"LOAD, LOCK AND LAUNCH!"
SECURING THE MARITIME TRANSPORTATION OF OIL AND GAS

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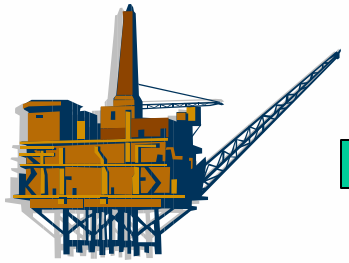
Presentation outline

- The energy supply chain
- The architecture of maritime transport of oil & gas
- Threats and risks faced in seaborne transportation of oil & gas
- Safeguarding the maritime transport of oil & gas

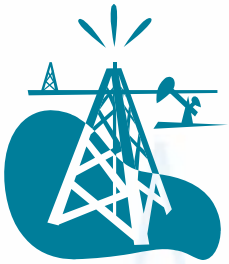
The energy supply chain

- Ensures smooth delivery of energy supply.
- Involves many parties, assets, systems, information & processes from upstream (producers) to downstream (consumers).
- Subject to geo-political influences.
- Its complexity, trans-boundary dimension and criticality renders it vulnerable to various risks.

The energy supply chain



Yards



Oil/gas fields

Futures market

Transportation

Refineries / plants

Spot market

Distribution

Storage

Transportation

Consumers

Components of energy supply chain

- Yards building oil rigs / tankers
- Refineries / processing facilities
- Terminal operators
- FSO / FPSO operators
- Transportation and distribution services providers i.e shipping lines, pipelines, truckers, storage tanks, gas stations
- Energy markets (spot and futures)
- End users / consumers

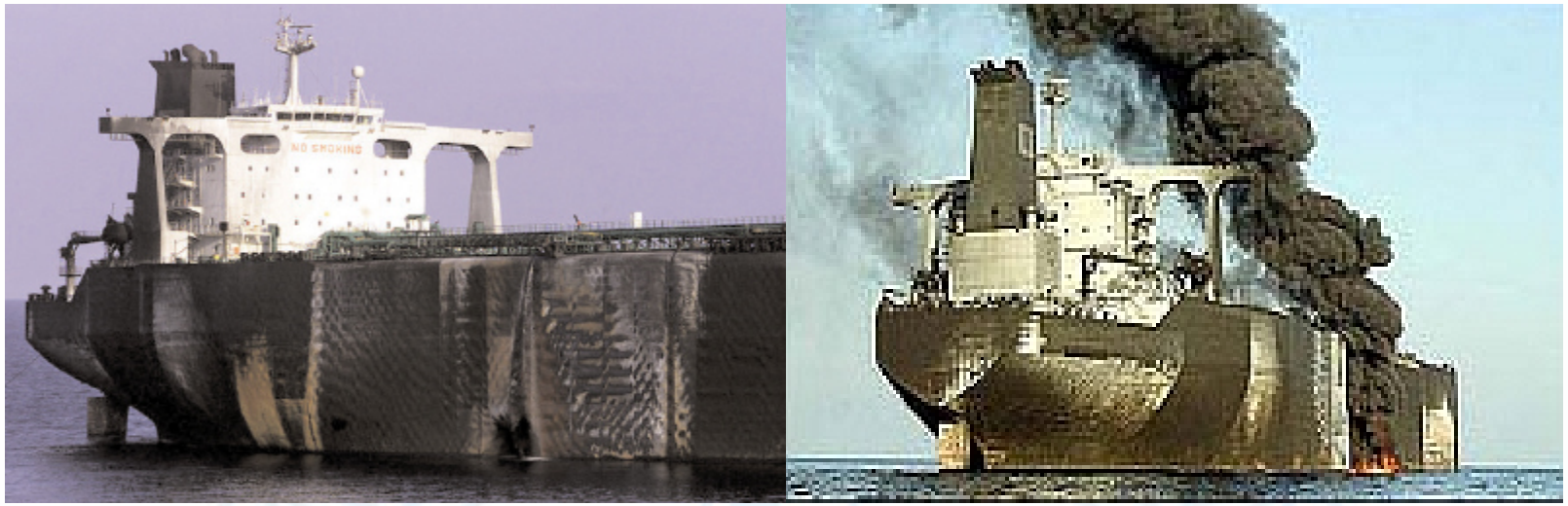
Maritime transport of oil & gas

- Involves expensive assets i.e. terminals, storage tanks, tankers, FPSOs etc.
- 77% of tanker trade is in crude oil. LNG seaborne trade is 6% of world production (UNCTAD, 2007).
- Ports & ships play crucial role in interfacing with other components in the energy chain.
- Speed, efficiency and security are the pillars of maritime transportation of oil & gas.

Threats on energy maritime transportation

- Terrorist attacks
- Piracy
- Sabotage
- War / conflicts / naval blockade & standoffs
- Human errors i.e. tanker collision, oil spills
- Mechanical failures / technical breakdowns
- Natural disasters i.e. hurricane

Terrorist attacks



Attack on French supertanker MV Limburg off Yemen, October 2002

Natural disasters

Seven platforms in the Gulf of Mexico destroyed by Hurricane Ivan in 2004

Over 40 platforms in the Gulf of Mexico damaged by Hurricane Katrina in 2005

Accidents

Oil tanker fire in Changsha, Hunan Province in China, December 2005

Petrobras P-36 oil rig sinking off Brazil, March 2001

Oil spills / pollution

Erika **oil spill off the coast of Brittany, France, December 1999**

Exxon Valdez **oil spill in Prince William Sound, Alaska, 1989**

Strategic role of maritime transportation in energy shipment

- Oil & gas are transported through narrow sealanes or chokepoints.
- Navigation safety and security of key sealanes i.e. Strait of Malacca, Strait of Hormuz are crucial to global energy trade.
- More countries depend on maritime transportation to facilitate energy trade.
- Energy security = military / global security

Impact of security breach in the energy supply chain

- Delay in production, transportation and distribution of energy
- Formation of bottlenecks along the energy supply chain and beyond
- Environmental damage
- Rising costs of energy, materials & goods
- Creating havoc to the global economy

Post-9/11 maritime security measures

- Int'l Ship & Port Security (ISPS) Code
- Customs-Trade Partnership Against Terrorism (C-TPAT)
- 96-Hour Advance Notification of Arrival
- 24-Hour Rule
- International Port Security Program
- Regional Maritime Security Initiative
- Proliferation Security Initiative
- Secure Freight Initiative

Implications of maritime security measures on energy transportation

- Security has become central to many parties along the chain.
- Better security, but speed and efficiency of supply chain have been hampered.
- Security costs passed by players along supply chain to users / consumers.
- Sharing of security costs a thorny issue.

Implications of security measures

- Bottlenecks forming along maritime supply chain i.e. congestion at ports.
- 'Security as an elitist issue' : ports in developing countries not able to comply with post-9/11 security measures suffer as a result of being bypassed by ships and shippers.
- Danger of maritime security measures being dictated too much by bureaucrats.

Challenges in securing maritime transportation of oil & gas

- Increasing asymmetrical, non-conventional threats to assets along the chain.
- Securing the entire length of the energy transportation chain from various threats.
- Emphasis on better coordination, cooperation, communication to create domain awareness.
- Huge resources needed to beef up security & to recruit, train and equip security personnel.

Balancing security and supply chain efficiency in energy transportation

- Security measures must not blunt speed & efficiency of energy transportation too much.
- Security initiatives must be planned in consultation with all players in supply chain.
- Good intelligence needed to avoid ‘looking for needle in haystack‘ approach.
- Reconcile security plans with supply chain management to ensure smooth energy flow.

Towards securing energy maritime transport

- Promote public-private partnership to improve effectiveness of security measures.
- Provide resources to beef up security.
- Tailor threat perception and responses based on sound intelligence & solid info / data.
- Address root causes of threats like piracy, terrorism, sabotage to mitigate their risks.

Towards securing energy maritime transport

- Enhance the efficiency of current measures before introducing new ones.
- Enhance cooperation & intelligence sharing between states and security agencies.
- Leverage use of technology.
- Focus on vulnerable points along the chain.
- Explore alternative energy routes & sources.

Conclusions

- The need for speed and efficiency in energy delivery must be balanced with the need to secure the energy supply chain.
- The security of maritime transportation of oil and gas is as good as the security of the entire energy supply chain.
- Language of ‘energy security’ needs to be redefined to suit current realities to avoid ‘hydrocarbon conflicts’.

Conclusions

- Protecting maritime transportation of energy should be embedded in the larger energy security framework.
- Securing the energy chain is the collective responsibility of all players along the chain.
- Will rising operational costs result in players along the chain cutting corners on security?
- Will ‘oil diplomacy’ lead to cooperative or confrontational energy security matrix?

Shape up or ship out!

THANK YOU

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