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Persistent Platforms— The DDG 51 Case

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- “How do we acquire systems with performance margins and configuration flexibility to support 30 or 40 years of unknown threats?”
- Good examples of “persistent platforms”
 - CVN 68, B-52, F/A-18
 - Vice DDG 1000, B-2, F-22



Characteristics of Persistent Platforms

- Larger quantities reduce acquisition cost
- Stability and predictability for prime contractor and subcontractors
- “Growth margin” for incorporating new systems that may be larger, heavier, more energy-intensive
- Share life-cycle costs and technology development with other major systems
- Ongoing modifications possible rather than development of new products



- Incremental or evolutionary view of acquisition process
- Design for affordable change
- Integrated roadmap for system design and development
- Overall IP strategy that supports competitive and affordable acquisition and sustainment
- Reduced life cycle costs and shared risks with other programs



DDG 51 (Arleigh Burke) Class

- First entered service in 1991
- Production run unprecedented—
 - Over 70 ships built to date; Flight III begins construction in FY2017
- Flights II and IIA included important modifications that demonstrated flexibility of DDG 51 hull form
 - Such as addition of helicopter hangar in Flight IIA



- Production split between BIW and Ingalls
- Profit Related to Offers
 - Variant of Fixed Price Incentive (Firm Target)
 - Lower bids get higher profit margins
- Competition is for profit rather than quantity
- Effective way of maintaining competition when procurement quantities are small
- Two ships procured/year through FY2019
- Positive from industrial base perspective



- 33 ships planned (starting with DDG 124)
- Managed by ECP rather than new contracts
- Includes Air and Missile Defense Radar that has passed Critical Design Review
- Incorporates DDG 1000 generator, LHD 6/7 4160 VAC electric plant
- Limited growth margin (lasers etc.)
 - “Densest surface combatant class”



- No Analysis of Alternatives for class
- Excessive technical and financial risk
 - DDG 124 is really first-of-class
- Burden of AMDR development rests solely on Flight III
- Navy has resisted “robust” OT&E
 - No at-sea testing of AMDR prior to installation on lead ship
- Navy response: Major R&D effort, minimum risk, maximum reuse



- DDG 51 success due to
 - Open systems
 - Growth margin
 - Shared life-cycle costs with other programs
- DDG 1000 and CG(X) cancellations may have played a role
 - DDG 51/III with AMDR is compromise in capability (e.g. no electric drive)
- Flight IV cancelled, but might be revived as older DDGs and CGs are retired