THE LITTORAL - REDUCING RISK THROUGHOUT PROJECT LIFE CYCLE

Anthony Rix, (Salamanca Risk Management Ltd)

Email: ar@salamanca-risk.com

Salamanca Risk Management Ltd, Nash House, St George Street, London, W1S 2FQ, UK

Abstract: Any offshore project faces a number of potential risks including some of a safety and security nature. The Littoral Zone provides the most diverse mix of safety and security risks and the most complex regulatory regime(s) within which risk mitigation measures must be applied. This paper looks at the security and safety risks that might confront an offshore project and considers some of the risk mitigation measures.

1   INTRODUCTION

The littoral zone is the part of a sea, lake or river that is close to the shore. In coastal environments the littoral zone extends from the high water mark to shoreline areas that are permanently submerged. However, the meaning of "littoral zone" can extend well beyond the intertidal zone.

There is no single definition. What is regarded as the full extent of the littoral zone, and the way the littoral zone is divided into subregions, varies in different contexts (lakes and rivers have their own definitions). The use of the term also varies from one part of the world to another, and between different disciplines. For example, military commanders (such as the paper's author in his earlier career with the Royal Navy) speak of the littoral in ways that are quite different from marine biologists.
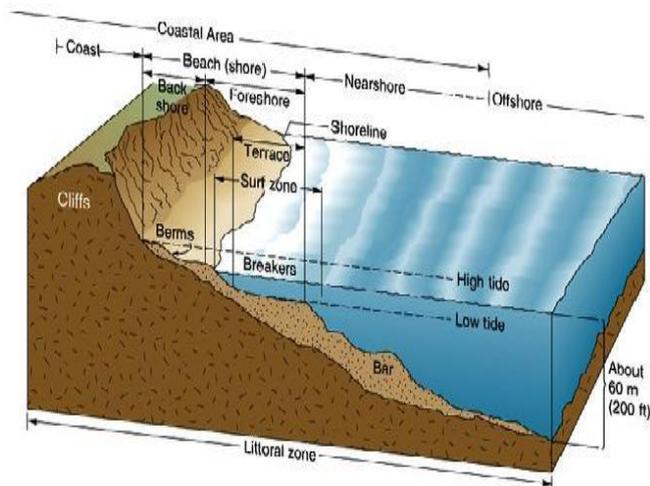
For the purposes of this paper the Littoral Zone is taken to mean the coastal part of the seas and oceans, invariably, but not always, within Territorial Waters. It is here that the security risks to any marine project become the most complex. But that is not to suggest that other security risks in other areas can be ignored. As this paper will suggest, the security risks to any marine project need to be carefully assessed, managed and mitigated across the lifetime of a project and in all areas, onshore and offshore; from initial desktop study and route planning for a submarine cable operation, through site surveys, cable laying and landing operations to routine cable maintenance.

It is vital that any security risks to a project's successful and timely completion are mitigated in order that project costs are kept to a minimum, and within budget, and so that personnel and equipment are given appropriate protection.

From a safety and security perspective, the risks to offshore projects come in many forms:

- **The weather**. An assessment of the likely weather in an area of operations is likely to have a significant influence on project timing (ie, it might be prudent to avoid operating through a hurricane season), the type of vessel used, routes to and from a project area, etc.

- **Political**. The offshore regulatory regime varies considerably in different areas such as the High Seas, Exclusive Economic Zones, Territorial Waters etc. A clear understanding of the regulations and therefore the restrictions in these areas is vital.

- **Security**. Criminal activities take place across the seas and oceans; while Piracy is defined as an activity on the High Seas, similar criminal acts take place within Territorial Waters including the Littoral Zone.

- **Interference from other users of the seas**. The seas (and the littoral zone in particular) are busy and the many lawful users can interfere with each other, innocently, for reasons of navigation or the need to use the same area for the same or different reasons.

- **Risks ashore**. Incidents ashore can impact on offshore projects.

This paper will examine some of these risks and suggest mitigation measures.

2 NAVIGATION

Routine navigation at sea is regulated principally by the International Regulations for the Prevention of Collisions at Sea; the nautical Highway Code. While these suffice for normal activities at sea, sometimes it is necessary to provide other seafarers with additional warning of a special activity such as submarine cable operations, drilling, etc. Warnings are broadcast by a variety of means such as Navarea Warnings. The following warning, issued by the National Hydrographic Office of India is an example:

DTG   211001 Z ROUTINE

FROM   NAVAREA VIII CO-ORDINATOR UNCLAS

TO NAVAREA VIII – 055

MYANMAR WEST COAST – OFF RAMREE ISLAND (.) CHARTS 31 371 INT 706 (.)

UNDERWATER PIPELINE LAYING OPERATION WILL BE CARRIED OUT BY SWAMP PIPE

LAYING BARGE GANAPATI TILL 31 MAR 13 ALONG LINES JOINING FOLLOWING POINTS

GAS PIPELINE

(A) 19-21.47N 093-40.93E (B) 19-21.45N 093-44.05E

OIL PIPELINE

(A) 19-21.50N 093-40.93E (B) 19-21.45N 093-44.05E

OPTICAL FIBER CABLE

(A) 19-21.50N 093-40.92E (B) 19-21.47N 093-44.05E

2. WIDE BERTH OF 03 NM AROUND THE LINES REQUESTED

3. CANCEL THIS MSG 010001 UTC APR 13

211001 Z / JAN

Nevertheless, some operators choose to mitigate the risks of navigational interference by introducing additional assets, over and beyond normal watchkeepers, dedicated to the task. This might include the availability of small craft (ie, Rigid Inflatable Boats) assigned to the safety and security of the operation.

3 FISHING AND OTHER LAWFUL ACTIVITIES

Seafarers ply the oceans in pursuit of a large variety of lawful business activities. But every now and then they can get in the way of each other. Vessels may come into close proximity of others for totally innocent reasons such as navigation, a need to use the same sea area (fishing etc), etc. The proximity of vessels might disrupt the activities of one or all vessels.

One, slightly extreme, example of this was the consequence of fish being attracted to a dynamically positioned Oil Rig operating within the littoral zone; small fishing boats naturally followed. Some of the fishing boats manoeuvred under the Oil Rig while others laid their nets close to the rig and its dynamic positioning motors operating underwater; had the nets become entangled in the propulsors both the drilling and fishing operations would have stopped. The presence of Rigid Inflatable Boats enabled the rig and its Security Team to respond quickly, without interrupting the drilling operation, and

thereby prevented any harm to people, the rig and the fishing boats.

The Littoral Zone can be particularly busy for fishing with large and small fishing vessels operating in a relatively small area. There are many examples of fishing boats approaching other vessels to warn the latter of the presence of nets etc in the water. In so doing, some fishermen have become persistent or even aggressive in their attempts to warn of the proximity of nets. This could be misinterpreted (particularly when viewed from a distance) as being not a warning, but a threat.

4 PIRACY

A particular threat to shipping, in some areas, arises from Piracy (or, when inside Territorial Waters, criminal acts).

Piracy consists of any of the following acts[1]:

(a) An**y** 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:

   (i) On the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

   (ii) 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).

Notwithstanding the current attention being paid to acts of Piracy in the Indian Ocean (and

---

[1] UNCLOS Article 101.

latterly, the Gulf of Guinea), this is nothing new. The earliest documented instances of piracy are the exploits of the Sea Peoples who threatened the Aegean and Mediterranean in the 14th century BC. The most widely known and far reaching pirates in medieval Europe were the Vikings from Scandinavia, some of whom became warriors and looters and who raided mainly between the 8th and 12th centuries, during the Viking Age in the Early Middle Ages. They raided the coasts, rivers and inland cities of all Western Europe as far as Seville, attacked by the Norse in 844. Vikings even attacked coasts of North Africa and Italy. They also plundered all the coasts of the Baltic Sea, ascending the rivers of Eastern Europe as far as the Black Sea and Persia. The lack of centralised powers all over Europe during the Middle Ages favoured pirates all over the continent.

Figure 1 Blackbeard battles Lt. Maynard at the height of the Golden Age of Piracy.

Today, the regions at risk of piracy include:

The Indian Ocean. Piracy has become a feature of this area over the last 8 years. In response to this, a High Risk Area has been established stretching from Suez to the Straits of Hormuz, across to India and down to 10 degrees south. Naval forces are also deployed, mainly in the Gulf of Aden, on counter-piracy operations. Figure 2 below shows the extent of piracy in 2012 (a year which showed a marked reduction in pirate activity when compared to 2011).

Figure 2 – Indian Ocean. Pirate activity 2012

South East Asia and the Indian Sub-Continent. Bangladesh, Indonesia, the Malacca Straits, Singapore Straits and the South China Sea are prone to acts of piracy;
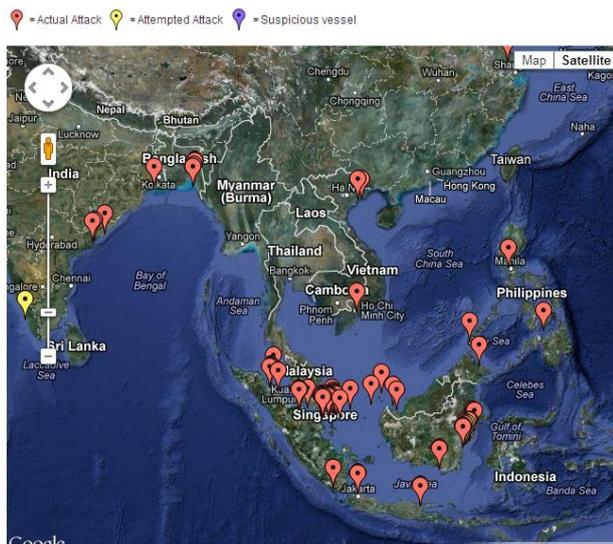

Figure 3 – South East Asia. Pirate activity 2012
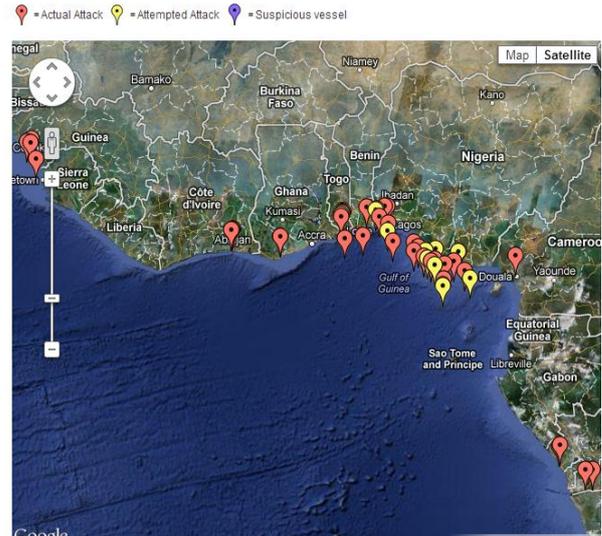
As is the **Gulf of Guinea:**

Figure 4 - Gulf of Guinea. Pirate Activity 2012

5 EVENTS ASHORE IMPACTING ON OFFSHORE OPERATIONS

While it is easy to focus on risks that might occur offshore, attention should also be paid to risks ashore. The author was involved in one operation during which political demonstrations and riots ashore put the entire offshore operation at risk. While the company and subcontractor representatives ashore where at risk, the local port and airport provided the only commercially viable logistical hubs through which personnel and equipment moved; they were also at risk.

However, at the outset of the operational planning, these risks had been considered and, *inter alia*, evacuation plans prepared with the aim of ensuring the safety of shore-based personnel while permitting the operation to continue for as long as possible.

6 RISK ASSESSMENT

So what should operators do in order to identify, manage and mitigate the risks that they might face during the life of a project?

First of all, operators will conduct a Risk Assessment in advance of their activity or operation. The Risk Assessment needs to be repeated for all stages of an operation

throughout the whole life cycle of a project and revised continually as circumstances develop.

Many, if not all, of the risks might be mitigated by relatively low level plans or procedures. When it comes to dealing with the risk of, for example, pirates, the mitigation measures will get more complicated and will need to work within an increasingly complex regulatory framework. Any risk mitigation measure must also work with minimal interference to the primary purpose of the venture; for example Submarine Cable operations.

The Risk Assessment must consider every aspect of the operation, including the mobilisation and demobilisation of vessels and equipment. For example a Support Vessel that needs to move through a High Risk Area in order to reach the operating area (which might lie in an area considered safe) might need protection for the mobilisation phase alone.

In proposing risk mitigation measures it is necessary to consider the jurisdiction in which one is operating and the relevant regulations. The Flag of the vessels involved in the operation will also have a bearing on the mitigation measures available.

7   RISK MITIGATION MEASURES

A wide range of risk mitigation measures should be considered and might include:

- Choice of route;
- Timing of the operation;
- Training;
- The employment of specialist advisors both ashore and afloat;
- The use of defensive measures (as described in BMP4 which is not only relevant to the Indian Ocean)[2];
- The use of (unarmed) Maritime Security Liaison Officers;
- The provision of dedicated Security Vessels;
- The use of Armed Maritime Security Liaison Officers.

8   ARMED GUARDS

In recent years, Armed Guards have been used by vessels transiting the High Risk Area of the Indian Ocean, and also in the Gulf of Guinea. It is acknowledged that their deployment has contributed to the reduction in hijackings in the Indian Ocean. ("This reduction [*the reduction in reported incidents within the High Risk Area*] is attributed to increased/active military action on suspected skiffs, military land based anti piracy operations, preventive measures used by the merchant vessels (as per latest BMP recommendations) and employment of Privately Contracted Armed Security Personnel (PCASP))[3]".

But to embark an armed team requires:

- The choice of a properly vetted and experienced Security Company (over 200 Maritime Security Companies have been formed in the last 4 years);
- Properly vetted, experienced and trained Guards;
- National licences to own, export and import weapons;
- End User Certificates for all weapons;
- Licences and Operating Permits to enable vessels to carry Armed Guards throughout all relevant jurisdictions including Territorial Waters (and possibly EEZs), and Ports;
- Import and Export certificates and licences for all States;

---

[2] BMP4: Best Management Practices for Protection against Somalia based Piracy

[3] ICC International Maritime Bureau Annual Report 2012 dated January 2013.

- Licences as required by the vessel's Flag State;

- Properly authorised weapon storage arrangements onboard;

- Properly authorised weapon storage arrangements when the weapons are in transit;

- Carefully vetted and approved procedures to ensure thorough records of the maintenance, movements of and responsibility for weapons;

- Contingency plans which cater for the thorough investigation of any event, particularly when weapons have been discharged;

- The availability of procedures and other security equipment that minimise the need for lethal force.

An added complication might be that some States do not permit the employment of <u>armed</u> guards within their Territorial Waters (and sometimes their EEZ). In this case, Armed Guards are provided by the local military with Consultants from a Private Security Company liaising between military and the vessel.

9   CONCLUSION

Mitigating the Safety and Security Risks throughout the lifetime of an offshore project is important and should be considered at the start of a project, and reviewed continually. While some of these measures might be considered to be routine, others are more complex and require careful planning. It is within the Littoral Zone that matters are potentially the most complex.

10   REFERENCES

[1] UN Convention on the Law of the Sea (UNCLOS)

[2] ICC International Maritime Bureau Annual Report 2012 dated January 2013.

[3] International Regulations for the Prevention of Collisions at Sea (1972) (COLREGS)

[4] Best Management Practices for Protection against Somalia based Piracy (Version 2 – August 2011)