

Global
Material
Security



Maritime Security for Transport of
Nuclear and Other Radioactive Materials
TS-CCAM

Office of Global Material Security

U.S. Department of Energy
National Nuclear Security
Administration



- International shipments have been accomplished using ocean-going vessels, small crafts and barges, and ferries.
- Both International Atomic Energy Agency (IAEA) and International Maritime Organization (IMO) have international instruments and guidance on safe and secure transport of nuclear and other radioactive material.
- Maritime security, even on high seas, must be addressed with protection measures identified and implemented.



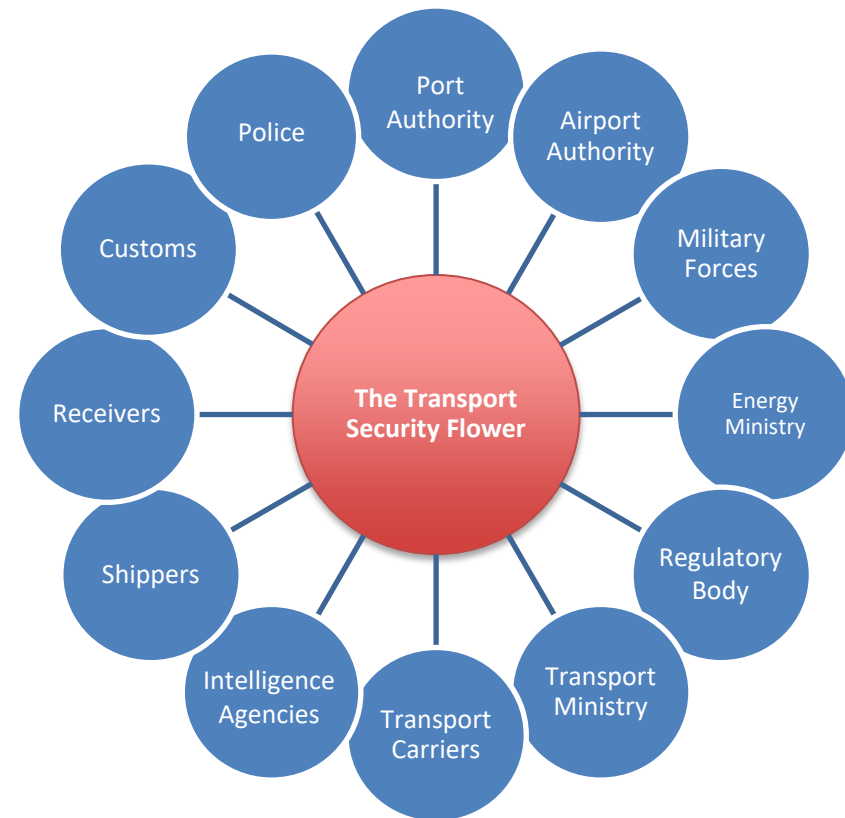
- Nuclear Law and IAEA Guidance
 - Convention on the Physical Protection of Nuclear Material (CPPNM) and Amendment to the Convention on the Physical Protection of Nuclear Material (ACPPNM)
 - IAEA Nuclear Security Series No. 9-G (Rev. 1) and Nuclear Security Series No. 26-G
- Maritime Law and IMO Codes
 - Safety of Life at Sea (SOLAS Convention)
 - International Maritime Dangerous Goods (IMDG) Code
 - International Ship and Port Facility Security (ISPS) Code
 - Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code)
- State-specific laws and regulations



- CPPNM and the ACPPNM recognize nuclear security is the responsibility of the State, and one of the Fundamental Principles includes security of nuclear material during International Transport (Fund. Principle B).
- Additional maritime security codes and requirements from the ISPS Code, IMDG Code provide further protection of nuclear and other radioactive materials during transport.



- **Multiple Stakeholders**
 - **Competent Authority- of what?**
 - Nuclear/radioactive material
 - Transport
 - Maritime Security (Coast Guard or Navy)
 - **Quasi-public Authorities**
 - Port Authorities
 - Terminal Operators
 - **Private Stakeholders**
 - Shippers
 - Carriers
 - **Many others**





Type, quantities, and categories of material being transported influence the level of protection while in a state's territorial waters or on the high seas.

– Questions:

- What type security plans do we need for maritime security?
- Are there different requirements for vessels for different types of Class 7 material?
- Who is in charge of security while on high seas?
- What coordination is required for international shipment by sea?
- How do we track shipment at sea?



Prior to conducting any shipment of nuclear or radioactive materials, threat assessment should be conducted of areas surrounding ports of embarkation and along the route.

– Questions:

- Why do a threat assessment while a shipment is at sea?
- Do terrorists attack at sea?
- How about criminal elements?

Port Security-Assessments



- Port assessments can provide some assurances the area is secure:
 - Typically provide positive access control and fenced perimeters
 - Waterside security may be accomplished by private security or Police Marine Division small boat patrols
- Many coastal naval bases may allow commercial vessels with Class 7 cargo:
 - High security port-wide with active security forces
 - Waterside security performed by military vessels



Port Security—Safe Havens



- Shipments of Class 7 arriving at port could experience delays in vessel loading:
 - Most commercial ports have high value goods exclusion areas
 - Equipped with CCTV and posted guards
 - Once inside port of departure take advantage of secure areas to setup a perimeter
 - Use shipment escorts, port security for safe-haven containment

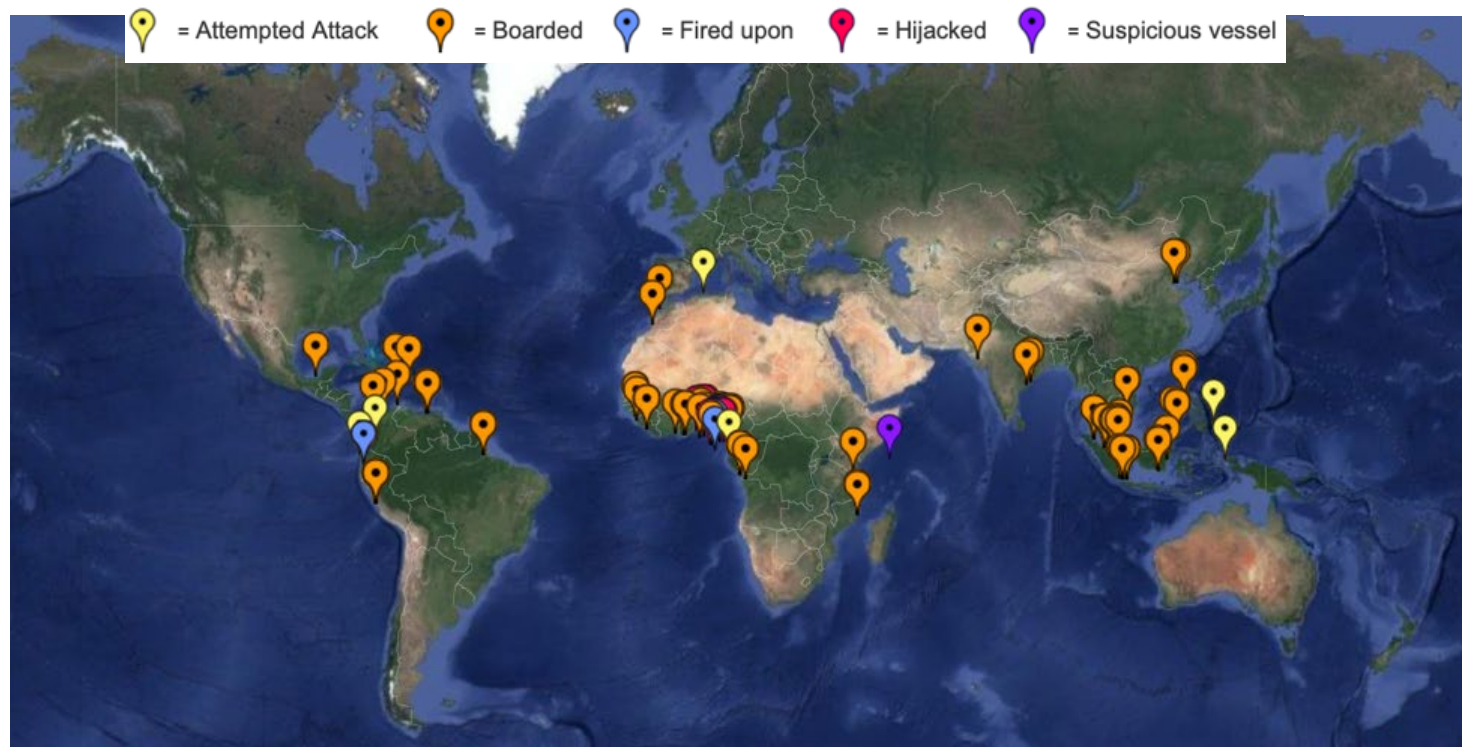


Port of Kingston Jamaica –
High Value Area

Piracy ICC - Live Piracy Map 2020



Piracy ICC - Live Piracy Map 2019





- **01.04.2019: 0745 UTC: Posn: 02:31.8S – 080:05.4W, Around 3.6nm WNW of Isla Escalante Island, Guayas, Ecuador.**

Duty officer onboard a container ship under pilotage noticed a fast-moving target on the radar approaching from astern. Crew alerted, and both searchlights were directed towards the approaching boat. A second boat was noticed. One boat, with around 10 persons with grappling hooks followed the ship, the other, approached the ship from the starboard side and attempted to hook on a telescopic ladder to the ship's rails. The pilot notified port control and the coast guard. The persons fired a few shots towards the search lights resulting in all crew retreating into the bridge and accommodation. Later the boats aborted their approach and moved away. All crew safe.

- **02.05.2019: Apprx 0730 UTC Posn: 09:16.40N – 078:07.45W, Around 1.9NM ENE of San Ignacio De Tupile, Panama**

The IMB Piracy Reporting Centre received a distress call from a family on an anchored pleasure boat indicating that unknown persons had boarded the boat, shot and killed one person and injured the other. Two other family members were unharmed. The IMB Piracy Reporting Centre (PRC) immediately informed the Panamanian Authorities who dispatched a patrol boat to the location to render assistance. The IMB PRC continued to liaise with the authorities and the family on the boat until the marine police boat arrived at location and rendered medical assistance.

Piracy Reports--continued



- **14.04.2019: 0645 UTC: Posn: 12:01.9S – 077:11.2W, Callao Anchorage, Peru.**
Five robbers boarded an anchored bulk carrier using a rope attached with a hook. Duty AB on routine rounds was attacked, threatened and beaten. Alarm raised and crew mustered. Seeing the alerted crew, the robbers escaped with the duty AB's personal belongings. Incident reported to local Authorities who boarded the vessel for investigation.
- **10.03.2019: 0430 UTC: Posn: 00:03.5N – 050:57.8W, Macapa Anchorage, Brazil.**
Two robbers armed with knives boarded an anchored bulk carrier using a rope attached with a hook. Duty AB on routine rounds spotted the robbers and immediately informed the OOW, who raised the alarm. PA announcement made, and all crew mustered. Seeing the alerted crew, the robbers escaped without stealing anything. Incident reported to Port Authorities.



Piracy is a fact of life in ocean transport. In some areas it is an extreme threat to shipping.

Awareness factors regarding piracy:

- Within DOE and NNSA pirates would be designated as criminals
- Typically their motivation for boarding vessels is monetary gain
- Piracy attempts are many times deadly with whole crews killed and vessels hijacked
- Areas of concern; South East Asia and Indian Sub-Continent, Africa and Red Sea, South and Central America, and Caribbean Waters
- Question:
 - Have you considered piracy as being an issue of concern during international shipments?



Transportation security professionals cannot disregard the possibility of terrorist organizations targeting nuclear or radioactive materials at sea. Case in point:

On October 7, 1985 four members of Palestine Liberation Front (PLF) hijacked an Italian cruise ship Achille Lauro off the coast of Egypt. This resulted in death of an American--wheelchair bound, 69-year-old, Leon Klinghoffer.





- In 1999, DOE/NNSA conducted a Spent Nuclear Fuel (SNF) shipment from four South Asian countries; Thailand, Indonesia, Philippines and Taiwan.
- Threat assessment revealed over 100 acts piracy in South China Sea the previous year. The vessel would be spending 17 days in the South China Sea.
- Based on threat information, a seven-man armed security team was placed on the vessel.
- During the 17 days, two attempts were made by pirates to board the vessel. Force by armed, uniformed security team became a deterrence.
- Both piracy attempts were aborted.

Concluding Review



- Can a vessel carrying Class 7 material be boarded?
- What is the intent of Piracy?
- Is extortion for monetary gain a possibility?
- Is piracy a threat in South America?
- How do we mitigate the threat?
- How do we identify the threat in our waterways and at sea?
- Who is going to respond if we are boarded?