



**MARITIME SECURITY ALLIANCE**  
SUSTAINABLE SECURITY SOLUTIONS

# Maritime Security Alliance

Non-violent Self-protection

Maurits Westerbeek van Eerten

2015

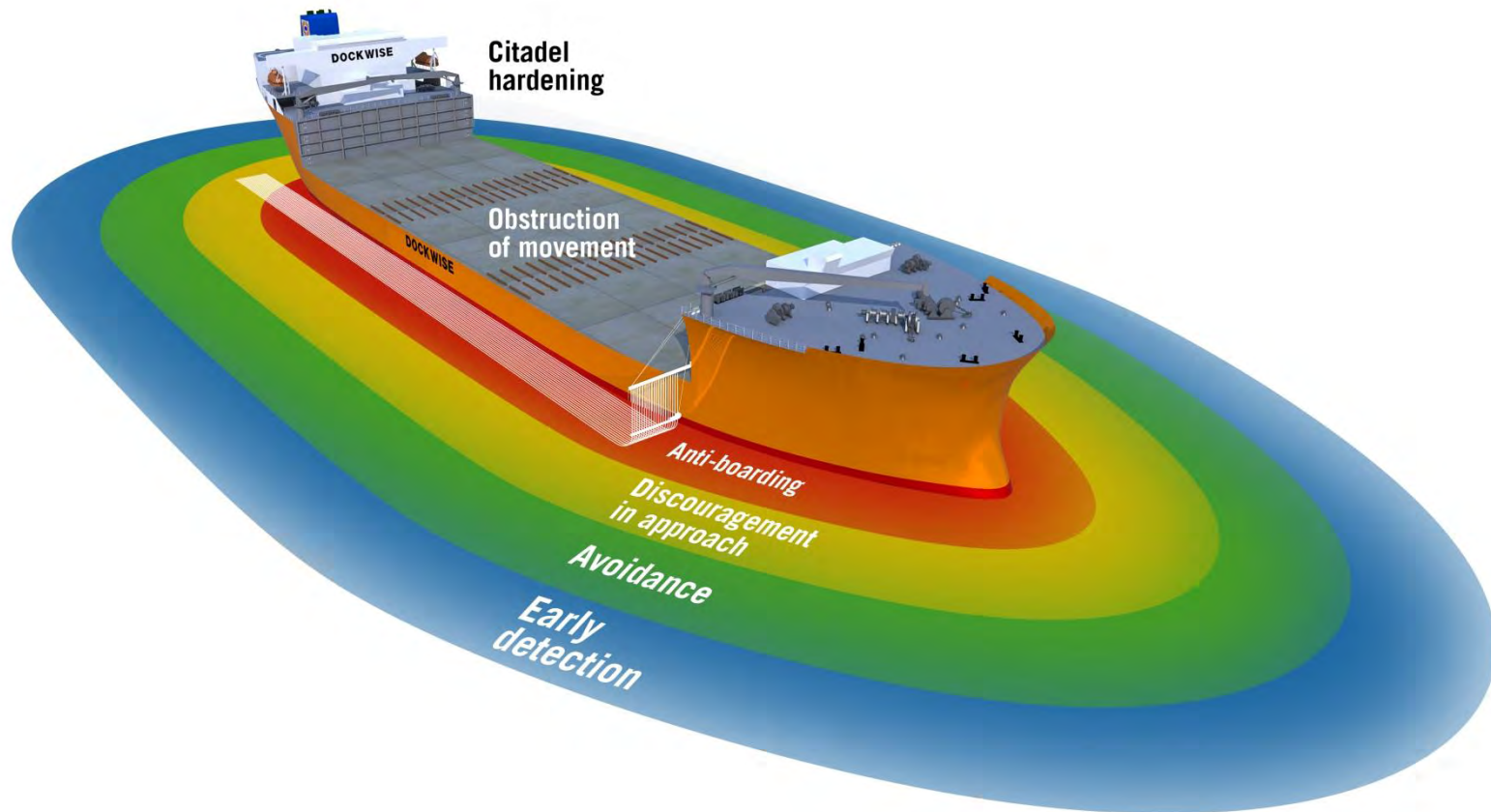


**MARITIME  
SECURITY  
ALLIANCE**

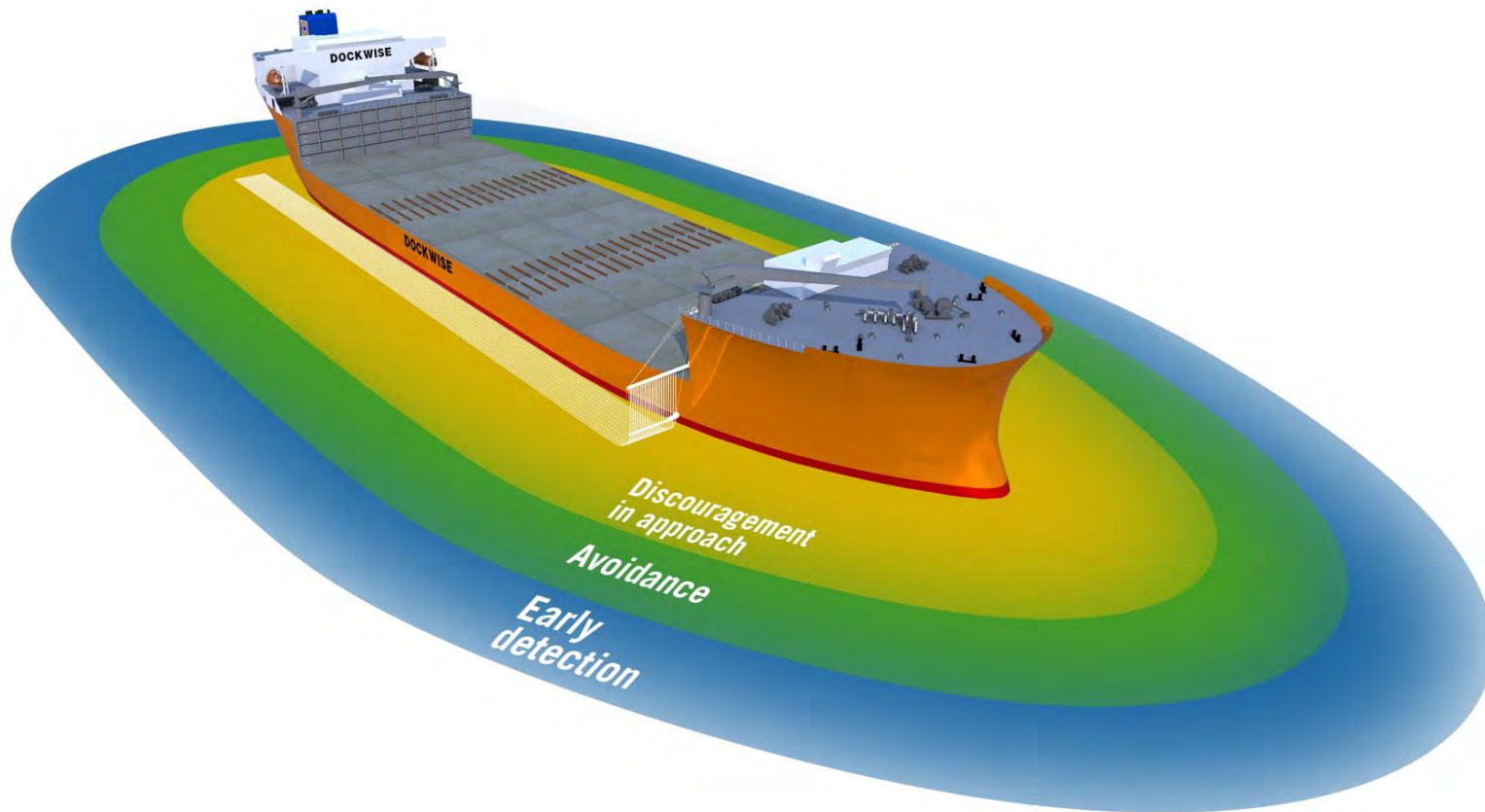


**KIVI**  
Engineering Society

# Physical Protection



# Discouragement in Approach Layer





- **High Powered Searchlights 3000 W**
  - Notification, search and warning of detection
  - Physically blinding in approaching
  - Direct, bridge operated and remote controlled





# MARITIME SECURITY ALLIANCE

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3000W Xenon at 600 metres

- **Hand held Searchlights**
  - Notification, search and warning
  - Physically blinding in approaching





- **Lasers & Stroboscopes**

- Radar guided detection and notification
- Automated response laser / stroboscope
- Physically intollerable for multiple vessels
- Digital record (with camera) of entire event



- **Water Cannon**

- Physical warning do not approach
- Floods vessel with water in seconds
- Increase fire fighting capability





- **Sound Cannons & Power Horns**
  - Notification / detection warning
  - Sound barrier unbearable pattern, frequency & intensity noise
  - Passive & active protection

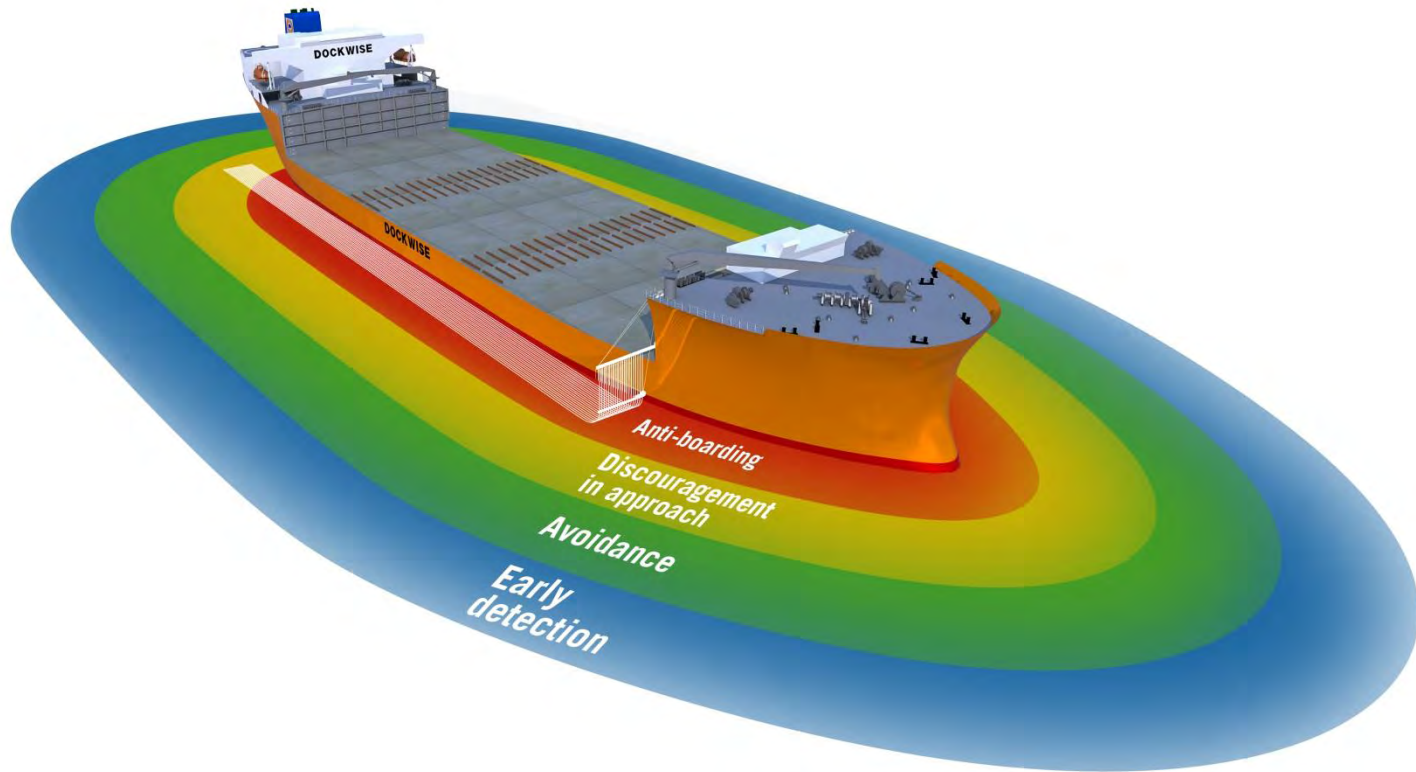


- **Rope Launcher**

- Physical barrier shuts down engine by blocking propeller
- Low pressure (8 bar) rope
- Launch availability in seconds
- Increase emergency rescue capability



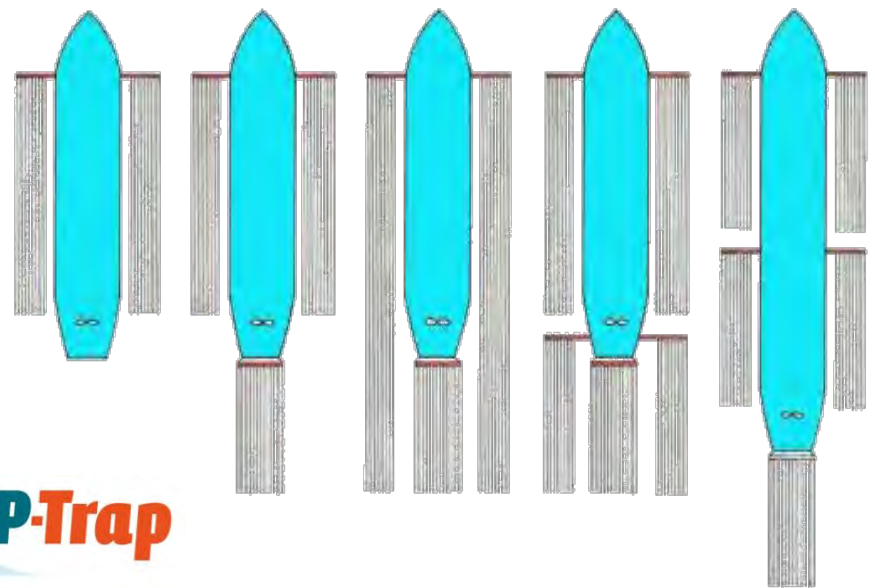
# Anti-Boarding Layer





- **P-Trap Propeller Entangler**

- Physical barrier with trailing ropes along the vessel
- Passive continuous protection 24/7
- Line immobilizes engine by entangling propeller
- Weak link releases line

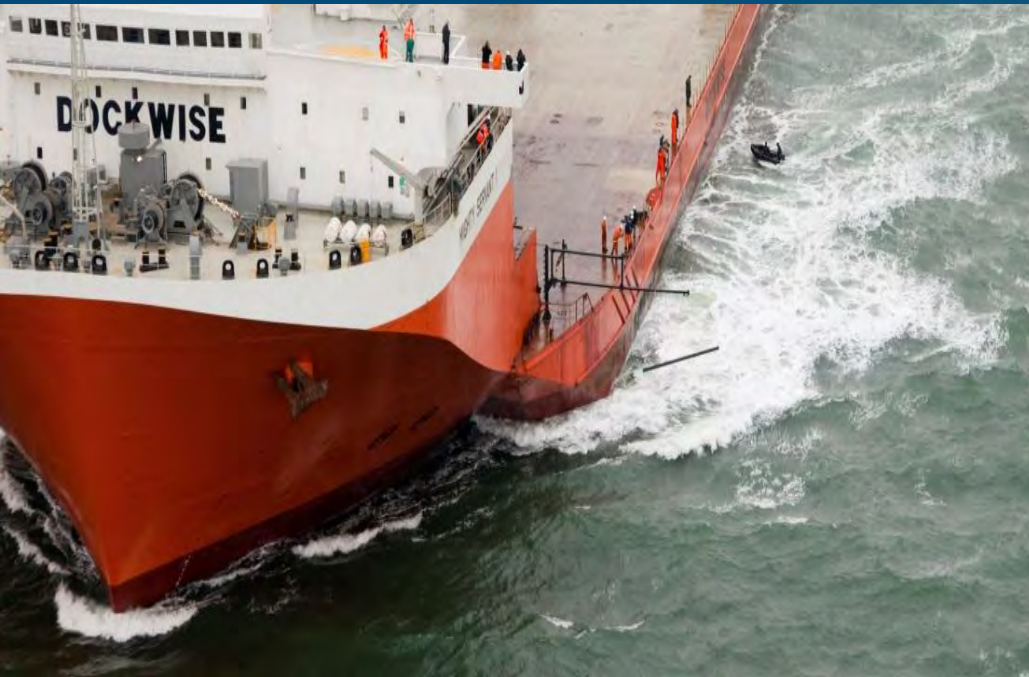






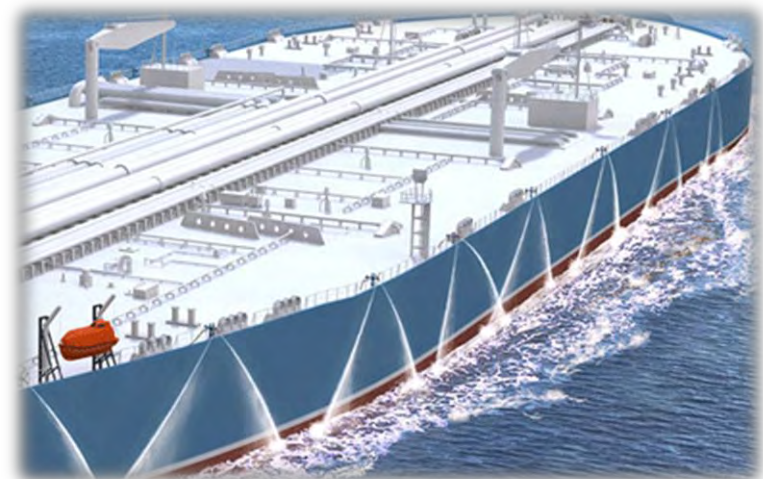
# MARITIME SECURITY ALLIANCE

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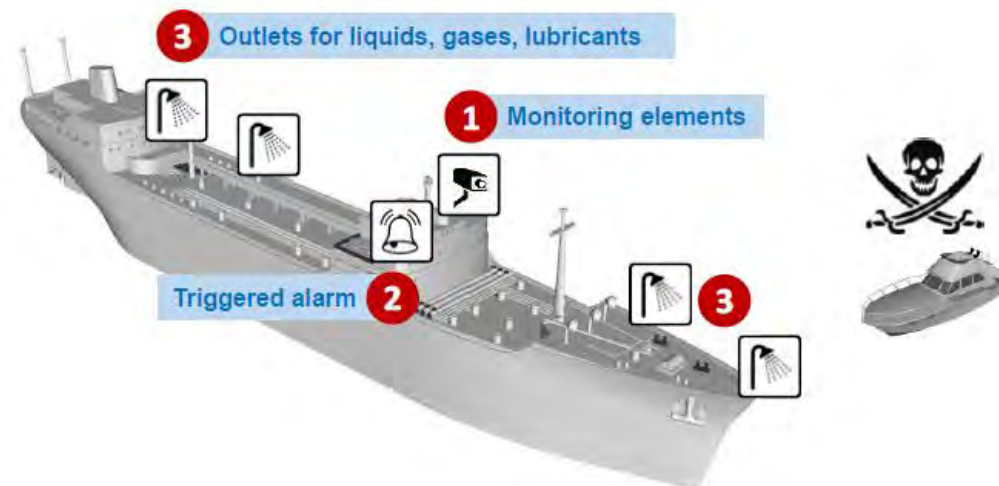
- **Water Cannon – side protection**
  - Physical immobilization by adding water
  - Hindering vessel alongside
  - Passive continuous protection once activated



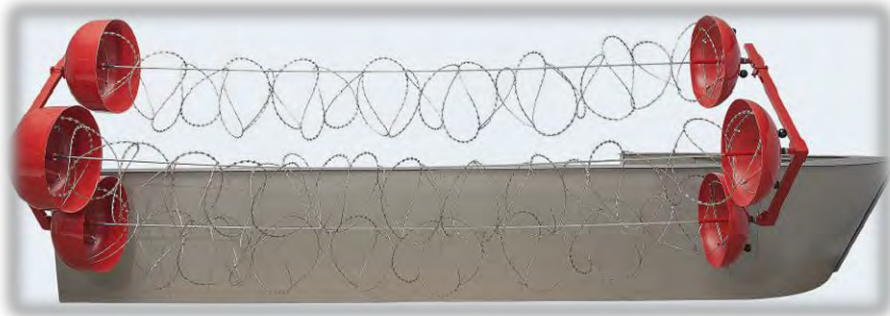
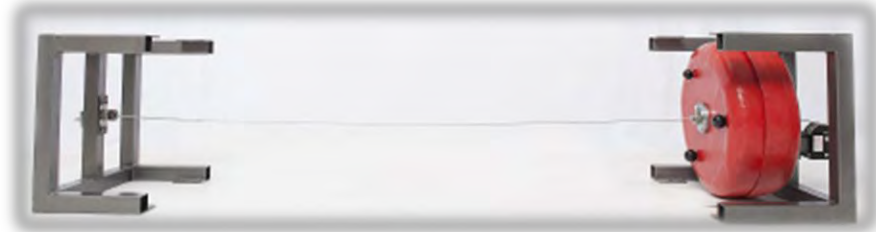


- **Slippery Barriers**

- Slippery paint options
- Automated monitoring, alarming and activation of lubricants



- **Quick removable razor applications**
  - Apply or remove razor wire in seconds
  - No additional storage for the units
  - Lifeboat embarkation, or pilot ladder entry point

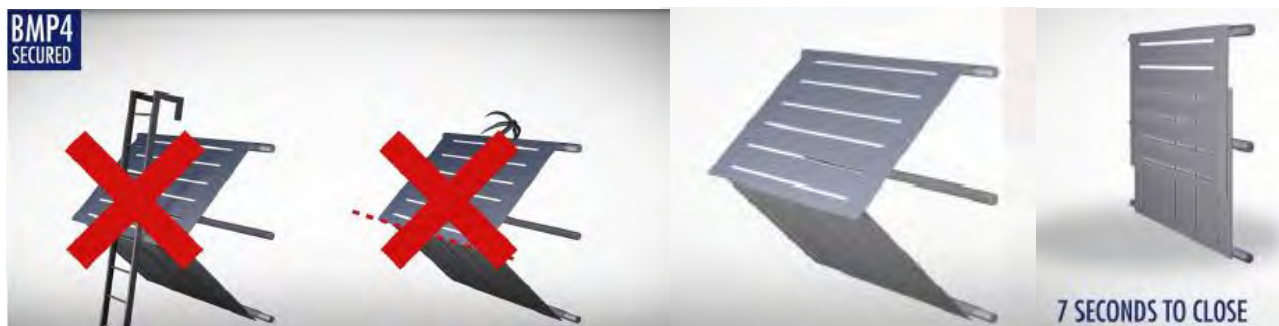


- **Anti-intrusion barrier**
  - Simple design to prevent rope or ladder access
  - Passive continuous protection
  - Easy to install, remove and store





- **Anti-intrusion barrier**
  - Simple design to prevent rope or ladder access
  - Passive continuous protection during heavy weather
  - Easy to install, stored alongside railing
  - No need for storage when not in use
  - High grade of Aluminum

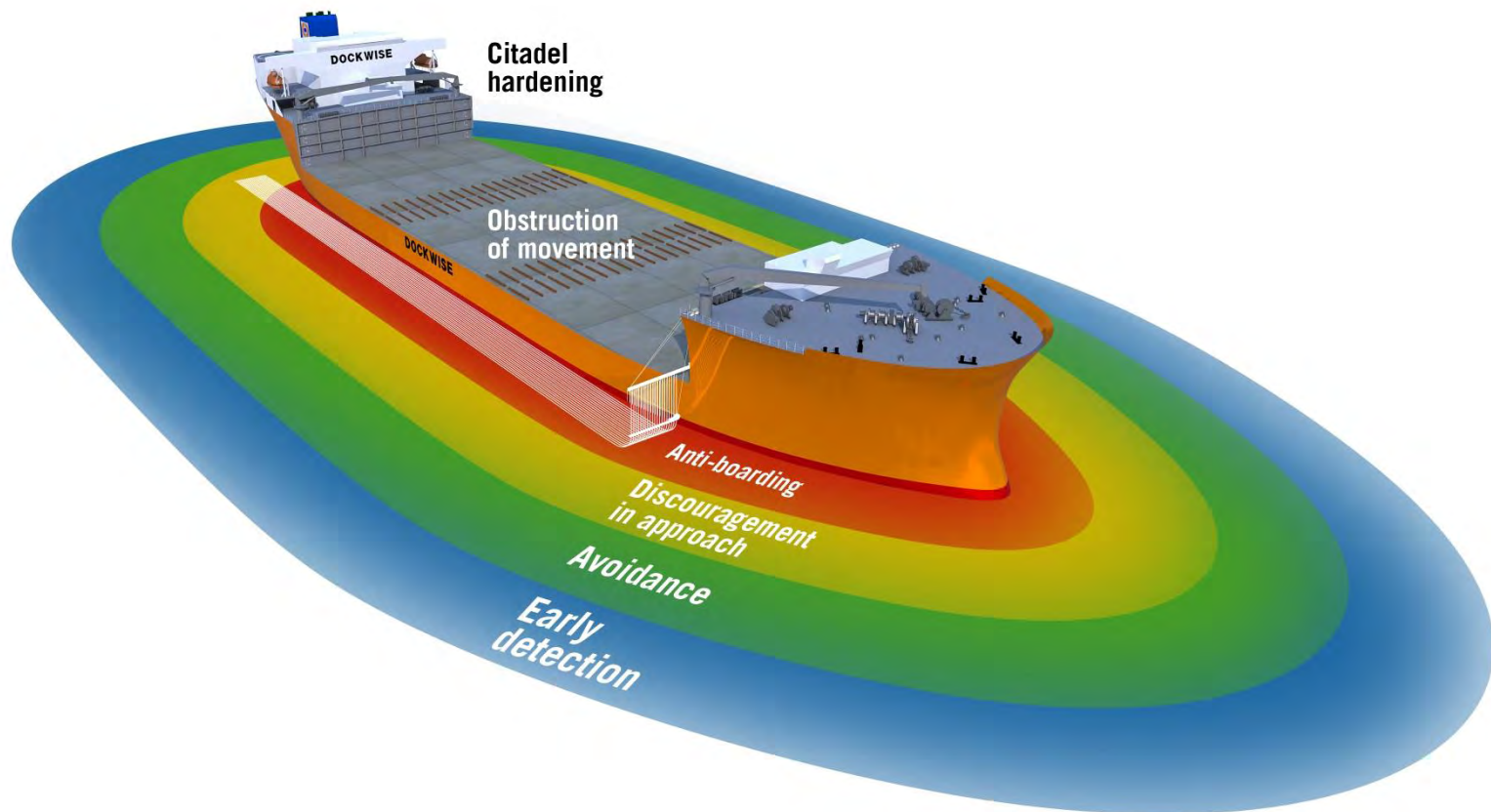


- **Re-usable razor wire elements**

- Extreme high quality razor wire
- Unable to connect to with hook or grapnel
- Installed / removed by vessel crew
- Single units are 1.8 m wide (6 ft)



# Obstruction of movement on deck Layer





- **Ballistic doors**

- Critical accommodation entry points
- Structural composite material made up of two metal plates bonded with a polyurethane elastomer core.



## Obstruction of movement

- Saferoom, citadel construction
- Ballistic hatches
- Compliant with SOLAS regulation



**Armoured escape hatch**

**Locks can be used  
from the inside only  
to secure access**



- **RPG protection grid**

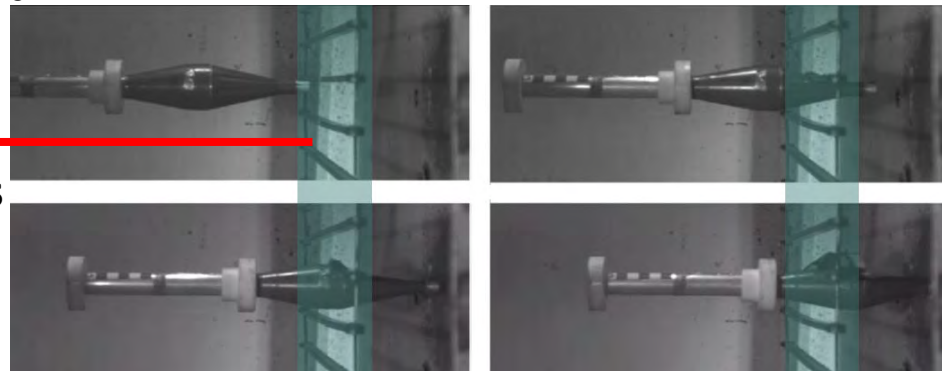
- Simple design mounted at critical areas
- Passive continuous protection against RPG's



**Foam on bulkhead**



**Grid on windows**





- **Sound, smoke and light barriers - inside**
  - sound barrier with stroboscope & smoke generator
  - unbearable pattern, frequency & noise combination
  - passive protection activated automatically



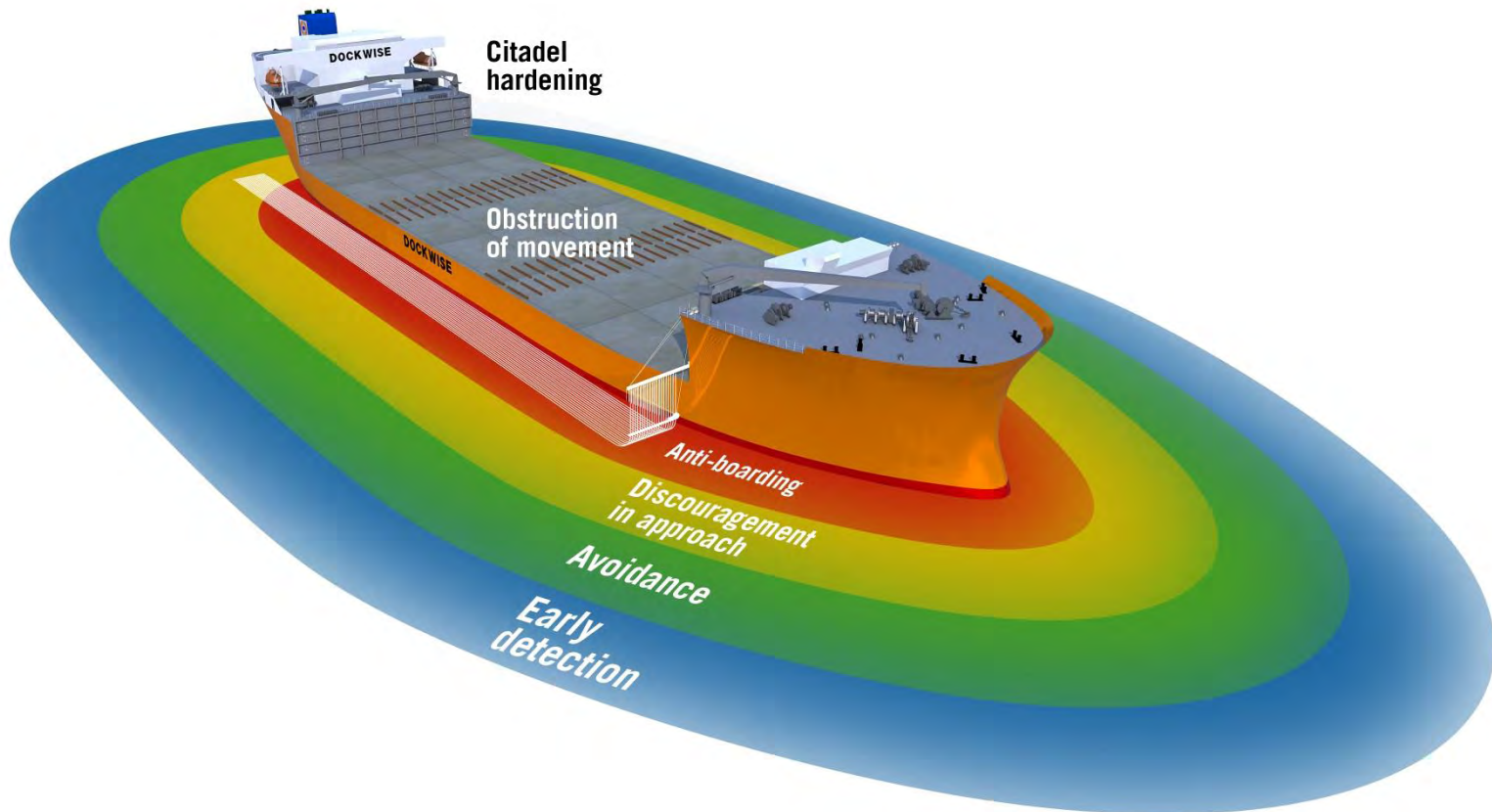
# Hardening outside accommodation

method of ship security assessment:

- technical survey
- ship leadership interview
- crew interview
- drill inspection
- vessel specific recommendations



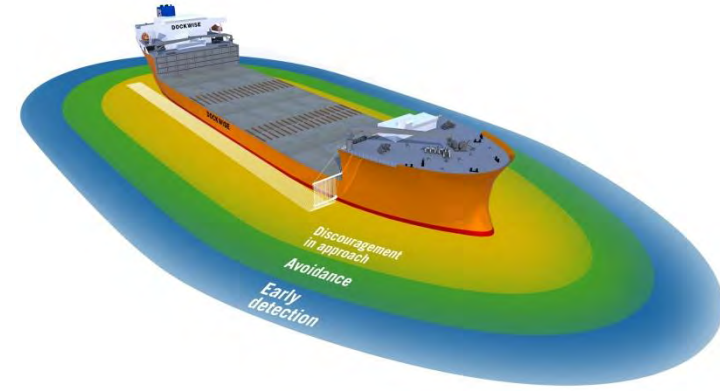
# SUMMARY OF PRODUCTS





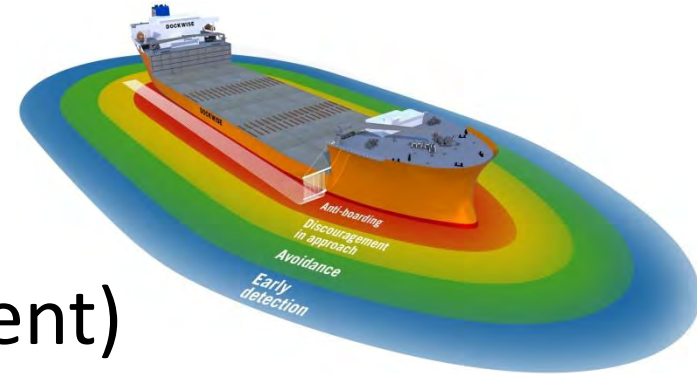
## Discouragement in approach

- High powered searchlights
- Lasers and stroboscope
- Directional sound cannons with light
- Water cannons



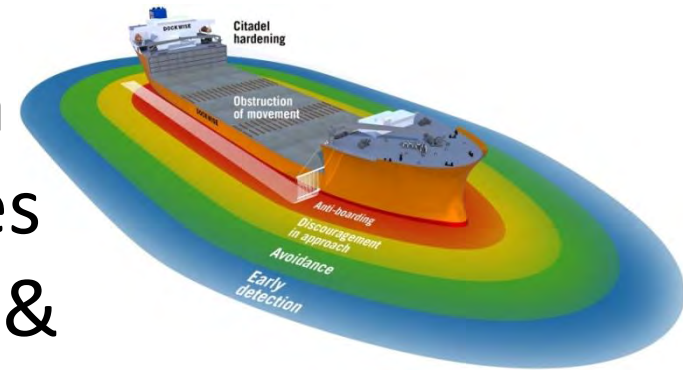
## Anti-boarding layer

- Sound cannon (static)
- P-Trap (propeller entanglement)
- Water cannon (side)
- Re-usable razor wire
- Anti-intrusion barriers
- Quick removable razor wire



## Obstruction of movement

- Saferoom, citadel construction
- Ballistic plates, doors & hatches
- RPG protection grids (window & bulkhead)
- Sound cannons, lights and stroboscope inside accommodation





# Summary

MSA provides:

- *An integrated non-lethal protection solution*
- *Single point of contact*
- *Wide variety of means*
- *Cost effective*
- *Covers all types of vessels*



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[www.maritimesecurityalliance.com](http://www.maritimesecurityalliance.com)



## Future protection methods...?

- Using nanosecond electrical pulses to paralyze people temporarily by disrupting the nervous system?
- Using millimeter waves to repel people by causing an intense heating sensation of the skin?
- Effect of blunt-impact weapons like rubber bullets, sting balls, bean bag rounds, and more sophisticated non-lethal munitions, and how to increase the range of today's blunt-impact non-lethal weapons?
- Studying advanced non-lethal RF directed-energy weapons and non-lethal laser weapons able to cause temporary blindness, painful heating of the skin, and other kinds of pain?
- Finding new laser sources that will make the fielding of a non-lethal laser weapons system more practical?