



Admiralty Trilogy *Harmonization Process*

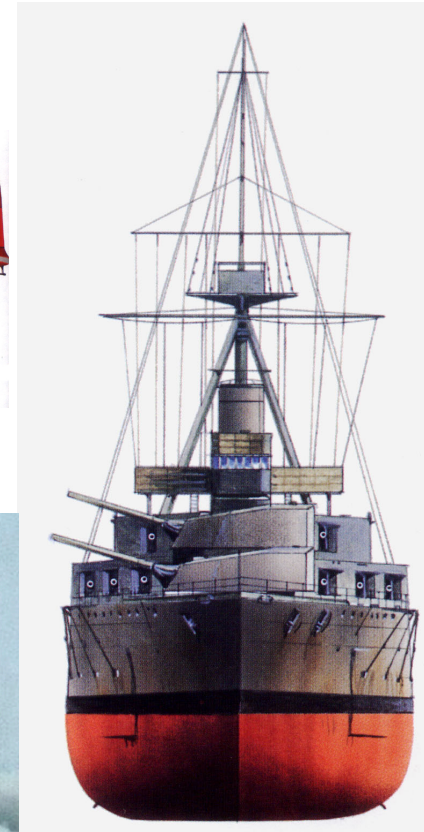
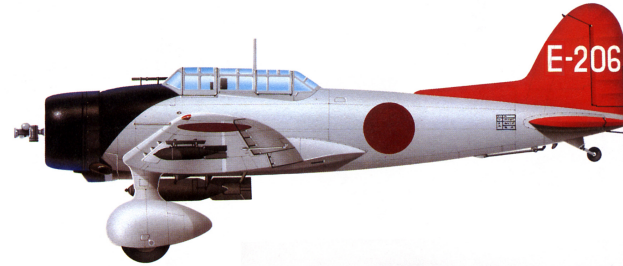
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Cold Wars 2009

Admiralty Trilogy Seminar



Outline

- ◆ **What drove the changes?**
- ◆ ***Admiralty Trilogy* Harmonization Process**
- ◆ **Game mechanics**
- ◆ **Combat modeling**
- ◆ **Generation concept**
- ◆ **Annex unification**
- ◆ **Conclusions**
- ◆ **Questions**





What drove the changes?

- ◆ During the development of *Fear God & Dread Nought* and *Dawn of the Rising Sun* combat modeling differences were noted with *Command at Sea*
- ◆ Modeling differences had an unforeseen impact on system continuity and would significantly affect products that spanned the timeframe between games
 - Biplanes & Battleships (*FG&DN* – *CaS*)
 - Stars & Stripes (*CaS* – *Harpoon*⁴)
- ◆ Inconsistencies between the three main rule sets
 - Game turn length, gunnery, and sensors issues to name but a few
- ◆ Continued difficulties dealing with large scale air battles



Harmonization Process

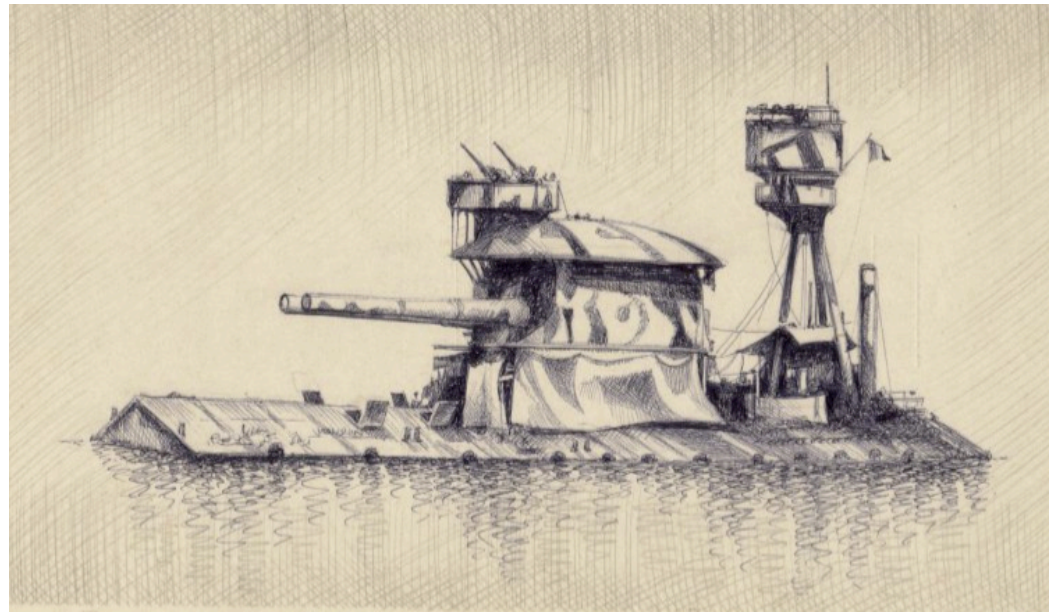
- ◆ **Complete unification of game mechanics and combat modeling to ensure conformity between games within the *Admiralty Trilogy* system**
 - All games shared a basic game mechanics structure; several era specific exceptions (e.g. 30 second Engagement Turn in *Harpoon*⁴)
 - Combat models while sharing a similar format had inconsistent basis for physical effects
 - Data annex organization varied between games

- ◆ **A multi-year effort (2004-2008) to address the issues raised by AT designers and players**
 - Published preliminary models in the Naval SITREP
 - Extensive peer review and game testing
 - *Atlantic Navies* with *Command at Sea* 4th ed first harmonized product



Game Mechanics

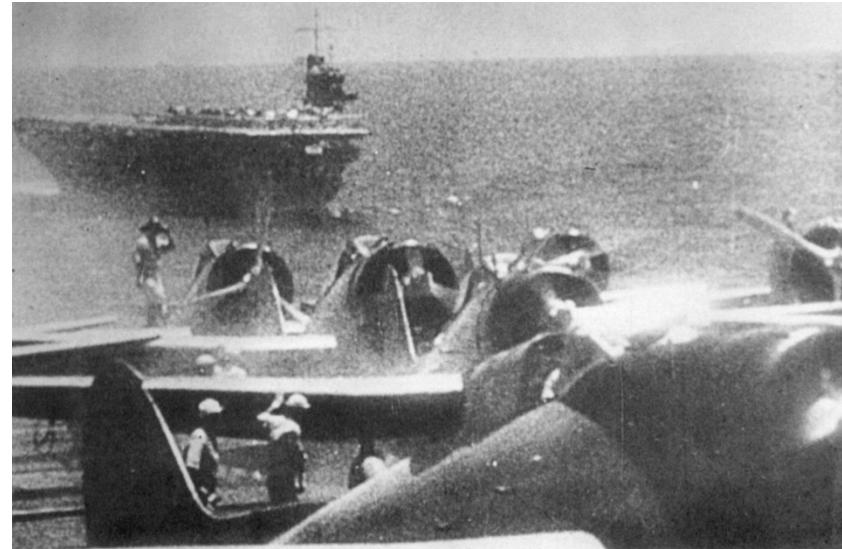
- ◆ **All games now synchronized on 3-minute Tactical Turn**
 - Eliminates second air movement phase
 - Eliminates the 30-second Engagement Turn
 - Combat and sensors models tuned to this time interval
- ◆ **Integrated rules from other modules**
 - *Mighty Midgets*: small boat combat
 - *Baltic Arena*: mine warfare
 - *NSBaF*: coastal defenses
- ◆ **Ground combat moved to its own supplement**
 - Needed the space
 - Better alignment with amphibious ops





Game Mechanics

- ◆ **Air combat – most significant changes**
 - Air – to – air combat has been revised and simplified
 - Air – to – surface combat based on salvo concept
 - Air crew quality a major input to combat resolution
- ◆ **Considerable improvement in speed of game play**
 - Players focus more on attack planning and battle management than maneuvering individual aircraft





Combat Modeling



◆ Gunnery

- Anti-surface gunnery conforms to *Fear God & Dread Nought*
 - Gunnery standards now extends to *Harpoon*
 - Range band boundaries tied to fire control and armor penetration
- Anti-aircraft gunnery conforms to *Command at Sea 4th ed*
- Small caliber gun model from *Mighty Midgets* now applicable to *Harpoon*

◆ Coastal defense guns

- Modifier tables conforms with the ship-based gun systems



Combat Modeling

- ◆ **Sensor models overhauled**
 - Radar and ES based on *Harpoon*
 - Used Computer *Harpoon4* research
 - Sonar based on *Harpoon*
 - Visual based on *Mighty Midgets*
- ◆ **Electronic Countermeasures**
 - New model in *CaS 4th* ed
 - Jamming and chaff
 - Land and sea state clutter
 - Extends in to *Harpoon*
- ◆ **Key to success was expanding the technology generation concept originally used in *Harpoon⁴***





Combat Modeling

- ◆ **Significant changes in damage effects modeling**
- ◆ **All damage based on the available energy in the explosion and impact of secondary effects**
- ◆ **Weapons damage effects**
 - **Back to first principles – physics (blast, fragmentation, incendiary)**
 - **Fundamental approach based on how explosives work**
- ◆ **Develop a consistent basis to evaluate weapons**
 - **Smaller set of modeling equations that applies to all weapon types**
 - **Take into account technological advances (explosives, fuzing)**





Combat Modeling

- ◆ **Single damage point equation based on standard displacement**
 - Consolidated the four DP equations into one continuous function
 - Smooths out the discontinuities between each step
- ◆ **Revised critical hit and damage control concept**
 - Critical hit table changed to d20 approach to provide better distribution
 - More variability in fire and flooding critical hits
 - Accounts for stress on DC parties





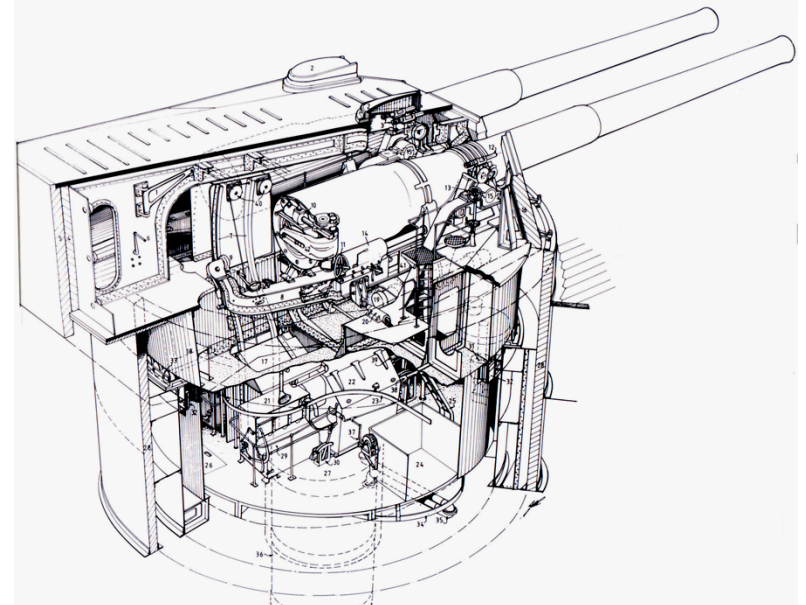
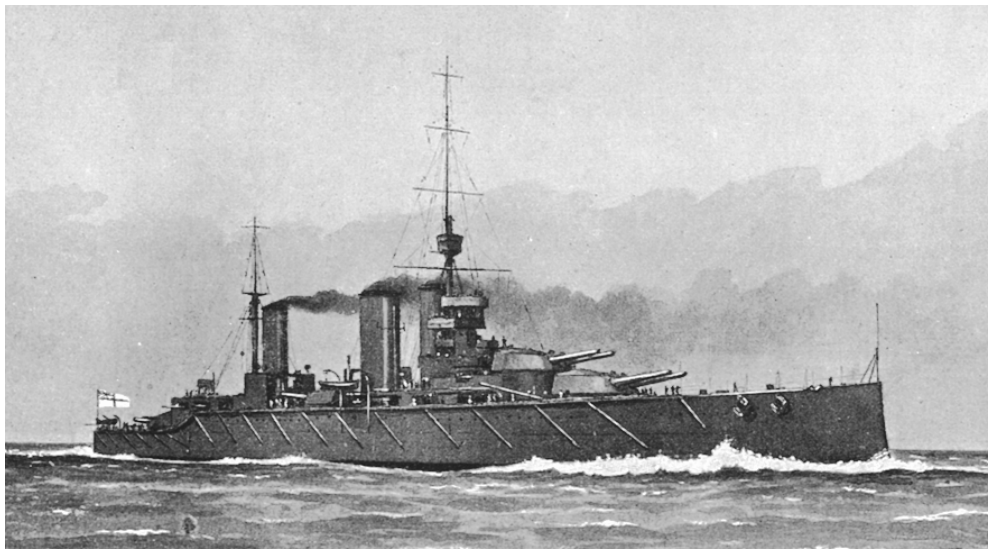
Generation Concept

- ◆ **Addresses the very complex problem of differing technology maturity levels between systems**
- ◆ **Sensors, seekers, countermeasures are rated based on key parameters that identify technology breakpoints**
 - **Radar generations**
 - **Generation 1: Simple pulsed + A scope**
 - **Generation 2: Simple pulsed + PPI display**
 - **Generation 3: Variable simple pulsed + PPI display + MTI**
 - **Generation 4: Early digital systems + PPI display + DMTI**
 - **Generation 5: Multifunction systems + digital display + DMTI**
 - **Generation 6: Active multifunction systems + digital display + DMTI**
- ◆ **Allows for technology asymmetry, which often display extremely one-sided results**



Annex Unification

- ◆ **Organizing and labeling all AT data annexes consistently**
 - Reduces confusion on the part of player and designer alike
 - Consistent data format makes information easier to find
- ◆ **Some annexes may not be in all games, Annex J1-J3 won't be in *Fear God & Dread Nought* as radar wasn't invented yet**
- ◆ **Seems like a trivial change, but it has proven its worth**





Conclusion

- ◆ **It's been 10 years since *Command at Sea* 3rd ed came out**
 - Numerous other games have been published
 - Players and designers noticed inconsistencies between games
 - Player expressed desired game features they'd like to see
- ◆ **Harmonization process was started in 2004 to address the game mechanic and modeling inconsistencies**
 - Adjusted game mechanics to eliminate unnecessary exceptions
 - Adapted or developed new combat models to work across all games
 - Addressed player desires when possible
- ◆ ***Command at Sea* 4th ed in *Atlantic Navies* is the first fruits of the Harmonization effort**
 - *Harpoon V* development has begun
 - *FG&DN* will be modified with the next print run



Questions?

