



OSD Perspective of DT&E in Navy Shipbuilding Programs

Do Additional DT&E Opportunities Exist?

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Outline

- Shipbuilding vs. other DoD acquisitions
- Challenge of Shipbuilding DT&E
- New Approach for DT&E on Ships
- Shipbuilding DT&E Best Practices
- PARMs
- Summary
- Q & A





Shipbuilding vs. Other DoD Acquisitions

- Limited use of Prototypes, EDMs, “Fly-before buy”
 - Prohibitive cost for test articles
- Larger Scope
 - Long construction time leads to parallel design and building
- Complexity
 - Many programs in one (i.e., weapons, propulsion, aviation, C⁴I, navigation, habitability, etc.)
- System-of-systems (SoS)
 - Virtually all mission capabilities require interaction of numerous sub-systems and components
 - Many SoS consist of mix of new and old systems or components
- Performance and schedule highly dependent on Participating Acquisition Resource Managers (PARMs)

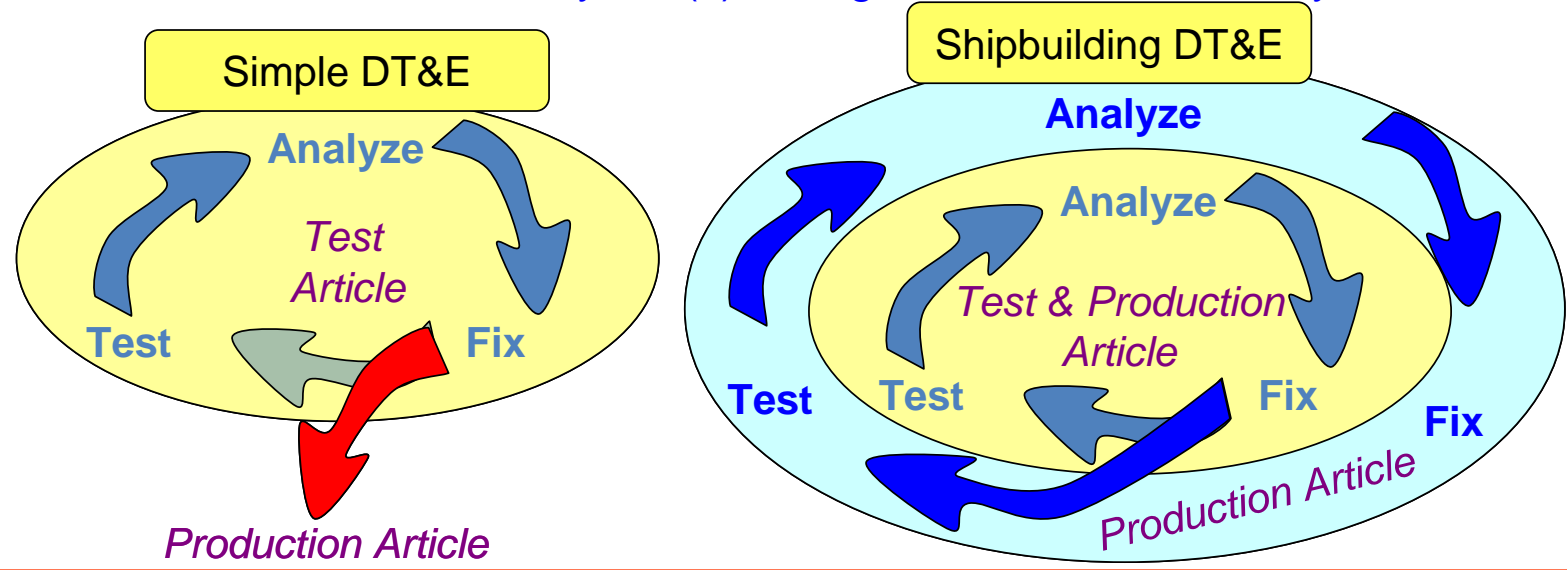


***Shipbuilding T&E Process
Inherently Leads to a Different T&E Approach***



Challenge of Shipbuilding DT&E

- First ship is the test article in shipbuilding T&E
 - Is ultimately a production article
 - Often no time for test-analyze-fix in shipbuilding trials
 - Multiple follow-on ships being built while DT/OT being conducted on first of class
- Fixes often limited to mission-critical discrepancies
- Lower priority discrepancies are often forward fit to future hulls
 - Possible back-fit to early hull(s) during future maintenance cycle





A New Approach for DT&E on Ships

- Opportunities for concurrent DT&E and OT&E throughout Shipbuilding T&E continuum
 - Industrial Stage Tests
 - Fast Cruise
 - Builder's Trials
 - Acceptance Trials
 - Post Delivery Test and Trials
 - Certifications
 - Aviation, ATO, HERO, UNREP SQT, CSSQT, etc
- Eliminate duplication, optimize efficiencies, increase opportunities to find & fix problems
- Requires access, partnerships, data sharing -- represents challenges
- A true acceptance of Integrated Testing across the T&E continuum



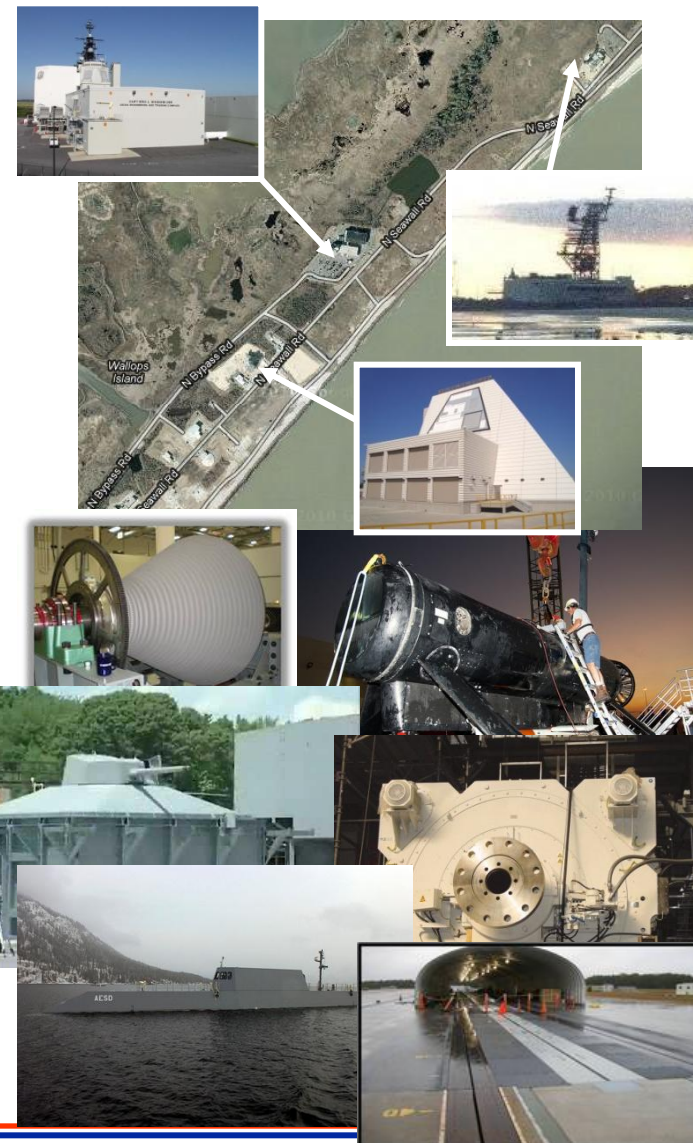
Taking Credit for ALL TESTING



Shipbuilding DT&E Best Practice



- Critical Risk Mitigation is done on Major Components at Land-Based Test Sites
 - Surface Combat Systems Center, Wallops Is
 - SSDS, AEGIS, DDG 1000
 - Test & Integration Facility (TIF), Charleston, SC
 - NAVSEA Panama City – LCS MCM MP
 - NAVSEA Dahlgren – LCS SUW MP
 - NUWC, Newport, RI – LCS ASW MP
 - DDG 1000 Integrated Power System LBTS, Philadelphia, PA
 - NAVAIR, EMALS/AAG, Lakehurst, NJ
 - NAVSEA Carderock, Acoustic Research Detachment – Lake Pend Oreille, Idaho
 - VASCIC, CVN-78, Newport News, VA
 - COATS, SSN-774, Groton, CT



What Other Testing is Being Done That Can be Used for DT&E Credit to Reduce Risk going into OT?



PARMs

- Participating Acquisition Resource Managers (PARMs) are responsible for developing their system independently, while meeting a defined in-yard date
 - Usually not under shipbuilding PM control
 - Relieves workload/But no direct authority
 - PARM can be resident from different PEO or SYSCOM
 - Matrix like: PM funds task/PARM funds staff
- PARMs add flexibility and efficiency by developing systems and equipment in parallel with ship construction
 - Ship PM defines interface specs
 - PARM develops sub-system solution
 - Ship schedule, cost and performance highly dependent on PARMs
- Challenge: Who is the systems integrator?



PARMs – Big Payoff if Successful



Summary

- Shipbuilding is different from other acquisition programs
 - Our approach to Shipbuilding T&E also needs to be different
 - Shipbuilding has a long cycle time to complete a test article
 - Test article is always a production article
 - Multiple follow-on ships are already well into construction when DT/OT are being conducted
 - All “fixes” need to be incorporated on all of these ships post-test
- Ships and their major components go through a plethora of testing before DT/OT
 - Many of these can be used as opportunities for DT/OT
 - Use of LBTS is a best practice that pays dividends
 - What other testing is being done that can contribute to DT&E?
- Must take advantage and credit for developmental testing
 - Will ultimately lead to more efficient and successful development



Points of Contact



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Back-ups





Does NAVSEA Have an RTO?

- Not by name, but many programs have an RTO by function
- Example: NAVSEA Port Hueneme Division (NAVSEA PHD) is non-AEGIS ship combat system RTO
 - SSDS In-Service Engineering Agent (ISEA)
 - Combat systems test lead for CVN, LHA, LHD, LPD, LSD ship classes
 - Operates the Self Defense Test Ship
 - With NAVSEA Dahlgren Division, performs systems integration at the Carrier and Amphib Land Based Test Site at Wallops Island, VA
 - Test conductor for all DT&E events on Pt. Mugu, CA range
 - Frequently assigned as COMOPTEVFOR trusted agent for OT&E data collection and test support

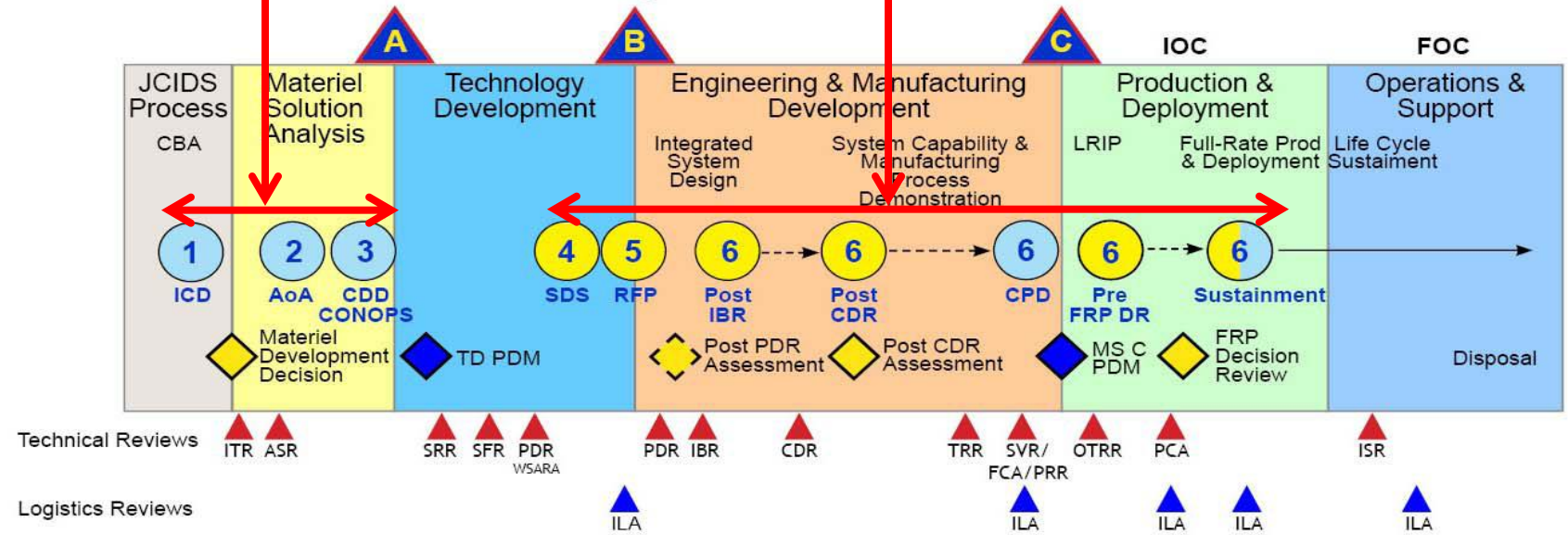


Navy Gate Review Process

Requirements Establishment

Acquisition Execution

Program Initiation at Milestone A



Legend

- > Annual Sufficiency Reviews Held
- > Periodic Reviews Held
- ▲ Technical Reviews
- ▲ Logistics Reviews
- ◆ MDA Issued
- ◆ DoDI 5000.02

Gate Chair:
CNO/CMC

Gate Chair:
RDA