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14. ABSTRACT
This paper analyzes the current legal regime for the protection of underwater fiberoptic cables from nefarious actors. To do so, it first looks at the history of telecommunications and the subsequent advances in technology that led to fiberoptic cables while also tracing the history of international treaties. It then looks at the Truman Proclamation on the Continental Shelf as an example of a state establishing customary international law in a relatively short period of time. It then delves into a strategic plan for the United States to establish customary international law for the protection of any underwater fiberoptic cable that lands on its territory.

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Underwater Fiberoptic Cables:
A Customary International Law Approach
to Solving the Gaps in the International Legal Framework

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I. INTRODUCTION

If someone asked you to explain how your email message got from the smart device in your hand to a recipient across the globe, would you know the answer? Chances are you may think that it is the myriad satellites orbiting the earth that are responsible for your email communication from Point A to Point B. If you thought this was the case, then you would not be alone. There is a common misperception that the world's communications data is transmitted by those satellites. As one commentator noted, "the idea that a person's cell phone link is sent to a nearby cell tower, but that the overseas messages themselves are then broken into bits of data, which then ply the ocean depths at the speed of light via unseen cables, is hard to imagine."[1] In reality, though, the world's communications data is transmitted by these unseen cables. Our data travels far below sea-level, along a series of underwater fiberoptic cables on the seabed connecting the earth's continents. In March of 2019, several mainstream newspapers had front page articles discussing the importance of this web of underwater fiberoptic cables that brought greater recognition to their importance.[2]

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[1] Douglas R. Burnett & Lionel Carter, *International Submarine Cables and Biodiversity of Areas Beyond National Jurisdiction: The Cloud Beneath the Sea*, BRILL RESEARCH PERSPECTIVES IN THE LAW OF THE SEA, 3 (2017).

[2] *See* Jeremy Page, Kate O'Keefe, and Rob Taylor, *U.S. Fights Huawei in Undersea Data Grid*, WALL STREET JOURNAL, Mar. 13, 2019, at A1 (discussing United States increasing its awareness of vulnerabilities to underwater fiberoptic cables); *see also* Adam Satariano, *How the Internet Travels Across the Oceans*, N.Y. TIMES, Mar. 10, 2019 (explaining how email is broken into bits and transferred to its recipient via underwater fiberoptic cables).

Experts estimate that 98% of international internet, data and telephone traffic is transmitted by this series of underwater fiberoptic cables.[3] In the past ten years, there has been increased awareness of the vulnerabilities of underwater fiberoptic cables and, more relevant to proponents of international law, there has been increased dialogue regarding not just the international legal regime protecting them but the gaps in that regime as well. There have been no less than four prominent scholarly articles highlighting the gaps in the international legal framework protecting underwater fiberoptic cables. The articles recommend various solutions that would use international law to secure the vital underbelly of the world's communications. These solutions vary from the creation of an international treaty to the United States ratification of the United Nations Convention Law of the Sea (UNCLOS) to the collective revision of various treaties that were ratified decades ago. These solutions, while certainly commendable, are not necessarily practical in the world that exists in 2019. Instead, the United States should look at customary international law for solutions to the gaps in the international legal regime protecting underwater fiberoptic cables. This paper presents a comprehensive strategy for the United States to establish customary international law to protect the fiberoptic cables beyond its territorial seas.

The first section of the paper will explore the history of underwater cables and briefly discuss the importance of these cables to the world. The second section will present the current international legal framework, its gaps and the various solutions offered by scholars. The third

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[3] Douglas R. Burnett, David Freestone & Tara Davenport, *Submarine cables in the Sargasso Sea: legal and environmental issues in areas beyond national jurisdiction*, Report of a Workshop held in Washington, D.C. on Oct. 23, 2014, 9 (2015), *available at* http://www.sargassoseacommission.org/storage/documents/Submarine_Cables_in_the_Sargasso_Sea_Final_Workshop_Report_dated_16_January_2015.pdf.

section will turn to customary international law and how it has been developed over the last century. Lastly, this paper will present a comprehensive plan for the United States to establish customary international law to cover some of the current gaps in the international legal regime, specifically protection of fiberoptic cables that land in the United States beyond its territorial seas.

II. BACKGROUND

A. HISTORY

One has to understand the history of underwater cables to fully understand the international legal framework governing them and its current gaps. This paper does not attempt to provide a comprehensive history of the subject. Rather, it will briefly highlight the almost 170 year history of telecommunications to provide context to the ensuing legal discussion.[4] The first telegraph link was laid between Dover, England and Calais, France in 1850.[5] It failed almost immediately because of an abrasion caused by the surrounding environment underwater.[6] A new telegraph link was laid between the two locations a year later, but this time was enmeshed with steel; it worked for over a decade.[7] The first transatlantic underwater cable was laid between Newfoundland and Ireland in June 1858 and transmitted over 400 messages before it broke after

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[4] *See* Stewart Ash, *The Development of Submarine Cables*, *in* SUBMARINE CABLES: THE HANDBOOK OF LAW AND POLICY, 19-39 (Douglas R. Burnett et al. eds., 2014) (providing a comprehensive review of the history of submarine cables).

[5] Lionel Carter & Douglas R. Burnett, *Subsea Telecommunications*, *in* ROUTLEDGE HANDBOOK OF OCEAN RESOURCES AND MANAGEMENT, 349, 350 (Hance D. Smith, et al. eds., 2015).

[6] Ash, *supra* note 4, at 21.

[7] *Id.* at 21-22.

26 days.[8] Six years later, in 1864, a new cable was successfully laid between Valentia, Ireland and Hearts Content, Newfoundland.[9] Cables were then laid successfully throughout the globe, including a cable connecting land masses along the seabed of the Pacific Ocean in 1902.[10]

As one historian noted, "advances in cable design and construction improved reliability and transmission speeds, which increased from twelve words per minute for the first cables to 200 words per minute by the 1920s."[11] The invention of the telephone created a new era in telecommunications in the 1950s. The underwater cable in the 1950s now carried signals by copper wire, allowing transcontinental voice communications between parties.[12] As scientific research continued to advance, these cables advanced in capabilities to allow a single cable to carry multiple voice channels. The first coaxial system, laid between Scotland and Newfoundland in 1956, called a "TAT-1," allowed for 707 telephone calls on the first day between the United States and the United Kingdom.[13] Technological innovation allowed for increased capacity of voice channels over the decades. The last coaxial cable, the TAT-7, had the ability to carry up to 4,000 channels.[14]

The emergence of satellites, however, greatly reduced the need for underwater cables in the 1970s.[15] Satellites had more capacity and were more reliable, resulting in their dominance of

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[8] *Id.* at 22; Carter and Burnett, *supra* note 5, at 350.

[9] Ash, *supra* note 4, at 22.

[10] *Id.*

[11] Carter & Burnett, *supra* note 5, at 351.

[12] Stephen C. Drew & Alan G. Hopper, *Fishing and Submarine Cables: Working Together,* International Cable Protection Committee (February 23, 2009) at 8, *available at* https://www.iscpc.org/publications/.

[13] Carter & Burnett, *supra* note 5, at 351.

[14] Drew & Hopper, *supra* note 12, at 15.

[15] *Id.*

the telecommunications sphere through the 1980s. This reliance on satellites during this timeframe, though decades ago, in small part, explains some of the misperception highlighted *supra*.

The discovery of fiberoptic cables shifted the focus back on underwater cables in the late 1980s. Fiberoptic cables could carry significantly more capacity than either the coaxial cables of the past or satellites. The first transatlantic fiberoptic cable was laid in 1986.[16] Since then, technological advances have increased the capacity of fiberoptic cables by a factor of 100,000 in 25 years.[17] Fiberoptic cables are so much more efficient than satellites that one expert estimated in 2007 that, if the then-roughly forty fiberoptic cables connecting the United States to the rest of the world were cut simultaneously, "only 7% of the total United States traffic volume could be carried by satellite."[18] Thus, technological advancement brought underwater cables to an extremely prominent role not just nationally for the United States, but globally as well.

B. Wait - it's the size of a garden hose?

An underwater fiberoptic cable is roughly the size of a garden hose. Each fiberoptic cable contains a set of between 6 to 24 glass fibers at its core.[19] Each glass fiber is estimated to be the width of a human hair.[20] These glass fibers are encased in a steel tube filled with a

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[16] Carter & Burnett, *supra* note 5, at 351.

[17] Burnett & Carter, *supra* note 1, at 3.

[18] *Id.* at 4 (quoting statement of Douglas R. Burnett, International Cable Protection Committee (ICPC), to Senate Foreign Relations Committee on Oct. 4, 2007).

[19] Drew & Hopper, *supra* note 12, at 9.

[20] *Id.*

thixotropic medium.[21] There is a layer of steel wire strands to provide strength, a "copper-band composite conductor" that carries electrical power and a "protective insulating sheath of polyethylene" on the outside.[22] These layers help protect the cables from the harsh environmental conditions of their surroundings on the seabed. Each underwater fiberoptic cable has devices called "repeaters" at intervals along it to regenerate or strengthen signals sent at long distances.[23]

Communications are transmitted by a series of "lasers [that] shoot pulses of light through these glass fibers, generating tens of thousands of communications circuits."[24] Computers at one end of the communication convert sounds and data to "digital pulses," and computers at the opposite end reconstruct these "digital pulses" back together.[25] Cable systems are not inexpensive; rather, they represent significant multi-national cooperation and investment. A Director of National Intelligence Report for the United States estimates that a single cable often represents over $1 billion dollars of investment.[26] A relatively tiny device, then, represents significant global investment and, as the next section will show, significant global importance.

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[21] Carter & Burnett, *supra* note 5, at 350.

[22] *Id.*

[23] Drew & Hopper, *supra* note 12 at 9.

[24] *Id.*

[25] *Id.*

[26] Public-Private Analyst Exchange Program, *Threats to Undersea Cable Communication*, DEPT. OF HOMELAND SECURITY ANALYST EXCHANGE PROGRAM, 11 (Sept 28, 2017), *available at* https://www.dni.gov/files/PE/Documents/1---2017-AEP-Threats-to-Undersea-Cable-Communications.pdf.

C. GLOBAL IMPORTANCE

As of 2017, it was estimated that the global fiberoptic cable landscape encompassed 241 active, separate and decentralized international cables that total roughly 1,046,138 km of submarine cables across the globe's surface.[27] In December 2014, it was estimated that at least 55 in-service submarine cables landed in the United States, with at least 12 more fiberoptic cables planned for construction.[28] These cables do not land in disparate locations across the American coastline; rather, they are clustered along patches in California, Florida, New Jersey, New York and Oregon.[29] Indeed, the overwhelming majority of the trans-Atlantic fiberoptic cables have landing stations all within a 30-mile radius of New York City.[30] New fiberoptic cables were simply layered on top of previous locations of past cables.

These fiberoptic cables are largely unseen by the average person using the internet daily. The ubiquity of the internet is, in part, what makes it difficult for the average human being to understand the physical aspect of it. Indeed, the search for the physical infrastructure that supplied the internet led one writer on a search across the globe, culminating in the 2012 book *Tubes: A Journey to the Center of the Internet*. Its author, Andrew Blum, noted that "other than obscurity and a few feet of sand, [the underwater fiberoptic cables] are just there" when

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[27] Burnett & Carter, *supra* note 1, at 45 (citing to a WFN *Subtel Forum* database analysis reported to Douglas Burnett in an email dated Jan. 4, 2017).

[28] Working Group 8 Submarine Cable Routing & Landing, *Final Report - Protection of Submarine Cables Through Spatial Separation*, THE COMMUNICATIONS SECURITY, RELIABILITY & INTEROPERABILITY COUNCIL IV, 1.

[29] Robert Martinage, *Under the Sea*, FOREIGN AFFAIRS, January/February 2015 Issue, *available at* www.foreignaffairs.com/articles/global-commons/under-sea.

[30] Michael Sechrist, *New Threats, Old Technology - Vulnerabilities in Undersea Communication Cable Network Management Systems*, Harvard Kennedy School, Discussion Paper #2012-03, 9, *available at* https://www.belfercenter.org/sites/default/files/files/publication/sechrist-dp-2012-03-march-5-2012-final.pdf.

describing a fiberoptic cable landing on a beach.[31] Indeed, this author ventured to a cable landing location in Lynn, Massachusetts to find a manhole clearly marking its existence in the middle of a rotary on a well traveled street near the town beach. This particular fiberoptic cable was hiding in plain sight of any knowing observer.[32] While landing stations are not the subject of this paper, it is relevant to note this description as it highlights many of the vulnerabilities of underwater fiberoptic cables.

The financial numbers that the internet, and thus this web of underwater fiberoptic cables, is responsible for each day are staggering. In a report published in 2017, experts noted that the Society for Worldwide Interbank Financial Telecommunications (SWIFT) transmitted 15 million messages over cables to 8,300 banking organizations, securities institution and corporations in 208 countries each day.[33] Similarly, that same report cited that the United States Clearing House Interbank Payment System (CHIPS) estimated that $1 trillion American dollars was transmitted each day to over 22 countries.[34] Thus, when those cables are cut, the financial impact can be devastating. As the former Chief of Staff for the United States Federal Reserve Board once said,

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[31] Alexandra Chang, *Why Undersea Internet Cables are more vulnerable than you think they are*, WIRED.COM, Apr. 2, 2013, *available at* https://www.wired.com/2013/04/how-vulnerable-are-undersea-internet-cables/.

[32] The fiberoptic landing station in Lynn, Massachusetts is located at an obscure but secured facility bearing the name GTT. The cable lands at Nahant Beach, a quaint beach on the shore not two miles from the facility. There are markings on the sidewalk alongside the beach denoting where the fiberoptic cable is located underneath (from the water to the facility), and the manhole is marked with the name of the first telecommunication company that laid the cable (360 Network). *See* www.surfacing.in (providing interactive webpage for user to simulate a signal traveling along the undersea network to nearly all fiberoptic cable landing stations globally, including photos and explanations of how the cable industry works).

[33] Burnett & Carter, *supra* note 1, at 4.

[34] *Id.*

"when communication networks go down, the financial services sector does not grind to a halt, rather it snaps to a halt."[35]

There are several recent examples of this devastating impact. In January 2019, Tonga was without internet for over 11 days when the cable connecting its 170 islands to the rest of the world was cut by what was believed to have been a ship's anchor.[36] International calls were unavailable, as were credit card payments.[37] A local satellite internet provider offered some connectivity, but "officials…block[ed] sites like Facebook and YouTube so that essential services could squeeze through."[38] In another example in Southeast Asia, it took 11 ships almost 50 days to complete repairs to undersea cables damaged from an underwater earthquake off the coast of Taiwan in 2006.[39] China, Japan, the Philippines, Singapore, Taiwan and Vietnam experienced significant disruptions to their respective economies due to lost communication links.[40] In April 2018, Mauritania was without internet access for 48 hours when a cable from Europe to Africa, called the African Coast to Europe (ACE) submarine cable, was cut.[41] Ten additional countries were impacted by the severed cable, preventing internet access to millions of individuals.[42]

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[35] Public-Private Analyst Exchange Program, *Threats to Undersea Cable Communication*, *supra* note 26, at 6.

[36] Daniel Victor, *Could You Last 11 Days Without the Internet? Tonga Finds Out the Hard Way*, N.Y. TIMES, Jan. 31, 2019, *available at* https://www.nytimes.com/2019/01/31/world/asia/tonga-internet-blackout.html.

[37] *Id.*

[38] *Id.*

[39] Martinage, *supra* note 26.

[40] *Id.*

[41] Chris Baynes, *Entire Country Taken Offline for Two Days After Undersea Internet Cable Cut*, UK INDEPENDENT. Apr. 10, 2018, *available at* https://www.independent.co.uk/news/world/africa/mauritiana-internet-cut-underwater-cable-offline-days-west-africa-a8298551.html.

[42] *Id.*

D. THE WORST CASE SCENARIO

While natural disasters or ships' anchors have caused much of the destruction to underwater cables in the past, there is increasing concern regarding more nefarious actors. One cut by an anchor will cause delay to internet traffic as it is re-routed via another fiberoptic cable; simultaneous cuts to several cables will have significantly more impact on a nation. This paper is concerned with these nefarious actors. For example, there has been significant concern in the past few years that the Russian government will sever fiberoptic cables as a precursor to a traditional kinetic military operation.[43] There is even Russian precedent for doing so. As the United Kingdom Member of Parliament (MP) Rishi Sunak noted in his Policy Exchange Report on Undersea Cables, "Russian special forces only had to secure one internet exchange point (at Simferopol)…[to] cut cable connections to the rest of Ukraine" in its annexation of Crimea in 2014.[44] Russia "was able to control the flow of information" into Crimea, allowing it "to spread disinformation aimed at portraying its actions as legitimate."[45] In 2017, the United Kingdom's then-Defense Chief, Air Chief Marshal Sir Stuart Peach, warned that risks to its underwater cables presented a "new risk to our way of life" and that a severed cable to the island would have "potentially catastrophic" impact on its economy.[46]

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[43] *See* David E. Sanger & Eric Schmitt, *Russian Ships Near Data Cables are too close for U.S. Comfort*, NY TIMES, Oct. 25, 2015, *available at* https://www.nytimes.com/2015/10/26/world/europe/russian-presence-near-undersea-cables-concerns-us.html?hp&action=click&pgtype=Homepage&module=first-column-region&region=top-news&WT.nav=top-news&_r=0 (discussing American military concerns regarding Russian naval submarines patrolling close to the location of underwater fiberoptic cables).

[44] Rishi Sunak MP, *Undersea Cables: Indispensable, insecure,* POLICY EXCHANGE, 32 (2017).

[45] *Id.*

[46] Arj Singh, *Russia "could cut UK's undersea internet cables," defence chief warns*, THE INDEPENDENT, Dec. 14, 2017, *available at* https://www.independent.co.uk/news/uk/home-news/russia-attack-uk-cables-underwater-sea-protection-a8111536.html.

Further, it is not simply the Russians that can be seen as a threat to this critical underwater infrastructure. In 2013, the Egyptian military arrested three men in scuba gear who allegedly attempted to cut an underwater fiberoptic cable off the coast of the Egyptian city of Alexandria.[47] This attempt is reported to have "caused a 60 percent drop in internet speeds."[48] While no further details on the arrest have been reported, MP Sunak noted the incident "demonstrates…the low degree of sophistication required for determined individuals to cause serious disruption[s] to internet communications."[49] In addition, the United Kingdom reportedly foiled an attempt by Al-Qaeda to sever the United Kingdom's internet access in 2007.[50] While the planned attack was on the main server house of Telehouse Europe, and not underwater fiberoptic cables, the report nevertheless highlights that intentional damage to the physical infrastructure of the internet is a target of myriad nefarious actors. The next section will analyze the international legal framework protecting the underwater fiberoptic cables.

III. The International Legal Regime

A. The 1884 Convention for the Protection of Submarine Telegraph Cables

As noted above, understanding the history of underwater cables assists in understanding why the cables that carry so much of the world's communications data in 2019 refer to a treaty that was established in the 19th century. The importance of underwater cables was recognized very early in their history. Cyrus Field, notable as the first trans-Atlantic cable proponent, stated

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[47] Chang, *supra* note 31.

[48] *Id.*

[49] Sunak, *supra* note 43, at 24.

[50] James Rivington, *UK foils terrorist plot to kill the internet,* Tech Radar, Mar. 12, 2007, *available at* https://www.techradar.com/news/internet/web/uk-foils-terrorist-plot-to-kill-the-internet-132665.

in 1866 that 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."[51] The protection of underwater cables was on the agenda of seven international conventions between 1863 and 1913.[52] The first international treaty protecting underwater cables, the Convention for the Protection of Submarine Telegraph Cables (hereinafter "1884 Cable Convention"), was signed in Paris in 1884.

The 1884 Cable Convention "applies outside territorial waters to all legally established submarine cables landed" on the colonies or territory of the signing parties.[53] There are several provisions in the convention that are relevant today. First, it made damage, either intentional or through negligence, a punishable offense.[54] Second, it gave signatories the right to board vessels when they "have reason to believe that an infraction of the measures provided for in the present Convention has been committed by a vessel other than a vessel of war."[55] This is significant because, as the first article of the treaty notes, the 1884 Cable Convention applies beyond territorial waters. Yet while it only addressed submarine cables beyond territorial waters, it has been reported that "it was understood by the negotiators that coastal States would also have laws protecting submarine cables within their territorial waters."[56] At the time of enactment, however,

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[51] Douglas Burnett, Tara Davenport & Robert Beckman, *Overview of the International Legal Regime Governing Submarine Cables*, *in* SUBMARINE CABLES: THE HANDBOOK OF LAW AND POLICY, *supra* note 4, at 65.

[52] *Id.*

[53] Convention for the Protection of Submarine Telegraph Cables, art. 1, Mar. 14, 1884 [hereinafter 1884 Cable Convention].

[54] *Id.* at art. 2.

[55] *Id.* at art. 10.

[56] *Submarine Cables - International Framework*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OFFICE OF THE GENERAL COUNSEL, https://www.gc.noaa.gov/gcil_submarine_cables_international.html.

the width of territorial seas was not nearly as expansive as the twelve nautical miles that it measures today.[57]

The over-arching purpose of the 1884 Cable Convention was to require signatory states to adopt domestic legislation to protect submarine cables. At Article XII, the signatories agreed to "take or to propose to their respective legislatures the necessary measures for insuring[sic] the execution of the present Convention, and especially for punishing, by fine or imprisonment, or both" those who violated the Conventions' provisions.[58] This is implemented in the United States with penalties for willful injury to a cable of "imprisonment for a term not exceeding two years, or to a fine not exceeding $5,000, or to both fine and imprisonment."[59] This legislation, first implemented in the 19th century, has not been updated since. Needless to say, there has never been an arrest or prosecution under this section of the United States Code.[60]

B. 1958 Geneva Conference on the Law of the Sea

As the world transformed from telegraph to telephone, underwater cables were still vitally important. Thus, when the newly formed United Nations tasked the International Law Commission (ILC) to codify the law of the sea in 1950s, underwater cables were a topic on its agenda. The ILC struggled with whether to codify all aspects of maritime law, even if it was

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[57] *See* George Grafton Wilson, *The Law of Territorial Waters*, 23 Am. J. Int'l. L. 2, 241-380 (Apr 1929) (detailing history and commentary of the law of territorial waters up until 1929, noting that most coastal states claimed 3 nautical miles but others varied).

[58] 1884 Cable Convention, *supra* note 53, at art. 12.

[59] 47 U.S.C. § 21 (2012).

[60] Eric Wagner, *Submarine cables and protections provided by the law of the sea*, 19 Marine Policy 2, 127, 135 (Mar. 1995).

governed by another treaty such as the 1884 Cable Convention.[61] In the end, three provisions of the 1884 Cable Convention were incorporated in the ILC Draft Articles: Article II (making intentional or negligent damage to cables a punishable offense), Article IV (indemnification of the owner of a cable by the owner of another cable company who damaged the cable) and Article V (indemnification for cable owners who lost equipment in an attempt to avoid damage to a cable).[62] These provisions were considered "essential principles on the law of the sea" and thus necessary to include in the ILC Draft Articles.[63] Only Article II - making intentional or negligent damage to cables a punishable offense - related to the criminalization of damage of the cables. The inclusion of Article IV and Article V illuminate the concerns of the time that the majority of damage would be caused by other cable laying companies. The ILC Draft Articles also, for the first time, included the right of each nation to lay underwater cables.[64]

The first Conference on the Law of the Sea was held in 1958, at which the ILC Draft Articles were used as a negotiating text. The three provisions recommended by the ILC were adopted in the resulting 1958 Convention on the Continental Shelf and the 1958 Convention on the High Seas. Interestingly, the United States initially protested the adoption of just three provisions of the 1884 Cable Convention for fear that it "would undermine its effectiveness."[65] President Dwight D. Eisenhower noted as much when he transmitted the documents to the Senate for its advice and consent. In the commentary submitted to the Senate, the administration

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[61] Burnett, Davenport & Beckman, *supra* note 51, at 70.

[62] *Id.* at 71.

[63] *Id.*

[64] *Id.*

[65] *Id.* at 72.

noted that it initially urged restraint from including submarine cables in the document "in view of the existing conventions on the subject…but withdrew its objection on the understanding that existing conventions or other international agreements already in force would not be affected."[66] Thus, in order for the United States to sign and ratify the 1958 treaties, it was agreed that no provisions in the 1958 treaties would impact the 1884 Cable Convention.[67]

C. 1982 United Nations Convention on the Law of the Sea

The United Nations held a third conference on the law of the sea in 1973, culminating nine years later in the 1982 UNCLOS. Three articles specific to the protection of underwater cables were included in the final draft. Article 113 requires states to adopt domestic legislation to prosecute individuals that intentionally or negligently damage submarine cables.[68] This article, however, makes clear that prosecution is limited to "a ship flying its flag or by a person subject to its jurisdiction."[69] Article 114 requires states to adopt domestic legislation providing for the indemnification of a cable company that causes damage to another cable in the process of laying or repairing a cable.[70] Finally, Article 115 requires states to adopt domestic legislation

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[66] Four Conventions & an Optional Protocol Formulated at the UN Conference on the Law of the Sea, Message from the President of the United States, Dwight D. Eisenhower to the 86th Congress, 1st Session, on Sept. 9, 1959, Ex. Doc. J-N, 86-1,-2.

[67] Burnett, Davenport & Beckman, *supra* note 51, at 73. *See* Convention of the High Sea, Apr. 29 1958, 450 U.N.T.S. 11 (codifying this provision at Article 30, excerpted here: "The provisions of this Convention shall not affect conventions or other international agreements already in force, as between States Parties to them.")

[68] United Nations Convention on the Law of the Sea, art. 113, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

[69] *Id.*

[70] *Id.* at art. 114.

providing for indemnification for owners of ships that incur costs in the avoidance of damaging cables.[71]

These provisions were nearly exact duplicates of the ILC Draft Articles that had been approved in the 1958 Conventions. Again, recognizing the history of underwater cables is important in light of the timing of UNCLOS. In the 1970s and 1980s, satellites were the dominant provider of telecommunications data. Thus, while submarine cables were important enough to be included in UNCLOS, very little debate was had regarding the relevant provisions. The first fiberoptic cable was not invented until after UNCLOS concluded and, as noted *supra*, the first underwater fiberoptic cable was not laid until 1986. Thus, while UNCLOS is one of the foundational documents for the international legal regime governing underwater fiberoptic cables, neither it, nor its predecessor documents in 1958 or 1884, for that matter, could ever have anticipated the importance that underwater fiberoptic cables would have to the global economy.

One aspect of UNCLOS that is relevant to note for purposes of this discussion is that one of its most important aspects is its emphasis on flag state jurisdiction. As one commentator noted, "it was necessary to clarify that a State could not take legislative measures against nationals of another State, only against its own ships or nationals."[72] This paper will explore the gaps in the international legal framework now that the foundation for the protection of underwater fiberoptic cables has been laid.

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[71] *Id.* at art. 115.

[72] Myron H. Nordquist, Satya N. Nandan & James Kraska, UNITED NATIONS CONVENTION ON THE LAW OF THE SEA 1982: A COMMENTARY 268 (Center for Oceans Law and Policy, 2012).

D. GAPS IN THE INTERNATIONAL LEGAL FRAMEWORK

There have been several law review articles, policy papers and blog posts in the past ten years that have drawn attention to the gaps in the international legal framework regarding the protection of underwater fiberoptic cables. Most, if not all, of these sources highlight the same four gaping holes in the current international law regime.

First, while coastal nations have the right, under UNCLOS, to adopt laws and regulations relating to innocent passage through their respective territorial seas to protect cables and pipelines, there is no obligation to do so.[73] Article 113 of UNCLOS, noted *supra*, also gives coastal states the authority to adopt national legislation to criminalize intentional or willful destruction of an underwater cable for a person under its jurisdiction. Yet, as one commentator noted, "these provisions do not oblige States to take such measures, and many States do not have sufficient laws and regulations to protect cables from international damage within territorial waters, including the most basic measure of ensuring damage to submarine cables is criminalized."[74]

One review of national legislation of Southeast Asian states found, for example, that there were no implementing provisions by any state expressly criminalizing intentional or negligent damage to underwater cables.[75] Further, even if states have adopted such measures under their respective domestic legislation, the legislation may not have been updated since the 19th century.

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[73] UNCLOS, *supra* note 68, at art. 21.

[74] Tara Davenport, *Submarine Cables, Cybersecurity and International Law: An Intersectional Analysis,* 24 CATH. U. J. L. & TECH 1, 57, 83 (Dec. 2015).

[75] Robert Beckman, *Protecting Submarine Cables from Intentional Damage,* in SUBMARINE CABLES: THE HANDBOOK OF LAW AND POLICY, *supra* note 4, at 287 n. 37.

Thus, criminal penalties, even if they do exist, are outdated and do not incentivize coastal nations to enforce and prosecute alleged offenders.

Second, the international legal regime currently limits jurisdiction to flag states. While this is not a problem unique to protection of underwater fiberoptic cables, it nonetheless is a limitation for protection of these critical communication lines. UNCLOS limits jurisdiction to ships flying its flag or to flag state nationals who commit such acts. There is allowance for a coastal nation to prosecute foreign offenders within its territorial waters for a limited subset of offenses that would include intentional damage to underwater fiberoptic cables; however, this is not the case for those offenders beyond the coastal nation's territorial waters.[76] Thus, not only are there gaps regarding criminalization of the offense, there are significant gaps in jurisdiction of potential offenders.

Third, while the 1884 Cable Convention provided for a right to board suspected vessels of engaging in nefarious acts against underwater cables, the later treaties, to include UNCLOS, do not provide for the same provisions. Thus, it is unclear what right, if any, a nation has to board a suspected vessel outside of its territorial seas. Under UNCLOS, if a vessel is engaged in nefarious activities within the territorial seas, then presumably the passage would not be innocent and, under Article 25, the coastal nation "may take the necessary steps in its territorial sea to

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[76] *See* UNCLOS, *supra* note 68, at art. 27 ("The criminal jurisdiction of the coastal State should not be exercised on board a foreign ship passing through the territorial sea to arrest any person or to conduct any investigation in connection with any crime committed on board the ship during its passage, save only in the following cases: (a) if the consequences of the crime extend to the coastal State; (b) if the crime is of a kind to disturb the peace of the country or the good order of the territorial sea; (c) if the assistance of the local authorities has been requested by the master of the ship or by a diplomatic agent or consular officer of the flag State; or (d) if such measures are necessary for the suppression of illicit traffic in narcotic drugs or psychotropic substances.").

prevent passage which is not innocent."[77] The underwater fiberoptic cables, though, are more susceptible to damage at great depths beyond a coastal nation's territorial seas.

Lastly, while not entirely relevant to the discussion of underwater cables discussed in this paper, none of the provisions discussed *supra* apply to the cable landing stations on land. The landing stations are nonetheless of strategic importance but as of yet lack any international law protections.

E. Recommendations for a way forward

Several commentators have recommended ways forward to address these gaps. Each recommendation will be briefly discussed in order to understand the thesis of this paper. First, Tara Davenport has written several law review articles on the subject and is an editor of the foremost book on submarine cables, *Submarine Cables: The Handbook of Law and Policy*. Davenport recognizes that "the existing legal framework is fragmented and is not capable of ensuring the security of this vital communications infrastructure."[78] Davenport recommends that the international community come together to sign an international treaty specifically for the protection of the underwater fiberoptic cables.[79]

In her proposal, any treaty on underwater fiberoptic cables would a) define the range of offenses against cables, to include intentional damage and the introduction of malware; b) oblige the parties to enact domestic legislation criminalizing said offenses; c) extend jurisdiction to those acts committed within a state's territory, committed by a national or from a ship flying its

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[77] *Id.* at art. 25.

[78] Davenport, *supra* note 74, at 82.

[79] *Id.* at 90.

flag; d) oblige states to extend jurisdiction to an offender within its territory even if the offense took place outside of its territory; e) oblige states to take offenders within its territory into custody; and f) include provisions regarding extradition of individuals alleged to have committed offenses.[80] Davenport's proposal would consolidate the myriad international laws under one document, and place obligations on signatories to enact domestic legislation. It would also ensure that if a nation will not prosecute offenders within its jurisdictional reach, then that nation must extradite the individual to a country that will do so.

Yoshinobu Takei, another prominent legal scholar in this area of the law, reviews the various jurisdictional arguments and argues that customary international law supports states extending universal jurisdiction to offenders who intentionally damage underwater cables.[81] Takei further recommends that three international treaties be revised to bring the international legal order up to date. The treaties he discusses are a) the 1884 Cable Convention; b) existing treaties of the International Maritime Organization; and c) the 1988 Suppression of Unlawful Acts (SUA) at Sea Convention.[82] Similar to Davenport, his proposal calls for the international community to come together to form a consensus regarding underwater fiberoptic cables and enter into legally binding instruments to enhance their protection.

MP Sunak, noted *supra*, acknowledges that "the present piecemeal legal regime is deficient in ensuring the security of cables and such vital infrastructure requires a more

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[80] *Id.*

[81] Yoshinobu Takei, *Law and Policy for International Submarine Cables: An Asia-Pacific Perspective,* ASIAN J. I. L. 2, 228 (2012).

[82] *Id.* at 228-229.

comprehensive approach."[83] He makes several international recommendations in addition to the United Kingdom-specific proposals in his Policy Exchange piece. First, he recommends coastal nations establish cable protection zones akin to New Zealand and Australia.[84] Second, he recommends, similar to Davenport, for the United Kingdom to push for an international treaty specific to the protection of underwater fiberoptic cables.[85]

Lastly, Laurence Reza Wrathall makes several specific recommendations for the United States to take steps to protect the underwater fiberoptic cables. First, Wrathall recommends that the United States ratify UNCLOS.[86] Second, he recommends that the United States adopt the 1988 SUA Protocol and Amendments and provide clarification as to whether intentional damage to underwater fiberoptic cables constitutes piracy.[87] Third, he recommends that the United States establish a central monitoring point of contact within the federal government and, similar to MP Sunak, implement safety zones around underwater fiberoptic cables.[88] Finally, he recommends that the United States issue declaratory statements regarding its views on protecting underwater fiberoptic cables.[89]

These commentators have several commonalities to them. All recognize the existing gaps and all, in some way, are advocating for the international community to come together to

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[83] Sunak, *supra* note 44, at 35-36.

[84] *Id.* at 35. *See* Carter & Burnett, *supra* note 5 (providing explanation of how cable protection zones work in practice).

[85] *Id.* at 36.

[86] Laurence Reza Wrathall, *The Vulnerability of Subsea Infrastructure to Underwater Attack: Legal Shortcomings and the Way Forward*, 12 SAN DIEGO INT'L L.J. 1, *223,* 248 (2010).

[87] *Id.* at 249-250.

[88] *Id.* at 250.

[89] *Id.*

achieve consensus on a way forward to protect these vital communication lines. Yet, all of these approaches are, in some sense, merely illusory. One only has to look to the international community's struggles with combatting climate change as an example of how difficult achieving international consensus can be in modern day. It took six years for the international community to agree on the Paris Agreement in 2015, only to have to wait three more years for implementing guidelines to be agreed upon in 2018. Furthermore, the community initially began discussions in 1989, almost 25 years prior to the international community coming together in Paris. The international community lacks the political will to come together on these issues in a timely manner and, while some of these commentators acknowledge that truth, do not provide alternative solutions to these gaps. If a nation wants to make significant change to the international legal regime, then what about a strategic plan to establish customary international law?

IV. CUSTOMARY INTERNATIONAL LAW

A. ELEMENTS OF CUSTOMARY INTERNATIONAL LAW

The starting point for any discussion of customary international law is Article 38 of the Statute of the International Court of Justice. It describes the law that is applied at the International Court of Justice (ICJ), and, as such, is generally considered the most authoritative reference for sources of international law. Article 38 lays out four types of international law that it can apply, one of which is relevant to this discussion. It applies "international custom, as

evidence of a general practice accepted as law."[90] There are thus two elements to customary international law: (1) the general practice of states; and (2) *opinio juris*. *Opinio juris* is defined as "the acceptance by states that such practice is necessary by rule of law."[91]

In 2018, the ILC published conclusions on the identification of customary international law, noting that there must be a general practice, and acceptance of that practice as law (*opinio juris*).[92] It went further, noting that in reviewing whether these two elements exist, "regard must be had to the overall context, the nature of the rule and the particular circumstances in which the evidence in question is to be found."[93] This formula has often been considered to contain an objective element (general practice) and a subjective element (the attitude toward that practice). The American Law Institute (ALI) Restatement (Third) Foreign Relations Law of the United States (hereinafter "ALI Restatement") overstates this principle and seemingly adds a third element to customary international law. The ALI Restatement states that "customary international law results from a general and consistent practice of states followed by them *from a sense of* legal obligation (emphasis added)."[94] The Restatement's use of the words "from a sense

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[90] Statute of the International Court of Justice, art. 38, Oct. 24, 1945 (The full text reads as follows: "The Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply: international conventions, whether general or particular, establishing rules expressly recognized by the contesting states; international custom, as evidence of a general practice accepted as law; the general principles of law recognized by civilized nations; subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.").

[91] LORI F. DAMROSCH & SEAN D. MURPHY, INTERNATIONAL LAW: CASES AND MATERIALS 61 (6th ed. 2014).

[92] Int'l Law Comm'n, Draft Conclusions on identification of customary international law, with commentaries, U.N. Doc. A/73/10, at 124 (2018).

[93] *Id.* at 126.

[94] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 102 (1986).

of" implies a causation element between the two other elements. For the purposes of this paper, however, customary international law will be looked at through the lens of Article 38.

(i) General Practice of States

Brownlie's Principles of Public International Law includes a non-exhaustive list of what constitutes custom. The list includes the following:

> diplomatic correspondence, policy statements, press releases, the opinions of government legal advisors, official manuals of legal questions (e.g., manuals of military law), executive decisions and practices, orders to military force (e.g., rules of engagement), comments by governments on ILC drafts and accompanying commentary, legislation, international and national judicial decisions, recitals in treaties and other international instruments (especially when in 'all states' form), an extensive pattern of treaties in the same terms, the practice of international organs and resolutions relating to legal questions in UN organs, notably the General Assembly.[95]

Similarly, the ILC lists as evidence of state practice "diplomatic acts and correspondence; conduct in connection with resolutions adopted by an international organization or at an intergovernmental conference; conduct in connection with treaties; executive conduct, including operational conduct 'on the ground;' legislative and administrative acts; and decisions of national courts."[96]

The ALI Restatement notes that general practice "includes diplomatic acts and instructions as well as public measures and other government acts and official statements of policy, whether they are unilateral or undertaken in cooperation with other states."[97] Thus, custom can be found in a variety of forms or, in the words of the ILC, a "wide range of forms…

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[95] JAMES CRAWFORD, BROWNLIE'S PRINCIPLES OF PUBLIC INTERNATIONAL LAW 24 (8th ed. 2012).

[96] Int'l Law Comm'n, *supra* note 92, at 133.

[97] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 102 cmt. b (1986).

[that includes] both physical and verbal acts."[98] It is also important to note that these lists, while non-exhaustive, are also not in any particular order. The ILC states as much, noting that "there is no pre-determined hierarchy among the various forms."[99]

There is also not a requirement that the practice occur over a significant period of time. In *Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands*, the ICJ stated that

> although the passage of only a short period of time is not necessarily, or of itself, a bar to the formation of a new rule of customary international law on the basis of what was originally a purely conventional rule, an indispensable requirement would be that within the period in question, short though it may be, State practice, including that of States whose interests are specifically affected, should have been both extensive and virtually uniform.[100]

The ILC notes that as long as the practice is general, by which it means "sufficiently widespread and representative, as well as consistent…no particular duration is required."[101] The commentary to the ALI Restatement reiterates this point, noting "the practice necessary to create customary international law may be of comparatively short duration, but…it must be 'general and consistent.'"[102]

Indeed, in 1960, ICJ jurist Judge Kotaro Tanaka noted that the time element to establish customary international law may be entirely different in the modern age. Judge Tanaka noted that "in former days, practice, repetition, and *opinio juris sive necessitatis*, which are the

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[98] Int'l Law Comm'n, *supra* note 92, at 133.

[99] *Id.*

[100] North Sea Continental Shelf Cases (Fed. Rep. of Ger. v. Den.; Fed. Rep. of Ger. v. Neth.), 1969 I.C.J. 3, 43 (Feb. 20).

[101] Int'l Law Comm'n, *supra* note 92, at 135-136.

[102] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 102 cmt. b (1986).

ingredients of customary international law might be combined together in a very long and slow process extended over centuries…in the contemporary age of highly developed techniques of communication and information…[it] is greatly facilitated and accelerated."[103] He envisaged a nation being able to communicate directly with the rest of the world via an international organization such as the United Nations, and immediately knowing the respective countries' reactions to the principle. Thus, a new principle of customary international law could be established over a short period of time should the specially affected nations all adhere to it. This will be illuminated *infra* when the paper analyzes the establishment of customary international law regarding the continental shelf.

Lastly, not every nation has to participate in the practice for it to be considered a general practice. *Brownlie's* reiterates that "complete uniformity of practice is not required, but substantial uniformity is" to establish a general practice.[104] The ILC notes "in assessing generality, an indispensable factor to be taken into account is the extent to which those States that are particularly involved in the relevant activity or are most likely to be concerned with the alleged rule…have participated in the practice."[105] The ALI Restatement notes that "it should reflect wide acceptance among the states particularly involved in the relevant activity."[106] For example, if there is a particular custom that is relevant to coastal states, a custom could be

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[103] South West Africa Cases (Ethiopia v. S. Africa; Liberia v. S. Africa), 1966 I.C.J. 6, 289 (July 18) (dissenting opinion of Judge Tanaka).

[104] CRAWFORD, *supra* note 95, at 24.

[105] Int'l Law Comm'n, *supra* note 92, at 136.

[106] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 102 cmt. b (1986).

considered general practice if coastal states practice it, even if landlocked states do not adhere to it as that custom would not be relevant to landlocked states.

(ii) Opinio juris

As noted *supra*, the second element is often referred to as a subjective element and, as such, it is often difficult to ascertain the reasoning behind a nation's decisions. The ICJ has a varied history with its methodology to determine if *opinio juris* exists in a given case. Generally speaking, the court "will often infer the existence of *opinio juris* from a general practice, from scholarly consensus or from its own or other tribunals' previous determinations."[107] The ILC notes that "the practice in question must be undertaken with a sense of legal right or obligation."[108] The ALI Restatement notes that "a practice that is generally followed but which states feel legally free to disregard does not contribute to customary law."[109]

Brownlie's suggests a usage such as ceremonial salutes at sea would be something that is generally practiced by nations, but "which does not reflect a legal obligation."[110] Nations may freely choose not to obey such practices as they are practiced out of "courtesy (or 'comity') and are neither articulated nor claimed as legal requirements."[111] *Opinio juris* exists only when that practice is adhered to from a legal requirement. The International Law Commission provides a non-exhaustive list of sources to find this element, including "public statements made on behalf

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[107] CRAWFORD, *supra* note 95, at 26.

[108] Int'l Law Comm'n, *supra* note 92, at 138.

[109] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 102 cmt. c (1986).

[110] CRAWFORD, *supra* note 95, at 23.

[111] *Id.* at 23-24.

of States; official publications; government legal opinions; diplomatic correspondence; decisions of national courts; treaty provisions; and conduct in connection with resolutions adopted by an international organization or at an intergovernmental conference."[112] The ALI Restatement concedes that the subjective element is not as straightforward, noting "it is often difficult to determine when that transformation into law has taken place."[113]

B. Does Customary International Law Still Exist?

The time element that Judge Tanaka mentions in the 1960 ICJ opinion discussed *supra* regarding customary international law highlights some of the most significant changes in its establishment over the past sixty years. One commentator contends that the establishment of customary international law is, in reality, a faster and more efficient route to establishing international law than an international treaty. He advocates that there are three primary reasons for its continuity vitality in the international field. First, Michael Scharf argues that customary international law has "more jurisprudential power than does treaty law."[114] Once customary international law is established, it is binding on all states. Treaties, on the other hand, are only binding on those States that are parties to it.

Second, Scharf notes that in practice, customary international law is actually faster than treaties.[115] For example, it took nearly ten years for UNCLOS to be written by the international

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[112] Int'l Law Comm'n, *supra* note 92, at 140.

[113] Restatement (Third) of Foreign Relations Law § 102 cmt. c (1986).

[114] Michael Scharf, Customary International Law in Times of Fundamental Change: Recognizing Grotian Moments 30 (2013).

[115] *Id.* at 30-31.

community; yet, as will be seen below, President Harry Truman established customary international law almost immediately with his proclamation on the continental shelf. Third, treaty law is not as precise with its language because it is a result of the various parties' compromises during negotiation.[116] Scharf argues that customary international law "may provide greater precision since [it] evolve[s] in response to concrete situations and cases and are often articulated in written decisions of international courts."[117] Thus, there are distinct advantages for a nation to choose to establish customary international law as opposed to pushing the international community to establish a convention to draft a treaty. This next section will analyze the establishment of customary international law regarding the continental shelf in the 1940s.

C. The Truman Proclamation

One example of a nation establishing customary international law in a "radical departure" from what was previously thought of as international law was United States President Harry Truman's proclamation regarding the resources on the continental shelf.[118] On September 28, 1945, President Truman declared that "the natural resources of the subsoil and sea bed of the continental shelf beneath the high seas but contiguous to the coasts of the United States as

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[116] *Id.* at 31.

[117] *Id.* at 31.

[118] *Id.* at 107. *See* Ann L. Hollick, U.S. Foreign Policy and the Law of the Sea 18 (1981) (discussing that this proclamation was formulated during the administration of President Franklin D. Roosevelt such that the naming of it may not be entirely accurate).

appertaining to the United States, subject to its jurisdiction and control."[119] The United States included a series of legal, economic, geological, conservation and national security arguments to justify its departure from international law. These justifications could be universal for all coastal states. For example, "self-protection compels the coastal state to keep close watch over activities off its shore which are of the nature and relative permanence necessary for utilization of resources of the subsoil and sea bed of the continental shelf."[120] Any coastal state would agree with this security assertion.

Similarly, this explanatory statement noted that "resources often form part of a pool or deposit extending seaward from within the state and their utilization may affect resources therein…[making it such that] the government of the country to whose shores the resources are contiguous is clearly the logical government to exercise jurisdiction and control over these resources."[121] Thus, again, a coastal state seeing this justification could think to itself that a similar policy would be advantageous to its own security, economic and geological aims.

The speed with which this proclamation was adopted by coastal states around the globe had as much to do with the universal justifications as it did to the growth of international organizations through which the policy could be distributed. The proclamation "unleashed a series of claims throughout Latin America, [including] claims that often went well beyond the

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[119] Truman Proclamation on the Continental Shelf, Presidential Proclamation No. 2667 (Sept. 28, 1945), *available at* https://iea.uoregon.edu/treaty-text/1945-presidentialproclamationnaturalresourcescontinentalshelfentxt

[120] HOLLICK, *supra* note 118, at 48 (quoting Explanatory Statement on the Proper Utilization and Development of Natural Resources of the Subsoil and Sea Bed of the Continental Shelf, *Foreign Relations 1945*, II, 1500-1501.).

[121] *Id*.

original US proclamation."[122] The acceptance was so widespread that Professor Hersch Lauterpacht, a noted ICJ jurist, remarked in 1950 that in considering "a radical change in pre-existing international law, the length of time within which the customary rule of international law comes to fruition is irrelevant."[123] There was a "degree of general acquiescence in what at first appears to be a startling innovation."[124]

Lauterpacht also noted that, when considering a creation of new international law by custom, "what matters is not so much the number of states participating in its creation and the length of the period within which that change takes place, as the relative importance, in any particular sphere, of [the] states inaugurating the change."[125] With regard to the continental shelf, the United States and Great Britain, the two great maritime powers at the time, were at the vanguard of the change. The stature of these two counties greatly enhanced the credibility of this innovative claim. This was the case despite the United Kingdom's initial reluctance to join in the Truman Proclamation, as will be discussed *infra*.

Thirteen years after the Truman Proclamation, the world came together at the 1958 Geneva Conference on the Law of the Sea, as discussed *supra*. The conference essentially codified the United States viewpoint on the continental shelf as customary international law. As one commentator noted, the convention "amounted to a formal international affirmation of the Truman Proclamation."[126] This particular example is one of a paramount importance in any

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[122] *Id.* at 61.

[123] Hersch Lauterpacht, *Sovereignty over Submarine Areas*, 27 BRIT. Y.B. INT'L L. 376, 393 (1950).

[124] *Id.* at 393.

[125] *Id.* at 394.

[126] SCHARF, *supra* note 114, at 119.

discussion of establishing innovative customary international law in the maritime domain. It provides a good framework for the United States to follow in terms of establishing customary international law to protect its underwater fiberoptic cables. The next section of this paper will lay out several steps for the United States to do so.

V. Application to Underwater Fiberoptic Cables

A. Strategic Plan to Establish Customary International Law

The sections *supra* highlight that there are several gaps in the international legal framework protecting underwater fiberoptic cables. One in particular is of paramount importance - the ability to protect cables from intentional damage as a result of nefarious actors beyond a coastal nation's territorial seas. One method of radical change that the United States should consider would be prosecution of alleged offenders for intentional damage, which would include the ability for its Coast Guard, and its Navy, for that matter, to be able to stop and board vessels suspected of planning or committing such offenses beyond the territorial seas. If the United States wanted to initiate such a radical change to the regime, then there are several steps it should take to do so.

First, Congress needs to enact updated domestic legislation that criminalizes the intentional damage of underwater fiberoptic cables. That legislation needs modern-day penalties that will make it economically worthwhile for the Coast Guard, Navy and Department of Justice to investigate, arrest and prosecute offenders. In addition, the legislation needs explicit language that it applies extra-territorially to offenses that may have, or have had, an impact on the United States. If a underwater fiberoptic cable is cut in the middle of the Atlantic Ocean, then the

impact in the United States, and the other country where the cable lands, for that matter, is the same as if the cable was cut in the territorial seas of the United States - access is shut off, or re-routed (and delayed), in both scenarios. The concept of protective jurisdiction will be expounded upon *infra*, but the important point is that the domestic legislation needs to be both updated and explicit with regard to its reach.

Second, similar to the Truman Proclamation, the United States needs to issue a proclamation declaring its intentions. This proclamation should come from the President of the United States, and also include transparent legal, security, and diplomatic reasoning behind its decision. This will be expounded upon *infra*, but the emphasis in this step is that the announcement should come from the highest office of government. The United States needs to be explicit with its intentions and ensure that the entire world is clearly put on notice.

This proclamation, however, should not simply be done in a vacuum. Rather, the United States needs to engage other allies that are specially affected by underwater fiberoptic cables. For example, Australia and New Zealand, already at the forefront with cable protection zones, would be ideal countries to issue simultaneous intentions regarding protection of underwater cables beyond their respective territorial waters. The United Kingdom would be another country that is specially affected and would have similar reasoning in wanting to protect its territory from the impact of intentional damage to the underwater fiberoptic cables connecting it to the rest of the world. Canada and Japan may be two other countries that the United States would want to engage in issuing simultaneous declarations. It could help if an international organization like the North Atlantic Treaty Organization (NATO) joined in the simultaneous proclamation. As Lauterpacht noted in 1950, the importance of the countries initiating the change is paramount.

Thus, having significant allies in America's corner, as well as an international organization like NATO, would mean that the proclamation carries greater weight and would potentially be more strongly indicative of international law.

Third, the United States should plan additional diplomatic statements at international events to expound on its reasoning. For example, the Ambassador to the United Nations could issue a diplomatic statement at the annual General Assembly meeting in September. Other Cabinet members, like the Secretary of State, Homeland Security Secretary and the Secretary of Defense, could provide similar speeches in both domestic and international fora. The Legal Advisor to the Department of State should give a speech laying out the legal justification for this new approach and create a formal memorandum to that effect.

Fourth, again similar to the Truman Proclamation, the United States needs to clearly articulate its legal justification for such a radical departure from previous international legal standards. While this is looped into both the second and third steps, it is carved out separately as a fourth step to underscore the impact that transparent reasoning is necessary to the establishment of customary international law in this context. The justification would begin with the national security threat of the underwater fiberoptic cables, and the impact that loss of connectivity would bring to the nation's economy and the broader global economy. Since the underwater fiberoptic cables provide such connectivity to the United States and, further, since the cables land on the United States, it makes the most sense for the United States to exert its jurisdiction to protect those cables regardless of their location in the worlds' oceans. This applies to the nation on the other end of the cable as well, as the responsibility for protection of the respective underwater cable should be shared between them.

In light of the detrimental impact that interference with an underwater fiberoptic cable would produce on American soil, the United States would be justified in exerting jurisdiction using the protective principle. The ALI Restatement notes that "a state has jurisdiction to prescribe law with respect to…certain conduct outside its territory by persons not its nationals that is directed against the security of the state or against a limited class of other state interests."[127] This so-called "protective principle" has been assumed by "nearly all states…over aliens for acts done abroad which affect the internal or eternal security or other key interests of the state."[128] Therefore, there is precedent for exerting it in other similarly situated scenarios.

This principle, however, is not without limitation. Rather, a nation's exercise of protective jurisdiction must be reasonable.[129] The ALI Restatement lays out several factors to consider in determining reasonableness, including "the link of the activity to the territory of the regulating state, i.e., the extent to which the activity…has substantial, direct and foreseeable effect upon or in the territory."[130] Other factors include the following:

> the character of the activity to be regulated, the importance of regulation to the regulating state, the extent to which other states regulate such activities and the degree to which the desirability of such regulation is generally accepted; the importance of the regulation to the international, political, legal or economic system; the extent to which the regulation is consistent with the traditions of the international system; the extent to which another state may have an interest in regulating the activity; and the likelihood of

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[127] RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 402 (1986).

[128] CRAWFORD, *supra* note 95, at 462.

[129] *See* RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW § 402 (1986) ("Even when one of the bases for jurisdiction under Section 402 is present, a state may not exercise jurisdiction to prescribe law with respect to a person or activity having connections with another state when the exercise of such jurisdiction is unreasonable.").

[130] *Id.*

conflict with regulation by another state.[131]

The United States would have to clearly articulate its security interests in protecting these underwater fiberoptic cables extra-territorially. This is especially important because of the likelihood that this legislation will be in conflict with regulations of the flag state of either the vessel or the nationality of the individuals accused of intentionally damaging the underwater cables.[132] In the case of underwater fiberoptic cables, simultaneous damage to the cables would cause catastrophic impact to America's economy and national security, wreaking potential havoc on nearly every aspect of American citizens' daily lives. Given the importance of the cables to the financial, political, diplomatic and national security interests of the United States and the ongoing issues with lax flag state enforcement, it is likely that exercising protective jurisdiction in this regard would be widely accepted by other coastal nations specially affected by such nefarious activity.

Lastly, the United States should enter into bi-lateral agreements with the countries at the opposite ends of the underwater fiberoptic cables that have landing stations on American soil. For example, transatlantic cables that land in Ireland, Portugal, the United Kingdom, France and Spain would all necessitate bilateral agreements between the United States and the respective landing station country on the opposite end of the cable. These agreements should provide for protection of the cable beyond the countries' respective territorial seas. They should require both countries' navies to patrol the world's oceans to protect their respective underwater cables.

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[131] *Id.*

[132] *See* Takei, *supra* note 81 (discussing application of universal jurisdiction to offenders of damage to underwater fiberoptic cables akin to an act of piracy).

Further, they should provide for bilateral support in apprehension, evidence collection and prosecution of alleged offenders.

In completing these steps the United States would be establishing both state practice and the *opinio juris* necessary to establish customary international law. Numerous coastal states would be issuing similar proclamations and, once the justification is widely distributed across the globe, other nations will, similar to the Truman Proclamation, recognize their own security interests in protecting the underwater fiberoptic cables that land on their respective territory. Again, it is not necessary that all states issue similar proclamations; only that specially affected states engage in a consistent practice. The legal memorandum, as well as additional speeches done by legal advisors, would have the effect of clearly articulating that the declaration stems from a sense of legal obligation.

There is even the potential that American adversaries could see the advantage to establishing customary international law in this area. After all, any interference with an underwater fiberoptic cable has the potential to impact the respective countries' ability to utilize the vital communication lines. For example, if several underwater fiberoptic cables are cut, then that traffic could be re-routed to other fiberoptic cables, which may cause delay to more users, including the nefarious actor's traffic. As more countries agree to the common principle, there will be more of a collective will to come together to codify the principles in a treaty.

B. Difficulties with this Approach

There are several obstacles that stand in the way of this approach. First, and most obvious, is that it relies on other allies to share America's concerns with underwater fiberoptic

cables and agree to issue similar proclamations simultaneously. There is no assurance that other nations - even our allies - will agree to a radical departure of this nature. Indeed, even with the Truman Proclamation, neither Canada nor the United Kingdom wanted any part in issuing similar proclamations. The United Kingdom announced that "His Majesty's Government do[es] not wish to be associated with this Decision [regarding the Continental Shelf] and would prefer that, when it is announced, no reference should be made to prior consultation with His Majesty's Government."[133] Similarly, Hollick noted that "it was clear that the Canadian government saw no reason to join with the United States in unilateral policy that was unnecessary and that moreover would have a negative impact on relations with other countries."[134] Thus, even with sound legal justification, it is not guaranteed that other nations will initially agree to a radical change such as the one proposed here regarding protection of underwater cables just as occurred over the continental shelf.

This goes to the whole premise that customary international law even provides a solution to the gaps in the international legal framework. If other countries or international organizations do not agree with the radical departure from the current regime, then there is not the requisite ingredients for the establishment of customary international law as there is no evidence of a general state practice. In addition, if several states countered this proclamation, it is not clear whether customary international law would be established despite these persistent objectors. Thus, bringing the world together at a convention to negotiate differences may be the most feasible way to achieve change in this realm.

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[133] HOLLICK, *supra* note 118, at 59 (quoting *Letter from the second secretary of the British embassy (Cecil) to Mr. William Bishop, assistant to the legal advisor (Hackworth)*, August 31, 1945, FOREIGN RELATIONS 1945, II, 1527.).

[134] *Id.* at 60.

Second, while the United States is not a party to UNCLOS, the unilateral change it is advocating for regarding boarding vessels suspected of engaging in intentional damage to underwater fiberoptic cables runs directly counter to the boarding provisions in UNCLOS. UNCLOS provides for justification for boarding a non-warship on the high seas if several factors are met, none of which is suspicion of intentional damage of a submarine cable. For example, if a ship is engaged in piracy, the slave trade or is flying without nationality, then UNCLOS allows for a warship to board said vessel.[135] In addition, UNCLOS explicitly states that "every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag."[136] Thus, in advancing the position that the United States could not just board a vessel suspected of intentional damage to cables but also potentially *prosecute* said individuals in domestic courts would be in stark contrast to the terms of UNCLOS.

Lastly, there are difficulties with the reach of the jurisdictional claims of the United States. The underwater fiberoptic cables are not, for the most part, owned by governments. Whereas the continental shelf and the resources on it belonged to the respective coastal states, the underwater cables are owned by private, multi-national companies.[137] While the cables have been deemed "critical infrastructure" by the United States government, the underwater cables themselves are the property of these multi-national companies.[138] These companies have agreements, called "Construction and Maintenance Agreements," that specify certain provisions,

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[135] UNCLOS, *supra* note 68, at art. 110.

[136] *Id.* at art. 94.

[137] *See* Mick Green, *The Submarine Industry: How Does it Work?* in SUBMARINE CABLES: THE HANDBOOK OF LAW AND POLICY, *supra* note 4. (discussing how the cable industry works).

[138] Working Group 8 Submarine Cable Routing & Landing, *Final Report - Protection of Submarine Cables Through Spatial Separation*, *supra* note 28 at 11.

including responsibilities that include "monitoring shipping activities close to the cable[s]."[139] Thus, in order for this strategy to work, the United States would potentially need agreement from the multi-national companies that own the fiberoptic cables.

C. Reasons Why it may Still be the Most Effective Method

Despite the potential obstacles to this approach, the process of establishing customary international law may be the best possible avenue for the United States to make change in this area of international law. First, the justifications for protecting underwater fiberoptic cables are universal. Every state would find commonality in their desire to maintain connectivity via underwater fiberoptic cables. As this paper has illustrated, the underwater fiberoptic cables are vital to not just national economies, but the entire global economy as well. Therefore, similar to the Truman Proclamation, once the United States issues the declaration along with its justification, it would not be surprising if other coastal nations express similar declarations regardless of whether these countries initially chose to issue simultaneous declarations.

Second, while UNCLOS does contain explicit provisions regarding boarding of a vessel, that same article begins with "except where acts of interference derive from powers conferred by treaty."[140] As noted *supra*, the 1884 Cable Convention is still considered valid international law. The United States can legitimately look to the provisions regarding boarding in Article X. It can also argue that there was pre-existing law for this principle. Indeed, Cyrus Field, noted *supra*,

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[139] Green, *supra* note 123 at 49. These companies also maintain complex security mechanisms by which they can immediately discover damage to a fiberoptic cable via sensor monitoring vice physical monitoring. There are risks that malicious actors could access these complex systems and cause irreparable harm via a cyber attack; however, this is not the subject of this paper.

[140] UNCLOS, *supra* note 68, at art. 110.

recognized the vital importance of underwater cables in the 19th century. Thus, it is not necessarily the case that this position would be contrary to UNCLOS. Similarly, there was no limitation on nationality of the offender in the 1884 Cable Convention. UNCLOS, at Article 92, provides a similar exception for exclusive jurisdiction to flag state "save in exceptional cases expressly provided for in international treaties."[141] Thus, there is precedent in the 1884 Cable Convention for the United States to establish jurisdiction over foreign offenders beyond territorial waters. In addition, as one commentator noted, "Article 113 [of UNCLOS] only concerns the obligations of states that can establish national jurisdiction over an alleged offender, and does not make clear which other states may also exercise penal jurisdiction over the breaking or damage of submarine cables beyond the territorial seas."[142] Thus, international law is not clear on the criminalization of offenders beyond the territorial seas. The United States and its allies could clear up any confusion with its declarations.

Lastly, while it is true that the cables are owned and operated by private multi-national companies, the United States would not be doing anything to the actual underwater fiberoptic cables. The United States Coast Guard and United States Navy would simply be patrolling the areas where the underwater fiberoptic cables are located, and would not be in any physical or other contact with the cables. There would be no intention by the United States government to engage the actual underwater fiberoptic cable that would in any way cause damage to it. Rather, the entire intention of the United States government would be protection of those underwater fiberoptic cables, which would, in turn, save those companies potentially billions of dollars in

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[141] *Id.* at art. 92.

[142] Takei, *supra* note 81, at 217.

repair costs. Thus, while it would be prudent for the United States to engage these multi-national companies so that they understand the rationale behind the declaration, there would not be a need for a public-private partnership agreement. In fact, these companies would most likely prefer for governments to protect the underwater cables from intentional damage so that they do not have to expend millions of dollars to repair them.

Therefore, the United States should strongly consider the advancement of this area of international law through the establishment of customary international law. In doing so, the United States would advance the area of the law more quickly than through treaty formation and, further, clearly establish the parameters of the international law protecting underwater fiberoptic cables with explicit language rather than the language of ambiguous compromise that often results from international treaties. This approach would be a radical departure from prior international law; however, the importance of these underwater fiberoptic cables is unprecedented in our world's history. Never before has a set of extra-territorial infrastructure played such a critical role in United States (and global) affairs. Thus, an unprecedented scenario requires an unprecedented solution.

VI. CONCLUSION

The world today is connected by a series of underwater fiberoptic cables that traverse the globe's surface. While the underwater fiberoptic cable in 2019 has transformed in capacity and effectiveness since the first underwater cable was laid in 1850, the international legal regime has not experienced a similar transformation. The international legal regime remains where it was during the mid-20th century, when telephone calls and telegraphs connected the world's

continents. Needless to say, there are significant gaps in the international legal regime. This paper looks at the gaps and reviews the proposed solutions that international scholars present in various fora. Those solutions all contemplate some form of international collaboration to form a specific treaty bringing together the various pieces of international law into one document to shore up any gaps in existing law. While the recommendations are commendable, this paper looks at customary international law and argues that the United States should establish a strategic framework to establish customary international law to protect underwater fiberoptic cables. Unilateral action, or action taken with a series of allies or international organizations, especially when done with universal justification, may shake the international community from its deadlock and establish customary international law. Clear precedent exists in the rapid adoption of the United States unilateral proclamation of rights in its continental shelf in 1945 as good international law in less than a decade. In doing so, the United States may find itself on a more efficient path toward protecting itself from nefarious actors looking to wreak havoc on its territory by simultaneously damaging multiple underwater fiberoptic cables in areas beyond its territorial seas.