UNMANNED VESSELS – LEGAL ASPECTS TO CONSIDER FROM AN INSURANCE PERSPECTIVE
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I. Unmanned Ships

1. Definition

Unmanned ships = ships that operate with no crew on board either...

...by a shore based remote control operated by a human...

...or by a shore based remote control operated by a human...

...supervised by a human or

...not supervised
I. Unmanned Ships

2. Pros and Cons

Saver
Less risk of human error vs. (Traditional) Seaman profession
Cost efficiency
I. Unmanned Ships

3. Current situation

a. Technically

- Unmanned ships already exist, e.g.: “wave glider” that is powered by wave and solar energy and it operates autonomous.

- Unmanned and remotely operated underwater vehicles.

- Both currently mainly used for marine research and military operations.

- Quite small

- No merchant cargo ship existing.
I. Unmanned Ships

3. Current situation

b. Regulatory

- No special international rules and no adaption of Conventions

- Insurance offered and existing for the existing unmanned ships/underwater vehicles
I. Unmanned Ships

4. Development/ Future

a. Technically

First unmanned cargo ship for merchant use anticipated to be introduced in 2018.

b. Regulatory

In February 2017 Proposal by seven countries to IMO to undertake a regulatory scoping exercise to establish the need to amend the regulatory framework to enable the safe, secure and environmental operation of unmanned ships. Likely to be discussed by IMO at the beginning of June.

CMI International Working Group on Unmanned Ships invited to attend IMO meeting and has prepared:

* CMI Questionnaire on unmanned ships for the National Maritime Law Associations

* Position Paper as to the international regulatory framework
II. International Conventions

1. Overview

a. Public
   - International Convention for the Safety of Life at Sea ("SOLAS")
   - International Regulations for Preventing Collisions at Sea ("COLREGs")
   - International Convention for the Prevention of Pollution from Ships ("MARPOL")
   - Convention on Standards of Certification, Training and Watchkeeping ("STCW")
   - Maritime Labour Convention

b. Civil
   - Collision Convention
   - Hague Rules, Visby Protocol, Hamburg Rules, Rotterdam Rules
   - Ship Arrest Convention
   - Salvage Convention
   - International Convention on Civil Liability for Oil Pollution Damage ("CLC")
   - Convention on Limitation of Liability for Maritime Claims ("LLMC")
   - Bunker Convention
   - Wreck Removal Convention

Operation allowed accordingly

Liability
II. International Conventions

2. Application to Unmanned Ships

Unmanned ship = ship in the sense of the conventions?
II. International Conventions

2. Application to Unmanned Ships

a. UNCLOS
   - No definition of „ship“ but:
   Art. 94
   2. In particular every State shall:
      (b) assume jurisdiction … over each ship flying its flag and its master, officers and crew in respect of administrative, technical and social matters concerning the ship.
   4. Such measures shall include those necessary to ensure:
      (b) that each ship is in the charge of a master and officers

⇒ Chief remote controller = master?
⇒ Chief supervisor or in his absence chief pre-programmer in case of autonomous ships = master?
II. International Conventions

2. Application to Unmanned Ships

b. SOLAS Chapter V Regulation 14

Contracting Governments undertake, each for its national ships, to maintain, or, if it is necessary, to adopt, measures for the purpose of ensuring that, from the point of view of safety of life at sea, all ships shall be sufficiently and efficiently manned.

⇒ Sufficiently and efficiently manned if no crew member is on board of the vessel?

Chapter V Regulation 24: In hazardous navigational situations it shall be possible to establish manual control of the ship’s steering immediately.

⇒ Not possible in case of unsupervised autonomous ship
II. International Conventions

2. Application to Unmanned Ships

c. STCW Convention: Standards for Certification, Training and Watchkeeping

   “Seafarers serving on board seagoing ships” (Art. III)

⇒ Convention does not apply to unmanned ships and would in so far be obsolete.
II. International Conventions

2. Application to Unmanned Ships

d. Collision Regulations Rule 2 (Precaution) and Rule 5 (Look-out)

“...precaution required by the ordinary seaman or by the special circumstances of the case…” (Rule 2)

“Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances” (Rule 5)

⇒ Human action and judgement required
II. International Conventions

2. Application to Unmanned Ships

⇒ International Conventions apply to unmanned ships and if widely interpreted also operate

⇒ Clearly drafted with manned ships in mind

⇒ STCW Convention would have no relevance in the context of unmanned ships
II. International Conventions

2. Application to Unmanned Ships

Consequences:

» Because international Conventions do not expressly regulate unmanned vessels and are clearly drafted with manned ships in mind, it is not finally clear in how far states are bound by the stipulations of the Conventions also in respect of unmanned vessels.

» Due to missing international Rules risk of fragmentation of law
II. International Conventions

2. Application to Unmanned Ships

Consequences (cont.):

⇒ According to UNCLOS right of innocent passage through territorial sea (up to 12 nm from coastline/baseline) coastal state laws relating to design, construction, manning or equipment of foreign ships do not apply unless they are giving effect to generally accepted international rules and standards (Art. 21 (2)).

⇒ UNCLOS does not apply to internal waters (Art. 2) and ports
II. International Conventions

Questions:

Under your national merchant shipping law would a merchant unmanned vessel which is either

a. remotely operated or
b. operated autonomous with human supervision or
c. operated fully autonomous without any human supervision

constitute a „ship“?
II. International Conventions

Questions:

Under your national merchant shipping law could either of the following constitute the unmanned ship‘s master

a. the chief on-shore remote controller?
b. the chief pre-programmer?
III. Liability Aspects

1. Seaworthiness liability for loss of damage to the cargo

Art. III §1 Hague Visby Rules
The carrier shall be bound before and at the beginning of the voyage to exercise due diligence to: (a) Make the ship seaworthy; (b) Properly man, equip and supply the ship;

Art. IV § 1 Hague Visby Rules
Neither the carrier nor the ship shall be liable for loss or damage arising or resulting from unseaworthiness unless caused by want of due diligence on the part of the carrier to make the ship seaworthy, and to secure that the ship is properly manned, equipped and supplied

=> Whether a ship is properly manned is a question of public law and the operation of unmanned vessels is allowed according to international law as outlined
III. Liability Aspects

2. Liability exemption for error in navigation

Art. IV § 2 (a) Hague Rules
2. Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from:
   (a) Act, neglect, or default of the master, mariner, pilot, or the servants of the carrier in the navigation or in the management of the ship.

» Land-based controllers may be “servants”

» But what in case of software failures, break-down of communication with the ship or unsupervised autonomous vessels?
   => Exemption will not work as no “servant of the carrier” responsible in the sense of Art. IV § 2 (a) Hague Rules
III. Liability Aspects

3. Collision Rules

Art. 3 Collision Convention 1910
If the collision is caused by the fault of one of the vessels, liability to make good the damages attached to the one which has committed the fault.

Art. 4 Collision Convention 1910
If two or more vessels are in fault the liability of each vessel is in proportion to the degree of the faults respectively committed.

Can ships be in fault? Land-based controllers or supervisors can.

Are system or communication failures “fault” of the Owner?

⇒ Duty of proper selection, maintenance and inspection but shipbuilder, manufacturer and IT-Provider will be more and more important as liability counterparts.
III. Liability Aspects

4. Liability in tort

Tort of Negligence

damage cause to someone by another who fails to take proper care to avoid what a reasonable person would regard as a foreseeable risk.

§ 823 (1) German Civil Code

(1) A person who, intentionally or negligently, unlawfully injures the life, body, health, freedom, property or another right of another person is liable to make compensation to the other party for the damage arising from this.
III. Liability Aspects

4. Liability in tort

§ 831 German Civil Code – liability for others

(1) A person who uses another person to perform a task is liable to make compensation for the damage that the other unlawfully inflicts on a third party when carrying out the task. Liability in damages does not apply if the principal exercises reasonable care when selecting the person deployed and, to the extent that he is to procure devices or equipment or to manage the business activity, in the procurement or management, or if the damage would have occurred even if this care had been exercised.

» Shipbuilder, Manufacturer and IT-Provider generally not a person in the sense of § 831 as such as person needs to be part of the owners organization as opposed to being independent.

» Reasonable care exemption will in most cases be at hand for the Owner.
III. Liability Aspects

4. Liability in tort

» Strict „non-fault“ Product liability according to European Law (Directive 85/374) and in alignment therewith under German product liability law.

» Strict “non-fault” product liability in the context of merchant unmanned shipping only applicable in cases of personal injury and not in cases of damage to property as in so far the product liability rules are only applicable if the damage is caused to a subject being designated for private use.
III. Liability Aspects

4. Liability in tort

§ 7 German Road Traffic Act

(1) If, in the course of the use of a road vehicle … a person is killed or injured or a thing damaged, the owner of the road vehicle must indemnify the affected person for the damage resulting therefrom.

(2) Liability is excluded if the accident was caused by Act of God.

⇒ In Road Traffic strict „no-fault“ liability exists in Germany

⇒ Strict “no-fault” liability of the Owner in the context of unmanned ships because it is highly problematic from the injured party’s perspective to prove fault when the human factor is even less involved than it already is? Seaworthiness requirement works and Owner might not be able to rely on navigational error exemption ⇒ no need, BUT
III. Liability Aspects

5. New Rules/changes necessary and allowed?

Shipbuilders and Equipment Manufacturers Liability

- Are the current legal regimes sufficient?
  - fault or strict?
  - current burden of proof resting with the person claiming compensation appropriate or is “deemed fault” liability the solution?
  - limitation of liability – if so, to what extent - like shipowners?

What about IT Providers?

- Should there be specific rules on their liability facilitating the damaged party to claim compensation from them?
III. Liability Aspects

5. New Rules/changes necessary and allowed?

Strict “no fault” liability and the 1910 Collision Convention:

- The Collision Convention is governing the liability in cases of “error”, i.e. a “fault” based liability

- On the other hand non-liability situations listed in Art. 2 are not conversely linked to a no-fault.

=> Strict “no-fault” liability possible according to the Collision Convention?
III. Liability Aspects

Polling question:

Does your national merchant shipping law contain a provision constituting a strict no fault liability?
IV. Marine Insurance Aspects

1. Do current standard clauses properly reflect the risk scenarios?

a. Perils covered: Marine risks. Does this include risks like

   - delay in data transmission/ communication
   - loss of data link
   - programming mistakes

Under German law yes as long as connected with maritime operation.
IV. Marine Insurance Aspects

1. Do current standard clauses properly reflect the risk scenarios?

b. Cyber attack exclusion clause

“….in no case shall this insurance cover loss damage liability or expense directly or indirectly caused by or contributed to by or arising from the use or operation, as a means for inflicting harm, of any computer, computer system, computer software programme, malicious code, computer virus or process or any electronic system…”

(Institute Caber Attack Exclusion Clause, CL380)

“The insurance does not cover loss, damage, liability and expense directly or indirectly caused by, arising from, or contributed to by one or more of the risks designated below:…..the use or operation, as a means for inflicting harm, of any computer, computer system, computer software program, computer virus or process or any other electronic system.”

(DTV-ADS 2009)
IV. Marine Insurance Aspects

1. Do current standard clauses properly reflect the risk scenarios?

b. Cyber attack exclusion clause

- **no prerequisite** that the “*computer, computer system, computer software programme, malicious code, computer virus or process or any electronic system*” must be **on board of the vessel**

- “**use or operation**” includes autonomous procedures of the mentioned means
IV. Marine Insurance Aspects

1. Do current standard clauses properly reflect the risk scenarios?

b. Cyber attack exclusion clause

- “use or operation for inflicting harm”:
  - does not require that this is aimed to cause physical damage to the vessel but any damage including financial losses.
  - Does the insurer have to prove that the intention was to harm the assured or simply an intention to inflict harm?
IV. Marine Insurance Aspects

1. Do current standard clauses properly reflect the risk scenarios?
   
b. Cyber attack exclusion clause
   
   - “use or operation for inflicting harm” (cont.):
     
     Exclusion does not cover
     
     * delay in data transmission/ communication
     * loss of data link
     * programming mistakes
IV. Marine Insurance Aspects

1. Do current standard clauses properly reflect the risk scenarios?

c. Warranties, fault based exclusions and willful misconduct

   How to handle fault-requirements in the view of few (or even no) human involved in actual operation of the ship?

b. Seaworthiness

   “The Insurer is not liable for loss or damage resulting from the vessel having put to sea in a non-seaworthy state, especially from her not having been properly fitted out, manned,…” (Clause 32.2.1.1. DTV-ADS)

=> Would underwriters accept an unmanned ship as seaworthy only because a flag state has accepted certain technology as sufficient?
IV. Marine Insurance Aspects

2. Current approach as to the existing unmanned vessels

- Existing unmanned vessels and underwater vehicles can be covered under an “all risk” wording containing special “conditions precedents” and “operating warranties” especially with regard to:
  
  - personnel trained in the operation of the insured unmanned ships/crafts
  - remote pilots maximum operating time
  - manufacturers operating parameters that are to be followed
  - requirement of chase boat in congested waters/ support vessel to be at immediate notice
  - national laws
  - specific notice requirements in cases of alteration of risk
  - cancellation rights of the insurer
IV. Marine Insurance Aspects

3. Mandatory insurance and the right of direct actions against the insurer?

a. Mandatory insurance

- Art. VII of the International Convention on Civil Liability for Oil Pollution damage, 1992:

  “The owner of a ship registered in a Contracting State and carrying more than 2,000 tons of oil in bulk as cargo shall be required to maintain insurance or other financial security…”.

- Existence of H&M and P&I cover is in many ports a prerequisite

- EU-directive 2009/20/EC on the insurance of shipowners for maritime claims: further compulsory insurance requirement
IV. Marine Insurance Aspects

3. Mandatory insurance and the right of direct actions against the insurer?

b. Right of direct action

- Art. VII of the International Convention on Civil Liability for Oil Pollution damage, 1992:

> “any claim for compensation for pollution damage may be brought directly against the insurer or other person providing financial security for the owner’s liability for pollution damage.”

» The fear that this risk could not be insurable did not materialize: P&I Clubs do take this risk and act as guarantors and provide the necessary evidence that cover is in place as required.
IV. Marine Insurance Aspects

3. Mandatory insurance and the right of direct actions against the insurer?
   b. Right of direct action

   General right of direct action in the context of unmanned ships would not only affect P&I Club but also H&M Insurers due to third party liability cover.

   » Would that be accepted by the market?

   » “Pay-to-be-paid” rule questioned by some national legislators and courts. Nevertheless still widely accepted in the market. Better choice to retain the concept – following the rule, “if it ain’t broke, don’t mend it”?

   » Possible solution: limit the right of direct action to new technology risks that are particular to unmanned ships?
IV. Marine Insurance Aspects

Polling question:

Do your national marine insurance clauses qualify risks like

* delay in data transmission/ communication
* loss of data link
* programming mistakes

as marine risks?
Polling question:

Would you insure unmanned vessels in case of strict liability and the right of direct action?
Thank you for your attention!