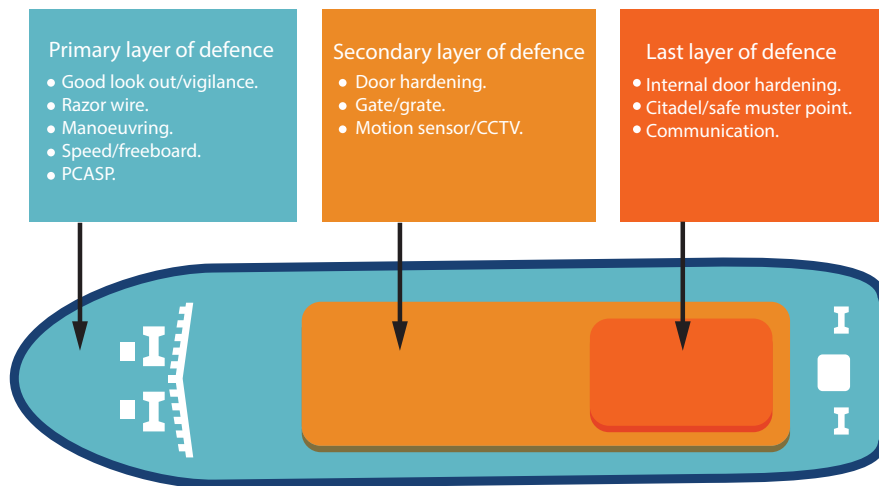


Section 5

Ship Protection Measures

This section highlights proven SPM that provide layered protection. The BMP is based on regional experience of attacks and will continue to evolve as methods change.

The implementation of SPM will be identified during the voyage planning process. Companies may wish to consider making further alterations to the ship beyond the scope of this BMP, and/or providing additional equipment and/or personnel as a means of further reducing the risk of attack.



Watch keeping and enhanced vigilance

The Master should implement the following actions to assist in raising vigilance on board.

- Provide additional, fully-briefed lookouts.
- Maintain an all-round lookout from an elevated position.
- Consider shorter rotation of the watch period to maximise alertness of the lookouts.
- Maintain sufficient binoculars for the enhanced bridge team, preferably anti-glare.
- Consider the use of thermal imagery optics and night vision aids as they provide a reliable all-weather, day and night surveillance capability.
- Maintain a careful radar watch and monitor all navigational warnings and communications, particularly VHF and GMDSS alerts.
- Consider placing well-constructed dummies at strategic locations around the ship to give the impression of greater numbers of crew on watch.

- Consider using CCTV and fixed search lights for better monitoring. Fixed search lights can deter approaches from the stern.
- Mount anti-piracy mirrors on the bridge wings to make looking aft easier.

An effective lookout is the most effective method of ship protection. It can help identify a suspicious approach or attack early on, which allows defences to be deployed.

Manoeuvring

The Master and officers should practice manoeuvring the ship to ensure familiarity with the ship's handling characteristics. The Master should also practice avoidance manoeuvres while maintaining the best possible speed. Experience has shown that such action can defeat even a lengthy and determined attack as creation of hydrostatic pressure can have a better defensive impact than speed.

Avoidance manoeuvres should only be practiced when it is safe to do so.

Alarms

The ship's alarms inform the ship's crew that an attack is underway and warn the attacker that the ship is aware and is reacting. In addition, continuous sounding of the ship's whistle may distract the attackers.

It is important that:

- The alarms are distinctive to avoid confusion.
- Crew members are familiar with each alarm, especially those warning of an attack and indicating 'all clear'.
- All alarms are backed up by an announcement over the accommodation and deck PA system, where fitted.
- Drills are carried out to ensure that the alarm is heard throughout the ship. The drill will confirm the time necessary for all crew to move to a position of safety.



Physical barriers

Physical barriers are intended to make it as difficult as possible for attackers to gain access to ships by increasing the difficulty of the climb for those trying to illegally board. When planning the placement of barriers special consideration should be given to ships with sunken poop decks.

Razor wire

Also known as barbed tape. It creates an effective barrier if properly rigged and secured. The quality of razor wire varies considerably and lower quality razor wire is less effective. The following is recommended:

- Use a high tensile concertina razor wire with coil diameters of 730mm or 980mm. This is difficult to cut with hand tools.
- Use a double roll. If this is not possible, place a single high-quality roll outboard of the ship's structure.
- Secure razor wire to the ship properly, to prevent attackers pulling the wire off. For example, attach at least every third wire ring to ship's railings and rig a steel cable through its core.
- Use personal protective equipment and wire hooks to move and install razor wire.
- Obtain razor wire in short sections, e.g. 10m, so that it is easier and safer to move.
- Keep razor wire clear of mooring fairleads when at terminals so that it does not interfere with mooring operations.



Other physical barriers

Other barriers have proven effective – from hanging swinging obstacles over the gunnels to specifically designed overhanging protection that prevents illegal boarding by climbing over the ship's rails.



Water spray and foam monitors

- The use of water spray and/or foam monitors is effective in deterring or delaying any attempt to illegally board a ship. The use of water can make it difficult for an unauthorised boat to remain alongside and makes it significantly more difficult to climb aboard.
- It is recommended hoses and foam monitors (delivering water) are fixed in position to cover likely access routes and are remotely operated. Manual activation is not recommended as this may place the operator in an exposed position.
- Improved water coverage may be achieved by using fire hoses in jet mode and using baffle plates fixed a short distance in front of the nozzle.
- Water cannons deliver water in a vertical sweeping arc and protect a greater part of the hull.
- Water spray rails with spray nozzles produce a water curtain covering larger areas.
- Foam can be used, but it must be in addition to a ship's standard fire fighting equipment stock. Foam is disorientating and very slippery.
- The use of all available fire and general service pumps may be required to ensure all defences operate efficiently.
- Additional power may be required when using pumps; the supporting systems should be ready for immediate use.
- Practice, observation and drills are required to ensure the equipment provides effective coverage of vulnerable areas.



Enhanced bridge protection

The bridge is usually the focal point of an attack. In some situations, attackers direct their weapon fire at the bridge to intimidate the ship's crew to slow or stop the ship. If pirates board the ship, they usually make for the bridge to enable them to take control.

The following enhancements may be considered:

- Bridge windows are laminated but further protection against flying glass can be provided by the application of blast resistant film.
- Fabricated metal (steel/aluminium) plates for the side and rear bridge windows and the bridge wing door windows, which can be quickly secured in place in the event of an attack can greatly reduce the risk of injury from fragmentation.
- Chain link fencing can be used to reduce the effects of an RPG.
- Sandbags can provide additional protection on the bridge wings. They should be regularly checked to ensure that they have not degraded.



Control of access to accommodation and machinery spaces

It is important to control access routes to the accommodation and machinery spaces to deter or delay entry. Effort must be directed at denying access to these spaces.



- Escape routes must remain accessible to seafarers in the event of an emergency.
- Where the door or hatch is located on an escape route from a manned compartment, it is essential it can be opened from the inside. Where the door or hatch is locked it is essential a means of opening the door from the inside is available.

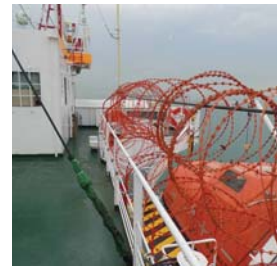
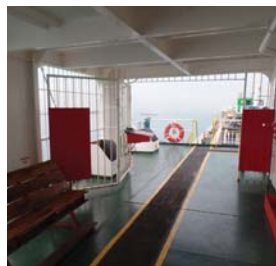


- Doors and hatches providing access to the bridge, accommodation and machinery spaces should be properly secured to prevent them being opened from the outside.
- Once doors and hatches are secured, a designated and limited number are used for security patrols and routine access. The use of these doors or hatches should be controlled by the Officer of the Watch.
- Block external stairs or remove ladders on the accommodation block to prevent use and to restrict external access to the bridge.
- Doors and hatches that must be closed for watertight integrity should be fully dogged down in addition to any locks. Where possible, additional securing mechanisms, such as wire strops, may be used.
- Removable barriers should be used around pilot boarding points so that a ship does not need to de-rig large areas prior to arrival at ports.
- Pirates have been known to gain access through portholes and windows. The fitting of steel bars to portholes and windows will prevent this.
- Procedures for controlling access to accommodation, machinery spaces and store rooms should be briefed to the crew.
- The attackers must be denied access to ship propulsion.



Safe muster points and/or citadels

The company risk assessment and planning process should identify the location of a safe muster point and/or a citadel within a ship.



Safe muster points

A safe muster point is a designated area chosen to provide maximum physical protection to the crew and will be identified during the planning process.

If the threat assessment identifies risks that may result in a breach of hull on or below the waterline then a safe muster point above the waterline must be identified. In many ships, the central stairway may provide a safe location as it is protected by the accommodation block and is above the waterline.

To minimise the effect of an explosion, consideration should be given to the likely path of the blast. The safe muster point should be selected with this in mind.

Citadels

A citadel is a designated area where, in the event of imminent boarding, all crew may seek protection. A citadel is designed and constructed to resist forced entry. The use of a citadel cannot guarantee a military or law enforcement response.

Well-constructed citadels with reliable communications (ideally satellite phone and VHF) must be supplied with food, water and sanitation. Control of propulsion and steering can offer effective protection during an attack. If citadels are used, they must complement, not replace, all other SPM.



The use of the citadel must be drilled and the SSP should define the conditions and supporting logistics for its use.

It is important to note that military forces are likely to apply the following criteria before boarding a ship:

- All the crew must be accounted for and confirmed in the citadel.
- Two-way communication with the citadel.

The Master should decide when to use the citadel.

Other measures

Closed circuit television

Once an attack is underway it may be difficult to assess whether the attackers have gained access to the ship. The use of CCTV coverage allows a degree of monitoring of the progress of the attack from a less exposed position. Some companies can monitor and record the CCTV from ashore, which will be of value when provided to the military. The following should be considered:



- CCTV cameras for coverage of vulnerable areas, particularly the poop deck and bridge.
- CCTV monitors located on the bridge and at the safe muster point/citadel.
- CCTV footage may provide useful evidence after an attack and should be retained.

Lighting

Lighting is important and the following is recommended:

- Weather deck lighting around the accommodation block and rear facing lighting on the poop deck to demonstrate awareness.
- If fitted, search lights ready for immediate use.
- Once attackers have been identified or an attack commences, over side lighting, if fitted, should be switched on. This will dazzle the attackers and help the ship's crew to see them.
- At night, only navigation lights should be exhibited.
- Navigation lights should not be switched off at night as this a contravention of international regulations and the risk of collision is higher than that of being attacked.
- At anchor, deck lights should be left on as well-lit ships are less vulnerable to attack.
- The ability to turn off all internal accommodation lights to deter pirates from entering or disorientate those who may already have entered.

Deny the use of ship's tools and equipment

It is important to secure ship's tools or equipment that may be used to gain entry to the ship. Tools and equipment that may be of use to attackers should be stored in a secure location.

Protection of equipment stored on the upper deck

- Consideration should be given to providing ballistic protection to protect gas cylinders or containers of flammable liquids.
- Excess gas cylinders should be stored in a secure location or, if possible, landed prior to transit.

Private Maritime Security Companies

This section provides guidance on the employment of PMSCs. PMSCs may offer armed or unarmed services. Further guidance on the use of armed services (PCASP) is given below.

BMP does not recommend or endorse the general use of PMSCs onboard merchant ships; this is a decision taken by individual ship operators where permitted by the ship's Flag State and any littoral states. However, the use of experienced and competent unarmed PMSCs can be a valuable protective measure, particularly where there may be the requirement to interface and coordinate with local law enforcement agencies, naval forces and coast guards.

Any decision to engage the services of a PMSC should consider:

- The current threat and risk environment.
- The output of the company risk assessment.
- Voyage plan requirements.
- Ship speed.
- Freeboard.
- Type of operations, e.g. seismic survey or cable laying.
- Levels of protection provided by navies, coastguards and maritime police.

Some Flag States do not allow the deployment of PMSC.

It is recommended that shipping companies only employ PMSCs who are accredited to the current ISO 28007-1:2015 *Guidelines for Private Maritime Security Companies (PMSC) providing privately contracted armed security personnel (PCASP) on board ships*.

A PMSC contract must:

- Be between the technical manager and the PMSC.
- Not prejudice the ship's insurance cover arrangements.
- Ensure the PMSC has insurance policies that are current and compliant with the requirements of the contract.
- Clearly identify the procedure for the use of force.
- Confirm the Master's overriding authority.

Privately Contracted Armed Security Personnel

Any decision to engage the services of PCASP should consider the guidance above for PMSC as well as the following.

BMP does not recommend or endorse the general use of PCASP onboard merchant ships; this is a decision taken by individual ship operators where permitted by the ship's Flag State and any littoral states.

Companies must check the credentials and licenses/permits of the PMSC, and where appropriate the PCASP, to ensure they have been issued by an appropriate authority and are operating legally against identified threats.

Some Flag States do not allow the deployment of PCASP. Some Flag States provide military Vessel Protection Detachments (VPDs) instead of PCASP. A VPD may be provided by another State, subject to Flag State approval. In some cases, the deployment of either PCASP or VPDs must be reported and acknowledged by the Flag State and reported when entering the VRA (see section 6 and annexes D and E).

Master's overriding authority

If private security contractors are embarked, there must be a clear understanding of the overriding authority of the Master.

The Rules for the Use of Force (RUF) under which the PCASP operate must be acceptable to the Flag State and the company.

The Master and PCASP should:

- Clearly understand and acknowledge the RUF as outlined in the contract.
- Have documentation authorising the carriage of weapons and ammunition.
- Ensure all incidents involving the use of weapons and armed force are reported at the earliest instance to the Flag State and the Chief Security Officer (CSO).

The PCASP must:

- Act in accordance with the agreed RUF, which should provide for a graduated, reasonable, proportionate and demonstrably necessary escalation in the application of force in defence of crew on the ship.

PCASP should only be used as an additional layer of mitigation and protections and not as an alternative to other measures. The decision to carry PCASP is an output of the company risk assessment and a ship that traverses the HRA without PCASP on board can be considered in full compliance with the BMP. The ship's crew must not handle or use firearms.