in the blurry Nord Stream case.

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[24] Severin Carrell, 'Telephone and internet restored in Shetland after cable damage' (*The Guardian*, 21 October 2022) accessed 25 February 2023.

[25] Carter, Burnett, Drew, Marle, Hagadorn, Bartlett-McNeil & Irvine (n 12) 45; Lionel Carter & Douglas R Burnett, 'Subsea Telecommunications,' in Hance D Smith, Juan Luis Suárez de Vivero & Tundi S Agardy (eds) *Routledge Handbook of Ocean Resources and Management* (Routledge, 215) 349-365; Fischer (n 23); Camille Morel, 'Les câbles sous-marins, indispensables et vulnérables' (2022) *Brèves Marines du Centre d'études stratégiques de la Marine*, no. 252.

[26] Camille Morel ['Menace sous les mers: Les vulnérabilités du système câblier mondial' (2016) *Hérodote*, no. 163, 33-43] offers several examples. For instance, the extraction of 500 kilometres of cables by local fishermen led to Vietnam losing 80 percent of its connection in 2007. Similar vandalism was reported in Gabon in 2015. Moreover, a cable-laying ship was attacked by pirates in the Red Sea in 2016.

[27] Bueger, Liebetrau & Franken (no 5) 13.

[28] Cooper (n 2)

[29] This is the case of the Russian 'oceanographic vessel' Yantar, suspected of spying and cutting cables in 2016 and 2021 [H I Sutton, 'Russian Spy Ship Yantar Loitering Near Trans-Atlantic Internet Cables' (*Naval News*, 19 August 2021) accessed 25 February 2023]. Likewise, in February 2023, the Netherlands and Norway warned of suspicious Russian activities targeting cables and gas pipelines in the North Sea [Alice Hancock & David Sheppard, 'Netherlands warns of Russian attempts to sabotage its energy infrastructure' (*Financial Times*, 20 February 2023), accessed 25 February 2023].

[30] One of the first intentional submarine cable cuts took place as soon as in 1898, when the United States cut the telegraphic cables connecting the Philippines and Cuba to the Spanish metropole [Charles H Stockton, 'Submarine Telegraph Cables in Time of War' (1898) U.S. Naval Institute *Proceedings* XXIV, no. 3, whole no. 87; George E Walsh, 'Cable Cutting in War' (1898) *The North American Review* 167, no. 503, 498-502].

[31] James A Fargher, 'Attacks on undersea cables: a Victorian legacy' (*Strife*, 12 April 2016) accessed 25 February 2023.

[32] Tife Owolabi, 'Nigeria pipeline saboteurs vow further Niger Delta attacks' (*Reuters*, 17 April 2016) accessed 25 February 2023.

Nevertheless, belligerents can also opt for a less destructive approach and try to monitor their traffic, particularly in the case of communication cables.[33] We will not deal with the latter cases since they pertain to the area of cybersecurity.

III. Damages in Times of Peace and the Law of the Sea

III.1. Overview of International Legal Sources

The Nord Stream case study is especially illustrative of the legal challenges that the protection of submarine infrastructure entails in both times of peace and war. As it is well known, its twin pipelines go from Vyborg (Russia) to Lubmin (Germany) going across the Exclusive Economic Zones of Russia, Germany, Sweden, Denmark and Finland and the territorial waters of some of these countries. It was sabotaged in September 2022 in the Swedish and Danish Exclusive Economic Zones (EEZs), and these events were widely framed in the conflict triggered by the Russian invasion of Ukraine in February of the same year. However, with the authorship of the injury remaining unknown, it is not possible to categorically apply international humanitarian law to it, since that would require a belligerent state to be the author. Even in the hypothesis that it was known, the peacetime legal framework would still be largely applicable. Therefore, it is pertinent to first address the possibilities and tools that international law offers in times of peace.

In times of peace, the legal regime of submarine cables and pipelines can be primarily found in the 1982 UNCLOS to which 168 states and the EU have become parties.[34] However, some others have not ratified it but are signatories of other older international treaties containing relevant provisions for the protection of this critical infrastructure. We must mention the 1884 Paris Convention on the Protection of Submarine Cables (PCSC), which is still in force.[35] Furthermore, Article 311 UNCLOS refers to the relationship between UNCLOS and other instruments and states that it shall not alter those agreements that are compatible with the Convention.

Actually, their material scope of applicability is very different. While the PCSC specifically and exclusively addresses the protection of submarine cables (pipelines did not exist at the time, as we discussed in Section 2), all subsequent treaties on the law of the sea aim to regulate a broader range of issues affecting navigation and the exploitation of marine resources and spaces, including those where cables and pipelines are laid.[36] Notwithstanding, this is not a linear progression and UNCLOS may not always be more protective of submarine infrastructure than other instruments.

Subsequently, we systematically analyse the general principles and rules that apply to submarine cables and pipelines in areas within and beyond state jurisdiction. Regulations governing pipelines laid in the territorial sea, where the coastal state holds sovereignty, differ from those governing pipelines laid in the deep seabed area. Following this, we will examine the repercussions of damaging behaviours during peacetime, as it may have been the case of the obscure Nord Stream sabotage.

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[33] For example, in 1971, during the Cold War, the United States carried out Operation Ivy Bells, which consisted of a cable-tap allowing the CIA to register the use of the cable [Camille Morel, *L'Etat et le réseau mondial de câbles sous-marins de communication* (Jean Moulin Lyon 3 University, 2020) 249].

[34] United Nations, *United Nations Convention on the Law of the Sea* (United Nations Treaty Collection, 2023) accessed 14 March 2023.

[35] The Netherlands, 'International Convention on the Protection of Submarine Cables, with additional Article' (*Overheid.nl Treaty Database*, 2023), accessed 14 March 2023. Their territorial applicability varies widely, ranging from the 36 countries of the PCSC to the 168 parties to UNCLOS, and these two lists do not fully overlap. For instance, countries like the United States have signed the PCSC but have not joined UNCLOS. Conversely, most States parties to UNCLOS did not sign the PCSC [most did not exist then, as Dupuy and Vignes (n 36) remind us].

[36] René Jean Dupuy & Daniel Vignes, 'Submarine Cables and Pipelines' in René Jean Dupuy & Daniel Vignes (eds) *A Handbook on the New Law of the Sea*, vol. 2 (Brill/Nijhoff 1991) 977-988.

III.2. Protection in Areas under Full National Jurisdiction

Governments enjoy the broadest possible control over their land territory and its adjacent waters – the territorial sea –, including their air space, bed, and subsoil. Hence, states prescribe and enforce laws in their territorial sea in accordance with the principle of territoriality. All domestic laws – including those regarding submarine cables and pipelines – must be observed by all persons present there, but the Convention does not impose any specific obligation to adopt them. Apparently, the conference assumed that states would enact laws in this regard on their own, but as Beckman maintains, it was wrong to assume this.[37] Many countries, e.g., those around sensitive spots in Southeast Asia, have not adopted any regulation, and many of those who did only established small penalties that have proved ineffective.[38] It is not the case in Sweden: if the Nord Stream sabotage had occurred in an area under territorial sovereignty, perpetrators could face a prison term of up to 4 years.[39]

The most relevant provision applicable in the territorial sea is Article 19 UNCLOS, which defines innocent passages. According to it, foreign ships can only be prevented from navigating through a state's territorial sea when their passage is 'prejudicial to the peace, good order or security of the coastal state.' It subsequently lists the behaviours that are considered to threaten these public goods, of which we shall highlight three, namely, the collection of information prejudicing state defence or security; research or survey activities; and acts that willingly interfere with communication systems and other facilities or installations (but it is not clear if pipelines are included therein, as discussed by Roach, Davenport and Azaria).[40] Under this legal basis, government vessels are entitled to take 'the necessary steps in its territorial sea to prevent passage which is not innocent' (Article 25 UNCLOS), but the exact measures are not defined.[41] In view of that, in the aforementioned case of the Russian vessels detected by the Netherlands around its North Sea wind farms, the navy and coastguard escorted the non-innocent foreign vessels out of the territorial sea.[42] Plus, Article 21 UNCLOS empowers states to adopt regulations limiting innocent passage to protect cables and pipelines, like the exclusion of certain activities in the surroundings of New Zealand's Protection Areas.[43] In the Nord Stream case, no ship carrying out undue activities was detected, and no regulation had been passed at the time.

III.3. Security Concerns in Areas Beyond National Jurisdiction

III.3.1. The Right to Lay Nord Stream and the Failure to Protect it in the EEZ

In the EEZ, the coastal state has limited sovereign rights and jurisdiction in the terms set in UNCLOS and must respect the rights and freedoms of other states. In this regard, Article 58 UNCLOS provides that all other states, both coastal and landlocked, have the freedom to lay submarine cables and pipelines in any EEZ and engage in other internationally lawful uses of the sea connected to this freedom, like surveying or their operation, subject to other rules of international law. But this right is not unlimited. On one hand, states must have 'due regard' for the rights of the coastal state in all their activities, which requires them to weigh the interests at stake on a case-by-case basis.[44] Individuals do not have this right

[37] Beckman (n 4) 287.

[38] According to Beckman (n 4, 287), some examples of countries with small penalties are Section 21 of Brunei's Telecommunications Order 2001, Section 41 of Singapore's Telecommunications Act and Sections 44, 72 and 73 of Thailand's Telecommunications Business Act 2001. Moreover, Roach, Davenport & Azaria (n 9) provide a non-exhaustive list of national legislation on this subject.

[39] Chapter 3, Section 4 of the Swedish Criminal Code.

[40] Roach, Davenport & Azaria (n 9).

[41] Beckman (n 4).

[42] Hancock & Sheppard (n 29).

[43] Maritime NZ, 'Enhancing our submarine cable and pipeline protection areas guidance' (*Maritime New Zealand*, 2021) accessed 14 March 2023.

[44] The due regard obligation is pervasive in UNCLOS, but it does not have a single meaning. Rather, it must be assessed case by case. According to the Mauritius v United Kingdom, *Chagos Marine Protected Area*

themselves and can only lay cables and pipelines in accordance with their domestic law.

On the other hand, Article 79 UNCLOS sets out the conditions for exercising the freedom to lay submarine cables and pipelines in the continental shelf, the seabed, and subsoil under the EEZ or even beyond it, depending on the zone's geophysical characteristics. Coastal states may not prevent this activity, but they are allowed to 'take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines' and to influence the course of pipelines. Some authors, such as Langlet, argue that this list is exhaustive and that no other reasons are permissible under UNCLOS, which means that invoking security concerns to ban the laying of a cable or pipeline is not allowed.[45]

In accordance with all these provisions, Nord Stream AG, the Swiss consortium that built the Baltic pipeline, had to request permits according to the specific national requirements (mostly tackling environmental concerns) of the countries whose EEZ it would cross: Russia, Finland, Sweden, Denmark, and Germany. Despite reticence due to Russia's belligerence against Ukraine, Sweden approved the laying of the Nord Stream 2 stating that 'that national and international law do not give the Government scope to reject the application.'[46] Further, in his reflection about Nord Stream, Langlet notes that this may lead to attempts to disguise security issues in the circumstances above, which could indirectly improve the quality of environmental assessments.[47]

Besides, Article 113 UNCLOS requires states to enact laws to punish any breaking or injury of submarine cables and pipelines by a ship flying their flag or by a person subject to their jurisdiction in the EEZ. Such breaking may be due to culpable negligence or, of greater significance for the security of critical infrastructures, wilful action. States enjoy prescriptive and enforcement jurisdiction in the EEZ and the continental shelf, but it is limited in accordance with the principle of nationality and lacks universal jurisdiction.[48] So, states can extend criminal jurisdiction to acts committed in these areas, but they can only enforce these regulations (e.g., exercise their right to board and arrest) vis-à-vis ships flying their flag and their nationals, in line with Article 97 UNCLOS. However, most countries have not incorporated this provision into their national laws.[49] Therefore, in Sweden's case, the perpetrators of the Nord Stream sabotage could only be prosecuted under Section 3, Section 4 of the Criminal Code on the hypothesis that they were Swedish or acted from a ship flying the Swedish flag.

In contrast to UNCLOS, PCSC offers a more protective framework only covering cables beyond territorial waters. The 1884 Convention foresaw in its Articles VIII and X a broad enforcement jurisdiction, shared by all treaty parties if not universal.[50] Still, Beckman acknowledges that states are reluctant to board vessels without the consent of the flag state.[51] Indeed, it can be perceived as a violation of the principle of sovereignty, which lies at the core of the modern international legal system. There is only one known instance in which a state party to PCSC exercised its right to visit a foreign ship: it

Arbitration [2015] ICGJ 486 (PCA), it requires examining the rights that are affected, their nature, their significance, the expected harm, and the existence of other options, often in a dialogue with the right-holding State; Roach, Davenport & Azaria (n 9).

[45] David Langlet, 'Transboundary Transit Pipelines: Reflections on the balancing of rights and interests in light of the Nord Stream Project' (2014) *International and Comparative Law Quarterly* 63, no. 4, 977-995.

[46] Valentin Jeutner, 'Amendments, annexations, alternatives: Nord Stream 2's contemporary status under EU and international law' (2019) *Journal of World Energy Law and Business* 12, 502-512.

[47] Langlet (n 45).

[48] Dupuy & Vignes (n 36).

[49] Tara Davenport, 'Submarine Cables, Cybersecurity and International Law: An Intersectional Analysis' (2015) *Catholic University Journal of Law and Technology* 14, no. 1, 57-109.

[50] Roger S Clark, 'Some Aspects of the Concept of International Criminal Law: Suppression Conventions, Jurisdiction, Submarine Cables and the Lotus' (2011) *Criminal Law Forum* 22, 519-530.

[51] Beckman (n 4).

happened in 1959, in the midst of the Cold War, when a US warship boarded a Soviet trawler due to twelve cable breaks in its vicinity and the US Government called the USSR to punish it if found to be guilty.[52]

Although there is no record of any other case in which this power has been used, Burnett recalls the usefulness of the evidence that it allows to obtain in the subsequent determination of the responsibility for a cable – and not a pipeline – injury.[53] And while it could be argued that PCSC parties have thereby granted general consent for visits by other parties, this would only apply to its 36 parties and not to the signatories of UNCLOS.

III.3.2. The High Seas

Lastly, as per Articles 87 and 112 UNCLOS, all states, both coastal and landlocked, enjoy the right to lay submarine cables and pipelines in the high seas beyond the continental shelf. Such freedom is subject to the rules sketched in the previous section on the EEZ: the case-by-case balancing of rights and interests to show due regard and respect to international law and good faith.

Article 113 UNCLOS applies to the high seas as well. Under UNCLOS, states can adopt laws to punish the breaking or injury of cables and pipelines in the high seas, and board and arrest ships flying their flag in accordance. However, they have failed to incorporate these provisions and are reluctant to enforce universal jurisdiction.[54]

III.4. 'The Security Gap' and a New Form of Piracy

III.4.1. The Need for an Alternative Approach

The previous analysis of the UNCLOS ordinary legal regime of submarine cables and pipelines has shown that states often lack the capacity to effectively protect them from malicious actions. This is what authors like Burnett and Beckman call 'the security gap.'[55] First, states cannot oppose the laying of an infrastructure that threatens their security. Secondly, they have been negligent at the time of enacting legislation extending their jurisdiction to the EEZ and the high seas, pursuant to Article 113 UNCLOS. The mere possibility of escorting non-innocent ships out of the areas under state jurisdiction does not seem enough. Plus, the inexistence of a universal jurisdiction subjecting all ships and persons to such laws, instead of applying the strict principle of nationality, is also unsatisfactory. Therefore, alternatives are needed.

One of the main alternative approaches to the persecution of breakings and injuries of submarine cables and pipelines is subsuming these behaviours under the crime of piracy. Could the saboteurs of the Nord Stream be prosecuted as pirates? In fact, this is one of the first questions ever posed in this field of international law. Already in 1869, the US unsuccessfully advocated for treating saboteurs as pirates; efforts fell short in what became the precedent of Article 113 UNCLOS in the 1884 Convention.[56]

III.4.2. The Notion of Piracy

International law completely outlaws piracy, with Article 100 UNCLOS codifying the aim to suppress it in the following terms: 'all states shall cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any state.' Article 101 subsequently

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[52] Embassy of the USA before the USSR, 'U.S. and U.S.S.R. Exchange Notes on Damage to Submarine Cables' (1959) *Department of State Bulletin*, 555-558.

[53] Douglas R Burnett, *The 1884 International Convention for Protection of Submarine Cable Provisions Not in UNCLOS Deserve Attention Now* (Workshop on the Protection of Submarine Cables, 2011).

[54] Beckman (n 4)

[55] Burnett (n 53); Beckman (n 4)

[56] Tara Davenport, 'Submarine Communications Cables and Law of the Sea: Problems in Law and Practice' (2012) *Ocean Development & International Law* 43, no. 3, 201-242.

defines piracy: 'any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed (...) against a ship, aircraft, persons or property in a place outside the jurisdiction of any state.' Hence, the traditional interpretation has been that, for an act of violence to constitute piracy, it must meet three requirements: (1) there must be two ships involved, (2) the acts may be for private ends, and (3) they must take place on the high seas or in any other place outside the jurisdiction of any state.[57]

To begin with, the two-ships rule poses a problematic starting point. The historically dominant approach was that piracy could only take place when a vessel boarded another, therefore excluding, for instance, cases of mutiny. For the purposes of this work, it suffices to point out that the disjunctive conjunction 'or' accompanying 'property' would straightforwardly mean that it is possible to talk about piracy when a vessel engages in illegal acts against it.[58] Only such a reading would allow states to punish saboteurs under the laws of piracy[59].

Secondly, a systematic interpretation of the international treaty shows that we must understand 'private ends' as contrasting with 'public authorisation' rather than with 'political motives.' Therefore, what matters is the state sanction of the act. Furthermore, the perpetration of such acts without the sanction of the state and with political motives cannot constitute a defence, which means that terrorists would fall within the scope of the law of piracy provided they commit any of the acts that it aims to suppress without the protection of the authority of the state. Finally, it shall be noted that 'where such actions are carried out by de facto or de jure state agents, they cannot be piracy other than in cases of mutiny.'[60]

Thirdly, and lastly, piracy can take place anywhere beyond the territorial sea, be it the high seas or the EEZ.[61]

All in all, a broad interpretation of the law of piracy that takes into consideration both literality and the purpose of the treaty, such as the one proposed by Guilfoyle, Paige, and McLaughlin, could provide states with some tools to prosecute illegal acts of violence exerted against submarine cables and pipelines.[62] To this regard, UNCLOS establishes universal jurisdiction on the grounds of a principle of interference, i.e., pirates are subjected to the law of the capturing warship.[63]

III.4.3. Piracy in the Nord Stream Sabotage

However, for the purposes of discharging responsibilities for the Nord Stream sabotage, its obscure circumstances force us to consider two hypotheses: either (1) the saboteurs acted for private ends, whether political or not, or (2) the saboteurs acted with the sanction of a state and, hence, were state agents.

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[57] Musili Wambua, 'A critical review of the global legal framework on piracy: 40 years after UNCLOS' (2022) *Maritime Affairs: Journal of the National Maritime Foundation of India* 18, no.1, 134-148.

[58] Douglas Guilfoyle, Tamsin P Paige & Rob McLaughlin, 'The Final Frontier of Cyberspace: The Seabed Beyond National Jurisdiction and the Protection of Submarine Cables' (2022) *International and Comparative Law Quarterly* 71, no. 3, 657-696.

[59] Note that the possibility to engage in this reading is limited by State practice. In fact, differing incorporation of these rules at the domestic level has led to an asymmetrical regulation of the law of piracy. For instance, Spain's definition of piracy in Articles 616 ter and 616 quarter of the Criminal Code does not fit the UNCLOS', since it merely covers the boarding of a vessel by another in strict compliance of the two-ships rule doctrine. In particular, this precludes prosecution for cable theft or pipeline damage.

[60] Guilfoyle, Paige & McLaughlin, 'The Final Frontier of Cyberspace'; Douglas Guilfoyle, 'Piracy and the slave trade,' in Douglas Guilfoyle (ed) *Shipping Interdiction and the Law of the Sea* (Cambridge University Press, 2009) 26-78.

[61] Wambua (n 57).

[62] Guilfoyle, Paige & McLaughlin (n 60).

[63] Guilfoyle (n 60)

Under the first hypothesis, the broad interpretation that has been presented above would close the gap. The saboteurs acting on their own behalf could be arrested and punished by any state. Yet here we face again the shortcomings of the sovereignty principle when dealing with international crime: even if states are entitled to board and arrest the authors of the malicious act, they are reluctant to do so.[64]

Alternatively, were the application of the law of piracy to be rejected on the ground that the law of piracy is not sufficiently clear in this particular domain, multilateral treaties for the suppression of unlawful acts could apply. These treaties, known as 'The UN Conventions on Terrorism,' impose upon states the obligation to criminalise certain conduct. This Convention grants jurisdiction over nationals but also over acts taking place in the country's continental shelf, hence, over the Nord Stream sabotage. Beckman pointed to the potential applicability of the 1997 International Convention for the Suppression of Terrorist Bombings,[65] which requires the use of explosives. According to some investigations, this factual element was present in Nord Stream.[66]

Likewise, Wrathall suggests adapting the 1988 Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf, which punishes acts of violence against fixed platforms.[67] This Protocol to the Rome Suppression of Unlawful Acts Convention against the Safety of Maritime Navigation aims to protect offshore installations or structures that, like oil platforms, are 'permanently attached to the seabed for (...) economic purposes.' Nevertheless, Nasr already includes pipelines under the umbrella of 'fixed platforms,' which means that state parties to the Protocol should have criminalised behaviours targeting them and that there is no need to adapt it.[68]

On the other hand, the second hypothesis, portraying saboteurs as state agents, is more challenging under international law. The events having taken place beyond the territorial sea, even if we go past the two-ship rule, the requirement that pirates act for private ends completely excludes the possibility of 'state piracy.' Notwithstanding, despite the lack of evidence, the theory that the Nord Stream sabotage was a secret operation under the auspices of a government – whether the Russian or the Ukrainian one (or even the American or the British), depending on the source – is widespread.[69] In case Russia or Ukraine were behind it, the malicious damage to the submarine pipeline would have to be assessed through the lenses of international humanitarian law, since these countries are immersed in an armed conflict. Otherwise, if the authors were state agents of a third country different from these two, the attack would go unpunished under the law of piracy but would not be subject to the law of armed conflict either.

IV. Damages in Times of War and Intersecting Laws

IV.1. Intersecting Laws: UNCLOS, Armed Conflict, and Neutrality

The possibility of state involvement in the Nord Stream sabotage poses a significant challenge in terms of international law. Unlike private acts of piracy, despite some early efforts state piracy has not been equally recognised and punished under international law.[70] Nonetheless, during times of war, it is still a matter of customary international law, which, as per the 2017 Tallinn Manual 2.0, prohibits damage to cables by states (including state agents) 'since doing so would run contrary to the object and purpose of

[64] Beckman (n 4).
[65] Ibid.
[66] Cooper (n 2).
[67] Laurence R Wrathall, 'The vulnerability of subsea infrastructure to underwater attack: Legal shortcomings and the way forward' (2010) *San Diego International Law Journal* 12, 223-262.
[68] Nihal M H Nasr, *A Law to Incorporate the 2005 SUA Convention and the 2005 SUA Protocol into the Laws of Egypt* (2014) International Maritime Law Institute.
[69] Cooper (n 2).
[70] The main instrument in this regard is the 1856 Paris Declaration Respecting Maritime Warfare (signed by 27 existing states), which formally abolished privateering and, consequently, put an end to the uncontrolled activity of private actors who sought private gain under a state-sanctioned commission of war.

the law governing submarine cables' (Rule 54), although it does not mention pipelines.

In the case in question, even if it is generally accepted that the incident took place in the wider context of the Russian invasion of Ukraine,[71] no state of war involving the states whose infrastructure was attacked existed at that time. This raises the question of what treatment corresponds to covert acts of aggression that could have severe economic and political consequences. We find ourselves in murky waters where the law of the sea, the law of armed conflict and the law of neutrality intersect.

The UNCLOS framework that has been presented in the previous section remains largely applicable in wartime.[72] By principle, international law suspends bilateral treaties between the belligerents and the obligations that they owed each other under multilateral treaties.[73] In Klein's words, 'the maritime rights and duties states enjoy in peacetime continue to exist, with minor exceptions, during armed conflict.'[74] Indeed, the law of armed conflicts constitutes a *lex specialis* that replaces some provisions of UNCLOS between belligerents, but it also modulates their relationship with neutral states. Definitely, war may be waged in waters under the jurisdiction of belligerent states, in the high seas and in the EEZ and continental shelf of neutral states, always having due regard to the interests of the neutral coastal state.[75] Thus, UNCLOS' provisions may be suspended vis à vis third parties that remain neutral to the conflict, as is the case of Denmark and Sweden during the Russian invasion of Ukraine.

Bearing in mind the above considerations, this section will analyse the legal regime of submarine cables and pipelines during armed conflicts, with a special focus on the Nord Stream. First, we will address the question of when they may be targeted and then, the issues that surround that notion of neutrality, pivotal to the understanding of this narrow set of rules. The relevant provisions will be found in the 1907 Hague Conventions,[76] and in military manuals like the San Remo Manual, a non-binding compilation of the law of naval warfare produced by the International Institute of Humanitarian Law, which may also be useful in as much as it is 'generally regarded as expressive of accepted customary law.'[77] Finally, the UN Charter will close the circle.

IV.2. Legitimate Military Objectives

State practice mentioned in Section 2 provides evidence that submarine cables and pipelines have long been legitimate military targets. However, not all cables and pipelines are the same under international law in times of war. There has traditionally been a three-fold classification depending on whose territories this infrastructure bridges: belligerent states between them, belligerent states with neutral states, or neutral states between them. Nevertheless, this categorization has not been consistent.[78] Most recently, customary

[71] Cooper (n 2).

[72] In contrast, Article XV PCSC clearly states that 'the stipulations of the present Convention do not in any way restrict the freedom of action of belligerents,' thereby explicitly excluding wartime breakings or injuries of submarine cables from its scope of applicability.

[73] Simonet (n 19).

[74] Natalie Klein, 'Armed Conflict and Naval Warfare: Shifting Legal Regimes,' in Natalie Klein (ed) *Maritime Security and the Law of the Sea* (Oxford University Press 2011) 257-300. Similarly, several multilateral energy treaties contain provisions stating that they will 'continue in force in time of war so far as such rights and duties permit' (Article 9 of the Convention Relative to the Transmission in Transit of Electric Power).

[75] Yusuke Saito, 'Reviewing Law of Armed Conflict at Sea and Warfare in New Domains and New Measures: Submarine Cables, Merchant Missile Ships, and Unmanned Marine Systems' (2019) *Tulane Maritime Law Journal* 44, 107-124; James Kraska, 'The Law of Maritime Neutrality and Submarine Cables' (*EJIL:Talk!*, 29 July 2020), accessed 4 April 2023.

[76] 38 States have acceded to Hague IV, 34 to Hague V, and 30 to Hague XIII, among which we shall highlight Russia, Germany, Sweden, Denmark and Finland, the countries whose EEZ Nord Stream crosses. In any case, these conventions are generally regarded as customary international law, binding upon all States.

[77] Klein (n 74).

[78] Guilfoyle, Paige & McLaughlin (n 60).

international law has been compiled in the 1994 San Remo (SRM) and 2020 Oslo (OM) Manuals, which follow the path initiated by Hague IV and the 1913 Oxford Manual, albeit with some differences, and has been followed by the British and New Zealander defence manuals.[79]

First, submarine cables and pipelines exclusively serving the belligerents may be legitimate military objectives (Rule 68 OM, Rule 37 SRM *a contrario*). Given that the San Remo Manual follows the principle of protection of civilian objects (Rule 40), this statement must be understood in the sense that only that infrastructure making 'an effective contribution to military action' is a lawful target.[80]

The International Committee of the Red Cross has put forward an interpretation of this clause that covers all objects 'directly used by the armed forces', which, according to some, may include oil and other minerals as well,[81] since they contribute to 'the party's overall war-fighting capability' (Rule 40.12 SRM). By the same token, the Oslo Manual (Rule 83 f)) states that objects like pipelines like Nord Stream (but exclusively serving the belligerents) 'presumptively qualify as military objectives by 'nature.'' Moreover, it subsequently notes in its commentaries that 'if oil is produced and transported for export, generating revenues to finance the war effort, the facilities fall in the category of war-sustaining industries.' However, it remarks that the lawfulness of attacking exportation facilities, like in this case, is contested. Indeed, Simonet argues that Article 49 of Protocol I to the Geneva Convention imposes upon states the duty to protect objects indispensable to the survival of the civilian population, among which a part of the doctrine controversially includes export oil tanks, for instance.[82] Nevertheless, the 1987 Commentary does not share this expansive reading.

Thus, the San Remo Manual does not offer a clear solution and there is little state practice to tip the scales in favour of either view. Notwithstanding, the first interpretation appears to be dominant. These submarine cables and pipelines may be cut at any point outside neutral waters (i.e., the territorial waters of neutral states) according to the principles of military necessity, distinction, proportionality, and the obligation to take feasible precautions (and due regard to the coastal state's interests in the EEZ).

Furthermore, with regard to communication cables, the Oslo Manual emphasises the need to distinguish them from all other critical undersea infrastructures because they are interconnected and constitute 'the backbone of global data traffic.' Consequently, Rule 69 reads that they 'may not be seized or destroyed even if they are serving one or more Belligerent states.' However, just like the 2017 Tallinn Manual 2.0, it does not reject the possibility that neutral cyber infrastructure like submarine cables be attacked if they become legitimate military objectives (Rules 150 TM, 83 b) OM).

Secondly, submarine cables and pipelines not exclusively serving the belligerents may not be legitimate military objectives and shall not be seized or destroyed (Rule 37 SRM). Hence, that infrastructure linking belligerent and neutral territories, like Nord Stream, shall be respected in all cases. In fact, this acknowledges the multipolarity of the contemporary communication network and expands the protection of neutrality contained in the 1913 Oxford Manual, which allowed cuts in the territorial sea of the belligerent, or in the high seas if there was a blockade. The 2017 Tallinn Manual 2.0 seemingly follows this approach regarding communication cables connecting two neutral countries, which may be cut in case of contribution to military action.[83] In spite of the different nature of these communication cables, power cables and pipelines, which continue to be bipolar, as in Nord Stream, the San Remo Manual extends this protection to them and obliges not to attack them.

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[79] Rob McLaughlin, Tamsin P Paige & Douglas Guilfoyle, 'Submarine Communication Cables and the Law of Armed Conflict: Some Enduring Uncertainties, and Some Proposals, as to Characterization' (2022) *Journal of Conflict and Security Law* 27, n. 3, 297-338.
[80] Saito (n 75).
[81] Ibid.
[82] Simonet (n 19).
[83] McLaughlin, Paige & Guilfoyle (n 79).

Thirdly, and lastly, according to a contemporary synthesis of customary international law that copies Article 54 of the Regulations in Hague IV, submarine cables and pipelines connecting occupied territory with neutral territory may not be seized or destroyed except in the case of absolute necessity (Rule 70 OM).

To sum up, these are the rules that protect submarine cables and pipelines in times of war depending on their origin, course, and destiny, with a special focus on the neutral status of the states that they connect. Then again, it is worth remembering that it is not a settled matter: McLaughlin, Paige & Guilfoyle, for instance, drop the 'unexplained' expression of 'exclusive service' and extend lawful targetability to those conduits linking belligerents and neutral parties, which would indeed change the legal treatment of the Nord Stream incident.[84] Be it as it may, the proper assessment of the Nord Stream case (and of any other bipolar infrastructure, hence excluding multipolar communication cables) requires, therefore, clarifying the status of the countries that it connected.

IV.3. Neutrality in the Nord Stream Sabotage

Neutrality entails a physical safeguard: when a state decides not to take part in a conflict, international law protects it through institutions like the inviolability of its territory (Article 1 Hague V), including the sanctity of its territorial waters.[85] This protection comes at a cost: neutral states must observe certain duties laid primarily in the 1907 Hague Conventions. Neutral states are therefore bound by an obligation of strict impartiality and a prohibition to supply war-related equipment to the belligerents. Nonetheless, the Russian invasion of Ukraine shows that it may not be so simple.

For many, the UN Charter meant the obsolescence of the traditional notion of neutrality. Nowadays, the position of 'qualified neutrality' would allow states to provide military assistance to the victims of a war of aggression. This status would require authorization by the Security Council under Chapter VII (Article 1). In these cases, neutral states may supply military goods to or impose an embargo upon a belligerent state, which would otherwise be a violation of the neutral status.[86] The recent war challenges this point of view, and some argue that qualified neutrality could exist beyond the UN Charter.

Indeed, the fact that the aggressor, Russia, is a permanent member of the Security Council has prevented said UN institution from identifying the cause of the conflict, a decision which would otherwise have been passed with a sufficient majority, as the supporters of the qualified neutrality doctrine have required. Plus, the doctrine and the international community have coalesced around the view that it is an unjustified war of aggression.

Consequently, this alternative vision of 'qualified neutrality' would allow neutral states to help the victims and overcome the impasse that they would otherwise face. As Heintschel von Heinegg puts it: 'If the notion of a "rule-based international order" is to be of any significance, states continuing to rely on and believe in international law can no longer stand by and allow an aggressor government to pursue its apparently illegal aims—even if they are threatened by the aggressor with "strategic responses".'[87]

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[84] One of the few documented incidents, the abovementioned cut of cables during the Spanish-American war of 1898, resulted in the 1923 arbitral award on *Eastern Extension, Australasia and China Telegraph Company, Ltd. (Great Britain) v. United States*, where the Tribunal ruled that the breaking of a cable between a belligerent territory (Spanish Philippines) and a neutral one (Hong Kong) was lawful and did not issue any right to compensation to the neutral owners of the cable. Kraska (n 75) affirms that 'this is the more realistic and compelling standard. In the exigencies of war, belligerents will utilize cables and conduct cyberattacks through them, particularly when the law is less than certain.'; McLaughlin, Paige & Guilfoyle (n 79).

[85] Kraska (n 75).

[86] Michael N Schmitt, 'Providing Arms and Materiel to Ukraine: Neutrality, Co-Belligerency, and the Use of Force' (*Articles of War*, 7 March 2022) accessed 4 April 2023.

[87] Wolff Heintschel von Heinegg, 'Neutrality in the War Against Ukraine' (*Articles of War*, 1 March 2022) accessed 4 April 2023.

All these comments are relevant for the protection of submarine cables and pipelines, whose status and protection during an armed conflict largely depends on the adoption of a neutral position by the states that they bind together.

In the case at hand, it is necessary to remember that the Nord Stream sabotage was widely framed in the conflict triggered by the invasion of Ukraine by Russia in February 2022. According to some theories, the bombings that took place in the EEZ of Denmark and Sweden were purportedly carried out by state agents of an unknown belligerent state – either Russian or Ukrainian agents.[88]

Apparently sharing this view on qualified neutrality, European states like Germany have repeatedly supplied Ukraine with arms, equipment, and other resources to help them sustain their war effort.[89] But as Schmitt clarifies, while providing 'arming and training' could amount to a use of force,[90] said the use of force or acting as a co-belligerent is separate from the law of neutrality that concerns us.[91] So, in this instance, Schmitt and Heintschel von Heinegg claim that the assistance provided to Ukraine by European states is consistent with their qualified neutrality and that they have not supplied materials, conducted operations, or offered intelligence contrary to it.[92] As a result, it can be said that, during the Nord Stream sabotage, a pipeline running between a belligerent and a neutral party was broken.

Finally, if the hypothesis is that European states violated their neutrality, much more is needed to consider them co-belligerents on Ukraine's side.[93] This circumstance would not give rise to the right of Russia to respond in an internationally wrongful way.

IV.4. Consequences of Attacking Nord Stream in Times of War

Even though it is not the purpose of this work to engage in an in-depth discussion of the consequences of each kind of damage to submarine cables or pipelines described in the prior three hypotheses, we shall briefly refer to them for the sake of completeness.

An attack on submarine cables and pipelines within the scope of the first hypothesis, exclusively serving belligerents, does not pose further problems as long as it meets the requirements to be considered a legitimate military objective and the principles of necessity, distinction, and proportionality are observed. If the infrastructure in question could qualify as a civilian object, any attack directed against it would be in violation of the principle of distinction. And if the attack against a military objective can be 'expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated' (Rule 14 of customary international humanitarian law), the principle of proportionality is breached. So, attacking a pipeline with a civil purpose or a military one whose destruction significantly and adversely affects the civilian population may constitute a war crime under the Geneva Conventions and the Statute of the International Criminal Court (Article 2(8)(b)).

Besides, the violation of neutrality as established in the second hypothesis – submarine cables and pipelines not exclusively serving belligerents – is closely linked to the question of state responsibility for internationally wrongful acts. According to Schmitt, if a state by act or omission breaches its international obligations, those states that have been injured by its conduct may adopt countermeasures or ask for

[88] Cooper (n 2).
[89] Nicolas Camut, 'Germany to send 88 Leopard I tanks to Ukraine' (*Politico*, 3 February 2023) accessed 5 April 2023.
[90] Vid. *Military and Paramilitary Activities in and against Nicaragua*, where the International Court of Justice stated that 'the arming and training of the contras can certainly be said to involve the threat or use of force against Nicaragua' (para 228).
[91] Schmitt (n 87).
[92] Ibid.; Heintschel von Heinegg (n 88).
[93] Schmitt (n 87).

reparations as internationally wrongful acts under the Articles on State Responsibility.[94] Countermeasures include imposing sanctions on the breacher and aiding the other party and reparations can involve the restitution of the situation existing before the damage, compensation, or satisfaction.

It has also been pointed out that there may be a political sanction in the form of the injured state joining the armed conflict like the UK did in 1914 after the violation of Belgian neutrality. Moreover, some countries, such as Switzerland, punish violations of neutrality in their criminal codes. Eventually, recourse could be made to the crime of aggression under Article 8 bis Rome Statute.[95]

Finally, the proportionate use of force in the exercise of the right to self-defence might be considered. According to Azaria and Ulfstein, 'the attacks against three pipelines of Nord Stream 1 and 2 either taken individually or cumulatively within less than two days might reach the threshold of gravity required by the International Court of Justice to accept the recourse to the use of force'.[96] In fact, pipelines are not as redundant as modern communications cables, and the lack of backup alternatives burdens the possibility of redirecting their traffic. However, the fact that this pipeline (as most cables in this analysis) is transboundary – and that it lands in Germany but was cut in Denmark and Sweden – makes it difficult to discern who is the objective of the alleged 'armed attack' and, therefore, the state entitled to such a response.

In light of these remarks regarding the three answers available in the second hypothesis, the most realistic solution in the Nord Stream case would be for Germany to invoke the Articles on State Responsibility. At least since February 2022, the European Union has adopted this approach with regard to Russia's invasion of Ukraine. Not only did this event constitute a breach of Russia's international obligations, but it also endangered international peace and security and ran against the prohibition of the use of force enshrined in the UN Charter. The requirements for the imposition of sanctions on the responsible state of an international wrongful act fall out of the scope of this work. For now, it must suffice to mention that the burden of proof lies on the injured state and that there is little evidence on the Nord Stream case.

V. Conclusion

As Travers Twiss affirmed in 1880, '[t]he great arterial lines of telegraphs have become indispensable for the circulation of the political lifeblood so necessary to maintain the vitality of our modern international state system.'[97] Now, this statement can be also applied to pipelines that, like Nord Stream, supply nations with the resources they need to carry out their ordinary activities. Their importance justifies interest in their protection, but, as we have seen, this protection may be deficient.

To begin with, critical undersea infrastructure laid in the territorial sea falls within the territorial jurisdiction of the state, which may protect them, as in Sweden. In contrast, those laid in the EEZ and the high seas face two challenges. On one hand, there is little leeway for states to prevent the laying of these cables and pipelines for security reasons as shown by Sweden's reluctant acceptance to grant the permit for the Nord Stream project crossing its EEZ. On the other hand, states have failed to protect them despite having prescription and enforcement jurisdiction on the grounds of the nationality principle. Hence, relevant provisions in criminal codes – where existent – lack proper enforcement mechanisms. Finally, the law of the sea in times of peace offers an alternative instrument, the law of piracy, which, following a broad interpretation and abandoning the two-ships rule, could be applied universally to subjects acting without the consent of a state and causing damage to property in areas

[94] Ibid.
[95] Mario Bettati, 'Chapitre 7. La neutralité,' in Mario Bettati (ed) *Le droit de la guerre* (Odile Jacob, 2016) 288-294.
[96] Danae Azaria & Geir Ulfstein, 'Are sabotage of submarine pipelines an 'armed attack' triggering a right to self-defence?' (*EJIL:Talk!*, 18 October 2022) accessed 5 April 2023.
[97] Twiss (n 3) 884.

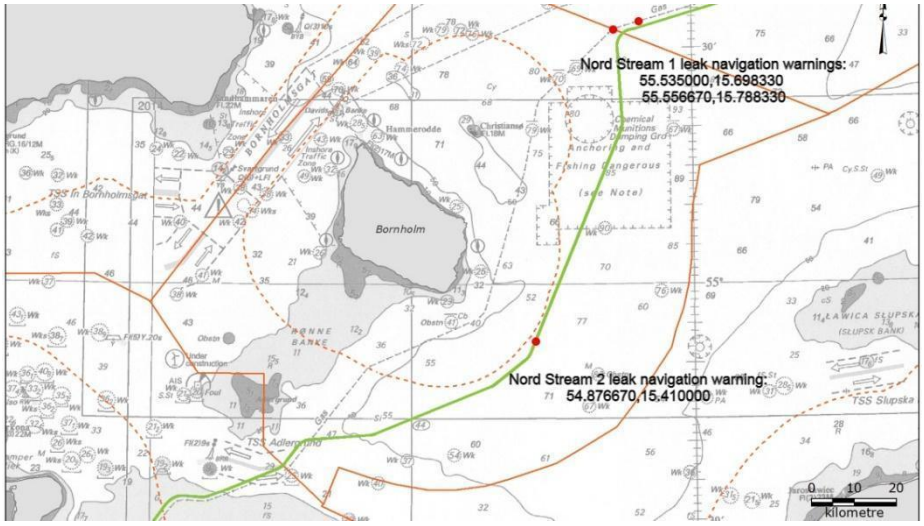
beyond national jurisdiction.

In times of war, these rules remain largely applicable but for some modulations. First, submarine cables and pipelines exclusively serving the belligerents and constituting legitimate military objectives – presumptively all, since there is some agreement that they are of a military nature (Rule 83 f) OM) – may be cut at any point (Rule 40.12 SRM). However, those not exclusively serving the belligerents and involving at least a neutral state, like Nord Stream under the 'qualified neutrality' paradigm, must be protected. In any case, the availability of remedies to respond to such a violation of the law of neutrality under the law of state responsibility and the law of the use of force clashes with the emergence of hybrid warfare, which blurs the responsibility of states and confuses the final picture. Nord Stream's case is particularly telling in this sense, as several theories regarding its authorship remain alive nine months after it happened, and no decisive evidence has been published.

Lastly, there is a further lesson that we can learn from this study: the security of submarine cables and pipelines, embodied here in Nord Stream, is at the centre of an area of convergence between the law of the sea, the law of piracy and international humanitarian law. These are distinct legal frameworks, but they all help to address the problems that arise when an incident like this takes place. Not only do they offer different alternatives depending on the characterization of the author – a ship flying the country's flag or a foreign one, a pirate or a state agent – but they also provide states with imbricated regimes that can tackle different aspects of the same problem. For instance, international humanitarian law enshrines the sanctity of the territorial waters of neutral states and Article 19 UNCLOS allows states to restrict passages that are not innocent. Similarly, where a cable has been damaged in a manner that may not be consistent with international humanitarian law rules described in Section 4, the PCSC establishes the right to board and visit foreign ships beyond territorial waters and allows the collection of necessary information. Yet this does not apply under UNCLOS and – what is more – to pipelines and harms security in waters beyond national jurisdiction.

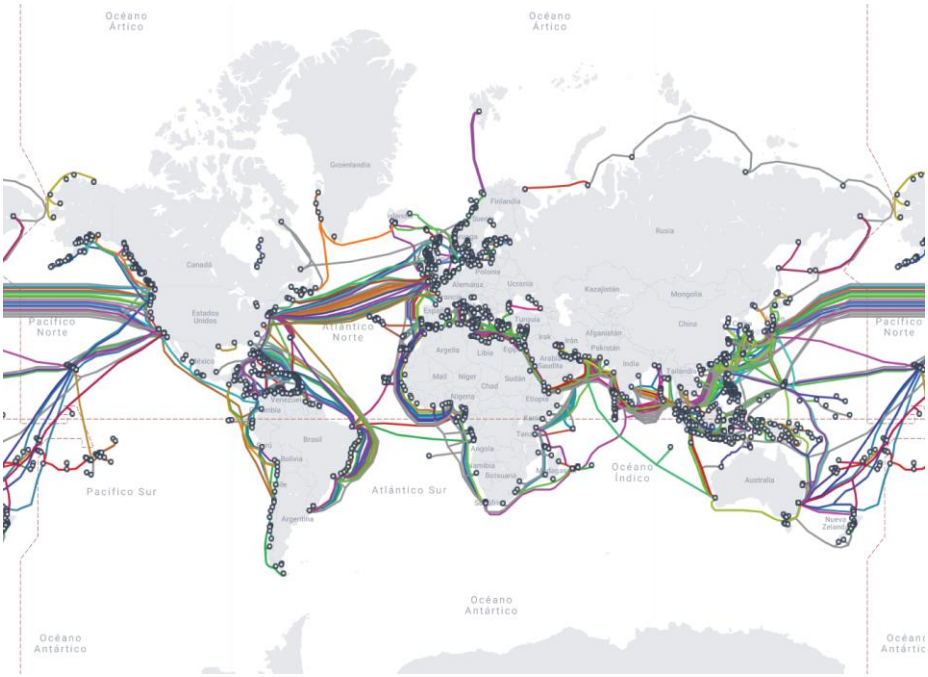
In conclusion, a comprehensive study of the international protection of submarine cables and pipelines with the occasion of the Nord Stream sabotage shows the complexity of a subject in which different fields of international law overlap. Although a systematic review of existing international instruments can shed some light on the legal definition of diverse damages, it also shows that the gap is still open.

Annex 1. Nord Stream Sabotage



Source: Euractiv 2022, *Gazprom: Nord Stream leaks stop, gas supply could resume on single line*, Euractiv, accessed May 4, 2023, https://www.euractiv.com/section/global-europe/news/gazprom-nord-stream-leaks-stop-gas-supply-could-resume-on-single-line/.

Annex 2. Submarine Cables Map



Source: TeleGeography 2023, *Submarine Cable Map*, Submarine Cable Map, accessed March 9, 2023, https://www.submarinecablemap.com/.