



Littoral Warfare

Littoral Warfare: Taking the Fight to the Enemy

Admiralty Trilogy Seminar

Presented by:

Clash of Arms Games





Introduction

Littoral Warfare

- Definition
- Environment
- Multiple Threats
- Impact on Design
- Impact on Operations
- Conclusions

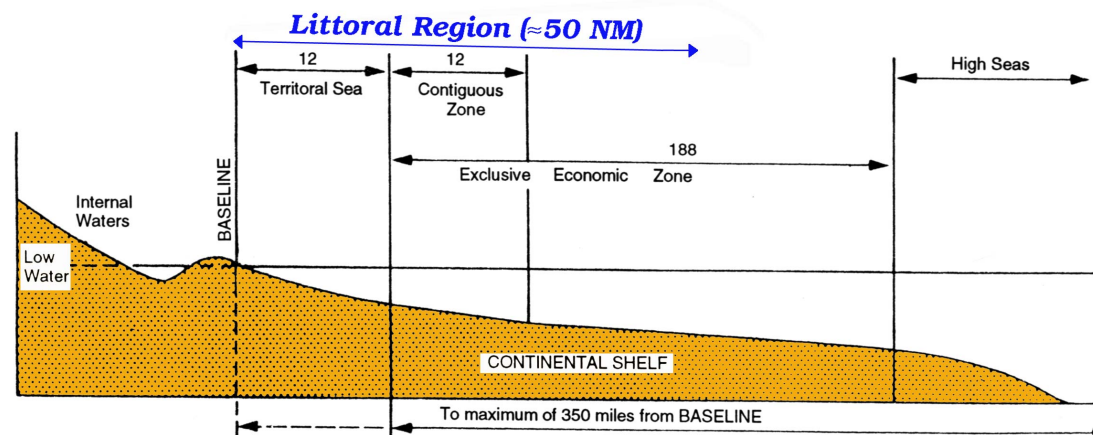




Definition

Littoral Warfare

- **Littoral**: Those regions relating to or existing on a shore or coastal region, within direct control of and vulnerable to the striking power of naval expeditionary forces. (*Naval Warfare, Naval Doctrine Publication 1*)
- **Proposed Definition**: The operation of naval forces within 50 NM of the coast.





Taking the Fight to the Enemy

Littoral Warfare

- Is “Littoral Warfare” something new?
- Anytime troops are inserted from sea, you have littoral warfare.
 - Gallipoli - World War I
 - South Pacific “Island Hopping” - World War II
- Anytime ships fight in close proximity to land, you have littoral warfare.
 - Operations in the English Channel
 - Guadalcanal Campaign



Environment

Littoral Warfare

- The littorals present a very difficult environment due to the close proximity of land
- Detection Issue
 - Radar - Land clutter
 - IR - Large background heat source
 - Sonar - Shallow water, high ambient noise
- Classification Issue
 - Large number of false targets
 - High shipping density
- Attack Issue
 - Shallow water can be mined

Radar Example



Littoral Warfare

- Detection of a fast patrol boat with a surface search radar
 - La Combattante class
 - 249 tons normal displ
 - RCS = 28 dB
 - SPS - 64 Radar
 - Open range = 11.3 NM
 - Operating near a beach
 - Land clutter = 17 dB
 - Littoral range of SPS-64 = 4.3 NM





Threats - Submarines

Littoral Warfare

- Diesel submarines are even harder to detect in shallow water
 - Very quiet when on the battery
 - High shipping density raises the ambient noise
 - High reverberation limits active detection



Mud Sharks!

- Taking the fight to his backyard maximizes a SS strengths and minimizes its weaknesses
 - Mitigates the speed and endurance limitations of SS



Threats - Fast Patrol Boats

Littoral Warfare

- Small, fast, heavily armed
 - Hard to detect, hide along the shore
 - Sprint to get into position, fire multiple ASCMs
- Fragile platforms, easily killed
 - Very limited space for defensive weaponry
 - Limited ECM
- “Egg shells armed with sledge hammers.”

Surprise!

Shoot!

Scoot!

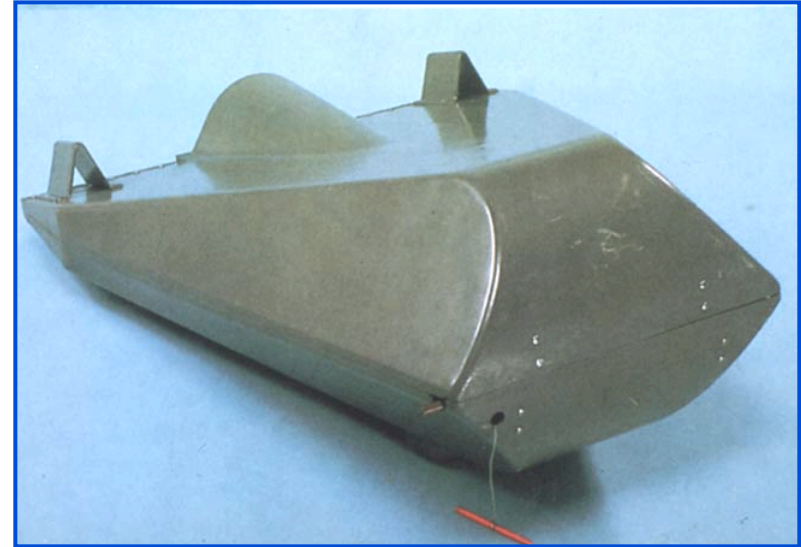




Threats - Mines

Littoral Warfare

- Weapons that wait
- Easy to employ
- Difficult to detect
- Very hard to sweep
- CHEAP!
- Modern mines
 - Multiple influence, bottom
 - Propelled warhead, moored
- Don't forget the old fashioned moored contact mine is still a threat





Threats - Coastal Defenses

Littoral Warfare

- Artillery and missile batteries
- Radar, EO/IR sensors
- Usually integrated
- Mostly static defenses
- Increasing emphasis on mobile systems
- **Lesson of DESERT STORM**

If it doesn't move, it dies!

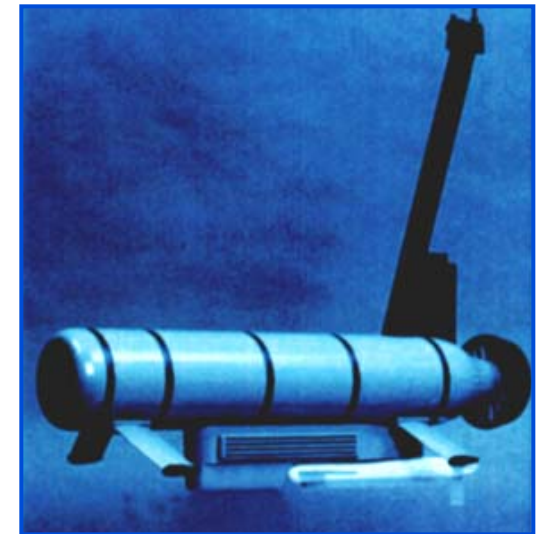




Impact on Ship Design

Littoral Warfare

- Radar and IR stealth required
- Greater reliance on “stealthy” and passive sensors
 - LPI radar
 - EO/IR sensors
- Growing emphasis on off board sensor platforms
- Highly automated, integrated combat systems
 - Reduce reaction time

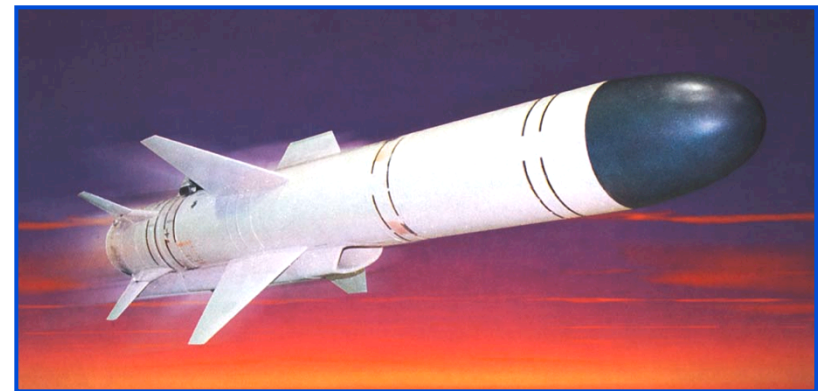
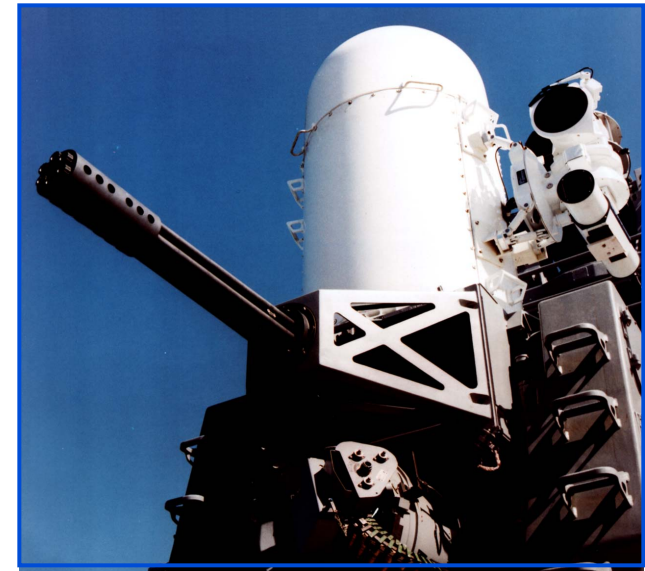


Impact on Weapon Design



Littoral Warfare

- Fundamental paradigm shift to coastal areas
- Back to the future
 - AAW systems now being upgraded/ designed with true ASUW role
- Small combatants now the major target
 - Need to be able to attack targets close to land
- Every ship needs to be able to counter mines





Impact on Operations

Littoral Warfare



- Littoral warfare is asymmetric in nature
 - Opponent can't win a force on force duel
- Operations will incur greater risks
 - Difficult detection, classification environment
 - Reduced reaction time
- Knowledge of your enemy, environment and own ship capabilities are key to survival and success



Conclusions

Littoral Warfare

- Littoral Warfare is the nature of war at sea today, and for the foreseeable future
- Its not something new - lots of history
- Its asymmetric in nature - guerilla warfare
- The environment is much more difficult, and is more beneficial for the defender
- Realize that taking the fight to the enemy always entails certain risks
- Risk can be reduce, but not eliminated by knowledge - enemy, environment, self

Warning!



Littoral Warfare



Littoral warfare can be hazardous....

Warning!



Littoral Warfare



.... to your health!

Questions?



Littoral Warfare

