



# ***Military Sealift Command and Piracy***

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***Military Sealift Command***

***Mission-focused... Value-driven***

**1**



# MSC on One Hand

**Time zones:**

**# of People:**

**10,000**

**24**

**# of Ships:**

**180**

**(120/60)**

**What our  
Customers**

**Pay Us:**

**\$3.5B**

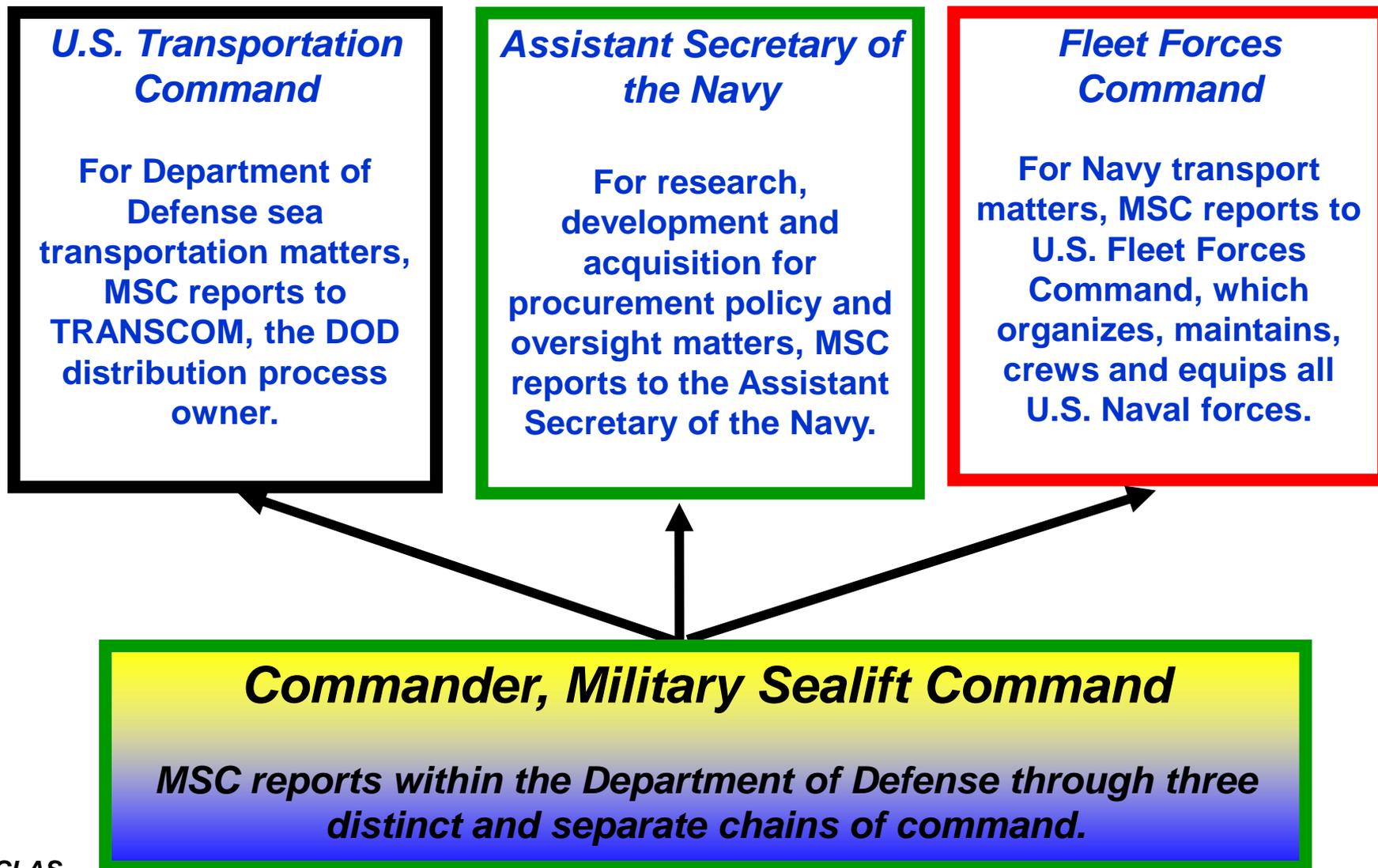


**What we do:**

**All Ships  
That Don't  
Shoot**

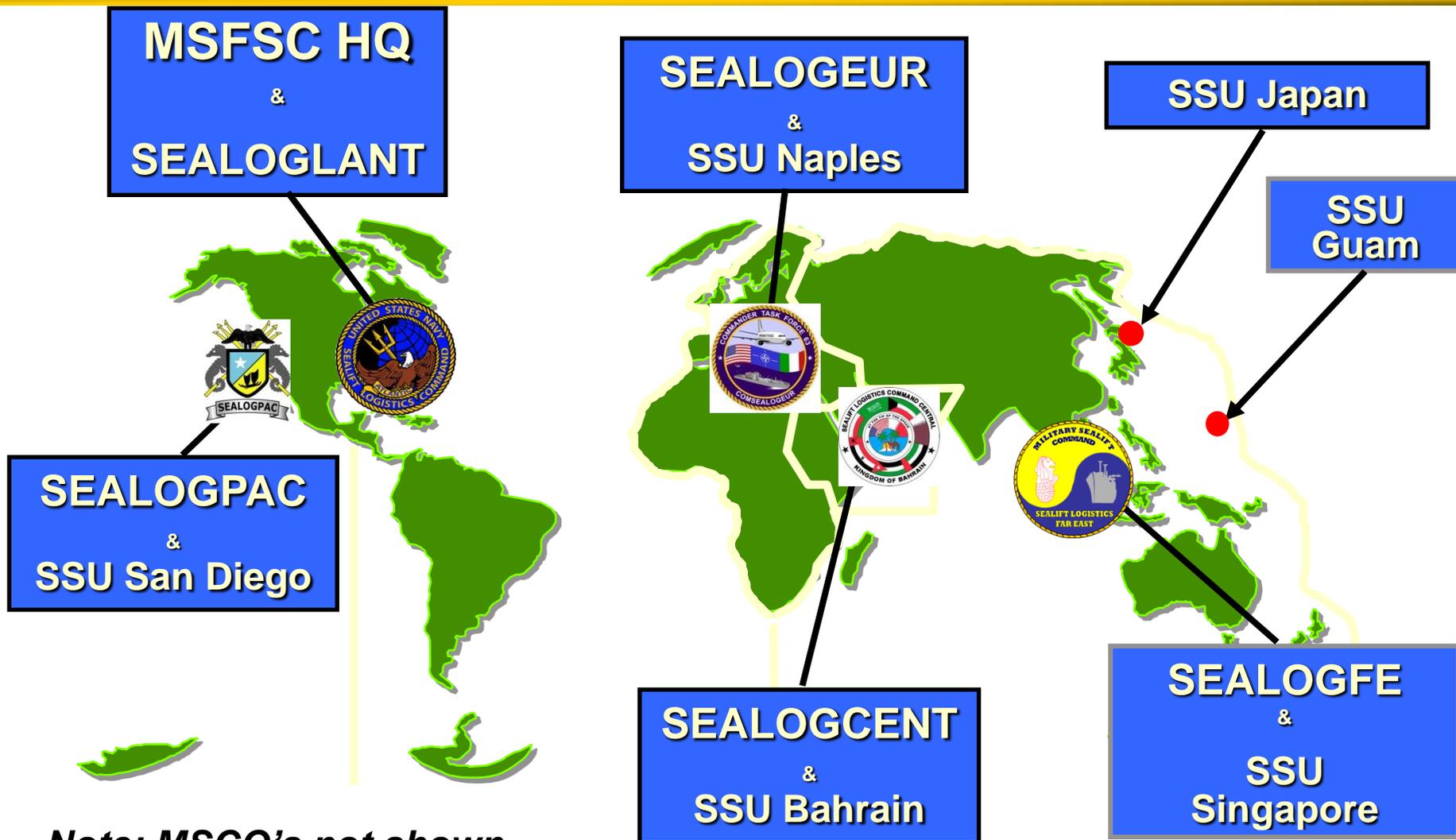


# Command Relationships





# MSC Global Footprint Subordinate & Area Commands

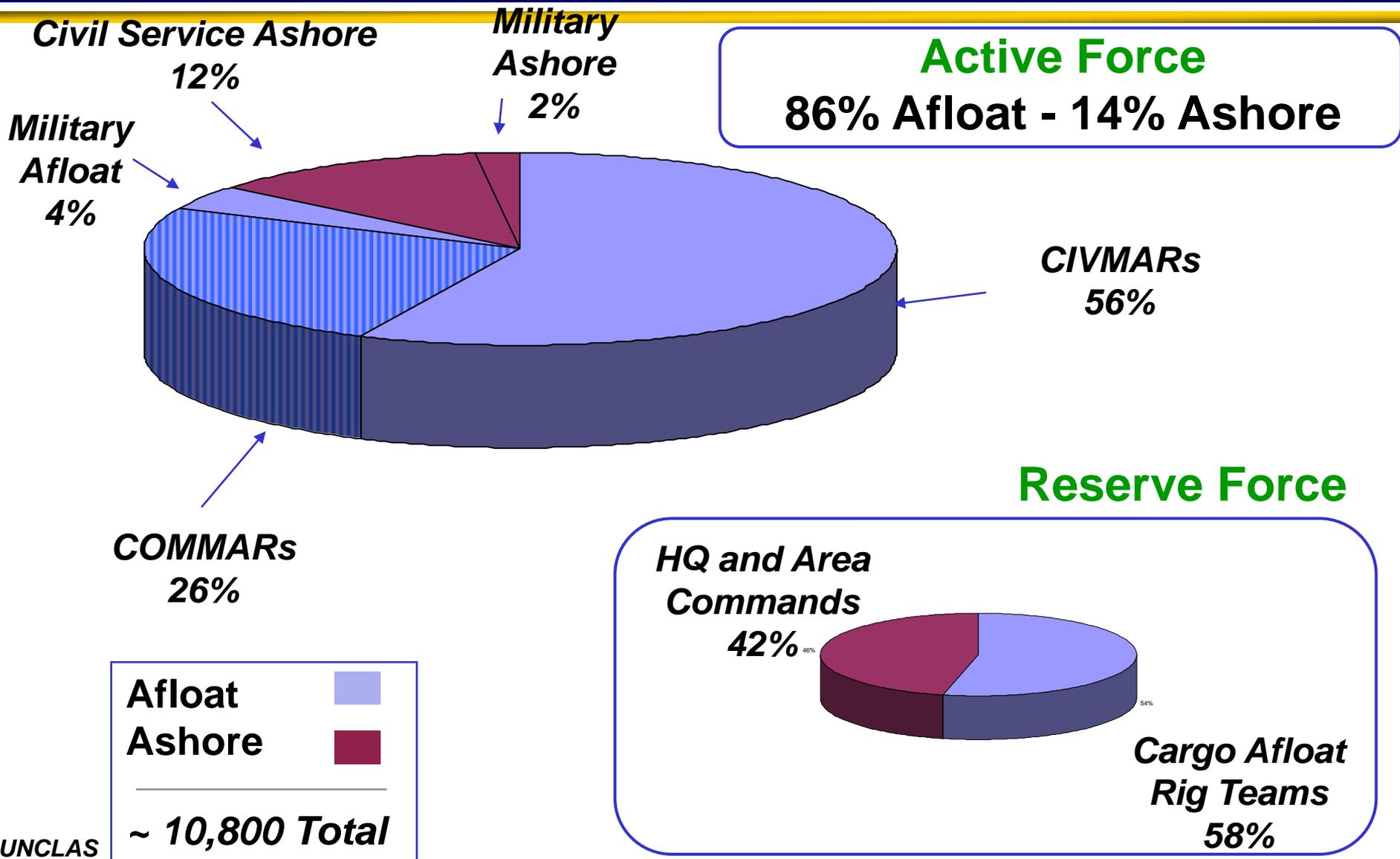


*Note: MSCO's not shown*

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# MSC's Workforce



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# MSC Today



## PM1: Naval Fleet Aux Force (CLF+)

- 14 T-AO
- 4 T-AE (1 ROS)
- 3 T-AFS
- 4 T-AOE
- 4 T-ATF
- 3 T-ARS
- 2 T-AH (1-2 ROS)
- 6 T-AKE

**GOGO**

## PM2: Special Missions

- 8 T-AGS
- 5 T-AGOS
- 2 T-AGM
- 1 T-AG
- 1 T-ARC
- 1 LCC
- 4 Sub Support Ships
- 1 Submarine Tender
- 3 Special Support (Warfare/Training)
- 1 Undersea Surveillance

**GOGO, GOCO & COCO**

## PM3: Prepositioning

- 15 USMC Cargo
- 1 Navy Ammo
- 1 HSV
- 10 USA Cargo (7 ROS)
- 2 USAF Cargo
- 2 USMC Maint. (ROS)
- 1 DLA OPDS
- 1 DLA Fuel (ROS)

**GOCO & COCO**

## PM5: Sealift

- 11 LMSR (11 ROS)
- 5 Tankers
- 7 Long-term Commercial charters
- 10 Short-term Commercial charters

**GOCO & COCO**



# Naval Fleet Auxiliary Force



<b>Fleet Underway Replenishment Oilers</b>	<b>14</b>
<b>Ammunition Ships</b>	<b>4</b>
<b>Combat Stores Ships</b>	<b>3</b>
<b>Fleet Ocean Tugs</b>	<b>4</b>
<b>Fast Combat Support Ships</b>	<b>6</b>
<b>Rescue-Salvage Ships</b>	<b>4</b>
<b>Dry Cargo/Ammunition Ships</b>	<b>4</b>
<b>Hospital Ships</b>	<b>2</b>



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# Special Mission Program

Oceanographic Survey Ships	6
Ocean Surveillance Ships	5
Submarine Support Ships	4
Missile Range Instrumentation Ships	2
Command Ship	1
Special Warfare Support	3
Navigation Test Support	1
Cable Laying / Repair Ship	1
Submarine Tender	1

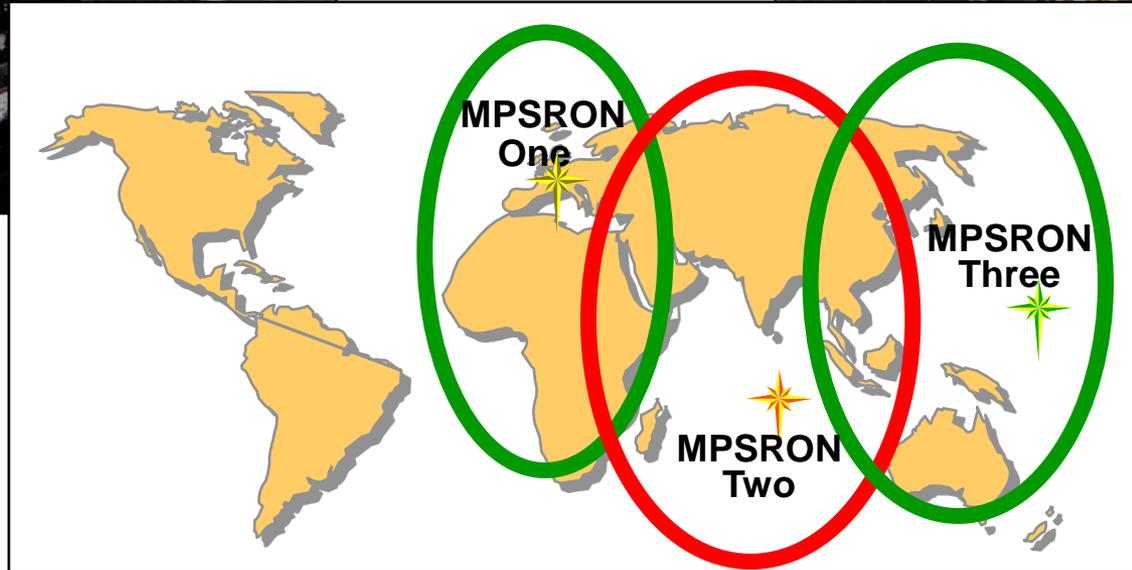


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# Prepositioning Program

15  
10  
6  
1



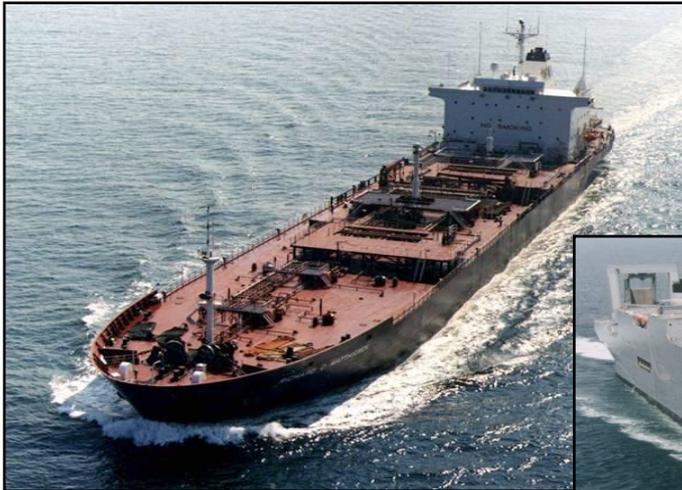
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# Sealift Program



11  
5  
4  
68



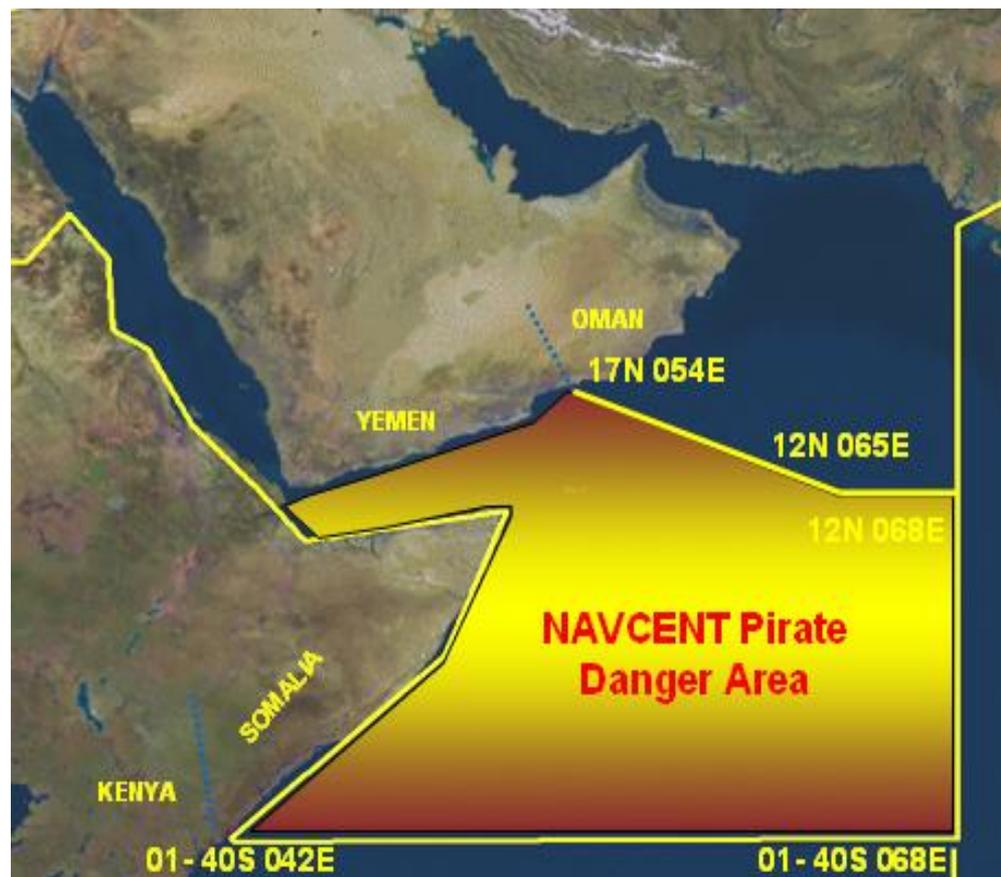
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**Military Sealift Command**

**Mission-focused... Value-driven**

# MSC Exposure to Piracy

- During 2008, 28 different Military Sealift Command ships transited the Pirate Danger Area
- 7 of those conducted logistics support services for prolonged periods in the PDA.
- 12 ships transited the area a combined 38 times during the course of their mission.



*Frequent and prolonged exposure in the PDA with no ships taken*



# ***MSC Gameplan***



- 1. Pre-training of crew.***
- 2. FP: Embarked security teams.***
- 3. Ops: go fast, don't stop, high freeboard***
- 4. Mutual situational awareness with local naval commander.***

- 
- 5. In US, support MARAD in the APAT process.***



# Crew Training: from ALMSC 08/09

- *Review ship's security bill to ensure 360 degree coverage by security watches. Ensure personnel assignments are promulgated and reaction force equipment is available and ready for issue at the designated muster point*
- *Review currency of small arms quals, conduct simulator training and weapons safety review*
- *Perform communications checks with SEALOGCENT/CTF53*
- *Muster and brief crew so all personnel understand importance of piracy response and that it is an all hands evolution*
- *If feasible, keep all propulsion units online during transit of the PDA since transiting above 14kts greatly hinders their ability to board*
- *Consider night-time transit of the PDA (attacks outside of daylight hours are rare)*
- *Lay out fire hoses so they can be rapidly charged and employed to fend off boarders*
- *Practice lockdown of the ship to prevent unauthorized topside entry*
- *Inspect the topside area looking for items that may assist pirates in boarding the ship, give special attention to low freeboard areas and the stern*
- *Issue night vision goggles to bridge and pirate watch personnel with appropriate training for its use*
- *Ensure reaction force teams have equipment to cut lines from grappling hooks in the case of an attempted boarding*
- *Do not anchor anywhere in the PDA unless an emergency necessitates, if so inform SEALOGCENT/CTF53 immediately*
- *Equip bridge personnel with helmet and body armor to be donned when a pirate threat is identified*
- *When EST boards ensure that most up to date threat intelligence for the transit area is shared*
- *Ensure that master and EST must understand each other's FP posture*
- *Ensure that ship key personnel and EST watch standers have tested communications*
- *Ensure coordinated responses have been rehearsed*
- *Any problems that cannot be addressed by EST and/or the ship must be referred to SEALOGCENT and CTF56*

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# Crew Training: from ALMSC 08/09



- ***A drill shall be conducted with the following as a basis:***
  - ***In the case of threat or suspicion of piracy***
    - ***Notify all hands via the general announcing system***
    - ***Utilize topside speakers to transmit prerecorded audible warning message***
    - ***Sound danger signal on ship's whistle and maneuver ship accordingly***
    - ***Muster ship reaction force***
    - ***Charge and activate fire hoses to deter/inhibit boarding***
    - ***Secure topside access while maintaining ability for EST to enter/exit***
    - ***Activate AIS if secured***
    - ***Notify SEALOGCENT and/or FIFTH FLEET Command Center***
  - ***In the case that pirates are discovered onboard***
    - ***Evacuate crew to critical spaces to maintain control of the ship and to keep the crew safe***
    - ***Barricade crewmembers on the bridge if possible***
    - ***Barricade crewmembers inside engineering in order to maintain control of the ship's vital functions***
- ***Report to CTF53 and COMSC the completion of required drills and actions prior to entering the PDA***



# FP: Ship Protective Measures

	<i>Rest of World</i>	<i>Naval Component Commander Designated High Threat Area</i>	<i>Inside FIFTH FLEET AOR</i>	<i>Inside PDA</i>
<b>Government Owned</b>	<i>5 ships force personnel qualified in small arms and shipboard security tactics</i>	<i>5 ships force personnel qualified in small arms and shipboard security tactics + EST</i>	<i>5 ships force personnel qualified in small arms and shipboard security tactics + EST</i>	<i>5 ships force personnel qualified in small arms and shipboard security tactics + EST</i>
<b>US Flag Charter &gt;180 days</b>	<i>5 ships force personnel qualified in small arms and shipboard security tactics</i>	<i>5 ships force personnel qualified in small arms and shipboard security tactics + EST</i>	<i>5 ships force personnel qualified in small arms and shipboard security tactics + EST</i>	<i>5 ships force personnel qualified in small arms and shipboard security tactics + EST</i>
<b>US Flag Charter ≤180 days</b>	<i>No Requirement</i>	<i>EST</i>	<i>EST</i>	<i>EST</i>
<b>Foreign Flag</b>	<i>No Requirement</i>	<i>No Requirement</i>	<i>No Requirement</i>	<i>CS</i>

\*EST: Embarked Security Team \*CS: Contract Security

\*MPS 1&3 prepo ships have contracted security guards on board, but arming levels vary and these guards do not sail with ships when they enter the Arabian Sea



## *Ops: Why MSC ships are a hard target*



- Embarked Security Teams work: Flares and warning shots have successfully turned away all suspicious boats and skiffs
- Crew drills are conducted so all personnel understand their duties and responsibilities in the case of an attempted boarding



- Evasive maneuvers are key since pirates face extreme difficulty boarding a maneuvering ship
- When possible ships are routed east of the PDA



# ***APAT: Ships Completed to Date***



***APAT visits have been conducted with:***

- American Presidents Line: ships routinely carry government impelled cargo***
  - President Jackson (05FEB2009 in Norfolk)***
- Liberty Maritime: ships routinely carry government impelled cargo, mostly for USAID***
  - Liberty Grace (27MAR2009 in Corpus Christi)***
  - Liberty Glory (28MAR2009 in Corpus Christi)***
- International Shipholding Inc: operates car carriers with routine port calls in the middle east and far east***
  - Green Lake (29MAR2009 in Beaumont)***



# The Way Ahead for MSC



1. Keep doing the right things.

2. Build upon success:

- Assess ships by class to determine specific vulnerabilities that pirates might use to their advantage
- Fielding video cameras to capture footage of piracy attempts or suspicious activity
- Survey emerging technologies that could assist in determining hostile intent. Examples include Acoustic Hailing Devices and Joint Non-Lethal Weapons Munitions





## Discussion:

# A potential model for piracy analysis and mitigation



# Propensity toward Pirate Activity



Pirate activity (or any other organized criminal activity such as drug trafficking) occurs when the reward/risk ratio of pirate activity is greater than the reward/risk ratio of alternate activity.

If  $(\text{Reward/Risk})_{\text{piracy}} > (\text{Reward/Risk})_{\text{alternate}}$ , then pirate activity occurs.

Also:  $\text{Risk} = \text{Risk}_{\text{ashore}} + \text{Risk}_{\text{afloat}}$



# Extrapolating...

=(attempts)(success rate)

=(ransom requested)x(% paid)  
X(%sanctuary)

\$Reward  
\$Risk<sub>a float</sub>

= # of successes x \$Ransom  
# of failures x \$cost of failure

=(attempts)(failure rate)

=(cost of people)(cost of equip)(%lost/failure)



# Reward / Risk =

$$\begin{aligned}
 &= \frac{\# \text{ of Attempts} \times \left[ \begin{array}{l} \text{success} + \text{success} \\ \text{thru ship} \quad \text{thru CTF} \end{array} \right] \times \left[ \begin{array}{l} \$\text{ransom} \times \text{sanctuary} \times \% \text{ransom} \\ \text{requested} \quad \text{avail} \quad \text{paid} \end{array} \right]}{\left[ \begin{array}{l} \text{Prob of} \quad \text{Neg} \\ \text{Attack} \quad \text{X} \quad \text{Results} \\ \text{Ashore} \end{array} \right] + \# \text{ of attempts afloat} \times \left[ \begin{array}{l} \text{failure} \quad \text{failure} \\ \text{thru} \quad + \quad \text{thru} \\ \text{ship} \quad \text{CTF} \end{array} \right] \times \left[ \begin{array}{l} \$ \text{Cost} \quad \text{cost} \quad \% \text{prob} \\ \text{of lost} \quad \text{X} \quad \text{of} \quad \text{X} \quad \text{of} \\ \text{people} \quad \text{equip} \quad \text{loss} \end{array} \right]}
 \end{aligned}$$



# Reward / Risk =

Ship Self-Defense Measures

Navy / CTF Defense Measures

Ashore Diplomatic / Government Building

$$= \frac{\# \text{ of Attempts} \times \left[ \begin{matrix} \text{success} & + & \text{success} \\ \text{thru ship} & & \text{thru CTF} \end{matrix} \right] \times \left[ \begin{matrix} \$\text{ransom} & \times & \text{sanctuary} & \times & \% \text{ransom} \\ \text{requested} & & \text{avail} & & \text{paid} \end{matrix} \right]}{\left[ \begin{matrix} \text{Prob of} & \text{Neg} \\ \text{Attack} & \text{Results} \\ \text{Ashore} & \end{matrix} \right] \times \left[ \begin{matrix} \# \text{ of} \\ \text{attempts} \\ \text{afloat} \end{matrix} \right] + \left[ \begin{matrix} \text{failure} & \text{failure} \\ \text{thru} & + & \text{thru} \\ \text{ship} & & \text{CTF} \end{matrix} \right] \times \left[ \begin{matrix} \$ \text{Cost} & \text{cost} & \% \text{prob} \\ \text{of lost} & \text{X of} & \text{X of} \\ \text{people} & \text{equip} & \text{loss} \end{matrix} \right]}$$

Prob of Attack Ashore X Neg Results

# of attempts afloat + failure thru ship + failure thru CTF

\$ Cost of lost people X cost of equip X % prob of loss

Risk Associated with efforts against shore HQ

Legal Measures To keep captured pirates off the street

Arms/Equip Embargo Efforts

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# Using the equation

***We can minimize reward/risk ratio in three ways:***

- 1. Through incremental improvements in a variety of parameters***
  - Better % chance of a ship defending herself*
  - Better % chance of Navy/CTF defending the ship*
  - Higher cost per failure (people, equipment, etc)*
  - Reduced number of opportunities/attempts*
- 2. By decreasing values in the numerator to near zero***
  - Probability of successful attack on a ship, for instance. Or, the probability that sanctuary is available.*
- 3. By increasing values in the denominator to a very large number***
  - Cost per failure, for instance.*



# Thinking anew...

- ***Q-ships***
- ***Could we extend the 15-minute window?***
- ***Could we manipulate the piracy reward/risk ratio?***
- ***Could we incentivize Somali leaders to avoid piracy?***
- ***Could we incentivize some Somali leaders to pursue pirates themselves?***
- ***Blockade/quarantine?***
- ***Exclusion area?***



# ***Back Up Slides***