



ASC's Continued Journey to Improved Cost Competitiveness

Objective Quality Evidence (OQE)

August 2016 – Osborne, South Australia

s 47G

Objectives

- **Provide an independent perspective on ASC AWD Shipbuilder journey to improved cost outcomes and remaining challenges**
 - Highlight S1 to S3 Production direct labor learning improvement
 - Highlight ASC's journey towards **global competitiveness for equivalent AWD manufacturing hours benchmark**
- **Review ASC's cost savings journey and** s 47G [REDACTED]
- **Share parting thoughts to continue the journey toward global shipbuilding competitiveness**

The AWD Program continues to deliver on its Five Points Reform Plan increasing shipbuilding experience to improve on cost outcomes

Summary of AWD Alliance's Reform Plan

**Increase
shipbuilding
experience**

**Actively reducing
the cost base**

**Improving
shipbuilding
performance**

**Controlling the
program**

**Accelerating
Learning**

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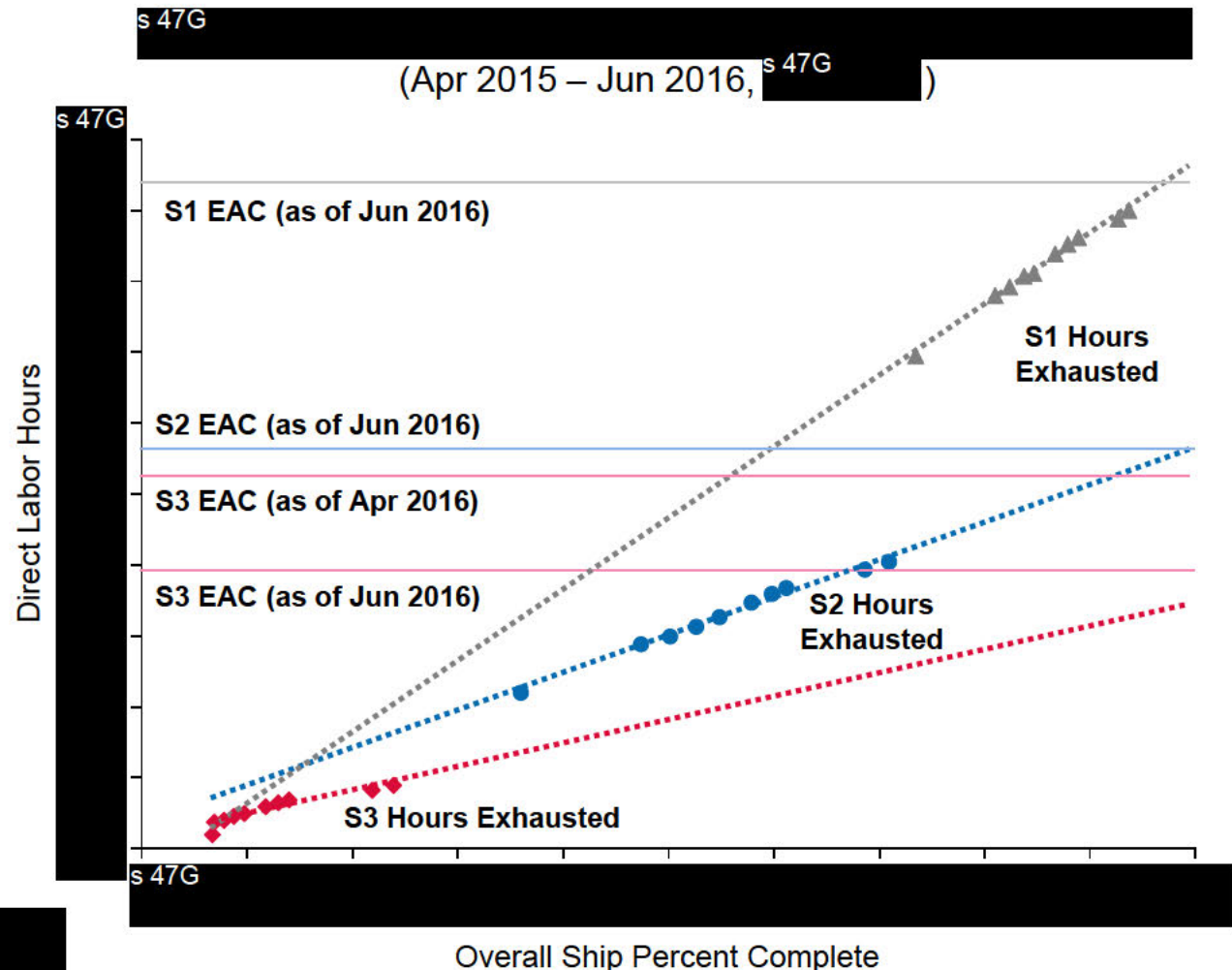
Overall production efficiency has shown drastic learning improvement from S1 to S2 – but more importantly S2 to S3

Production Direct Labor Learning Improvement

AS OF JUN 2016

Discussion

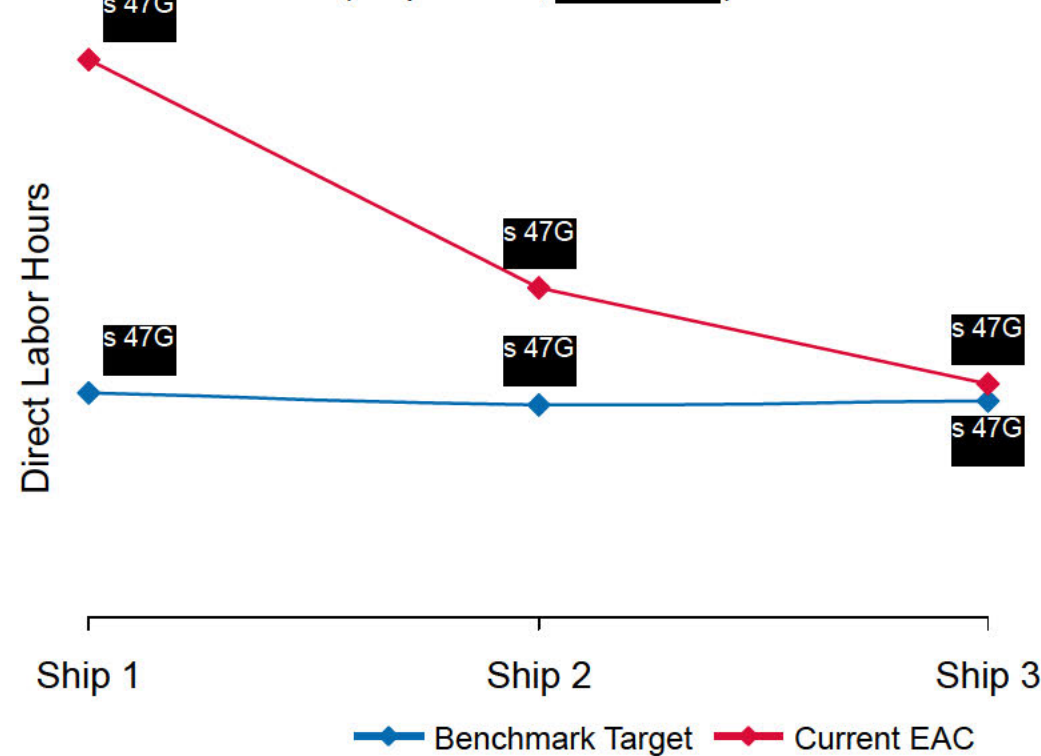
- **Ship 3 to date progress** (red diamonds and best-fit line) **shows tremendous improvement** over S1 and S2 best-fit line slopes
- **EACs for S1 to S3 continue to trend downward** with more accuracy in planning...
- ...but also **increased direct labor productivity** and **drastic learners improvement**
- **S3 EAC has been reduced by more than s_{47G} than 25%** from Sept 2015 to June 2016



Direct Labor benchmarks for a comparable build suggest S3 is on an journey to close the gap to globally competitive Aegis-like production

Journey towards Global Competitiveness

Benchmark Target for Direct Labor Hours of Production vs.
Current ASC Estimate-At-Completion Hours
(Ships 1 – 3, s 47G)



Discussion

- Its early, but operating on **S3's current trajectory suggests that ASC AWD Shipbuilder could approach the global benchmark**

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Benchmarking Calculation Discussion

Methodology

- Based on previous workload analysis benchmarked from a series of Aegis-destroyers, we arrived at a benchmark for direct labor hours across fabrication, pre-outfit, offshore work, afloat work, and T&A
- We then adjusted hours for total gross tonnage across the Aegis-destroyers vs. the Hobart-class DDG, multiplying by a factor of 75% (figured a decrease in tonnage by ~33%) to adjust for the smaller size of the Hobart-class surface ship
- Since ASC outsourced fabrication and pre-outfit work of some modules, we identified the appropriate portion of direct labor work performed by ASC based on modules by PO1, B&P and PO2 to arrive at a % of Total by ASC (Source: Block Construction Allocation as of 15/05/15 provided by Supply Chain)
- We then applied the benchmark percentages to the adjusted AWD hours to arrive at a full-ship hours benchmark and then factored the non-ASC scoped hours
- Finally, we adjusted the total hours to account for just manufacturing direct labor hours to factor out support and engineering hours to arrive at a comparable DL manufacturing benchmark based off what we have experienced at other best-in-class shipyards adjusting for the complexity and tonnage difference of the Hobart-class DDG

Major Assumptions

- Assumes direct production workload roughly varies by tonnage
- Sea Trial hours are included in the benchmark hours but not in the ASC DPL manufacturing hours – but these hours are assumed as negligible for overall calculations
- Assumes that on average, the direct product hours required for fabrication and pre-outfit of each module is equal (thus the # of modules produced by ASC is proportionate to the overall fabrication and pre-outfit direct labor effort)

Appendix

- Shipbuilder's Savings Journey
- Drawdown Plans and Observations
- Headcount Drawdown



ASC leaders should remain aggressive on drawing down indirect support cost as the production workforce continues to ebb and flow...

Savings Drawdown Plans and Observations

