# 30 Years of UNCLOS (1982-2012): Progress and Prospects

# 《联合国海洋法公约》（1982–2012）签署30周年：成绩与展望

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# Editors´ Note & Acknowledgments

This book is a collective effort by international law of the sea scholars and professionals of different countries, who gathered in Qingdao, China on November 22 – 24, 2012 to celebrate the 30th anniversary of the signature of the United Nations Convention on the Law of the Sea ( UNCLOS) . The three – day conference brought together legal scholars from the China, United Kingdom, United States, Canada, Australia, New Zea land, Singapore, and South Korea and South Africa to address various aspects of the UNCLOS, known as "A Constitution for the Oceans".

Over the course of the three – day conference, the relevant issues influenced by the UNCLOS were examined in a scholarly but free – wheeling fashion, including the legal response to climate change, dispute resolution mechanisms, sustainable fisheries, submarine cables, Arctic governance, marine environmental protection, regional cooperative agreements, maritime boundary delimitation, state responsibility, and ballast water regulation. The product of that examination in the form of principal papers delivered in the conference has been preserved and selectively presented here as a valuable contribution to the study and development of the rules of law governing the world oceans.

As editor and contributing author, and on behalf of my co – editor Ashley White, I extended our gratitude and thanks to the contributing authors of this informative and provocative work. We would also like to thank the administrators, professors, and students at the Ocean University of China for their generous support and kind assistance in making the conference a great success. Last but not least, we

wish to acknowledge Stephen Barnes and David White for their advice and assistance in editing this book.

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September 2013

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# Thirty Years of UNCLOS and Submarine Cables

Douglas R. Burnett [1]

**Abstract:** This paper in the first part describes the importance of United Nations Convention on the Law of the Sea ( UNCLOS) provisions to submarine cables as critical international infrastructure. The paper focuses on the uses of submarine cables for telecommunications and electrical power distribution with special emphasis on the practical utility of UNCLOS provisions by the submarine cable industry in their day – to – day operations. The paper reviews how these uses are treated under UNCLOS.

The second part of the paper addresses recent trends by coastal States and parties to the Convention for the Protection of the Marine Environment of the North – East Atlantic ( OSPAR) that ignore or contravene UNCLOS provisions in waters outside of territorial seas. The detrimental effect of these actions on the resiliency of the cable industry to respond to faults caused by natural and man – made activities is examined. Specific examples of coastal State and international body encroachment on the freedom to lay and maintain international cables outside of territorial seas ( Malta, India, China, and OSPAR) are described and analyzed.

**Key Words:** submarine cables, Convention for the Protection of the Marine Environment of the North – East Atlantic, OSPAR, United Nations Convention on

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[1] Partner, Squire Sanders ( US) LLP, International Cable Law Advisor, International Cable Protection Committee ( ICPC) , Capt. USN ( ret. ) , J. D. University of Denver ( 1980) , B. S. U. S. Naval Academy ( 1972) . douglas. burnett@ squiresanders. com ( 212 – 872 – 9820) . The opinions expressed in this paper are those of the author alone and do not represent the views of the ICPC or its members, currently about 124 companies and governments from about 50 nations.

the Law of the Sea, UNCLOS

## Introduction

*The preliminary question, which deserves consideration, is whether the maintenance of the telegraphic sea – cables, which have an international importance, is an interest of the highest order to States, analogous to the interest of the public health and of the public revenue, whicheach nation is allowed by courtesy to protect beyond the strict limits of its territorial waters. If we look to the public services which the telegraphic sea – cable is now called upon to perform in time of peace, that it has become the normal instrument of communication between Governments and their envoys in foreign countries; that international treaties are from time to time concluded between the nations of the two hemispheres through the medium of cable telegraphs; that through the same instrumentality approaching tempests are announced in advance to Europe from America, by which great damages and destruction to life and shipping may be averted; that no great criminal can now hope to escape from Europe to the western shores of the Atlantic Ocean with the fruits of his crime without a telegram anticipating his arrival, when he finds himself the captive of the law at the moment when he expects to set his foot upon a land of liberty; the answer to the question above stated must, we think, be in the affirmative, and there can be no doubt that the great arterial lines of telegraphs have become indispensable for the circulation of the political life blood so necessary to maintain the vitality of our modern international State system.* [2]

The 1880 quote captures the marvel and pleasing astonishment by which the world welcomed the first submarine telegraph cables and the progress they brought. It is in many respects the way modern society looks upon the submarine fiber optic

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[2] Travers Twiss, "Submarine Telegraph Cables", see 49 *The Nautical Magazine* 883 ~ 884, November, 1880.

cables that combine with the worldwide web and laptops and ever smaller mobile devices to transform the global economy, political system, and everyday life for the world and its citizens.

The history of submarine cables in the oceans stretches back 162 years. [3] Submarine cables as the object of international law were firmly established by the 1884 International Convention for the Protection of Submarine Cables ( "Cable Convention") [4] and since then have been robustly cemented in the United Nations Law of the Sea Convention ( UNCLOS) . [5] But the importance of cables as critical infrastructure to the global economy and political systems has never been as pronounced as now. Submarine cables are the physical ties that bind the world together by allowing torrents of digital data, video, and telecommunications to course throughout the world on a 24/7 continuous basis.

## The Importance of Submarine Cables as Critical Infrastructure

Each day the Society for Worldwide Interbank Financial Telecommunications ( SWIFT) transmits 15 million messages over cables to over 8, 300 banking organizations, securities institutions and corporate customers in 208 countries. The Continuous Linked Settlement ( CLS) Bank located in the United Kingdom is just one of the critical market infrastructures that rely on SWIFT as it provides global settlement of 17 currencies with an average daily US dollar equivalent of approximately USD3. 9 trillion. The U. S. Clearing House Interbank Payment System ( CHIPS) is another structure that processes over USD1 trillion a day to over 22 countries for investment companies, securities and commodities exchange

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〔3〕 Charles Bright, "Submarine Telegraphs – Their History", See *Construction and Working*, 1898.

〔4〕 *International Convention for the Protection of Submarine Cables*, March 14, 1884, T. S. No. 380. ( The provision of the Cable Convention are generally accepted as customary international law) ; *Restatement* ( Third) of *the Foreign Relations Law of the United States* § 521, cmt. b ( 1986) . ( There are 41 parties to the Cable Convention. )

〔5〕 *United Nations Convention on the Law of the Sea*, Dec. 10, 1982, 1833 U. N. T. S. 397 [hereinafter UNCLOS]. There are 162 parties to UNCLOS.

*organizations*, *banks and other* financial institutions. [6]

The common, but obsolete belief that international communications are largely carried by satellite is false. Until the first transatlantic fiber optic cable was laid in 1988, satellites were used, but the tremendous volume of data carried on lower cost modern fiber optic submarine cables dwarfs the limited capacity of higher cost satellites. Additionally, the technical transmission delays and other quality limitations inherent in satellites make them comparatively marginal for continuous transmission of high – speed voice, video, and data traffic.

If the approximately 40 garden hose diameter cables connecting the United States to the world are cut, even using every single satellite in the sky, it is estimated that only 7% of the total traffic volume could be carried by satellite. [7] Referring to the submarine cable networks, the Staff Director for Management of the Federal Reserve observed "when the communication networks go down, the financial sector does not grind to a halt, it snaps to a halt." [8] The same can be said for most industries enmeshed in the global economy through the Internet including shipping companies, airlines, banks, supply chain, and manufacturing industries.

Other countries are no different in their reliance. With the laying of submarine cables along the east coast of Africa in 2009 ~ 2010, this last major group of nations gained access to the world's submarine cable network. As of mid ~ 2012, only 21 nations and territories remain isolated from fiber connectivity and many of these have

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[6] Steve Malphrus, "Board of Governors of Federal Reserve System, Presentation at the 34th Annual Law of the Sea Conference, Center for Ocean Law and Policy", See University of Virginia: *Undersea Cables and International Telecommunications Resiliency*, May 20, 2010.

[7] "Hearing on the United Nations Convention on the Law of the Sea, S. Comm. on Foreign Rel. 110th Cong". (October 4, 2007) (Testimony of Douglas R. Burnett, then Partner, Holland & Knight, LLP) available at: http://www.foreign.senate.gov/hearings/hearing/?id=bafa7c95 – ca92 – 8929 – e85f – b03b15cebcb7.

[8] Steve Malphrus, "Board of Governors of Federal Reserve System, Presentation at First Worldwide Cyber Security Summit", See *East – West Institute*, Dallas, Texas, May 3 ~ 5, 2010.

connecting cable projects underway. [9]

Telecommunications is the only part of the value of modern submarine cables. International submarine power cables are growing in importance. With improved technology that reduces power loss, high voltage direct current (HVDC) submarine cables, such as the 370 *km* Basslink interconnector linking Australia with Tasmania and the 580 *km* NorNed cable between Norway and the Netherlands, have been operational for years. The United Kingdom and Iceland governments are presently in talks to lay the foundation for a 1500 *km* submarine HVDC power cable between the two countries. A 900 *km* HVDC cable between the United Kingdom and Norway is also under discussion. [10] These HVDC systems use either a mass impregnated or cross-linked polyethylene extruded ("XLPE") insulation that eliminates pollution threats to the marine environment. Modern HVDC submarine cables allow nations with excess hydro or geothermal produced electricity capacity to share it with nations needing it.

Key International Business Features that Harmonize with UNCLOS for Optimum International Submarine Cable Communications.

An important aspect that is underappreciated by diplomats and government policy makers is how much the UNCLOS and Cable Convention terms on submarine cables are used on a day-to-day basis in the building and maintaining undersea cable systems. The engineers and commercial persons who build the world's undersea cable systems historically rely on UNCLOS and its historic recognition of the right to lay

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[9] Submarine Telecoms Forum, Inc, *Telecoms Industry Report* 2012, pp. 14 ~ 15. Inhabited sovereign States and territories without fiber optic connectivity include: Somalia, Saint Helena, Ascension, and Tristan da Cunha (British Overseas Territory); Christmas Island (Australian External Territory), Montserrat (British Overseas Territory); Saint Pierre and Miqulon (French Collecivité d'Outre-mer); Easter Island (Chilean Special Territory), Falkland (Malvinas) Islands (British Overseas Territory), Cook Islands (Self-Governing State in Free Association with New Zealand), Kiribati, Nauru, Niue (Self-Governing State in Free Association with New Zealand), Norfolk Island (Australian External Territory), Palau, Pitcairn Islands (British Overseas Territory), Solomon Islands, Tokelau (New Zealand Dependent Territory), Tonga, Vanuatu, Wallis and Futuna (French Collecivité d'Outre-mer).

[10] "UK in talks with Iceland over 'volcanic power link'," BBC News UK, Apr. 12, 2012, *available at*: www.bbc.co.uk/news/uk-politics-17694215.

and maintain submarine cables outside of territorial seas. It is this blending of UNCLOS provisions with the practical application of international know – how and skills developed by the cable industry over 162 years that is primarily responsible for the modern marvel of today's international submarine cable communications.

Diplomats and government ocean policy makers need a basic understanding of key characteristics of the submarine cable industry that are essential to making sound domestic laws and ocean policies that comply with UNCLOS and foster the practical compliance and utility approach followed by the industry. Here are basic characteristics in summary form:

- There is no single global submarine cable network any more than there is a single world airline network. Rather, the global cable network is composed of approximately 184 separate, diverse, and independent cable systems totaling about 870, 000 *km* of fiber optic cables. [11] These systems are typically built by private businesses without any government subsidies in direct response to market demands, technical developments and innovations, and competitive pressures to deliver low cost, reliable international communications for voice, data, and video applications.

- Between 2008 and mid – year 2012, there were approximately USD10 billion worth of investments in new systems. Of the billions of dollars spent to finance cable systems, governments or international agencies currently provide less than 5% of total funding. Private consortiums (49%), carriers (32%), and non – government investors (14%) provide the remaining 95%. [12]

- International cables are frequently co – owned by many different companies from different nations. A consortium of cable co – owners typically consists of about 4 to 30 or more telecom companies from multiple nations that

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[11] International Cable Protection Committee Ltd. (ICPC), International Telecom Cables database (Oct. 2011). An interactive world submarine cable map showing these systems can be viewed at www. iscpc. org by accessing the "Cable Data" button.

[12] "Telecoms Industry Report 2012", See at supra note 9, at 16 & 23.

co－own an international cable system's capacity and operate the cable system pursuant to a cable construction & maintenance agreement( "C&MA") .

• Cable systems are geographically organized into cable maintenance agreements whereby groups of separate cable systems collectively contract with the operator ( s) of cable ships that are strategically based in ports to serve all of the cable systems in a region or zone. These purpose built ships with their specialist crews are contractually obligated to sail within 24 hours of a fault notification to promptly carry out repairs at sea. The cost of a cable ship can vary between USD45, 000 and USD70, 000 per day. The average cost of a repair is between USD1M and USD3M, depending upon the location of the fault and the cable ship, the cable ship costs, and other factors. [13] For example, the Atlantic Cable Maintenance Agreement( "ACMA") consists of approximately 80 cable owners of separate cable systems that have four cable ships under contract located at base ports in Europe and the Americas that serve cables located the Atlantic Ocean and the West coast of South America. [14] The important point for government policy makers is that cable repair is paid privately by the cable owners and is carried out not by government mandates, but by contract.

• Prompt repair of cables is essential not only for business reasons, but also because every cable is in effect a backup cable for a damaged cable awaiting repair, and can be used to immediately restore communication traffic by rerouting it from the damaged cable to an undamaged cable in a process that can often be measured in seconds. It is this feature that allows for the resiliency of modern cable systems that generally allow for continuous global communication, notwithstanding the 200 or so cable faults that occur worldwide annually from contact by fishing gear, anchors, or natural hazards like

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〔13〕 Douglas Burnett, "Recovery of Cable Ship Repair Cost Damages from Third Parties That Injure Submarine Cables", See at 35 Tulane L. J. 108, Winter 2010, ( hereinafter "Recovery of Cable Ship") .

〔14〕 http: //www. acma － mc. org/Home _ tcnGeneralDestacado/seccion = 224&idioma = en _ GB&id = 2010072015200001&activo = 3. doA description of cable repair agreements worldwide with maps and the costs associated with them can be found at Douglas Burnett, *"Recovery of Cable Ship"*, pp. 105～111.

earthquakes. [15]

• Submarine cables have a tiny footprint on the seabed. The diameter of a modern submarine fiber optic cable is about the diameter of garden hose [16] and has a low impact on the marine environment. [17]

• The industry recognizes that the general public and governments frequently lack appreciation and knowledge of their dependence on submarine cables. The engineers, commercial managers and technicians who work with submarine cables have learned their skills in – house and from working in the industry. There are no formal university programs on submarine cables. Even within telecommunications companies the group that handles submarine cables is relatively unknown. The industry and individual cable owners and ship operators are working to change awareness by educating the public and governments about submarine cables and the intricate relationship they have with UNCLOS.

• Since 1958, the International Cable Protection Committee( "ICPC") has been the principal professional body of the cable industry. ICPC membership, presently 124 members from over 50 nations, includes about 97% of the owners of the various cable systems worldwide and almost all of the operators of the cable vessels that lay and maintain these systems. Since 2010, membership has been open to national governments and four governments are now represented. [18] The ICPC issues recommendations available to the public on methods of protecting

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[15] Douglas Burnett, "Recovery of Cable Ship", supra note 14, at p. 108.

[16] International Cable Protection Committee, Ltd., "About Submarine Telecommunications Cables", issued October 2011, available at: www. iscpc. org by accessing the "Publications" ( hereinafter About Submarine Telecommunications Cables) .

[17] Lionel Carter et al., "Submarine Cables & the Oceans: Connecting the World", See at *UNEP – WCMC Biodiversity Series* No. 31. , 2009. ( This report compiles and analyzes the environmental experience with cables in the marine environment since submarine cables were introduced into the ocean in 1850 and underscores the benign impact of a modern fiber optic cable on the marine environment.) [hereinafter "Submarine Cables & the Ocean"].

[18] Australia, Malta, Singapore, and the United States all have government representatives as ICPC members.

submarine cables. [19] The ICPC works with governments, organizations and other seabed users on a partnership basis to promote submarine cable security and compliance with UNCLOS. These include the International Seabed Authority, UNEP, APEC, the East West Institute, and the Rhodes Academy.

UNCLOS Submarine Cables Provide Transoceanic Legal Coverage

The Preamble to UNCLOS emphatically recognizes "the desirability of establishing through this Convention ... a legal order for the seas and oceans which will facilitate international communication." Perhaps no part of UNCLOS better carries out this object than its articles dealing with submarine cables. *See* Articles 21.1 (c), 51.2, 58, 78, 79, 87.1 (c), 112, 113, 114, 115 and 297.1 (a) that fulfill the object and purpose of facilitating international communication.

### A. Territorial and Archipelagic Seas

Article 21 (1) (c) [Laws and regulations of the coastal State relating to innocent passage] allows the coastal State to adopt laws and measures for "the protection of cables and pipelines" which may limit innocent passage of vessels within territorial seas. [20] This is consistent with the sovereignty that coastal States enjoy in their territorial seas which allows them to set the conditions of cables within the territorial sea, including denial of landings and transit for international cables.

Given the importance of submarine cables, most nations have detailed regulations for any cable system that lands in a State or transits its territorial sea. Article 21 (1) (c) measures that states have employed including the establishment of corridors around submarine cables where bottom trawling, fishing, dredging, and other seabed activities that can damage cables are restricted. Australia, New Zealand, Denmark, Uruguay, and Colombia have modern

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[19] ICPC Recommendations cover areas such as cable protection, cable and pipeline crossings, cable proximity to offshore wind farms, civil engineering projects, and seismic activities, charting of cables on navigational charts, cable protection actions, and out – of – service cables. They are free upon request from the ICPC at www. iscpc. org .

[20] UNCLOS, *supra* note 5, at art. 21 (1) (c) .