

SMOOTH SAILING OR A RISKY EXPEDITION?

UNMANNED VESSELS AND ITS POTENTIAL LEGAL AND REGULATORY IMPACTS ON THE MARINE INSURANCE SECTOR

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OVERVIEW OF UNMANNED MARITIME VEHICLES/VESSELS



INTRODUCTION– WHAT ARE UNMANNED MARITIME VEHICLES?

Unmanned maritime vehicles also known as unmanned vessels, autonomous vessels or ‘ghost ships’ are simply vessels that are not operated by an on-board master and crew.

- There are two types of unmanned maritime vessels:
 1. Fully autonomous vessels and
 2. Remotely operated shore-based unmanned vessels.

IS THERE A NEED FOR UNMANNED VESSELS?

- Unmanned vessels are expected to address some of the common issues that face the maritime industry. These include:
 1. High level of absenteeism from seafarers due to family obligations;
 2. Environmental concerns—oil spills, pollutions—zero emissions
 3. Limited hold space on cargo ships due to housing for seafarers

Autonomous vessels are expected to be more:

1. Efficient
2. Use cleaner and more environmentally friendly energy
3. Solve the problem of seafarers absenteeism

CURRENT DEVELOPMENTS IN UNMANNED VESSELS

“THE YARA BIRKELAND” – AUTONOMOUS VESSEL



(CONT'D)

ROLLS ROYCE ADVANCED AUTONOMOUS WATERBORNE
APPLICATIONS INITIATIVE (AAWA) PROJECT-SHORE BASED REMOTE
OPERATED VESSEL



ARE UNMANNED VESSELS LEGALLY CONSIDERED AS SHIPS?



- There is surprisingly no uniformed definition of the word ‘ship’ under maritime law.
- It varies from convention to convention, and some national laws have varying definitions of the word ‘ship.’
- To know if an autonomous vessel is considered as a ship, one has to examine the specific convention, or the specific national law.

UNITED NATIONS CONVENTION ON THE LAW OF THE SEAS (UNCLOS)

- The United Nations Convention on the law of the seas (UNCLOS) is often times referred to as the '*constitution for the oceans*,' as it contains amongst other things, the navigational rights and relevant duties of ships.
- However, this very constitution itself does not have any definition as to what exactly constitutes a ship.
- It is thus quite possible that autonomous vessels will be considered ships for the purposes of the UNCLOS.
- This would mean that autonomous vessels would enjoy the same rights and benefits and must comply with the stipulated regulations under the UNCLOS.

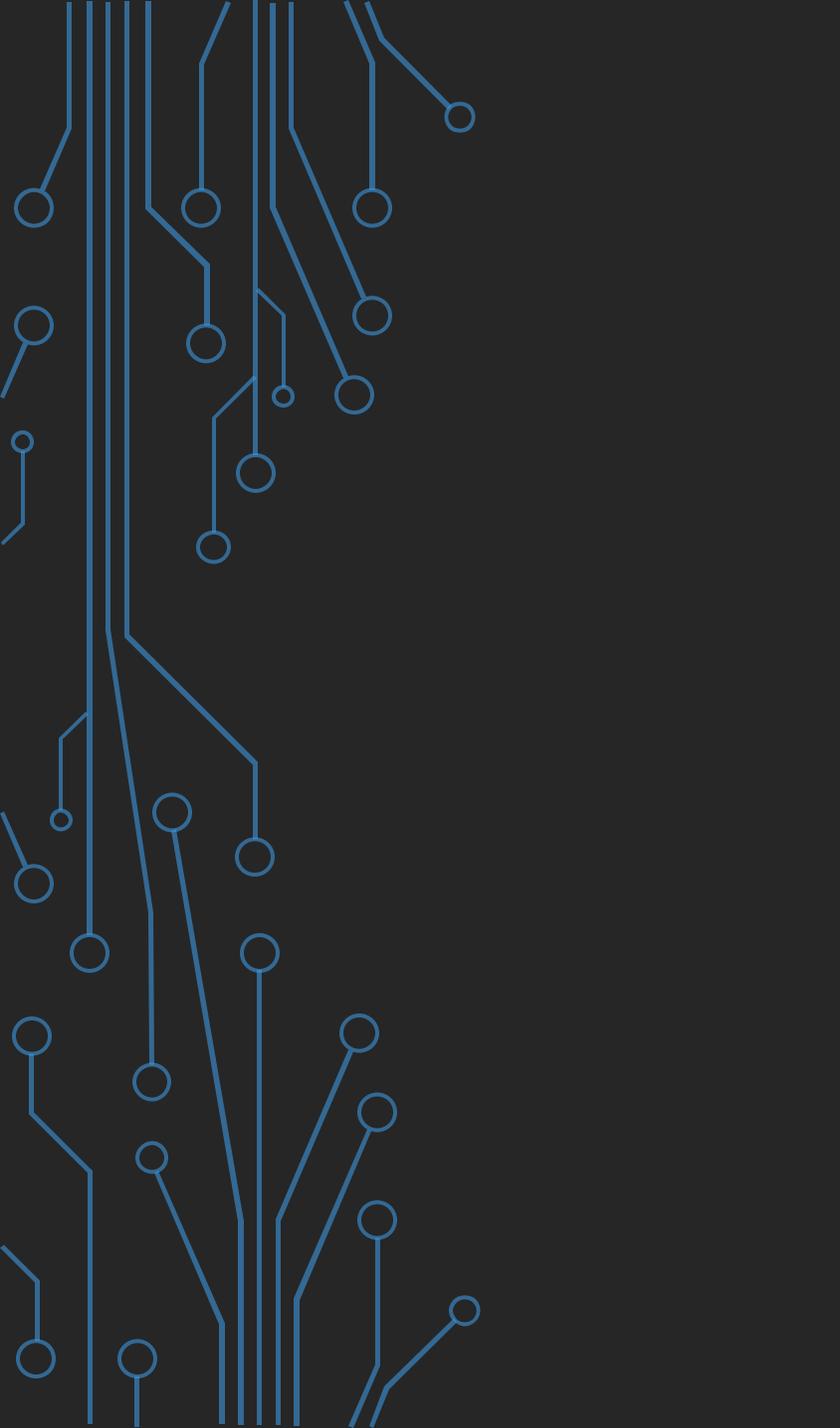
INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS 1973 AS MODIFIED BY THE PROTOCOL OF 1978

- Article 2, Clause 4 of the International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 (MARPOL 73/78) defines a ship as:

‘a vessel of any type whatsoever, operating in the marine environment and includes hydrofoil boat, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms.’

INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA 1972 (COLREGS)

- Section 3(a) of the International Regulations for Preventing Collisions at Sea 1972 (COLREGs) defines ship as
- *“every description of water craft, including non-displacement craft, WIG craft and seaplanes, used or capable of being used as a means of transportation on water.”*



INSURANCE LAW CONSIDERATIONS FOR AUTONOMOUS VESSELS

INSURANCE CONSIDERATIONS OF UNMANNED VESSELS

1.The Risks:

- i. Technological risks–cyber pirates, cyber attacks, software viruses, malfunctioning of on board technical hardware.
- ii. Increased privacy risks– Privacy and the storage of sensitive information on the clouds and hard drive of autonomous vessels– How will insurance companies safe guard against this risk?
- iii. Collision risks– It has been reported that human error is responsible for 75% of maritime accidents. It is expected that autonomous vessels will reduce this risk to a great degree as it removes the need for an on board staff and crew.

However–will autonomous vessels be able to rapidly respond to an impending collision? What about shore based operated unmanned vessels? Will they increase the risk of collisions?

INSURANCE CONSIDERATIONS OF UNMANNED VESSELS (CONT'D)

2. LIABILITY

i) PRODUCT/MANUFACTURER LIABILITY:

There may be an increase in the demand for marine insurance policies to include product liability clauses. Alternatively, there may be an increase in manufacturers seeking product liability protection.

This is as a result of the fact that autonomous vessels will depend heavily on extremely high technical products being developed by manufacturers.



LIABILITY CONT'D

ii. Vicarious Liability–Traditionally, shipowners can be held vicariously liable for the negligent acts of seafarers on manned vessels.

Question: Will there still be vicarious liability in its traditional form with the advent of unmanned vessels?

Arguably, it will evolve– Shipowners could arguably now be liable for negligent acts of shore based operators.

Question: Will manufacturers be held vicariously liable for any defaults or negligent acts of programmers and developers?

LIABILITY CONT'D

iii. Civil Liability:

- Civil liability in maritime law varies from jurisdiction to jurisdiction. This leads to complex legal issues—choice of law, jurisdiction, nature of the accident or incident at sea, the flag states of the autonomous vessels, the nationality of the persons involved in the incident generally add to the complexity of addressing civil liability issues in maritime law.
- This will most likely be more complex with unmanned vessels. Will autonomous vessels be linked to a flag state? What about the enforcement of civil liability against shore based remote control operators when they are at fault?
- There is also the issue of whether fault based or strict liability would be applicable to civil liability issues involving unmanned vessels. Would it be fair that a ship owner is strictly at fault when there is an issue with an unmanned vessel that malfunctions solely based off its internal algorithms and no human real time intervention?

LIABILITY CONT'D

- iv. **Environmental liability**– Marine disasters are inevitable. Over the last century, there have been many notable maritime accidents, which caused pollution to the environment.
- Though it is expected that autonomous vessels will operate more efficiently and as such it is expected that there will be less accidents or incidents that should pollute the environment, this is not an absolute certainty.
- Additionally, though some autonomous vessels are expected to have zero emissions, it is not yet known what other novel polluting substances that autonomous vessels that are not zero-emissions will release.
- Owners of unmanned vessels should thus ensure their insurance contracts contain environmental liability clauses.

INSURANCE CONSIDERATIONS OF UNMANNED VESSELS CONT'D

3. PREMIUM–It is already a known fact that marine insurance policies costs multimillions of dollars for traditional manned vessels.

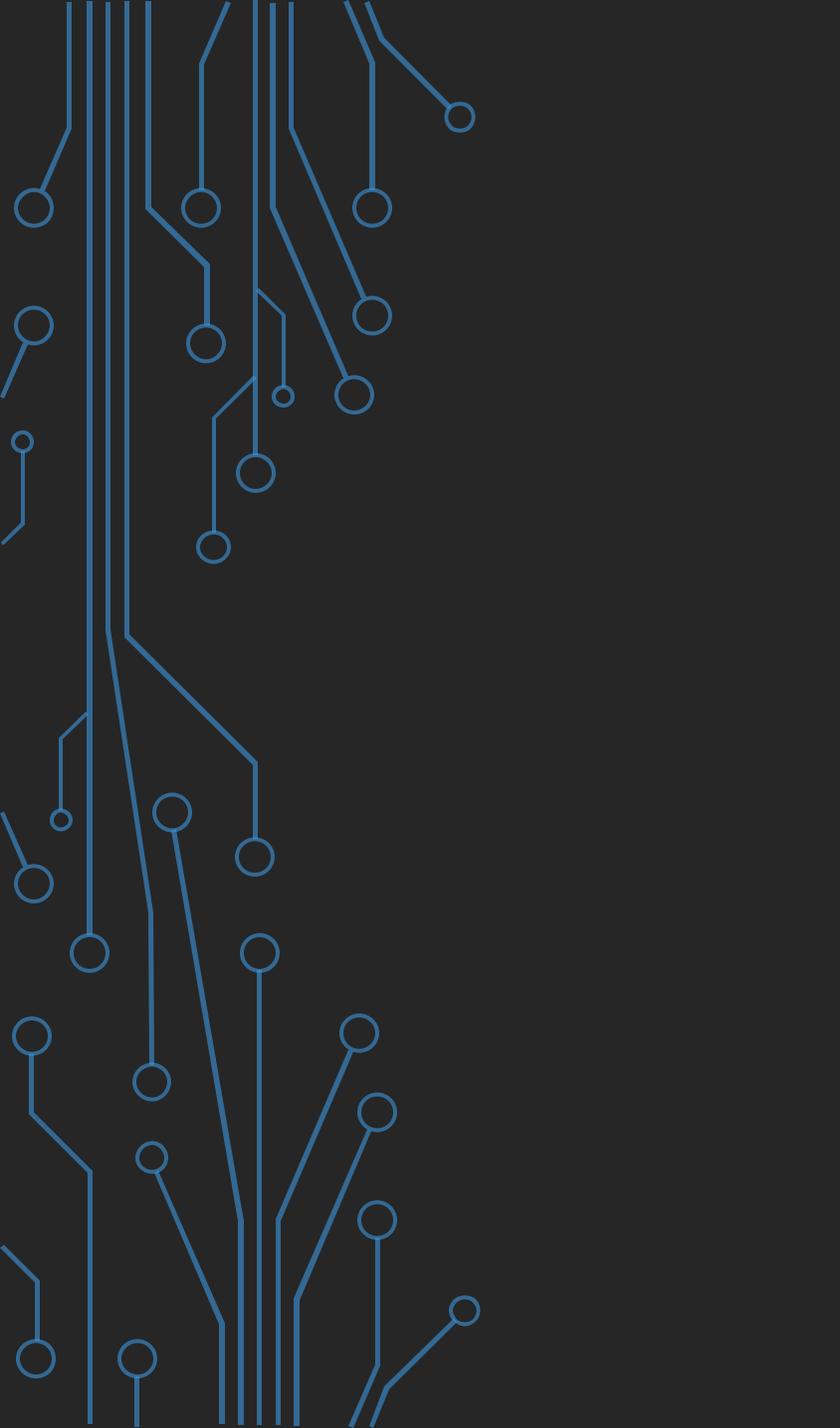
- With the advent of autonomous vessels, it is expected that at least initially, the cost to insure these vessels will be much higher than the cost to insure a traditional manned vessel.
- This is due to the fact that it is novel and risky and as such, insurance companies will most likely charge a higher premium than usual for autonomous vessels.
- Over time however, if owners of autonomous vessels are able to demonstrate through use of technology that they are able to operate at a much safer level than manned vessels, then the cost of the premium to insure the said vessels should be reduced.



INSURANCE CONSIDERATION S OF UNMANNED VESSELS CONT'D

4. CLAIMS– How will marine insurance claims be different with the introduction of unmanned vessels?

- It is possible that insurance companies may see a decline in the number of claims and the amount of money they have to pay out if autonomous vessels are used extensively in the future.
- However even if there is a reduction in the number of the claims, what may happen is that the nature of the claims might very well change. For example, with autonomous vessels, there may be fewer claims as it relates to cargo loss due to human error during the loading process but there may be an increase in the number of claims arising from delay as a result of malfunctioning technology or breaches of cyber security.
- It is suspected however that claims may be settled at a faster rate than previously, because of the use of advanced technology which should produce high quality evidence in the aftermath of an incident.
- Additionally ship owners and their insurers may seek to take advantage of indemnity insurance, where claims for losses are not as a result of any fault on the part of the ship-owner, but as a result of some manufacturing defect. This would be heavily dependent however on the warranty or the sales contract between the manufacturer and the ship owner.



THE INTERPLAY OF THE LAW/REGULATION WITH UNMANNED VESSELS

HOW CAN THE LAW OR REGULATION ASSIST THE MARINE INSURANCE SECTOR WITH UNMANNED VESSELS



- International Law- Conventions:

An international convention could be drafted that deals specifically with autonomous vessels. Alternatively, existing international conventions should be able amended so that they can adequately accommodate unmanned vessels.

National Laws- Legislation:

Each state can either amend existing marine insurance national legislations so that unmanned vessels can be properly accounted for. This will assist with addressing a variety of issues- including liability issues and claims involving unmanned vessels.

HOW CAN THE LAW OR REGULATION ASSIST THE MARINE INSURANCE SECTOR WITH UNMANNED VESSELS (CONT'D)

- **CONTRACT LAW**– Going forward, marine insurance contracts should be drafted in a manner that is wide enough to incorporate unmanned vessels. For example, the definition section of a marine insurance contract relating to unmanned vessels would define vessel or ship without any reference to the a master or a crew (unless it is a remote controlled shore based.
- The contract would also have to be properly drafted to cover novel risks that unmanned vessels present, such as cyber risks.
- Additionally, standard form charter parties such as the GENCON 94 and the NYPE would have to be revised to some degree to incorporate marine insurance concerns surrounding unmanned vessels.

HOW CAN THE LAW OR REGULATION ASSIST THE MARINE INSURANCE SECTOR WITH UNMANNED VESSELS (CONT'D)

- Classification Societies–Should classification societies have regulatory powers over unmanned vessels?
- Argument could be made that since it will take a while for international conventions and national legislations to be drafted, tabled and passed, classification societies could assist with the regulating unmanned vessels.
- They can verify whether a particular unmanned vessel is seaworthy, which can have far reaching consequences on the insurance sector.



CONCLUSIO
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QUESTIONS?