Maritime Security Challenges in the Global Maritime Commons

Critical infrastructure resilience amidst complexity and uncertainty

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National Strategy for Maritime Security
September 2005

Presidential Policy
Directives (PPD 4,18)
2010, 2012

Global Maritime Intelligence Integration (GMII)
Maritime Domain Awareness (MDA)
Maritime Operational Threat Response (MOTR)

Domestic Outreach
International Outreach & Coordination
Maritime Transportation System Security
Maritime Commerce Security
Maritime Infrastructure Recovery

Maritime Security ...facing complexity
Complex system of interconnected, interdependent, intermodal, simultaneously operating cross-domain supply chains

**Economic Security**
Global supply chains

**Ports & Waterways**
- 361 commercial ports in US
- 17 strategic ports (DOD/DOT)
- Over 95,000 miles shoreline
- 23,000 miles of waterways

**Small Vessels**
- Vessels < 300T
- Major tracking challenge
- 50K in LA basin alone

**Cruise Ships**
- Over 11M passengers worldwide
- 80% passengers from the US

**Oceangoing Fleet**
- 135,000+ vsls > 100T
- 40,000+ commercial ships
- 198 international flags

**Containers**
- 20M+ moving globally
- 354M moves per year
- 971M tons cargo annually

**Crew & Port Employees**
- Over 1M merchant mariners
- Multinational crews

**Maritime Transportation System**
- Over 80% of global trade and commerce
- Over 90% US trade (total imports & exports)
- Trillion dollar industry
For example...

Port of New York/New Jersey

<table>
<thead>
<tr>
<th>Crossroads of international commerce</th>
<th>2,000 waterways</th>
</tr>
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<tbody>
<tr>
<td>NYC population over 8 million</td>
<td>2 Foreign Trade Zones (FTZs)</td>
</tr>
<tr>
<td>PANJNY 2012 budget $7B</td>
<td>3,500 longshore workforce</td>
</tr>
<tr>
<td>Nation’s #2 container port</td>
<td>2011 TEU containers 5.3 million</td>
</tr>
<tr>
<td>1,340 acres of port terminal</td>
<td>80 tenants across business sectors</td>
</tr>
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</table>
JFK International Airport

“Daniel Castillo walked in dripping wet...” 13 Aug 2012 USA Today
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Maritime Security...facing uncertainty

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What is the magnitude of challenge using current maritime information systems?
In the future...
need new sources of
MDA data, tracks, and
intelligence in a sensor-rich,
shared information environment

Missing from Global MDA Picture

Dark targets
Small vessels < 300T
Non-coop, non-emitters
AIS Blind Spots

17,000,000 vessels
Global MDA Uncertainties

- **Current 1%**
  - 165,000 vessels

- **Maritime Security Challenge 99%**
  - 17,000,000 global registered vessels

- **Capability Gap**
  - 12K > 65 ft
  - 71K 40-65 ft
  - 500K 26-40 ft
  - 6M 16-26 ft
  - 5M < 16 ft
  - 11,900,000 US-registered
  - Not required to transmit AIS

- **Classified Mostly US systems Commercial AIS**
**National Resilience Framework**

All-hazards, cross-domain critical infrastructure resilience in the face of complex and uncertain risks

**Resilience**

An active virtue integrated into all operations and systems

**National Preparedness**

Prevent | Protect | Mitigate | Respond | Recover

**Infrastructure Protection**

- Land
- Maritime
- Air
- Space
- Cyber

**Functional Continuity**

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