

CURRENT MARITIME PIRACY PRACTICES AND ANTI-PIRACY PROTECTION

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Abstract: *The threat of maritime piracy has not disappeared with the decline in Somali piracy since 2011-2012. Piracy has surged in other regions and now the tactic is to kidnap the crew for ransom. Although at present many ships employ self-defense measures, pirate attacks become more sophisticated and demonstrate a remarkable degree of success. Considering the presence and the evolution of this threat, the improvement of anti-piracy protection of vessels is increasingly important. The purpose of this survey is to track the evolution of pirate practices (character of attacks, targets, tactics, weapons and equipment), along with the evolution of anti-piracy measures, within the period 2008-2017.*

KEYWORDS: MARITIME CRIME, MARITIME PIRACY, PROTECTION OF SHIPS, NON-LETHAL WEAPONS (NLWs)

Introduction

The escalation of maritime crime as a modern transnational threat in 21st century is a cause of serious concern due to significant economical and human cost of this phenomenon. Increasing number of attacks on vessels in several regions gave reason piracy to be identified as a new dimension of the organized crime and as an international problem whose solution requires a pragmatic approach involving military and non-military options.

An unprecedented growth of pirate attacks off the coasts of Somalia and the Gulf of Aden was registered in 2009-2011. This necessitated the formation of multinational naval forces to patrol within the region. "The noteworthy efforts of the European Union's Operation Atalanta, NATO's Operation Ocean Shield, and Combined Task Force 151 were a major reason why piracy in the Gulf of Aden nearly disappeared over the past five years". [1] As a result of international efforts, as well as improved anti-piracy measures, the number of Somali piracy acts dramatically decreased since 2011. This affected the world statistics of incidents which marked in 2017 the lowest value for 20 years. However, the threat has not disappeared with the decline in Somali piracy - statistics show increased activity in some regions, with a boom of kidnapping crew for ransom, since 2016. Considering the presence and the evolution of this threat, which could push up global levels of maritime crime, the importance of security measures remains relevant.

This study is an extension of a previous survey from 2013 [2] covering the period 2008-2012, when the highest piracy activity was recorded. It aims to track the evolution of pirate practices, along with this of anti-piracy measures, over the next 5 years to the present. The statistical data used are taken from the annual piracy and armed robbery reports of the International Maritime Bureau (IMB) in the period 2008-2017 - [3].

Character of pirate attacks in the period 2008-2017

The piracy can be defined as an act of boarding any vessel with intent to commit theft or any other crime, and with intent or capacity to use force in furtherance of that act. Two sub-sets of maritime crime exist: armed robbery at sea, occurring within a nation's territorial sea, and piracy, which takes place in waters beyond territorial sea. The term "piracy" encompasses two distinct sorts of offences: hijacking, where the aim of the attack is to steal a maritime vessel and/or its cargo; and kidnapping, where the vessel and crew are held in captivity until a ransom is paid. *Maritime robbery* is the predominant type of maritime crime. Its' targets are all kinds of vessels, usually while on anchor or in a dock. The attacks are mostly improvised and involve intimidation to unarmed crew rather than real violence. *Hijacking* is aimed to steal the vessel and/or the cargo. In such cases crew of the target vessel rather than being the object of the attack, is an obstacle, to be removed as

quickly as possible. Many of these attacks involve violence as the pirates need unobstructed withdrawal to repaint the abducted ship or unload the cargo. Such offence is profitable, but in general difficult. Most attacks target slow-moving tankers and cargo vessels and take several days until the cargo is unloaded. *Kidnapping* for ransom includes hijacking of crew and vessel and, although the most profitable, is a high risk undertaking. It is usually a continuous operation, since ransom negotiations last for months. Subject of attacks are any kind of vessels. Kidnappings are usually free of violence since it is in the pirates' interest to keep hostages alive. Both hijacking and kidnapping are based on careful preparation, intelligence, shore support, financing and other logistics, often with assistance from corrupt officials. The execution of the abduction itself is also a complex task whose implementation requires coordination, modern means of communication and heavy weapons to overcome the resistance of the crew. [4]

The types of attacks against vessels in the period 2008-2017, and their proportions in 2017, are shown in Fig.1.

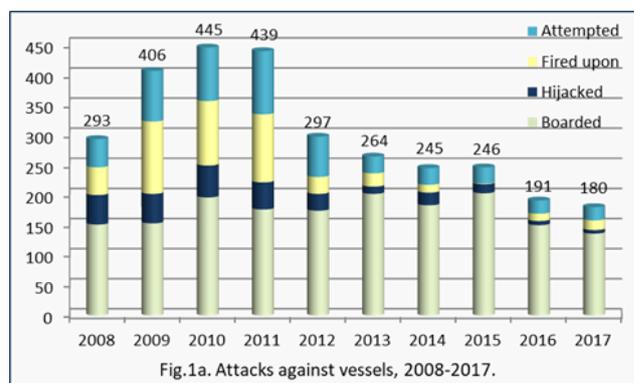


Fig.1a. Attacks against vessels, 2008-2017.

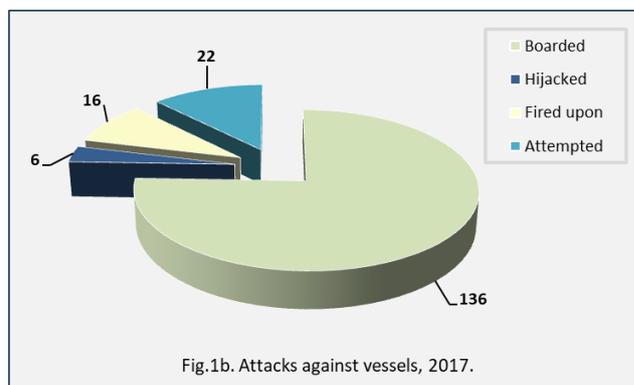
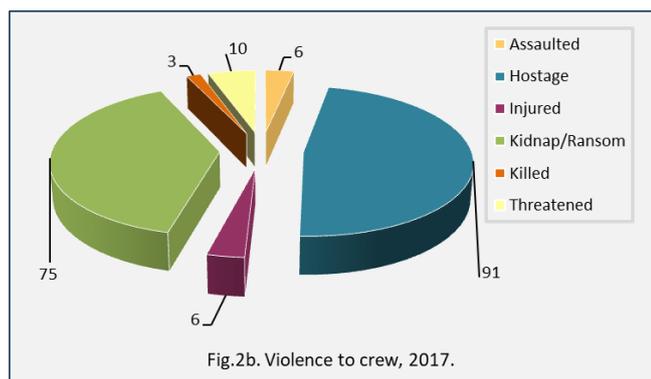
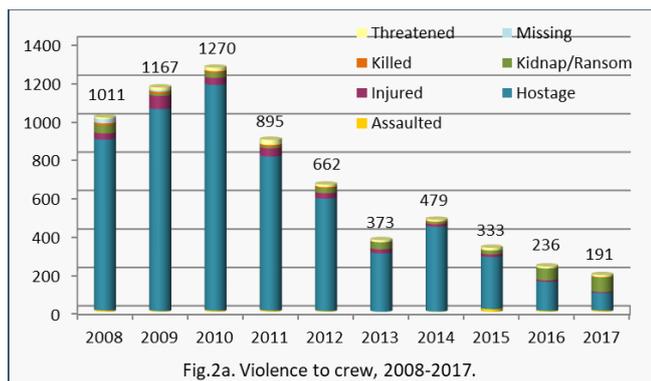


Fig.1b. Attacks against vessels, 2017.

In the past, simple armed robberies have been the most commonly used attacks. "Once this technique has become more resilient, the ships are equipped with the necessary weapons of self-defense, the crews are alert to potential threats and the presence of naval forces is enhanced, modern pirates must organize more hidden and aggressive operations, such as kidnapping, to make maximum profits". [5]

While the attacks off Somalia coast and in the Gulf of Aden were mainly characterized by hijacking ships and keeping crew hostages, the number of hijacked ships and crew members after lessening Somali piracy significantly decreased over the world since 2012, especially in 2016-2017. On the other hand, there is an alarming escalation of attacks in the Gulf of Guinea near Nigeria, including kidnapping crew for ransom, accompanied with violence, in the last two years. The types of violence on crew in the period 2008-2017, and their proportions in 2017, are shown in Fig.2.



More crew members were kidnapped at sea in 2016 and 2017 than in any of the previous ten years, most of them in the Gulf of Guinea. Although the Nigerian Navy recently extended operating to counter attacks on merchant shipping, Nigeria continues to lead in maritime hijacking and kidnapping with all 4 of the vessels hijacked, all crew kidnappings and hostages taken (except of 1 crew member) over the world in the first quarter of 2018. [6]

Pirates' targets, tactics, weapons and equipment

In general, the subject of pirate attacks is any craft - from yachts to large transport and cruise ships. Preferred targets are relatively slow and low vessels, such as cargo ships. Attacks on large container ships, cargo ships and tankers are considered to be high return but high risk operations. Tactical advantages of attacking and hijacking such ships are: easy obtaining information about their movement, route and cargo; easy tracking in international navigation channels; little crew. Slow movement and difficult maneuvering of such ships, as well as the proximity of the deck to the water make it easy to approach by the fast attacking boats and pirates to board. "Yachts are easy targets for pirates - with low risk and high returns. Typically, pirates do not expect resistance from crew or passengers. In most cases private yachts are owned by wealthy people who are willing to pay a tall ransom. In the case of a refusal

to pay a ransom, pirates can easily find a yacht buyer on the black market. Attacks on trawlers and longlines that are mainly used for fishing are a medium risk operation. In some cases, fishermen have a fierce resistance, making it difficult for pirates to board the ship. Trawlers are rarely hijacked for goods, but such ships are sold easily or can be turned into "mother ships" to support pirates' activities. These vessels are small and do not attract much attention, so pirates can anchor them near the shore or on the high seas and pretend they are catching fish while watching the passing craft". [7]

Until recently, in Southeast Asia and the Gulf of Guinea, pirates were hijacking slow-moving tankers to steal the oil, rarely for crew ransom. [8] Now pirates off West Africa expanded their hostage-taking to include offshore supply vessels and general cargo ships. "In the waters off of Southeast Asia, bandits increasingly target mostly slow-moving vessels like tugs, trawlers and passenger boats". [9] "Modern pirates tend to attack and hijack cargo ships and fishing vessels, which have commodities readily sellable on the black market, and therefore rarely direct their attention towards cruise ships. Smaller pirate gangs, who do not have the resources to seize the cargo being transported, instead often board a ship to steal substantial amounts of the cash ships carry for payroll and port fees, and the recent trend is more frequent kidnappings of crewmembers to be exchanged for ransom money". [10]

Most of attacks worldwide in 2008-2017 are opportunistic - against anchored ships, for robbing equipment, crew belongings and money found on board, with the exception of 2009-2011 when significant number of attacks were conducted against sailing vessels (typical for Somali pirates). Table 1 and Fig.3 show the status of vessels during the attacks in the period 2008-2017.

Table 1. Status of vessels during attacks, 2008-2017

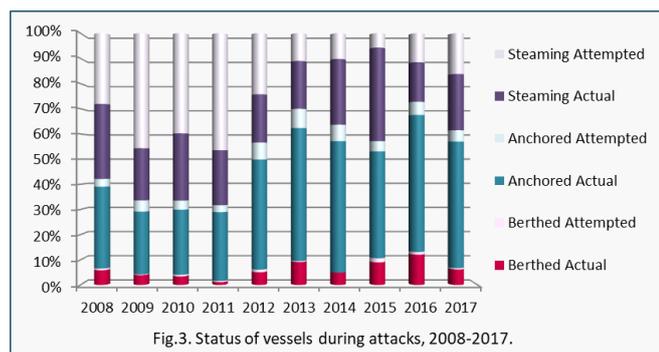
Vessel	Berthed		Anchored		Steaming		Total	
	Actual	Attempted	Actual	Attempted	Actual	Attempted	Actual	Attempted
2008	17	2	95	9	87	82	199	93
2009	16	1	101	18	84	185	201	204
2010	15	3	115	16	119	177	249	196
2011	5	2	120	12	96	204	221	218
2012	15	3	130	20	57	72	202	95
2013	24	1	139	20	50	29	213	50
2014	12	0	128	16	64	25	204	41
2015	22	4	104	10	91	14	217	28
2016	23	2	104	10	30	22	157	34
2017	11	1	90	8	40	29	141	38
Total	160	19	1126	139	718	839	2004	997

Even assuming that much of the low-level incidents are not officially reported, and therefore not included in the statistics, a notable part of incidents before and after 2009-2011 has occurred during steaming. Furthermore, the attacks against vessels underway demonstrate a remarkable degree of success, given the difficulties in accomplishing such task, especially since 2013.

On the whole, the number of successful attacks (boarded and hijacked ships) significantly exceeds that of unsuccessful attacks (attempted and firing upon ships), as is seen from Fig.1, Fig.3 and Table 1. The less success of the attacks in 2009-2011 can be attributed to the powerful international naval presence in the region with the highest concentration of pirate attacks, together with increased vigilance and security measures on vessels, in this period. Similar conclusion is made also in [11]. Concerning the high rate of successful attacks on steaming vessels over the last few years, it could be due to ineffective counter-piracy actions in the regions where the attacks take place. According to experts, the military measures that have worked in the Gulf of Aden can not be applied in other regions such as Southeast Asia: "Asia's dense map of

territorial waters complicates the use of military vessels, a contrast to the African coast, where they can operate more easily in international seas". [8] Reduced crew vigilance and non-compliance with security recommendations, as well as improved pirate tactics, may have contributed to pirates' actions success.

Unlike their predecessors of the "Golden Age" of piracy who often spent their lives at sea, modern pirates typically operate from shore. "The few who pursue a career in piracy rather than attacking a few random ships must have access to markets to sell their plunder. They must also have an organizational structure, weapons and surveillance equipment. Pirates who steal entire ships have to find sympathetic ports where the authorities are willing to disregard their illegal activities. In these ports, pirates re-register ships with new names and false identification, creating phantom ships to use for illegal purposes". [12]



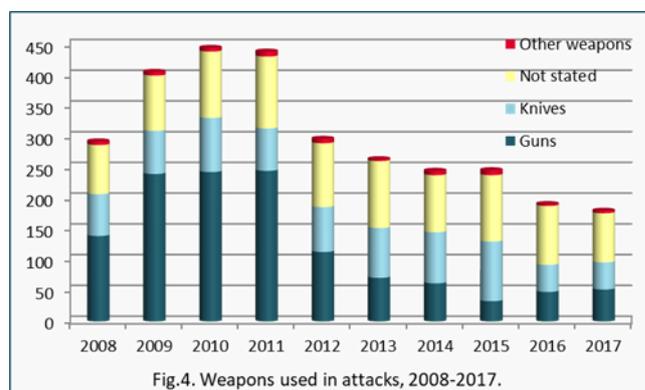
Some of the modern pirates' tactics are the same as during the "Golden Age". Pirates often attack ships from behind, night time, using ropes with hooks to board the ship until someone raised the alarm. If pirates are unable to pick up the cargo, they take the crew personal valuables, equipment, and other things, and rob the ship's safe, which often holds large sums of money. The most part of these attacks take place relatively near shore, and the pirates use small speedboats to carry them out.

Recently, some attacks have occurred far from shoreline. Using "mother ships" and operating in well-organized groups pirates are capable to operate hundreds of nautical miles from the coast, for long time and despite the meteorological conditions. "Mother ships" are usually commercial or fishing vessels, previously captured, serving to transport pirates, their supply, fueling, weapons and attacking boats at long distances. The attacks are carried out by at least two high-speed boats with outboard engines approaching the ship from different sides in order at least one of them to remain unnoticed. Approaching the vessel, pirates are firing on the bridge in an attempt to stop or slow down the vessels to facilitate their boarding. The boats are positioned so that one or two armed pirates can be transferred to the ship through light stairs or hooks. When board the ship, they are firing the bridge until the other pirates boarding. After that, the goal is to seize the bridge and take control on the ship. The duration of the entire operation is from 15 to 30 minutes. Boarding of a vessel underway, especially at night and far out in open seas, is a tactic usually associated with Somali pirates.

Modern pirates are heavily armed - they use automatic weapons (most often AK-47), knives and RPGs. Types of weapons used in attacks are presented in Fig.4. It is seen that in the few years following 2012, with reducing the number of hijacking attacks, the share of firearms involved in attacks gradually falls, while knives remain preferred weapons convenient for carrying out robberies. In the last years (2016-2017) this trend is changed - increased use of firearms is observed, connected with the new wave of hijackings and kidnappings.

Pirates are growing more sophisticated in their operations. "The weapons used in piracy attacks are modernizing, and the pirates are often armed with a variety of new conventional weapons and sophisticated equipment, such as: applying radar to detect targets, interfering ships' communication systems and contacting other

criminals or groups for sharing the business information via the Internet, and so on". [13] Pirates are using high-tech methods to find out the location and the cargo of ships, with hackers who are breaking in online and stealing ship manifests. "They are also flying drones to identify unguarded ships in busy sea lanes. Law enforcement is responding in kind, also employing drones to locate pirates, and deploying specially-made spider web nets to entangle their vessels". [9]



Contemporary anti-piracy protection measures

Regardless of how pirate practices evolve, it is undeniable that the most common victims of pirate attacks remain most vulnerable ships and these are relatively slow and low vessels, with insufficient surveillance, small crews and lack of anti-piracy protection. A decisive factor a ship to be attacked is the vessel's physical characteristics, combined with the visible use of defense measures.

In case of a piracy action in high sea, naval forces alerted often can not get there on time because they are located in the coastal waters, so the crew of the attacked ship must be able, if not to prevent the attack, at least delay it for some time until military help arrives. National laws of many countries do not allow crew on their ships to carry firearms. Also, many countries have laws prohibiting the import of any firearms into their territory. An effective, but rather controversial measure (because of its potential to escalate the violence), is the hiring of armed guards on board. However it is expensive and related to legal and bureaucratic problems. [14] Therefore most instructions for protection do not involve conventional weapons and require the use of non-lethal weapons (NLWs).

Vessels passing through dangerous waters have to comply with some general recommendations and apply self-defense measures depending on the situation and the vessel's specific. These are focused on preventing attacks, by encouraging commercial and private vessels to apply industry-developed Best Management Practices (BMPs). The BMP4 - Best Management Practices for Protection against Somalia Based Piracy [15], although specially developed in respect to Somali piracy, are applicable all over the worlds high risk areas. They represent practical steps to prevent, delay or repel piracy attacks and can generally be grouped as follows: 1. Surveillance, alert and communications; 2. Maneuvering and speeding up; 3. Use of devices and physical barriers with non-lethal action; 4. Increased protection of the bridge; 5. Provision of safe crew compartment ("citadel"). 6. Hiring armed guards. BMP4 contain valuable guidance on how to act in the event of an attack as well as on the anti-piracy means that ships must be equipped with.

Many companies on the world market offer products, systems and services to assist merchant vessels in protection of cargo and crew members. Ships today are increasingly employing various non-lethal means ranging from simple and inexpensive means with proven efficacy (such as barbed wire and high pressure water hoses) to modern devices like directed energy NLWs. In recent years some advanced means for prevention of boarding and obstruction of

movement have been developed, some means originally designed for other applications have been adapted to protect vessels. Fig.5 [16] presents an example of anti-piracy means configuration.

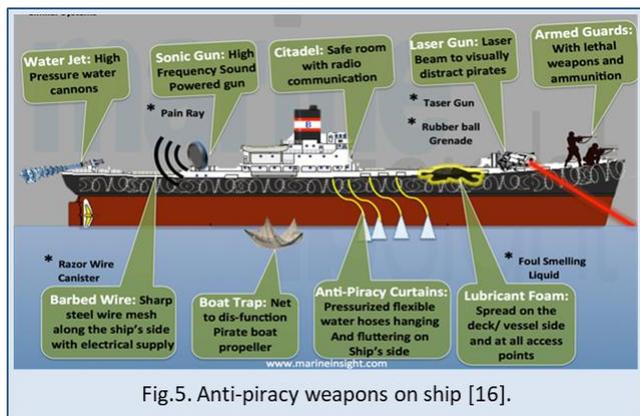


Fig.5. Anti-piracy weapons on ship [16].

Contemporary concepts for protection against pirate attacks are based on a multi-layered model which includes early detection, evasion, approach discouragement, anti-boarding, obstruction of movement and safe room. The *early detection* is critical for the threat detection at the widest possible distance to provide sufficient response time. It is provided by watchkeeping and enhanced vigilance together with appropriate observation means (binoculars with anti-glare effect, night-vision devices, long-range video surveillance cameras, etc.). The *evasion* aims to avoid the attack upon detection of threat by increasing the speed or taking maneuvers. The *approach discouragement* consists of measures to deter further approaching the ship - sending warning signs to indicate that the ship is well protected and prepared to counter any attack, through lighting the deck, illuminating the attackers by green laser beams or high-power search lights, directed acoustic weapons (long-range acoustic devices), water cannon, electromagnetic pulse, pneumatic rope launcher, etc. The *anti-boarding* means are used when the attackers are close the ship with the intention to board and include razor wire, boat traps (wires or nets to entangle the pirate boat propeller), electrified fences, anti-intrusion barriers to prevent climbing, water curtains, etc. The *obstruction of movement* consists of measures, in case of successful boarding, to prevent pirates to move on deck and reach the bridge and safe room. Such means are barriers and obstacles to avoid breach of doors, entry barriers with sound/light/smoke effect, ballistic protection of windows, grids for protection of vulnerable points against RPGs, etc., together with classical means like pepper spray, electro-shock devices, slippery foam, sticky foam. Non-lethal munitions with flash-bang, sting-ball and other effects, launched by pneumatic devices or hand thrown, can be used within the last 3 layers. The *safe room (citadel)* is intended to conceal the crew in case of imminent danger and should be well protected and equipped with everything necessary for survival for several days. [14 - 19]

Conclusion

In the last years, maritime piracy is intensifying in some regions with more frequent kidnappings crew for ransom, and pirate tactics and equipment are becoming more sophisticated. At the same time, anti-piracy measures are continually being developed and applied to many vessels. Nonetheless, pirate attacks worldwide demonstrate an alarming degree of success. In this context, the provision of improved self-protection measures is becoming increasingly important to ensure safety of ships and their crews.

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