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ABOUT THE JOURNAL

Centre for Aerospace and Defence Laws (CADL), NALSAR, as an institution stands for par excellence research and through its courses, journals, newsletters, moot courts, conferences and other activities, bringing the attention of the Aerospace and Defence community to forefront and highlighting its contemporary issues and challenges at a global level.

The Indian Journal of Defence and Maritime Laws (IJDML) is the official publication of Centre for Aerospace and Defence Laws (CADL), NALSAR University of Law, and is dedicated to research, practice, advocacy, education and policy in security and maritime sectors.

The main objective of the IJDML is to encourage original thinking through trans-disciplinary research and thereby facilitate scholarly exchange on contemporary issues concerning Defence and Maritime Laws. It also aims to enrich the emerging jurisprudential discourse in the field of Defence and Maritime Laws.

IJDML aims to contribute in Law and Policy making in the fields of Defence and Maritime Laws at both international and national level. It also facilitates sharing of research insights among various stakeholders - academia, industry, government, non-governmental entities. It also provides young enthusiasts a platform to share their research.

The Journal publishes Doctrinal, Legal, Policy, empirical, theoretical, methodological and practice-oriented articles and book

reviews covering topics relevant to Defence, Security (Homeland and International), Military, Armed forces, cybersecurity, armed conflicts, diplomacy, conflict resolution, and related legal and policy aspects; Maritime safety and security, admiralty law, marine environment aspects, legal and policy issues relating to ships and shipping, passage issues, Law of sea, and other related aspects.

Preference is given to the current and ongoing discussions in legal and policy sectors in all security, Defence and maritime areas in relation to Individuals, Organisations and nations.

The Journal publishes research paper, short articles, book reviews and case law studies.

EDITORIAL

The realm of defence studies and research is fast expanding as the global security scenario is rapidly transforming. It may not be an overstatement to say that contemporary security threats to a nation state are less from state actors and rather more from non-state actors whose networking, lethal skills and capacity, sources of patronage, bases of operation are often beyond the comprehension and reach of regular state security agencies. Along with the new and daunting security challenges faced by the global community, India too is exposed to the multitude of threats from the non-state actors apart from the known state rivals. Indian legal community realizes that that existing laws and legal system are not adequate to book and prosecute the offenders of national security. Laws relating to terrorism, piracy, cyber security, sedition, sabotage, illegal migration demanding reexamination, even reenactment. The fact that India is a maritime state with a coastline of 7515 km. and a vast maritime sovereign zone of 2.2 million square miles has far enlarged the scope for maritime crimes against the security and safety of Indian coastal communities and properties. Yet, the need for updating the scope of national maritime laws and enforcement is imperative and urgent. There is no gainsaying that India has been a major victim of global and cross-border terrorism. Indian legal system including the courts and teaching universities are under constant pressure to rewrite or codify new set of laws to prosecute the perpetrators of crimes against national security. Realizing such need, NALSAR Univeristy has taken the lead in

initiating teaching and research programmes in defence and security laws.

Over the years NALSAR has pioneered courses, in regular and distant modes, at graduate and post-graduate levels to impart laws pertaining to the defence and security domains. We are very glad that the courses have attracted large number of students drawn from different sections of the society. The NALSAR team is resolved to equip the course participants with updates on the emerging legal issues and cases relating to the subject of defence studies. Centre for Aerospace and Defence Laws (CADL), NALSAR is the premier institution actively engaged in advancing the above objectives through teaching courses, journals, newsletters, moot courts, conferences and other such activities.

The *Indian Journal of Defence and Maritime Laws (IJDML)*, is CADL's active platform engaged in encouraging scholarly articles from the academia, legal community, security personnel and scholarly from home and abroad. Focus is on specialized branches of defence laws, their interpretation, case laws, and the doctrinal and practical developments that formation the working of relevant laws of defence and security. *IJDML* caters to a broad spectrum of clientele including students of Defence and Maritime Laws, practicing lawyers, judicial officers, research scholars and all other interested professionals.

It gives me immense satisfaction and pleasure in introducing the Inaugural issue of *Indian Journal of Defence and Maritime Laws.* I express my sincere gratitude to all those who have enthusiastically

participated as also contributed their academic mite relating to the field of Defence and Maritime Laws. This first issue of the Journal contains certain interesting perhaps contentious themes such as the role and extent of Admiralty Jurisdiction on Indian maritime domain, ecological effects of oil discharge in seas, legality of autonomous vessels, the importance of recent *Sagarmala* Project, submarine telecommunications and cable infrastructure regime, maritime lien, EU's counter-piracy measures, Indian Armed Forces Special Powers Act, contemporary dynamics of 'dipolmatic immunity', India's nuclear regime, bioterrorism and biowarfare, UNCLOS Dispute Settlement regime, etc.

Advancement and implementation of ever-evolving defence and maritime technologies has resulted in demanding informed debate and research in this field. Privatization and intensified global competition are forcing the defence and maritime industries to become responsive, increasingly competitive and committed by focusing more closely on their stake-holders. Therefore, the endeavor of this Journal would be to promote and encourage a healthy and innovative debate on all facets of defence and maritime industries and ensure that the ethical standards of research are complied with.

The publication of IJDML has been with the relentless effort put in by **Prof. Faizan Mustafa-Vice-Chancellor, NALSAR University** and his constant, unequivocal and fortifying support coupled with his exemplary leadership, pleasing personality and brilliant administrative skills that have been a source of inspiration for us. He has continuously and regularly steered the academic path to

evolve avenues for research and publication and attain higher levels of excellence. I, on the behalf of the Editorial Team once again gratuitously thank our Patron for bestowing his faith in our ability to publish this Journal. I extend our gratitude to our National and International advisory board, whose valued suggestions and advice has guided the Journal in every aspect.

I would like to give a special thanks to our Research Associates of CADL-NALSAR, Ms. Ruchi Jain and Ms. Bangaru Laxmi Jasti, for their hard work and efforts which contributed to the publication of this volume. I would also extend my heartfelt appreciation to our student editorial team.

The Journal is our modest venture in furthering and advancing the cause of research in the field of aviation and space law, and we at Centre for Aerospace and Defence Laws sincerely are committed to publish regularly the successive issue of *IJDML*.

I also sincerely hope you would enjoy reading this Issue as much as we enjoyed working on it.

Dr. V. Balakista Reddy
Editor-in-Chief

CENTRE FOR AEROSPACE AND DEFENCE LAW (CADL)

The NALSAR University of Law has always endeavored to promote quality research in contemporary legal issues. One of the contemporary but neglected areas in the Indian legal realm is Air and Space laws. To fill this gap and to promote further studies and research in the aerospace law, the University established the advanced Centre for Aerospace and Defence Laws (CADL) in 2005 with object to contribute to the development of aviation and space laws and related policies by conducting and promoting research and teaching at different levels. Since then, NALSAR-CADL has been continually promoting the study of Air and Space Law by conducting National and International Conferences, Workshops and Publishing Newsletters, Books and Articles in the Aerospace law field.

The University has been teaching the subjects of air and space law for the past ten years. Till date, there are many students with degrees in air and space law who have now been absorbed in the national mainstream and are working with the airlines, airports and the multinational corporations. Recently, NALSAR-CADL has also launched few innovative On-site and Online courses which include the Two-Year Master's Degree in Aviation Law and Air Transport Management (MA ALATM); Two-Year Master's Degree in Space and Telecommunication Laws (MA STL); Two-year Master's Degree in Security and Defence Laws (MA SDL); Two-Year Master's in Maritime Laws; One-Year Advanced Diploma in Aviation Law and Air Transport Management; One-

Year Advanced Diploma in Maritime Laws and One-Year Advanced Diploma in GIS & Remote Sensing Laws. The objectives of these courses are to cater to the needs of unprecedented aviation growth coupled with commercialization of space and telecom industries, and moderinisation and indigenisation of defence and maritime Industry, which calls for thousands of skilled manpower to meet the managerial requirements of rapidly growing airports, airlines, aerospace, defence, shipping and telecommunication sectors. CADL also undertakes collaborative research activities in areas of common concern with state governments, NGO's and other international organizations.

MEASURING THE APPLICABILITY OF ABSOLUTE LIABILITY PRINCIPLE OVER STRICT LIABILITY IN CASES OF POLLUTION CAUSED BY DISCHARGE OR ESCAPE OF OIL IN THE MARINE ENVIRONMENT

Mahek Bhatter[*]

Abstract

International conventions for preventing oil-based pollution in the seas due to their discharge or escape from ships/tankers have seen considerable coverage over the years. The Civil Liability Convention designed by the International Marine Organisation, seeks to impose strict liability on the shipowners for causing such pollution and grant them the right to limit their liability on certain specific grounds. This convention is further supplemented by the Fund for Compensation Convention, which establishes an international fund for compensation in case of lack of availability of funds with the liable shipowners. Accordingly, it is suggested in the paper that such strict liability imposed on the shipowners be replaced with the application of absolute liability, owing to the severe damage and harm caused to the marine environment due to such pollution. Moreover, through the means of analogical deduction, it shall be contended as to why the principle of absolute liability is a much more reliable option in such cases and why there should be a change in the already existing laws governing the liability imposed therein. This shall be backed by providing a brief overview of the effects and changes that are caused in the environment when oil is discharged or escaped from the

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ships or tankers into the sea and shall be done by reviewing the available literature in this regard, thereby providing the necessary suggestions and conclusions upon the same.

Keywords: *Oil pollution, Civil Liability Convention, Fund for Compensation, Strict liability, Absolute Liability, Environmental damage.*

Introduction

The use of maritime channels for ransportation is extremely common and one of the most important transit platforms available. In terms of volume and value, a majority of the world's trade is shipped through the use of seas and handled by the ports established by different countries.[1] Naturally, the constant use of such water channels by ships, cargos, tankers or bunkers, raised the stakes of marine environment pollution caused by the discharge or escape of oil by such shipping vessels even though most marine pollution originated from land-based sources.[2] Accordingly, observing the degree and nature of environmental damage that was caused, a number of international legislations, in the form of conventions and treaties were drafted upon, by the UN recognised marine authority, known as the International Maritime Organisation (hereinafter referred to as IMO), which is responsible for the safety and security of shipping as well as taking necessary steps to prevent or control marine and atmospheric pollution by the ships.[3] Subsequently, after the *Torrey-Canyon* oil spill incident, the need for oil-based pollution legislation

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1 United Nations Conference on Trade and Development, https://unctad.org/webflyer/review-maritime-transport-2018 , last visited on November 19th, 2020.

2 JingJing XU, *The law and economics of pollution damage arising from carriage of oil by sea*, Vol. 36, MARIT. POL. MGMT., 309, 309-310, 2009.

3 International Maritime Organisation, https://www.imo.org, last visited November 19th, 2020.

was recognized, where the Liberian tanker ran aground on the Seven Stones Reef off the coast of southwest England and spilled over 80,000 tons of oil into the ocean[4] , causing unprecedented environmental damage to the ocean water and sea life. As a result, the International Convention on Civil Liability for Oil Pollution Damage (CLC) was enacted by the IMO for imposing legal and financial responsibility, in the form of strict liability upon the vessel owners from whose ships the oil was discharged or escaped. The convention was amended constantly over the years, with a final protocol being enacted in 1992 and was hence replaced with it, subsequently ratified by the different member states of the IMO. In order to further the position and provide support to the ship owners, in case of compensatory claims being raised against them, the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, also referred to as the FUND convention, was also enacted. These two international legislations, read along with other oil-based marine pollution conventions such as MARPOL and the International Convention Relating to Intervention on the High Seas in cases of Oil Pollution Casualties, therefore, provide the basic international legal framework required for the prevention or control of pollution in the seas or oceans by different sources, including oil. Being a member of the IMO, India has ratified the CLC and FUND convention under article 253 of its Constitution and adopted the same in the Merchant Shipping Act of 1958, which is positioned as one of the most important legislation governing and regulating maritime affairs. Following the international conventions, this municipal maritime legislation consists of provisions imposing the same form of liability and simultaneously requires the government to establish a Fund in

[4] JingJing XU, *supra* note 2, at 310.

cases of oil-pollution damage claims being raised against Indian sea vessels.

Therefore, the author, through this paper, aims to put forward the contention of applying the absolute liability principle instead of strict liability in cases of such oil-based pollution caused in the marine areas, and highlight the importance of marine environmental conservation and prevention as a reason as to why such change would be better applicable. The paper would be first directed at providing a brief review of the literature available in this regard, throwing light on the different conventions and conferences established and held for environmental protection in general and marine environment in particular, along with the various municipal laws formulated for the same. The different legal principles and aspects involved shall also be explained, and lastly, the arguments and counter-arguments supporting the main claim statement shall also be put forward, through analogical deduction and economic analysis of the laws, to a certain extent.

Literature Review

1. Theoretical background involved-

The principle of no-fault liability is generally applied in scenarios where an individual may be held liable even without any negligence on his part and irrespective of whether or not he has taken due and reasonable steps to prevent particular harm or injury from taking place.[5] Subsequently, the no-fault liability principle has been classified into two types: the principles of strict liability and absolute liability.

[5] 7th Edition, SK Kapoor, Law of Torts, 272, Central Law Agency, (2016).

STRICT LIABILITY:

The principle of strict liability was evolved in the case of *Rylands v. Fletcher*[6] by Blackburn J., who considered it a special branch of tort liability, different from torts of negligence, nuisance etc. It is based on the legal maxim, *'sic utere tuo ut alienum non laedas,'* which means the right to use a person's property without injuring the property of another. He stated that where any person collects, keeps and uses on his/her land anything that may cause mischief due to its escape; then it should be kept at such an individual's own accord. Where such a thing escapes and causes damage, it would be the responsibility of such a person to be held accountable[7]. Accordingly, the principle of strict liability allows the person from whose property or land the thing likely to cause mischief has escaped the right to reduce or limit the amount of liability imposed on him to make good the losses based on certain defences. These defences include the Act of God[8], which may be defined as any event that occurs beyond the control of human beings, such as snowstorms, cloudbursts, earthquakes, tornadoes, cyclones etc.,[9] the defense of Act of the third party, which may be availed only when it is proved that the defendant has acted and taken all reasonable care to prevent the harm that was caused due to such third party's actions[10], the defence of plaintiff's consent, based on the legal maxim of *'volenti non fit injuria'*[11] where the plaintiff cannot seek remedy from the defendant for any actions to which he has given consent. Lastly, the defence of the plaintiff's default where

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6 *Rylands v. Fletcher* , (1868) LR 3 HL 330

7 4th Edition, B.M. Gandhi, Law of Torts, 345, Eastern Book Company, (2018).

8 Nugent v. Smith, (1876) 1 CPD 423.

9 B.M. Gandhi, *supra* note 7, at 357.

10 Id. at 358

11 e-lawresources.co.uk,http://www.e-lawresources.co.uk/Volenti-non-fit-injuria.php, last visited 20th November, 2020.

the plaintiff, through his negligence, causes harm or injury to any property, and therefore cannot seek redressal from the defendant.[12]

ABSOLUTE LIABILITY:

The principle of absolute liability was derived by the Honourable Supreme Court in cases of *MC Mehta v. Union of India*[13] and *Union Carbide Corporation v. Union of India*[14] , wherein the courts observed the need to extend the limit of liability imposed against the defendants in certain situations, on the basis of the severity of their consequences. Accordingly, the principle of absolute liability requires the defendant to make good the losses or injury incurred by others, such that none of the defences provided under the strict liability rule can come into play[15]. Irrespective of whether the defendant has taken reasonable care or steps to prevent the damage from happening, yet the degree of damage caused is extensively high and dangerous. Hence, no defences can provide a backbone to the defendant from escaping such liability[16] as far as the principle of absolute liability goes. Accordingly, for the principle of absolute liability to apply, it should consist of those enterprises who are involved in hazardous or inherently dangerous activities, no defences laid down in the strict liability principle should be applied to support the defendant, and the principle can be imposed in cases of both natural and non-natural use of land[17].

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12 B.M. Gandhi, *supra* note 7, at 359.

13 *MC Mehta v. Union of India*,1987 SCR (1) 819

14 *Union Carbide Corporation v. Union of India*, AIR (1989) (1) SCC 674

15 Bharat Parmar & Ayush Goyal, *Absolute liability: The Rule of Strict Liability in Indian Perspective*, Manupatra, Articles Section, last visited 20th November 2020, 12:40pm, http://docs.manupatra.in/newsline/articles/Upload/2D83321D-590A-4646-83F6-9D8E84F5AA3C.pdf

16 B.M. Gandhi, *supra* note 7, at ?

17 MC Mehta v. Union of India, *supra* note 13.

When applied in terms of environmental issues and matters, the theories of absolute and strict liability are founded upon the polluter pays principle. Accordingly, the principle implies holding the polluter or the concerned enterprise liable for the pollution caused, and therefore require them to compensate and return the environment to its original state, irrespective of the intent[18].

2. International Legislations-

INTERNATIONAL CONVENTION ON CIVIL LIABILITY FOR OIL POLLUTION DAMAGE (CLC):[19]

Convention established by the IMO to ensure payment of adequate compensation to those who suffer damage resulting from oil pollution in marine areas, causing maritime casualties by oil carrying ships. Although the liability imposed on the shipowner for claims raised against them is strict, it allows the defendant vessel owners to restrict their liability by proving that any of the exceptions available are in play. It allows them to cover their liability by undertaking insurance or some financial support, equivalent to the amount of liability that may be raised in one incident[20]. The original convention has been replaced by the Protocol enacted and adopted in 1992, which brings about considerable changes with regard to the application of the convention. Hence, the convention covers pollution damage but the costs incurred to undertake reasonable measures to reinstate the contaminated environment are limited. Moreover, the vessel owners are also allowed to recover the costs

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[18] Rupin Chopra, *India: Polluter Pays Principle*, Lexology, November 10, 2017, https://www.lexology.com/library/detail.aspx?g=c832a88c-7f8c-4628-bb96-c3e7d9189b2d

[19] International Maritime Organisation, *supra* note 3

[20] Ibid, International Maritime Organisation, convention applied to all bulk cargo vessels but only those ships carrying more than 2,000 tonnes of oil are required to maintain insurance in case of oil-pollution damage.

incurred to undertake preventive measures to prevent damage, even in cases where the oil pollution is not caused, but a great and imminent threat is plausible.[21]

INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS (MARPOL):

the IMO adopted This international convention in 1973 to prevent pollution in marine areas by ships either through operational discharges or accidental means and covers 6 annexes with a list of some of the major ship-based pollutants including oil(Annex1)[22], noxious liquid substances, harmful substances in packaged form, sewage, garbage etc..[23] The term 'operational' herein refers to any activity which causes pollution from any pollutant that has been covered in the annexes[24], and 'discharge' implies the release of that pollutant in the water, irrespective of the mode through which it has been dumped, as mentioned under Article 2(3) of the Convention.[25]

INTERNATIONAL CONVENTION ON THE ESTABLISHMENT OF AN INTERNATIONAL FUND FOR COMPENSATION FOR OIL POLLUTION DAMAGE (FUND):[26]

The convention works in addition to the CLC, established and adopted on 18th December 1971. The fund mainly aims at covering

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21 Ibid, International Maritime Organisation.

22 International Maritime Organisation, https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx, last visited- 20th November, 2020.

23 Ibid.

24 Proshanto K. Mukherjee, Through the Lens of Maritime Law: A Worldview, 5, EBC, (2020)

25 Ibid.

26 International Maritime Organisation, https://www.imo.org/en/About/Conventions/Pages/International-Convention-on-the-Establishment-of-an-International-Fund-for-Compensation-for-Oil-Pollution-Damage-(FUND).aspx , last visited- 20th November 2020.

the compensation required to be paid by the shipowners to the States and people who suffer pollution damage, where the quantum of compensation paid is not adequate to cover the damage of the pollution or are unable to receive any compensation at all. Although the Fund's obligations are limited, the States suffering damage may even receive compensation falling beyond the shipowner's liability. In a situation where the vessel owner is unable to compensate or pay for the damage incurred, then the entire liability shall fall on the Fund. In such cases, the obligation or limit to pay the compensation amount by the Fund shall be increased. The obligation of the Fund to pay damages is concerned mainly with the pollution damage caused in the marine environment of the Contracting States to the Fund. The convention is also obligated to provide such States with assistance in a case where they are threatened or may be affected by pollution and would want to take considerable measures to prevent or control such damage.[27]

3. Constitutional Provisions and Municipal Laws-

CONSTITUTIONAL PROVISIONS:

Article 253 of the Indian Constitution lays down the power of the Parliament to enact any treaty, agreement, or convention with any other country/countries or bring any decisions that may be ratified by it in any international conferences, associations, or bodies. This article is read along with the powers provided to the Union government or the Parliament under Entry 14 and 10 of the Union List.[28] Moreover, under article 48A[29] and 51A(g)[30] of the Indian Constitution, the Legislation further has the power to make any laws

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[27] International Maritime Organisation, *supra* note 26.
[28] India Const., art. 253
[29] India Const., art. 48A, ins. by the Constitution (42nd Amendment) Act, 1976.
[30] India Const., art. 51A(g), ins. by the Constitution (42nd Amendment) Act, 1976.

or take any steps or measures for preventing pollution and improving the environment. Although these two articles are not justiciable per se, the courts in various judgments have highlighted their need and importance for upholding the need and importance of environmental conservation and restoration[31].

MERCHANT SHIPPING ACT, 1958:

The Merchant Shipping Act of 1958 aims to foster development and regulate the Indian maritime and mercantile affairs in an efficient and effective manner emphasizing the need to control the safety, security and other perspectives involved with respect to Marine areas. Part XB and XC of the Act focus on the imposition of civil liability for oil pollution damage[32] and establishing the International Oil Pollution Compensation fund in cases of oil pollution damage[33] caused by Indian sea vessels or ships[34].

THE PUBLIC LIABILITY INSURANCE ACT, 1991:

This act provides provisions for the application of public liability insurance to provide immediate relief to those who have been affected by any accident causedby the mishandling of hazardous substances. Accordingly, the Act defines the meaning of such substances and what is contained under them[35]. Moreover, the Act also provides a structure of the liability imposed against owners in cases of the no-fault liability principle.[36]

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31 Sachidananda Pandey v. State of West Bengal & Ors., 1987 AIR 1109.

32 Merchant Shipping Act, 1958, §352 (G), §352 (I), §352 (J), §352 (N), No. 4, Acts of Parliament, 1958 (India).

33 Ibid, §352 (S), §352 (T), §352 (U), §352 (W)

34 Ratification of the CLC and Fund Compensation convention, and implementation under article 253 of the Constitution.

35 The Public Liability Insurance Act, 1991, §2(a), §2(c), §2(d), No. 6, Acts of Parliament, 1991(India).

36 Ibid, §3.

THE ENVIRONMENTAL PROTECTION ACT, 1986:

The Environmental Protection Act, 1986 provides the regulating legislation for the protection and conservation of the environment and provides the powers granted to the Central and respective State governments to formulate laws and provisions. Section 2[37] of the Act lays down the important definitions required to explain the purview of application of the law and how matters related to these are to be adjudicated.

EFFECTS OF OIL SPILLS ON THE MARINE ENVIRONMENT

The effects of oil pollution spilled or discharged from ships, can have lethal effects on the aquatic environment and the marine ecosystem. The manner in which these spills affect the high seas depends upon a lot of factors, such as the kind and quantum of oil that has been spilled in the sea, the geographical context in which the marine source is positioned and its consequent behavior to the damage that is caused subsequently to the spill. The biological composition of the water as well the kind of ecosystem that is present within the source may also affect the manner in which the spill affect the water.[38] Amongst the different organisms present within the sea and oceans that are affected by the oil pollution damage, the most vulnerable are the phytoplankton, which are micro-organisms forming the algae within the sea bed and suffer a high rate of mortality.[39] When the oil is dispatched into the seawater, it considerably alters the

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[37] The Environmental Protection Act, 1986, §2(a), §2(b), §2(c), §2(d), §2(e), No. 29, Acts of Parliament, 1986(India).

[38] *Effects of Oil Pollution on the Marine Environment*, ITOPF, 20th November, 2020, 6;20pm, https://www.itopf.org/fileadmin/data/Documents/TIPS%20TAPS/TIP_13_Effects_of_Oil_Pollution_on_the_Marine_Environment.pdf

[39] Ibid.

photosynthesis process of these micro-organisms, thereby reducing the oxygen level in the water and raising the level of carbon dioxide produced. Such an increase in carbon dioxide levels may cause a 'greenhouse effect' and impliedly escalate the issue of climate change.[40] Apart from changing the composition of these organisms in terms of reproduction[41], the spill of oil in the water would also impose a significant impact in the food chain followed within the marine system, such that the oil particles shall infuse with the water and be absorbed by such phytoplankton, further consumed by the fishes and other organisms, causing major alterations in body composition of these organisms, leading to the evolution of certain types of cancers or mutations.[42] Apart from the direct effect caused to the food chain by such oil-pollution damage, the next category of organisms who suffer indigenously through it are the fishes and seabirds. While the fishes may not react to the damage caused immediately and severely at the time of the pollution, yet the long-term effects of the pollution can be seen through the changes in their body compositions and their inherent biological processes. The oil particles present within the water may not stick to the fins and bodies of the fish immediately but may affect them through ways of ingestion of the toxins present in the oil, or disruption in their respiratory organs and reproductive systems, gradual degradation of the fins and scales etc.[43]

Apart from the wild effects of oil-pollution posed on the marine environment and aquatic wildlife, the problems do not end there. The damage caused by oil pollution also affects other wildlife forms,

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[40] Paul Stephen Dempsey, *Compliance and Enforcement in International Law: Oil Pollution of the Marine Environment by Ocean Vessels*, 6, Nw. J. Int'l L. & Bus. 459, 467-468, (1984).

[41] ITOPF, *supra* note 38.

[42] Paul Stephen Dempsey, *supra* note 40.

[43] Ibid, at 468-469.

especially the migratory sea birds, leading to their plausible death.[44] The shiny layer of oil on the seawater may attract such birds, causing the layer of oil to stick on their feathers, thereby affecting their strength to fly and keep themselves warm. In an effort to clean themselves, the oil may move on to other body parts of the body, leading them to ingest the inherent dangerous toxins present in the oil. Such ingestion may affect their lungs and intestines, causing severe congestion and breathing problems.

Moreover, it may be passed on to their young living ones or either their eggs, who still haven't hatched.[45] Not just the birds, the oily water also poses severe effects on land-based mammals, whichcome in contact with it. Like the birds, the oily layer may stick itself to the fur of the animals, resulting in loss of their waterproofing capabilities, thereby causing them to lose out on their ability to keep themselves warm and protected. Such loss of insulation and mobility may lead them to their slow and gradual death.[46]

Apart from the animals, the spread of oil in the river water also affects the economic capabilities and activities of the people who live near or around coastal areas, perform fish farming and enrolled in shrimp culture etc. This is because the effect of oil pollution damage caused in the water and inherited by the fishes and other sea animals would cause them to be extremely bad in taste and smell, thereby causing the human beings, ultimately, to take the burden of the damage caused. Such degrading impacts to the marine environment through oil pollution thereby make it necessary to bring a change in the law governing it, such that strict and stringent regulations can be imposed against those through which it may have been caused.

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[44] Ibid, at 469-470.
[45] ITOPF, *supra*, note 38.
[46] Paul Stephen Dempsey, *supra* note 40.

NEED TO REPLACE STRICT LIABILITY WITH ABSOLUTE LIABILITY

The need to protect the environment and control the damage caused to it has been clearly defined by the different sustainable development goals that have been developed by the UNDP and adopted by its member States.[47] All the above-mentioned laws, whether international or national therefore focus on preventing pollution that is caused by the oil spilled either accidentally or operationally in the marine environment. The CLC involves imposing a strict form of liability upon shipowners, from whose ships the oil may be spilled but allows them the right to restrict their liability if it's proven that either of the exceptions laid down under the convention may come into play. However, it is important to note and compare the environmental damage caused when such oil is spilled into the sea. The short as well as the long term effects of such pollution damage are more than enough reason to contest the fact that such exceptions should not be considered while imposing liability, i.e., the shipowners should be held absolutely liable. Such absolute liability can be supplemented by the insurance covers and financial support provided to the shipowners through their insurance providers and the Fund for Compensation convention ratified by the member States. Thus if the amount of compensation is beyond the payment capacity of the vessel owner's insurance cover, then the Fund be allowed to pay for the remaining compensation amount to the sufferers. As far as the question of pollution being caused by the act of a third person is concerned, such that any other person, like a crew member or charterer etc., intentionally performs any act which results in the spilling of oil, being well informed about the outcome of his/her

[47] UNDP, https://www.undp.org/content/undp/en/home/sustainable-development-goals.html , last visited- 23rd November, 2020.

actions, then in such a case, the amount of compensation derived through the imposition of absolute liability, shall be divided amongst the shipowner and the concerned third party, especially if a person working on the ship, on the basis of the principle of vicarious liability.

The imposition of absolute liability instead of strict liability in this paper is based on observing the judgments passed by the Indian Courts in cases of *MC Mehta v. Union of India*[48] and *Union Carbide Corporation v. Union of India*,[49] where the courts highlighted the importance of environmental protection, in situations where the escape of hazardous and noxious substances is concerned. Though both the judgments focused more on human and societal protection and welfare, yet the decisions were also taken upon the basis of grave environmental effects that were posed by the escape of the hazardous gases.

The main objective of imposing absolute liability would be to restrict the shipowners from limiting or restricting the level of their liability upon the basis of the exceptions that are provided to them. Although the ship or vessel owners would take the necessary steps to prevent the pollution from being caused, yet the exceptions would give them the privilege to not put in the desired level of efforts that may be required to prevent the damage from being caused and escape their liability as much as possible, imposing a great disregard to the environment and the wildlife. The principle of absolute liability would therefore ensure a reduction in the level of oil pollution spills caused by the ships since it would build immense pressure on the vessel owners upon the payment of a higher amount of claims to improve and regain the original condition of the water. Furthermore, such higher liability

[48] S*upra* note 13.
[49] *Supra* note 14.

shall be supported by the already established International Fund for Compensation and the insurance coverage provided to the shipowners by their respective insurance companies.

CONCLUSION

With the current trends and extensive technological changes into play, it is important that certain specific rights be accorded to the environment, wildlife and other natural resources for their protection and conservation in an utmost manner from human activities. Such rights should focus only on the prevention of such animals and environmental resources and not on the extensive enforcement of the fundamental rights guaranteed to human beings in different forms.

The principle of absolute liability imposed on individuals shall act as one step towards the enactment of such rights, especially in cases of marine wildlife and ecosystems, which are harmed by the severe and extensive effects of pollution caused by the spilling of oil through ships in seas and high waters. The principle of absolute liability, unlike strict liability, does not provide any form of exceptions or escapes to individuals from their liability and therefore implements the polluter pays principle in its complete sense. Moreover, the imposition of such liability shall also ensure that all forms of reasonable precautions are taken into view and acted upon so as to ensure that the precautionary principle, which was laid out in the Rio declaration, is also achieved.

The disruption caused by oil spillage into the sea and the devastating long and short-term effects it imposes on the sea creatures and other resources are important to be looked over and worked upon, and absolute liability can therefore be a step towards preventing the same.

THE JURISPRUDENCE OF VESSEL UNSEAWORTHINESS & THE FUTURE OF LEGALITY OF AUTONOMOUS VESSELS IN THE 21ST CENTURY

Akash Dubey and Siddharth Shukla[*]

Abstract

One may suggest that the doctrine of seaworthiness may be one of the straightforward yet debated aspects in the realm of Admiralty Law. By basic requirements, the shipowner has the absolute duty to certain persons working upon his ship to rig out a seaworthy vessel, reasonably fit for the intended use. The quantum of vessel unseaworthiness is affected by several elements before and during the voyage. It is no lie that at the dawn of the 21st Century, most of the transportation sectors around the world have introduced automated machines and vehicles, and the same has also made its way into the shipping industry.

In the first section of this commentary, the authors will try to define and layout the internationally accepted standards of vessel seaworthiness using various rules, codes, and standard Charter Parties for the analysis of the same. Several aspects affect the seaworthiness of a vessel including physical fitness, human competence, and there are documentary factors attached as well. In the second section of this commentary, the authors will try to analyze the introduction of Autonomous Vessels into the commercial shipping industry and try to scope out the implications of having introduced such vessels and factors of legal unseaworthiness attached to it

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in the context of present laws, specifically, in the context of India. Autonomous Vessels are yet to be debated, and regulations are to be deliberated upon, rendering the states around the world unprepared.

The authors in this paper try to set out a model, using current laws and how the stakeholders should adopt changes in case such Autonomous Vessels come into use, enter the market, while also keeping in consideration socio-economic challenges attached to the same in the form of repercussions.

Keywords: *Autonomous Vessels, Autonomy, Seaworthiness, Charterparties, Transport Economics, Risk management, Maritime Security*

INTRODUCTION

The study of vessels, the laws regulating it are complex yet endless. Be it a vessel raging through the tides in the middle of high seas or parked at a shipyard or a port, international and national rules and regulations are always attached to them. One such concept is the concept of seaworthiness. It is one of the oldest yet essential obligations over the shipowners to keep the vessel 'fit for voyage.' This 'absolute obligation' that shipowners have may differ depending on the nature of the contractual relationship and the nature of the vessel's utility. The dawn of the Twenty-First Century has witnessed a rise in the automation sector. Spillovers of this development have affected the Maritime Sector as more 'Autonomous Vessels' are being tested and deployed for regular use. In the present discourse, the authors have tried to examine the concept of seaworthiness of Automated Vessels with a focus on the Indian laws and market and have briefly analyzed the consequences that the regular use of

Automates Vessels might entail. The analysis includes policy reforms, revamp of the employment structure, and logistical constraints.

To better understand the concept of seaworthiness, the authors have dedicated the 'Section A' of this paper to explain the related theory. In the next section, the authors have examined the seaworthiness of such Autonomous Vessels through the lens of the current structure of rules that regulate the commercial shipping industry. It is important to note that the current laws might not necessarily directly apply to Autonomous Vessels, as at the point of the inception of such laws and regulations, the intent may not have been to create an instrument encapsulating the automation. The attempt here, on a macro level, is to answer whether the current understanding of seaworthiness is enough to accept Autonomous Vessels without any hiccups or not.

SECTION A

(1) *A fleeting look at the origins of seaworthiness*

Maritime trade is as old as time. Similarly, the origin of the seaworthiness could be traced back to Rhodian sea Law in 900 BC.[1] Though no explicit provision dealt with the obligation of the shipowners to maintain the vessel in a reasonably good state, it recommended the merchants to check whether the ship was watertight, while also putting a moral obligation upon the shipowners to keep the vessel seaworthy.[2] Archaeological evidence suggests that a 'private charter party' dated 236 A.D. included the 'moral' obligation of seaworthiness in the charter at that time, obligating to provide the vessel with complete equipment and sailors.[3] The evidence found in

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1 B. S. Shah, Seaworthiness — A Comparative Survey, 8 MALAYA L. REV. 95 (1966), (discussing the origins and history of the theory of seaworthiness), https://www.jstor.org/stable/24862410.

2 Id.

3 Id.

the year 236 lacked safeguards from a breach. The practice was not common, nor was the notion, a mandatory legal obligation in the Common law.[4]

In an English case, *Loggan v. Bessett*, the Court held against interpreting seaworthiness into the contract and held that the damages caused have to be construed as an outcome of the negligence of the crew of the ship.[5] Subsequently, the people in the industry incorporated the vessel liability as a contractual obligation in their charter party contracts. Since the duty to maintain seaworthiness became absolute, shipowners started assimilating clauses that exonerated them either partially, or completely. However, the practice was criticized and shunned by various decisions. The need to consolidate the obligations was evident, therefore in an attempt to do the same, the United Kingdom enacted the *Marine Insurance Act* in 1906, as the consolidation of all the marine insurance principles of the United Kingdom, which included the notion of seaworthiness.[6]

In the United States of America, the case of *The Osceola*, (1902) recognized the doctrine of seaworthiness.[7] The United States Supreme Court held the shipowner liable for the personal injury inflicted upon the seaman due to the vessel unseaworthiness. Thereby the 'vessel' was mandated to indemnify for the injuries sustained to the seamen because of the unseaworthiness.[8]

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4 Shah, supra note 1, at 96.

5 (1573) Libel File 44, No. 74 (Record Office, London) as cited in Shah, supra note 1 at 96.

6 Nicolas R. Foster, The Seaworthiness Trilogy: Carriage of Goods, Insurance, and Personal Injury, 40 Santa Clara L. Rev. 473, 474-75 (2000) (discussing the recognition of warranty of seaworthiness in the UK and the US), http://digitalcommons.law.scu.edu/lawreview/vol40/iss2/4.

7 Id.

8 189 U.S. 148, 158 (1902) as cited in Foster, supra note 6 at 474.

Later in the century, various Maritime States came together at the International Conference on Maritime Law held at Brussels in October 1922, to bring uniformity. The same became the backbone of the *Indian Carriage of Goods by Sea Act*, 1925, and Article III of the rules of the Act mandated to exercise due diligence to keep the ship seaworthy.[9] Nevertheless, as per the Act, an 'absolute warranty' of seaworthiness was not to be *implied* in contracts made under the rules laid down in the Act.[10] From the first evidence of the concept of keeping a vessel seaworthy, the liabilities and obligations have gradually developed through the years and have become more streamlined. Modern legislative trends have placed the increased responsibilities not only on the shipowners but also on shore-side administrators and shipboard personnel, especially the master.[11]

(2) *Defining and understanding seaworthiness even further*

The concept of seaworthiness has no universally accepted uniform definition. This quandary has often pushed the courts to define seaworthiness on a case-to-case basis. Furthermore, in such accounts, the interpretation and obligations attached could differ, in case the duty to maintain vessel seaworthiness has to be read in different contexts. For instance, a clause in a time charter party and a clause in an insurance contract suggesting maintenance of seaworthiness may have independent interpretations and liabilities.

In the mid-twentieth century, the US District Court for the Western District of Pennsylvania, in the case of *McLeod v. Union Barge Line*

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[9] Indian Carriage of Goods by Sea Act, 1925, No 24, Act of Parliament, 1925 (India), Art. III, Schedule.

[10] Id., s. 3.

[11] Sandell Peter - Ivar, Transport Economics and Seaworthiness of Vessels, 21 CONSTANTA MAR. UNIV. ANNALS 219, 220 (2014) (discusses shift and growth of the structure of obligations flowing through the duty of seaworthiness).

Co. delved into the recognized definition of vessel unseaworthiness. The court observed that an unseaworthy vessel is 'reasonably' not fit to perform its 'functions.'[12] In other words, an unseaworthy ship is insufficient with either material, form, equipment, or crew. The duty is not to provide a 'perfect ship,' rather a reasonably fit with reasonably suited equipment for the intended purpose. The Hon'ble Court interpreted the duty of both the master or the shipowners, whichever the case, to 'reasonably foresee' and anticipate 'ordinary and usual' circumstances and provide the seamen or the employees a vessel reasonably fit enough to encounter such ordinary perils of the sea and for the intended use.[13] A century before the *McLeod* judgment, the US Supreme Court had observed that determination of vessel seaworthiness has three major components of a '(i) sound ship, (ii) proper gear, and (iii) competent crew.'[14] However, seaworthiness does not entail a guarantee of absolute safe carriage. The popular *MacFadden Test* requires an 'ordinary, careful and prudent owner' to ensure their vessel's fitness at the commencement of the voyage, considering all the possible circumstances that may affect the vessel during an ordinary voyage.[15]

Under the Common Law principles, the shipowner has the *absolute* duty to provide a seaworthy vessel.[16] The Courts have had similar views and held that the duty is 'absolute' and 'non delegable.'[17] Such

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[12] Admiralty. Tort Liability. Shipowner Liable for Injuries Caused by Unseaworthiness Arising Subsequent to Departure from Home Port, 69 HARVARD L. REV., Apr., 1956, at 1128, https://www.jstor.org/stable/1337545.

[13] McLeod v. Union Barge Line Co., 95 F. Supp. 366 (W.D. Pa. 1951).

[14] The Propeller Niagara v. Cordes, 62 U.S. 7, 22 (1858).

[15] MacFadden v Blue Star Line (1905) 1 KB 697.

[16] Nabil Anwari, Seaworthiness in the context of the ISPS Code and the relevant amendments to SOLAS Convention, 1974 7 (World Maritime University Dissertations), http://commons.wmu.se/all_dissertations/41.

[17] Roebuck & Co., v. American President Lines, Ltd., 345 F. Supp 395, 398 (N.D. Cal. 1971).

absolute obligation bestowed upon the owners is often termed as 'no-fault liability,' wherein the owners are liable in such cases even when they have taken due care and caution.[18] Often the owner's duty is reliant upon the essence of the obligation, as it may vary from absolute, implied, expressed to even solely responsible for due diligence to maintain the fitness of the vessel.[19] This allows the shipowners to minimize their liability by including clear and unambiguous words as courts often perform a strict interpretation of these clauses. In case there are no 'express' clauses in the contracts, the duty may be implied.[20] Although the same depends on the law governing the contract.[21] The term 'implied' can be construed in the sense that the vessel is fit to face the reasonably foreseeable perils of the intended voyage and thereby is capable to transport the cargo that it is intended to carry, that is, it should be 'cargo worthy.'[22] Moreover, it should be sufficiently equipped to prevent any damage to the cargo in transit, which is a part of the foreseeable perils of the intended voyage, rendering this duty to be *implied* upon the shipowner.[23]

Since the duty of seaworthiness has developed through the years, the latest practice involves Charter parties or maritime contracts to have the obligation stipulated in express terms. These clauses are usually in lines with international conventions, national laws, or the 'standard terms' are often taken from standard charter party forms. The obligations flow from such clauses that differ depending on the terminology of such clauses. The nature of contracts is also a

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[18] Leonidas Villagran, Ecuador: Liability Cover In Marine Insurance: P&I Perpective, Mondaq, Sept. 15, 2016, https://www.mondaq.com/insurance-laws-and-products/527342/liability-cover-in-marine-insurance-pi-perspective.

[19] Anwari, supra note 16, at 7.

[20] Id.

[21] Indian Carriage of Goods by Sea Act, 1925, supra note 9, s. 3.

[22] Anwari, supra note 16 at 8.

[23] Id.

deterrent. The standard may vary depending upon the nature of the voyage, the cargo, location of its use, the weather during the voyage, and other related dangers that the vessel is likely to face. Lack of essential equipment crucial for the intended voyage might also cause a vessel to be unseaworthy.[24]

To understand better taking the example of clause 1 of the GASVOY 2005, a type of Gas Voyage Charter Party, that imposes a wholistic duty upon the owners to conduct due diligence at the beginning of the voyage to ensure that the vessel is fit for the voyage, in 'every way.' The obligation includes keeping the vessel's cargo system in working condition, and the vessel should be provided with an efficient crew.[25] It is important that it is ensured that there are no defective, unstable, or broken equipment especially if they are essential for the voyage or the purpose intended. Usually, in Voyage Charter parties, the obligation to provide a seaworthy vessel is also at the time of sailing. For example, clause 1 of CRUISEVOY, a type of Voyage Charter for passenger vessels, imposes the obligation to perform due diligence before the delivery of the vessel in certain mannerism and mandates the vessel to be in possession of all necessary documents that may be essential for the voyage, 'throughout the cruise.'[26] Charter Parties such as the GENTIME General Time Charter Party obligates the owners and their servants to exercise due diligence before or at the beginning of the voyage to

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[24] Foster, supra note 6 at 481.

[25] GASVOY 2005, BIMCO CONTRACTS (an example of a voyage charter party developed for use in the LPG, ammonia and liquefied petrochemical gas trades), https://www.bimco.org/contracts-and-clauses/bimco-contracts/gasvoy-2005# (last visited on 15 September 2020).

[26] CRUISEVOY, BIMCO CONTRACTS (an example of a standard cruise voyage charter party), https://www.bimco.org/contracts-and-clauses/bimco-contracts/cruisevoy# (last visited on 15 September 2020).

ensure the seaworthiness.[27] Usually, in Time Charter parties, there are subsequent period maintenance clauses that are separate and different from the seaworthiness clause. The duty of maintaining seaworthiness often operates as a condition prior to the vessel's voyage and it operates as a warranty after the vessel has started its voyage.[28] A condition would lead to repudiation which could be tested through a 'substantial deprivation test,' and on the other hand, a warranty would lead to damages. Thus, the obligation could be inferred as a 'hybrid' of condition as well as a warranty, as the nature of the obligation is innominate.[29]

The standard of due diligence differs from country to country. In the United States, the insurer may have to prove the failure to perform due diligence, and the inability to discover the unseaworthiness was a negligent act and that it was diligent on the part of the insured. Using the 'but for' test, the unseaworthiness also has to be the proximate cause of the loss.[30] Under the English Law, which is broadly the backbone of the Indian standards as well, puts an obligation over the insurer to prove that there was an 'actual knowledge' of unseaworthiness rather than depicting negligence.[31] The burden of proof usually lies on the party alleging unseaworthiness, while also depending upon the scenario-specific interpretation of the duty by the courts. For instance, if the vessel is filled with water then the court is likely to assume the condition of unseaworthiness. Albeit in such a scenario, the claimant has to prove that the unseaworthiness was the proximate cause. In the case of *International Packers v. Ocean*

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27 GENTIME, BIMCO CONTRACTS (an example of a standard time charter party developed for the dry cargo sector), https://www.bimco.org/contracts-and-clauses/bimco-contracts/gentime# (last visited on 15 September 2020).

28 Shah, supra note 1 at 103.

29 Id.

30 Foster, supra note 6 at 499.

31 Id.

Steamship Co, a ship laden with tinned meat cargo was damaged due to the presence of water in the ship.[32] The water seepage was caused due to the storm. The trial court ruled that the damage was the result of the negligence of the crew rather than the fitness of the vessel.[33]As an accepted uniform practice, the Hague Visby rules provide a replacement to the Common Law absolute obligation upon the owner to keep a vessel seaworthy. The shipowner is entrusted with the duty 'to exercise due diligence,'[34] and this duty has been interpreted to begin at the time of 'loading' until the voyage begins.[35] The shipowners are required to provide a voyage-worthy, cargo-worthy, and a seaworthy vessel.[36] Though the duty is not absolute, one cannot opt-out of the obligation,[37] although in case of an absence of fault, they cannot be held absolutely liable. As discussed previously, various maritime contracts have incorporated the duty of due diligence taking inspiration from the HVR.

Another essential factor that is crucial in determining a vessel's seaworthiness is the vessel crew members. The vessel should be efficient for the transport, that is, sufficiently fuelled as well as in the condition of a good repair with an efficient crew.[38] The efficiency of the crew has to be construed with respect to their knowledge and skill in relation to the duty, and the determination of the fitness can be affected by factors such as incompetent crew or even individual crew

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[32] (1955) 2 Lloyd's Rep. 218 as cited in JOHN FURNESS WILSON, CARRIAGE OF GOODS BY SEA (7th ed. 2010).

[33] JOHN FURNESS WILSON, CARRIAGE OF GOODS BY SEA 13-14 (7th ed. 2010).

[34] Hague Visby Rules art. 3.1, 1968, https://www.jus.uio.no/lm/sea.carriage.hague.visby.rules.1968/doc.html (last visited Jan 19, 2020) [hereinafter HVR].

[35] Maxine Footwear Co. Ltd. v. Canadian Government Merchant Marine Ltd. [1959] AC 589, 603.

[36] HVR, supra note 34, at art. 4.1.

[37] Shah, supra note 1, at 100-102.

[38] Foster, supra note 6, at 483.

members.[39] With respect to crew members, the warranty of seaworthiness requires their conduct to be on par with the other people engaged in the same field. It does not mandate the crew to be ready to tackle all the contingencies.[40] A work done by a competent crew in an unsafe manner causing occupational negligence, as in the *Ocean Steamship Co.* case might also render a vessel unseaworthy.[41] An aggravated form of fight or disorderly conduct by 'dangerous crewmen' inflicting injuries might also constitute unseaworthiness, as they are not 'reasonably fit for the intended service of the ship.'[42] The standard is that the employed crew should possess similar skills and disposition to 'men ordinarily employed as a merchant seaman.' This standard, as a rule, extends to shore-based employees employed for work 'traditionally performed by seamen' as well.[43] This phenomenon is also termed as 'human seaworthiness,' an essential factor as a large chunk of the marine incidents are traced back to an error committed by the crew on the part of the carrier. This is highly dependent upon the crew's competency and their knowledge of the vessel and its equipment they are set to deal with.[44] In *Hongkong Fir Shipping Company Ltd. v. Kawasaki Kisen Kaisha Ltd*, the Court uses an objective test that may come handy to resolve this issue. The test is to simply check whether a fully competent or a prudent person would have been able to discover the problem in question and resolve it or not.[45] An affirmative response to this question would make the crew

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39 Id.

40 Shah, supra note 1, at 110.

41 Ocean Steamship Co, supra note 32.

42 Foster, supra note 6 at 483.

43 Murphy v. National Bulk Carriers, Inc., 310 F. Supp. 1246, 1249 (E.D. Pa. 1970).

44 Ahmad Hussam Kassem, The Legal Aspects of Seaworthiness: Current Law and Development, 35 (2004) (unpublished Ph.D. thesis, University of Wales), https://discovery.ucl.ac.uk/id/eprint/6988/1/6988.pdf.

45 Hongkong Fir Shipping Company Ltd v. Kawasaki Kisen Kaisha Ltd, [1961] 2 Lloyd's Rep.478 (C.A).

in question, 'competent.' The court in this case also observed that a crew in sufficient numbers is also an important factor that may affect the fitness and efficiency of the vessel, as no one could provide the same service as that 'missing crew.'[46]

The concept of documentary seaworthiness is another such factor that might render a physically fit vessel, employed with competent and sufficient seamen to be unseaworthy. The master or the owner of the vessel is designated to be equipped with documents that ensure vessel safety, complying with multiple international rules, regulations, and standards such as ISM or ISPS.[47] Documents related to cargo, essential documents such as navigational charts or documents determining the vessel's operation and plans should be present on the vessel and should be duly updated.[48] In *The Madeleine*, the Court held the breach of duty of seaworthiness by the owners as they failed to produce the certificate of de-ratisation, a type of sanitation certificate, essential for the ship to sail outside India, despite being provided with a 'reasonable time.' Thereby, the Court held that the cancellation of the charter party by the charterers was not wrong in law.[49] Of course, such standards are contingent on the nature of national laws applicable to the vessel at that time, be it of the flag state or the port state, the duty also flows through the charter party clauses that stipulate the duty to maintain the seaworthiness of the vessel in a mannerism that may vary.[50]

Briefly, physical fitness of the vessel, equipment fitness, voyage readiness, human seaworthiness, documentary seaworthiness are few

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46 Id.
47 Kassem, supra note 44 at 45.
48 Id.
49 Cheikh Boutros Selim El-Khoury & Ors v. Ceylon Shipping Lines Ltd, [1967] 2 Lloyd's Rep. 224 QBD (Comm.Ct).
50 Anwari, supra note 16 at 9.

of the most important factors that may render a vessel to be seaworthy. The Maritime laws of India have not defined the concept of seaworthiness per se.[51] However, apart from the previously discussed Indian CGSA, 1925, the concept has further been referred in section 41(4) of the Indian Marine Insurance Act, 1963 which states that a ship is seaworthy if it *"… is reasonably fit in all respects to encounter the ordinary perils of the seas of the purpose of the stage."*[52] In addition to that, the Merchant Shipping Act, 1958 also refers to the concept as "*A ship is 'unseaworthy' when the material of which she is made, her construction, the qualification of the master, the number, descriptions and stowage of the cargo and ballast, the condition of her hull and equipment, boilers and machinery are not such as to render her in every respect fir for the purpose of voyage or service*."[53]

SECTION B

This part of the paper will discuss the analogy of seaworthiness in the context of Unmanned Maritime Vessels, also termed as Automated Vessels. As per the generally accepted rules and norms of Maritime Law, and as discussed in the previous part, various carriers regardless of the nature and mode of transportation, are obliged to maintain vessel fitness and seaworthiness. Needless to say that seaworthiness broadly is the ability of a vessel sail on the sea.[54] As previously discussed, article 3.2 of HVR stipulates the said obligation to begin before and at the beginning of the voyage and requires the

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[51] Badar Ahmad, The Basis of Sea Carrier's Liability: Seaworthiness of the Vessel, 21 ALJ, 115 (2013).

[52] The Indian Marine Insurance Act, 1963, No 11, Act of Parliament, 1963 (India), s. 41(4).

[53] The Merchant Shipping Act, 1958, No. 44, Act of Parliament, 1958 (India), s. 334-335.

[54] The Legal Challenges of Unmanned Ships in the Private Maritime Law: What Laws Would You Change?, 5 in MARITIME, PORT AND TRANSPORT LAW BETWEEN LEGACIES OF THE PAST AND MODERNIZATION, 493–524 (Juan Pablo, Rodriguez Delgado), https://ssrn.com/abstract=3297487.

shipowners to exercise *due diligence* to ensure that the ship is seaworthy, properly manned, adequately equipped, and thereby, supply the ship accordingly.[55]

Back in 2017, during their 98th session, IMO's Maritime Safety Committee (MSC) had agreed to include the issue of marine autonomous surface ships (MASS) on their agenda. The addition was a result of multiple requests made by the Member States that acknowledged the need to draw level with the rapid technological developments relating to the introduction of commercial vessels, operated in autonomous mode, that is, ships operating without crew.[56] This exercise of diligence over revamping rules and various other instruments in line with such advancements is to be in the form of a scoping exercise to ensure the maintenance of a safe, secure, and environmentally sound operation of MASS, or simply put, Autonomous Vessels. Since then, the MSC has deliberated upon MASS even further. At their 101st session, the MSC developed and approved interim guidelines for the trials of such vessels.[57] The legal committee at their 105th session decided upon a target completion year of 2020 for the said scoping exercise and gap analysis after adding it to their agenda.[58]

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55 HVR, supra note 34, at art. 3.2.

56 Maritime Safety Committee (MSC), 98th session, 7-16 June 2017, International Maritime Organization, http://www.imo.org/en/MediaCentre/MeetingSummaries/MSC/Pages/MSC-98th-session.aspx (last visited Jan 2, 2020).

57 Maritime Safety Committee (MSC), 101st session, 5-14 June 2019, International Maritime Organization, http://www.imo.org/en/MediaCentre/MeetingSummaries/MSC/Pages/MSC-101st-session.aspx (last visited Sep 15, 2020).

58 Legal Committee, 105th session, 23-25 April 2018, International Maritime Organization, http://www.imo.org/en/MediaCentre/MeetingSummaries/Legal/Pages/LEG-105th-session.aspx (last visited Sep 15, 2020).

The purpose of this part is to analyze whether the said Automated Vessels align with the current standards of vessel seaworthiness laid down in the relevant international maritime rules, local laws, and various Charter Party agreements. As previously noted, these instruments were not necessarily designed and enacted to overlook Automated Vessels. The biggest drawback that the upcoming industry of commercially viable Autonomous Vessel faces is that the maritime legal instruments currently in use do not specifically define Autonomous Vessels. The solution in the authors' view of this dilemma is to either interpret these Vessels in a liberal sense and try and read it into the regular definition of a regular vessel. Or, another option is to simply revamp all the legal instruments accordingly. While the former may backfire as it may open various other loopholes in the conversations about autonomous vessels, the latter would logistically have to be a very slow, tedious, and rigorous process. The point of this analysis is to point out the hurdles that may come forth while determining an Autonomous Vessel's seaworthiness. Further, the analysis aims to suggest the level of scrutiny needed for reforms.

For the sake of understanding the context, in the next segment, the authors will try to give a small introduction to these Automated Vessels and consecutively continue further with the legal analysis.

(1) *What actually are Automated Vessels?*

Firstly, the authors will attempt to define Autonomous Vessels. As the name suggests these are vessels that are *automatic* in nature. Black's Law Dictionary defines *automatic* as 'having inherent power of action or motion; self-acting or self-regulating; mechanical.'[59] Furthermore, '*vessel*' has been defined as 'any structure which is made to float upon the water, for purposes of commerce or war, whether

[59] Automatic, BLACK'S LAW DICTIONARY (9th ed. 2009).

impelled by wind, steam, or oars'.[60] When read together, any *Automatic Vessel* could be a vessel that is a 'structure made to float upon the water which may be self-acting or self-regulating, for commerce or war.'

UNCLOS is often referred to as the Constitution of the Sea.[61] Yet, UNCLOS fails to provide a general definition of a ship or vessel, except for Article 29 that broadly defines what 'warships' are, focusing on the ownership and not the description of the same. Similarly, the SOLAS Convention or the ISM Codes also fail to define what a vessel is. On the other hand, the convention that was put forth aiming to protect the marine environment from the pollution by vessels, the MARPOL, defines 'ship' broadly as any structure operating in the marine environment which includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms.[62] This interpretation creates a very wide ambit for UMVs to fall in it, just like the vague structure of the definition of a ship under the HVR,[63] which states that "'Ship' means any vessel used for the carriage of goods by sea." Considering the broad ambit of the language of these definitions, interpreting UMVs or the Autonomous Vessels would not be a problem, as the language suggests a more inclusive tone, rather than limiting itself with specificity. Although, the traditional Maritime Law would suggest

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60 Vessel, BLACK'S LAW DICTIONARY (9th ed. 2009).

61 Anders Kirchner, Rise of the Machines – A Legal analysis of Seaworthiness in the context of autonomous shipping 34 (Spring 2019) (unpublished graduate thesis) (on file with Lund University), https://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=8977227&fileOId=8984495 (last visited Dec 22, 2019)

62 International Convention for the Prevention of Pollution from Ships (MARPOL), art 2(4), Nov 2, 1973, 73/78 http://www.mar.ist.utl.pt/mventura/Projecto-Navios-I/IMO-Conventions%20%28copies%29/MARPOL.pdf (last visited Dec 22, 2019).

63 HVR, supra note 34, at art 1(d).

that 'human presence' is necessary onboard to call it a vessel, and introduction of UMVs will eventually diminish the need for 'Ship Masters' and the duties would be redistributed to others.[64]

In India, the Law Commission of India in 1994 created a report on Admiralty Jurisdiction.[65] The said report suggested a non-conventional definition for a ship that would have included *any conveyance*, mainly by water, of human being or of property but excluded sailing vessels *and any class of vessel* as may have been notified by the Central Government by notification in the Official Gazette.[66] The latest law that was notified was the Admiralty (Jurisdiction And Settlement Of Maritime Claims) Act of 2017,[67] which defines 'vessel' by including any 'ship, boat, sailing vessel or other *description* of a vessel' used or constructed for use in navigation by water, *regardless of it being propelled or not*.[68] The definition continues to include a barge, lighter, a floating vessel, or a hovercraft within its ambit. Noting the fact that India is a significant ship-recycling hub, the purpose of this definition with a wider ambit was to be accommodative of such vessels that arrive at Indian ports for breaking.[69] Nevertheless, the wide nature of the definition acts in favor of jurisprudence of Autonomous Vessels in India, as the definition allows anything with a *description of a vessel*, notwithstanding the fact that it is being propelled or not, to be

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64 Luci Carey, All Hands Off Deck? The Legal Barriers to Autonomous Ships (NUS Centre for Maritime Law, Working Paper No. 17/06, 2017) (manuscript at 16-22), https://ssrn.com/abstract=3025882 (last visited Dec 30, 2019).

65 The Law Commission of India, 151st Report on Admiralty Jurisdiction (1994), http://lawcommissionofindia.nic.in/101-169/Report151.pdf (last visited Sept 15, 2020).

66 Id.

67 The Admiralty (Jurisdiction and Settlement of Maritime Claims) Act, 2017, No. 22, Act of Parliament, 2017 (India).

68 Id., at s. 2(l).

69 A Francis Julian, Admiralty procedure reform in India, 19 LLOYD'S SHIP. & TRADE L., Jul. – Aug. 2019, at 5.

considered as a vessel. The legislative intent can be construed from the language to be accommodative, and hence appropriate for UMVs, or Autonomous Vessels.

Furthermore, the definition derived from the two most descriptive words, 'automatic' and 'vessel,' still fails to appreciate the Autonomous Vessels completely. Even if the proposed definition is to be read along with the definitions of vessels in the international legal instruments, it still fails to do justice to these machines. The regime of Automatic Vessels is still in a developmental stage. These vessels do not need to be always 'fully autonomous' as there are several types and levels of autonomy that are present within the framework of the current technology. Juan Pablo and Rodriguez Delgado in their discourse, identify six levels of autonomy of vessels;[70]

a. Human on Board (No autonomy);

b. Operated – Monitored Autonomy (The crew is on board to operate and control shipboard systems and functions, while some operations may be automated, these may include transit to station or active sensors);

c. Directed;

d. Delegated (The ship is controlled and operated from some other location, although seafarers are on board and the vessel may refer to its operator when directed by the operator or by its own awareness of the situation, e.g., for permission to fire);

e. Monitored - Constrained Autonomy (The ship is controlled and operated from shore or any other location, without having anyone on board); and

[70] Pablo, supra note 54, at 496.

f. Fully autonomous (The operating system of the ship is capable of making decisions and determine actions by itself, therefore, self-regulating).

Briefly, one may define the Unmanned Maritime Vessels (UMVs) as vessels that may not have a crew on board and are capable of being controlled remotely from the shore. On the other hand, Fully Autonomous Vessels are pre-programmed vessels that operate using algorithms and are self-regulating. When compared to regular manned vessels, these UMVs, and FAVs are no different, apart from the highly technical aspects of controlling it. Both the manned and the unmanned vessel are destined to perform similar tasks, go on similar adventures that involve homogenous perils.[71]

(2) Introduction of Unmanned Vessels in a Manned World: Challenges

By the distinction listed above in the previous segment, it may be deduced that these distinctions between Remote Controlled Vessels and Fully Autonomous Vessels have a deep dependency on the said Unmanned Vessel's ability to comply with the applicable regulatory requirements[72] and that the legally acceptable autonomy level also differs from one function to another.[73] Many legal hurdles have to be crossed since this is comparatively a very early stage of the process in comparison to the existing instruments governing manned vessels, many issues are still unclear, and views differ widely between stakeholders depending on the nature and scope of the task, in the context of UMVs. Besides, there is instability in the usage of key concepts and terminologies. Since uncertainties on these matters risk

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[71] Henrik Ringbom, Regulating Autonomous Ships—Concepts, Challenges and Precedents, 50 OCEAN DEV. & ITL. L. 141, 145-147 (2019) (drawing similarities between manned and unmanned vessels), https://doi.org/10.1080/00908320.2019.1582593 (last visited Dec 10, 2019).

[72] Id., at 146.

[73] Id.

further complicating the exercise, it is of paramount importance to reach up to clarify the meaning of key concepts and relationships from the outset. It is essential to figure out a way to determine the autonomy of a vessel along with the liability implications of such vessels,[74] considering the importance of separating the different elements of automation.

2.1. Why or why not Unmanned Vessels?

One of the biggest arguments for the expansion of the automation industry is that it will directly reduce the human risk factor, along with higher reliability and safety, and in the case of vessels, it will ensure cargo safety and will be safer for the seamen on board as well.[75] Conspicuously, this would also lead to lesser accidents that may be caused by human err as the Automated Vessels will strictly follow the programmed algorithms, which probably will end up with a more efficient vessel. It may also result in consuming lesser fuel, reducing carbon emissions. Apart from the efficient use of fuel, there is scope for efficient use of space in ship design as well. Furthermore, since there will be lesser crew involved, costs associated with personnel, health and safety, operations, and legal disputes may eventually go down as well.

On the other hand, the safety rules and codes governing the vessels at sea as the ISM Code, 1993/98, or the International Convention for the Safety of Life at Sea (SOLAS), 1974, lack the safety standards that may be required to regulate an Automated Vessel, creating a void,

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[74] James M. Anderson et al., Liability Implications of Autonomous Vehicle Technology, in AUTONOMOUS VEHICLE TECHNOLOGY: A GUIDE FOR POLICYMAKERS, 111–134, https://www.jstor.org/stable/10.7249/j.ctt5hhwgz.14 (last visited Jan 20, 2020).

[75] Robert Sparrow & Mark Howard, When human beings are like drunk robots: Driverless vehicles, ethics, and the future of transport, 80 TRANSPORTATION RESEARCH PART C: EMERGING TECHNOLOGIES 206, 208-210 (2017), https://doi.org/10.1016/j.trc.2017.04.014 (last visited Jan 14, 2020).

failing to provide a standard model of securing the vessel and operating it safely, as of yet. These codes are essential to oversee and to prevent the misuse of the Automated Vessel to impose a duty of care and the liabilities attached to it upon the duty holder. Another drawback which may be considered a positive aspect in some sense would be the lack of crew on board.

2.2. Time for a 'crew-cut' – Boon or Bane?

While a crew-less vessel does sound good, there are various drawbacks attached to it. Firstly, in the course of longer voyages, lack of crew would make it difficult to maintain the due diligence and to prevent the breakdowns, which may probably result in significant delays. Furthermore, the crewless vessel also might get in trouble in situations where there is a need to make impromptu decisions, to prevent incidents that may cause harm, or maybe at, say, the Singapore port, one of the most jam-packed ports, berths are rarely vacant, and there's more traffic than usual, problems might arise for the 'algorithm-run' vessel and that we do not know enough to mimic natural human interaction.[76]

Remote-controlled vessels monitored or fully autonomous, have the challenges to connectivity and threats of cybersecurity. Current automatic systems have an intermediate level of intelligence that tends to maximize difficulties.[77] The vessels controlled from the shores will probably face challenges in navigating and positioning if facing connectivity challenges, they might even face challenges to maintain a secure communication, and might even fail to monitor the ship's sensors overseeing the engine or other mechanical parts. Such connectivity issues may also create obstacles in detecting small

[76] D. A. Norman, The Problem with Automation: Inappropriate Feedback and Interaction, not Over-Automation, 327 PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B: BIOLOGICAL SCIENCES 137, 142 - 143 (1990).

[77] Id., at 137.

objects. The higher cybersecurity risk shall always linger upon creating interference and will probably create difficulties in frequency management.[78] In cases of unforeseeable circumstances such as rough weather, there are greater chances of essential equipment needed for navigation getting damaged. Such instances would instantly cause the vessel to be unseaworthy. For example, if equipment such as the ones connecting a Monitored Unmanned Vessel to an offshore operator gets damaged, there would be no communication, and hence no navigation. In case parts of the engine suffer a failure or are ruptured, it will be technically impossible to retrieve the vessel from the middle of the high seas. The vessels would regularly need intelligent high-capacity communications for port areas to maintain secure communications, especially, in the case of monitored vessels. Another thing that will entail is that to monitor these vessels, there has to be an expert on the other end controlling the vessel, therefore, more support/solutions are needed from autonomous systems and/or shore-based crews,[79] also equipped with strong connection, as will the vessel. This will end up creating a presumption of the presence of humans in the decision-making loop.[80]

Another challenge that may entail upon is the issue of determining the jurisdiction of the UMVs. As Craig H. Allen raises questions in this context,[81] the practical consequences of UMV status are of particular concern to maritime security.[82] Several aspects are still unclear, such as whether the UMVs are subjected to the same

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78 Marko Hoyhtya et al., Connectivity for autonomous ships: Architecture, use cases, and research challenges, in 8TH INTERNATIONAL CONFERENCE ON INFORMATION AND COMMUNICATION TECHNOLOGY CONVERGENCE (ICTC) (2017) 10.1109/ICTC.2017.8191000.

79 Ringbom, supra note 71, at 144-146.

80 Norman, supra at 76, at 140.

81 Craig H. Allen, Determining the Legal Status of Unmanned Maritime Vehicles: Formalism vs Functionalism, SSRN E. J. 1, 15 (2018), https://ssrn.com/abstract=3244172(last visited Jan 2, 2020).

82 Id., at 41.

registration requirements as Manned Vessels, or what are the pieces of evidence that they have to carry to establish their nationality and are they required to have a flag State as required by the UNCLOS,[83] even in cases where the 'remote control' of the vessel is not within the physical jurisdiction of their flag State. The determinants of these factors are beyond the scope of this paper, although it is undisputed that all these loopholes exist because of the lack of stringent rules governing Autonomous Vessels.

Although, in the next segment the authors will try to examine the aspects necessary to declare such vessel seaworthy and will try to fill in the gaps that may be present in the curious case of the Autonomous Vessels.

(3) *The Relation between Seaworthiness and the Autonomous Vessels*

As broadly discussed in the previous part, seaworthiness is an important concept that is prevalent in maritime law. Several aspects are needed to be taken care of before the ship is ready to go to the sea. Broadly, the vessel has to be physically fine to be 'physically seaworthy'[84] along with making sure there is a competent crew on board,[85] the need to make sure that all the necessary and essential documents are on the ship while taking the voyage[86] and all other similar issues that may affect the fitness of the vessel and its efficiency to encounter the ordinary perils of the sea[87].

Article III of the HVR unambiguously puts an obligation on the carrier, either before, at the beginning of the voyage, to exercise due diligence, additionally to make the ship seaworthy, to properly man,

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83 Convention on the Law of the Sea, art. 91, Dec. 10, 1982, 1833 U.N.T.S. 397.
84 Kassem, supra note 44, at 25 – 35.
85 Hongkong Fir Shipping Company Ltd, supra note 45.
86 Id.
87 Id.

equip, and deliver the vessel.[88] This general definition goes against the idea of Automated Vessels. As pointed out in earlier segments of this part, maintaining 'due diligence' would face hindrance in cases of Fully Autonomous Vessels, if there are connectivity issues. Even the Article 14 of the Rotterdam Rules require the carrier to make the ship seaworthy and "Properly crew, equip and supply the ship and keep the ship so crewed, equipped and supplied throughout the voyage".[89] In cases of Fully Autonomous Vessels, there would be no crew as such on-board that would comply with these rules. This quandary raises another question, whether the remote operator onshore is to be considered as the 'crew' that has to perform due diligence over the vessels?

Following this, it is vital to note that in the *Hong Kong Fir Shipping case*, the law had become clear that the ship's incompetent crew could result in an unseaworthy vessel.[90] It is hard to determine the 'appropriate' number of seamen needed to maintain the seaworthiness of the Autonomous Vessels, including the new 'safe manning' standards that would require a revamp as well. Even though the *Hong Kong Fir Shipping case* was decided specifically in the context of Manned Vessels, it will be unfair to disregard the principle. Naturally, the current standard of Charter Parties may not provide for such clarifications. These factors may be clarified in specific Charter Parties between the shipowners and charterers, specifically designed for the operation of Autonomous Vessels. The accepted traditional maritime law suggests that a vessel consists of a shipmaster, a pilot along with other crew members. UMVs will change the structure of the same, the responsibilities and duties

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88 HVR, supra note 34, at art 3.

89 United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea 'The Rotterdam Rules,' art. 14(b), Dec 11, 2008.

90 Hongkong Fir Shipping Company Ltd, supra note 45.

traditionally allocated to these roles will be distributed between the owner, the shore-based operator, and the ship's agent.[91] This brings in one of the critiques of the theory of seaworthiness, that there are no 'standard' definitions or rules, just a similar interpretation that has developed across the globe in due time. As previously pointed out, there is no definition or even a mention of the same in the UNCLOS either. Even in India, obligations regarding seaworthiness are either 'implied' or are vaguely mentioned in subsections, as previously discussed in Section A of this paper.

On the other hand, as previously discussed, Article 3.2 of the HVR lays down the obligations over the carrier to maintain the 'due diligence,' and also requires the presence of crew onboard. Except these definitions are not wide enough to fit the automated vessels as we previously discussed, the lack of human presence on-board may render the autonomous ships unseaworthy thereby removing the benefit of the exclusions in the HVR and potentially voiding marine insurance policies. Unless the ambit of HVR is extended to autonomous vessels and the requirement of a crew is excused, this definition which has a prevalent use in the common law would be rendered futile in the context of Autonomous Vessels.

Apart from the predicament to perform due diligence over a 'crew less' ship, the concept of 'properly manned' with the trained and competent crew would be doubtful, yet, the vessel still could be unseaworthy. The new definition or the experimental interpretation would require offshore operators controlling or monitoring Autonomous Vessels to be considered as an essential requirement. Albeit, a similar principle has already been observed by courts in the context of Manned Vessels.[92] The standards for documentary seaworthiness would also have to be changed and revamped. The

[91] Carey, supra note 64, at 20-21.
[92] Murphy, supra note 43.

vessel is obligated to have onboard certain documents to ensure safe sailing and compliance with both international and national rules and regulations.[93] A 'crew-less' vessel would decay the requirement of keeping the ship's documents on board. Eventually, there will be nobody on board to keep a check on the various documents on board, such as the certificate of registry, safety certificates, the tonnage certificates, the minimum safe manning document, manuals and instructions, bills of lading, the manifest, the crew list, the oil log, safe manning certificate, etc., and regularly update the same.[94] Documents such as the crew lists and the charts will consecutively become obsolete. These documents would have to be stored online, in the clouds, and as previously mentioned, although safer but will always be exposed to the threat of cyber-attacks or regular fail and errors. One way to deal with this problem would be to have a rule that puts an obligation to keep an official record of whoever is the shore-based vessel controller, making it compulsory that these persons have the most recent digital charts and certificates.[95] Therefore, the digitization of documents could be one way to solve the issue. These documents could also be made available to appropriate parties. These 'updated' and recent digital charts would also help in performing due diligence over the vessel during the course of the voyage.

With the inception of such vessels, a new concept of 'Technical seaworthiness' would develop. Providing a 'cyber-attack' proof vessel would be of paramount priority. Considering the risk factors, the requirement of providing with regular technical insights during or even before the voyage might develop into an essential obligation flowing out of the Charter Parties. Duties of the pilot and masters

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93 Kassem, supra note 44, at 45-50.

94 Eric Van Hooydonk, The law of unmanned merchant shipping – an exploration, 20 J. INTR. MAR. L. 403, 415-416 (2014)(discussing the possible changes that the unmanned vessels will bring into the market).

95 Id., at 415.

might get transferred to the remote operator or the shore-based operator. Needlessly, this would require considerable technological developments and changes. Recently, IBM launched the Mayflower Autonomous Ship, an AI and solar-powered marine research vessel, fully autonomous with no human intervention, aimed to traverse oceans gathering vital environmental data. The vessel is powered by 'AI Captain,' which can sense, think, and make decisions at sea. The AI can scan the horizon for possible hazards, make informed decisions, and accordingly change its course based on a fusion of live data.[96] While Mayflower is yet to be tested at the sea, the potential risks involved, especially protecting software such as the AI Captain, are of utmost importance to be looked upon.

(4) *Socio-Economic Spill-overs of Automated Vessels*

Seafarers are a necessary part of international as well as domestic trade. However, the working conditions of the seafarers do not constitute an imminent issue for the employers. It is often observed that their living state of affairs is still substandard. Therefore, to curb and control such abhorring standards International Labor Organisation adopted the "Maritime Labor Convention" (MLC) that came into force in 2013.[97] MLC recognized human rights as well as the labor rights for the seafarers.[98] The MLC deals with multiple concerns such as the employment conditions, minimum requirements to work, accommodation, and medical care. The MLC applies to all seafarers.[99] The definition of seafarer covers all the

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[96] Mayflower Autonomous Ship Launches, IBM News Room, Sept. 15, 2020, https://newsroom.ibm.com/2020-09-15-Mayflower-Autonomous-Ship-Launches.

[97] Maritime Labor Convention, Feb 23, 2006, n. 186 [hereinafter MLC].

[98] Pol Deketelaere, The Legal Challenges of unmanned vessels 51-53 (2016-17) (unpublished Master dissertation) (on file with the Ghent University) https://lib.ugent.be/fulltxt/RUG01/002/349/671/RUG01-002349671_2017_0001_AC.pdf.

[99] MLC, supra note 97, at art. 2.2.

persons employed or involved in any capacity on the ship to which MLC is applicable.[100] According to the strict interpretation of the definition, the employees of the Shore Control Centre do not enjoy the same benefits as seafarers.[101] Although there might be a possibility of loopholes that might allow the application, or else, a deliberate extension of interpretation might be needed. The competent authorities of the respective member states have the discretion to include persons as seafarers after due consultation with the relevant seafarers' and shipowners' organizations.[102] The purpose of the aforementioned rule was to incorporate all such people who traditionally did not form the part of the seafaring personnel.[103] Such employees were often ignored by the maritime labor conventions, as they did not guise as part of the operations of the ship. The laws of the MLC primarily focus on the living as well as the working conditions on the vessel. A substantial part of the provisions will be futile if extended to remote operators who are working on the land. It appears that the working conditions, wages of the shore-based operators would be governed by the existing labor laws of the land-based employees. If necessary, the current labor laws should be supplemented with special rules. MLC applies to all ships except the ones operating in the inland waters, sheltered waters, or in such are areas wherein the port regulations are applicable.[104] Therefore, the employees of such Autonomous Vessels should be brought within the scope of MLC.[105]

Similarly, to create safety standards, regulation 2.7 of the MLC mandates all the vessels to be employed with an adequate number of

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[100] Id., reg. 2.1(f).
[101] Deketelaere, supra note 98, at 51.
[102] MLC, supra note 97, at reg. 2.3.
[103] Deketelaere, supra note 98, at 52.
[104] MLC, supra note 97, reg. 2.1
[105] Deketelaere, supra note 98, at 53.

seafarers.[106] All the ships are required to be manned by the crew as per the current standards. The quantity and qualifications of the crew should be ample to ensure the safety of its vessel and employees.[107] All the concerned authorities are required to comply with the manning requirement. The aim of the regulation appears to be on-board security concerns and the issues related to seafarer fatigue.[108]

With the introduction of Autonomous Vessels, several questions would challenge the status quo of the current standards. The 'impact' upon the stakeholders of the MLC, will suffer just like other industries faced as automation in the past was introduced, the introduction of crewless vessels will also have a similar socio-economic impact. One of the biggest concerns would be the occupations that would no longer be required as soon as these vessels enter the market. The safeguards will lead to failure eventually if the Maritime 'community' fails to produce and introduce new forms of employment, training, and qualifications that shall be deemed necessary. Nevertheless, the uncertainties would also include the psychological thresholds that the operators of unmanned passenger ships will have to overcome. The passengers of various cruise ships also might face difficulties in choosing between a vessel equipped with an adequate crew, or an Automated Vessel. As trust upon the technologies may be shaky when it comes to ensuring order and safety. Apart from this, Autonomous Vessels such as Unmanned Oil Tankers or Chemical tankers would also be perceived as walking bombs from the perspective of the port states, unless appropriate safety measures are adopted.

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[106] MLC, supra note 97, reg. 2.7.

[107] Id.

[108] International Labour Organisation, Preparatory Technical Maritime Conference, Consolidated maritime labour Convention: Commentary to the recommended draft, Geneva 2004, 26, http://ilo.org/public/english/standards/relm/ilc/ilc94/ptmc/pdf/cmlc-comment.pdf.

Even though there is a threat to a loss of thousands of jobs, but from a capitalist perspective, the issues related to seafarer's fatigue will not be an issue with the Autonomous Vessels.[109] However, regardless of the potential challenges to unemployment, the shipowner still has to ensure that the Autonomous Vessels self-sufficient.[110] In other words, the vessels should be capable of navigating safely and effectively without any person on board. In addition to that, the minimum manning levels appear to be futile concerning the Autonomous Vessels.

CONCLUSION: THE WAY FORWARD?

There is no doubt that the international standards have to be redefined to bring in the Autonomous Vessels within the Maritime Legal Framework. The IMO has to agree on a possible uniform definition of MASS, a steady framework for analyzing the applicable IMO regulations, as previously mentioned. The legal barriers are going to stay prominent in the carrier's implied seaworthiness common law obligation, whether it may be the Hague-Visby Rules, the Rotterdam Rules, or even the charter parties. Therefore, it has become clear that a strict interpretation will result in a situation where the unmanned ships will end up being prima facie unseaworthy and thus unfit for the voyage.

Even in India, if the Autonomous Vessels are to be introduced, it will be important that there is a progressive legal interpretation approach towards the same. As discussed in the previous part, it is clear that seaworthiness cannot be considered a static concept, and has the means to develop dynamically. The traditional law developed over time. The development took place even when there was no way to determine that there could be a possibility that vessels one day would be safe for traveling without a crew, and when there is a possibility of

[109] Deketelaere, supra note 98, at 52-53.
[110] Id., at 52.

the same, if the laws are relaxed a bit, they might allow the development of the Autonomous Vessels along with their inclusion. The traditional concept of seaworthiness evolved and developed to cover the needs of traditional manned transportation and, hence, human involvements are evident in all corners of the current regulatory framework. The idea behind the concept of progressive legal interpretation is to reconstruct the method which is employed by the courts when dealing with certain cases. The law should grow beyond the boundaries of the literal interpretation of the current texts. Aiming for a progressive take on the existing framework, the courts would also not limit themselves to the present legal framework but get to stretch out of the box as well.

The authors of this paper suggest that there should be a revamp in the laws regulating the Maritime activities, and there should be a 'standard' definition of a vessel, wide enough to have the UMVs included, keeping in consideration the various levels of autonomy of automated ships. The MASS, as defined by the IMO, may be referred to while considering the same. In the context of India, the ambiguity of the definition of the word 'vessel' presented by the Admiralty Act, 2017 of India, gives a better scope of interpretation. The key here would be a higher specification of laws and rules for better regulation. As mentioned earlier, several threats are hovering around keeping at stake the cybersecurity of the vessel, and hence there have to be newer and stricter regulations that may present higher standards to protect the interests of the parties involved. The current rules overlooking the Maritime Insurance need severe revamp as well. Rules and regulations that are supposed to oversee the 'seaworthiness' of the vessels are either in 'implied' terms or are interpreted in a similar fashion, which could be changed into a standard definition that would incorporate all the elements of working and fit automated ship. As earlier suggested, if the documents and certificates have to be 'digitized,' the

rules should clarify the stand with the same as well. While a future with complete maritime traffic of fully Autonomous Vessels does look good with lesser human errs, accidents, and probably lesser piracy, but it may not be logistically possible. The feasibility of the vessels also depends from state to state, and their ability to afford the said technologies. It may be safe to say that keeping in view the current technological limitations, the authors believe that the near future could consist of a *hybrid* environment that consists of vessels of all types of autonomy, manned, autonomous, and semi-autonomous vessels rather than aiming for a complete autonomous marine environment. Along with the long list of problems as discussed in the paper, there is no doubt that there will be many more unprecedented problems when Automated Vessels enter the market for commercial purposes. The Maritime Industry is known to persistently grow and evolve, adjusting to the time, redefined to cater to the needs of the market and environment. Autonomous Vessels' injection to the market would force another such phenomenon, pushing the market to adjust to the developments. A global approach and demand for a new convention focusing on Autonomous Vessel could be made as soon as the IMO comes up with their report on MASS and the possible growth of the automation sector in the maritime industry.

LEGAL IMPLICATIONS OF MARINE INSURANCE IN OIL POLLUTION WITHIN INDIAN COASTLINES

Minnah Elizabeth Abraham[*]

Abstract

Oil pollution is one of the recurring issue which resorts to the gravest consequences on marine ecology as well as economy of the inhabitants residing nearby, if not taken care of. The oil spill is considered as India's worst nightmare with the instance of Chennai beaches where it confronted a blanket of toxic sludge across the Indian sea. This Article seek to evaluate the legal insurance ramifications of Oil Pollution both from international outlook, enlisting conventions safeguarding the prevention of Oil Pollution as well as laws applicable on Indian Soils. This Article also seeks to research on civil liability regime, which India strongly follow and compensation thereof under Marine Insurance Act 1963, Merchant Shipping Act 1958 r/w Merchant Shipping Rules 2008 and conventions.

Keywords: *Marine Insurance, Civil Liability, Oil Spillage, ecology, conventions.*

Introduction

As we venture to keep up with the rapid development of technological advances in science and digitalisation, a lot of concerns have been raised, out of which the first and foremostly, how much does it adversely impact our environment. Understanding the consequences of the dangers of carelessness as a result of lack of

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checks and inherent lacunae in the rush of the hour, one faces the dangers thereof, draining away the time and resources. An incident of Deepwater Horizon's explosion in the Gulf of Mexico, upon drilling an exploratory well, a collision of merchant vessel with a panama ship carrying Oil cargo outside of Mumbai harbour, a calling of India's ecological checks in the maritime sector in the wake of Chennai's oil spill or even a recent news of Japanese bulk carrier's spill in the Island nation of Mauritius inciting an environmental emergency, all those instances point the need towards securing maritime safety both internationally and nationally to tackle the impact of oil pollution as well as oil spillage.

Oil is the most important sought after commodity, but also the most transported pne across the marine route (sea being the most convenient medium for its bulk transportation).[1] Oil contamination or oil pollution of the ocean, in simpler terms, started with the carrying of oil in ships and expanded with the carriage of oil payload in mass and has been exponentially increasing ever since.[2] Oil contamination may result from collision of vessels carrying oil across or from its bunkers due to damages. It may emerge as an inadvertent break or from the cognizant choice of the Master to lighten his stricken vessel.[3] Tanker mishaps, notwithstanding, are not by any means the only source of oil contamination. Marine based oil contamination can ensue either from ships or from seaward installations.[4] Apart from unintentional accidental spills like the

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1 Oil is generally transported by sea either using pipelines or tankers. Oil tankers transport some 2400million tonnes of crude oil and oil products around the world by sea. Please see www.imo.org for details.

2 DAVID W. ABECASSIS, THE LAW AND PRACTICE RELATING TO OIL POLLUTION FROM SHIPS, 3 (1st ed., Butterworth 1978).

3 SIMON GAULT, MARSDEN ON COLLISIONS AT SEA 413 (13th ed., Sweet and Maxwell).

4 As in the case of the BP Oil Spill.

Exxon Valdez,[5] intentional discharges by the boats or ship constitute s a significant reason for oil contamination. The ongoing appearance of tar balls on sea shores of Goa is a case of intentional oil release by a boat on high seas.[6] Natural drainages may likewise cause oil pollution however because of the way that it is not brought about by human activity, such instances are commonly avoided from the ambit of marine based oil pollution.[7]

It is evident that accidental pollution of sea by oil is unprecedented and the effects thereof of the oil spill are numerous and add up for serious implications in character. However, the question arises as to *who* is to be held liable responsibly for such accidental oil spillage and *what* role does the marine insurance play?

International Community

As Posner stated that in our heightening complex and interconnected world, matters of concerns emerge which cannot be solved by just one Nation only. Oil pollution, mainly oil spills are one such concern that transgress the scope and capacity of one State to solve the issue by itself without the effectiveness of international legislative regime and nonetheless categorized as 'collective action problem'. 1954 was the year for the first international convention that covered the subject

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5 The "Exxon Valdez" super tanker carrying 1,264,155 barrels of crude oil ran aground on Bligh reef off Alaskan coast, spilling eleven millions of gallons of crude oil into Prince William Sound, Alaska, on March 24, 1989. Prior to the BP oil spill, Valdez was considered to be the largest oil spill in terms of the sheer volume discharged in the sea in the accident. For details see "The Exxon Valdez Oil Spill: A Report to the President (Executive Summary) available at http://www.epa.gov/history/topics/valdez/04.htm.

6 August 31, 2010 Goan beaches were swept away by tar balls which are generally formed as a result of waste oil dumped by ships reacting with sea water. See *Tar Balls invade Goa's Coastline*, THE TIMES OF INDIA (Aug. 31, 2010) http://timesofindia.indiatimes.com/city/goa/Tar-balls-invade-Goascoastline/articleshow/6465768.cms.

7 *supra* note 2.

of liability of shipowners for sea pollution.[8] E.D Brown prescribed a system of classification of the laws to distinguish on the basis of:[9]

1. Provisions for the enforcement of set standards
2. Coastal States right of intervention
3. Coordinated international response to oil pollution incident and lastly.
4. Civil liability regime

For the purpose of relevancy of the chosen topic on marine insurance law, the author seeks to analyse from the perspective of fourth category i.e., civil liability.

Provision of compensation under International conventions

Along with international treaties on cooperation in oil pollution prevention, international treaties on settling compensation for oil pollution from ships providing the basis for compensation:

- International convention on Civil Liability for Oil Pollution Damage (***Civil Liability Convention - CLC)*** **-** *gives indemnity to spills of persevering oil conveyed in tankers up to the shipowner's liability limit and is settled by the container's insurer.*
- International convention on the establishment of an international fund for compensation for oil pollution damage (***Fund Convention)*** **-** *the second tier of indemnity for spills of determining oil from tankers, paid by recipients of oil in nations that have ratified to the convention. However, Supplementary Fund is also availed to provide third tier of compensation.*

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[8] The International Convention for the Prevention of Pollution of the Sea by Oil, 1954 was adopted under the auspices of IMCO, that was later amended in 1962, 1969 and 1971.

[9] E.D. BROWN, THE INTERNATIONAL LAW OF SEAS 377 (Dartmouth Publishing Company, Sydney Vermont, 1st ed/2004)

- International convention on liability and compensation for damage in connection with the carriage of hazardous and noxious substances by Sea (***HNS Convention)*** **-** *applies to spills of other oils, for example, non-tenacious hydrocarbon oils, vegetable oils and synthetic compounds conveyed in mass and in packaged structure. The HNS Convention is not yet in force.*
- International convention on Civil Liability for Bunker Oil Pollution Damage (***Bunker Convention***) - *applies to spills of bunker oil from an assortment of boats, again up to the shipowner's liability limit and is paid by the vessel's safety insurer.*

Few other international conventions contain relevant general provisions that address the prevention of sea transport-source oil pollution, including accidental discharges. These include: UN Convention on the Law of the Seas (UNCLOS); the International Convention for the Prevention of Marine Pollution from Ships 1973, in line with modifications of 1978 Protocol (MARPOL 73/78); With regards to the response to Oil pollution, International Convention on Oil Pollution, Preparedness, Response and Co-operation (OPRC) 1990 bestows on measures for dealing with marine oil pollution accidents nationally and in line involving with other countries'.

Indian Community

It is clear the sources of law of liability in cases of maritime incidents in India are derived from International conventions, treaties, Indian legal precedents, and foreign precedents as stood recognized by Indian courts. Some of the legislative protection of marine ecology from oil pollution.

i. Marine Insurance Act 1963;
ii. Merchant Shipping Act, 1958; and

iii. The Merchant Shipping (Prevention of Pollution by Oil from Ships) Rules, 2010.

India's acceptance of OPRC convention in 1990, along with final Act and 10 resolution and promulgation of the said convention in 1995, India worked on its existing provision on compliance and national contingency plan on oil spillage response. Observing that the Coast Guard is the rendered authority under National Oil Spill Disaster Contingency Plan coordinating the quick response to oil spillage in Indian seas.[10]

Indian laws on Marine Insurance: Marine Insurance Act 1963

The need arose in the post-independent India, shipping has underwent a considerable change and adopted an Indian legislation in par with the Indian condition in taking in consideration of general law of contract and the English's precedent based on the common rules of the contract. Although the enactment represented substantially of its English counterpart i.e., ***Marine Insurance Act of 1906*** with certain changes as only in unnecessary parts. It has been in statutory force since 1963 i.e., ***Marine Insurance Act 1963***. (Hereinafter '***MIA***'). The majority of the law of marine insurance is generally pure interpretation[11] of the contractual agreement contained in the common type of marine policy.[12] The fundamental rule of an agreement of insurance is that the indemnity recoverable from the insurer is the financial loss endured by the assured under the agreement. Subsequently, according to the enactment, a contract of

[10] The Coast Guard is the national agency for ensuring marine environment security in India. It involves protection and preservation of the environment and prevention and control of pollution. Coast Guard Service was crystallized in India by passing the Coast Guard Act in the Parliament on 18 August, 1978 which was brought into force on August 19, 1978.

[11] English Marine Insurance Act, 1906, § 22.

[12] Kulukundis vs. Norwich Union Fire Insurance Society, (1937) 1 K.B. 1, 34 C.A (per Scott L.J).

marine insurance is an agreement whereby the backup plan embraces to indemnify the insured/assured in a way and to the extent thereby incurred, against marine losses, in other terms, the loss occurrence to unprecedented marine adventures. A marine insurance policy cannot be admitted in evidence unless it embodies the relevant particulars as given under **Section 24, 25, 26** and **Schedule E** for a Policy form in accordance with **Section 25** of MIA.[13] In the present topic frame, Protection and Indemnity insurance is most relevant pertaining to shipowner's liability cover towards third parties, usually associated by entering the ship in a mutual insurance joint, referred as 'club'. Liability is decided in accordance with the prevailing legislations of the country, where incident took place. Both P&I Clubs and ordinary marine insurer are administered by the arrangements of the Marine Insurance Act 1906. Marine insurers give cover to known quantifiable dangers, predominantly Hull and Machinery insurance for proprietors of ship and Cargo Insurance for cargo proprietors. On the other hand, P&I Clubs give protection cover to more extensive uncertain dangers, for example, outsider liabilities that marine insurers are opposed to cover. Outsider dangers incorporate a ship's liability to a freight proprietor for damage to the tanker, a ship's obligation after a collision, ecological pollution damage and war hazard protection.[14]

Understanding Liability implications: Insurance under Merchant Shipping Act 1958

Apart from MIA 1963, ***Merchants Shipping Act, 1958 (***Hereinafter ***'MSA')*** codifies liability provision for maritime accidents. MSA's

[13] Surajmull Nagoremull vs. Triton Insurance Co. Ltd, (1924) L.R. 52 I.A. 126, 129.

[14] Patil, Gaurangi. India: (Nov.27, 2012) Reeling Back in History to understanding Marine Insurance/Protection & Indemnity Clubs (P&I) – Marine Insurance, Brus Chambers Advocates & Solicitors, Mondaq

application extends to every Indian ships, irrespective of its location as well as foreign ship, residing within the port or place in India or within the jurisdictional territorial waters of India or marine areas adjacent which India has exclusive jurisdiction wrt. Marine pollution.[15] In ***World Tanker Corporation vs. SNP Shipping Services Pvt. Ltd***[16]. the SC held that the whole intent of limitation of liability is to protect the shipowner against excessive claims, exceeding far into value of ship and cargo from all over the world in situation of accidental, damages to tanker, or loss of personal injury or loss. A petitioning owner must avail the benefits of liability limitation under **Section 352I (3)**[17]**,** (4), and (6) in the High Court for appeal on limitation fund. **Section 352K** enlist thereof where such fund shall be chosen either by deposit of sum with the HC or furnishing of a bank guarantee or other financial security in the satisfaction of HC.[18] It is to be noted that the said fund is the beneficiary of any right of subrogation arisen from all payments of damage, which any claimant has against any other person.[19] Furthermore, the action for claim on fund compensation against Fund Convention must be brought to the HC and the Fund shall have the right to intervene as a party to the proceeding instituted in the HC against the owner or his insurer.[20] The fund is liable to pay compensation to a person suffering pollution damage where the financial security ensured under the given **section 352N** is insufficient to satisfy as provided in ***Merchant***

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15 The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352G.

16 World Tanker Corporation vs. SNP Shipping Services Pvt. Ltd ,AIR 1998 SC 2330

17 Section 352 I(3) reads-"where with respect to any incident, the owner proves that the pollution damage resulted, either wholly or partially , from an act or omission done, with intent to cause such damage, by the person who suffered damage, or from the negligence of that person, the owner shall be exonerated wholly or, as the case may be, partially from the liability to that person."

18 The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352K.

19 The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352I.

20 The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352X.

Shipping (International Fund for Compensation for Oil Pollution Damage) Rules, 2008.[21] **Section 352W** gives that where any individual enduring pollution damage has been unable to get full and sufficient pay for damage under the particulars of the Liability Convention on any grounds indicated in the Fund Convention, the Fund will be obligated for pollution harm done as per the arrangements of the Fund Convention.[22]

On compensation payment, the Public Authority of India or the Fund shall acquire the Right of Subrogation, all the rights against the owner or his insurer.[23]

Every ship that is carrying 2,000 tons or more in bulk as tanker cargo is required to generate a certification authenticating liability insurance.[24] Furthermore, certificate issued outside of India are also accepted only if it is generated by competent authority.[25] In contravention of above absence of the certificate, the ship would be restrained from entering or leaving from any Indian ports or within Indian territorial jurisdiction.

Furthermore, **Part IX, X, XA, XB, XC & XI A of MSA 1958** codifies liability and insurance requirements under MSA.[26] Rules as prescribed under Section 352R, MSA 1958

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[21] Merchant Shipping (International Fund for Compensation for Oil Pollution Damage) Rules, 2008.

[22] In line with Art. 4 of the Fund Convention. The grounds specified in Art. 4(1) of the Fund Convention are:
"(1) Where no liability arose under the CLC;
(2) Where the ship owner was incapable of meeting his CLC obligations or where his insurance covers, and or financial security were themselves inadequate;
(3) Where the value of damage exceeded the vessel owner's liability under the CLC"

[23] The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352Z.

[24] The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352N.

[25] The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352O.

[26] The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958 (India).

i. According to the ***Merchant Shipping (Civil Liability) Rules, 2008***,[27] the shipowner shall be allowed to entitle limitation of his liability for oil pollution damage with regard to one incident to an aggregate amount as given below:

   a. 4,510,000 units, noting that the ship's tonnage does not transcend 5,000 units of tons

   b. 631 units for each and every additional unit of tonnage, where the ship's load tonnage transcend beyond 5,000 units of tonnage.

   c. Provided that the above aggregate does not exceed 89,770,000 units

ii. The *Merchant Shipping (Civil Liability) Rules, 2008*, also prescribe that the ship owner of an Indian ship, who has maintained insurance or any other mode of financial security in accordance with **Section 352N(1),** MSA 1958 shall ensure to make an application to the Director General for issuance of renewable of certificate/Financial security wrt. Civil liability for oil pollution in Form A. Similarly, for shipowner of a foreign ship, who has maintained the same insurance/financial security shall provide the DG in accordance with Civil Liability Convention, 1969 in Form A.

In absence of India's enforcement of CLC which compulsorily requires the owners to maintain mandatory insurance coverage, only general tort liability and polluter principle read with MSA that provides for invoking the liability.

It is repeated once again that liability is credited to the owner for example just the owner can be viewed at liable under the MSA. No other individual, for example, the Master and crew, administrator or salvor, can be held subject, aside from where such individual causes harm persistently or recklessly.[28] A wide scope of persons are commonly exempted from such liability. These absolved people are of the sort who may be relied upon to be associated with the vessel when an occurrence including an oil spill, or any danger or threat emerges.

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[27] Merchant Shipping (Civil Liability) Rules, 2008.

[28] The Merchant Shipping Act, 1958, No. 44, Acts of Parliament, 1958, § 352J.

There is nothing in the MSA to keep a case in carelessness from being made against a third party other than those exempted people. [29]

Conclusion

The intent behind marine insurance has been to empower the ship proprietor and the purchaser and dealer of products to work their separate business while easing themselves, at any rate somewhat, of the troublesome money related outcomes of their property's being lost or harmed because of the different dangers of the high oceans. Subsequently, at the end of the day, marine insurance adds the important component of monetary security with the goal that the danger of a mishap happening during the vehicle isn't a restraining factor in the lead of worldwide exchange. The significance of marine insurance protection, both to the assureds, as far as the security it gives and its cost component in the general financial matters of running a boat or moving merchandise, and to nations, especially agricultural nations, in its effect on their equilibrium of instalments position, cannot be overemphasized.

Keeping in see the drawn out consequences for the ecological environment and individuals reliant on the same, global legitimate principles concerning the marine-based oil pollution should hence have the option to consider the degree of the harm caused, yet additionally the reason for the harm. This implies that not just customary harm to property and individual injury, yet in addition harm to the environment fundamentally ought to be considered.

India follows the civil liability principle for oil pollution harm. The Merchant Shipping Act under its Parts XB and XC consolidates the arrangements of CLC and Fund Convention holding the owner at risk for oil pollution harm and restricting the liability for the equivalent while establishing the limitation fund. It is to be seen here that does the Merchant Shipping Act deciphers the spirit of

[29] *Ibid.*

International conventions in itself or is it insufficient in its application when managing occurrences of oil contamination is a question that lingers upon author's research observation. The main major lacunae that is observed in the Merchant Shipping Act is the non-referencing of the liability covers. Section 352 just says that "the owner shall be entitled to limit his liability under this Part, in respect of any one or more incident, as may be prescribed". The provisions for compulsory insurance, budgetary assurance, and privileges of compensation by subrogation have been assimilated from CLC sensibly well into the MSA. In any case, what must be contemplated here is that if doing this much is adequate enough to make sure about our Indian coastlines.

The MSA, just like CLC, makes the liability of the owner join and a few. Nevertheless, it does exclude from its ambit people that may be associated with the mishap intently like the charterer, the crew and the master of the cargo and just as the port specialists who are liable for planning signals. To forestall mishaps adrift the liability system of the nation should be reinforced by forcing criminal risk on the owner as well as allied people who are firmly connected with the spill.

Insurance of oceans by oil pollution is of tremendous significance and all measures ought to be required to forestall and ensure our coastlines. India is today a pioneer among the countries of the world. It involves a directing lead opportunity in the Indian Ocean. It must serve as a lead to other Asian and African nations by giving harder laws in the matter of security of the environment. To beat this, the strategy of "prevention is always better than cure" must be followed. For the counteraction of an environment catastrophe, there is an earnest need of new laws backed by international accords.

SAGARMALA PROJECT: INDIA'S BLUE ECONOMY INITIATIVE

Shiksha Srivastava[1] *and Sweta Ojha*[2]

Abstract

In this paper the researchers have delved into the emerging concept of Blue Economy and the potential it offers India to harness the potential of its extensive marine resources and vast coastline, in a sustainable manner. The hypothesis of the researchers is that the Sagarmala Project is the key initiative to develop India's Blue Economy, as has been highlighted by the government. For the same, the researchers have analyzed the objectives of this ambitious mega project which was aimed at marine and coastal development through port led industrial development, port modernization, tourism and other facets and sectors around India's port-based infrastructure economy. The paper discusses these objectives of Sagarmala project in the light of current status of India's port infrastructure. Furthermore, the challenges and serious concerns regarding the project have been analyzed to conclude whether and to what extent the Sagarmala Project helps in the development India's Blue Economy. The paper concludes that even though Sagarmala Project is hailed as India's core initiative to develop blue economy, there are still certain pertinent issues regarding marine ecology, social aspects and an unbalanced focus on industrial development due to which

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the project lacks in fulfilling the central principles of Blue Economy for India.

Keywords *:Blue Economy, Sagarmala Project, Sustainable Development, Port Infrastructure. Marine Ecosystem, Port-linked industrialization*

INTRODUCTION TO BLUE ECONOMY

Oceans contain 97% of the Earth's water, cover three-quarters of the planet's surface and accounts for 99% of the living area on Earth.[3] Due to their enormous potential they are referred to as the last frontiers of growth and development, but this potential that they offer remains to be completely exploited.

However, this potential in terms of energy and resources cannot be harnessed thoughtlessly, it needs to be harnessed in a balanced way, in such a way that the conservation as well as the health of the ocean water are given prime attention, alongside adherence to United Nations Sustainable Development Goal No. 14 the objective of which is to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development".[4] Therefor according to the experts the concept of Blue Economy which at its very core idea is ocean based is the next sunrise issue for countries of the world.

This is at the heart of the idea of Blue Economy. It is based on the idea of using locally available resources and using renewable inputs, subscribes to "ocean-as-a-resource" and addresses resource scarcity concerns, and encourages sustainable development.[5] The ambition is

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3 S. Smith-Godfrey, *Defining the Blue Economy*, 58 MARITIME AFFAIRS: JOURNAL OF THE NATIONAL MARITIME FOUNDATION OF INDIA 60, (2016).

4 Sustainable Development Knowledge Platform, *Sustainable Development Goal 14* (Jan 10, 2021), https://sustainabledevelopment.un.org/sdg14.

5 Sonali Mittra, *Blue Economy: Beyond an Economic Proposition*, 1 ORF ISSUE BRIEF 173 7 (2017).

that marine economic development will mitigate environmental risks and environmental challenges. Due to this enhanced and responsible capacity planning will make it possible to achieve sustainable socio-economic development across the globe.[6]

Blue Economy can be defined as sustainable use of ocean resources for economic expansion, business growth, and increased standard of living with a full idea of preserving the ecosystem.[7] It includes areas such as maritime transport, fisheries, renewables, waste disposal, and tourism industry, according to the World Bank.[8]

In India, the Blue Economy represents the sum total of economic activities stemming from marine resources. Presently, deep-sea mining, offshore oil, fisheries sector, and gas are the major constituents of India's blue economy and other projects are also underway under the umbrella of blue economy.[9]

OVERVIEW: SAGARMALA PROJECT

Sagarmala Project is at the heart of India's blue economy drive. It was launched under the aegis of Ministry of Shipping, with the objective of port building and development, developing coastal infrastructure, expanding the inland waterways network, increasing fisheries sector output, establishing special economic zones and promoting tourism.[10]

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6 GUNTER A. PAULI THE BLUE ECONOMY: 10 YEARS, 100 INNOVATIONS, 100 MILLION JOBS (2010).

7 *Id*. at 40.

8 Godfrey, *supra* note 1 at 62.

9 Dinoj K. Upadhyay & Manoranjan Mishra, *Blue economy: Emerging global trends and India's multilateral cooperation*, 30 MARITIME AFFAIRS: JOURNAL OF THE NATIONAL MARITIME FOUNDATION OF INDIA, 16(1) 31 (2020).

10 The Economic Times, *Government roping in multilateral agencies for Rs 3.5 lakh crore Sagarmala project* (2016) (Jan 8, 2021, 10:45 am) https://economictimes.indiatimes.com/news/economy/infrastructure/government-roping-in-multilateral-agencies-for-rs-3-5-lakh-crore-sagarmala-project/articleshow/50956475.cms?from=mdr.

A detailed plan released by Ministry of Shipping in 2016 outlines the contours of this ambitious and large-scale project.[11] The plan laid down a four-pronged strategy whose components were port modernization, port connectivity, and port-led industrialization. It included formation of coastal-economic zones (CEZ) and industrial clusters in the areas surrounding the port facilities similar to projects undertaken for fisheries sector in China or Europe. This project, which covers 14 ports was designed with the objective of making the domestic manufacturing sector and export-imports industries more competitive. The consolidated Sagarmala project proposes to carry out almost 400 varied projects along the coast at an estimated cost of almost ₹8 lakh crores over the next two decades.[12]

In the context of this ambitious and eventually huge project, India has begun to develop maritime infrastructure as well as inland and coastal waterways for port-led development and revolutionary maritime logistics in India.[13]

As a great deal of attention has been paid to this initiative both domestically and internationally, certain criticisms and challenges have been highlighted, particularly with regard to the significant environmental damage that needs to be addressed. Overall, the Sagarmala project needs to be analyzed in terms of its economic viability and sustainability, taking into account the current state of

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[11] S. S. Ray, *Infrastructure: How Sagarmala project can be a shot in the arm for the economy*, FINANCIAL EXPRESS (2016) (Jan 5, 2021, 5:12 pm) https://www.financialexpress.com/economy/infrastructure-how-sagarmala-project-can-be-a-shot-in-the-arm-for-the-economy/450802/.

[12] J. Sood, *Govt mulls Rs10 trillion public financing for infrastructure projects*, LIVEMINT (2017) (Jan 3, 2021, 1:45 pm) https://www.livemint.com/Home-Page/G63KRD11vfvag0lOWJtBIN/Govt-mulls-Rs10-trillion-public-financing-for-infrastructure.html.

[13] M. Gulam Hussain, Pierre Failler, et. al., *Major opportunities of blue economy development in Bangladesh*, 88 JOURNAL OF THE INDIAN OCEAN REGION, 14(1) 90 (2018).

the infrastructure in India. It is also relevant to explore how this will become a part of India's Blue Economy initiative.[14]

NEED DEVELOPMENT OF INDIA'S PORT INFRASTRUCTURE

Infrastructure is the key sector that drives the overall development.[15] India needs a state-of-the-art infrastructure to ensure a constant export growth trajectory. Hence, improving the logistic costs of India is crucial to enhance its trade facilitation measures to improve its competitive position in international markets.[16]

Deficient infrastructure and the way in which infrastructure is operated in India remains a major obstacle in ensuring the competitiveness of goods and exports. Logistic improvements are of enormous significance as every 1 percentage point reduction would add USD 10 billion to the Gross Domestic Product of India and in that context, India's cross-border trading score improved from 57.6 in 2017 to 58.5 in 2018.[17]

Indian exports are losing their competitiveness in the international economy due to their huge logistic cost. Logistics costs comprise 14% of GDP in India while in the European Union it is 10% and, in the USA, it is even lower at 8%. Thus, it is vitally important that India should work to reduce trade costs by providing highly efficient and connected infrastructure and port facilities with a major role to play in the same.[18]

Therefore, one of the primary goals of the Sagarmala Project. It is a much-needed initiative to boost the performance of Indian ports and

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[14] *Id.* at 82.
[15] STAFANO GATTI, PROJECT FINANCE IN THEORY AND PRACTICE 314 (2007).
[16] R. C. MISHRA & TARUN SOOTA, MODERN PROJECT MANAGEMENT NEW AGE INTERNATIONAL 78 (2006).
[17] *Id.* at 80.
[18] Godfrey, *supra* note 1 at 63.

carry them into line with global operational standards.[19] It is estimated to save approximately $5billion in logistics costs each year and could even provide a significant boost to the initial developments of India. Unless the various environmental and coastal community sustainability challenges are addressed, the Sagarmala project can lead to a higher level of productivity expansion and it can also be inclusive and sustainable in nature.

OBJECTIVES OF SAGARMALA PROJECT

The Sagarmala Project was launched in 2015 by the Ministry of Shipping with the intent to derive the potential of the 7,500 km long coastal line of the country.[20] The overall vision of the ambitious Sagarmala Project is the economic growth of the country, in particular industrial development through port-based initiatives and coastal development considering in mind about the sustainability. The major initiative of the project was towards port development and modernization, connectivity across ports, port-led industrialization and development of coastal communities.[21]

To achieve this objective under the Sagarmala Project 577 projects have been flagged at an estimated investment of approximately ₹8.570500 lakh crore (equivalent to US$130 billion in 2019) for port modernization & new port development, enhancement of connectivity across ports, coastal economic zone industrialization linked with ports and development of coastal community over the period 2015 to 2035 in a phase wise implementation.[22] These projects will be completed under the auspices of the concerned Central Ministries and agencies of the

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[19] Gulam Hussain, Pierre Failler, et. al., *supra* note 11 at 82.
[20] Mittra, *supra* note 3 at 6.
[21] Ray, *supra* note 9.
[22] Sood, *supra* note 10.

Central and State Governments through innovative modes of private or Public Private Partnership investment, as indicated in the approved implementation plan for the Sagarmala schemes.[23]

PROJECT THEME	NO. OF PROJECTS	PROJECT COST (RS 10)
Port Modernization	245	₹1,416,410 million (equivalent to US$21 billion in 2019)
Port Connectivity Enhancement	210	₹2,444,640 million (equivalent to US$39 billion in 2019)
Port-Linked Industrialisation	57	₹4,639,700 million (equivalent to US$73 billion in 2019)
Coastal Community Development	65	₹69,760 million (equivalent to , US$1.1 billion in 2019)
Total	577	₹8,570,500 million (equivalent to US$140 billion in 2019)

The objective of the project for the year 2018-19, as per the Ministry of Shipping was to accomplish an investment target of Rs 3 trillion and complete projects worth Rs. 30,000 crores in that fiscal year.[24] This was an expansion of Rs. 10,060 crores worth projects that the preceding financial year period.[25]

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[23] Amrita Datta, *Public-Private Partnerships in India: A Case for Reform?* 73 EPW 44 (33) 76 (2009).

[24] Ministry of Ports, Shipping and Waterways, *Projects Under Sagarmala*, (Jan 1, 2021, 3:35 pm) http://sagarmala.gov.in/projects/projects-under-sagarmala.

[25] *Id.*

The project envisaged the development of Maritime Clusters and Coastal Economic Zones with the goal of promoting foreign shipping and India's export import (EXIM) policy. This is often crucial, as long as shipping and EXIM trade have international ramifications and its essential to deal with the prices and time involved within the transportation of EXIM containers.[26]

A few of the key goals of the Sagarmala Project is to improve the port connectivity via connectivity rail projects, of which 11 have been already completed and the others are underway. About 210 connectivity schemes were laid down, out of which many have been established including Coastal Berths in different major and non-major ports, increasing the network of National waterways in the first phase as a priority for domestic network connectivity and heavy haul rail corridor between Talcher to Paradip.[27]

Another significant component of the Sagarmala Project is Coastal Economic Zones (CEZ) built in phases across the coastal lines of India, which are targeted at port-led industrial development. Within the project 14 Coastal Economic Zones with the expenditure of ₹4,639,700 million (equivalent US$73 billion in 2019), spread across the national coastline of 7,500 km and focused around ports are to be built using indigenous manufacturing scheme under Government's Make in India initiative.[28] Each of these CEZ would cover an economic or industrial region comprising of cluster of coastal districts with a clear and direct linkage to the sea ports in the territory.

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[26] Sood, *supra* note 10.

[27] Mittra, *supra* note 3 at 6.

[28] *Developing Ports: Sagarmala Project* (Jan. 2, 2021) https://www.makeinindia.com/article/-/v/developing-ports-sagarmala-project.

The sectors designed for manufacturing units to be established in these Coastal Economic Zones which includes water transport, maritime and inland waterways, renewable (wind and solar) energy generation, and, automobile sector, telecom sector and coastal and cruise shipping, etc.

The objective of each of these Coastal Economic Zones is to create synergies with industrial and economic corridors in that region, such as the Mumbai-Bangalore economic corridor, Dedicated Freight Corridor, Chennai Bangalore Industrial Corridor, Delhi–Mumbai Industrial Corridor Project, Visakhapatnam–Chennai Industrial Corridor and Amritsar Delhi Kolkata Industrial Corridor, etc.[29]

The zones will contribute an important role for ease of doing business improving exports to the value of $100 billion along with creation of 150,000 jobs by 2025, and reducing export freight logistics in terms of cost and time, which will increase India's GDP growth and the global competitiveness of Indian exports.[30]

As a complement to the Sagarmala Project, a strong push has been given to commercial shipbuilding and ship repair sectors under the Government of India's Make in India scheme.[31] Shipbuilding industry will also benefit from port led development being propelled. This accelerates industrial growth along with its large number of associated industries due its high multiplier effect. In December 2014, India had a fleet strength of just over 1,200 ships, the aim now is to reach over 1,600 by 2025.[32] The interoperability between related

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[29] Meera Siva, *All you wanted to know about Sagarmala*, THE HINDU BUSINESS LINE (Jan. 4, 2021), https://www.thehindubusinessline.com/opinion/columns/all–you–wanted–to-know-about-sagarmala/article86408.

[30] Id.

[31] Siva, *supra* note 27.

[32] Ray, *supra* note 9.

industries propelled by the Sagarmala project for port-led development has the capacity to be the beacon for economic transformation of the country.

Sagarmala Project shows the overall picture of tremendous unlocked potential of the Indian coast line for economic development which can be achieved by proper implementation of the project and will propel the economic development in the economic horizon of India.

SAGARMALA PROJECT PART OF BLUE ECONOMY

In recent years, as a new paradigm for development of marine resources and coastal management has emerged in the concept of Blue Economy. The core idea of the Blue Economy concept is of a sustainable and productive marine ecosystem supported by a healthy ocean. The objective is to integrate ocean -related economic and commercial activities with social inclusion, environmental sustainability, and innovative business models.[33]

For India, it is of utmost importance to utilize the huge potential of the Blue Economy around its coastline and the ocean region. To realise the vision to become a $10 trillion economy by 2032 India's need to develop its Blue Economy.[34]

Conservation of the ecological health and productivity of marine and coastal ecosystems by shifting to a more sustainable economic model that taps their economic potential is the core proposition of Blue Economy. Generation of renewable energy, promoting ecotourism,

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[33] Michelle Voyer et al, '*Shades of blue: what do competing interpretations of the Blue Economy mean for oceans governance?*', 20(5) JOURNAL OF ENVIRONMENTAL POLICY & PLANNING 595, 596 (2018).

[34] Ministry of Agriculture, *Mission Fingerling with a total expenditure of about Rs. 52000 lakh to achieve Blue Revolution*, PRESS INFORMATION BUREAU, GOVERNMENT OF INDIA 2017 (Jan. 4, 2021), https://pib.gov.in/PressReleasePage.aspx?PRID=1484208.

and sustainable fisheries and transport are included in it.[35] At its core the idea is to transition to a sustainable economy in the marine space from the conventional economy.

The Indian Ocean Region is of immense strategic importance to India's economic growth as most of the country's oil, and gas is imported through the sea. This dependency expected to rise continuously and exponentially in the next decade.[36] Thus the development of the region is very important for Indian economy.

The Indian Ocean Region is abundant with resources, especially in sectors including ocean energy, fisheries, sea-bed mining and minerals, aquaculture, and even marine tourism and shipping activities which provide opportunities for economic activities of tremendous commercial potential. Even among these resources, focus is on fisheries and minerals as the most commercially viable industries.[37] The United Nations Food and Agriculture Organization (FAO) in its report stated that the Indian Ocean's resources hold the capacity to sustain an increase in production whereas the other world oceans in certain areas are nearing their fisheries limit.[38]

Therefore, the Indian Ocean region presents huge trade potential for India. This region and the Indian Ocean have been at a place of prominence in global economic policy and trade. Other countries have tried to establish a presence in the region for their strategic and national interests.

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35 Upadhyay & Mishra, *supra* note 7 at 34.

36 Mohammad Rubaiyat Rahma *Blue Economy and Maritime Cooperation in the Bay of Bengal: Role of Bangladesh*, 356 PROCEDIA ENGINEERING 194 357 (2017).

37 *Id* at 355.

38 Rajni Nayanthara Gamage, *Blue economy in Southeast Asia: Oceans as the new frontier of economic development*, 1 MARITIME AFFAIRS: JOURNAL OF THE NATIONAL MARITIME FOUNDATION OF INDIA, 12(2) 2 (2016).

The Sagarmala project as the strategic policy for development of ports through modernisation of and extensive and innovative use of IT enabled services for, thus serves as a beacon for India's Blue Economy initiatives. The project addresses the issue of underutilized port capacity and proposes port modernization, efficient evacuation, and coastal economic development, giving further impetus to the port-led development.

Furthermore, a fishing harbour project is being developed as a part of the coastal community development component of the Sagarmala initiative through partly funding by Ministry of Shipping. Additionally, capacity building, infrastructure, and social development projects related to value addition in fisheries, aquaculture and cold chain development will be funded and coordinated by related Central Ministries and State Governments [39]

Another component of Sagarmala is promoting tourism in maritime and coastal states. For the same, Ministry of Tourism and tourism development departments of maritime state governments have identified various projects. Some of these major coastal tourism projects are development of infrastructure for promoting cruise tourism, development of lighthouses, and development of Coastal Circuits under Swadesh Darshan Scheme of Ministry of Tourism, establishing a National Maritime Heritage Museum Complex at Lothal and an underwater viewing gallery.[40]

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[39] Cabinet Committee on Economic Affairs (CCEA), *Integrated Development and Management of Fisheries - a Central Sector Scheme on Blue Revolution*. PRESS INFORMATION BUREAU, GOVERNMENT OF INDIA, (2015) (Jan 11, 2021, 11:15 am) https://pib.gov.in/newsite/PrintRelease.aspx?relid=133807.

[40] M. Arju, *SDG 14: Prospects for Blue Economy*, FINANCIAL EXPRESS (2016) (Jan 12, 2021, 1:05 pm) http://www.thefinancialexpress-bd.com/2016/01/04/9191.

Hence the Sagarmala Project it covers in itself the various aspects of Blue Economy like promotion of ecotourism, to sustainable fisheries and transport.

CHALLENGES OF SAGARMALA PROJECT

1. INADEQUATE CAPACITY AND INSTITUTIONAL CHALLENGES

Port infrastructure and infrastructure in coastal regions with the objective of providing connectivity is a major focus of Sagarmala Project. In this context, the movement of containers within the country between gateway Ports and hinterland is required to be addressed. It seeks to develop both rail and road sector along the coast line, adopting the model of countries like China.[41] But these sectors have their sector-specific challenges. Railways faces the challenge of congestion as priority is to be given to passenger trains which results in higher freight charges to compensate for lower passenger charges. Roads also get frequently congested causing congestion in the approach roads to many Ports which further highlight the need for providing proper last mile connectivity.

Other logistical and capacity challenges which Sagarmala Project will face are delays in customs clearance formalities and delivery formalities and ineffective implementation of the initiatives taken under 'Ease of Doing Business'.[42] The existing capacity and institutions have a long way to go to translate infrastructure development into substantial reduction of cost and time in the movement of EXIM containers and other trade related activities on the ports.

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[41] Gamage, *supra* note 36 at 5.
[42] Upadhyay & Mishra, *supra* note 7 at 40.

Sagarmala Project also faces financial challenges like timely investment mobilization and budgetary support.[43] However from a long-term perspective, the shipping and ports sector should benefit from this project aimed at expanding the coastal and inland waterways, even though fund mobilization is likely to remain a challenge for the government for executing the projects under Sagarmala.

2. Threat to the livelihood of coastal/fishing communities

A major challenge and concern with the Sagarmala project is addressing the critical concerns regarding implementation of Coastal Economic Zones and the Industrial Corridors along the Indian coastline. The National Fishworkers Forum (NFF) and National Alliance of People's Movements (NAPM) are organizations which have expressed their strong opposition on the ground that such projects were being approved without any mitigations and consultations for their effects on the fishing community who face the risk of displacement of their settlements along the coast, due to the development and construction of the industrial clusters.[44]

On the examination of the blueprint of the Sagarmala project the plans of large-scale land and ocean grabbing emerge, the direct result of which would be displacement of local communities and violation of their fundamental right to life, livelihood and dignity.[45]

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[43] Mittra, *supra* note 3 at 6.

[44] Thozhilalar koodam, *Sea is for the fishing communities Coastal Yatra by NFF in Tamil Nadu,* NFF (2017) (Jan 1, 2021, 9:30 pm) https://tnlabour.in/fish-workers/5654.

[45] Laxmi Prasanna, *Fishermen oppose Sagarmala project,* Times of India (2016) (Jan 1, 2120, 10:00 pm) https://timesofindia.indiatimes.com/city/thiruvananthapuram/fishermen-oppose-sagarmala-project/articleshow/56.

Thus, the livelihood of the coastal fishermen and local communities who are directly affected by the adverse effects of the port development, needs to be addressed. The social element of the sustainable development cannot be ignored and be the weakest 'pillar' of the principle of sustainable development, especially with regard to such mega projects.

3. THREAT TO THE FRAGILE ECOSYSTEM IN COASTAL REGIONS

One of the biggest criticisms of the project has been with regards to the ecological devastation that has been accelerated due to infrastructural projects around sensitive maritime and coastal ecosystems. Critics argue that sustainable development and environment conservation has been side-lined due to the massive push for development.[46]

Primarily, the Sagarmala Project is a port-based development model with the aim of developing ports and waterways transport system to promote shipping industry in India. However, a port-based development of multiple projects intended at facilitating foreign currency through trade and export import, should not be conflated with holistic coastal development.

This is evident by the fact that many serious concerns have been raised about the environmental effects on the coasts with problems of coastal erosion, coastal accretion as well as severe dredging and sea bed depletion being raised by experts.[47] This goes against the very idea of Blue economy and coastal development objective of Sagarmala.

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[46] S. K. Mohanty & Pankhuri Gaur, *Blue Economy, Ocean Development and SDG-14 Implications for the Marine Ecosystem*, 9 BLUE ECONOMY ENHANCING GROWTH AND SUSTAINABILITY : BLUE ECONOMY FORUM 11.

[47] *Sagarmala project: Serious concerns being raised about environmental effects on coastal areas*, COUNTERVIEW.ORG. (Jan 1, 2021, 11:10 pm) https://counterview.org/2016/11/21/sagarmala-project-serious-concerns-being-raised-about-environmental-effects-on-coastal-areas/.

The industrial corridors and economic corridors, the smart cities initiative, coastal investment plans are all a part of the larger plan of industrialization, which will threaten India's vulnerable coastline and lead to its destruction. It will also lead to cases of violations of Coastal Regulation Zone (CRZ) guidelines. The Sagarmala project thus needs serious national assessment, for these different complexities and issues which arise with it.

CONCLUSION

In the present era when technology has significantly advanced, oceans have become the new frontiers of economic activity. Oceans already have a key role in facilitating trade and commerce in the sectors of shipping, offshore oil and gas, fishing, undersea cables, and tourism. Other emerging and lucrative industries such as aquaculture, marine biotechnology, ocean energy and sea-bed mining also that have the capacity to generate jobs and spur worldwide economic growth.[48]

Blue Economy plays the role of integrating the twin objectives of sustainable development and economic growth, in the realm of ocean development. It not only covers the growth dimensions, but also the costs due to environmental damage, in particular injury to the ecosystem.[49] Thus, the Blue Economy concept, sought to develop and harness the potential of oceans but in a sustainable manner.

India proved its commitment to build a sustainable ocean economy through the ambitious Sagarmala Project. The project aligns its domestic mega-modernization projects and international cooperation initiatives in the region. The aim is to enable India's to harness the full potential of the ocean based Blue Economy, and thrust the overall economy especially the infrastructure sector into a higher growth trajectory.

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[48] Bent Flyvbjerg, *What You Should Know About Megaprojects, and Why: An Overview*, 6 PROJECT MGMNT. JOURNAL 45(2) 15 (2014).

[49] Mohanty & Gaur, *supra* note 44 at 12.

But the challenges of this mass development project need to be addressed. The interests of coastal communities should be taken into consideration, and a proper rehabilitation as well as skill development training should be provided to them. Such changes and mitigations can help Sagarmala project lead to higher levels of economic growth which is also inclusive in nature.

Furthermore, to ensure that the environmental values are not compromised and for the preservation of fragile marine and coastal ecosystem, a method of compensation can be introduced to reduce the severe negative impacts to the natural ecosystem and the environment. Examples of similar measures can be observed like the European Union legislation which provides for a model of compensation for the environmental losses and damage to the ecosystem.

Additionally, certain countries have already adopted such a kind of sustainable model of compensation for the environmental and social damages that occur due to the port development project. In the port of Rotterdam in Netherlands, an expansion project caused an adversely impacted the marine ecosystem so a new seabed protection area was established to compensate that habitat loss.[50]

Thus, the government of India can consider develop such a model consider to preserve the natural assets of the Indian Ocean region and the coastline. The existing compensation concept of Environment Assessment system should be enhanced in the context of mega projects like Sagarmala. Thus, this environmental assessment and planning will improve the social aspect and environmental preservation under the principle of sustainable development and will have a positive impact at making Sagarmala Project a true-Blue Economy initiative.

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[50] Voyer, Quirk, et al, *supra* note 31 at 601.

SUBMARINE TELECOMMUNICATION CABLE INFRASTRUCTURE REGIME IN INDIA: AN ANALYSIS ON THE INDIAN LEGAL AND REGULATORY REGIME

Aakaansha Arya[*]

Abstract

Submarine cable infrastructure is the backbone and key to global telecommunications and the internet vis-à-vis the security and economy of every country. India's growing population and its dependency on cable networks creates an exigency to require one of the largest subsea networks to meet the growing demand and economy. India's strategic and geographic position in the Indian Ocean region must be exploited to meet its ambition to become one of the world's few cyber superpowers. However, India's complex and unwieldy legal and regulatory regime in lieu of its inconsistency in domestic laws makes India a potential target for damage. Cable-related issues are regulated by measures found scattered in different laws, notifications, orders etc. and that are dealt with by different authorities that run across several Ministries. This article articulates India's position not being supported by an efficient permit regime in the light of the domestic legal framework. The article embarks on the present-day challenges in the Indian regulatory system and furnishes recommendations for better coordination and compliance to improve India's position in global telecommunications.

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***Keywords**: Submarine cable, legal regime, regulatory regime, UNCLOS, cable ship, vessel*

INTRODUCTION

Submarine Cables formulate a critical position in the globally interconnected networks by carrying about 99 percent in international communications traffic, with demand projected to double every two years for the foreseeable future.[1] This rocket growth in demand for data, fuelled by bandwidth-intensive applications, continued exposure to mobile device usage, and proliferation of cloud-based services, has driven towards a considerable growth and rise in the global submarine deployments.[2] Over Top Service providers only continue to showcase strong earnings reports at a rapid pace, indicative of bandwidth demand not weathering off any soon.[3] This exponential growth in the Submarine Telecom development industry turns towards India's fast-growing technology sector, which makes this region prime for growth.[4] The backbone of a global telecommunication network that facilitates the growth of independent economies induces dependency on submarine cables over its economy and security coupled with associated challenges in the submarine cable infrastructure, which is responsible for financial transactions up to $10 trillion daily, closely raveled with India's

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1 Wayne Nielsen et al, *Submarine Telecoms Industry Report,* (7th Ed Submarine Telecoms Forum, 2019), 12. https://subtelforum.com/products/submarine-telecoms-industry-report/; see also, Douglas Main, "Undersea Cables Transport 99 Percent of International Data" Newsweek, April *2015*. https://www.newsweek.com/undersea-cables-transport-99percent-international-communications-319072.

2 Wayne Nielsen et al, *Submarine Telecoms Industry Report, supra note 1*

3 Wayne Nielsen et al, *Submarine Telecoms Industry Report, su*

4 Submarine Telecommunication Forum Magazine, May 17, 2020. https://issuu.com/subtelforum/docs/subtel_forum_issue_112

potential to emerge as a global cyber superpower.[5] *The United Nations Convention on the Laws of the Sea, 1982 (UNCLOS)* and a country's domestic laws sought to regulate activities relating to a submarine cable. However, this regime of submarine cables is often overlapped by India's conflicting interests of other maritime uses. At the domestic level, India remains negligent in ensuring the protection of cables within its jurisdiction due to a lack of specialised domestic laws and policy, thereby making it unaware of the criticality of submarine cables to its economy.

With freedom of movement being an issue post Covid-19 pandemic, it was observed that there had been a shift in India more predominantly accessing the internet via mobile devices, with the latest statistic depicting 90% market accessing the internet in the above-mentioned manner.[6] India, being the second most populated region in the world, must need one of the largest subsea networks, which would be driven by the increasing demand and a growing digital economy. However, the vested interests, policies and bureaucracy prevailing in the country have held back its development in the sector, making it a far-reaching goal to meet similar demand levels for itself[7].[8] Currently, about 18 subsea cables are landing in 15 cable landing stations across 4 cities in India. Out of 18 subsea cables,

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5 Ronald J. Rapp et al. 2012. "India's Critical Role in the Resilience of the Global Undersea Communications Cable Infrastructure" *Taylor and Francis Group* https://doi.org/10.1080/09700161.2012.670444.

6 Eric Handa and Sean Bergin. 2020. "The Impact of Covid-19 on Telecommunications and the Future" Submarine Telecommunication Forum Magazine, May 17, 2020. https://issuu.com/subtelforum/docs/subtel_forum_issue_112.

7 Country comparison on the basis of population

8 John Tibbles. 2020 "Subsea Cable Demand Post Covid-19" Submarine Telecommunication Forum Magazine, May 17, 2020. https://issuu.com/subtelforum/docs/subtel_forum_issue_112.

around 7 subsea cables terminate in India.[9] Submarine cables meet one of the most complex regulatory challenges with respect to ocean governance.[10] States are yet to acknowledge the importance and challenges of the submarine system.[11] Challenges related to cable operation mechanism and its protection/repair continue to exist without changes in the current regime.

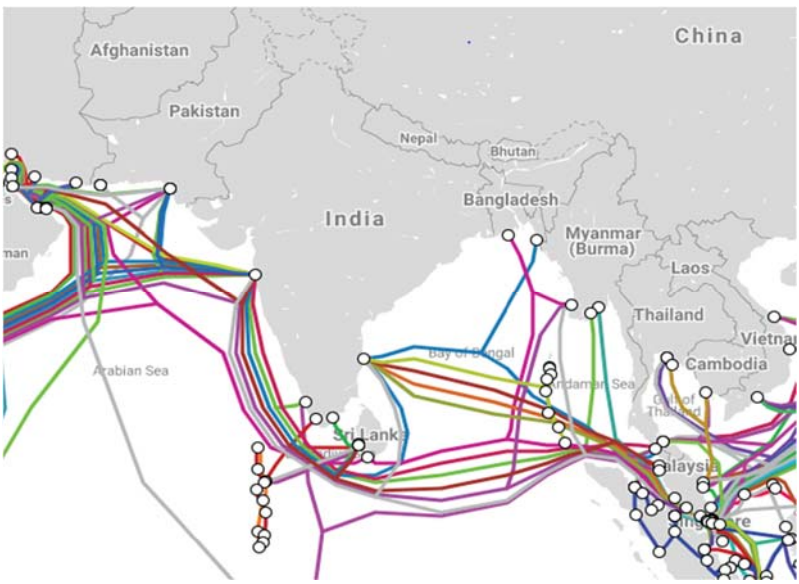

Figure 1: India's submarine cables and maritime zones. (*Source*: Submarine Cable Map, TeleGeography. <https://www.submarinecablemap.com/>)

[9] Suvesh Chattopadhyaya. 2008. "Is India'a subsea cable infrastructure sufficient to support next-gen business." https://www.submarinenetworks.com/en/insights/is-india-a-subsea-cable-infrastructure-sufficient-to-support-next-gen-business.

[10] Douglas R. Burnett et al eds., Submarine Cables: The Handbook of Law and Policy (Martinus: Nijhoff, 2014).

[11] Beckman, "Submarine Cables-A Critically Important but Neglected Area of the Law of the Sea" (paper presented at the 7th International Conference of the International Society of International Law on Legal Regimes of Sea, Air, Space and Antarctica, New Delhi, 15-17 January 2010, 2), https://cil.nus.edu.sg/wp-content/uploads/2010/01/Beckman-PDF-ISIL-Submarine-Cables-rev-8-Jan-10.pdf

Disturbance in the cable system that affects multiple jurisdictions in one place extends to other jurisdictions as well.[12] Any interruption in the functioning of subsea cables may become detrimental to a nation's economy and security. India's cable system stability rests upon the collective supportive system across borders; hence, as a result, an integrated submarine cable management approach would prove to be an effective measure. In 2008, multiple cable cuts in the Mediterranean and Persian Gulf region had caused widespread loss of internet connectivity through the Middle East and South Asian region. India had lost 60 percent of traffic.[13] In another event, in 2013, BSNL, the prime bandwidth provider lost 21 percent of traffic.[14] Paramount Communication Limited became the only Indian company to work on repairs to Bharat Lanka Undersea Cable System (BCLS) since the year 2006.[15]

Indian policy and regulatory regime do not support the facilitation of submarine cable operation and repair within its Maritime Zones due to several required permits before commencing the operations. Cable-related issues are regulated by measures that are found scattered in different laws, notifications, orders etc. and that are dealt with by different authorities that run across several ministries. Having said

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[12] Coffen-Smout, Scott, and Glen J. Herbert. 2000. "Submarine cables: a challenge for ocean management Marine Policy 24.6", 448.

[13] Karl Frederick Rauscher. *Reliability of Global Undersea Communications Cable Infrastructure 300 (ROGUCCI)*, August 11, 2020. http://www.ieee-rogucci.org/files/The%20ROGUCCI%20Report.pdf.

[14] Bobbie Johnson, "How one clumsy ship cut off the web for 75 million people," *The Guardian*, February 1, 2008. https://www.theguardian.com/business/2008/feb/01/internationalpersonalfinancebusiness.internet.

[15] Deepak Kumar Jha. "Optical fibre company repairs undersea net cable facility to SL" *The Pioneer, September 9, 2019.* "https://www.dailypioneer.com/2019/india/optical-fibre-company-repairs-undersea-net-cable-facility-to-sl.html.

this, the cable ship companies end up spending several months and losing millions of dollars in the course of procuring these permits. These factors make India a chokepoint affecting the Indian telecommunication industry and every other state connected by the damaged cable.[16] The submarine cable infrastructure challenged by an inadequate protection regime in lieu of its inconsistency of domestic laws would pose a consolidated target for damage.

This article will examine the broad issue of legal and regulatory regimes on establishing cable network and repair operations that govern the submarine cable infrastructure and operations in India's maritime zones. The article will articulate the existing legal regime on National and International laws and its challenges. The first segment of the article will outline the international legal regime governing subsea cables, followed by India's legal regime relating to submarine cable operations in the territorial sea and the exclusive economic zone. The second segment examines the regulatory/permit regime on cable operations and sets out recommendations and potential changes in the subsea cable system. The article embarks on the present-day challenges in the Indian regulatory system and furnishes recommendations for better coordination and compliance to improve India's position in global telecommunications.

INTERNATIONAL LEGAL REGIME ON SUBMARINE CABLES

The first International instrument that provided obligations for breaking telegraph cables in the High Sea was prescribed under the

[16] Anjali Sugadev. "India's Critical Position in the Global Submarine Cable Network: An Analysis of Indian Law and Practice on Cable Repairs." Indian Journal of International Law. Springer India, February 23, 2017. https://link.springer.com/article/10.1007/s40901-017-0050-y.

Cable Convention, 1884[17]. However, this age-old convention was limited only to a few states who were party to it.[18] It was only after more than half a century that the global community made deliberations on the law of the sea to include subsea cables. Thereafter, 'Freedom of laying submarine cables' was codified and recognised by the *Geneva Convention on Continental Shelf*[19]. Further, in following the path of its predecessor (*Cable Convention, 1884*), it also adopted provisions in relation to the protection of submarine cables.[20] Later, all these provisions were included *ad verbatim* in *The United Nation Convention on the Law of the Sea (UNCLOS), 1982*, which became the primary international law on submarine cables.

Under the UNCLOS, the coastal states have sovereignty over territorial waters up to 12 nautical miles.[21] As a result, the national law of territorial waters becomes applicable on submarine cables. On several coasts, there are either minimal or no legal measures to reduce the potential threat on submarine cables from indiscriminate maritime activities. Further, UNCLOS does not lay an obligation upon the states to adopt laws for submarine cable in the event of cable damage. The same would not be prohibited.[22]

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[17] "Convention for the Protection of Submarine Telegraph Cables," opened for signature March 14, 1884, Australian Treaty Series 1901 no. 1, https://web.archive.org/web/20160303182819/http://cil.nus.edu.sg/wp/wp-content/uploads/2009/10/Convention_on_Protection_of_Cables_1884.pdf

[18] Beckman, *Submarine Cables-A Critically Important but Neglected Area of the Law of the Sea*, *supra note 11*.

[19] "Convention on the Continental Shelf," opened for signature April 29, 1958, United Nations, Treaty Series, vol. 499, p. 311

[20] Beckman, *Submarine Cables-A Critically Important but Neglected Area of the Law of the Sea*, supra note 11

[21] "United Nations Convention on the Law of the Sea" opened for signature December 10, 1982, United Nations, Treaty Series, vol. 1833, p. 396.

[22] Utpal Kumar Raha and Raju K.D., "Submarine Telecommunication Cable Infrastructure in South Asia Under International Law: Opportunity for Sri Lanka and India" 26 (2018) 79.

The rights in relation to the sea bed and subsoil are related to the continental shelf regime. Notably, a combined reading of Article 87[23] , i.e., freedom of high seas, includes laying subsea cables and Art. 58(2)[24] makes it clear that freedom of laying subsea cables apply to the EEZ as well. Art. 58 and 59 further reassure other states' right to lay submarine cables in the EEZ of the coastal state. However, the same must comply with the convention and domestic laws of the state. Further, notably, subsea cables are more predominantly owned by private companies and not by 'states.'[25] Art 77 & 78[26] provide limitations upon the coastal states to facilitate submarine cable operations. Art. 79 (2) provides that the laws of the coastal state in the continental shelf and EEZ must be reasonable. Art. 79(5)[27] restricts a coastal state from adopting measures or enacting legislation that may affect the contingent needs for the repair of cables already laid.

The two major issues that contribute as an area of concern in the protection of submarine cable infrastructure in the continental shelf and EEZ are, first, the protection of cable ships and, secondly, the protection of submarine cable in this region. There may arise a conflict in the other marine uses and repair cables that might cause problems. For instance, the vessels engaged in fishing activities cause interference to cable ships involved in cable operations.[28] This may affect the immediate cable repair and lead to interference in urgent

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23 United Nations Convention on the Law of the Sea, *Article 87.*

24 United Nations Convention on the Law of the Sea, *Article 58 (2).*

25 Myron Nordquist et al. (eds). 1993. "The United Nations Convention on the Law of the Sea 1982: A Commentary," (Martinus Nijhoff Publishers, Leiden) III 264.

26 United Nations Convention on the Law of the Sea, *Article 77 & 78.*

27 United Nations Convention on the Law of the Sea, *Article 79(5).*

28 Ninety-Four Consortium Cable Owners vs Eleven Named French Fishermen, Tribunal de Grande Instance de Boulogne Sur Mer (1st Chamber), August 28, 2009, [File No 06/00229 DG/LM].

telecommunications. The Cable Convention, in this regard, provides provisions for maintaining a minimum distance between vessels by giving prior notice to the local guards in the areas of operation.

Further, the *CLOREGES, 1972*, requires cable ships to demonstrate signal and sound in the operation area to keep other fishing vessels away.[29] However, these abovementioned measures find no mention in the UNCLOS. For this reason, the coastal states often neglect to implement these mandates during cable repair operations, and the same often gets hampered by fishing vessels.[30]

The inadequate protective regime and substandard implementation are enormously challenged by the submarine cable infrastructural regime. This inconsistency in international and domestic law poses a threat to potential growth and a chokepoint for laying subsea cables in the region.

NATIONAL LEGAL REGIME ON SUBMARINE CABLES

In September 2017, the undersea communication link which establishes a link connected between South East Asia-Middle East-Western Europe (SEA-ME-WE-3), the world's longest undersea cable, was damaged during repair carried out out by the Kerala Water Authority in Kundannoor. Over 92 telecom companies from across the globe were key stakeholders in the venture, and the cable had a total of 39 landing points. The cable services remained disrupted for six-and-a-half hours, and in the places wherein the stakeholder did not have a backup, they suffered total internet blackout, and in other

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[29] Douglas R. Burnett, "The 1884 International Convention for Protection Of Submarine Cables Provisions Not In UNCLOS Deserve Attention Now," *Squire Sanders Legal Counsel Worldwide* (2011) 5. https://cil.nus.edu.sg/wp-content/uploads/2011/04/Douglas-Burnett_1884_International_Convention_for_Protection_of_Submarine_Cables_Provisions_Not_in_UNCLOS_De1.pdf.

[30] Burnett. D., *Submarine Cables: The Handbook on Law and Policy, supra note 10.*

cases, the internet connectivity had been very slow. Notably, this wasn't the first time it had been damaged.[31] In the future, such instances might happen if the regulations on a potential site of failure are not improved. Extreme regulations in India, inclusive of laws on cable ships within Indian waters and permits/requests to install monitoring equipment for terminating bandwidth coupled with prohibitively expensive, make India a chokepoint for the carriers to conduct business.[32]

The primary legislation and provision that deals with the law of the sea in the Indian coastal maritime zones are the *Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976 (the MZI Act).*[33] As stated earlier, Art. 21 UNCLOS allows the coastal state to adopt laws and regulations with respect to the protection of submarine cables. Section 4(3) MZI Act entitles the Central Government to regulate the affairs of entry of foreign ships (including cable ships) if it is satisfied that it is necessary to do so in the interest of peace, good and security of India.[34] Section 6 and 7 MZI Act[35]are provisions dealing with maritime zones beyond 12 nautical miles, i.e., rights in the EEZ and the Continental Shelf where the coastal state has no sovereignty in the sense of territoriality or dominium but possesses sovereign rights over the ocean's resources in the form of exploration, exploitation, management and

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[31] Swarajya Staff, "Kerala: World's Longest Undersea Cable Damaged During Repair Works," *Swarajya*, September 20, 2018. https://swarajyamag.com/insta/kerala-worlds-longest-undersea-cable-damaged-during-repair-works.

[32] Nicole Starosielski, "Strangling the Internet" *Limn, (*2020). https://limn.it/articles/strangling-the-internet/.

[33] The Maritime Zones of India (Regulation Of Fishing By Foreign Vessels) Act, 1981, No. 42, Acts of Parliament, 1981 (India).

[34] The Maritime Zones of India Act, *Section 4(3).*

[35] The Maritime Zones of India Act, *Section 6 & 7.*

conservation of natural resources.[36] The MZI Act explicitly addresses provisions in relation to submarine cables only under Section6(7) and Section 7(8). Section 6(7) provides that the Central Government shall not impede the laying of submarine cables or pipelines by foreign vessels in the continental shelf subject to the measures necessary for protecting the interests of India. Section 7(8) provides provisions similar to Section 6(7) in the EEZ.

The regulatory regime on submarine cables in India exists in the form of several notifications, circulars and regulations issued by different Ministries that spreads across seven Ministerial Governmental departments, i.e. Ministry of Home Affairs (MOHA), Ministry of Defence (MOD), Directorate General of Shipping (DG Shipping), Flag Officer, Offshore Defence Advisory Group (FODAG), Indian Customs department, Indian National Shipowners' Association (INSA) and Port authorities. Although it may appear a sound submarine cable regime, this institutional framework represents a rather cumbersome cable regulatory and infrastructural regime that may not produce a potential outcome to its effect.[37] In the jurisdictions wherein there occur one or more cable faults in a year, India takes second-highest average mean time to commence repair of submarine cables extending up to 50 days.[38] This delay in subsea cable faults in India is predominantly due to the requirement of several permits at the time of default. These lengthy delays in cable infrastructure and repair operation result in a high financial burden on cable operators coupled with additional standby costs.

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[36] Aban Loyd Chiles Offshore Ltd. & Anr. v Union of India & Ors., (2008) 11 S.C.C. 439 (India). See also; Republic of Italy & Ors. v Union of India & Ors., (2013) 4 S.C.C. 721 (India).

[37] Anjali Sugadev, *India's Critical Position in the Global Submarine Cable Network, supra note 16.*

[38] Source: Verizon, for the International Cable Protection Committee. Copyright International Cable Protection Ltd.

PERMIT REGULATORY REGIME FOR ESTABLISHING SUBMARINE CABLE NETWORK

Network operators work in accordance with the regulatory regime prevailing in the country. Often project implementations in India are heavily impacted due to cumbersome regulatory framework to facilitate system implementation and maintenance. This segment would portray the complexities in project planning coupled with unwieldy requirements and an undefined approval system. This process involves permit requirements from different government and ministerial departments.

Permits necessary to install a system with a landing point; The primary permit for a regulator to establish a network is the *'Cable Station Landing License'* that is issued by the *Ministry of Communications and IT/Department of Telecommunications*. This involves a process in which approval from the *Coastal Zone Management Authority, Department of Environment,* is required. The same is required to assess the impact on the project's environment within the coastal regulation zone. Thereafter, approval from the *Ministry of Environment and Forests* is granted on the basis of its recommendation. Further, an agreement including the provisions for the network regulator to pay annual fees relating to the occupancy of the seabed is to be signed with the Maritime Board of the concerned state/UT.

Operational permits to undertake survey or installation operations in India with a foreign vessel; *The Director General of Shipping* provides a *'Specified Period License'* permitting the vessel to undertake operations in India. This process thereafter involves approval from

the *National Ship Owners Association.*[39] No Objection Certificate for operation from the *Ministry of Defence*.[40] *The Ministry of Home Affairs* is then required to give Security Clearance to all foreign nationals on the vessel board out of the applications forwarded by the *Ministry of Communications* submitted to them by the network operators. Further, for the vessel to be imported in India, the company must hold a valid Importer Exporter Code that would act as an Importer of Record. *Final Naval Security Clearance* from the *Flag Officer Defence Advisory group* is granted following an inspection of the vessel and the crew prior to India's EEZ operations. Similarly, the vessel would again undergo an inspection at the end of the operations before leaving India.[41]

The table below shows the average time expected from a ministry/authority to provide clearance in relation to actual delay isincurred on installation projects on account of the complex permit requirement system.[42]

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[39] "Guidelines for Chartering a Foreign Flag Vessel," *Indian National Shipowners' Association*, March 27, 2000. \http:// insa.in/content/81/guidelines-for-chartering-a-foreign-flag-vessel.

[40] "Guidelines for E&P Operators for MOD Clearance in Respect of Vessel Deployment / Engagement and Data". \http://www.dghindia.gov.in/assets/downloads/570ce280a688a1003.pdf.

[41] Douglas Burnett, "Submarine Cables on the Continental Shelf," in The Regulation of Continental Shelf Development: Rethinking International Standards, edited by Myron H. Nordquist, John Norton Moore, Aldo Chircop, Ronán Long, 53–70 (Martinus Nijhoff, Leiden/Boston, 2013).

[42] Nick Smith et al, "Emerging Subsea Networks Regulatory Challenges of Project Implementation – India Case Study," *Sub Optic*, (2016). https://suboptic.org/wp-content/uploads/fromkevin/program/TU3B.3%20Regulatory%20Challenges%20of%20Project%20Implementation%20-%20India%20Case%20Study.pdf.

NO.	PERMIT REQUIREMENTS	EXPECTED DURATIONS	EXTENDED PERMITTING DURATIONS
1.	Ministry of Defence	2 Months	12 Months
2.	MOHA Security Clearance	3 Months	6 Months
3.	Customs Clearance for Import/Export of Cable Ship	1-2 Weeks	5 Weeks

The outcome of such an operational regime for obtaining permits is that, in effect, it becomes impossible for a cable system to pass through India's EEZ without the sponsorship of a company that is holding an Indian telecom operator's license. the requirement follows this that all crew members must hold MOHA clearance, which can be obtained only by an entity that is holding an Indian telecoms license. Further, regarding the vessel imported into India, the vessel has to go through customs clearance.

Although complex permitting regimes involve a process of considerable management effort, however, in situations wherein the timescale of permit approval is undefined or uncertain, it becomes difficult to mitigate effective implementation of the project. One such issue is custom clearance for vessel importation for the purpose of marine installation by an operator. The vessel and the crew are held on standby while the authorities complete their assessment. There have been instances wherein the vessels are delayed at the port due to uncertainty in the officials' minds regarding whether the custom duties and service tax should be applied for vessels that lie beyond 12nm but within 200nm in EEZ.[43]

[43] Smith, *Emerging Subsea Networks Regulatory Challenges of Project Implementation, supra note 42.*

PERMIT REGULATORY REGIME ON CABLE REPAIRS

Due to the criticality in the nature of submarine cables, cable ships are required to be on standby at their regional depot to attend the cable repair at the time of damage/breakage. On account of this, to shorten the duration of permit time for carrying the repairs, applications are made well in advance from the *Ministry of Home Affairs and Ministry of Defence*. Any cable vessel commissioned to engage in cable repair operation in the territorial sea or EEZ is required to seek an MOHA Clearance. The application for clearance is to be submitted by the cable operators to the *Department of Telecommunications* (DOT) before its expiry, which is thereafter sent to the MOHA for approval. The same is to be obtained on a yearly basis.[44]

Ministry of Defence Clearance is required under the *Ministry of Defence Guidelines for cable repair in the Indian territorial sea and the EEZ, 1996*.[45]The application for clearance is submitted to the DOT along with the *Research Survey, Exploration and Exploitation of Resources (RSEE) Form*, which provides the details of the ship and crew members; thereafter, it is forwarded to the MOD. These applications are submitted at the time when the vessel reaches the port before repair. The entire processing time takes about 7-14 days.[46] Further, the MOD clearance is granted under a condition that the vessel shall undergo a *Naval Security Clearance* before deployment. The clearance

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[44] Anjali Sugadev, *India's Critical Position in the Global Submarine Cable Network, supra note 16.*

[45] "Guidelines for E&P Operators for MOD Clearance in Respect of Vessel Deployment / Engagement and Data". \http://www.dghindia.gov.in/assets/downloads/570ce280a688a1003.pdf.

[46] Kalyan Parbat, "Security Nods for Foreign Staff at Telecoms on Hold on Technical Grounds," *Economic Times Bureau*, November 12, 2014. \http://articles.economictimes.indiatimes.com/2014-11-12/news/ 56025647_1_security-clearance-home-ministry-landing-stations.

is terminated once the vessel leaves the India waters post, which a fresh clearance would be required in the future.[47] The requirement of physical security clearance inspection is directed under the '*Apprehension of Vessels Violating Provisions of MZI Act 1976 and MOD Guidelines, 2006*.

Indian National Ship Owners Association Clearance is another permit requirement applicable in the territorial sea and the EEZ to determine if the Indian flag ships can perform cable repairs before a foreign vessel is deployed for the repair operations.[48] The permit time to undertake this process takes 3-4 days. Further, this requirement is inconsistent with the UNCLOS.[49] Notably, there are currently no existing Indian ships that have the adequate infrastructure and technology to execute cable repairs. The Indian cable operators are under single-owner private arrangements or are members of multi-owner consortia. By entering into a maintenance agreement, the cable ship companies ensure the availability of appropriate equipment at the time of cable fault.

Post the INSA Clearance, the vessel applies for SPL; *Specified period License*. This process takes 3-5 days. Thereafter, permits are required at the port at the time of repair. As per the Indian customs regulation, a cable ship is a foreign vessel, and hence, it is imported to India and has to undergo *Customs Clearance*. At the time of importation, the cable operator has to provide a bond against the vessel. Post the repair operations, the bond is canceled, and the ship is exported. This process takes an average of 30 days. The cable operators often face

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47 Parbat, *Security Nods for Foreign Staff at Telecoms on Hold on Technical Grounds, supra note 46.*

48 Guidelines for Chartering a Foreign Flag Vessel, *Indian National Shipowners' Association*.

49 Anjali Sugadev, *India's Critical Position in the Global Submarine Cable Network, supra note 16.*

financial hardships due to the bond being withheld against them for non-compliance with custom requirements.

Additionally, there exists a difference in practice at different ports in India, which leads to ambiguity and uncertainty.[50] In addition to this, since cable ships are considered to be conducting coastal trade in the territorial sea, before commencing operations, it is required to be converted from foreign to coastal running. However, this practice of conversions differs in different ports.

When all the above-mentioned permits are fulfilled and obtained, the cable ship may request clearance to depart the port and commence repair operations. After the cable is repaired, the vessel is required to return to the Indian port. Customs clearance would be required for the cables used thereafter, which the cable operator would obtain bond cancellation along with duty drawback application. Finally, *Outward Clearance and Immigration Clearance* would be granted by the port authorities to the vessel thereafter which, the vessel could return to its base port.[51]

The table below shows the average time involved in clearing permit requirements by each department/ministry.

NO.	MINISTRY/ GOVERNMENT AUTHORITY INVOLVED	PERMIT REQUIREMENT IN TERRITORIAL SEA/ EEZ	TIME TAKEN/ WORKING DAYS
1.	Ministry of Home Affairs; Through Ministry of Communication	MOHA Pre-Clearance	90-120
2.	Ministry of Defence; Through Ministry of Communication	MOD Pre-Clearance	7-14
3.	Indian Naval Ship Owners	Indian Naval Ship	3-4

[50] Anjali Sugadev, *India's Critical Position in the Global Submarine Cable Network, supra note 16.*

[51] Anjali Sugadev, *India's Critical Position in the Global Submarine Cable Networkm supra note 16.*

	Association	Owners Association Clearance	
4.	Directorate General of Shipping	Specified Period License	3-5
5.	Customs Department	Customs Clearance	14
6.	Flag Officer, Offshore Defence Advisory Group	Naval Inspection and Security Clearance	1-5
7.	Post Authorities	Post Clearance	1
8.	Port Authorities	Port Clearance	10-20

The above table depicts a rather explicitly complex permit regime that takes several days and undue delay in operational and repair activities. There is a critical need to undertake a consistent and conscious effort in improving the regime on the protection of submarine cables in order to protect the financial health and security concerns in India. The parent legislation must be rationalized by aligning its laws that are consistent and in parlance with the international regime. The MOHA Pre-clearance procedure is unique to India and is not followed by any country. Also, the MOD guidelines 2006 do not apply to subsea cables. Hence, it would be ideal to remove MOHA and MOD permit requirements. The DOT must maintain a database of crew members and cable ships involved in regular cable operations. This would reduce the time involved in the verification process. The requirement for an INSA Clearance is inessential since it involves a redundant process of obtaining confirmation on the non-availability of an Indian cable ship, thereby causing undue delay. Another notably prominent issue that causes hardships to the cable operators is the submission of a bond. Cable operational activities in the territorial sea and the EEZ shall be duty-free.

Further, the naval inspection before the repair operations shall be done on a priority basis without any delay keeping in view the criticality of the damage to the subsea cables. Regarding India's concern relating to the safety of navigation and interference with

other maritime activities, a notification by the lead agency intimates repair plan activities could be intimated to other vessels, fishing ships, etc. In addition, to avoid a collision at sea, provisions from the Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREG)[52] shall be followed by using signals and sounds to prompt other vessels of subsea activities.[53]

PERSPECTIVE FOR THE FUTURE

The damage to any submarine cable is time-sensitive and requires the quick deployment of cable repair ships to start the repairing operations. In 2017, the Sri Lankan Government laid the foundation for building a submarine cable deport in Port Galle.[54] It was the first of its kind in South Asia. The question is how ambitious India is in becoming a host country that would play a lead in offering a common platform wherein the stakeholders would have the opportunity to form cooperative measures to address their respective concerns underpinning the submarine cable operations to establish growth and advancement in international communications. With India's potential to become a global cyber superpower, its engagement and role in submarine cable operations become crucial not only for itself but also for countries in the South Asian region and beyond.

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[52] "The Convention on the International Regulations for Preventing Collisions at Sea (COLREG)," opened for signature October 17, United Nations, Treaty Series, Vol. 1050 pg. 16. https://treaties.un.org/doc/Publication/UNTS/Volume%201050/volume-1050-I-15824-English.pdf.

[53] COLREG, *Rule 27 and Rule 3(g)(i).*

[54] P. D. de Shilva, "SLT opens SEA-ME-WE-5 Submarine Cable' Daily FT," *Daily FT*, October 4, 2017. http://www.ft.lk/front-page/SLT-opens-SEA-ME-WE-5-Submarine-Cable/44-640887.

The submarine cable regime by far remains one of the most neglected agendas.[55] In the absence of a lead agency, supervisions and review of submarine cables would, to a greater extent, remain poor. There is a critical need to improve the practice of permits in India by making a consistent effort in recognizing the need for a pragmatic cable repair system. A legal regime that is unique to operations, protection and repair of submarine cables needs to be enacted such that a specific set of regulations and procedures are adopted and agreed upon by the central and the local authorities. Such rules shall not be intertwined with India's other marine interests.

It is reasonable that India being a coastal state, is sensitive about the presence of a foreign vessel including cable ships in its territorial waters and the EEZ that might indulge in exploitation and exploration activities, and the same would raise a matter of security concern and a threat to its coastal and national interests. However, such measures shall be addressed with cooperative and integrative measures in the sense that a common supervisory mechanism comprising the instruments of the state shall be formulated. India must exploit its strategic position in the Indian Ocean Region by establishing a regional cable committee unique to subsea cables to assess and associate by facilitating expedite the process in permit requirements from coastal states. Hence, a common platform to address instruments of law and practice by extending cooperation through consultation would provide both the government and the cable companies an integrated method to look into associated problems.

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[55] Raha, *Submarine Telecommunication Cable Infrastructure in South Asia, supra note 22.*

CONCLUSION

Global connectivity largely depends upon international communications, which is facilitated by underground submarine cables. One must not forget India's strategic position in the Indian Ocean region. The regime on submarine cables in the territorial sea and the EEZ is grossly neglected by both International and National laws. The breadth and value of the Indian economy created a sizable demand for bandwidth and submarine cables. However, its cumbersome and complex regulatory regime discourages cable operators from installing and repair subsea cables on the coast of India. A deliberate and conscious effort shall be made in improving the permit regime for cable repairs and installation mechanisms. The regime on cable operations, repair and infrastructure, needs close analysis on the issue. It can be achieved by formulating uniformity in regulatory practices by establishing a regional committee that looks into the cooperation and consultation of both the cable operators and the government authorities/ regulators. This uniformity would establish a supportive mechanism under which the operations and activities related to submarine cables would run smoothly. Hence, with India's capability to become a potential global superpower, it is important that India recognises the need for submarine cable infrastructure and take measures necessary in pursuit of. It must avail its opportunity of being located in a strategic position in the Indian Ocean Region and must become a hosting country to generate a common platform for the stakeholders in the submarine cable industry. Hence, a planned and prudent mechanism would help India fulfill its ambitions in the field of global telecommunications.

INTRICATE DISPUTE SETTLEMENT SYSTEM OF THE LAW OF THE SEA: DO THE STATES PREFER ARBITRATION OVER OTHER FORA?

Bangaru Laxmi Jasti[*]

Abstract

The United Nations Convention on the Law of the Sea has a wide and intricate dispute settlement mechanism. The Convention specifies various means and has various dispute settlement provisions pertaining to different disputes. The general dispute settlement mechanism is detailed in Part-XV of the United Nations Convention on Law of Sea, 1982. The Convention provides various fora and methods for the dispute settlement. It also facilitates special chambers, commissions and institutions for the specific disputes. This article will be comparing the preference of states as to arbitration with the other dispute settlement mechanisms.

Key Words: *UNCLOS, ITLOS, Arbitration, Dispute settlement, Forum shopping*

INTRODUCTION:

The third United Nations Conference on Law of Sea was held in New York on 3rd December 1973[1] with the aim to strengthen global peace, security and cooperation among states.[2] While recognizing the

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[1] *International Tribunal for Law of Sea*, HISTORY, (Jan. 3, 2021) https://www.itlos.org/the-tribunal/history/

[2] United Nations Convention on law of seas, 1982, preamble; (Jan. 30, 2021) http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

legal order for the seas and oceans, which facilitates the international communication for the protection and preservation of environment and of the living resources of the seas, the United Nations Convention on Law of Sea (UNCLOS or hereafter 'the Convention') was adopted in 1982[3]. UNCLOS also addresses the rights of sovereignty of oceans and seas, maritime issues, navigational zones, Exclusive Economic Zones (EEZ) in the oceans and seas[4]. Although it was open for signatories from 10th December 1982, it was not until 16th November 1994 that it came into force[5].

The unique feature of the present UNCLOS is its dispute settlement mechanism, which is inherited in the convention as an integral part rather than the protocol or annex attached to it. The previous law of sea Conferences[6] had the dispute settlement mechanism in the Optional Protocol[7]. The other innovative feature of the convention is that the state parties are not at liberty to make reservations on the dispute settlement mechanism. There is no opt-out facility available to the contracting state parties. The state parties are obliged to settle disputes in a peaceful manner as specified in the United Nations

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3 UNCLOS,1982, preamble.

4 Permanent Court of Arbitration, UNCLOS, (Jan. 4, 2021) https://pcacpa.org /en/services/arbitration-services/unclos.

5 ITLOS, history, (Jan. 4, 2021) https://www.itlos.org/the-tribunal/history/.

6 Prior to the present convention, law of sea conferences in Geneva were held in 1958, and a few smaller conventions were passed, which are considered as the UNCLOS I. The 2nd conference was held in 1960 in Geneva where the agreement was not reached. The 3rd conference was conducted in 1973 and the present convention came into force through the efforts of the drafters. D.R.ROTHWELL & T.STEPHENS, THE INTERNATIONAL LAW OF THE SEA, 6-10 (Oregon, 2010).

7 SHABTAI ROSENNE, 'ARBITRATION UNDER ANNEX VII OF THE UNITED NATIONS CONVENTION ON THE LAW OF SEA' in T.M.Ndiaye & R.Wolfrum, Law of Sea, environmental law and settlement of disputes 989 (Boston,2007).

(UN) Charter[8]. This is in compliance with the dispute settlement provisions of the Convention[9]. The Convention had facilitated a wide range of options for the states to settle disputes among them, which will be discussed in detail in the next part of the paper.

While providing a wide range of options, the drafters and states had made delicate compromises that came with negotiating in the spirit of 'give a little -get a little'[10]. In this Paper, the researcher will highlight the general dispute settlement mechanism under the Convention and then followed by analysis of the preference of the forum by the states in settling disputes. With the analysis provided, the researcher argues as to which mechanism plays an important part in dispute settlement.

DISPUTE SETTLEMENT MECHANISM IN INTERNATIONAL LAW:

Under Article-2(3)[11] of the UN Charter, all the state parties are obliged to settle disputes in a peaceful manner and in compliance with the international treaties and UN Charter. Article-33 of the Charter sets out mechanisms such as Negotiation, Inquiry, Mediation, Conciliation, Arbitration and Judicial Settlement or resort to any regional organizations or any other dispute settlement mechanism[12]. Most of these mechanisms were used by states in settlement of disputes in the Law of the Sea before the Convention

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8 Article-33(1) and Article-2(3) specifies that states must resolve the disputes peacefully.

9 Convention,1982 (n.1), Articles-74(2), 83(2), 151(8), 159(10), 162(2)(u)-(v), 165(2)(i)-(j), 186-91, 264, 279-99, 302;annex-III article-18(1)(b), 21(2); Annex-V,VI,VII,VIII,IX-Article-7; John E. Noyes, *The International Tribunal for the Law of the Sea*, 32 Cornell Int'l L.J. 109,113 (1999).

10 A.O.ADEDE, THE SYSTEM FOR SETTLEMENT OF DISPUTES UNDER THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA, 241, (Dordrecht,1987)

11 United Nations Charter, (Jan. 5, 2021) http://www.un.org/en/charter-united-nations/.

12 Ibid

came into force. For example, The Fisheries case (United Kingdom V Norway) 1949, North Sea Continental Shelf case (federal republic of Germany V Denmark, Federal republic of Germany V Netherlands) 1967, were taken to ICJ[13]. The Inquiry Commission was appointed to investigate the Red Crusader incident in 1961[14]. Ad hoc Arbitration was set up in the Alabama Claims Arbitration[15], Bering Sea Fur Seals Case[16], I'm alone case[17].[18]

After the Convention came into force, such dispute settlement mechanisms were laid down in the part-XV, but the states had not completely availed themselves to the jurisdiction under it. There are such cases which are related to the law of sea taken before the ICJ, however the basis of jurisdiction for them is derived from the other treaties[19]. The jurisdiction and the dispute settlement mechanism under the Convention are dealt with in the following section, where the reasons as to the choosing of the jurisdiction are specified.

DISPUTE SETTLEMENT PROVISIONS UNDER UNCLOS:

Part-XV[20] of the Convention deals with the general dispute settlement provisions. Part-XV consists of 3 sections. Section-1[21] has the general provisions with respect to settlement of disputes, while Section-2[22] deals with the Compulsory procedures entailing binding decisions,

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13 Text available at: http://www.icj-cij.org/en/list-of-all-cases
14 Rothwell, Law of sea (n.6) pg:441
15 United states V Great Britain (1872)1Moore 495
16 Great Britain V United States (1893)1Moore 755
17 Canada V United States (1935)3RIAA 1609
18 Rothwell, Law of sea (n.6) pg:442
19 Maritime dispute (Peru V Chile), 2008, Territorial and Maritime Dispute (Nicaragua V Colombia), 2001, jurisdiction was availed from the pact of Bogota.
20 Part-XV deals with Settlement of Disputes, Text available at: http://www.un.org/depts/los/convention_agreements/texts/unclos /unclos_e.pdf
21 Section-1: General Provisions; Articles-279-285;ibid
22 Section-2: Compulsory Procedures entailing binding decisions; Articles-286-296;ibid

and section-3[23] stipulates the limitations and exceptions to applicability of Section-2. In addition to the general dispute settlement provisions, annexes are attached with relation to specific mode of settlement[24]. The Convention facilitates special chambers, commissions and institutions for the specific disputes[25]. All these features of dispute settlement gives the UNCLOS, a special status in the International Law. The general mechanisms specified in the section-1 of the part-XV are similar to that of the mechanisms in the UN Charter. The general obligation on the state parties to 'expeditiously…exchange…views'[26]complements the peaceful settlement of disputes, specified in the UN Charter. Under this section, states have to exchange views with relation to the dispute and settle it. If they fail to reach the agreement, Section-2 comes into play.

The uniqueness is in section-2 which deals with the compulsory dispute settlement mechanisms. It operates only when the parties to the disputes do not reach the settlement under agreed terms or the parties could not reach agreement for the settlement. It lays down the binding dispute settlement mechanism, which is discussed in detail in the next section of the article. Section-3 of the Convention deals with the exceptions, where the compulsory dispute settlement mechanism cannot be entailed. These include the subject-matters[27] relating to the

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[23] Section-3: Limitations and Exceptions to Applicability of Section-2; Articles-297-299;ibid

[24] Annex-V deals with Conciliation, Annex-VI deals with Statute of the International Tribunal for the Law of Sea(ITLOS), Annex-VII deals with the Arbitration, Annex-VIII deals with the Special Arbitration; ibid

[25] International seabed Authority (ISBA), Commission on the Limits of the Continental Shelf (CLCS). Part-XI, Section-5 deals with the sea bed dispute chamber dispute settlement and advisory opinions; ibid

[26] Article-283

[27] State parties can submit the declarations reserving rights on specific subject-matters or the option to omit/exclude the specific forum from hearing the dispute, under Article-298. Making such declarations is not mandatory. Only

disputes including the historic bays or titles, disputes over the military activities or where the Security Council exercises its functions under the UN Charter[28].

COMPULSORY DISPUTE SETTLEMENT MECHANISM UNDER PART-V, SECTION-2 OF THE CONVENTION:

Under Article-287[29] of the Convention, the state parties can declare their preferences as to which forum could be approached if the agreement is not reached under Section-1[30]. Article-287 outlines four different forums where the disputes could be settled. They are (i) International Tribunal for the Law of Sea (ITLOS), established under Annex-VI, (ii) The International Court of Justice (ICJ), (iii) An Arbitration Tribunal, under Annex-VII, (iv) A Special Arbitration Tribunal under Annex-VIII.

Article-288 underlines the broad jurisdiction for ITLOS, ICJ and Arbitration. The jurisdiction includes the disputes concerning the application and interpretation of the convention, or other international agreements related to the Law of Sea[31]. If no declaration is made by the state parties, Arbitration prevails over the other

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38 states had submitted their declarations under article-298 (Source: http://www.un.org/depts/los/settlement_of_disputes/choice_procedure.htm#_ftn1; Rothwell, Law of sea 455, table: 18.2, (n.6).

28 Rothwell, Law of sea, 454, (n.6).

29 Also known as Montreux Compromise; P.CHANDRASHEKARA RAO, LAW OF THE SEA, SETTLEMENT OF DISPUTES, *Max Planck Encyclopaedia of Public International Law* [MPEPIL] (2011), http://opil.ouplaw.com/view/10.1093/law:epil/ 9780199231690/law-9780199231690-e58.

30 As of 1st December 2016, 47 countries had submitted their declarations under article-287. R.Churchill, 'Compulsory' Dispute Settlement under the United Nations Convention on the Law of the Sea – How has it operated?, PluriCourts Annual Conference 2016; http://www.jus.uio.no/pluricourts/english/blog/guests/2016-06-09-churchill-unclos-pt-2.html

31 Ibid pg:449

dispute settlement systems[32]. Therefore, ITLOS, ICJ and the Arbitration Tribunal can hear the disputes with respect to any matters of the Law of the Sea brought before them. Unlike the arbitration tribunal, special arbitration tribunal can hear only matters specific to fisheries, preservation and protection of marine environment, marine scientific research, pollution by vessels, which require experts in the field[33].

In this article, the researcher would narrow down the subject of jurisdiction, and confine to the analysis of the preference of states to arbitration and the other fora specified under article-287. To be more precise, the researcher would be comparing the preference of states as to arbitration with the other dispute settlement mechanisms.

PREFERENCE OF STATES TO ARBITRATION:

In this section, the researcher would be concentrating on the disputes in the law of the sea which were taken to the arbitration tribunal under Annex-VII, VIII. Under Annex-VII, Permanent Court of Arbitration (PCA) acts as the registry for the disputes filed[34]. Till date, since the enforcement of the convention, PCA has provided registry services in 12 cases[35]. As of 1st December 2016, 19 cases were initiated to the arbitration tribunal under Annex-VII, of which 5 were transferred to the ITLOS[36]. The transfer of cases may be presumably due to the high cost for arbitration[37]. No cases have been referred to

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32 Article-287(3)

33 M.P.GAERTNER, THE DISPUTE SETTLEMENT PROVISIONS OF THE CONVENTION ON THE LAW OF THE SEA: CRITIQUE AND ALTERNATIVES TO THE INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA, 19 San Diego L. Rev. 577, 582 (1982).

34 Permanent Court of Arbitration, (Jan. 5, 2021) https://pca-cpa.org/en/services/arbitration-services/ unclos/

35 Ibid

36 Churchill, 8-9 (n.30)

37 Ibid;pg:9

the Special Arbitration Tribunal under Annex-VIII through Article-286[38]. With reference to the declarations made by 47 States[39] under Article-287, 15 states had preferred to submit the disputes to Arbitration under Annex-VII & VIII[40].When compared with the total number of cases under the convention, arbitration does not seem to be approachable. The reasons may be due to the high costs of the arbitration or some states considered solving disputes by negotiation or diplomatic means[41], while few considered taking disputes to the ICJ without preference to the jurisdiction under UNCLOS[42].

PREFERENCE OF STATES TO THE ITLOS:

ITLOS was established in October, 1996 in Hamburg, Germany, under Annex-VI, as a part of the compulsory dispute settlement forum of the Law of Sea. It is considered as an independent judicial organ of the Law of the Sea. The state parties to the Convention, natural and legal persons or International organizations[43] have *locus standi*[44]. Unlike other fora under Article-287, ITLOS has the competence to entertain the cases brought by entities other than states.

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38 Ibid; pg:4

39 Till 1st december2016; Robin Churchill (2017): The General Dispute Settlement System of the UN Convention on the Law of the Sea: Overview, Context, and Use, Ocean Development & International Law; 4 (Jan 10, 2021) http://www.tandfonline.com/doi/pdf/10.1080/00908320.2017.1327287?needAccess=true;

40 Of the 15 states, only 8 states had preferred Arbitration under annex-VII as their first choice. (Jan. 12, 2021) http://www.un.org/depts/los/settlement_of_disputes/choice_procedure.htm#_ftn1

41 Churchill, 10 (n.30)

42 As of 30th June, 2015, 12 contentious cases relating to the law of sea were taken to the ICJ. But none are instituted under Article-287. (Jan 17, 2021) http://www.un.org/depts/los/general_assembly/contributions_2015_2/ICJ_Contribution_En.pdf.

43 As provided in part-XI or any special agreement

44 Competence, ITLOS, (Jan. 15, 2021) https://www.itlos.org/jurisdiction/competence/.

As it is specially established body under the Convention, it has been given importance in matters pertaining to the prompt release of vessels, provisional measures, advisory opinion, and seabed mining cases[45]. Under Article-292 of the Convention, any issue relating to the prompt release of the vessel, when a reasonable bond is provided by the flag state under Article-73, can be brought before the ITLOS. The tribunal can *prima facie* decide the case, before assessing the jurisdiction. If the flag state has provided enough bonds, but the coastal state does not release the vessel, then the flag state can approach the tribunal. If the coastal state seeks exorbitant security, then the tribunal can assess the amount[46]. The cases on prompt release have dominated the docket of the tribunal[47]. A notable case is the M/V Saiga case[48] which was the first case brought before it and the tribunal had ordered for the release of the vessel with a bond of $400,000 in addition to the vessel's gasoil cargo[49].

The other set of cases which dominate the docket of the tribunal are related to the provisional measures. Article-290 outlines prescription of the interim orders either by agreed court or tribunal, failing which, the fall back option lies to the ITLOS to preserve the rights of the state parties and prevent serious harm[50]. Interim orders can be awarded by the tribunal before the agreement is reached or when the arbitration tribunal is not yet formed but is in process. Such

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45 J.E.Noyes, The International Tribunal for the Law of the Sea, 32 Cornell Int'l L.J. 109, 129, (1999).

46 Rothwell, Law of sea (n.6) pg:453

47 Ibid; list of cases available at: https://www.itlos.org/en/cases/list-of-cases/.

48 M/V Sagia (no 1) case (*saint Vincent and the grenadines V Guinea*) (prompt release)(1997)110ILR736

49 Noyes 135, (n.45).

50 Rothwell, Law of sea 452, (n.6).

provisional measures have the binding effect and can be altered or withdrawn after the actual tribunal is formed[51].

The other main function carried out by the ITLOS is with regards to the advisory jurisdiction, where the scope of the activities of the Assembly or the Council of the International Seabed Authority of the assembly is questioned[52]. With regards to the Convention, ITLOS has formed the Chamber of Summary Procedure, the Chamber for Fisheries Disputes, the Chamber for Marine Environment Disputes and the Chamber for Maritime Delimitation Disputes, which plays an important role in the settlement of specific disputes[53].

Of total declarations made under article-287, 37 states have given preference to the ITLOS[54]. This shows that the states are inclined towards ITLOS rather than Arbitration. The researcher does not deny that the cases before the ITLOS are not proportionate to the expenditure incurred, but the researcher argues that the states are inclined towards it for the dispute settlement[55].

CONCLUSION:

With the above analysis, the United Nations Convention on Law of the Sea had a wide and intricate dispute settlement mechanism. The Convention specified various means and had various dispute settlement provisions pertaining to different disputes. The main consideration with respect to the general dispute settlement mechanism pertains to Part-XV of the Convention. While it provides

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[51] Ibid; see also: Noyes, 135, (n.45)

[52] Advisory proceedings, ITLOS; (Jan. 15, 2021) https://www.itlos.org/en/jurisdiction/ advisory- proceedings/.

[53] The tribunal, ITLOS; (Jan. 15, 2021) https://www.itlos.org/en/the-tribunal/.

[54] United Nations, (Jan. 15, 2021), http://www.un.org/depts/los/settlement_of_disputes/choice_ procedure.htm#_ftn1.

[55] The declarations made by the states are evident to show the acceptance of states.

various fora for the states to settle disputes, the majority of the states are willing to settle disputes in an amicable way[56]. Regarding the cases which were brought for the judicial settlement, arbitration was initiated in few cases[57] but then few were transferred to the ITLOS. Under the declarations made by the 47 states under Article-287, only 15 states had preferred arbitration for the dispute settlement, while 37 states had opted for the ITLOS[58]. While there are no cases which are taken to the ICJ through the article-287, there are as many as 12 cases relating to the law of the sea. Taking these into consideration, the disputes settled by the ITLOS, ICJ and other non-judicial mechanisms, outnumber the disputes settled through Arbitration. If the ITLOS alone is compared to Arbitration, it can be considered that it did not reach the expectations of the drafters, when the convention was made, it nevertheless has influenced settling the disputes in the law of the sea. Given this evidence, the researcher denies the statement saying majority of states prefer Arbitration, as the majority of declarations made show preference to ITLOS. The disputes settled by the Arbitration do not outnumber the disputes settled by the ITLOS and ICJ[59]. However, the framers also support the Arbitration as a choice for dispute settlement through Article-287(v), which makes arbitration as a default choice if no declaration is made. But comparing the choice of states, other dispute settlement mechanisms had their own importance as the Arbitration in the dispute settlement mechanism of the law of the sea.

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[56] Churchill, 11, (n.30).

[57] The M/V "Virginia G" Case (*Panama V Guinea-Bissau*)

[58] Few states did not give preference as to which came first.

[59] Though ICJ did not deal with the cases under Article-287, it nevertheless dealt with the cases relating to the law of the sea.

AN ANALYSIS OF MARITIME LIEN AND ITS PRACTICE IN INDIA

*Rishabh Arora**

Abstract

A maritime connection is a crossword puzzle or fraught with anomalies, credentials and confusing legal writings for many citizens. Of fact, what may be valid of India might not always be there in the relevant circumstances or in various jurisdictions. This is therefore a matter of semantics. The principle of common law is that if a person does have an article he was handed over to him, for the benefit of which he had to offer trouble and cost, and he had the right to detain him before his demand had been met. It's root is found in lex mercatoria, which is mercantile law. Royal navy law has recognized maritime connection for a number of years and, in order to understand it, we need to appeal to English law. except for its description, there are various kinds of links in practice in India, such as common link, general link, legislative link, possessive link and maritime link. The value of the maritime connection and its compliance procedure is discussed elaborately. It contends with the findings and current situation of shipping and maritime legislation in India. The work focuses on the study of legal reforms and judicial patterns with particular reference to the definition of 'Analysis of Maritime Lien as well as its Application in India.'

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Keywords: *Maritime Lien, Admiralty Law, Maritime Law, Maritime Law in India.*

Introduction

It is important to remember that maritime relations are a distinctive and historic characteristic of modern admiralty law. The origins stretch far back to the maritime law of the medieval period. Transnational mercantile law regulated the relationship between traders who migrated by sea and their goods in the Middle Ages. Initially, this customary law has been used verbally by merchants. Subsequently, this rule of the sea was slowly implemented in medieval sea codes, which were usually sets of judgments handed down by the merchant judges, supplemented by some loosely developed rules which it deemed useful in subsequent situations of the same nature.

A maritime bond under the law of the Admiralty is a proprietary right to maritime asset, such as a ship, with respect of services provided to, works performed or injuries incurred by that property. Under common law, a bond is the privilege of the borrower to hold the assets of the borrower until that debt has been paid.

On inspection, it is defined in legal texts that there are two concepts of a maritime bond: (1) the right to a portion of the asset in the res; and (2) the right to a vessel, aircraft or such maritime asset in respect with the services provided or the damage caused from such property.[1]

Usually, Maritime Lien results from a number of maritime activities within the jurisdiction of the Admiralty and produces maritime

[1] BEALE H.G ET AL., CHITTY'S ON CONTRACTS, (28th ed., Sweet & Maxwell 1999).

claims. This can also be defined by law, including the Ship Mortgage Act.[2]

A nexus in a basic words can be defined as 'a nexus is the right with one man to maintain that that is in his possession owing to another until some certain demand has been made for him by the individual in his possession.'

Example-A delivers a rare gem to B, a silversmith, to be cut as well as polished, and this is completed properly. B is entitled to hold the stone until he has been paid for the facilities he has provided.

The creation of a maritime lien is established by citing the following judgment:

"Where a dancer has expended his labour and ability in improving the chattel he has been handed over to him, he has a bond in that regard to his debt. Therefore, the artificer to whom goods are shipped for the intention of being employed in the form, or the harrier by whose ability the animal is healed of a disease, or the horse breaker by whose ability it is made manageable, are bound by the chattels in consideration of their charges.[3]

Legal Characters of Maritime Lien

- A privileged claim or charge,
- upon maritime property,
- for service rendered to it or damage done by it,
- accruing from the moment of the events out of which the cause of action arises,

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[2] CHRISTOPHER HILL, MARITIME LAW (2nd ed., Lloyd's of London Press Ltd 1985).

[3] DR. B. S. BHESANIA, COMMENTARIES ON MAJOR PORT TRUSTS ACT, 1963 (1st ed. 2009).

- traveling with the property secretively and unconditionally, and
- enforced by an action in rem.

It is important to note at this juncture that Article 4 of the 1993 International Maritime Links Convention, which entered into force on 5-9-2004, lists the preceding maritime links in terms of priority.

- Wages of a crew and master.
- Claims for loss of life or personal injury.
- Claims for salvage reward.
- Claims for canal and pilotage dues.
- Claims in tort for physical loss or damage.

In the event that the available funds from the sale of a ship are not sufficient to cover all of its obligations, the compensation of the captain, officer or crew, and the claims for loss of life and personal injury cases are equal to one another and pay in proportion to the other's claims. And then should the rights of other maritime bond holders be considered. Restitution shall be in the order of priorities as set out above, unless the local legislation supports other priorities.

Pursuant to Article 2 of the 1993 Convention, loans and or guarantee to such loan recorded against a vessel are binding in compliance with the law of the flag State, but the maritime liens referred to in Article 4 take precedence and accompany the vessel irrespective of any change in ownership or declaration or flags.

It is important to note that, apart from a bridge, a maritime connection is a relation created by an Admiralty or other state statute in a vessel or any other “maritime goods”.

Property Attached to Maritime Lien

Based on the type of link, a maritime link can be connected to a vessel's sailing vessel, electronics, appliances, vehicles, fishing gear, other types of fishing rights and permits, machinery, spare parts, fuel and other supplies, cargo, fish and items that have been retrieved from navigable waters. Many forms of charges refer to leased and borrowed equipment carried on board a vessel, and others do not. Maritime relations do not extend to shore-based properties such as quarries, piers and floats. When a tether is connected to an object on a vessel, it is normally re-attached even if the object is removed from the vessel. Therefore, one has the privilege or right to assert the said land.

In Case more than One Maritime Lien is Attached:

Admiralty law gives preference to the request for payment of various forms of levies on the profits of a foreclosure sale. Holders of higher-priority links must be charged in full before the holders of lower-priority links can receive something. In priority levels, the last connection to be added to the ship is usually to be charged first, although the connection can be clustered by year, period or voyage.[4] Giving regard to the rule of priorities, every party must be aware of its goals before setting up an admiralty suit over maritime claims. That is because, in any kind of suit, someone who has a maritime claim can take part through filing a different suit and assert priority if they have been entitled to do so, leaving nothing or very little to the plaintiff. It is therefore advisable; before setting up a maritime suit, it is believed that one must know where that is on the priority list.

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[4] SIR ALAN ABRAHAM MOCATTA, SCRUTTON ON CHARTERPARTIES AND BILLS OF LADING (18th ed., Sweet & Maxwell 1974).

For example, the holder of a vessel subjected to a mortgage bond may (i) neglect to pay for the fuel and services given to the vessel, which could give birth to a 'lien for necessaries,' (ii) neglect to pay the crew, give rise to a bond for the wages of seamen, and (iii) trigger an incident with the ship or vessel, which would give rise to a liability for bodily injury or property harm. These liens and other maritime and non-maritime liens could co-exist.

Practice and Procedure

In general, the owner of the ship has the right to keep the goods in his post-session until the freight has been charged on them and often other costs have also been charged. This right is called a connection. It does not give the Ship Owner any property in the products, nor does it make it possible for him to sell them, even though ex-think might be interested in their retention. It is simply the obligation to claim possession of the goods and to withstand all claims to drive them away, which is against the true owner of the property, even though he may not have been the person accountable for freight or any other charges.

Lien is limited to a particular shipment. The privilege shall be limited to the freight owed on the specific shipment of goods. The Ship Owner does not maintain goods for all other freights due from its owner on certain transactions unless the arrangement to that effect has also been made explicitly or unless such an arrangement has been derived from the conduct of the company between both the parties or from the general use of the trade. The Ship owner may maintain all goods in respect of which they are payable until the entire has been paid or may supply the goods by instalment and request that the goods on each instalment be paid at the same time as the delivery.

A Maritime Lien shall have the right or privilege to Maritime Re (thing) in respect of the services rendered to it or the damage caused to it. Such a contract does not import or allow the ownership of a res for the purpose of putting its right or privilege into effect through a legal process. A Maritime lien with the res to whomever it may be held, even if the res may have been bought without notice of the bond or may have been confiscated by the Sheriff under the Firefacias[5] Writ given at the time of the execution of the creditors.

There can be no Maritime lien on res that is not a vessel or its apparel or cargo, and if the bond is attached to Maritime res and the res is transferred by the owner, there is no relation to the proceeds of sale as the bond moves with the res.

In the *Optima* case, it was laid down that the Maritime Liaison can be preserved if the transaction takes place under the direction of the court.

Under English law, an action in rem may impose a maritime bond by seizing a ship in the following situations:

- Damage caused to a ship due to Collision on high seas.
- For the recovery of the amounts due on Bottomry and Respondent bonds.
- Wages of seamen and disbursements made by the masters. Maritime liens would attach only to those disbursements which are in the form of necessaries supplied to a ship for example supplies of coal to a ship, oil, etc.
- Necessaries supplied to ship.
- Salvage.

[5] THOMAS GILBERT CARVER, CARRIAGE BY SEA (13th ed., Stevens & Sons 1982).

Also the links described above can be imposed by an act in rem, i.e. by seizing a ship, all the other maritime links can be imposed by an act *in personam* i.e., in lawsuits against the owners.[6]

Subsections 4 to 8 of the Admiralty Courts Act, 1861, provide for an analysis of the conduct which may be taken in rem. In this regard, Justice S. M. Shah in *Kamlakar Mahadeo Bagat vs. Scindia Steam Navigation Co. Ltd*,[7] held that the High Court of Bombay, on its Admiralty side, possessed exclusive power to bring an action in respect of the damage incurred by the ship to assets in the High Seas. The argument for such harm can be submitted to the High Court of Admiralty in Bombay by proceeding in rem i.e., by restraining a ship. In that case, the Plaintiffs delivered some goods from Bombay to the consignees of Colombo. The Indian representatives of the owners of the vessel received the Bombay Bill of Lading for the goods on board the vessel. The goods were shipped by the vessel owner in Colombo without being generated by the con-signs of the Bills of Lading and without any approval from the Plain-Tiffs or the Plaintiffs' Lender in Colombo. The plaintiffs brought an appeal before the High Court of Bombay itself on admiralty side against the vessel for his detention. It was decided, pursuant to section 6 of the Admiralty Courts Act, 1861, that the High Court of Bombay had authority to bring an appeal. In addition, it may be found out that the High Court of Bombay, over its Admiralty side, has authority to examine and try this within rem and *in personam*.

Clause 32 of the Patent Letters of the High Court of Bombay bestows on the High Court of Bombay the authority of the Admiralty in respect of the State of Maharashtra.

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6 WILLIAM TETLEY, MARITIME LIENS AND CLAIMS (2nd ed., Les Editions Yvon Blais 1998).

7 WILLIAM TETLEY, MARITIME CARGO CLAIMS (2nd ed., Butterworths 1978).

Lien only provides the right to hold the goods and not to sell the products except in other situations i.e., commercial usage, or when statutory power is granted to inn keepers, carriers, bailiffs for compensation and merchant vessels. There are no legislative provisions in either the Merchant Shipping Act or in the applicable Indian Statute for Ship Owners to sell the goods; hence, it would be appropriate to seek permission from the Court to sell an asset in order to retain the bond.

It states that, for maritime purposes, the Law of the Admiralty Court, 1861, read in the International Convention for the Unification of Certain Rules relating to Maritime liens and Mortgage, Brussels, 1926 read in the Brussels Arrest (Of Seagoing Ships) Convention 1952 and the Brussels Maritime lien Convention, 1967, clearly state that a claim arising out of an agreement relating to the use and/or hire of a ship

Descry under Admiralty Laws

When we talk from an Indian viewpoint, it is important to notice that India is proposing to abolish its current Admiralty Act, which is concurrently enforced only by the three Chartered High Courts of Bombay, Calcutta and Madras, as expressed in the following Statutes:

- The Colonial Courts of Admiralty (India) Act, 1891.
- The Admiralty Offences (Colonial) Act, 1849,
- The Admiralty Court Act, 1861,
- The Admiralty Courts Act, 1840,
- The Admiralty Jurisdiction (India) Act, 1860,
- The Colonial Courts of Admiralty Act, 1890.

The 2005 bill of admiralty was passed by the Parliament, and the same will never become an act, and the efflux of time lapses. Because

India requires new admiralty laws instead of outdated and obsolete ones. The above-mentioned Acts, as well as the provisions of Letters Patent, 1865 of the three High Courts of Bombay , Calcutta and Madras (Clauses in so far as they relate to the Civil Admiralty Jurisdiction), are to be repealed by the enactment of a single and uniform Statute. Albeit, the Acts relating to the Law of the Maritimes will continue to be in effect as stated below.

Current Practice of Maritime Laws In India

It should be noted that India has other laws in place that directly or indirectly impact maritime contracts and maritime transport. Some of the major laws in place are as follows:-

- The Indian the Carriage of Goods by Sea Act, 1925; based on the Hague Rules (1924) (which were amended to implement amendments to the rules required by the procedure signed at Brussels on 23 February 1968 and 21 December 1979).
- Sale of Goods Act, 1930;
- The Bills of Lading Act, 1856;
- The Multimodal Transportation of Goods Act, 1993;
- The Indian Contract Act, 1872;
- The Merchant Shipping Act, 1958;
- The Carriers Act 1865;
- The Indian Ports Act, 1908;
- Major Port Trusts Act, 1963;
- And many other statutes.

In addition to the above-mentioned constitutional provisions, India has adopted a number of international treaties, including the Ship Limitation Convention of 1957 as well as 1976, the Warsaw

Convention of 1929 and 1955 and the Indian Carriage of Goods by Sea Act, 1925.

Nevertheless, in view of these rules, in attempt to settle maritime disputes which occur in the numerous claims, the Indian Courts must necessarily rely on the laws established at international level , in particular the judgments of the English Courts, in order to settle various disputes against them, in so far as a significant part of the Maritime Law is needed to be construed by reference to certain foreign judgments.

When shipping and maritime legislation is enacted in the Indian Parliament, the Indian Admiralty Legislation and Procedure will be somewhat on par only with Admiralty Law followed worldwide by all major nations in the world.

Conclusion

Difficulties occur when the maritime claim suit brought by the individual who has the last obligation and the fund aren't enough to reach it until the last. Under these cases, the first and second person to be prioritized will receive their shares under compliance with the rule of priority and the person who sued does not receive anything. Accordingly, the law is intended to carry uniformity so that all incensed persons receive their shares in ratio, in particular, to those who initiate legal proceedings. India needs to amend the obsolete law on maritime and shipping acts in force to bring admiralty issues in uniformity. The admiralty acts in force needs to be repealed as they are becoming obsolete and needs uniformity.

ANALYSING MARITIME SECURITY IN LIGHT OF EU'S COUNTER-PIRACY MEASURES

Kaustubh Kumar [*]

Abstract

"Since Europe is dependent on imports of energy and most of its raw materials, it can be subdued, if not quite conquered, without all those nuclear weapons the Soviets have aimed at it simply through the shipping routes and raw materials they control."

— Barbara Amiel (a British Journalist)

The maritime sector is extremely important in today's world. Maritime transport is one of the most prominent forms of transportation and shipping used around the globe. The marine sector ensures crucial supplies for the nations and plays a pivotal role in world trade. As a result, the focus on the security of this sector becomes critical. Threats to maritime security such as maritime terrorism & piracy, and armed robbery around the Western Indian Ocean/Horn of Africa have risen to a serious level. This has endangered not only the economy of European nations but the lives of seafarers as well. To secure an international sea lane, there was a need of the hour for the international community to come forward.

As a result, the European Union (hereinafter "EU") in 2008 came forward with its EU NAVFOR and launched Operation Atlanta along with its sister missions. The research

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paper elucidates how the Shipping industry acts as a linchpin in the international trade by considering the threats to it as well. With the examples, the research paper delineates two major threats to maritime security – maritime terrorism & piracy and armed robbery.

The research paper discusses the idea behind EU coming forward with a concrete plan by formulating EU NAVFOR. It further expounds on the success of Operation Atlanta. Furthermore, it delves into the legality of the operation. The operation is allegedly backed by the UN Resolutions and International law even though there are a few concerns that still exist and can be exploited unabatedly by the NAVFOR, anytime. Finally, the research paper provides some recommendations to expand the operation to tackle maritime terrorism that is increasing slowly in the region concerned.

Keywords: *Maritime, Human Rights, EU NAVFOR, Horn of Africa, Maritime Piracy*

INTRODUCTION

The ability of the shipping industry to provide an economically efficient mode of transportation puts it at the kernel for the sustenance of the world economy. A recent instance of 'traffic jam in the sea' undisputedly denotes the importance of shipping or maritime industry in the world. Every day thousands of ships through the Suez Canal move back and forth from Asia to Europe. This movement got disrupted due to 'the Ever Given' going from China to the Netherlands after it lost control and stuck in Suez Canal. It caused a

jam of more than 200 big vessels halting the maritime transportation of two major continents – Asia and Europe.[1]

As per the International Chambers of Shipping, nearly 11 billion tons of goods are transported every year with the help of ships.[2] If we take into account the exports and imports of European Union countries, nearly 80 percent of the total exports and imports are done by Shipping. As per the estimates in 2019, the total value of the world shipping trade done by the shipping industry was more than 14 billion dollars, [3] which saw an unprecedented dip in recent years due to COVID-19. The United Nations Conference on Trade and Development (UNCTAD), in its 'Review of Maritime Transport, 2020,' estimated that world maritime trade would plunge by 4.1 percent in 2020, which is grossly lower than the previous years.[4]

Nearly 71 percent of the earth's area is covered with oceans, which is increasing everyday with the increase in global sea level.[5] This limitless area acts as a keystone in facilitating the shipping industry to work in an efficient manner. However, it is prone to various natural as well as manly threats that sometimes even account for the lives of the passengers and explorers. It is a herculean task to protect an

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1 Arti Ghargi. "Traffic Jam In Sea: Life-Size Container Ship Stuck In Suez Canal. Block Route." *HW English*. March 25, 2021. https://hwnews.in/international/traffic-jam-in-sea-life-size-container-ship-stuck-in-suez-canal-blocks-route/154149.

2 "Shipping and world trade: driving prosperity." *International Chambers of Shipping*. https://www.ics-shipping.org/shipping-fact/shipping-and-world-trade-driving-prosperity/ (Accessed June 16, 2021).

3 Ibid.

4 "COVID-19 cuts global maritime trade, transforms industry." *UNCTAD*. November 12, 2020. https://unctad.org/news/covid-19-cuts-global-maritime-trade-transforms-industry.

5 "How Much Water is There on Earth?." *U.S. Geological Survey (USGS)*. https://www.usgs.gov/special-topic/water-science-school/science/how-much-water-there-earth?qt-science_center_objects=0#qt-science_center_objects (Accessed June 16, 2021).

individual from such threats prevalent in the ocean. Man cannot completely alter or compete with the natural threats posed by the sea. However, he can try and deal with the man-made threats. , Thus, the term 'maritime security' comes into play, Primarily for the protection of the shipping industry.

Maritime security does not have a concrete definition. The term has a subjective and dynamic definition that changes from time to time and from one expert to another as per the need. The Maritime Institute of Technology and Graduate Studies (MITAGS) defines the term simply as "*a general term for the protection of vessels both internally and externally. The areas from which ships and maritime operations need protecting include terrorism, piracy, robbery, illegal trafficking of goods and people, illegal fishing, and pollution.*"[6] As the definition itself underlines some of the issues that leave vessels in a vulnerable position while transporting goods or passengers or both, the maritime security acts as a linchpin in preventing them and maintaining the peace in the maritime arena.

THREATS TO MARITIME SECURITY

"It is a curious situation that the sea, from which life first arose should now be threatened by the activities of one form of that life. But the sea, though changed in a sinister way, will continue to exist; the threat is rather to life itself."

— Rachel Carson, The Sea Around Us

As mentioned above, the shipping industry was booming leaps and bounds before the arrival of recent catastrophic circumstances posed by COVID-19. Owing to this the threats at sea during also increased exponentially. There are various hazardous threats prevalent in the

[6] "Guide to Maritime Security." *Maritime Institute of Technology and Graduate Studies (MITAGS)*. August 27, 2020. https://www.mitags.org/security-guide/.

ocean that account for the lives and money of the members boarding a ship. Some of them are Drugs and Human Trafficking, Illegal Immigration, Container Crime, Maritime Terrorism, Trespassing, Arms Smuggling, Environmental Damage, and last but not least Piracy and Armed Robberies against the Vessels. The scope of the heading is limited to Maritime Terrorism and Piracy and Armed Robberies as these two issues are the most prominent ones among others.

1. Maritime Terrorism

   Cristopher C Joyner in his book – 'Suppression of Terrorism on the High Seas: The 1988 IMO Convention on the Safety of Maritime Navigation' – defines 'maritime terrorism' as "*the systematic use or threat to use acts of violence against international shipping and maritime services by an individual or group to induce fear and intimidation in a civilian population in order to achieve political ambitions or objectives.*"[7] In layman terms, it can be said that when the terrorists enter into the territory of any nation through the sea to give effect to their plan of killing; or when terrorists hijack any vessel and hostage its crew members or passengers, or both; or attack through the sea on ports, facilities, and coastal installations; or when terrorists attack naval or coast guard security vessels and warships; then it would be an act of 'maritime terrorism.'

   Incidents of maritime terrorism are not that much in number, however, in recent times, they have increased exponentially. The sole motive behind such acts of the terrorists is not to gain anything of good monetary value but to terrorize society

[7] Christopher C Joyner. *Suppression of Terrorism on the High Seas: The 1988 IMO Convention on the Safety of Maritime Navigation.* (19 Israel Yearbook on Human Rights, 1989) 343 – 348.

by creating panic for more publicity. One of the best examples of maritime terrorism can be the 26/11 attacks at different places in Mumbai. Ten Pakistani terrorists, with the help of speedboats, landed on the seashores of Mumbai and conducted a series of coordinated attacks, killing 166 and injuring more than 300 people.[8] This instance also usurped a debate on maritime terrorism in the world, which was not so prevalent before that period.

Another instance of 2014, where PNS Zulfiqar, a Pakistani frigate, was surprisingly attacked in Karachi by the Tehrik-i-Taliban (i.e., Al-Qaeda). Even the advanced intelligence of the Pakistani Navy was not able to prevent the attack. However, the prompt action of naval forces prevented any major mishap.[9] The incident was crucial as the terrorist organization states that its true intention was to hijack the frigate and launch an attack on the US navy vessel, which would have resulted in a potential loss of American lives and relations between both nations.[10] It shows that how maritime terrorism has the potential to damage not only internal security and peace but friendly relation on international platforms as well.

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[8] Shishir Gupta. "India on alert against possible Lashkar, Jaish attacks from sea." *Hindustan Times*. October 12, 2018. https://www.hindustantimes.com/india-news/india-on-alert-for-terror-attacks-from-sea/story-Z3sbBaWORD4X6R0QZqymaN.html.

[9] Syed Shoaib Hasan, Saeed Shah and Siobhan Gorman. "Al Qaeda Militants Tried to Seize Pakistan Navy Frigate." *The Wall Street Journal*. September 16, 2014. https://www.wsj.com/articles/al-qaeda-militants-tried-to-seize-pakistan-navy-frigate-1410884514.

[10] Syed Raza Hassan and Katharine Houreld. "In attack by al Qaeda, lines blur between Pakistan's military, militants." *Reuters.* October 01, 2014. https://www.reuters.com/article/us-pakistan-militants-attacks-insight-idUSKCN0HP2MM20141001.

Another recent instance of 2020, where after five days of fierce clashes between the insurgents and Mozambican security forces, the Islamist insurgents of Islamic States (IS) captured a heavily-defended strategic port of Mocimboa da Praia in the restive province of Cabo Delgado in northern Mozambique. The port was at a strategic site where gas companies are operating as well as different multinational companies have their huge investments in the area.[11] The terrorists entered through ocean and also took over various northern towns displacing tens of thousands of people.

It can be understood from the aforementioned incidents how maritime terrorism is a potential risk for the safety and security of a nation as well as vessels and people boarding on it. Moreover, it can also pose a severe threat to marine life and ecosystem.

In spite of such issues mushrooming in the maritime environment, the international framework of law and policies has not inculcated any concrete solution to deal with such issues. Furthermore, there is hardly any data available that determines the instances of maritime terrorism that took place each year in the world. There is no consensus of the definition of the term – maritime terrorism as well. Thus, such issues which are of grave nature are matters of urgent concern that need to be resolved as soon as possible.

2. <u>Piracy and Armed Robberies:</u>

[11] Andre Baptista and Sirwan Kajjo. "Islamist Insurgents Capture Strategic Port in Northern Mozambique." *voanews.com*. August. 13, 2020. https://www.voanews.com/africa/islamist-insurgents-capture-strategic-port-northern-mozambique.

The one who has watched the 'Pirates of the Caribbean' must have an idea of what pirates are and what piracy is. However, the reality is far-fetched from such fantasy and swashbuckler movies. Article 101 of the United Nations Convention on the Law of the Sea (UNCLOS) defines 'Piracy' as an act that consists of any of the following:

a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:

   - on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
   - against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;

c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b).[12]

Furthermore, Resolution A.1025(26) on the International Maritime Organization (IMO) Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery Against Ships defines 'armed robbery against ships' as an act that consists of any of the following:

[12] United Nations Convention on the Law of the Sea 1982. art. 101.

a) any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against persons or property on board such a ship, within a State's internal waters, archipelagic waters and territorial sea;

b) any act of inciting or of intentionally facilitating an act described above.[13]

Most of the incidents of Piracy and Armed Robbery took place in the Gulf of Guinea, waters of South-East Asia, and the Western Indian Ocean. However, they are not just limited to these areas. Armed Robbery is also prevalent at ports in South and Central America and Caribbean Waters.[14] Reports state that in recent years, the maritime piracy incidents have seen an upsurge up to 20 percent than last year.[15] While some say that it increased by 40 percent solely during the pandemic,[16] a report by the International Maritime Bureau (IMB) of the International Chamber of Commerce released in January 2021 states that more than 900 incidents of Piracy and Armed Robbery were reported across the world

[13] International Maritime Organization. "Code of Practice for the Investigation of Crimes of Piracy and Armed Robbery against Ships." A 26/Res.1025. December 02, 2009. https://www.gard.no/Content/31036385/Res.A.1025(26).pdf.

[14] Theo Locherer. "Surge of Piracy amid Coronavirus Outbreak." *Global Risk Insights.* October 04, 2020. https://globalriskinsights.com/2020/10/surge-of-piracy-amid-coronavirus-outbreak/.

[15] Chaitanya Mallapur. "Global maritime piracy incidents rise in 2020; here's why India and its seafarers should be cautious." *Moneycontrol.* April 12, 2021. https://www.moneycontrol.com/news/trends/current-affairs-trends/global-maritime-piracy-incidents-rise-in-2020-heres-why-india-and-its-seafarers-should-be-cautious-6759251.html.

[16] Nicky Harley. "Pirate attacks increased 40 per cent during pandemic." *N World*. December 30, 2020. https://www.thenationalnews.com/world/pirate-attacks-increased-40-per-cent-during-pandemic-1.1137691.

in the last five years, including 2020.[17] The numbers are enough to emphasise on the seriousness of the issue.

The pirates kidnap crew members and demand a huge amount of ramson in return to set them free. For instance, in November 2020, Nigerian pirates kidnapped eight crew members from 'Milano 1' cargo ship and demanded a ransom of 1.3 million dollars in exchange to release them.[18] The pirates give a major blow to the world economy as the report of World Bank released in 2017 states that Somali pirates nearly extracted 338 million dollars in ransom between 2005 and 2015. Further, an earlier report of 2013 stated that pirates cause a loss of more than 18 billion dollars every year to the world economy as vessels have to opt for long routes due to the threat of piracy, and shippers have to pay extra fuel prices and insurance premiums.[19]

As mentioned above, maritime piracy is most prevalent in the western Indian Ocean – near the Somalia region and the Horn of Africa, and the Red Sea. It severely affects the trade routes and vessels voyaging towards or departing from European nations, which ultimately places a major chunk of the economy of European nations at peril. Thus, to cope up with such instances of maritime terrorism and maritime piracy and armed robbery, the European countries came together and

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[17] ICC International Maritime Bureau. "Piracy and Armed Robbery against Ships." First Quarter 2021. April, 2021. https://www.icc-ccs.org/reports/2021_Q1_IMB_Piracy_Report.pdf.

[18] "Nigeria pirates demand $1.3m to release Lebanon, Egypt hostages." *Middle East Monitor*. December 04, 2020. https://www.middleeastmonitor.com/20201204-nigeria-pirates-demand-1-3m-to-release-lebanon-egypt-hostages/.

[19] "Maritime piracy attacks reported worldwide surged 20 percent in 2020." *INMEX Maritime Spectra*. April 15, 2021. https://www.inmexmaritimespectra.com/NewsDetails.aspx?newsid=84&newstype=News.

launched a mission EU NAVFOR (Naval Forces) – Operation ATLANTA. The EU NAVFOR also constituted a Maritime Security Centre – Horn of Africa (MSCHOA) under the operation to protect the merchant shipping in the region. As the issues of maritime terrorism are not that prevalent among the European nations, the operation was launched to counter the threats related to piracy and armed robbery only.

However, the research paper later deals with the maritime terrorism accompanying EU NAVFOR.

EU NAVFOR – OPERATION ATLANTA

The European Union Naval Force Somalia – Operation Atlanta was formulated to counter the mushrooming piracy activities at sea off the Horn of Africa and in the Western Indian Ocean in December 2008. It was launched under the legal basis of the European Common Security and Defence Policy (CSDP) and in consonance with UN Security Council Resolutions and International law. Somali pirates are a huge concern for European countries as they not only hinder the trade and growth of these countries, but the seafarers of these countries are also held as hostages for long periods by them. It is stated that the average time period of captivity under Somali pirates is nearly five months, however the longest duration for which one was held hostage by such pirates was almost three years. This depicts the urgent need for such counter measures which were taken by Europe.[20]

The political control and command structure of the EU NAVFOR is highly sophisticated in which the Operation Commander (OpCdr) plays a vital role. OpCdr directly reports about the operation to the Political and Security Committee (PSC). Under the authority of the

[20] EU Naval Force – Somalia, Operation Atlanta. "Mission." *EU NAVFOR Somalia*. https://eunavfor.eu/mission/. (Accessed June 16, 2021).

Council of European Union and the High Representative of the Union for Foreign Affairs and Security Policy/Vice-President of the European Commission (HR/VP), PSC exercises the political control and strategic direction of the EU military operations. Further, the OpCdr is monitored continuously by the European Union Military Committee (EUMC), which is the forum for military consultation and co-operation among EU members and provides recommendations and advice on military matters to PSC.[21]

Recently, on January 1, 2021, the council announced the extension of Operation Atlanta along with its sister missions until 31 December 2021 with an aim to amalgamate and bolster the EU's response to developing security context.[22] The mission was also extended to tackle other threats to maritime security, such as countering arms trafficking, drug trafficking, and monitoring other illicit activities conducted through shipping.[23] Operation Atlanta was launched along with its two sister missions under CSDP to root out the maritime piracy, namely:

1. <u>EUCAP Nestor or EUCAP Somalia</u>

   The EUCAP Nestor was launched in July 2012, which got later transformed into EUCAP Somalia. Headquartered at Mogadishu, Djibouti, the mission aims to develop the maritime security systems by providing advice, mentoring,

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[21] Ibid.

[22] Naida Hakirevic. "EU naval operation Atalanta extended until December 2022." *Naval Today*. January 04, 2021. https://www.navaltoday.com/2021/01/04/eu-naval-operation-atalanta-extended-until-december-2022/.

[23] "Operation ATALANTA´s new mandate enters into force on 1st of January 2021. New tasks will reinforce the EU NAVFOR's counter-piracy core responsibilities." *EU NAVFOR Somalia*. December 30, 2020. https://eunavfor.eu/operation-atalantas-new-mandate-enters-into-force-on-1st-of-january-2021-new-tasks-will-reinforce-the-eu-navfors-counter-piracy-core-responsibilities/.

and training in three major fields – law, maritime, and police – in the Horn of Africa/Western Indian Ocean (HoA/WIO), including Somaliland. The mission, with the help of key actors, such as coastguards, navy, coastal and maritime police, prosecutors, judges, and others strengthens the existing legal and law enforcement mechanisms and develops relevant maritime security key instruments to counter the acts of piracy.[24]

This regional maritime security capacity-building mission also had strategically appointed personnel at Kenya, Mauritius, Seychelles, Tanzania, Djibouti, as well as Somaliland. However, at a later stage, the activities of the mission got only limited to Somalia (including Somaliland), which's why it was renamed EUCAP Somalia.[25]

2. EUTM Somalia

A military training mission was launched by the EU in April 2010, which aims to strengthen the Somali National Government (SNG) or Transition Federal Government (TFG) along with the other important institutions of Somalia by providing military training to the Somali National Armed Forces (SNAF). The mission was first started in Uganda due to security situations and instability of Somalia during that period and further, it was extended to Somalia.[26]

SUCCESS OF OPERATION ATLANTA

[24] "About us." *EUCAP Somalia*, https://www.eucap-som.eu/about-us/. (Accessed June 16, 2021).
[25] Ibid.
[26] "About us." *EUTM – Somalia*, https://www.eutm-somalia.eu/about-us/. (Accessed June 16, 2021).

The website of Operation Atlanta itself showcases the achievements stating that the operation since its commencement has become highly effective in preventing the maritime piracy issues with the help of its anti-piracy partners. As per the estimates, in 2011, there were nearly 176 attacks that were committed by pirates, and 166 suspicious events took place in the region, which got drastically reduced to zero in 2020, along with three suspicious events.[27]

Furthermore, the operation has played an important role in protecting the vessels of the World Food Programme (WFP) and African Union Mission to Somalia (AMISOM) since 2009. As per the estimates, the mission has rescued 1,598 vessels of WFP while 704 vessels of AMISOM.[28] Thus, the data depicts that the mission acted as a linchpin in alleviating the aggravating circumstances posed by maritime piracy. However, the area of the operation is just limited to the Western Indian Ocean and Horn of Africa (as per EU, 95% of the trade of European countries moves back and forth from this region only, that's why the area of operation is just limited to this region[29]), which acted as a chain reaction in increment of the piracy cases in Central and Western Africa, especially in the Gulf of Guinea.

As already stated above, the Mozambican instance (Mocimboa da Praia captured by maritime terrorists) and different other data highlights how this operation alleviated the situations in Horn of Africa/Western Indian Ocean (HoA/WIO) but exacerbated the same in other African regions. As per the recent 2021 estimates of IMB, the Gulf of Guinea accounted for nearly half (43%) of all reported

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[27] "KEY FACTS AND FIGURES." *EU NAVFOR Somalia*. https://eunavfor.eu/key-facts-and-figures/. (Accessed June 16, 2021).

[28] Ibid.

[29] "MSCHOA." *EU NAVFOR Somalia.* https://eunavfor.eu/mschoa/. (Accessed June 16, 2021).

piracy incidents in the first three months of 2021.[30] The data puts forth the repercussions posed by the operation on the people and poses some fundamental questions – who is accountable for affecting the lives of people residing in other areas of Africa by directly or indirectly forcing the pirates to move towards other parts? And how the EU would compensate for the increase in piracy cases in other parts of Africa?

LEGALITY OF OPERATION ATLANTA

Till now, the research paper focused on elucidating maritime security, and threats posed to it by various external factors. The EU formulated EU NAVFOR and launched operations to keep control of maritime threats in the HoA/WIO region, which ultimately affected other various parts of the Indian Ocean and African Continent. However, the real issue posed by such maritime operations of the EU starts under this heading, where we will try to look into the legality of this mission.

In 2008, the Council of European Union adopted and gave effect to Joint Action 2008/851/CFSP based on International Law and UN Resolutions to establish Operation Atlanta.[31] Article 110 of UNCLOS (or LOSC) mentions the 'right to visit' that states that all warships or other duly authorized vessels have the right to board and search vessels suspected of being engaged in piracy.[32] However, the article mentions an important phrase – 'reasonable grounds,' which

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[30] "Gulf of Guinea remains world's piracy hotspot in 2021, according to IMB's latest figures." *International Chamber of Commerce (ICC)*. April 14, 2021. https://iccwbo.org/media-wall/news-speeches/gulf-of-guinea-remains-worlds-piracy-hotspot-in-2021-according-to-imbs-latest-figures/.

[31] The Council of European Union. "COUNCIL JOINT ACTION 2008/851/CFSP." *Official Journal of the European Union*. November 10, 2008. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008E0851&from=EN.

[32] United Nations Convention on the Law of the Sea 1982. art. 110.

must be there before suspecting that the vessel has been engaged in piracy, and reasonable grounds must be in accordance with Article 101 of UNCLOS. However, the UN conventions are limited to 'States,' and the EU does not fall within the definition of State. Thus, there exists a loophole that can be abided by the EU at its whims and fancies and exploited by the EU at any time without any deterrence.

Furthermore, as per the EU, NAVFOR is based on the rulings of the Council of European Union in consonance with relevant UN Security Council Resolutions and International Law. It defines the 'Detention of Suspected Pirates' as "*EU NAVFOR assets can seize vessels of suspected pirates or armed robbers, vessels captured by an act of piracy or armed robbery at sea, and such vessels which are in the hands of the pirates or armed robbers, as well as the property on board*."[33]

However, the first issue comes into the picture with this illegitimate authority provided to NAVFOR. EU does not define what are the conditions that are necessary to be fulfilled to consider that the person concerned is a 'pirate' or the concerned vessel is a vessel of 'pirate' or 'armed robbers.'

As it is already well-known that practical life is not similar to movies, in the same manner, the pirates or armed robbers also look like any common seafarer (unlike Captain Jack Sparrow), and their vessels are also similar to any ordinary vessel (not like Black Pearl) in any practical scenario. Moreover, the Somali pirates or that of the African continent are of Black colour. And the issue of 'racism' is already known in European nations. What would be the legal position of the EU if any sailor of its NAVFOR just on the basis of colour of the concerned person suspects him/her as a pirate or armed robber? Who

[33] "What is Operation Atlanta's legal basis?." *EU NAVFOR Somalia*. https://eunavfor.eu/mission/. (Accessed June 16, 2021).

would rescue those alleged pirates or armed robbers? Thus, this poses some fundamental questions, which still remain unanswered.

Further, the EU states that it is assisting the United Nations Office for Drugs and Crime (UNODC) and United Nations Development Programme (UNDP) to allow fair and efficient trials of the pirates. It also states that the prosecution of the captured suspected pirates is limited to EU member states, regional states, and a few third states with which the EU has signed a Memoranda of Understanding. The third States include Kenya, Seychelles, Mauritius,[34] and Tanzania.[35] However, even after such a sophisticated mechanism was developed to prosecute the pirates, the numbers of pirates prosecuted remain considerably low in comparison to the piracy attacks committed since 2008. Out of 591 total attacks, the NAVFOR have convicted only 145 of 171 suspected pirates.[36]

Further, the question of who would be accountable for the violation of the human rights of pirates has seen a differential response from the EU. For instance, on November 11, 2011, the administrative court of Cologne in a case in which the suspected pirates were sent to Kenya in consonance with EU – Kenya Agreement where they faced severe human rights violations, ruled that Germany had violated the prohibition of torture, inhumane and degrading treatment by

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[34] "Maritime Piracy: Strengthening the EU Response." *The Maritime Executive*. February 12, 2018. https://www.maritime-executive.com/article/Maritime-Piracy-Strengthening-the-EU-Response.

[35] The European Union and The United Republic of Tanzania. "AGREEMENT between the European Union and the United Republic of Tanzania on the conditions of transfer of suspected pirates and associated seized property from the European Union-led Naval Force to the United Republic of Tanzania." *Official Journal of the European Union.* April 11, 2014. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22014A0411(01)&from=EN.

[36] Supra, note 27.

transferring suspected pirates, not EU.[37] This ruling creates a complex situation as the EU entered into an agreement with Kenya, and pirates were sent to Kenya under the vigilance of the EU, then how does Germany solely become the wrongdoer? Such instances clearly show the lacunas in legality of such operations that need to be sorted out for accountability and fairness on the part of the EU.

MARITIME SECURITY CENTRE – HORN OF AFRICA

Another major step taken under Operation Atlanta by the EU to safeguard seafarers and vessels from piracy was the establishment of the Maritime Security Centre – Horn of Africa (MSCHOA). MSCHOA helps in maintaining maritime security by sharing information with vessels that can assist them in preventing pirate attacks and disrupting the activities of pirate groups. MSCHOA was set up with an aim to safeguard the trade and freedom of navigation in the HoA/WIO region. The MSCHOA provides for the registration of ships under the voluntary registration scheme (VRS) of EU NAVFOR, after this the MSCHOA's website allows a vessel to share its real-time position and contact EU NAVFOR as well as UK Maritime Trade Operations (UKMTO) Dubai during any emergency.[38]

EU NAVFOR and UKMTO also share real-time information with the registered vessels to avert any mishap that might take place due to pirates. One such instance happened with a Panamanian ship. An MSCHOA registered Panamanian ship was attacked by the pirates. The ship signalled an emergency and a French Naval Vessel as a part of EU NAVFOR came to rescue the ship. As a result, 19 pirates were

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[37] Re 'MV Courier' [2011] 25 K 4280/09 (Verwaltungsgericht Koln, 25. Kammer).

[38] "About MSCHOA." *Maritime Security Centre Horn of Africa*. https://on-shore.mschoa.org/about-mschoa/. (Accessed June 16, 2021).

arrested by the French navy, and the Panamanian ship was made free.[39] This shows how MSCHOA is very helpful in assisting during as well as preventing piracy attacks on vessels. Moreover, the registration scheme is unconditional and voluntary in nature, which means that it does not impose any condition on the vessel or seafarer, thus providing freedom of choice to each vessel.

As a consequence of this freedom of choice, hardly 75 percent of the vessels voyaging through the region register under the scheme. Moreover, NAVFOR states that some ships also ignore fundamental Best Management Practices (BMPs), which puts them in danger of getting hijacked.[40] If one vessel does not register under the EU NAVFOR's VRS, then at least it must follow BMPs that might avert any risk of piracy at high sea. Experts state that vessels do not register under VRS as they fear that they might have to share any important information with MSCHOA, which can result in the breach of the company's policy, and further, result in losses to the company. The evidences also suggest that the ships not registered with MSCHOA are vulnerable to piracy attacks.[41] The solution to this can be that MSCHOA must assure the company that no crucial information about the company would be asked from the ship's crew except in unforeseeable circumstances.

The NAVFOR with its website of MSCHOA also provides time-to-time guidelines to be followed by the vessels to avert any risk of piracy. It also provides for BMPs, which state Gulf of Aden's

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[39] "French vessel saves two cargo ships from pirates." *The Star*. January 05, 2009. https://www.thestar.com.my/business/business-news/2009/01/05/french-vessel-saves-two-cargo-ships-from-pirates/.

[40] "Why registration with MSCHOA is vital in the war on piracy." *Gard News*. May 01, 2010. https://www.gard.no/web/updates/content/3486550/why-registration-with-mschoa-is-vital-in-the-war-on-piracy.

[41] Ibid.

Internationally Recommended Transit Corridor (IRTC).[42] If any ship gets attacked by pirates while voyaging through Gulf of Aden's IRTC, then it can contact MSCHOA and expect immediate help from NAVFOR within 15 minutes. However, sometimes the humongous size of the Indian Ocean makes it impossible for the naval vessels to assist the ship within the stipulated time.

The MSCHOA also gathers information about the region with the help of maritime patrol aircraft, which provides them good intelligence input about the pirate groups. Furthermore, if any vessel registers it with MSCHOA, then it automatically starts getting help with UKMTO. The UKMTO has such strong surveillance mechanisms that it watches the real-time location of a ship from control rooms, and whenever there is any pirate activity where the concerned ship is operating, it can guide the vessel and talk to crew directly through MSCHOA and ask them to change course, divert or go by an alternative path.[43] Thus, MSCHOA operating under Operation Atlanta plays a major role in helping the vessels and seafarers by bolstering counter-piracy measures laid down by EU NAVFOR.

SUGGESTIONS AND RECOMMENDATIONS

As under the heading – 'Threats to Maritime Piracy' mentioned above, the research paper delineated 'maritime terrorism' and put forth how this area still remains unaddressed by the international community. Even if we ignore the presence of maritime terrorism in South Asia and South-East Asia, the Western parts of Asia alone

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[42] "Mandatory registration with the MSCHOA and UKMTO." *SAFETY4SEA*. June 17, 2011. https://safety4sea.com/mandatory-registration-with-the-mschoa-and-ukmto/.

[43] "From a master's desk – Transiting the Gulf of Aden." *Gard News*. November 01, 2009. https://www.gard.no/web/updates/content/136063/from-a-masters-desk-transiting-the-gulf-of-aden.

provide adequate instances of maritime terrorism that call for urgent action. As 95 per cent of the trade of the European countries passes through Western Asia,[44] the EU must be concerned about the threats of 'maritime terrorism' in this region and should expand the NAVFOR to counter it.

On November 13, 2015, in Paris, 130 people were killed, and more than 350 got wounded in a terrorist attack.[45] An investigation on these attacks showed that at least two plotters entered Europe via the refugee flow through the Greek island of Leros.[46]

The sole motive of piracy and armed robbery activities is to extract money/ransom/food or for any economic benefit, while the terrorist activities are just for sake of instilling fear in the minds of people. Further, if we take the Red Sea region into account, then in 2017, a mine hit a UAE patrol ship by Al-Qaeda motivated Houthi rebels.[47] In the same year, a drone boat in the Red Sea region also attacked a Saudi frigate.[48] In 2014, some IS-affiliated terrorists hijacked an

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[44] Supra, note 29.

[45] "Wounds still raw as France remembers 2015 Paris attacks." *The Economic Times.* November 13, 2020. https://economictimes.indiatimes.com/news/international/world-news/wounds-still-raw-as-france-remembers-2015-paris-attacks/articleshow/79209065.cms?from=mdr.

[46] Sebastian Rotella and ProPublica. "Why Europe has been so vulnerable to terror attacks in recent years." *Scroll.in.* October 21, 2016. https://scroll.in/article/819463/how-europe-left-itself-open-to-terrorism.

[47] Joseph Trivethick. "Houthi Rebels In Yemen Attacked Another UAE Ship and That's All We Know For Certain." *The Drive*. July 31, 2017. https://www.thedrive.com/the-war-zone/13068/houthi-rebels-in-yemen-attacked-another-uae-ship-and-thats-all-we-know-for-sure.

[48] Tyler Rogoway. "Attack on Saudi Frigate off Yemen Was Made by Drone Boat." *The Drive.* February 20, 2017. https://www.thedrive.com/the-war-zone/7769/attack-on-saudi-frigate-off-yemen-was-made-by-drone-boat

Egyptian navy vessel in order to attack Israeli targets in the Mediterranean Sea.[49]

There is a plethora of such instances that demonstrate the increase in maritime terrorism in the concerned HoA/WIO region, which needs to be countered as soon as possible. However, the EU has not yet taken cognizance of this issue. EU NAVFOR should play an active role in curbing such instances by taking control of the region for further peace and stability of the region.

CONCLUSION

"Security is the essential roadblock to achieving the roadmap to Peace"

— George W. Bush

This research paper coasteering maritime security is an attempt to elucidate the pros and cons of the measures taken by the EU to deal with maritime piracy and armed robbery. The shipping industry saw a boom after rapid economic development in the world, especially in developing countries, which made it vulnerable to various threats. Ships have become more sophisticated by implantation of environmental-friendly tools to curb carbon footprints and advanced safety gears to protect passengers and crew during any mishap. However, the area of maritime security was least focused on by any company or vessel manufacturers. Moreover, they even can't have that much say and expertise in this field, which makes it a responsibility of nations concerned to at least counter any threat to maritime security in their waters.

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[49] The Times of Israel. "REPORT: Terrorists Commandeered An Egyptian Navy Missile Boat In November." *Business Insider*. December 02, 2014. https://www.businessinsider.com/terrorists-hijacked-egyptian-navy-vessel-2014-12?IR=T.

Piracy, which was started in the maritime environment as mugging has transformed slowly with the usage of swords to automated guns and artillery in hijacking and murdering innocent seafarers. Further, maritime terrorism activities were also increasing slowly with time, which might give a huge blow to humanity in near future. The EU came up with EU NAVFOR – Operation Atlanta in 2008 to keep a check on piracy activities in HoA/WIO region. The operation mostly remained successful as statistics clearly denote a drastic decrease in piracy and armed robbery activities.[50] However, there are some lacunas that were put forth above, and recommendations were also made to sort them out.

The maritime ecosystem is gigantic and complex. Securing it from being attacked is in itself a big challenge that cannot be done easily without any help from the international community as it is a well-known fact that 'utopia' can never be achieved. But the challenges should be taken care of, and concrete steps must be taken to prevent any such heinous activity off-shore so that it may pave the path for success through the enhancement of maritime security.

[50] Supra, note 27.

THE DEFENCE AND SECURITY IN INDIA- FICTITIOUS OR FACTUAL

Ritika Sharma[*]

INTRODUCTION

India is surrounded by the mighty Himalayas on the top and with water bodies on the three sides of the land. While the distinct features of the country brings humongous amount of advantages, it also brings about certain demerits. In general, the term defence refers to the action of defending and protecting the country from any attack that could render it in incapacitated situation. In order to avoid the tensions and clashes with the other countries, it is often seen that every country tends to create, establish, and execute its own defence structure and mechanism. Furthermore, the security of the nation is paramount for every State and it should be ensured at its optimum level in each and every realm. The term security means to be free from the state of danger or threat. India's priority has always been to defend itself from external and internal aggression and ensure the security of the entire nation while maintaining the status of peace keeping country. The concepts of diplomacy, foreign state policy and inter-state relations become a cardinal aspect of the defence and security of the nation. In reference to this, India has witnessed landmark changes which can easily be divided into several phases. However, the situation has been extremely different from time and again since independence.

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HISTORICAL PERSPECTIVE

The history of India's defence and security dates back 5000 years when the maritime aspect existed. The *Rig Veda* mentioned around 1500 BC about *Varuna* being awarded with the credits of having excellent knowledge of routes of oceans throughout and there has an enormous explanation of naval expeditions. There have also been many mentions of the earliest organizations pertaining to ships in ancient India in the Mauryan Empire from 4th century BC. The Mauryan, Chola, Vijaynagara, Mughal and the Maratha empires are known to be the greatest militaries of their times. The structure of defence and security was as such that particular time that the sea lanes between the land of India and the neighboring lands were being used exceptionally, not only for the purposes of battles and wars but also for the trade and businesses for number of centuries, thereby, leading widespread influence and amalgamation of culture of India on the other societies. During the 17th and 18th centuries, the fleets of Kerala and Maratha expanded multifold, thus, becoming the most powerful forces in the entire subcontinent leading to defeat of many European navies from time to time. With the advent of the British rule, massive changes were being brought about in the defence and security of the British India. The Royal Indian Navy was established during the time of British rule. The Indian military was also being used during the First World War and it fought against the German Empire in the German East Africa. However, after the First World War, the "Indianization" of the military actually began. The World War II brought about the largest volunteer in the army leading to huge success during wars along with the awards to their names. The constant demand for the wars as well as the near ending of the British era in India brought novel aspects and the increased rate of Indianization of the Indian defence and security systems.

POLITICO-ECONOMIC REALMS

The independence was brought about in India on 15th August 1947 from the British rule. The characteristics and the features of the country make it to stand on a different footing from all the other countries of the world, although, right after the independence, the country faced end number of challenges of nation-building. With the formulation of the world's largest Constitution, India came to be known as world's largest democracy. Moreover, the nationalization of the Indian army began with the thirteen Indian Major Generals and thirty Indian brigadiers and gradually the number of British officers began to decline by 1950. The religious, geographical, cultural, demographical and topographical features of the country depict India's strength of harboring great amount of advantages to its politico-economic baggage.

However, even after such competitive advantages, India has a poor record of fighting of the invaders.[1] The political realm of the country depicts it to be promoting federalism; however, it is known to be quasi federal in nature. The aim is to advance the ideal of the democracy. India is known to be the land of diversity. The foreign policy, defence strategies and security aspects has seen to be evolving right from the *Nehruvian* theory to the *Modian* theory. The *Nehruvian* stream theory in foreign policy has often been questioned from two perspectives; conservative realist perspective and the second one is Hindutva, which is more driven by Hindu ideology.[2] The economy faced enormous challenges right after the independence, yet, under the Prime Ministership of Dr. Manmohan Singh, the economy boom took place when the GDP of India was over 8%, the highest ever number. The economic reforms which were being

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1 S.P. COHEN, INDIA: EMERGING POWER pp. 37-44, (1st ed. 2001).
2 Ibid.

brought in 1991 transformed the country into the fastest growing economy. However, the explicit decline can be seen during the era of the present government.

DEFENCE AND SECURITY STRATEGY OF INDIA- THE CHANGING PARAMETERS

The security strategy of India has been evolving from time to time. The rise of India's regional and global power has been largely catered and reinforced by the geostrategic weight that has been assigned to India naturally. According to Drerkmeier, the real Great wall of India may instead have been its ability protect and preserve a fundamental Indian civilization and to mitigate the cultural and the social effect of foreign invasions by the way of the caste system.[3] The projection of the power of India has been done both actively and passively. The security concerns that India has been facing time and again emerges from its neighboring countries and at times from within the territory of India itself. Since Independence, India has been adopting the security strategies of creating friendly and amicable relations with that of its neighboring countries so that threats can be reduced and they become minimal. Maintaining peace and security within the territory has also been challenging as regards to the internal perspective of India.

The incidents of communal violence and riots as well as tensions and conflicts within in the Northeastern and Southern region give rise to threats of security and integrity. The changing parameters of the security has brought new realms of the threats such as cyber-attacks, environmental threats, maritime security, energy and biological security along with the concerns and threats of health. The recent instance of Novel Coronavirus not only posed a great health security

[3] C. DREKMEIER, KINGSHIP AND COMMUNITY IN THE EARLY INDIA pp. 69-80, (Stanford University Press, 1962).

threat to India but it has paved its way worldwide. It has brought with itself several other security concerns and it is nothing less than health terrorism. The defence structure of India includes Indian army, navy and Air force. Indian military has been ranked at a great position from time to time.

Imminent Conundrums

The recent and the most imminent challenges are perceived to be the one which arise from the neighboring countries itself. The recent break off with China has been the most excruciating factor in the Indian history of defence and security. The fact that Pakistan has always acted as a worst enemy with India, it becomes all the more important to note that the defence and the security gets at the verge of being harshly threatened. The neighboring countries like Nepal, Bhutan, Myanmar and Sri Lanka have always been in constant conflict with that of India and this creates a huge tensed situation for India. The foreign policies and the international relations on the global level has been far more improved than ever before, however, the neighboring countries have often posed a great threat. The strained relationships reflect the international tensions and conflicts, thereby affecting the entire process of the growth, progress and development.

Conclusive Remarks

In the light of the major facts and developments appraised, it has become clearly evident that the defence and the security aspects of India have been constantly evolutionary and extremely transforming. It is important to note that the concept of defence and security has never existed in isolation in the context of India. The policies of the foreign relation have been emerging from time to time with the changing nature of the internal political changes and transformations.

It would be wrong to term the aspect of the defence and security system to be flawed altogether and the fictitious one as it is very much in existence. The need is to provide clear directions along with the strategic planning and management.

THE ARMED FORCES SPECIAL POWERS ACT – AN ANSWER TO INSURGENT ACTIVITIES

Niharika Singh[*]

Abstract

There are certain States in India which face internal disturbance by the virtue of insurgent activities, those areas are North-Eastern States – Nagaland, Assam, Manipur, Tripura, Arunachal Pradesh, Mizoram and Meghalaya. These states are heavily affected by insurgent activities. This led to the government deploying armed forces in these regions in order to control the violent situation. The Central Government enacted a special legislation so that Army could deal with the insurgent activities. With this objective, Armed Forces (Special Powers) Act, 1958 was enforced to empower Army personnel to carry out the counter-insurgency operation in the troubled areas of Assam in 1958 and in the other parts of the North-Eastern States of Nagaland, Tripura, Manipur, Meghalaya, Mizoram and Arunachal Pradesh in the year 1971. In the year 1990, this Act was extended to Jammu and Kashmir under the aegis of Armed Forces (Special Powers) Act, 1990 to deal with the infiltration of terrorist and proxy war/ State-sponsored terrorism supported by the neighbouring countries.In the present research paper, the author will deal with the reason why the Armed Forces (Special Powers) Act, 1958 was needed, why its retention is necessary, the response to human rights violation, suggestions to overcome its drawback.

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***Keywords**: Armed Forces, insurgent activities, National Socialist Council for Nagaland, Naga insurgency and Constitution of India.*

INTRODUCTION

It is the duty of every State to guard its citizens against aggression whether it is external or internal. In the performance of this obligation, the armed forces play an important role. For this purpose, the State maintains strong and equipped armed forces. The Army is one of the most powerful institutions in the world. Members of the armed forces have high esteem because of their professional integrity.

The primary role of the Armed forces is to protect the borders of the country and prevent any infiltration by insurgent groups. The duty of maintaining internal peace is of police authority. In India, there are 28 States and 8 Union Territory, in most of the States, the public tranquillity is in the hands of the police administration. However, there are certain States in India which face internal disturbance; Nagaland, Assam, Manipur, Tripura, Arunachal Pradesh, Mizoram and Meghalaya. These are the militant affected areas and the militants residing in the forest areas are involved in anti- State activities. They are causing harm to the civilians and the local authorities of the area from a long time. Their main target is police officials and politicians. Since the police authorities were overwhelmed with the prejudicial situation, the Central Government deployed Armed forces in the disturbed areas to maintain public order and tranquillity.

Since the North-East area is quite sensitive, the Central Government felt a need to enact a special legislation to deal with the insurgent activities. In order to eliminate the lawlessness and to control the militant activities, certain power was required to be given in the

hands of armed forces. Without effective legislation, the Army could not have been able to take necessary measures, as unlike police, a soldier is not empowered by law to use force. They cannot fire on insurgents and while operating in far-flung areas it is not possible to requisition the order of magistrate as required under section 130 of the Criminal Procedure Code, 1973.[1] Thus, a legislation was required to ensure efficient utilisation of the combat capability. With this objective, the Armed Forces (Special Powers) Act, 1958 was enforced to empower army personnel to carry out the counter-insurgency operation in the troubled areas of Assam in 1958 and in the other parts of the North-Eastern States of Nagaland, Tripura, Manipur, Meghalaya, Mizoram and Arunachal Pradesh in the year 1971. In the year 1990, this Act was extended to Jammu and Kashmir in the name of Armed Forces (Special Powers) Act, 1990 to deal with the infiltration of terrorist and proxy war/ State-sponsored terrorism supported by the neighbouring countries.

This legislation got its recognition under Article 246 of the Constitution.[2] Entry 1 of List I of the Seventh Schedule of the Constitution provides for the defence of the country. Entry 2A of List I deal with the deployment of any armed forces of the Union or any other forces subject to the control of the Union in any State in aid of civil power and also provides for power, jurisdiction, privileges and liabilities of the member of such forces which are on deployment.

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1 Section 130 of Criminal Procedure Code, 1973, provides that If any unlawful assembly cannot be otherwise dispersed, and if it is necessary for the public security that it should be dispersed, the Executive Magistrate of the highest rank who is present may cause it to be dispersed by the armed forces.

2 Article 246 of the Indian Constitution refers to three lists of subjects given in the Seventh Schedule of the Constitution: List 1: Union list - includes subjects in respect of which the Parliament has the sole power to make laws. List 2: State List – includes subjects in respect of which the State legislature has exclusive powers to make laws. List 3: Concurrent List – consists of subjects on which both the Parliament and the State Legislature can make laws.

Armed Forces (Special Powers) Act, 1958 (AFSPA) was enacted by the Central Government by exercising its power provided under Entry 2A of the Constitution. Indian Constitution imposes a duty upon the Union to protect the States against the internal disturbances and the deployment of forces under AFSPA was made to fulfil this objective.[3]

Delving into the historical background of AFSPA we can find that the legislation similar to the Armed Forces (Special Powers) Act, 1958 was present during the Colonial Rule as well. The Armed Forces (Special Powers) Ordinance was promulgated by the Britishers on 15 August 1942 to suppress the Quit India Movement. It bestowed special powers on officers to deal with the emergency situation. The concerned officer was empowered to use necessary force in order to suppress the disturbing situation. The powers extended to the killing of people. In the exercise of their power under the Ordinance they were provided with the immunity for the alleged act and prosecution was allowed only after the approval of the Central Government.[4]

At the time of partition in India in 1947, the Government of India in order to deal with the disorder in the various parts of India issued four ordinances – the Bengal Disturbed Areas (Special Powers of Armed Forces) Ordinance, 1947, the Assam Disturbed Areas (Special Powers of Armed Forces) Ordinance, 1947, the East Punjab and

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[3] The Union Government has a duty and, therefore, the responsibility expressly imposed on it to protect every state against external aggression and internal disturbance under article 355 of the Constitution.

[4] Section 4 of the Ordinance of 1942 dealing with the protection to persons provided: "No prosecution, suit or other legal proceedings for any order purporting to be done in obedience to any such order shall be instituted in any Court except with the previous sanction of the Central Government, and notwithstanding anything contained in any other law for the time being in force, no person purporting in good faith to make such an order or to do any act in obedience thereto shall, whatever consequences ensure, be liable therefor."

Delhi Disturbed Areas (Special Powers of Armed Forces) Ordinance, 1947 and the United Province Disturbed Areas (Special Powers of Armed Forces) Ordinance, 1947. These legislations got its base from the Armed Forces (Special Powers) Ordinance, 1942. The Armed Forces (Special Powers) Act, 1948 replaced all the four above mentioned Ordinances and this Act continued till 1957 and later on revived in the form of Armed Forces (Special Powers) Act, 1958. --

The Armed Forces (Special Powers) Act, 1958 was enforced when internal security in Assam was disturbed by the Nagas. The Nagas were opposed to the merger of their homeland with the rest of India. Nagas are tribal people who reside in the Hills of Assam and Manipur. The reason for such resistance was that they consider themselves racially different from the people of India. Because of which a referendum was conducted in which Nagas favoured for the separation of Assam and Manipur dominated by the Nagas people and declared independence in 1951. The decision of Naga people was not acceptable to the Central Government and government continued the merger. This resulted in the outbreak of violence.[5] For controlling the difficult situation, the Assam Government ordered for police action against the rebels, the government deployed Assam Rifles in the Naga Hills to control the crisis which arise at that time. The Naga Nationalist Council formed a parallel government in Nagaland in 1956. The violence got intensified and could not be curbed by Assam Rifles and state police. Centre provided assistance to the State government by sending the army to bring normalcy in the area. The President of India promulgated the Armed Forces (Assam and Manipur) Special Powers Ordinance in 1958 to provide special power to the armed forces to control the situation in the disturbed

[5] Pushpita Das, *The History of Armed Forces Special Power Act*, in Vivek Chadha (ed.), *Armed Forces Special Powers Act: The Debate*, IDSA Monograph Series No. 7 New Delhi, 12, 2012.

area in Assam and Manipur. The Bill was introduced to replace the Ordinance which later took the form of legislation.

AFSPA came into the public debate during 1980s, when various news about the human rights violation was reported in the State of Assam and Manipur where it was alleged that the army personnel killed many tribal people in the name of counter-insurgency operation. The operation 'Blue Bird' in Manipur was highly criticised for violating human rights. VariousInternational Organisations in their report mentioned about the disappearance, summary and extra-judicial execution of local people. Resistance against the said legislation further elevated due to the twelve years hunger strike by Irom Sharmilla. The most problematic part of this legislation is Section 4 of the Act. This Section gives wide powers to the armed forces to deal in the disturbed area.[6] This Section authorises army personnel to enter into any place and can search and seize any property. The power of the army extends to the killing of any suspect whenever required as directed by the Armed Forces (Special Powers) Act, 1958.[7]

The alleged fake encounter of Manorama Devi further exacerbated the situation.[8] In reaction to this incident, the Manipuri women came on the road in nude state to show their protest against the encounter which brought AFSPA into the limelight. Not only the Indian media, but international media also took this matter seriously. Seeing this, the Amnesty International gave its report in which it favoured the repealing of the Act of 1958. The government appointed the Jeevan

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6 Section 4(c) of the Armed Forces (Special Powers) Act, 1958, gives power to the armed forces to open fire in the disturbed area.

7 in Vivek Chadha (ed.), *Armed Forces Special Powers Act: The Debate*, IDSA Monograph Series No. 7 New Delhi, 12, 2012.

8 Ibid.

Reddy committee in 2005[9] which gave its opinion against the continuance of this Act and suggested for repealing the Act of 1958. It recommended for the incorporation of the provisions of the said legislation in Unlawful Activities Prevention Act (UAPA).

Justice Jeevan Reddy Committee demanded a review of Armed Forces (Special Powers) Act, 1958 from various sections of the society. A large group of lawyers, human rights activist, organisations appeared before the Committee to express their views. The general officer commanding the Mountain Division was of the view that power and protection given to army officer under Armed Forces (Special Powers) Act, 1958 is justified because the army plays a demanding role in the prevention of the insurgency. The Committee also met the various organisations of Tripura. The Director-General of Assam Riffles focussed on the need to retain AFSPA. However, the local people of Manipur had a diverse opinion. The civilians were of the view that in order to maintain peace and harmony there is a need for a stronger law which must be based on humanitarian approach. Some were of the view that the Army should not leave the place but they demanded for the withdrawal of AFSPA. On one hand, the Committee recommended for the withdrawal of AFSPA,[10] on the other it took the view that provisions of AFSPA should be inserted under the Unlawful Activities (Prevention) Act, 1967 (UAPA). The Second Administrative Reform Committee headed by Veerappa Moily recommended for the repeal of AFSPA and like the Justice Jeevan Reddy Committee suggested that the provisions of AFSPA must be inserted in UAPA.

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[9] The Central Government set up a 5-Member Committee under the Chairmanship of Justice B P Jeevan Reddy, a former judge of the Supreme Court with the following four members – (i) Dr S B Nakade, (ii) Shri P Srivastava, (iii) Lt Gen. (Retd) V R Raghavan, (iv) Shri Sanjoy Hazarika.

[10] The text of the report was leaked to *The Hindu* and is now available at <http://www.hinduonnet.com/nic/afa/afa-part-i pdf>.

Subsequently in the year 2013, a Commission was appointed by the Supreme Court of India which was headed by Justice Santosh Hegde,[11] in response to the numerous writ petitions seeking an investigation into an alleged extra-judicial execution committed in the State of Manipur between 1978 and 2010. Commission was of the view that security forces have transgressed their limits and used disproportionate force while carrying out the counter-insurgency operations and recommended that the government should remove Armed Forces (Special Powers) Act, 1958 from the north-east area.[12] However, at the same time, the Commission also stated that the State police is not competent enough to deal with the insurgents. They are not trained in a way that they can deal with the terrorist and they are also not well equipped. On the other hand, the Commission admitted the fact that the army personnel are trained to carry out such operations and to kill and destroy the enemy. So, the Commission suggested to train the State police in that manner.

If we go back in the year 1998, we can see that the constitutionality the AFSPA was challenged in the case of *Naga People's Movement of Human Rights* v. *Union of India*[13], the Supreme Court upheld the constitutional validity of the Armed Forces (Special Powers) Act, 1958 and ruled that the power given to the army under the Act is not arbitrary or unreasonable. The power conferred under Section 4(a) to (d) and Section 5 of the Armed Forces (Special Powers) Act, 1958 is not violative of Article 14, 19, and 21 of the Constitution. On the

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[11] Writ Petition(Cri) No. 129 of 2912 filed in the case of Extra-judicial Execution Victims Families Association Manipur (EEVFAM) v. Union of India and Writ Petition (C) No. 445 of 2012 in Suresh Singh v. Union of India.

[12] The Commission, after having several sittings including public sittings at Imphal, Manipur, and having received many written submissions, documents, affidavits including personal appearances by witnesses for the petitioners and the respondents, submitted its report on 30 March, 2013.

[13] 1998 AIR SCC 459.

instances of an act of violence on women and children, the Supreme Court made it clear that such officers should be prosecuted and punished. In order to curb the incident of extra-judicial killing and violence on the innocent people of the area, the Supreme Court issued certain guidelines for the army which they have to follow at the time of the operations.

In Jammu and Kashmir, the Armed Forces (Special Powers) Act, 1990 was a controversial topic from the very beginning when it came into existence. However, after the incident of Pathribai Killing, the voice against the legislation became very high. The killing of innocent people by the army, rape of girls and women, killing of youth by declaring them terrorists – such news became very common in 1990-2000. Thus, the people demanded to do away with the legislation. The concern over the violation of human rights of the people was raised.

This is the only side which is brought to the attention of the public. Every coin has two sides and nothing should be judged before knowing both the sides. Every time news was made that army was torturing the local people under the garb of the legislation, the flipside was not thrown light on. It is believed that the legislation is violating the human rights of the people. However, in reality, whether the basic rights of the people were tarnished by the army was never closely considered. At many instances, it was found that local people were given money by the insurgent groups so as to malign the dignity of the army.

An NGO on human rights has alleged that during the period of 1989 to 2010 military and paramilitary forces deployed in Jammu and Kashmir were responsible for the extra judicial killing and voluntary disappearance. As per their report, in Manipur enforced

disappearance is at a high level.[14] Armed forces personnel have also been accused of committing rape and harassing women. It is alleged that Commanding Officers who are at a higher position try to save their subordinates who are accused of such acts. However, the reality is that armed forces have shown zero tolerance in such matters and have taken strict action against the violators. In 1996, a rape incident took place at Chhaturgul village in Srinagar where four BSD personnel were charged for raping a woman during their deployment. The Army Court sentenced them to ten years imprisonment.[15] So it is wrong to say that the Army does not punish its people for any wrongdoing. This is one shade of reality and the other shade of reality is that sometimes the local people who support terrorist/insurgent groups under their influence throw false accusation on the army.

In 2005, an incident was reported in Kupwara district where a Major was charged for molesting a twelve-year-old girl and her mother during a search operation. Later on, it was proved from DNA report that Major was innocent and he did not commit the alleged act. Many times, militants and their supporters falsely accuse armed force of fake encounters and enforced disappearance. In 2011, in the State of Tripura, Border Security Force (hereinafter "BSF") killed two labourers. BSF alleged that the men were smugglers and the firing was done in self-defence. As per National Human Rights Council (hereinafter "NHRC") directives the BSF paid compensation to the family of the deceased.[16] Even the judiciary has taken pro-active action in taking the cognizance of the fake encounters.

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[14] These Fellow Must be Eliminated: Relentless Violence and Impunity in Manipur, Human Right Watch, p.56, September, 2008.

[15] J&K: HC Upholds Dismissal of 4BSF Men for Rape, *Outlook*, 9 August 2011.

[16] BSF compensating firing victim's families in Tripura, *The Hindu*, 20 November 2013.

Quite often, the report of a death in fake encounter is false since this is done to obtain money from the armed forces. If the arms and ammunition are recovered from the house of any person then it is the local media who shows that the armed forces have placed them in the house. In *Pathribal encounter case*, the militants used people especially women as a human shield to escape from the clutches of the armed forces when the army was conducting a search operation. The media don't have courage to bring the truth on the face because they live in the shadow of fear.

Armed forces personnel too are a human being and they too have human rights. In order to understand their situation, one must know in what conditions they have to work. Under AFSPA they have to work in an area which is declared as disturbed. In the disturbed area, the local media is under the influence of the militants. It is obvious that they will present what the militant wants and tries to portray. Most of the times, they show that our soldiers are the great violator of human rights. Whenever in a search operation if any civilian dies by mistake the human rights activists and the civil society tries to represent that army has done it intentionally. On the other hand, it is not covered by the media when a militant kills a civilian.[17] When a soldier is killed in a counter-insurgency operation by a militant than human right activist becomes blind. The so-called urban society creates an impression that soldier is enemy of civilians.

The disturbed areas where army personnel have to carry out operation is mostly covered with the dense forest. The militants are quite familiar with that area making it easy to hide in the forest and attack army people while the armed forces face much difficulty in

[17] Militants have killed more than 10 panch members in J&K, who were elected in Panchayat elections of 2011. See: *The Times of India*, 18 April 2014 and 21 December 2014.

performing their functions. It becomes very difficult for them to survive in that atmosphere and carry out their duty.

Article 21 of the Constitution of India guarantees to every person the right to life which includes right to live with dignity. Member of armed forces have this right and if we will respect their right then only we can understand their situation. The army man pledges to serve its country and shows true faith and allegiance to the Constitution and takes a vow to sacrifice his life for the country. The soldier has to go through rigorous training and serving for their country costs them their life.. Quite often they lose their lives to technical problems like faulty jets, and defective ammunitions.

Though many favour for repealing this legislation, if we go by the situation of disturbed areas we can see that a large amount of people argue about the necessity of the AFSPA in handling insurgency. The military bureaucracy is of the view that AFSPA is absolutely necessary to combat insurgency in the country and to protect the borders. Lt. Gen Harwant Singh, former chief of the army, states that, "*In a virulent insurgency, security forces just cannot cooperate without the cover of the AFSPA. Without it, there would be much hesitation and caution which would work to the advantage of insurgents.*" Maj. Gen. Bakshi said that there is a concerted campaign on the part of some foreign-funded NGOs to demonize the Army and delegitimize its counter-insurgency and counter-terrorist operations.[18] Lieutenant-General Vijay Uberoi viewed that the Army needed special legal protections and power in those areas where there is a threat. Even General V. K. Singh emphasized that the Armed Forces (Special Powers) Act, 1958 was a functional requirement of the army.

[18] Major General G. D. Bakshi, AFSPA debate: Disarming the state, *The Times of India*, 18 November 2011.

If we consider the present situation, in Jammu and Kashmir and in north-east area the situation has improved considerably. Most of the groups of Maoist have surrendered to the State government and many of them have joined the mainstream of the society. Some of them have joined the counter-insurgency operation in which they assist the military forces and para-military forces. In this way, they have become a respectable citizen of society. Most of the Maoist leaders who have left the anti-national activities have joined the politics and are now serving society. Those who opted to continue the militant activities were gunned down by the military forces. In the area of Jammu and Kashmir, we can see at present that the terrorist activities have been reduced. This is because of the presence of the AFSPA in the region. Adil Ahmad Mir, Bilal Ahmad Bhat, Adil Ahmad Wani were some top terrorist commanders who were killed by the military. The armed forces in the past 2 to 3 years have eliminated more than a thousand terrorists and have reduced fear in the region. Operation 'All Out' in 2017, 'Operation Calm Down' in 2016, 'Operation Sarp Vinaash' in 2003 are major operations which were carried out by the army to flush out the terrorists. Recently 'Operation All Out' has eliminated uncountable terrorist from the valley and has brought peace in the region. --

AFSPA gives additional power to operate in an environment where there is high level of complexity and it becomes difficult for the army to differentiate between the local people who are innocent and the terrorist who merges with the civilians and takes the undue benefit of this. Even the former Finance Minister P. Chidambaram was of the view that AFSPA must be made more humanitarian. Though he criticised the army for its role under AFSPA but at the same time he was also of the view that if the legislation is given a more humane approach then it can be retained. Many people are of the opinion that

in Kashmir AFSPA is meant only to distract attention and the army is always made the scapegoat. Army says that they will happily leave Kashmir on the shoulders of the State police if they are convinced that the situation is under control and no more insurgent activities will storm the peace of the valley.

The positive effect of this legislation on the north-east area where it was implemented is that many known insurgent groups have been eliminated. The Naga insurgency in 1958, the Mizo insurgency in 1966 was brought under control at that time only. In Assam, the terror of United Liberation Front of Assam (ULFA) was from 1980's. The armed forces have restrained the activities of a member of this group to a great extent. Most of the insurgents have either surrendered or they have been given killed by armed personnel. There vow to have an independent nation no longer exist. The National Socialist Council of Nagaland –Issac/Muivah faction (NSCN-IM) entered into a dialogue with the Government of India to enter into a peace accord. Even ULFA entered into an agreement with the government in 2010 for maintaining peace in the region. The National Socialist Council of Nagaland –Khalang faction (NSCN-K), the other faction of The National Socialist Council of Nagaland which was against the idea of establishing the harmonious relation with the Government of India has been observing ceasefire agreement since 2001.

CONCLUSION AND SUGGESTION

In several States of India especially in the north-east area, there are many insurgent groups which are fighting for their homeland and many are involved in it for political purposes. In Jammu and Kashmir insurgency began as a result of a conspiracy by the neighbouring country Pakistan. They sponsor terrorism in the region. The militants were involved in killing civilians, people in the administration,

politicians, and police officials just to create fear and insecurity among the people and to force the government to accept their demands. A separate State of Bodoland was demanded by Bodos and for this, they created a violent situation in the State. Owing to this, the Union Government decided to declare the North-East States and Jammu and Kashmir a 'disturbed area' and deployed armed forces in the region. The armed forces were under a duty to carry out the counter-insurgency operation and for this they needed special power to deal with insurgents. With this objective, AFSPA was enacted.

Many Human Rights Organisation and NGOs allege that armed forces are the violator of human rights of civilians. They consider that AFSPA is a draconian law and it is against the rule of law and human rights law. Sometimes the army personnel transgress their limits but often fake news is created against them to malign the dignity of the army. Primarily, because sometimes they get funds from some foreign source to create such a story. It is demanded that when army personnel are accused of any violence they must be tried in civilian court so that they can get proper punishment. In reality, when any soldier commits any offence, he is tried in army court, punishment for which is much severe than the punishment provided in the civilian court. Moreover, they are subject to court martial which a civil person is not subject to.

Though the so-called urban society criticises AFSPA and urges for the removal of it but if we look at the present scenario, we can see the positive result of this legislation. At present AFSPA is limited only to the State of Nagaland, Manipur (except Imphal Municipal area), three districts namely Tirap, Changlang and Longding of Arunachal Pradesh and the areas falling within the jurisdiction of the eight police stations in the districts of Arunachal Pradesh, bordering the State of Assam. Recently, Centre extended AFSPA on Nagaland for

further six months. In 2018, the Government removed AFSPA from Meghalaya just because the insurgent activities had stopped in the region. In 2015, PM Narendra Modi signed a peace agreement with NSCN-IM. It still applies to Jammu and Kashmir. This shows that earlier the ambit of AFSPA was wide. It extended to all the States of the north-east region but now it is limited to only a few States. The obvious reason for this is the counter-insurgency operation carried out by armed forces under AFSPA which has eliminated the insurgent groups from the area.

The AFSPA has to face many backlashes because of certain provisions which it contains such as in Section 4 the army personnel can enter any suspect's house and do search and seizure and can open fire whenever considered necessary. In the present paper, the author wants to suggest some recommendations which may do away with the drawbacks the legislation has. They are as follows,

- While using the powers under Section 4 to suppress the insurgency the armed forces transgress their limits. How much force is necessary and how much is out of the ambit, must be incorporated in this section to ensure a fair use.
- There is an allegation that Section 5 gives immunity to the armed forces as it provides that no legal proceedings can be initiated against any person in respect of anything done by them in the exercise of a power conferred by the Act except with the previous sanction of the Central Government. This arbitrariness can be remedied by adding that if the government rejects any sanction than it must give sufficient reasons for it.
- The government must ensure that if the human rights of any victim are violated by the members of armed force than the

compensation scheme should be available for them and necessary amendments must be made in the legislation with regard to this.

- Necessary amendments should also be made in the army law to deal with the offence committed by the army personnel during the counter-insurgency operation.
- The Commanding Officer must see that the decision given in the *Naga Movement Case* must be complied with. The guidelines laid down by the Supreme Court must be followed while performing any search operation.
- The proper mechanism has to be established so that if any violation of human rights takes place by army personnel then the victim or the family member of the victim must report it to the higher Commanding Officer.
- The army personnel must be given requisite training as to how they must conduct themselves during the seizure or search.
- The media plays an important role in portraying the image of the army in society. If any news about violation by armed forces comes to them then they must first authenticate its correctness. Media should be prohibited to do the media trial on any act in which army personnel is involved.
- The army should develop a strong mechanism so that when any act of human rights violation by army personnel is reported a fair investigation should be conducted in the matter.

Indian citizens must try to understand why the power under AFSPA is provided to the army. A soldier sacrifices his life just to

save the country from external and internal danger and conflicts. Those who give the label of 'draconian law' to the AFSPA must know that this legislation is made for the security of the nation and not for suppressing any innocent people. If we look back at our past when the Golden temple was seized by the Khalistani terrorist, the police department showed their incapacity to handle the situation then it was the army who took the responsibility and gunned down every terrorist who was inside the gurudwara without harming any local civilian. In the Mumbai attack when the Taj Hotel was targeted, it was the special commandos who came forward to save the life of thousands.

At last, the author would conclude by saying that it is not false that many times few army personnel have under the garb of this legislation violated the human rights of innocent people but because of few people, we cannot say that the whole army is corrupt. If anyone has done wrong and took the shield of this legislation than he has to be punished for it. The same can be ensured by incorporating the aforementioned recommendations. Thus, at last we can say that AFSPA is not a curse for the area where it is implemented rather it is a boon for it. If there is any drawback in the legislation then we must make necessary amendment but repealing the Act is no solution.

THE CONFLICT BETWEEN DIPLOMATIC IMMUNITY AND NATIONAL SECURITY IN INDIA

Mahima Dutta[*]

Abstract

"Diplomacy is the conduct of relations between one state with another by peaceful means, but the real purpose of having a diplomatic mission in a country is often vague"[1] *In a world where everyone is connected and we are no longer separated by the boundaries of our countries, diplomacy has an even more important value than before. International ties are essential for creating a world where all of us are global citizens, treated equally, and granted the same human rights everywhere despite the state borders, nationality, ethnicity, and other differences. National interest over maintaining these international relations becomes challenging in these times, where acceptance in the international community is essential. National security is often compromised due to espionage incidents but worse is when the diplomats that enter the country officially, protected by diplomatic privileges are the ones spying on the host nation. For India, bordering nations have always posed a threat be it of terrorism or territorial disputes, hence it becomes vital to draw the line and determine the stance of maintaining diplomacy while guarding our national security. This paper analyses the current laws in place for diplomacy, national security, and the changes that ought to be bought especially due to the rising rates of such incidents. The paper attempts to analyse*

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[1] Daryl Tarte, *Diplomacy, Fiji: A Place Called Home*, p.225, ANU Press, 2014.

the existing cases of diplomats abusing immunity and privileges to put forth activities beyond the scope of legal powers, like espionage. International law has a direct connection with human rights law in regards to these espionage charges levied at diplomats or other officials. Further, it dwells on the need to modify pre-existing laws under the international convention, especially, The Vienna Convention of 1961. The international community is in need ofcollaboration and needs to define laws to guard itsnational interest while maintaining diplomatic relations with other countries.

Krywords: *Diplomatic Immunity, National Security, Diplomacy, International Relations.*

INTRODUCTION

A country's national security is always the topmost priority of the nation. As said by Phil Karn "*National security is the root password to the constitution*". With the dawn of a global era and the increasing importance of foreign relations with countries, India has indeed come a long way in managing both national as well as international interests. The country maintains healthy diplomatic relations with countries all around the globe barring a few exceptions. India has always been troubled by itsneighbors, often seen as a regional bully due to its high standing in the region of South Asia. The value of a "regional influencer"[2] like India can be anticipated to advance and with it the worldwide worry concerning the influence it exercises.

[2] Sonu Trivedi, Early Indian Influence in Southeast Asia: Revitalizing Partnership between India and Indonesia, India Quarterly, vol. 66, no. 1, p.51–67, MAR 2010.

Despite having trifling disputes with her neighbors, a constant source of military tension for India has been Pakistan, principally over the issue of Kashmir. Military attacks and new guerrilla warfare strategies have become a way of being, particularly the constant daily tensions in Kashmir with militants. Nevertheless, both the nations still engage in diplomacy, with the High commission of each country being present in the other as well as diplomats from both the countries involved in embassy programs and additional diplomatic missions.

Recently, there have been issues with sustaining cordial diplomatic relations, with an ever long history of distrust between the nations; such activities lead to the question of whether diplomacy stands a chance?

On 31st May 2020, two visa assistants of the High Commission of Pakistan in New Delhi were apprehended by the Delhi Police Special Cell for allegedly indulging in espionage. The Indian Government declared both of them *as persona non grata* which essentially translates to "an unwelcome person" "a legal term used in diplomacy that indicates a proscription against a foreign person entering or remaining in the country." They were directed to leave the country within 24 hours.[3]

India's laws and regulations on maintaining diplomatic ties are governed by **the Vienna Convention of 1961**[4], which was brought into effect in India by the passing of **The Diplomatic Relations (Vienna Convention) Act, 1972**[5]**.** The act sets down rules besides

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[3] The Hindu, Pakistan summons senior Indian diplomat over expulsion of High Commission officials on espionage charges (June 01, 2020), https://www.thehindu.com/news/international/pakistan-summons-senior-indian-diplomat-over-expulsion-of-high-commission-officials-on-espionage-charges/article31719552.ece

[4] The Vienna Convention on Diplomatic Relations, 1961.

[5] The Diplomatic Relations (Vienna Convention) Act, 1972.

providing privileges to diplomats from the sending country within India; vitally being immunity against arrests and trial of diplomats. Under the Vienna Convention, the Diplomat enjoys complete immunity against arrest or detention in the host country.

Article 29[6] :

"The person of a diplomatic agent shall be inviolable. He shall not be liable to any form of arrest or detention. The receiving State shall treat him with due respect and shall take all appropriate steps to prevent any attack on his person, freedom or dignity."

Article 37[7] :

1. *"The members of the family of a diplomatic agent forming part of his household shall, if they are not nationals of the receiving State, enjoy the privileges and immunities specified in articles 29 to 36.*

2. Members of the administrative and technical staff of the mission, together with members of their families forming part of their respective households, shall, if they are not nationals of or permanently resident in the receiving State, enjoy the privileges and immunities specified in articles 29 to 35, except that the immunity from civil and administrative jurisdiction of the receiving State specified in paragraph 1 of article 31 shall not extend to acts performed outside the course of their duties. They shall also enjoy the privileges specified in article 36, paragraph 1, in respect of articles imported at the time of the first installation."

As per the convention, a diplomat enjoys complete immunity from the criminal jurisdiction of the receiving State. It is time for the global society to re-visit the Vienna Convention, which grants a great

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[6] Article 29, The Diplomatic Relations (Vienna Convention) Act, 1972 , Act No. 43 Of 1972.

[7] Article 37, The Diplomatic Relations (Vienna Convention) Act, 1972 , Act No. 43 Of 1972.

degree of legal protection to diplomats and their families in the nations where they are posted. The convention was intended to facilitate diplomats to carry out their duties without hindrance even in a hostile environment. Using its provisions to shield diplomats facing charges of crimes against the country, compromising the national interest of the State cannot be seen as justified.

The foremost issue that arises from the application of the diplomatic convention is the complete application of it overall levels of diplomats, the act provides for the immunity from criminal charges to all levels of employees within an embassy or high commission or a diplomat mission. This essentially translates to even the staff of the diplomat from the sending state, to be protected from any criminal charges. The fundamental problem is whether this blanket coverage is essential? Is it just a way that leads to an abuse of the privilege granted; an easy paved way for illegal activities to foster and be carried out within the host country?

Another enigma that comes up is why a country would treat its alleged government sent spies as criminals? Why would they criminally charge and try their diplomats? Diplomats of one country might be seen as an offender here for charges of espionage, but in their home country, they would be honestly viewed as mere agents on a job. Further, the protection against arrests is granted only when the activities carried are under the direct pursuance of duties. When the nature of activities lies outside the course of the official duties, is it fair to provide such protection from the law?

Diplomacy in the name of covering up illegal activities, carrying out espionage is centrally against the national interest of any country. Owing to the delicate relationship between both India and Pakistan, any information leaked will lead to a danger to the interest of India's national security. There is surely a need for amendments in the

existing diplomatic rules and regulations, with a special focus on the national security law to balance the country's national interest along with maintaining foreign relations. Diplomacy otherwise becomes a sly term for official spying and the essence of maintaining inter-country relations becomes futile.

This research paper aims to find solutions to various issues like balancing diplomatic ties along with preserving national security's interest, examining the cases in the past and current times where such conflict is seen, and international stance on balancing the interest of the country over international relations. The paper attempts to analyse the existing cases of diplomats abusing immunity and privileges to put forth activities beyond the scope of legal powers, like espionage. International law has a direct connection with human rights law in regards to these espionage charges levied at diplomats or other officials. Further, it dwells on the need to modify pre-existing laws under the international convention, especially, The Vienna Convention of 1961. The International community faces the need to collaborate and define laws to guard national interest while maintaining diplomatic relations with other countries.

INTERNATIONAL LAW AND ESPIONAGE

International law is a field of law that is still developing, despite countries being bound by bilateral treaties or common UN conventions, the binding powers often are futile. The Foremost issue that points to the lack of development of the United Nations Charter (UN Charter) is the absence of provisions of law over espionage. There are numerous rudiments to espionage with regards to its intent, approaches, and method; however, the imperative point to be noted is the lack of attention to espionage as an overall issue in peacetime in international law.

Espionage is only attended to as a problem of law during war in international law[8]. The international law on "spying" is defined best as "underdeveloped," an argument present repetitively in a few of the research papers or articles based on the issue of espionage and international law.[9]

Therefore it is seen that utmost of the writings relating to espionage and international law discourses on conditions in where wartime laws are applicable. The laws of espionage during periods of war, "*based on the Hague Regulations of 1907, the Geneva Conventions, the Protocol Additional to the Geneva Conventions*", or additional provisions, are direct[10]. The legal commentary that is in existence on espionage during peacetime is divided into three groups. According to legal scholars, these three groups are the broad categories of views held towards espionage missions by countries in other states.

The views vary as the first group believes that during peacetime, espionage is not a crime and should be held legal in International law. The second group states that regardless of wartime or peacetime, espionage should be considered an illegal activity. The third group is mixed with opinions of both sides and believes espionage to be both legal and illegal during peacetime, should be dependent on evaluating factors in each case.[11]

The issue of ambiguous law and lack of legal provisions is especially highlighted when there is a direct relationship between the conflicts

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8 Demarest, G. B., Espionage in International law, *Denver Journal of International Law and Policy*, 24, 321-348, (1996).

9 Craig Forcese, Spies Without Borders: International Law and Intelligence Collection, Journal of National Security Law and Policy, Vol. 5, (2011)

10 A. J. Radsan, The Unresolved Equation of Espionage and International Law, 28 MICH. J. INT'L L. 595 (2007)

11 A. John Radsan, Second-Guessing the Spymasters with a Judicial Role in Espionage Deals, 91 Iowa Law Review v. 1259, 1277-78, (2006).

of spying by a state in another country. The conflict between the sovereign interests of a country and the extraterritorial, unjustified espionage activities of the other nation[12]. Nevertheless, it cannot be said that the entire arena of espionage issues is barren of any laws. Concerning the application of human rights international law and other conventions, there can be overlapping of espionage in violation of those humanitarian international provisions of the convention.[13] Especially when the UN provides for non-interference of other states in internal matters of the nation. This provision is explicitly present in the UN charter itself, to uphold the sovereignty of a nation over its domestic and military affairs[14].

DIPLOMATIC IMMUNITY

Diplomatic immunity is amongst the initial elements of maintaining overseas affairs, the concept can be traced to ancient Greece as well as Rome.[15] This long dating element has now shaped into a feature that is legally incorporated by the codification of the Vienna Convention on Diplomatic Relations taking charge of former traditions and customs.

In the "Draft Articles on Diplomatic Intercourse and Immunities",[16] Article 29 declared by the International Law Commission that *"a diplomatic agent shall enjoy immunity from the criminal jurisdiction of the receiving State*"

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12 Supra, note 9.

13 Arbër Ahmeti, Question on legality of espionage carried out through Diplomatic Missions, IAPSS, (2015), https://www.iapss.org/2015/02/16/question-on-legality-of-espionage-carried-out-through-diplomatic-missions/

14 Article 2 (4), Charter of the United Nations, 1945.

15 Moutzouris Maria, Sending and receiving: immunity sought by diplomats committing criminal offences, Rhodes University, Faculty of Law, 2009.

16 Report of the International Law Commission covering its Tenth Session, 1958 (General Assembly, Official Records, 13th Session, Supp. No. 9 (A/3859), (1958).

The explanation provided in the commentary highlights that this immunity is exclusively provided over the criminal jurisdiction of a state and not applicable to the jurisdiction of the state in civil and administrative matters[17]. The charges of espionage are of serious nature and yet the diplomats avail the immunity provided to them and are deemed heroes by the sending state rather than criminals for the offence.

A central notion of diplomatic law is that of diplomatic immunity, which originates from immunity established by the state. "A diplomatic agent performing different tasks within a state is covered by the inviolability principle: That is, the diplomatic agent is considered inviolable"[18].

The privileges, duties, and rights of diplomatic members have constantly developed from the past to the present. These laws are still modified and new provisions yet added from time to time. The notion of diplomatic representatives living in a different nation, away from their nations originates from the past, dating back to the 15th century[19]. Nevertheless, the role of the diplomats has much evolved than that of the past, further, the Vienna convention has provided for each state to have a right to both send and receive diplomats on an envoy.

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[17] L. C. Green, Diplomatic Immunity in a Criminal Cause: Reg. v. Madan, University of Malaya Law Review, Vol. 3, No. 1 (July 1961), pp. 131- 134, National University of Singapore (Faculty of Law), https://www.jstor.org/stable/24874794.

[18] Nehaluddin Ahmad, The Obligation of Diplomats to Respect the Laws and Regulations of the Hosting State: A Critical Overview of the International Practices, Faculty of Law and Shariah, Sultan Sharif Ali Islamic University (UNISSA), 30 August 2020.

[19] Eileen, Denza, Vienna Convention on Diplomatic Relations, United Nations Audiovisual Library of International Law, (2009) http://www.thehindu.com/thehindu/2003/06/10/stories/ 2003061000701000.htm

Abuse of Diplomatic Immunity

There is an abuse of the privileges and immunity granted to diplomats under the Vienna Convention. Although the law provides for permissible, in

ert gathering of "open source intelligence information by accredited diplomats" The Vienna Convention on Diplomatic Relations states that diplomatic agents have an obligation to not intervene in the domestic matters of the host nation they are living in. Further, it is clearly stated in the convention that the diplomatic premises of a commission or embassy cannot be used for any matter that is outside the legal functions provided for, or inconsistent with the general provisions of the international law. Further, diplomatic missions are entitled to follow the special agreements in force between the host nation and their sending country at that point in time.[20]

In the international community, there have been a plethora of cases where diplomatic mission members are caught as spies. In India, we see the recent case of the Pakistan High commission but even in Europe and USA, there have been cases of espionage charges levied against diplomats. It is an unsaid understanding between the nations of the world that diplomatic missions are a form of open spying on other countries, as it is not possible to not discover countries' secrets while working with its government.

"*Theresa May says the 23 Russian diplomats kicked out of Britain are undeclared intelligence officers*"[21] In simple words they are spies. Many believe that to be a good diplomat one needs to possess good oratory skills and, confidence, convincing powers, the ability to retain information, and a mannerism. Nonetheless turns out that diplomacy

[20] Article 41, Vienna Convention on Diplomatic Relations.

[21] BBC, When is a diplomat really just a spy?, https://www.bbc.com/news/newsbeat-43556816, 2018

is a façade as claimed by many, it is a sly terminology given to official spying.

It is difficult to draw a line between the muddy waters of diplomacy between countries and espionage missions for other nations. "*Every embassy in the world has spies*, says Prof Anthony Glees (director of the Centre for Security and Intelligence Studies at the University of Buckingham) and because every country does it, he says there's an *unwritten understanding that governments are prepared to turn a blind eye to what goes on within embassies.*"[22]

When we take a look at India, the Incident of May 2020 is not the sole incident where Pakistan's diplomats have been caught as spies instead. In history, there have been many incidents where Pakistan officials have rather been caught and declared as spies by the Indian Government The foremost example of the first incident of espionage, catching of Pakistani diplomats exchanging crucial information about India is the case of "*Shadi Lal Kapoor,* which is the first instance of espionage against India, dating back to 1951"[23]

Shadi Lal Kapoor was a diplomat of a junior level junior-level who worked in the ministry of external affairs and was deployed in the Indian consulate in Karachi in the year 1950. He was convinced and recruited as an officer working for the Pakistani Intelligence Bureau and was tasked with getting information on the happenings of the consulate of India in Karachi. He was caught when he was posted back to India, in Delhi and continued to remain in touch with IB and was then apprehended by Indian authorities.[24]

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[22] Ibid.

[23] NEWS18, A Lengthy History of Espionage Tactics: When Pakistan Double-crossed India after Nehru's Generosity, 2020, https://www.news18.com/news/india/a-lengthy-history-of-espionage-tactics-when-pakistan-double-crossed-india-after-nehrus-generosity-2647615.html

[24] Ibid.

Another case in the history of Pakistan's espionage charges in India is a high-level case . Despite the former Kapoor case being of a junior level employee, this was of a high-level official. A major such incident was that of Brig Zaheer ul Islam Abbasi in 1988, who was the head of the defence sector in the High Commission of Pakistan in New Delhi. Brig influenced and recruited a *"retired major of the Indian Army"*. He then used the influence of the retired army major to extract data in relation to the positioning of military officials, deployed soldiers, further any additional military information concerning the Indian force.

Despite all safety measures taken by the brigadier Abbasi, the active relation between Brig and the Indian retired major came under the radar of the Indian intelligence, *"counter-espionage agency in Delhi"*. Finally, he was caught red-handed in the act through a methodically calculated setup. An operation was set up in a hotel in New Delhi, where both Brig Abbasi and his inside informer, the retired Indian major were caught, exchanging official papers and giving money to the informer[25]

Therefore we see that the recent actions of Pakistan are not new and neither are they unique to India. Cases of diplomatic espionage are common and spread globally, as mentioned earlier in the paper "unsaid awareness" of the fact that diplomatic missions are bound to have spies is present globally. The action taken by the Indian authorities in the recent case of Pakistan's diplomats spying is seen to be in consonance with International law.

There is no violation or step into any excessive role by actions of India, on its part. The action of declaring the officials as *persona non grata* taken against the diplomats is justified as per the Vienna

[25] Ibid.

Convention as well the established International custom[26]. paragraph 1 of Article 31, of the Vienna Convention states that the embassy agent will have immunity from the jurisdiction of criminal matters of the receiving state[27].

The article when read with Article 29, conforms to the customary rules of international law[28] Article 41 of the convention dictates, that person enjoying the immunity and privilege granted under the diplomatic convention is bound to adhere to the rules and laws of the hosting nation. In accordance with this, if a diplomat commits an act violating the laws especially serious criminal law, they possibly will be affirmed to be "*persona non grata*" however diplomats on no occasion can be put on trial or taken legal action against by the receiving country.[29]

Article 41[30] and 42[31] of the Vienna Convention on Diplomatic Relations, classified the central ideologies on the obligations of diplomatic missions that are owed to the host state that have existed previously as the customary law, "*such as the duty to respect laws and regulations of the receiving state, the duty not to interfere in internal*

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[26] Supra, note 11.

[27] Article 31, The Diplomatic Relations (Vienna Convention) Act, 1972 , Act No. 43 Of 1972.

[28] Article 29, The Diplomatic Relations (Vienna Convention) Act, 1972 , Act No. 43 Of 1972.

[29] Nehaluddin Ahmad, The Obligation of Diplomats to Respect the Laws and Regulations of the Hosting State: A Critical Overview of the International Practices, Faculty of Law and Shariah, Sultan Sharif Ali Islamic University (UNISSA), 30 August 2020.

[30] Article 42, The Diplomatic Relations (Vienna Convention) Act, 1972 , Act No. 43 Of 1972.

[31] Article 41, The Diplomatic Relations (Vienna Convention) Act, 1972 , Act No. 43 Of 1972.

affairs, and the duty not to misuse diplomatic premises for wrongful purposes."[32]

The norm of diplomatic immunity is a deep-rooted principle of international law. It is a generally accepted point that diplomacy is an essential element for the functioning of international relations, deprived of which global relations will face extinction.[33] For quite some time it is witnessed that, the misuse of "privileges and immunities" by diplomats, and nation's governments, institutes the biggest challenge to the successful application of the Vienna Convention.[34]

The rule of law stresses that the offences committed even by the diplomats must be properly filed and inquired into. Conversely, on numerous occasions, it has been observed that the issue has arisen owing to the extensive understanding of the immunities and privileges provided to the diplomats by the states. Hence, it is essential to focus on the purpose behind the protection of diplomats, which is "*to ensure the efficient performance of the functions of diplomatic missions as representing states*"[35] besides the protection and privileges are not to be seen to be granted merely because the diplomat is the representation from another sovereign nation. The passage of time has shown that immunity granted to diplomats by the law itself forecasts the opportunity of its misuse then "*specifies the means at the disposal of the receiving state to counter any such abuse*."[36]

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[32] Chapter III, Privileges And Immunities, Diplomatic And Consular Relations, Vienna Convention on Diplomatic Relations, 1961.

[33] Supra, note 29.

[34] Richtsteig, Denza E, Diplomatic Law: Commentary on the Vienna Convention on Diplomatic Relations, 4th ed, Oxford University Press,(2016).

[35] Supra, note 31.

[36] International Law Commission, 53rd session, Draft articles on Responsibility of States for Internationally Wrongful Acts, with commentaries, Yearbook of the International Law Commission, vol. II, Part Two, (2001).

The laws are lenient and contradictory to the stance that the nation would likely take on serious issues like espionage. The next part of the paper discusses the suggestions for improving the loopholes in the current law as well as addresses the major issues in the persisting system of diplomacy.

SUGGESTIONS AND CONCLUSION

There is a lacuna of laws when it comes to dealing with espionage in peacetime. Observing the lack of laws internationally as well as nationally leads to a lot of ambiguity while dealing with cases. As examined in the paper, there have been instances of espionage all over the international community but the worst kind of spying is the one intentionally permitted by the host countries. Diplomatic relations being the cover for these espionage missions by foreign nations is a direct abuse of the privileges granted to diplomats.

The proper diplomats collect facts by means of only legal approaches and follow the program as stated in the Vienna Convention of 1961. The area of work they are supposed to be focused on is categorised into three central areas. These are the official working reasons for a diplomat to gather information as specified and allowed by International law.

They're listed as:

"Political- monitoring developments in the country the embassy is vital as well as representing the government and the media.

Commercial - helping the country's companies to trade overseas and promote the investment interests of the sending state.

Consular - Helping citizens of their country in the receiving nation and processing the visa applications."[37]

[37] Supra, note 21.

The most alarming gap is in the domain of the lack of any laws being present to govern espionage in International law during peacetime. As discussed in the paper above, three schools of thought believe peacetime espionage to be legal, illegal, or a mix depending on the circumstances. This legal categorisation is based on the works and symposiums of legal scholars but no set prerequisites are present to have a formal structure for deciding the status of espionage. Moreover, there is a need to have amendments in the Vienna Convention for Diplomatic Relations as well; throughout the paper, the laws set forth are very liberal towards providing protection to the diplomats in another country from jurisdiction and legal trials of courts.

This does appeal to the humanitarian laws and conventions against torture, prevent human rights abuse or malpractices as the host country is to hand over the diplomat to the sending state for the trial of any criminal charges levied on the diplomat. Nevertheless, the issue that remains is as seen in the case of Kapoor[38] and Brigg, the host countries will not treat a diplomat spying on another nation as a criminal but rather as an officer contributing towards the military intelligence of their state.

Further, there is a need to address the issue of national security that arises with diplomatic immunity being the norm despite apprehending officials under the charges of espionage. The national security of the host country is always at risk of such diplomatic missions, where a country officially allows for entry to these diplomats and provides privileges that are moreover abused.

"*Gathering intelligence is just the flip side of performing espionage, and performing espionage is just one part of a country's broader effort for*

[38] Supra, note 23.

survival. Beyond any international consensus, countries will continue to perform espionage to serve their national interests"[39]

The verse and the summary of the issues discussed in the paper all direct us towards one common probable solution to the issue of espionage at an international legal scale, that is:

- The International community ought to draft new rules to govern and maintain diplomatic ties strictly in consonance to upholding their national security against any future mishaps of espionage.

Additionally, these points should be taken into consideration as suggestions to implement, for smooth functioning in the domain of espionage charges and international law:

- Laws need to be in place for criminalising and punishing the misuse of immunity and power granted to diplomats.
- The trial of such diplomats charged with espionage ought to be conducted on a neutral ground, preferably the International Court of Justice, where each state is a party to the suit.

The incidents in the past and present showcase the need for our nation to bring changes to the existing laws as well as set up new rules to protect national integrity from foreign attacks. As India is surrounded by enemies, crucial information in the wrong hands can be disastrous to the country's security[40]

There should be a special focus on the need for India to set rules, so as to prevent future incidents like in the past. The following

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[39] Jan Goldman, Ethics Of Spying, Volume 2, Chapter 10, p.166, (2010).

[40] Amb (Retd) Achal Malhotra, India's relationship with its neighbours: Conflict and Cooperation, Distinguished Lectures, Ministry of External Affairs, GOI, May 2014, https://mea.gov.in/conflit-cooperation.htm

recommendations just provide the stepping path for the development of a new law as well as the need for changes in the legal procedures:

- India should draft guidelines, or formulate a new law governing the national security of the country towards safeguards over spying by diplomats, citizens, and officials of the state.
- Special provisions for diplomats from another state apprehended under espionage charges should be made by the Government of India.
- Close vigilance on the officials in embassies, consular missions, and other diplomatic envoys should be kept, to regulate the passing of information.
- Treaties between the regular offending states, such as Pakistan should be formulated to peacefully maintain diplomatic ties without compromising on national security.

"*Around and around we go with the second oldest profession. What we do to them is gathering intelligence-something positive, worthy of praise. What they do to us is performing espionage-something negative, worthy of punishment.*

Negative or positive, it all depends on who does what to whom. International law does not change the reality of espionage."[41]

The final verse of a brilliant paper on espionage and international law clearly shows the hypocrisy on a multi-dimensional level of the situation. On one end the need to uphold the national interests of one state conflicting with the national interest of another state. Further, the conflict of respecting diplomatic relations and maintaining international ties conflicted with the need to safeguard the national security of the country.

[41] A. J. Radsan, The Unresolved Equation of Espionage and International Law, Michigan Journal of international law, 595, (2007), https://repository.law.umich.edu/mjil/vol28/iss3/5.

INDIA'S NUCLEAR EVOLUTION: AN INSIGHT INTO THE NUCLEAR REGIME OF INDIA

Anusha Maurya[*]

Abstract

Survival of State is hooked on the defence of the State. Undoubtedly, when it comes to delineating the most desired weapon for national security, answer is the 'Nuclear Weapons'. These weapons of mass destructions are something which antagonistic to the ordinary weapons are created for not to be used in war. The real power of these weapons lies in creating the deterrence due to which every nation is kicking hard to acquire it. India in the later decades of 20th Century jumped onto the bandwagon to become a 'Nuclear State' but, the journey of acquiring world's deadliest weapon was extraordinary.

For this article author has extensively analysed the existing legal provisions and related secondary material to provide her take on this ardent topic. The objective of this article is to provide a detailed insight to the readers about the journey of India in developing nuclear weapon and the evolution of nuclear doctrine in India. Further, to portray the holistic picture of the nuclear power in India, author has also highlighted the nuclear liability regime in India and the inherent flaws pervading the legislation. Additionally, recent developments in the nuclear arsenal of India are also provided for providing a contemporary touch to the topic.

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The author believes that this study will contribute significantly to provide certainty to the existing dubiousness surrounding nuclear power of India and will re-kindle the curiosity amongst the readers to know more about the defence sector of our Nation.

Keywords: *Nuclear Power, Defence, Weapons of Mass Destruction, India.*

Origin of Nuclear Power in India:

On 18 May 1974, India witnessed a historic moment when it became the world's 6th nuclear power, surpassing various other nations in the race of building & owning a nuclear warhead. Although the test was conducted within Indian subcontinent but the effect rippled all over the World. There was lots of hullabaloo created aftermath this test, India's neighbor especially Pakistan & China were flabbergasted and projected this accomplishment of India as a threat to world at large. India was perceived as nation lacking caliber to use these nuclear warheads in a judicious and peaceful manner. Consequently, India was down casted for its achievement at international arena and various sanctions were imposed to discourage the development of nuclear weapons in India.

Although India had conducted its first nuclear testing in 1974, but this nuclear power culminated in 1996 with the success of Pokhran-II after which India was formally tagged as a 'full-fledged nuclear power'. Like its previous nuclear test this test was also conducted under utmost secrecy due to which once again with this test India became focal point in international community. Reaction of world this time was more furious this time, as a result of which various sanctions were imposed. After this milestone was achieve, thousands of arrows were launched from the quiver of world forcing India to

sign nuclear non- proliferation treaties and to lay down a detailed nuclear policy of India in order to ensure that the peaceful usage of the weaponry.

India's national security since the dawn has been deeply influenced by the action reaction strategy.[1] Changes in national security policies of China or Pakistan, ordinarily acts as the precursor for alterations in India's national security policies.

India's reservations with some Nuclear Disarmament Treaties:

India since its independence was beleaguered by enemies and this animosity was not latent and was known to world at large but still India under the leadership of Jawaharlal Nehru relying on the idealistic Gandhian principle chose to use nuclear power only for non-military & peaceful purposes.

But sooner than later, the need for nuclear warhead was felt for the first time when India lost Sino-India war of 1962 which made Indians to come up with an alternate solution to counter Chinese aggression on Indian mainland. This temptation of acquiring nuclear weaponry technology was further enhanced when in 1964 China did its first successful nuclear test and was recognized as the World's 5th nuclear power. China's nuclear empowerment was the unparalleled threat to Indian national security which compelled the nation propagating the idea of Ahimsa to the world to strive for world's deadliest weapons in order to defend itself.

It is evident from India's actions at the international arena that India has been a stalwart of nuclear disarmament. But, in 1995 when India was called upon to sign Non-Proliferation treaty (NPT), India decided to step back from signing, due to fact that this treaty

[1] Arvind Kumar, *India's Nuclear Doctrine and National Security Policies* (2013) 12.

perpetuated "nuclear apartheid". Similarly, India refused to sign Comprehensive Test Ban Treaty (CTBT) due to presence of relegating "Entry into force" clause.[2] Such refusal resulted in worldwide sanctions being imposed along with deterioration of friendly relations with other nations. Almost every nation turned a blind eye towards India, neglecting the mounting threat arising from anti-India alliance of China and Pakistan.

After India's refusal to sign these nuclear disarmament treaties First-World Nations started to exert pressure on India to lay down a comprehensive nuclear doctrine thus, in 1998 just after its second nuclear test, India bowed to U.S. pressure and released draft nuclear doctrine that ruled our first use and endorsed nuclear "Credible Minimal Deterrence" (*hereinafter* "CMD").[3]

Although India hasn't signed any major nuclear disarmament treaty yet but, India through its State Practices has always advocated for a neutral denuclearization treaty. One more reason for India to back off from signing such treatise is that the total denuclearization is possible only if all the nations willingly acquiesce to global denuclearization but due to objection of few nations like Pakistan, USA and Russia to commit to No first use policy along with ambiguousness pervading in nuclear policies of various nations committing absolutely to no use of nuclear arsenal would not be a sound decision for nations like India. India's reservations hence, are mainly due to lack of a non-discriminating denuclearization treaty which could properly address India's security apprehensions.

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[2] J. Mohan Malik, *India goes Nuclear: Rationale, Benefits Cost and Implications*, 20 CONTEMPORARY SOUTHEAST ASIA 191, 192-215 (1998).

[3] Shashank Joshi, *India's Nuclear Anxieties: The debate over Doctrine*, 45 ARMS CONTROL TODAY 14 (2015).

India's Nuclear Doctrine:

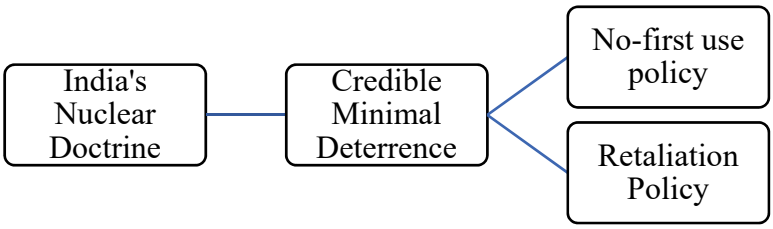

Figure 1: Flowchart explaining Nuclear Doctrine of India

The concept of "Minimum Deterrence", seeks to deploy sufficient forces to raise the cost of aggression i.e., by inflicting unacceptable damage- significantly for any potential aggressor.[4] This policy has been adopted nations which want to employ minimum resources in maintaining nuclear arsenal and simultaneously want to maintain status as a Nuclear State. Indian version of minimum deterrence policy, is fundamentally based on two tenets: i) No-first use policy; and ii) Retaliation policy.

This policy was rolled out in 1998 but the policy was finalized and declared officially by Cabinet Committee on Security on 4th January, 2003. In this policy the end goal was to ensure continued commitment of India to the goal of a nuclear weapon free world, through global, verifiable and non-discriminatory nuclear disarmament.[5] According to this policy, commanding authority for nuclear strike rests with Nuclear Command Authority of India, which comprises of Political Council headed by Prime Minister of India and Executive Council headed by National Security Advisor. This amalgamation of Political & Executive Council ensures that

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[4] Rajesh M. Basrur, *Enduring Contradictions: Deterrence Theory and Draft Nuclear Doctrine*, 35 ECONOMIC & POLITICAL WEEKLY 611 (2000).

[5] *Cabinet Committee on Security Reviews Progress in Operationalizing India's Nuclear Doctrine*, PRESS INFORMATION BUREAU (Jan. 4, 2013), http://pibarchive.nic.in/archive/releases98/lyr2003/rjan2003/04012003/r040120033.html.

nuclear weapon is used only when the criterion mentioned under the policy is fulfilled and the power is not misused.

No-First Use Policy (NFU):

NFU pledge of India envisages that India will not use its nuclear arsenal against any non-nuclear weapon State. India's this policy is primarily based on *"quid pro quo"* ideology. It provides an assurance at the international arena that India in no case can be the pre-emptive State (in other words, a State to do a first strike) in case of a war. This policy plays a vital role in deterring the probability of causing mass destruction but interestingly, this doctrine was modified later to bring in States "aligned with" nuclear states within the ambit of Nuclear Weapon State.[6] This ideological change was done keeping taking into consideration the increasing nuclear alliance between China & Pakistan.

Although India believes in the concept of NFU but still India vests with the right to first strike if India is subjected to any biological or chemical attack or if any weapon of mass destruction is used against Indian territory or against Indian forces outside India. Here term "Indian Territory" includes any naval vessel floating under Indian flag or air vessel under Indian control.

Contrastingly, the NFU pledge is often alleged as an 'inefficient' at global arena as it merely provides a declaration and does not guarantee that India will not use nuclear arsenal which is considered as one of the precursors for Pakistan to keep its nuclear arsenal always active. This pledge was recently in limelight when BJP in its election manifesto of 2014 raised the issue of "changing & updating" nuclear policy but contrary to speculations the policy till date remains intact.

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[6] *supra* note 3 at15.

Retaliation Policy:

According to the second part of the nuclear policy, India will use its nuclear arsenal to punitively retaliate when India's nuclear deterrence fails i.e., India will retaliate only in case a nuclear attack occurs. Such nuclear retribution to a first strike will be massive and will be designed to inflict unacceptable damage to the belligerent.

These nuclear policies are considered more a symbol of Indian culture of ahimsa and tolerance rather than being merely a strategic policy of India. In this way both the NFU and retaliation policy creates an aesthetic balance between Indian ethos and Indian national security.

Nuclear Liability regime in India:

In India, development of nuclear power industry is slow paced as compared to other industries; the main reason for such staggered growth is the enormous liability which follows up in case of nuclear failure. Since, in the first decade of 21st Century India was moving towards developing its nuclear power therefore, it became necessary to provide provisions in case any nuclear incident occurs while testing or building any nuclear weapon or in any nuclear installation.

Indian Parliament in 2010, in order to concretize laws concerning nuclear liability and to align domestic laws to standards of International obligations passed 'The Civil Liability for Nuclear Damage Act, 2010' (*hereinafter, 'CLND, 2010'*) which provides for an extensive framework for civil liability for nuclear damage and prompt compensation to the victims of a nuclear incident through a no-fault liability regime and channeling liability to the operator. This law was passed as a result of ratification of IAEA Convention on Supplementary Compensation for Nuclear Damage in 2016 whose main objective is to establish an extensive framework to provide proportionate compensation to the victim of nuclear damage.

The territorial application of CLND, 2010 as mentioned under §1(3) applies to nuclear damage suffered in any part of India or in Exclusive Economic Zone of India or on any water vessel floating under Indian flag or on any aircraft registered in India or on an artificial island, installation or structure within the jurisdiction of India.[7] This wide territoriality conferred to this Act ensures proper remedy to the victims of nuclear damage. Moreover, this Act finds applicability only in cases where nuclear damages are a result of Government actions.

Apart from adequate compensation the second aim of this Act is to provide proper & speedy framework for availing this compensation, as in cases concerning nuclear liability time is matter of essence and speedy remedy is a *sine qua non*. CLND, 2010 provides for 'Claims Commissioner' (or 'Claims Commission' where larger public injury is caused) whose work is to hear the cases filed under this Statute and to accordingly disburse the remedial amount to the aggrieved. To ensure timely disposal of cases, there is provision under Sec. 9 (2) of the Act for appointment of more than one Claims Commissioner and there is mandatory condition to decide these cases within timespan of 3 months and to enforce the awards passed under this Act within 15 days from date of deposit of money by the nuclear installation operator/ central government. Moreover, to assuage adjudication all Claims Commissioner are acquainted with all trappings of the civil court.

One more plus point of this Act, is the widespread relief which it intends to provide to the victims of nuclear damage. According to Section 2(g) of the Act, provisions have been made to compensate for all the loss incurred by person or his family along with all incidental losses like, loss of livelihood. Additionally, compensation for

[7] The Civil Liability for nuclear Damage Act, 2010, No. 38, Acts of Parliament, 2010 (India).

environmental degradation occurred due to such nuclear incident is also included to ensure environmental reinstatement.

Loopholes in CLND Act, 2010

CLND Act, 2010 might on the face of it look quite perfect and easy going for availing remedy in case of a nuclear damage but the Act has many inherent flaws some of them are highlighted as follows:

Firstly, the as per §1(4), the Act applies only to the nuclear installation owned or controlled by the Central Government either by itself or through any authority or corporation established by it or a government company. This provision clearly implies that the Act does not intend to cover liability arising out of nuclear damage caused due to nuclear installations of private players.

Secondly, the Act as per §6, caps the maximum liability in case of nuclear damage to INR equivalent to 300 million Special Drawing Rights which can be altered by Central Government. Moreover, the liability of nuclear operator is also fixed up to certain amount which in essence tends to favour the wrongdoer by limiting the liability and shifting the residual liability on the Central Government.

Thirdly, right to claim compensation as per §18, extinguishes after 10 years in case of property and 20 years in case of personal injury which in my opinion cannot be premeditated because nuclear damage is something which can affect human lineage. Moreover, sometime the adverse impact of such incidents is not seen immediately but might set in with pace of time due to which this provision of limiting liability to certain amount cannot be termed as "just, fair and reasonable".

Fourthly, the nuclear damage needs to be notified by the Central Government relying on which the remedy shall be disbursed to the aggrieved which creates doubt regarding the assessment of the nuclear

damage to the common public. Instead, provisions should be made to appoint an independent body comprising of an expert from nuclear field, environmental field, judicial field which in author's opinion can better quantify the damage occurred due to nuclear incident.

These loopholes vitiate the objective of the CLND Act, 2010 and provide half-cooked remedy to the victims of nuclear incident. Summarily it will not be wrong to say that currently the Indian legal system is not well equipped to handle the enormous liability that could arise from any sort of nuclear damage resulting from nuclear incident.

Recent Nuclear development in India:

India's nuclear arsenal today comprises of around 130-140 nuclear warheads which comprises of various missiles ranging from short range ballistic missiles to some intercontinental range ballistic missiles. Major breakthrough in India's nuclear expedition was in 2018 when India successfully devised its first indigenously built nuclear submarine INS Arihant which was the final step of India towards achieving its long-awaited goal of possessing Nuclear 'Triad' i.e. having nuclear strike capability from land, water & air.

Formation of nuclear triad is one of the objectives envisaged by the India's Nuclear Doctrine, which as projected has exponentially enhanced the deterrence capacity of India at a global level. For India, possessing this triad was important as it provided some sense of security and stability to the dilapidated relation of India with its neighboring countries China and Pakistan. Currently, India's nuclear arsenal majorly comprises of following weapons:

Nuclear Weapon Delivery Systems	Nuclear Weapons	Weapon Type
Land Based Ballistic Missiles	Prithvi Series (I, II &III)	Short Range Ballistic Missiles

	Agni Series (I, II, III, IV & V)	Medium Range (Agni I & II)
		Intermediate Range Ballistic Missile (Agni III, IV & V)
	Trishul	Short Range Ballistic Missile
	Akash	Medium Range Ballistic Missile
	Nag	Anti-tank guided missile (max. 20 Km)
Water Based Ballistic Missiles	Sagarika (or K15)	Short Range Submarine Launched Ballistic Missile
	Dhanush	Short Range Submarine Launched Ballistic Missile
	K4	Intermediate Range Submarine Launched Ballistic Missile
Air Based Ballistic Missiles	Dassault Mirage 2000 H	1550 Km
	Mikoyan Mig- 27	2100 Km
	SEPECAT Jaguar	3524 Km
	Rafale	3700 Km

Amongst all these weapons water-based nuclear weapon is considered as the most valuable asset because land and air-based delivery systems are more prone to first strike whereas, water-based nuclear weapons provide capacity to have an effective second strike.[8] Nuclear triad is considered as the most desired level of weaponization, it provides unequivocal power to a nation to retaliate the nuclear attack. It symbolizes defensive policy of the state and provides humongous deterrence to avert usage of weapons of mass destruction.

Conclusion

Nuclear weapons are the weapon of mass destruction, their capacity to devastate is never-ending and inexplicable. Nuclear weapons do not destroy one nation rather they destroy lineages which can be well

[8] *supra* note 1 at 23.

understood from the existing reverberations of Hiroshima-Nagasaki Bombings. Although, the animosity between the nations has been resolved but the suffering of the victims of nuclear attack is still alive.

World strives for peace, but the dichotomy lies in the way world strives for peace. Nuclear weapons are the weapons of deterrence not the weapons to ensure international peace. The deterrence created by these weapons today is considered as the symbol of international peace & brotherhood which in no sense is a correct notion. We need to understand, that there is difference between maintaining friendly relations and maintaining peace, peace cannot be interpreted as the guarantor of friendliness.

India similar to other nations has developed nuclear triad but when it comes to denuclearization India is the strong volunteer of global disarmament. India due to its vacillating relations with the neighboring nations as well as sue to the discriminating features of major disarmament treatise has averred to commit. India's nuclear policy is unquestionably a true example of harmony and defence.

Nuclear power has today reached the zenith but the solution of wars and dispute lies in negotiations and talks thus, nuclear deterrence cannot be called as the solution of the disagreements instead nations should focus more upon improving diplomatic relations. Good diplomatic relations, in my opinion, are the pre-condition of global denuclearization.

BIOTERRORISM AND BIOWARFARE: A NEW THREAT TO INDIA

G. Brahmakrit Rao and Saumya Tripathi[*]

Abstract

India has always been a major potential hub for being threatened by bioterrorism. Biological attacks to any nation, let alone India, can be disastrous. Most dreadful thing about biological warfare agents is that no symptoms are produced, so if a person is exposed to it then the agent could spread to thousands of people, because it is contagious, and no one symptoms would manifest for several hours or days. The ongoing research and development in the field of Biotechnology have made bioterrorism the most intimidating when compared to WMD's (Weapons of mass Destruction). India's preparedness is nil against such bioterrorism, as can be seen by the infamous example of 2,300 lives claimed by the recent H1N1 epidemic. External factors which contribute more towards India being a potential victim to such threat can be the growth of Pakistani extremists, South Asia having unpredictable security environment, Afghanistan having its civil war and inception of Islamic State of Iraq and Syria (ISIS). This research paper shall tend to explore and analyze bioterrorism threat imposed on India, strategies, technological tools and what can be done to curb such threat such as recovery, response and surveillance. It is understood that Bioterrorism may be a low-probability threat, but what need to be kept in mind is that it will be a high-impact threat.

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Biological agent's understanding must be drastically improved so that it does not become a threat to our citizens, livestock and health of the crop, and moreover the Indian economy. Mitigating this threat can only be achieved by the public participating as such and the political awareness. India will only be able to become a resilient society when it prepares against attacks of bioterrorism, which will also benefit it from being resistant against occurrence of natural diseases.

Keywords *Bioterrorism, India, Biological Warfare, WMD'S, Biotechnology, ISIS, Surveillance*

INTRODUCTION

Strategic planning and deliberate usage of microorganism's pathogenic strains which can be virus, fungi, bacteria and/or their toxins, which thereby facilitate in spreading of life threatening diseases that too on a large scale with the intention to annihilate the whole population of that are is called Bioterrorism.[1] When a microorganism infects a target host and thereby starts to produce clinical diseases which kills or incapacitates the host, such microorganisms are called Biological Weapons (BW). Such microorganisms can be the sole microorganism metabolic product. Biological toxins and substance which tend to interfere with our normal behavior for example hormones, neuropeptides and cytokines can be included as well.[2]

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1 "Dudley JP, "Review and Analysis of Reported Anthrax-Related Military Mail Security Incidents in Washington D.C. Metropolitan Area", Ed. 12 March 2005.

2 "Arora DR et al., ."Biological warfare: Bioterrorism", Indian J Med Microbiol 2002.

Humans are meant to coexist with certain things which threaten their existence, such as poisons and pathogenic microorganism which are considered to be a naturally existing health hazard. Some of them could be deadly or insidious and at the same time be challenging to perceive and thereby rendering it difficult to perceive. Long ago, when wars were fought, there were a code of ethics followed by the military which banned the usage of microorganisms which were poisonous to human health. There have been numerous battles which have been proof of the fact that biological weapons (BW) have been used.[3] Dead and rotten animals, in the Roman Civilization Era, were thrown in the wells of their enemies so that the water supplies could be poisoned, this is also considered as Bioterrorism.[4] In 1346, when a plague had been infested in Tartar Army while they were in Crimea. The enemies had thrown dead bodies over the city walls, and so an epidemic which followed made them to surrender. People who left Kaffa were infected and gave rise to the Black Death pandemic which killed 1/3rd of the Europe.[5] Also, the Britishers in the French-Indian War had given the native Americans such blankets which were subject to smallpox victims.[6]

Such ancient taboos have been known all around the world, be it the Manu laws, Saracen Code of warfare, the Lieber Code of 1863 or the Geneva Protocol.[7] But, as humans are considered to be the pests of

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3 "Michael B.Phillips, Bioterrorism: A Brief History, Northeast Florida Medicine Ed. 3, Pg 105-206.

4 "Sitanshu Sekhar Kar et at., "Bioterrorism: How prepared are we?", Indian Journal of Medical Specialties, ((Last Visited: 1st October 2019;23:12)

5 "Christopher GW, Cieslak TJ, Pavlin JA, Eitzen EM, "Biological warfare: a historical perspective", JAMA 1997; 278(5): 412-417, (Last Visited: 1st October, 2019, 12:30)

6 "Arun Kumar R, Nishanth T, Ravi Teja Y, Sathish Kumar " Biothreats-Bacterial warfare agents", J Bioterr biodef (Last Visited: 2nd October, 2019, 15:23)"

7 Marin 1957; Mandelbaum 1981

Earth, there has been fear of intentional usage of such microorganisms as WMD's which may be a state as a whole or a terrorist.[8] But the good thing is that such instances are still in their rarity.[9] After the attack of 9/11 in America, through post, many letters have been distributed which contain spores of a microorganism called *Bacilus anthracis.* This act has killed almost five till now and has created a sense of fear among people through the intentional use of such biological weapons to harm human health.[10] Not only will having intentional usage of biological weapons result in mass killing of humans, but aslo will it cause hysteria for the whole public along with panic among everyone. This threat that the reaserch paper talk about is not restricted to any one country or state, it has become a global issue which need to be tackled when the whole community comes together. When comparing weapons which nuclear, chemical or biological. We can see that biological weapons are simpler, cheaper and have easy readily available material. (See Table 1).

Table 1: Comparing Nuclear, Chemical and Biological weaponry

	Nuclear	Chemical	Biological
How complex is the technology	3	2	2
How problematic it is in acquiring of raw materials	3	2	1
Cost	3	2	2

3: High

2: Medium

1: Minimal

[8] DaSilva 1999
[9] Cole 1996
[10] Block 2001

RESEARCH OBJECTIVE

1. To understand the concept of biological warfare and agents
2. How neighbors of India pose a threat to the country with respect to technological advancements in the field of biological warfare.
3. To comprehend what laws and legislations have been put forth

RESEARCH QUESTION

1. What are biological agents and how do they come under the ambit of 'weapons of mass destruction'?
2. Does technology play a vital role in contributing to the dangerous effects of biological warfare?
3. Is India prepared against bioterrorism?
4. How can we mitigate the threat?

Chapter 1

UNDERSTANDING BIOLOGICAL AGENTS

If not speaking on a practical perspective, biological weapons can be said to be the perfect agents which can be characterized as weapons of mass destruction.[11] But as nature intended it to be, all microbes can not be fostered for the usage as a weapon. A lot of check boxes need to be ticked before making a microorganism a potential biological agent and so to use it as a WMD. The check boxes can be how stable the organism is in external harsh environment, how easily it is available in nature, how lethal it is, whether it is virulent or not, the degree of its infectiousness. Out of all the microbes in the world, only

[11] Atlas 1998

a couple of thousands have been tested, of them only around 40 have been found to be fir for military use and among them only some are registered and used as a weapon.[12] In USA, the CDCP[13] have moved on to classify them into 3 categories which would depend on how to use them as a bioweapon.[14] (see table 2).

Table 2: CDCP Classification of agents which can be used as bioweapons

Class	Feature	Microorganism
A	Easy Dissemination	Variola
	Extreme Death rate	Plague
	Substantial impact on the health of public	Botulinum
	Can effect in social disruption	Pahvant Valley Plague
	Public Health must be prepared in a special way	Haemorrhaic
B	Medium level of dissemination	*Causative agent of Q fever*
	Medium morbid nature	*Undulant fever*
	Death rate is low	*Malleus*
		SEB
		Food or Water borne substance
C	Pathogens disseminated due to their potential of being engineered	Nipah virus
		Hantaviruses

Organisms which do not have any color neither do they any smell, which can be easily commuted thorough the air with the help of aerosols or in eatables and liquids (See Table 3). These microorganism and toxins concealment is easy to do and so become very difficult to be detected.[15] To get a greater mass destructive nature

[12] Porche 2002

[13] Centre for Disease Control and Prevention

[14] Report CDC, http://www.bt.cdc.gov/agent/agentlist-category.asp#catdef,(Last Visited: 23rd September, 2019, 13:45

[15] M.G.Kortepeter and G.W.Parker, "Potential biological weapons threats", Emerg, Infect. Dis. 1999; pg 523-524

of a weapon, sometimes nuclear weapon along with the chemical weapon are put together with Biological Weapon. The only key difference between BW and nuclear/ Chemical Weaponry is that the latter has immediate effects whereas the former develops at a later stage.[16] One of the major reasons for the usage of BW is that it cannot be detected for a very long time unlike the other conventional weapons which are subject to being detected easily and are limited to a certain piece of area. The attacks by such biological weapons is dependent upon which strand or species of microorganism is being used. At the first instance, these biological attacks are not even considered as a manmade attack.[17]

Table 3: Mode of administration of biological agents

1.	**Air**
	a. Letters by post
	b. Spraying devices
	c. Extinguishing systems used to put down fire
	d. AC
2.	**Liquid or eatables**
	a. Separate eatable products
	b. Products which have been infected due to the food chain
3.	**Intra-venous**
	a. Injections
	b. Armament which have been contaminated
4.	**Communication with a contaminated person/animal**
5.	**Armed force munitions**

Presently one of the advanced ways of BW is with the help of aerosols. But it is not the ways by far as those materials clog when

[16] Raghunath "Biological warfare: Bioterrorism in XXIV National Congress of Indian Association of Medical Microbiologists" Patil CS (ed) (Depatment of Microbiology, JNMC, Belgaum) 2000, (Last Visited on 22nd September, 2019, 11:45.)

[17] McDade JE " Global infectious disease: Surveillance and response", Australian Journal of Medical Science 1997; 18: 2-9, ((Last Visited: 13th September, 2019, 19:45)

sprayed or also could get destroyed by UV light.[18] Rain can also wash them away. One of the far-fetched distribution mechanism have also been to make the toxin be attached to the instrument which will blow up. But the only setback is that the microorganism might get destroyed during the explosion.

Chapter 2

HOW DO BIOLOGICAL WEAPONS BE AFFECTED WITH TECHNOLOGICAL ADVANCEMENT

Biological Warfare agents are made stronger day by day with the advancement in the biological department of gene modification. Most of the country's military personnel invest in the micro-biology sector and so new BW agents can be created. It is deemed easy for the scientists to modify new BW agents because of what nature provides us. But as always, all such agents are not being used for military purpose only, and this is what is troubling. And so these as such can be used as a biological weapon and at the same time as a chemical weapon as well. We know that currently gene editing is being used to help mankind in multiple ways like health, food, etc. but this procedure can also be used to create more dangerous biological agents which may be more toxic that which were previously used. Modification leads to the resistance of a biological agent to external forces such as it may withstand the current defenses used against it or may become more virulent. This happens when the gene sequencing of the agent is altered a bit. Sometimes research shows that when such editing is done, numerous different characteristics of the agent goes, but not importantly always. Also, this engineering may help in increasing the number of microorganisms, so that they do not

[18] Stajner I "Cloudiness and Breast Cancer" J. Cancer Sci Ther, ((Last Visited: 1st October, 2019, 12:30.)

become extinct while testing them itself. The increase of the number of toxins can easily be done by inserting the genes of the toxin into a microorganism, which then when reproduces, produces more toxin.[19] Many new agents and immunity boosters can be made as the advancement in technology rushes.[20]

2.1: Features of the Disease Suggestive of Bioterrorism[21]

1. Non-Endemic area found with a disease which does not happen there

2. Ruling out whether it is a natural phenomenon of disease outbreak

3. BT starts from a single point in the area and then slowly starts to expand within the same time

4. Any and every age may be affected by it

2.3: Problems posed by Bioterrorism and Warfare-

1. BT is growing its popularity and is a lot dangerous than bombs or chemical weapons. [22]

2. There have not been many funding and support given to the public by the officials.[23]

3. Making biological weapons is extremely as the how-to-make is readily available on internet and basic trained person could do it. So preventing and countering it will be a difficult task.[24]

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19 Cieslak et al., 2000

20 Ales and Katial 2004.

21 R.J.Bellamy and A.R.Freedman "Epidemiological principles for recognizing bioterrorism" (Last Visited: 12th September, 2019, 23:50.)

22 Bio Weapons and bioterrorism, "JAMA 1997", ed.278 pg 351-370 (Last Visited: 1st September, 2019, 23:56)

23 Tucker JB "National health and medical services response to incidents of chemical and biological terrorism" (Last Visited: 2nd October, 2019)

4. Detecting as to which terrorist organization or individual may intend to use BW cannot be known.[25]

Chapter 3

HOW PREPARED ARE WE AS A COUNTRY?

3.1: What India needs to do

Coordination and preparedness are recurrent themes for discussing the threat of BT. A key advance toward tending to the danger of BT is complete arranging that spotlights on nearby readiness and reaction limit coordinating the job of state, provincial and governments. Viable arranging ought to be executed for situations that may defy, including the declared/quiet arrival of an organic operator or crossover occasion like bomb blast pursued by the arrival of a natural/synthetic specialist. Moreover situations like individual-to-individual transmission or non-transferable irresistible illnesses ought to be considered.[26]

India ought to build up an emergency course of action to ensure against such consequences by including associations like barrier, home service and logical foundations/research facilities. In spite of the fact that India has set up a National Institute for Disaster Management in 2003, it has no plan explicitly coordinated for bioterrorism and its moderation. The principal line of guard is foundation of a high control lab (Bio safety level-4) having ultra current offices, ideally under the home service or science and

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[24] Danzig R, Berkowsky PB, "Why should we be concerned about biological warfare?", JAMA 1997; Ed 285: Pg 431-2 (Last Visited: 2nd October, 2019, 15:23)

[25] D.A.Henderson, "Bioterrorism as a Public Health Threat. Emerging Infectious Diseases 1998", Ed. 4: Pg 488-492" (Last Visited:15th September, 2019, 17:45)

[26] Margret A. Hamburg, Addressing Bioterrorist Threats: Where do we go from here? Emerging Infectious Diseases 564-565

innovation or barrier service, for speedy and exact finding of the considerable number of operators by and by recorded under BW and their stockpiling under safe guardianship for creating immunizations and counteractants for use in crisis.[27]

The job of these research centers is chronicling basic natural operators and the presentation of other specific tests, for example, culture or atomic ID of exceptionally risky viral specialists that require bio security Level-4 offices.[28] There is only one bio-safety level-4 lab in India at Bhopal under the Indian Council of Agricultural Research occupied with conclusion and control of exotic animal illnesses.[29] After September 2001 attack in USA, numerous examples suspected for Bacillus anthracis were gotten in Bhopal research facility for testing and observed to be a trick. The research facility tried effectively a recombinant Bacillus anthracis immunization in lab creatures and monkeys for consequent inoculation of people.

The antibody is currently under field preliminaries with great outcomes. The immunization can be utilized for guard faculty, postal office workers and police who are powerless.[30] At present Government of India, under Indian Council of Medical Research and Council of Scientific and Industrial Research has started the foundation of two bio-wellbeing level-4 labs at Pune and Hyderabad for use in safety related high-hazard pathogens. The opportunity has already come

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[27] Sitanshu Sekhar Kar, HK Pradhan, B Pattnaik. Bioterrorism: How prepared are we? Indian Journal of Medical Specialties 2nd October, 2019, 12:31; 3(1): 43-48

[28] Wolfgang F. Klietmann and Kathryn L. Ruoff. Bioterrorism: Implications for the Clinical Microbiologist. Clin. Microbiol. Rev, 12th September, 2019, 15:34; pg 364

[29] Sitanshu Sekhar Kar, HK Pradhan, B Pattnaik, "Bioterrorism: How prepared are we?" Indian Journal of Medical Specialties, pg : 43-48 (Last Visited on 1st September, 2019, 12:45

[30] Sitanshu Sekhar Kar, HK Pradhan, B Pattnaik, "Bioterrorism: How prepared are we?" Indian Journal of Medical Specialties , pg:43-48 (Last Visited on 1 st September, 2019, 12:50)

and gone to create readiness for BT to protect the nation. To build up such offices, innovations are currently accessible indigenously. Assets can be pooled under one umbrella to focus regarding the matter. In the event that we start now it will take 5-10 years to get the ideal outcomes.[31]

3.2: State of Preparedness against Deliberate use of Biological Agents

Catastrophe arranging is a laborious undertaking. Maybe no type of fiasco is hard to get ready for than one coming about because of the purposeful, incognito arrival of a natural pathogen or poison. The complexities of reaction tasks and the hazards of deficient readiness can't be overemphasized. Indeed, even with point by point arranging, deviations from foreseen crisis tasks plans are probably going to happen.[32] The essential administration intends to deal with the debacles are set up in the majority of the nations of the SEA Region yet a natural weapons related calamity the executives plan isn't by and large piece of this arrangement. This implies the greatness of the impacts of natural weapons crises has not yet been comprehended by approach creators of most of the Member Countries. In addition, all fiasco plans might be of down to earth use on the off chance that they are upheld by assets without which none of the necessities for gathering the natural weapons crises will be met.

Another upsetting actuality is that despite the fact that catastrophe plans are made there is no readiness activity plan at the lower regulatory level in a large portion of the nations. This implies by and by, organic weapons crises are by and large being met on a specially

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[31] Sitanshu Sekhar Kar, HK Pradhan, B Pattnaik. Bioterrorism: How prepared are we? Indian Journal of Medical Specialties , pg:43-48 (Last visited on 1st September, 2019, 12:45)

[32] Flowers et al., 2002.

appointed premise just in the greater part of the nations with the exception of Thailand where medicinal and general wellbeing readiness and bioterrorism readiness plans were at that point present to react to natural crises. These plans are multisectoral. Notwithstanding the plans being worked from the Federal Government there are organizations in the areas and at nearby levels that are set up for such crises. As indicated by the Thailand experience, preparing, making accessible medications and medicinal supplies, foundation of quick reaction groups, legitimate coordination of various offices and giving right and bona fide data to the open are the key components for a fruitful program.

The intentional utilization of natural operators of any sort can possibly overpower a network, and now and again, the entire country. During such an assault the quantity of patients requiring hospitalization and basic consideration is probably going to be colossal. Doctors will be at the bleeding edge and should assume a significant job in managing the flood of patients and will require broad preparing and back-up of satisfactory and explicit medications and hardware.[33] It is pivotal to create practical procedures for a bioterrorism occasion for the procedure of human services prioritization (triage arranging) for effective utilization of assets under convincing medicinal services requests.[34] Event of natural weapons crises could be decreased through legitimate enactment to control and manage exercises identified with radiation sources, and poisonous concoction and pathogenic life forms. A national vault of the current organic weapons components and sources should be readied and legitimate prudent steps taken to defend from both mishap and burglary.

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[33] Karwa et al., 2003
[34] Burkle 2002

Tragically, while such administrative components for the most part exist for concoction and radiological sources, enactment and guideline for natural specialists stay lacking.[35] Gifted wellbeing authorities and wellbeing foundation assume key jobs for taking care of Biological, Chemical and Radionuclear (BCR) crises. Despite the fact that there are medical clinics to deal with such patients in nations of the South-East Asia Region, the preparation of doctors to react to BCR crises is by all accounts lacking. There is general mindfulness among the Member Countries of the presence of global organizations that will deal with natural weapons crises. This systems administration should be additionally fortified. Routine delicate and close continuous illness reconnaissance frameworks are in this way basic in both infection episodes and those brought about by natural specialists. Such frameworks ought to be set up well ahead of time of an assault, with the goal that the foundation infection pervasiveness in the zone concerned is known. The presentation of a reconnaissance framework as far as the practicality of its reaction to normally happening flare-ups of sickness gives a sign of its plausible commitment during intentionally caused episodes. Improvement of national readiness and developing reactions to natural operators is reliant upon the velocity of intercession via prepared gathering of experts containing microbiologists, doctors, clinicians, emergency clinic staff and law implementing offices.[36]

Chapter 4

Recommendations which may help to mitigate the threat

Various dire things in household & universal levels could help India as a nation in being equipped. Joining of world accepted steps &

[35] WHOSEA 2003.
[36] Kaufmann et al. 1997; Green and Kaufmann 2002

innovative technologies can help increase the factors which help decrease the threat of Bio-terrorism.

Internal Course of action

Participation between Internal Intelligence, community of science, industries, police units, securing agencies. It is obvious that not most, but all organizations have to work in unity with each other for a better sence of understanding and keeping control the nation's security. It will also help in the better functioning of the administration. A basic ground work need to be established as to how the flow of information and paper work shall be done between state and central agencies, police as well as government. Most of the dangers which are posed due to the threat of BT do not fall under the purview of most of the security agencies. To counter this, a new agency must be established which could counter threats as such and should also have a strong link between other security agencies as well.[37]

1. Creating Detection Technology

All security agencies should, along with, established industries, skilled persons in research must make, understand and send quick dependable, savvy, touchy and particular discovery advances for natural dangers.[38] Imaginative methods, such as the usage of H2O2, bright light which is introduced to devastate natural biological agents in rails which are under the ground, biosensors also make early sensors which caution the quality of organic biological agents in the soil.[39]

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[37] NRC, 2002, p. 73
[38] NRC, 2002, p. 73
[39] Siegrist, 1998, pp. 9–10

2. National Centers and databases for Countering BT

India must be able to make a database center where all information can be stored as which are important and which pathogens can be used as a national threat. The research wing must be able to classify and incorporate all different DNA's and RNA's there are globally. And there must be sub-grouped into a nation-wide open for all internet source, so that it can be examined at the earliest. [40]

3. Person on call Preparedness and Enhanced Public Awareness for Appropriate Response

The readiness levels of Indian security powers towards bioterrorism risk run from being absolutely ill-equipped to being just halfway arranged. Preparing and correspondence foundation at the grassroots levels, particularly among the police and specialists on call of various states, comes up short. There is an earnest need to grant bioterrorism preparing to security powers, wellbeing administrations and other specialists on call like firemen. Bioterrorism DM ought to be fused in the present educational program of restorative courses; and preparing of research center experts, disease transmission experts, general wellbeing authorities, veterinarians and plant pathologists is basic for quick location, appraisal and auspicious reaction.

Expanded open sensitisation is required towards bioterrorism; its reasonable indication; job of significant functionaries like specialists on call for incorporate nearby police, fire administrations, area gatherer, boss therapeutic official, and so on.; job of open and private emergency clinics and wellbeing focuses; duties of national, state and region DM experts; and data of assigned medical clinics for

[40] Bannerjee, 2002, p. 118

natural risk, medical aid focuses, assigned research facilities, cleaning focuses and data focuses. Reserved clinics should be redesigned and those fit for crisis restorative reaction (EMR) ought to have appropriately prepared emergency vehicle administration and store of basic chemoprophylactic and immunoprophylactic medications, immunizations and IPE.

4. The NDMA

Despite the fact that the NDMA keeps on advancing, it comes up short the extent that its arrangement for relief of bioterrorism dangers is concerned. State and region DM specialists should be better prepared, fortified and gave essential assets to handle bioterrorism occurrences. NDMA rules need to advance enthusiastically designs at focal, state and region levels and ought to be lawfully restricting measures. Given the recurrence of cataclysmic events in India, the office's attention is essentially on catastrophic events, instead of the apparent low probability of bioterrorism danger. Be that as it may, here additionally, it has been battling to complete its command, as delineated by its poor reaction both in Uttarakhand downpour and Jammu and Kashmir floods.

5. Master Research Organization to Counter Bioterrorism

There is a requirement for a focal nodal legislative organization for bioterrorism. NDMA needs to assume a significant job in reacting to bioterrorism episodes, however its attention stays on a post-debacle reaction. NCDC isn't ordered for bioterrorism and, besides, doesn't have the essential foundation just as the mastery according to the present association. This focal office ought to comprehensively address unpredictable and multivariable parts of bioterrorist risk and guide approach plan reactions, while producing solid linkages with

industry and scholarly founds for coordination of bleeding edge look into. It ought to likewise obviously characterize the duty of various government offices, similar to security powers, including NDRF; specific associations like NDMA, DRDO, DBT and CISR; various services like MoH and FW, MoA, MoD and Ministry of Environment and Forest (MoEF); administrative associations like the Central Drug Standard Control Organization (CDSCO) and Food Safety and Standards Authority of India (FSSAI); private establishments to incorporate biotech industry, clinics, Indian Pharmaceutical Association (IPA) and different non-government associations (NGOs); and media.

The job of the considerable number of partners ought to be outlined and administered framing some portion of a bigger activity plan at the national level. This organization ought to likewise be in charge of financing research for long haul, high-hazard, high-result ventures. In a perfect world, the new suggested association ought to be little, however have solid communications with colleges and important government associations. Thinking about the profoundly specific nature of the issue, bioterrorism ought to be distinguished as a particular issue and given centered approach consideration. The new examine association will likewise work to comprehend pathogenic harmfulness elements and their impact on mammalian frameworks, went for the improvement of diagnostics, antiviral and antibacterial medications and immunizations. This unavoidably would have double use benefits.

6. Characterizing Protocols for Responding to Bioterrorist

NDMA, in interview with DRDE and NCDC, ought to build up an arrangement for accomplishing this goal, and MoH and FW and MoA, through their different offices, should bolster the vital

research. Fast epidemiological appraisal of organic catastrophes can be accomplished by ICMR by utilizing the most recent mechanical devices, which will thusly aid basic leadership and opportune intercession. IDSP should be extended and reinforced, and ought to likewise have linkages with reconnaissance systems of neighboring nations just as globally, through offices like Food and Agriculture Organization (FAO) and WHO. It should fuse specialized and operational research devices, for example, mapping; utilization of topographical data framework (GIS) and new philosophies for hazard based distribution of assets, similar to danger, powerlessness and result (TVC) investigation.[41]

7. Fortifying Legal Framework

India direly needs a stricter enactment sponsored by powerful implementation for tending to the bioterrorism risk. The Indian Penal Code is lacking to manage bioterrorism. The US, in the wake of the Bacillus anthracis assaults, passed the 'Bioterrorism Act of 2002', which spotlights on sustenance, water and medication safety and security. According to the Indian Constitution, wellbeing is a state subject. Scourge Diseases Act of 1897 doesn't give any capacity to the middle to mediate even if there should arise an occurrence of a natural crisis and ought to be supplanted by the Public Health Emergencies Bill which is as yet pending. The new demonstration ought to exhaustively address all biosecurity and biosafety issues and have arrangements for the focal and state governments and nearby specialists to act without risk of punishment. [42]

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[41] NDMA, 2008, p. 31; Linacren et al., 2005
[42] NDMA, 2008, p. 13

A. External Course of action

1. Best Practice from Global Forums

Enrollment in worldwide gatherings gives access to counsel and direction created by the associations, including access to specialists, limit building projects and allows and worldwide administration structures. Substantial advantages can be seen from India's commitment with such worldwide discussions. Coordinated effort and collaboration with worldwide associations, similar to the WHO, Office International des Épizooties and FAO, and associations of similar nations like CDC of the US can assume an essential job in plague control.

2. Preparing and Capacity Building

Thinking about the present absence of specific preparing accessibility inside India, it might be relevant for Indian police powers to gain by connections with Interpol to exploit the preparation bundles created by Interpol's Bioterrorism Prevention Program and Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) Terrorism Prevention Program [Interpol, 2015(a), 2015(b)]

3. Biological Weapons Convention (BWC), 1972

BWC thoroughly forbidding organic fighting was endorsed by the United Nations General Assembly in 1971. The nonappearance of any formal check system or component to screen consistence has restricted the adequacy of the Convention, and even after seven survey gatherings, this provision has not been included. Progress in hereditary designing has additionally muddled this issue. Vectors of sicknesses as potential specialists of organic fighting ought to likewise be incorporated into the BWC.

4. Institutionalize International Biosecurity Efforts

Foundations that keep up hazardous pathogens for genuine uses, for example, culture accumulations, scholastic and business inquire about labs and restorative offices, offer the most immediate and dependable courses for the obtaining of seed stock required for an organic assault by fear mongers. Various such offices exist the world over, a considerable lot of which are insignificantly verified and managed. The universal network should go to a typical comprehension on a bioterrorism high-need specialists list, to all the more likely protect such stocks dependent on their destructiveness, consequences for wellbeing, irresistibleness, and so on. Moreover, a global biosecurity show can avoid these seed stocks from being abused. [43]

5. Improve Global Preparedness, Detection, Surveillance and Response Capabilities

A universal system for identification and observation, utilizing IT for constant detailing and investigation, to quickly distinguish new examples of malady locally, broadly and globally is required. Sufficient readiness and reaction abilities by summoning worldwide collaboration may not avert bioterrorism, yet will limit the losses, monetary harm and dread psychosis, and further lessen key motivating forces for psychological oppressors.

CONCLUSION

The purposeful utilization of Biological specialists to hurt human wellbeing has accepted extensive significance in later past. The simplicity of generation and the ability to make frenzy have pulled in people or gatherings of people towards the utilization of organic specialists as weapons. Present day biotechnological apparatuses have the ability to upgrade their destructiveness just as to lessen the plausibility of their identification. In spite of the fact that conscious

[43] Ackerman & Moran, 2004, pp. 16–17

utilization of natural specialists added another measurement to the dangers to general wellbeing, battling these biothreats requires utilization of the customary standards of flare-up examination upheld by productive research facility frameworks. The WHO has been upholding, supporting, and fortifying national general wellbeing reactions to such an extent that any flare-up, common or conscious, can be quickly researched and successfully contained.

Time and again, it is seen that agencies responsible for security nation fail to provide counter intelligence against threats as that of Bio-Terrorism. A network need to be established alongside with knowledge should be gained as to how to counter such threats and awareness must be spread. Ultimately, if we as a country could counter such threats, this will not only help us in defending ourselves from Bio-terrorists, but also be able to fight normal disease, agricultural infections, thereby transforming our nation to a versatile community.

EMERGING TRENDS AND LEGAL PERSPECTIVES IN ROBOTICS AND ARTIFICIAL INTELLIGENCE

Dr. Bhupinder Kaur[*]

Abstract

Artificial Intelligence (hereinafter "AI") is the new electricity. AI and Robotics will lead to the formation of 'technological society' striving to bring out the fourth-generation industrial revolution in the world in the upcoming decade. AI is going to transform economy and society by increasing productivity, efficiency, accuracy, and transparency in governance, manufacturing, services, and resource management.

However, there are concerns that these technologies will also put forward problems as well as dangers before humans and organisations including Government. The loss of human autonomy, unreliability of technology, bias of training data, abuse of dominance by high tech giant corporations, breach of privacy, inequality of opportunity, safety, and security are the legal issues which need attention of the legal fraternity. There is a great need to examine the threats posed by these technologies and to provide for viable legal solutions.

This research paper has been divided into two parts. The first part gives descriptive information as to the concepts; developments and emerging trends in robotics and artificial intelligence giving the reader fair assessment of the efficacy of these technologies. The second part revolves around legal issues, possible legal solutions, and policy framework. The findings of the study suggest that some common legal

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standards need to be set by the international community. As of now, there is no need for strict national legislation on robotics and AI, however sound data protection legislation must be enacted. There should be SWOT analysis of the usefulness of these technologies in fulfilment of needs of our country. Accordingly, customised and suitable legal solutions should be evolved.

Key Words- *Robotics, Artificial Intelligence, Automated, Autonomous, Algorithm*

INTRODUCTION

Robots are the machines that are "*capable of carrying out a series of actions on behalf of humans*".[1] Part mechanical and part electronic, robots are automated machines that clatter, scamper and whiz around doing dirty and dangerous jobs such as sniffing out bombs, dragging out survivors from earthquakes, and making nuclear explosions safe. The present generation of robots predominantly consists of 'automated' machines devoid of thinking feature or artificial intelligence. Future robots, however, will become 'autonomous', being no longer reliant on human operators. They will be programmed in such a way that they will learn from their mistakes and become artificially intelligent.

There has not been any universally accepted definition of human intelligence, and therefore, artificial intelligence is also difficult to define since it is based on the idea of the former. For the perspective, Artificial Intelligence, as it stands in present, has been explained as, "*a set of statistical tools and algorithms that combine to form, in part,*

[1] UK House of Commons Science and Technology Committee, Robotics and Artificial Intelligence 2016-17, p. 6, https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/145/145.pdf (Last visited on May 25th, 2020).

intelligent software that specializes in a single area or task. This type of software is an evolving assemblage of technologies that enable computers to simulate elements of human behaviour such as learning, reasoning and classification".[2] Machine learning is one branch of AI which is currently dominating the process of development of AI. The UK Government Industrial Strategy White Paper defined AI as, "*technologies with the ability to perform tasks that would otherwise require human intelligence, such as visual perception, speech recognition, and language translation*".[3] The House of Lords Select Committee made an addition to this definition which is that AI systems today usually have the capacity to learn or adapt to new experiences or stimuli.[4]

AI innovation includes the hardware, largely robotics using AI techniques, their design and development as well as the software programme which collects, analysis, classifies, and processes data to make automated decisions. The significance of AI throws light on its ongoing use in healthcare, traffic management, energy and water consumption management, the EU Parliamentary Research Service has remarked that, "*AI increasingly affects our daily lives, and its potential range of application is so broad that it is sometimes referred to as the fourth industrial revolution*".[5] The report of the White House Office of Science and Technology Policy (OSTP), 2016 also hails AI as a "*technology that when used thoughtfully, can help to augment*

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2 *Ibid.*

3 House of Lords Select Committee on Artificial Intelligence, AI in UK: Ready, Willing and Able? 2017-19, p.14, https://www.parliament.uk/business/committees/committees-a-z/lords-select/ai-committee/ (Last visited on May 22nd, 2020).

4 *Ibid.*

5 EU Parliament, EU Guidelines on Ethics in Artificial Intelligence: Context and Implementation, p.1, https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/640163/EPRS_BRI(2019)640163_EN.pdf (Last visited on May 23rd, 2020).

human capabilities, instead of replacing them. It is useful for public good and to tackle some of the world's greatest challenges and inefficiencies".[6]

Presently, AI and Robotics are two different things primarily because robots do not use AI in factories, agriculture, or commercial works undertaken by them. The reason behind this is that they need to be programmed every time they do something new. However, both phenomena need to be analysed in relation to each other since both are set to blend in future to provide solution to problems. These are eventually likely to be conjugal in near future; robots serving as body and AI software programme serving as their mind. The IdTechEx Research Forecasts on future market of robots and AI have shown that presently only five percent of robots are smart enough to have AI features. However, by 2038, around seventy percent of robots will be packed with AI features smart enough to undertake majority of the work humans can do.[7]

EVOLUTION, USEFULNESS AND EMERGING TRENDS IN ROBOTICS AND AI

After a detailed examination of the scientific and academic literature on robotics and AI, the author describes the developments in the following manner:-

a. Evolution of Robotics and AI

Alan Turing, Herbert Simon, Marvin Minsky and John Mc Carthy are the pioneers of digital computing and the idea of artificial

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[6] Corinne Cath et al., Artificial Intelligence and the 'Good Society': the US, EU, and UK Approach, p.15, https://ora.ox.ac.uk/objects/uuid:12f825d6-d2cc-41c9-b2a8-7456994a64da/download_file? (Last visited on May 22nd , 2020)

[7] idtechex Research, New Robotics and Drones 2018-2038: Technologies, Forecasts, Players, p. 8, https://www.idtechex.com/en/research-report/new-robotics-and-drones-2018-2038-technologies-forecasts-players/584 (Last visited on May 27th, 2020)

intelligence. The early debate, research, and development concerning AI and robotics took place in the UK and the USA. The famous Alan Turing Test explains the meaning of artificial intelligence as, "*if you ask a human to perform a task for you and a machine hears and does the same for you, it is artificially intelligent*". In 1960s, universities took over the R&D in AI in the UK as well as in the USA. The 1970s faced the AI Winter which resulted in huge reduction in funding of research because scientists could not show any fruitful results. James Lighthill Committee in UK investigated the matter and found major inconsistencies in promises and actual results in research centres. In 1980s, however, the AI research led to the development of 'expert systems' used by experts in areas like program trading and medicine to arrive at correct decisions. Internet and World Wide Web arrived in the late 80s and countries resumed serious efforts in the field. In 1990s, various kinds of sectors such as cell phone industry, medicine, stock exchanges, and data analysis services in government as well as private sector started using first generation AI applications. With the passage of time the language translation, image and speech recognition, filtering spam out of an email inbox, deep learning, reasoning and classification came out to be the output of AI research.

Seeing the trends, the USA is leading in the R&D and real life application of robotics and AI technologies, followed by China who has heavily invested in this area since the last decade. UK is also a major partner in the elite league. Alan Turing Institute is its premier public sector research institute on AI amongst its other world class research universities. Google Deep Mind, one of the largest machine learning labs in the world, is also located in London.

India has also established research centres in IITs and IISc. Its defence PSUs are working on development and use of AI for defence

purposes and have recently completed 13 such projects.[8] Apart from this, we may see rise in number of applications being filed for patents in automated technology in recent years in the Indian patent office. NITI Aayog has published the 'National Strategy on Artificial Intelligence in India' in June, 2018.[9] The strategy focuses upon the research, development, and use of AI in healthcare, agriculture, education, smart cities and infrastructure, smart mobility and transportation. The Aayog has identified certain AI related challenges before the Indian system including lack of expertise, absence of enabling data ecosystem, high resource cost, privacy and security including a lack of formal regulation around anonymization of data and absence of collaborative approach to adoption and application of AI.

Though the strategy paper claims that AI is the new factor of production and is going to change every aspect of human life adding 1 trillion Dollars to India's economy by 2035, it additionally admits that India is far behind the other advanced economic powers in robotics and AI research, development and its real time application. Serious research work in India is limited to less than 50 researchers concentrated mostly at IITs, IIITs and IISc[10].

b. Opportunities Created by Robotics and AI

The experts in the field of robotics and AI have expressed hope that this technology can greatly serve the humans if used wisely. Some of the predictable uses are as under: -

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[8] Ministry of Defence, *Mission Raksha Gyan Shakti*, p.4, https://ddpmod.gov.in. (Last visited on Aug. 4rth, 2020).

[9] NITI Aayog, National Strategy on Artificial Intelligence in India, p.20, https://niti.gov.in/national-strategy-artificial-intelligence (Last visited on Aug 5th, 2020).

[10] *Id* at p. 50.

1. Productivity will increase. Autonomous robots packed with AI will be undertaking jobs in manufacturing, retail, services, and agriculture like humans though the automated robots are already in use but quite limited in enormity. Eventually every sector of the economy will gain from accuracy and efficiency of AI.

2. Humans will be greatly assisted in dangerous, dirty and complex jobs.

3. Automated and autonomous technology will enhance the exploration in the seas, tropical areas, and the aerospace. This will provide great lead to early innovators in decisive defence combats. Its integrated use in GIS and remote sensing technology can greatly help nation states to plan and better manage their geographical and socio-economic conditions.

4. AI used along with other systems may greatly help the first responders such as fire-fighters, disaster management teams, hospital emergency caregivers, and law and order enforcement agencies. AI assisted systems are being used to create situational awareness (for example, T-Mobile in USA) and to offer quick response by locating affected or likely to be affected areas, buildings, and people with robots and drone navigational cameras, sensors, and AI data analysis.

5. AI systems will help remote work particularly in businesses which can be managed through computer programmes such as information technology and finance. It will provide good career opportunities to those who want to work in reputed companies yet hesitate to relocate from their cities or who want to work from home, by choice or limitation. It can help create more employment opportunities for women and

reduce gender gap by affording them work from home facilities since they have family responsibilities and many of them prefer to stay home.

6. Advanced AI based online learning systems will help the disadvantaged sections of society who want to gain knowledge and skills but cannot manage to bear the cost of formal education in good institutions. It will also help to manage linguistic diversity in education in the country.

7. If AI techniques can provide good customised solutions to identify the legitimate beneficiaries for Government's Direct Benefit Transfer (DBT) schemes, it may be of great help to the governance system. A lot of non-eligible people eat out the money of poor people by corruptive methods by giving fake identity particulars in banks. The linking of Aadhar with accounts, particularly Jan-Dhan accounts, was a crucial step to check upon such frauds. AI's potential in this regard should be analysed on priority basis.

8. The care-taking services for persons with special needs such as disabled persons, old aged people and small children will be greatly assisted through camera, sensors, robots and AI packed technologies.

9. New employment opportunities will be created. However, re-skilling and up-skilling will be required because the nature of work as well as the method of working will change. NASCCOM predicts that "*by 2022, a startling 46 per cent of the Indian workforce will be engaged in entirely new jobs that do not exist today or jobs that have radically changed skill sets. India*

will face a demand-supply gap of 2,00,000 data analytics professionals by 2020".[11]

c. Challenges Underlying Development and Use of Robotics and AI

There are equal concerns also in relation to the future of autonomous technology which have been highlighted as under: -

1. The defence combats will become enormously fatal. Lethal Autonomous Weapon Systems (LAWS) are being secretly developed. These are largely unregulated and hailed to be the next warfare revolution. If autonomous weapons fall into the hands of terrorists and anarchists, the results will be immensely disastrous.

2. In civil use of robots and AI, safety and control issues will equally emerge. Standards of accountability and liability are to be fixed for technology developers, service providers as well as end users.

3. There will be risk of loss of existing jobs. The nature and forms of employment will change. The skill mapping and skill creation is a big challenge which, if not done, is likely to create huge skill gaps leading to inequalities of opportunities for the disadvantaged sections. However, some of the industry leaders and researchers do not agree with this assertion. They claim that new jobs will take over the old jobs and employment balance will remain the same. For example, in advocacy, the work of junior lawyers is likely to be taken over by AI systems, however, new para-legal staff will be required for maintenance of such technology in law firms.

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[11] *Id* at p. 64.

4. It is also worried that advanced technology like AI will create real time knowledge gaps. Humans will become dependent on machines. They will be unable to handle emergency situation when technology breaks down. They will eventually lose hold on actual human scientific skills. Albert Einstein had also expressed such concerns commenting upon the unwise and excessive use of technology.
5. Transparency in application of these technologies will be required. The use of AI for discriminatory purposes, political purposes and unethical purposes is a risk factor.
6. Directing the positive use of AI for the benefit of people is to be secured. In order to set basic legal norms to guide the scientific community and industry,development of technology is required. It will enhance the public trust in the technology.
7. Monopolisation of data by big technology companies and abuse of dominance is to be curbed.
8. Academics, industry and government will have to be co-ordinated to understand and work upon the capabilities and limitations of these advanced technologies. Public sector like health care may take lead in the use of robotics and AI in universal healthcare service. Training schemes, apprenticeship programmes, early young age learning in schools and colleges, and training of academia will be required.
9. The issues in relation to open data, data protection, data sabotage, data portability, data trusts, auditing of data sets used in robotics and AI need to be analysed and resolved.
10. It is not clear whether robotics and AI led technology would be able to secure sustainable development and better climate

change management. There is not enough research on the counter effects of robots and AI machines' emissions, radiation, laser or rays on environment and its different elements including humans themselves.

d. Emerging Trends in Recent Past and their Implications

Autonomous technology warfare will be very different, disastrous, and undermining the existing international war crime laws. Throwing some light on the military use of robots and AI, Stuart J. Russell[12] cautions that, "*existing AI and robotics components can provide physical platforms, perception, motor control, navigation, mapping, and tactical decision-making and long-term planning. They just need to be combined. For example, the technology already demonstrated for self-driving cars, together with the human-like tactical control learned by Deep Mind's DQN system, could support urban search and destroy missions. Despite the limits imposed by the physics, one can expect such platforms deployed in the millions, the agility and lethality of which will leave humans utterly defenceless. This is not a desirable future".*[13]

Lethal Autonomous Weapon Systems (LAWS) is the next generation revolution in the warfare. Though Germany and Japan have expressed concerns and agreed to the universal ban on such weapons but UK, the USA, and Israel have not shown this commitment. The problem may become very serious if these weapons fall into the hands of terrorists and anarchists. Some meetings have been held by UN in

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[12] Stuart J. Russell is the Professor of Computer Science at the University of California, Berkeley. He is well known for his work on artificial intelligence including his celebrated book 'ARTIFICIAL INTELLIGENCE: A MODERN APPROACH'.

[13] Stuart Russell, Take a Stand on AI Weapons, https://www.nature.com/news/robotics-ethics-of-artificial-intelligence-1.17611, p.3, (Last visited on May 13th, 2020)

this regard under the auspices of Convention on Certain Conventional Weapons (CCW), however no fruitful result came out. Anthropologist Hugh Gusterson argues that "*if war is a duel in which both sides are vulnerable, and then drone warfare may not even be war. It is so asymmetrical that it resembles hunting, new form of state violence, harder to define and control with national and international laws. The drone is an inherently colonialist technology that makes it easier for the States to engage in casualty-free and therefore debate-free intervention.*"[14]

Russ B. Altman lays stress on transparency of AI techniques and their use for all on equal basis.[15] It requires imparting adequate training to users of AI technology. Altman admits that AI can transform the healthcare sector for betterment. According to him, "*AI systems promise to help make sense of several new types of data: measurements from the 'omics' such as genomics, proteomics and metabolomics; electronic health records; and digital-sensor monitoring of health signs. Clustering analyses can define new syndromes separating diseases that were thought to be the same and unifying others that have the same underlying defects. Pattern-recognition technologies may match disease states to optimal treatments. For example, my colleagues and I are identifying groups of patients who are likely to respond to drugs that regulate the immune system on the basis of clinical and transcriptomic features. In consultations, physicians might be able to display data from a 'virtual cohort' of patients who are similar to the one sitting next to them and use it to weigh up diagnoses, treatment options and the statistics of outcomes. They could make medical decisions interactively with such a*

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[14] Hugh Gusterson, Drone: Remote Control Warfare, https://www.nature.com/articles/534618a, p.4, (Last visited on May 13th, 2020).

[15] Russ B. Altman is the Professor of Bioengineering, Genetics, Medicine and Computer Science at Stanford University. He has been the member of American National Academy of Medicine, ACP, ACMI and AIMBE etc

system or use simulations to predict outcomes on the basis of the patient's data and that of the virtual cohort."[16] Manuela Veloso[17] gives examples of robots doing wonderful jobs such as NASA's Robonaut 2 (used for space construction), Japan's Kirbo, the robot astronaut working in International Space Station. The commercial robots called Cobots are being used in retail sector for loading and unloading and in manufacturing for production lines and in agriculture for plucking fruits. Cobots are being used for e-tourism also. Veloso informs that "*they can generate accurate maps of spaces, showing temperature, humidity, noise and light levels, or WiFi signal strength. We help the robots to open doors, press lift buttons, pick up objects and follow dialogue by giving clarifications.*"[18]--

Markus J. Buehler reports that the use of AI systems in nano-technology research has shown great results at Massachusetts Institute of Technology (hereinafter "MIT"). It has immense potential to help engineers find out the reasons and processes which are accountable for breakage of different types of materials, natural as well as artificial ones so as to save losses in relevant industries. He asserts that, "*for inspecting planes or trains or cars, or for roads or infrastructure, or concrete, or steel corrosion, or to understand the fracture of biological tissues such as bone, the ability to simulate fracturing with AI, and doing that quickly and very efficiently, is a real game changer. For single*

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[16] Russ Altman, Distribute AI Benefits Fairly, https://www.nature.com/news/robotics-ethics-of-artificial-intelligence-1.17611 , p.5 (Last visited on May 13th , 2020)

[17] Prof. Manuela Veloso is the Professor of Computer Science at Carnegie Mellon University and also the Head of J.P. Morgan AI Research. She is quite optimistic that robots and AI are going to be of great help for humans. She has developed many autonomous robots including soccer robots and commercial robots.

[18] Manuela Veloso: Embrace a Robot–Human World, https://www.nature.com/news/robotics-ethics-of-artificial-intelligence-1.17611, p.7 (Last visited on May 13th, 2020).

simulations in molecular dynamics, it has taken several hours to run the simulations, but in this artificial intelligence prediction, it only takes 10 milliseconds to go through all the predictions from the patterns, and show how a crack forms step by step"[19].

Google Deep Mind developed AlphaGo, an AI programme which defeated the world champion Lee Sedol in the highly complex Chinese 'Go' game in 2016 and surprised the world.[20]. The leaders of the auto industry such as BMW, Mercedes- Benz, Ford, Volkwagen and Tesla have established facilities to develop Unmanned Vehicles (UV). The Platoon and Freightliner trucks are semi-automated trucks. AI techniques are being developed to equip the vehicles with skills needed for braking, lane changing, collision prevention, navigation and mapping systems. Google's UVs, which are the representative models, are already on the roads legally in California, Nevada, Florida, and Michigan in USA.[21]

REGULATORY ASPECTS

Autonomous robotics and AI are in the first generation of their development. Therefore, it is not necessary to create any strict national legal regime at present. It will stifle the innovation itself. However, it is wise enough to think upon the basic issues, ethics, and legal questions which either have arisen or may arise in the very near future. Clarity of ethics and legal norms will help the scientific

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[19] MIT News Office, http://news.mit.edu/2020/machine-learning-develop-materials-0520 (Last visited on May 28th, 2020).

[20] UK House of Commons Science and Technology Committee, Robotics and Artificial Intelligence 2016-17, p. 3, https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/145/145.pdf (Last visited on May 25th, 2020).

[21] Tao Zhang et al, Current Trends in the Development of Intelligent Unmanned Autonomous Systems, http://dx.doi.org/10.1631/FITEE.1601650 (Last visited on May 23rd, 2020).

community. It will give them the idea that they are moving in the right direction and their investments in research and development are secure. Regulation increases the public trust in the use of advanced technologies which is significant to create market for those products. The idea of highly intelligent and powerful AI machines which can supersede human intelligence can be called a fantasy. It is, however, pertinent to recognize that landing on moon or mars was also once a fantasy for old generations. AI scientists have conceived the ideas and they are marching towards their accomplishment. The developments are so fast that soon we may see long jump in AI innovation and product delivery. For a mix of reality and forecasts in a developing field, it is neither easy nor feasible to dwell upon all the legal perspectives; however, the author, after examination of practices, is of the opinion that the following regulatory aspects need attention of legal fraternity: -

a. **Reliability**

The developers of technology will have to ensure that it does not produce unintended or unwanted results by accident or malice. Human operator must have real control over an AI machine. Bill Gates of Microsoft and Elon Musk, the founder of Tesla and Space X have strongly expressed their concerns over loss of human autonomy over future machines. There must be inbuilt control mechanisms in AI machines to maintain human control over them. Laws of manufacturing, testing, and certification should require the technology developer to ensure such inbuilt controls in their products. Infrastructure needs to be developed so that testing and approval facilities are readily available. Problem with highly intelligent machines would be even more challenging as they are built to self-improve and we may see different behavioural patterns at different times including learning to avoid human interventions. In

2016, An AI chatbot developed by Microsoft started making racist, sexist and political statements to youngsters for whose entertainment it was developed after it learnt about them from their conversations. Similarly, earlier in 2013, an AI robot put pause on the Tetris game forever when it learned that it can lose the game the other way. Thereafter, the famous Kill Switch Programme was undertaken at the Oxford University in association with Google Deep Mind to prepare required integral command systems in AI robotics which makes them work the way the operating humans expect from them.[22]

b. **Transparency**

The decisions taken must be transparent, reasoned and capable of analysis and course correction. AI will be making decisions in medical diagnostics, legal matters, financial and trading transactions through advanced 'expert systems'. There should be record of the course of learning and training data of the machine and the algorithms behind decisions. Algorithms are the artificial neural networks with neurons having discrete layers and connections to other neurons. Each layer picks out a specific feature to learn and depth is created by using multiple layers to make intelligent decisions. There should be right to know, inspect, and investigate the algorithm and the logic. Right to explanation of the algorithm is vital. The documentation will serve as legal evidence in litigation. It will facilitate the AI owner or the service provider also to prove that it has taken due care.

c. **Discrimination and Misuse**

The use of Robotics and AI should not result into discrimination knowingly or unknowingly. Discrimination is highly apprehended in

[22] BBC News, Google Developing Kill Switch for AI, 8 June, 2016, https://www.bbc.com/news/technology-36472140 (Last visited on July 22nd, 2020).

use of AI in employment, political, and ethnic matters. The choice of training data is very significant as it sets the ground for discriminatory use or misuse of people analytic techniques by using AI technology. The developers and users must be under obligation to stick to neutrality in training data. The organisational biases have to be eliminated.

d. **Consent**

The user should be able to assume that his data is ethically sourced and used under appropriate consent rules. For example, in medical data, how much data can be given to the hospital using AI technology, the norms of taking consent of patient, ownership of the data, re-use of data and privacy of information are to be secured. AI works on big data analysis and therefore, data protection policy and regulation are prerequisites to any specific AI regulation.

For example, in unmanned vehicles, who will bear the cost of liability in accident case? The manufacturer of the vehicle or the developer of the software or the owner of the vehicle? How to fix the liability if a driverless car hits one vehicle to save collision with the other? Is the law of tort, contract, consumer law or the insurance law equipped to deal with it? One solution is that vehicle should be compulsorily insured and victim is to be compensated from insurance cover and there should not be any criminal liability. Second principle is of product liability. The newly enforced Indian Consumer Protection Act, 2019 (hereinafter "Act") incorporates the principle of product liability making the manufacturer of the product predominantly liable for quality of his product. The service provider and product seller are also liable for lack of standards of care which is legitimately expected from them. However, the Act is more focused on products of general use than of complex and highly advanced technological products like AI machines. In case of defence related autonomous

unmanned aerial vehicles, how the particular commander is to be tried under humanitarian law when the drone itself finds its target, finishes it and moves further without any control by human commander? The debate relating to killer robots exposes the incapacity of existing international law to deal with such weapons.

e. Jurisdiction Issues

The Use of AI application will create jurisdiction issues. For example, the company is incorporated in the USA, trained its AI in London based data lab, actually operating in Singapore through Indian employees via gig work. The litigation will become too complex. The issues can be solved by a specific treaty of international community or regional conventions on AI. For example, the General Data Protection Regulation (GDPR), 2018 of European Union provides that if any firm violates the rights of EU citizens under GDPR, it will be subject to the jurisdiction of EU, no matter wherever it is incorporated or operates for gain.

f. Legal Personality to AI

This idea though seems to be premature today yet cannot be ignored. The basic elements responsible for human's legal personality are their 'intelligence' and 'will'. Cognitive science begins with the assumption that the nature of human intelligence is computational, and therefore, the human mind can, in principle, be modelled as a program that runs on a computer and AI research attempts to develop such models.[23] Alan Turing's mimic test recognises the intelligence of machines but John Searle rejects this idea. On the basis of 'Chinese Room Experiment', Searle argues that machines can only manipulate

[23] Owen J. Flanagan, THE SCIENCE OF THE MIND, 2d ed. 1991, in Lawrence B. Solum, Legal Personhood for Artificial Intelligence, North Carolina Law Review, 1992, Vol.70. No.4, p. 123.

symbols and produce results. These machines do not know about themselves, the meaning of symbols they use and cannot feel that meaning which humans can do. They cannot differentiate between just and unjust. Therefore, they lack 'intentionality' which is basic to intelligence or will that humans possess and therefore, the idea of their legal personhood fails.[24]

Lawrence B. Solum gives hypothetical examples of expert systems like program trading in stock markets (an AI application) being appointed as a trustee. He argues that artificial persons can become trustees such as corporations, however, can an AI can do so or not depends upon certain legal questions. Is AI competent to administer trust? Can it make moral or aesthetic judgments like human trustees? Can an AI compensate the trust for breach of trust?

The solution may be compulsory insurance of AI and payment of compensation to the victim out of the amount of insurance claim. What if there is a change in circumstances and a decision deviating from the terms of the trust is required for the benefit of the trust itself? Is it to be referred to a human person through the very terms of the trust? And, if that human becomes the real trustee in the eyes of law? Further in legal suits, how an AI will decide whether to bear the cost of litigation or to settle the claim in a compromise or go for ADR mechanisms? Solum's arguments make it clear that if AI has that level of intelligence that humans have in order to make decisions in discretionary or emergency situations, only then the idea of legal personhood on AI would hold some water.

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[24] John R. Searle, MINDS, BRAINS AND SCIENCE in Lawrence B. Solum, Legal Personhood for Artificial Intelligence, North Carolina Law Review, 1992, Vol.7, No.4, p.1236.

g. Employment Law Issues

The issue of technological unemployment has also drawn the attention of the world. Robotics and AI are the biggest culprits. MIT economist Daron Acemoglu and Pascual Restrepo (Professor of Economics at Boston University) have conducted studies on the impact of automation on employment in US and Europe. Acemoglu and Restrepo claim that since 1990 to 2007, one robot deployment in factories has replaced 3.3 workers. Some sectors have made greater robotisation such as automobile (38 percent), electronics (15 percent), plastic and chemical (10 percent) and metal manufacturing (7 percent) as compared to other industries. The automation has created income inequalities throwing low-skilled workforce out of work and real time wage loss also.[25] In a relatively recent paper, Acemoglu finds that, within industries adopting automation, the average 'displacement' (or job loss) from 1947-1987 was 17 percent of jobs, while the average 'reinstatement' (new opportunities) was 19 percent. But from 1987-2016, displacement was 16 percent, while reinstatement was just 10 percent.[26]

In the March 2020 issue of the 'International Labour Review', ILO has also put forward concerns before stakeholders relating to technological impact on employment patterns and employment laws through Miriam A. Cherry.[27] The paper warns about the loss of human autonomy at workplace. The gig economy or crowd-work, for

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[25] Daron Acemoglu and Pascual Restrepo, Robots and Jobs: Evidence from U.S. Labor Markets, MIT News Office, http://news.mit.edu/2020/how-many-jobs-robots-replace-0504 (Last visited on May 26th, 2020).

[26] Daron Acemoglu and Pascual Restrepo, Unpacking Skill Bias: Automation and New Tasks, http://news.mit.edu/2020/how-many-jobs-robots-replace-0504 (Last visited on May 26th, 2020).

[27] Miriam A. Cherry, Back to the Future: A Continuity of Dialogue on Work and Technology at the ILO, International Labour Review, Vol. 159 (2020), No. 1, p.5.

example, home based manufacturing, work from home IT services, cab services, grocery shopping, home repairs, food, and goods delivery etc. done by people who are not employees of the organisation they are working for, will increase day by day. It will lead to low wages, lack of advancement and benefits for workers as there will be no one centralised physical workplace and no collective bargaining. Workers rather will become the independent contractors and employment law will fail to protect them.

People's analytics (making decisions from analysis of big virtual data from official as well as personal use of people) will be used by employers to collect information of prospective recruits which is a violation of basic human rights of equality to opportunity, privacy and non-discrimination. However, there are positive counter developments as well. According to Cherry, "*there are a number of worker-driven oversight systems that monitor technology in the workplace. Other worker bulletin boards and rating services, like Turker Nation and Turkopticon allow online crowd-workers to rate review and discuss tasks and hiring entities before beginning to work*".[28] In an Uber case, workers compelled the company to change its policy decisions by making an online campaign on coworker.org[29]. This idea may lead us to a different direction in labour matters. What if the gig workers register themselves on a common website as workers of a company and court accepts the petition of workers filed in the name of the website domain name? What if the virtual platform serves as a recognised trade union for collective bargaining? However, these hypothetical assertions need further research and academic debate.

CONCLUSION

[28] *Id* at p. 8.
[29] *Id* at p. 21.

There is an old saying that diamond cuts diamond. It is equally applicable to technology as well. It means that practically, the problems which are created by technology can be fixed by technology itself. The task of law is to ensure that such counter technology is also developed and compulsorily made integral part of the main article.

The inbuilt control mechanism should, therefore, be an essential part of the robotics and AI. Facilities should also be developed for proper testing and certification of robots and AI. The ways to mitigate losses arising out of breach of code of conduct, destruction of assets, and accidents should be evolved. For instance, the robust legal norms on product liability or compulsory insurance cover. As AI works on big data, a strong data protection regulation needs to be enacted, for example, in EU the General Data Protection Regulation 2018 gives certain concrete data protection rights to EU citizens such as right to be informed about possession, use and breach of data by the user company, right of access to data and data processing methods, right to rectification of data, right to erasure of data, right to restrict processing of data, right to get data portability, right to object and rights around automated decision making and profiling. India also needs to think on these issues as we may not have developed AI technology to that an extent but meanwhile, we must be using imported technologies or must be outsourcing AI work to foreign entities which will use personal data of our citizens.

Employment issues are also vital for any society and solutions will have to be found that our laws do not lag behind to protect workers due to change in employment patterns created by steep rise in technological developments. The challenges are to be converted into opportunities. The legal system needs to work on the use of virtual platforms to grant remedies to people in general, and the workers in particular. It should also exercise mind on use of AI for reduction of

pending case load on courts. Academicians need to work with scientists, industry leaders and para-legal service providers to understand and respond to challenges created by advanced technologies.

The interface between law and science should become the illustrious dimension of research in universities. A vigilant attitude, well defined goals with written strategies and policies, informed institutions and customised legal solutions are required to successfully operate a 'technological society' which we all are going to be part of in the next generation industrial revolution.

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