

Port and shore security

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ABSTRACT

The battle to ensure maritime security is ongoing, with terminal operators having to balance both port and shoreline security. Rather than implementing non-effective technologies, long term costs are saved by the correct choice of security Secure Marine's Raphael Kahn writes.

Introduction

The land-based section of maritime security can be divided into two main parts: Port & Terminal protection and Shore & Waterway protection. Of course the shores and waterways reach the ports and terminals, but because of the difference in the environment and the extensiveness of the areas the solutions are very different.

Port & Terminal Protection

Often, ports are a combination of many terminal operators, specialising in various cargos, such as containers, fuels, chemicals, bulk cargo and passengers. The traffic flowing through many ports is huge and consequently any delays can seriously hamper the port's operation. This is especially important as most terminals are operating under tight financial and competing conditions and need to make a profit. The result is that the incentive for security is minimal and in many cases a non-effective security operation is put in place just for show.



Figure 1. Security fencing surrounding a port.

Some examples of these are:

- access control to the port, where a driver is given an electric card, but the contents of his van/truck is not controlled (he can smuggle in anyone in the closed section of his van)
- simple fencing surrounding the terminal, which can be cut through with simple cutters without anyone knowing about it. Here there may be access control at the gate, but anyone can enter or leave via the fence.

Solutions to security non-effectiveness

The solutions to those problems vary, but mainly they have to do with three elements: Gate access control, parameter protection and waterfront protection.

Gate access control

This is the simplest to achieve, and operates by checking the identity of people entering the port and giving a temporary access pass. But it remains essential to also physically check the vehicles entering and leaving to make sure that no "extra" people enter the terminal. This costs extra manpower and effort, but without it, access control is meaningless. The tools to be used can vary from simple ID cards to smart cards and biometric cards.

Parameter security

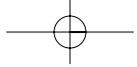
It is clear that a fence with some barbed wire on top is not a valid parameter protection. Anyone can cut through the fence and leave or enter the terminal undetected. The solutions here are various and I will mention a few of them:

Active IR is a solution used because it is not very expensive and detects intrusions. The problem is that it cannot be used when the area is active and some ports are active 24 hrs a day, and further it is prone to false alarms. Other detection devices such as radar have those same disadvantages.

CCTV is an option, but it requires continuous monitoring, is more expensive and does not deter trespassing.



Figure 2. Secure-Port on long stretches of fence.



Fence security. One of the best means of securing a long fence is the Secure-Ports 9,000v shock wire fence. It can be installed on existing fences, deters trespassers by the 9,000 non-lethal shock (uses only 36 mAmps, 50 pulses per minute) and has full detection capabilities per installed zone. The system is maintenance free (very important at salt water ports), generates no false alarms and can be quickly installed on existing fences.

Waterfront protection – this part is the most problematic of the port protection. Ships need to berth along side and there is always a large amount of activity involved. Further, the threat can be underwater as well as above water. About the underwater counter measures, I will only mention that various sonar techniques are available to detect divers. Here, the operational factors are easier since in most cases divers are off limits in ports. However, the same cannot be said about surface traffic. It is normal that all kinds of boats pass through the waterways and inside the ports. Those boats can easily come alongside a pier and pickup or discharge the trespassers at night, or even during daytime.

If the terminal is not active at night or a certain area can be set to be “off limits” then active IR or radar can be used to protect an open area. If this is not possible, then land patrols and water patrols are the only solution. It might be possible to declare a certain area as a “no sail area” for private boats, reducing the traffic and consequently the checking activities required. A maritime response force is required to enforce the no sail area.

Shore and waterway protection

When considering shore and waterway protection one must first clarify what the threats are. In many cases the sinking of a ship in narrow waterways can disrupt traffic for a long period of time, causing major economical damage. Sinking an oil tanker and causing an oil spill will add an ecological (and further financial) dimension to the attack.

Another threat may be the landing of illegals or even terrorists on the shores. Since shores cannot be closed with fences, and the public normally demands free access to them, it is necessary to intercept such operations before they are able to land ashore.

The above threats, as well as others not mentioned, make shore and waterway protection complex issues. The control and identification of all traffic requires many resources and a complex system of detection, reporting and prevention. The system should include full coastal radar coverage and possible air radar patrolling to cover over the horizon ranges. Continuous vessel patrolling is required to enable vessel checking and identification as well as advanced ship reporting of position, ETA (estimated time of arrival) and other details. An Automatic Identification System (AIS) will become mandatory to enable coastal stations to identify the radar targets.

A rapid response force must be setup to enable the stopping of suspect ships at sea, as well as near the ports or on the shoreline. This force could consist of naval forces as well as air force (attack helicopters) and military shore based patrols.

The real question is if countries are willing to invest the effort and cost to achieve such results to protect their coastlines before any attacks have happened. If one looks at the history of counter terrorism, then in most cases “holes are closed” only after incidents happened and governments are good at fighting the previous wars instead of the future ones.

ABOUT THE AUTHOR



Raphael Kahn's maritime career started at the Nautical College. Several years of working on cargo ships were followed by a seagoing naval officers career. Years of naval operations planning and co-operation with various intelligence agencies have contributed to the current expert knowledge in Maritime Security. Secure-Ship, the counter piracy system, was developed and patented by Raphael Kahn in co-operation with the shipping industry to find a non-lethal answer to the various piracy activities. The knowledge of port security requirements, the high demand for port operation flexibility and solutions found to run complex systems in harsh environments have resulted in Secure-Port.

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