Comment: The emerging spectrum of maritime security

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Abstract

The traditional view of maritime security is epitomised by warships, but this is a narrow and naive way to look at contemporary maritime security. Maritime security consists of several elements, as is white light passed through a triangular prism. However, translation is key, and many languages use the same word for safety and security. Consequently, there is no internationally recognised definition for maritime security. The commercial shipping industry, which dominates the oceans by number, emphasise safety, whereas navies concentrate on security. The adoption of the International Ships and Port Facilities Security (ISPS) Code by the International Maritime Organisation (IMO) in 2004, introduced the first security code for the maritime industry. Whilst it has been effective, it is limited in scope philosophically and literally to countering terrorism, restricting its utility across the spectrum of maritime security. As the shipping industry confronts the challenges and hazards of the interconnected cyber space, crucial to the increasing efficiency of the industry, cyber risk management has been incorporated as part of the maritime safety management ethos, without confronting the extent and realities of cyber security. The diversity and complexity of maritime security, especially those caused by climate change are becoming progressively more evident and may require an innovative approach.

Introduction

For most people, the epitome of maritime security is fleets of warships bristling with weapon systems and sensors, aircraft carriers with numerous fast jets being launched from and recovered to the deck, and black, sinister-looking submarines, just exposed above the ocean, or submerged below it, and carrying hundreds of nuclear warheads that could wreak Armageddon invisibly from beneath the waves across the world.

But this traditional image of maritime security is as limited, narrow and naive as is the belief that a beam of light is singularly white. For, as we all know, if a beam of light is passed through a triangular prism, it is refracted slightly and dispersed into its constituent spectral colours depending on frequency from invisible infra-red, through the visible colours and further to invisible ultra-violet. If the constituent elements of maritime security were to be dispersed from the rather simplistic view previously described via the equivalent of a triangular prism, it would reveal the multifaceted complexity of maritime security. Perception is key and so, whether you are an Admiral, shipowner, offshore platform manager, fisherman, criminal, terrorist, citizen of Fukushima, where a nuclear power station was struck by the tsunami in 2011, or an islander in the South Pacific watching the exponential rise in sea levels, maritime security is likely to mean very different things to you.   Therefore, the spectrum analogy proposed by this author is a useful tool when examining the difference between assumption and the complicated reality of maritime security.

This comment article will explore the meaning of the phrase "maritime security", how it is interpreted, and by whom and define some of the existing and emerging threats to maritime security, the way in which they are manifested and some of the diverse ways in which they are being mitigated.

What's in a Word?

In 2008, the Secretary General of the United Nations report on Oceans and law of the sea stated "There is no universally accepted definition of the term "maritime security"."(UN 2008: 39) The report goes on to say, "Most definitions [of maritime security] also usually include security from crimes at sea,

such as piracy, armed robbery against ships, and terrorist acts. However, intentional and unlawful damage to the marine environment, including from illegal dumping and the discharge of pollutants from vessels, and depletion of natural resources, such as from [illegal unreported and unregulated] IUU fishing, can also threaten the interests of States, particularly coastal States."(UN 2008: 39)

The sea is crucial to the planet. The oceans cover more than 70 percent of its surface and, apart from dictating the global climate and weather, the sea provides much of the oxygen we breathe and the food we eat. According to the IMO, "shipping transports more than 80 percent of global trade to peoples and communities all over the world" (IMO 2020). Over 60 percent of the global population live within 100km of a coast, and more than 40 percent of the world's population rely on seafood as their main source of protein (UN 2017).

Although, in English, the difference between the meaning of "safety" and "security" are relatively easy to explain, in many languages (BIMCO 2015) the same noun is used to describe these two different but linked concepts. These include French, Chinese, Spanish, Russia Ukrainian and Hindi, used by India. (indifferent languages 2013)

Indeed, in English there is opportunity for confusion. *The Oxford English Dictionary* (OED) definition for security is "a secure [untroubled by danger or fear] condition or feeling". (OED 2011) Whereas safety is defined as "the condition of being safe, freedom from dangers or risks", which are similar in meaning, but modern usage, especially by English speaking people, has developed a distinct difference in meaning between these two words. A commonly agreed difference between the two words is that "safety" is protection from unintended acts and events, whilst "security" is protection from deliberate acts. However, there is a degree of national linguistic interpretation of the word security, especially by armed forces and law enforcement organisations, which has given rise to a distinct understanding of the meaning of the word. This can often result in ambiguity, confusion and misunderstanding for non-English speaking people and, therefore, the majority of the globe's population. It probably is not surprising therefore, that there is not a "universally accepted term" for maritime security.

Developments in international regulation of maritime safety and security

For merchant navy seafarers, the concept of "safety" achieved significant gravitas in 1914 when, as a result of the *Titanic* sinking on her maiden voyage in April 1912, the International Convention for the Safety of Life at Sea (SOLAS) was written and internationally adopted. The Convention, "is generally regarded as the most important of all international treaties concerning the safety of merchant ships." (SOLAS 1974) SOLAS continues to be the fundamental cornerstone of all commercial shipping operations at sea. SOLAS is an evolving document, under the management of the International Maritime Organisation (IMO), and is regularly amended to keep up to date with current practices and technological developments.

Safety, as a doctrine, was given even more credence with the introduction of the International Safety Management (ISM) Code, adopted in 1998, following the capsize of the *Herald of Free Enterprise* car ferry just outside Zeebrugge, Belgium, with the loss of 193 passengers and crew. This disaster led to mounting concern about poor management standards in shipping and elevated safety to part of the modern maritime culture. (ISM 1993) The ISM Code was incorporated into SOLAS, making it mandatory across the international shipping industry.

Security as an activity for the maritime industry has been far less common. In 1982, after more than 30 years in gestation, the United Nations Convention of the Law of the Sea (UNCLOS) was opened to nations for signature. It was regarded as "a constitution for the oceans" (Murphy 2006), comprising 320 Articles, divided into seventeen main parts that "provides a general legal framework within which states parties are required to act" (UNCLOS 1982, Bernaert 1988), but it does not define maritime security and references to security are limited.

A crucial requirement of security, defined as "a secure (untroubled by danger or fear) condition or feeling", is for states to establish a legal framework of legislation that supports the nation's equilibrium of security. Without the appropriate laws in place security cannot exist and citizens will be vulnerable to danger or fear. UNCLOS required states to draft and enact supporting legislation, for example, Article 101 of UNCLOS provides a definition of piracy, but it is incumbent that each state passes piracy laws so

that individuals caught committing acts of piracy can be arrested and undergo the arresting nations judicial process, in accordance with their national laws on piracy. (UNCLOS 1982) Many nations have failed enact the requisite legislation, devaluing the efficacy of the convention and allowing, for example, pirates to go free, because they have not committed a crime in that jurisdiction.

After the hijacking of the cruise ship *Achille Lauro* by Palestinian terrorists in 1986, the international community was prompted to draft and adopt the Convention for the Suppression of Unlawful Acts of Violence Against the Safety of Maritime Navigation or SUA Convention. (IMO SUA 1988) Again, the emphasis of the Convention was on safety rather than security.

It was not until the 9/11 attacks in the United States that the International Maritime Organisation (IMO) was prompted to quickly draft the International Ship and Port Facility Security (ISPS) Code in 2004, designed to prevent ships being used as weapons by terrorists as the airliners were used to crash into targets in New York and Washington DC in September 2001. However, the Code does not define security and is extremely specific as stated in the Foreword "the review of measures and procedures to prevent acts of terrorism which threaten the security of passengers and crews and the safety of ships" (ISPS 2003: iii).   Whilst the Code was a significant step forward in global maritime counterterrorism measures for ships and port facilities, it only covers a very narrow part of the maritime security spectrum. However, the consequences of the implementation of the measures stipulated in the Code have successfully deterred attacks on ports by ships and provided a platform for improved security in ports across the world "serving such ships engaged on international voyages." (ISPS 2003: 3.1.2)

The IMO is "the global standard-setting authority for the safety, security and environmental performance of international shipping," (IMO 2020). In order to fulfil these obligations, it has a Maritime Safety Committee (MSC) and another for marine environment protection, but it doesn't have a maritime security committee. The maritime security working group is part of the maritime safety committee and only formed as and when required. Therefore, the message is clear, the commercial maritime industry regards maritime safety as its primary concern and maritime security is addressed only as and when necessary. Having said this, when there have been major security concerns, they have provided the catalyst for a coordinated international response. For example, after the 9/11 terrorist attacks, the maritime security working group commenced work on what would become, the ISPS Code, which was finalised in November 2001, accepted and became mandatory in January 2004. In 2009, as Somali piracy became a significant problem in the north west Indian Ocean, the maritime security working group worked with the shipping industry to provide the essential guidance and support to the shipping industry that resulted in the effective deterrence of Somali piracy in less than three years.

The fifth dimension – cyber security

Less visible, but equally important zones of the spectrum of maritime security are also gaining importance and profile, needing to be proactively managed. The increasing reliance within the maritime industry on technology and use of digital data and communications has exposed the vulnerability of the maritime industry to cyber-attacks. Over the past decade there have been an increasing number of cyber incidents affecting ports, offshore platforms and ships. In January 2016, the main international shipping associations published "The Guidelines on Cyber Security Onboard Ships", providing ship owners and ship operators with a comprehensive guide to protecting ships from cyber-attacks. In June of that year, the maritime security working group of the IMO's MSC published guidelines on "Maritime Cyber Risk Management" rather than cyber security. The guidelines refer "to a measure of the extent to which a technology asset is threatened by a potential circumstance or event, which may result in shipping-related operational, safety or security failures as a consequence of information or systems being corrupted, lost or compromised."(MSC 2016) The concern of the MSC was that any guidelines should incorporate measures to protect ships from external malicious attacks and/or internal accidental incidents that could result in the ship's safety or security being put at risk.

A year later the MSC introduced Resolution MSC.428(98) "Maritime Cyber Risk Management in Safety Management Systems", stipulating a mandatory requirement on flag States to "ensure that cyber risks are appropriately addressed in safety management systems no later than … 1 January 2021; (MSC 2017)" This resolution establishes the requirement for maritime cyber risk management as part of the ISM Code, which is part of SOLAS and thereby mandatory. Whilst this was a bold move by the MSC of the

IMO to establish a mandatory requirement across the global commercial fleet, it again blurs the distinction between safety and security for some, although for seafarers it makes sense.

The IMO's Resolution was a significant step forward internationally for the shipping industry, however, what it fails to do, because the IMO is not empowered to, is place any obligations on port states to require their ports to conduct any form of cyber risk management.

Ports are the critical global nexus of the supply chain because they are the vital interface between sea and land. Ports are the only point in the supply chain at which the physical cargo and its complete digital profile come together in the same location before onward movement by sea or land transportation to their destination. However, ports are located on the shores or in tidal estuaries of the sovereign land of port states and therefore subject to that port State's national legislation rather than a regime established by the IMO. Even the ISPS Code only covers the port facilities, which are defined in SOLAS Chapter XI-2, Definitions as "a location, as determined by the Contracting or by the Designated Authority, where the ship/port interface", which is further defined as "[where the] interactions that occur when a ship is directly and immediately affected by actions involving the movement of persons, goods or the provisions of port services to the ship [takes place]". (SOLAS 1974: XI-2). This, consequently, leaves most of the port outside the parameters of the Code, which can lead to a significant discontinuity of standards, an issue that has not been missed by organised crime.

As each port around the globe is unique, it is inevitable there will be a kaleidoscopic variance in the level of policies covering cyber security, along with a range of procedures and differing levels of implementation. Therefore, every time ships enter port, they will be in an invidious position with potentially juxtaposed cyber security requirements for ship and port resulting in a potential safety/security dilemma. The opportunities for criminals will abound.

Climate Change and Maritime Security

Looking over the horizon at potential challenges for the future, there is an emerging linkage between climate change and maritime security. In the last 50 years, the population of the world has more than doubled to an unsustainable level. The Intergovernmental Panel on Climate Change (IPCC) summary for policy, published on 6 October 2018 stated "Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. (IPCC 2018: A1)" The report goes on to say "Model-based projections of global mean sea level rise (relative to 1986-2005) suggest an indicative range of 0.26 to 0.77 m by 2100 for 1.5°C global warming.(IPCC 2018: B2.1)"

Whilst we cannot predict exactly what the outcomes will be, we can be sure that the gradual climb of global temperatures will have a significant impact on the oceans which cover more than two thirds of the surface of the planet. Increasing temperatures will inevitably decrease, the mass of the ice sheets and glaciers globally, causing a rise in sea levels.

The Ocean Conference held at the UN in New York 5-9 June 2017 came out with some stark warnings about the impact rising temperatures will have on the oceans of the world "Sea level rise leads to coastal erosion, inundations, storm floods, tidal waters encroachment into estuaries and river systems, contamination of freshwater reserves and food crops, loss of nesting beaches, as well as displacement of coastal lowlands and wetlands. In particular, sea level rises pose significant risk to coastal regions and communities." (Ocean 2017) It also points out that "almost two thirds of the world's cities with populations over five million are located in areas at risk of sea level rise."(Ocean 2017) And "Antarctica alone has the potential to contribute more than a metre of sea level rise by 2100"(Ocean 2017). The ramifications of these predicted events are significant. Focusing more on the specifics of the global supply chain, it is anticipated the "potential costs associated with damage to harbours and ports due to sea level rise could be as high as USD 111.6bn by 2050".(Ocean 2017) The security implications of all these scenarios are serious and must not be ignored.

Whilst both climate change and maritime security appear on many governments and international agencies' agendas, there is strong evidence that this critical area is being paid lip service, rather than prompting tangible action. The Oceans and Law of the Sea Report by the Sec Gen of the UN in 2018 stated, "in a recent study conducted among the world's leaders, Goal 14 (UN 2018a) [Life below water – Oceans] was ranked last in significance among all the Sustainable Development Goals(UN 2018b) set out in the 2030 Agenda." (UNSG 2018: 6)

A recent paper in the Journal of Environmental Studies and Science looking at the *corpus linguistics* of climate change and maritime security narrative at the IMO concluded that, with the exception of mass maritime migration by sea, it is non-existent, despite the organisation's clear leadership in pushing through other significant environmental requirements like water ballast management and the reduction in Greenhouse Gas emissions from ships (Germond and Fong 2018).

Conclusion

Maritime security today is far more complex than previously thought. Part of the challenge is not having an internationally recognised definition for maritime security. Whilst this is complicated by many languages using the same noun for safety and security, without an agreed definition it is difficult for states and organisations to act in support of it. The shipping industry focuses on safety over security, as safety is an area that requires daily management, whereas security concerns are statistically far less frequent. There is an argument that if states were to fulfil their obligations in accordance with UNCLOS, security would be much easier to implement and maintain. The ISPS Code was the first security code for the maritime industry but is restricted to the small area of a terrorist attack, using a ship against a port, harbour or shore installation. Whilst IMO does not make security their priority, they have acted swiftly and decisively in several areas (ISPS Code drafting and implementation, countering Somali piracy and maritime cyber risk management) since 2001. Ports however are viewed by organised crime as the weak link in the maritime supply chain, which they are exploiting very effectively. The elephant in the room is the impact of climate change on maritime security. There is clearly a gap that exists between what is happening and what needs to happen, and it will only get wider with time.

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