

# Security Dimension of the Maritime Energy Management: A Naval Perspective

Burak Şakir Şeker, Ph.D.,  
Lieutenant (Navy),  
Turkish Armed Forces General Staff

Dimitrios Dalaklis, Ph.D.,  
Assistant Professor (Safety & Security),  
World Maritime University (WMU)



Economic activities of mankind are intertwined with **sea and energy.**



No security for the seas



No trade

Lifeline of global economy



# Maritime Security



Global trade  
security



Energy supply  
security

Basic and complementary requirements

# Maritime Trade



**50.000 merchant ships  
registered in over 150 nations**



**%90 of the world's  
global trade**



**15 billion tons  
cargo**



**Carried throughout  
20.000 ports worldwide**



# Energy Supply and Maritime Security



Primary energy goods to be carried over the seas

Crude oil & by-products

# Pipelines

## Crude Oil & Natural Gas Transportation



Natural gas

**% 95**

Crude oil

**% 35**



# Crude Oil Production in 2015



82 million barrels (daily)



4 billion tons of crude (annually)



# Crude Oil Production and Consumption



# Crude Oil (Daily Move in 2015)

55 mn barrels



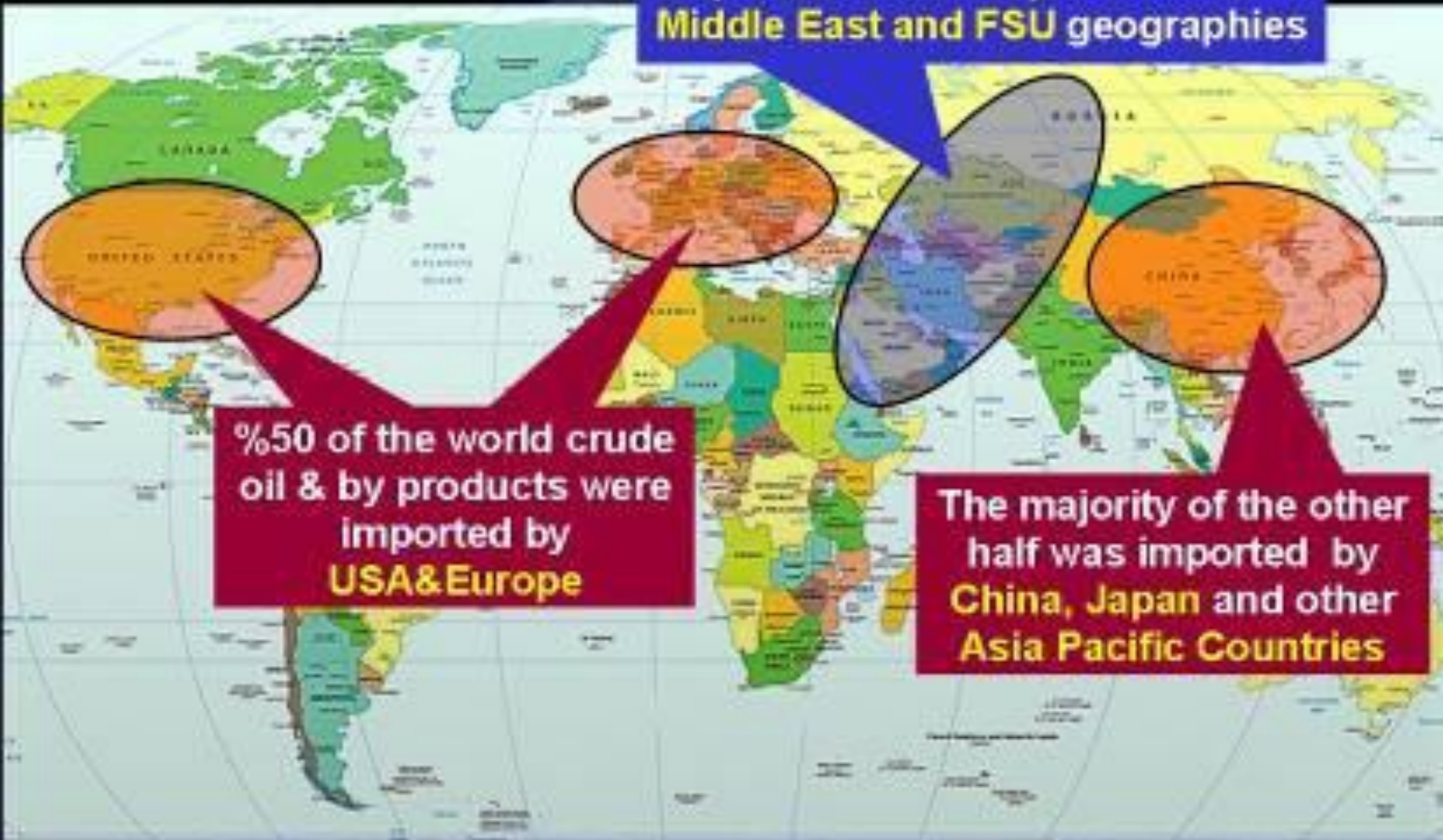
**%65 of oil (36 mn barrels)  
carried by 4300 tankers**



**%35 via pipelines**



**%50 of the world crude oil & by-products was exported from Middle East and FSU geographies**



**%50 of the world crude oil & by products were imported by USA & Europe**

**The majority of the other half was imported by China, Japan and other Asia Pacific Countries**



# The Maritime Shipping



Cheaper than

3 times



7 times



22 times





## Ultra Large Crude Carriers (ULCC)



ULCC's (550,000 DWT) are able to carry almost **3 million barrels** of crude oil.

# Maritime Transportation Advantages

Largest container ship (123,000 DWT)  
(aircraft carrier size) 18,000 containers



The first Trip was with 13 Crew  
The cost was \$145,000,000 US



- Low cost
- Productivity
- Flexibility



# Major Trade Routes



The securities of energy supply and maritime domain, particularly the safety and security of the offshore oil rigs, seaborne pipelines and terminal ports connecting sea lanes of communications crossing through straits, canals and choke points play very important role.

## The Strait of Hormuz



- It connects Persian Gulf to Arabian Sea and Gulf of Oman.
- 17 million barrels of crude oil is on daily move.



# The Strait of Hormuz

## (Iran-Iraq War)



- 240 tankers of different flags were attacked.
- 55 tankers were sunk or very heavily damaged.
- The maritime traffic was decreased up to % 25.
- The insurance costs and oil prices skyrocketed.



# The Strait of Hormuz



## The Daily Moves of Crude Oil & By-products

- To Japan 4 mn barrels per day.
- To Europe 3 mn barrels per day.
- To USA 2.2 mn barrels per day.
- To China 1,5 mn barrels per day.
- To Asia Pacific 6,8 mn barrels per day.

# Malacca Strait



- It connects Indian Ocean to the Pacific Ocean, interconnecting India, China and Indonesia.
- It is 1,7 nm wide at the narrowest point.



# Malacca Strait

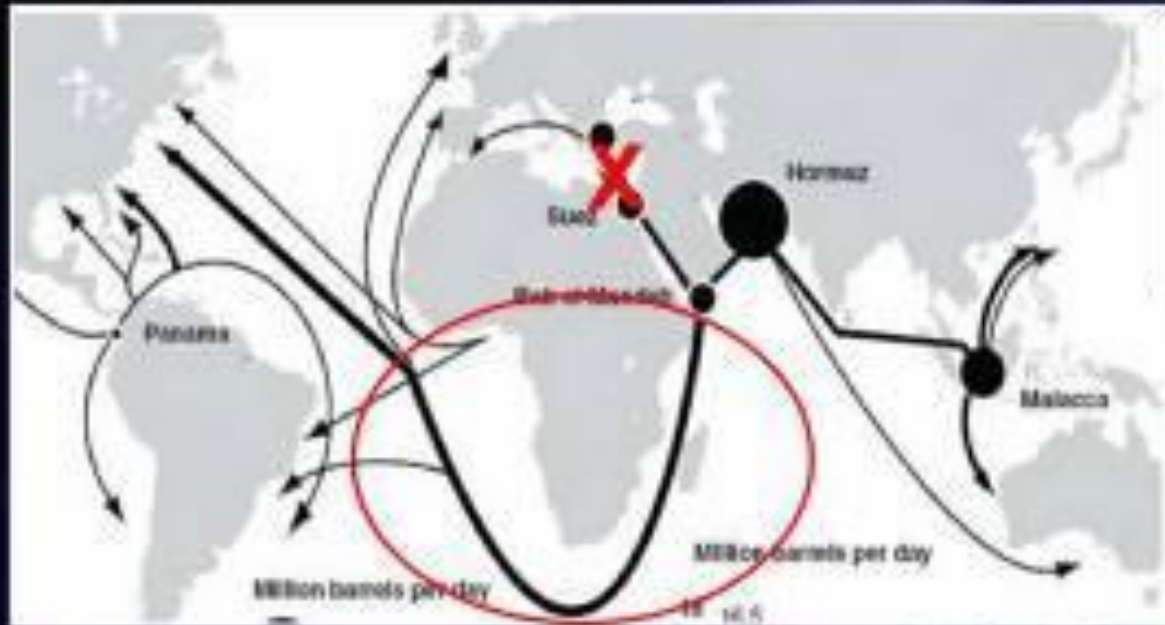


- Annually, 50.000 ships pass through the strait.
- 11,7 million barrels of crude oil and its by-products are on daily move.





# Suez Channel



**The closure of Suez Canal** after 1967 Arab-Israeli war

The tanker traffic was diverted to The Cape of Good Hope

Additional 6000 nm

## Bab El Mendeb Strait



- Annually 20 thousand ships pass.
- 3,3 mn barrels of Persian Gulf origin crude oil & by-products are on move toward the ports of Europe and USA.



# Bab El Mendeb Strait

Region has security shortcomings



USS Cole (2000)



Limburgh (2002)

# Panama Canal & Trans Panama Pipeline



- It connects Pacific Ocean to Caribbean Sea and Atlantic Ocean.
- Daily 0,6 mn barrels US origin crude oil&by-products are carried through the canal to Central and North American Ports.



# Panama Canal & Trans Panama Pipeline



If closed by any reason, detour course through  
Magellan Strait



Adds further 8000 nm

# Other important Sea Areas For Crude Oil & Natural Gas





## Other Important Choke Points



**Strait of Gibraltar**



**Sicilian Strait**

# Arctic Passages



**Connecting Pacific and Atlantic Oceans, as a result of ice melt downs in the Arctic Region due to global warming.**



# Arctic Passages



9000 nm Long **Seattle-Rotterdam** course through Panama Canal becomes 7000 nm with **2000 nm** saving.

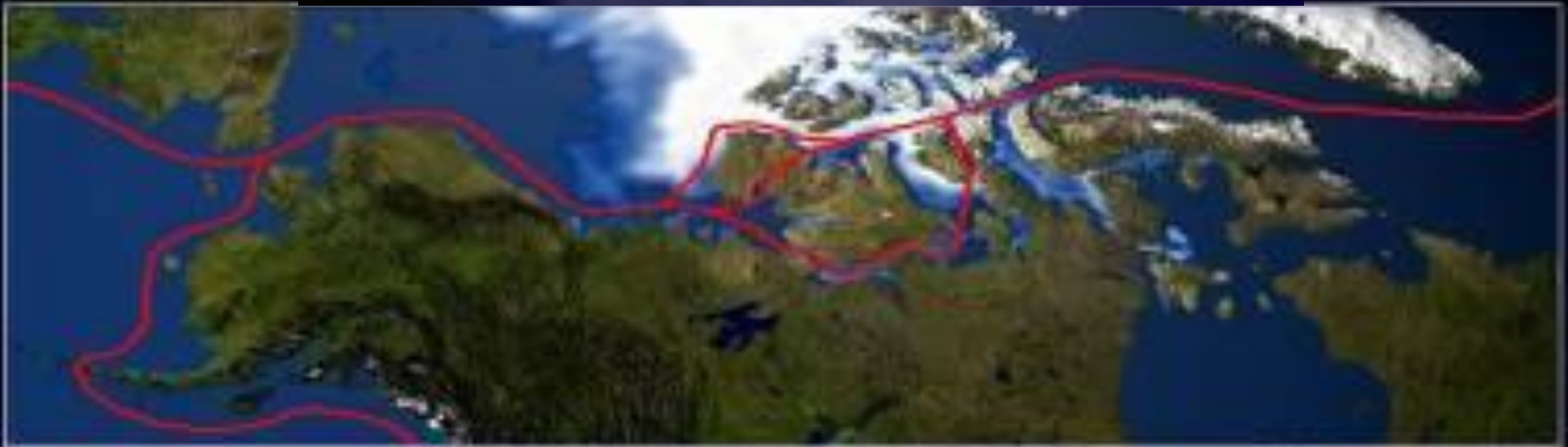
# Arctic Passages



11200 nm **Rotterdam-Yokohama** course through **Strait of Gibraltar** and **Suez Canal** becomes 6500 nm with **4700 nm** saving.



# Arctic Passages



Distance cutdowns might cause revolutionary effects in **maritime industry**



**%20 savings**

# Major causes for disruption of energy flow over the seas



**Wars**



**Terror attacks**



**Piracy**



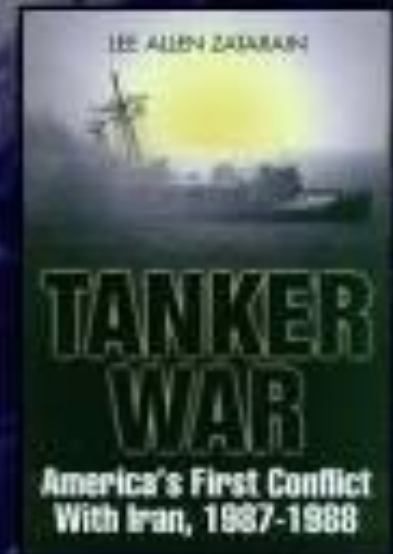
# Wars



- The closure of Suez Canal
- The disruption of oil flow from the Persian Gulf via Strait of Hormuz

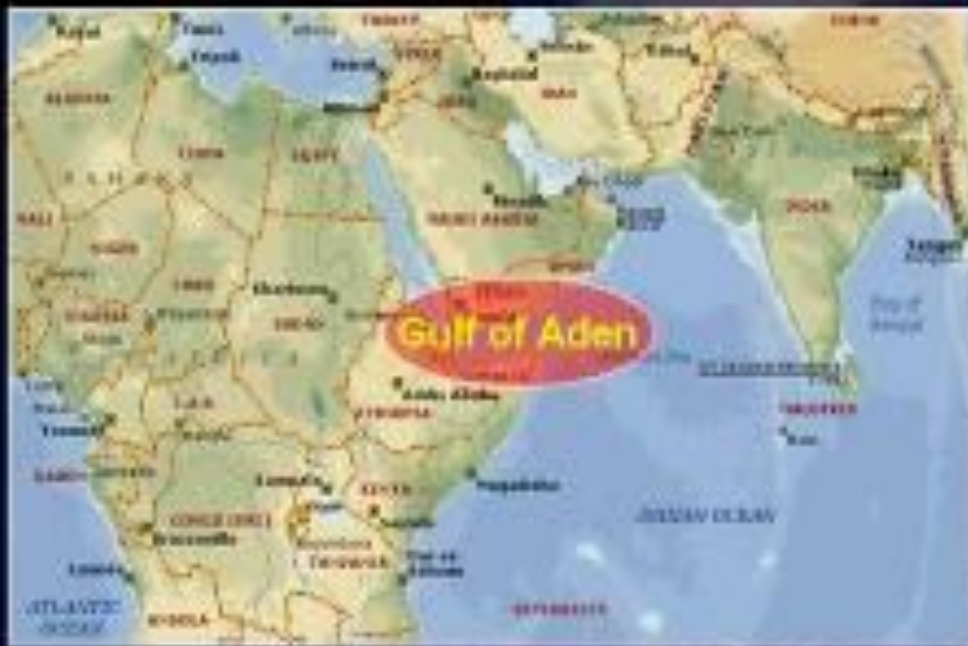


**Important experiences**



# Terror Attacks

## Limburgh Attack (6 Oct 2002)



- 90 thousand barrels of oil dispersed to the sea.
- One crew member was dead with many wounded.



# Terror Attacks

## Limburgh Attack (6 Oct 2002)



- Yemeni Government has lost \$4 million of monthly revenues.
- 3000 Yemenis have lost their jobs.
- The insurance costs of maritime shipping have tripled.

# Piracy



**Piracy** constitutes threat and risk to the energy supply security over the seas.



# Piracy

## Sirius Star Case (2008)



- 320 thousand tons super tanker. (VLCC)
- Carrying 2 mn barrels of crude oil.
- The value of the tanker with cargo was \$256 mn.
- The biggest ship ever hijacked in the maritime shipping history.



**The security of world coastlines adjacent to major sea lanes of communications necessitate the sustainment of maritime security.**



## Post 11 September Period



Revolutionary developments have taken place in maritime security



**Deter & Disrupt**

## Deter & Disrupt

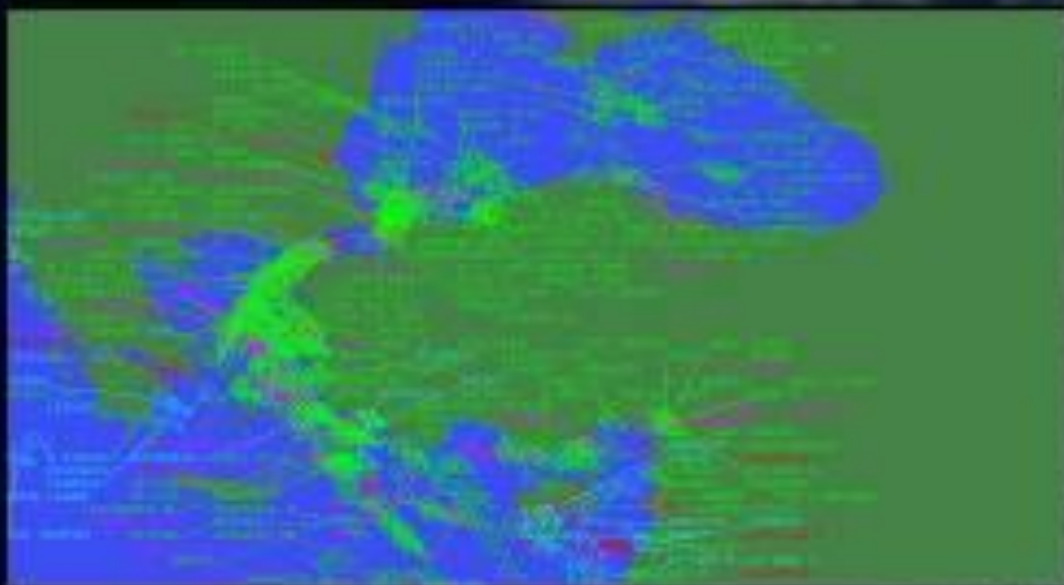


The maritime security operations conducted in different maritime regions of the globe

Essential



# Basic Elements of Maritime Security Operations



**Maritime Domain Awareness**

**Soft Power**



**Maritime Interdiction Operations**

**Hard Power**

# Maritime Domain Awareness



- The real time surveillance
- The detection of entire ship movements

**ACTIONABLE INTELLIGENCE  
INTRA&INTER GOVERNMENTAL INFO&INTEL SHARING**

**INDISPENSABLE**



# The Maintenance of Maritime Security



No state or alliance

has reach + capability

to establish and maintain maritime security

**ALONE**

# The Maintenance of Maritime Security



**INTERNATIONAL  
COOPERATION & COORDINATION**





**Keeping the sea lanes of communications  
along with important choke points**

**OPEN-SAFE-SECURE**



**essential necessity, leaving  
geopolitical competitions aside.**

## Regional Cooperation



**The global partnership of regionally provided securities**



**to make world oceans and seas ever secure and safe for everybody and to deter those conducting illegal activities at sea.**



# Maritime Security



**“Not a taken for granted right for states”**

**in an era of global interdependence**

# Maritime Security

“Once lost”



It takes long and difficult process to restore and maintain.



The maritime security is “sine qua non” in the energy supply security



National and international cooperation & coordination

# Q & A