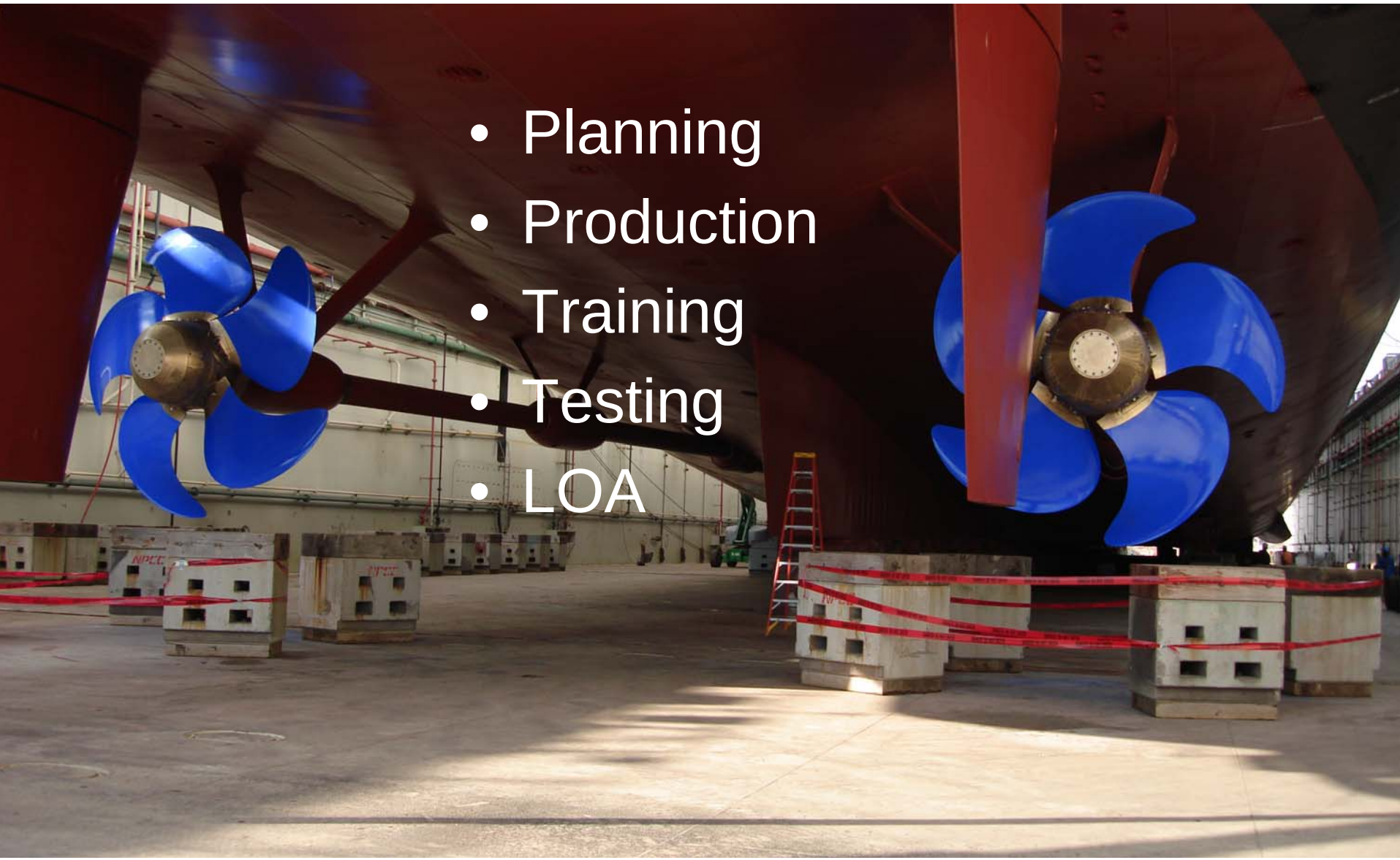
“SUPER HOT WASH”

SEA 21

FLEET SUPPORT

USS GUNSTON HALL
LSD 44 EDPMA LESSONS LEARNED

Discussion Items



- Planning
- Production
- Training
- Testing
- LOA

“Continuous Hot Wash”

April 2008 LSD 44 Project Team initiated the LSD Mid Life Continuous Hot Wash Process as a means to capture lessons learned as they became known and apply the corrective action to the LSD 42, 41 and follow on ship availabilities.

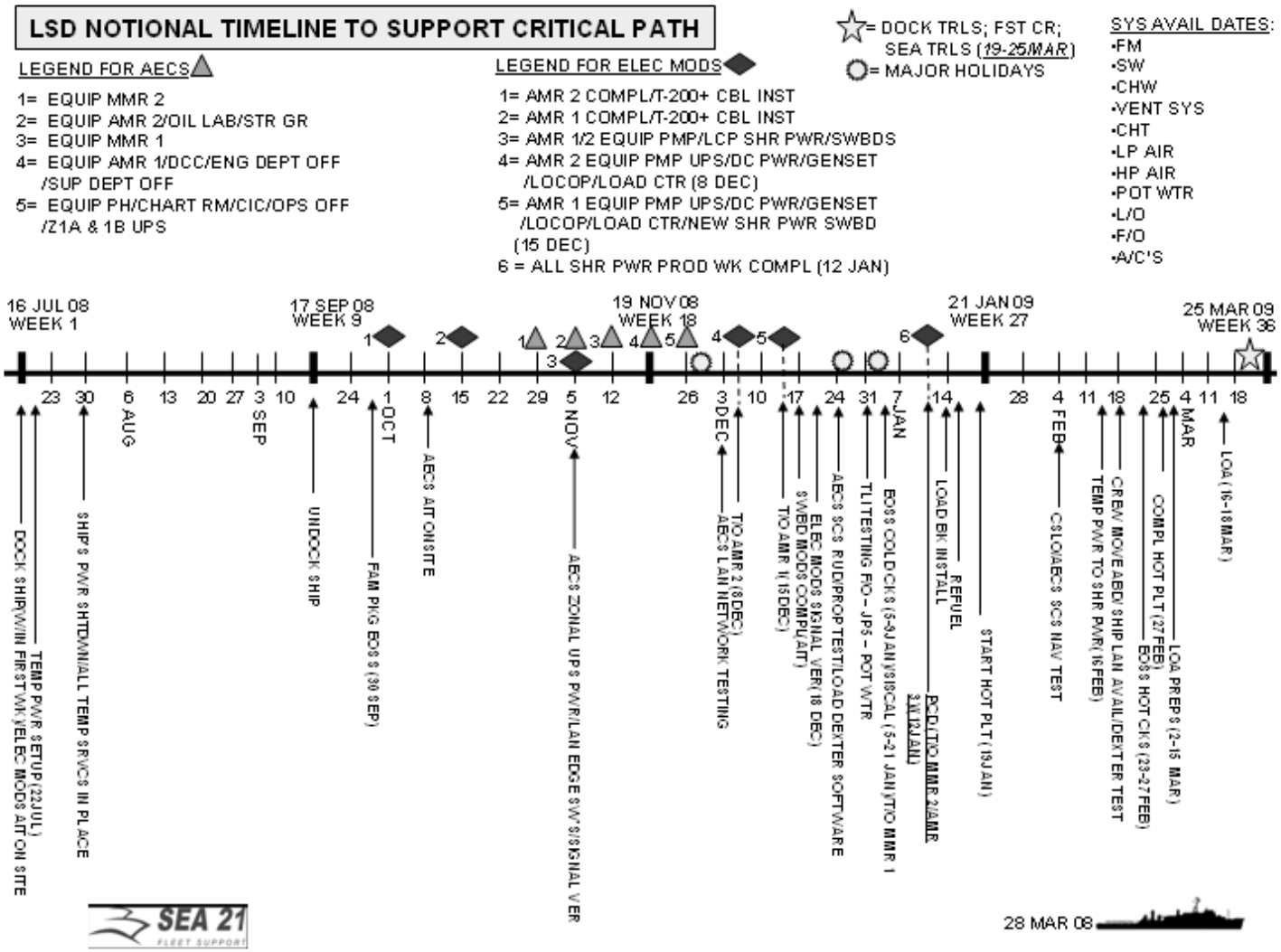
“Continuous Hot Wash”

- Team make up – S/F, Metro Machine Corp., PMR, MARMC, NSWC OSR, HW Team
- Initially met once per month, and than as required.
- Total of 60+ items generated / discussed
- Items ranged from living barge issues to CFR / RCC process

EPDMA Timeline

- Notional timeline based primarily on CG Modernization developed by March 08. This timeline proved very accurate throughout the availability.
  - LSD 41 timeline adjusted to reflect actual durations required for Generator upgrade production milestones, dedicated SSDG pre-light off operation key event and break in, Ship responsible actions, and increased LOA preparation from 2 weeks to 3 weeks.

EDPMA Timeline



LSD 44 LARs and RLARs

- 185 LARs issued
- 71 RLARs issued
- 8 LARs deferred to upcoming CMAV
- PY/Metro delayed delivery of LSD 41 drawings until end of November to incorporate as many 44 & 42 LARs as possible as revisions

44 LARs to 41 RLARs

- Evaluated LARs post drawing cut off to determine applicability to 41 and developed RLARs accordingly.

- To date LSD 41 has received 57 RLARs from 42 and 44 Projects and 40 LARs.

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Teaming - Cooperation

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Teaming and Cooperation

- NASSCO conducted two separate site visits to Metro during GT advance planning.
- Metro has conducted two visits to LSD 42 to ship check CPS and 250 T AC install with a third visit scheduled this week
- Metro provided NASSCO with the LSD 44 alternate / temporary power plan
- LSD 42 availability timeline based on LSD 44 timeline

Production

Production Lessons

- Due to high volume of cables and high number of contractors involved, cable routing and tracking process initiated to ensure better control and tracking of cable installation and re-routing for Big 3 SCDs 3396/3397/4048, 3290.8 and 5159
- Initiated installation drawing for MPDE Gov offset linkage kits and EGA swap.
- Added MARMC system assessment of legacy 400 HZ and scheduled system “soft start”

Production Lessons

- Conduct a PHD Main IC SWBD Groom and require a full time IC Tech to support IC legacy circuits. S/F does not have the manpower or capacity to groom and test all of the IC systems.
- After installation QA all legacy connection boxes for proper wiring.
- Groom and calibrate IC sync amps to ensure once you feed the switch board you can feed the analog displays via the sync amps.

Production Lessons

- Bench test and repair all Gen and Bus Tie Breakers prior to EDPMA.
- Bench test and repair Shore Power SWBD Breakers during EDPMA.
- Location of MPDE Jacket Water Heaters and Controllers issues with space constraint.
- Ships Force Review Machinery Arrangements Drawings Early. Whidbey Island has done that.

Production Lessons

- Conduct UT of the entire 06 level decking early to identify problem areas.

- Field run piping modifications required to allow operational and maintenance access in and around the RO plants and the Water Heating Plants, RLAR applied to 41

Production Lessons

- Early WAF Training and Trailor Set Up on the Whidbey Island
  - Resulted in minimum delay to priority items and getting production work started
- Metro fully embraced the AIT Teams and has a Full Time AIT Coord
- ID Critical Systems That Need To Be Removed Prior To The Access Cuts to expedite RMC approval. i.e. Halon Systems, HP Air Systems

CFR – RCC Process

- LAR/CFR/RCC Approval Process proved cumbersome, taking up to three weeks for resolution. This process was aggravated by high volume of LARs and RLARs.
- As a result, LSD 41 Project has already set up a “trigger” to initiate streamline process should the system experience a similar back log.
  - **44 Project was not afforded the ability to resort to CFR RCC streamlining until 75% conference**

Gage Calibration

- Numerous SF level I gages, switches, meters were found to require calibration, late in the avail and were funded to be accomplished by a contractor.
- During early start, plugged in with WI Gage Cal to determine calibration situation
- Utilizing Metro GFM receiving to identify early on devices requiring calibration

Early Start

- Expanded and improved LSD 41 early start items.
  - Aux Boiler / Steam Distribution Removal; Enhanced access cuts to enable rip out of boilers and evaporators in 3 weeks vs 45 days on GH
  - MPDE work was able to commence
  - Expedited console rip-outs associated with MCS

Training


DCON LSD
SSDGI DIESEL GENERATOR CONTROL
REAL LOAD
SEQUENCE STATE
REACTIVE LOAD

Training

- Established the On Board Trainer (OBT) and PMP Classroom at Metro Machine for Crew Training. Provided Furniture and all equipment.
- Delivered Draft JQR to Ship A+2
- Delivered Familiarization EOSS at A+2
- Encourage SF to plug into Controls Systems installation with ISEA

Testing

- LSD 41 backed out engine hot checks and grooming from the “start hot plant” to the left by 2 weeks.
- Ensure the crew is fully engaged with SSES (not just an operator) and on the deck plates during all testing to grasp as much training and LOK of the newly installed equipment.
- Ensure SSES EOSS/PMS Coordinator is on the deck plates during all testing and able to do overnight turn around of changes.

Light Of Assessment LOA

- LSD 44 schedule provided 2 weeks of crew preparation prior to LOA.
- Ship was unassisted with their LOA preps.
- MCS testing ultimately extended 3 days into this 2 weeks
  - GH unable to attain safe path to L/O, inability to clear cold checks; problems with main drain; AFFF, fire pumps, etc.
  - Re LOA 5 – 7 May

LOA - Training

- Develop Main Prop and Aux Plant Operator deck plate training plan early
  - To include more detailed SSES reach through training on the newly installed systems, i.e. MCS, PMP and SCS.
    - Increase LOA prep time to 3 weeks to enhance this
- Conduct “mock” LOA in advance of LOA with an outside team oversight

LOA

- Pre LOA coordination work with Ship to identify and correct discrepancies
  - Determine total ship material deficiencies early
- PT ensure MLOC is up to date and conducted

- PT ensure Cold and Hot Check procedures; EOSS, PMS are correct and can be performed to ID discrepancies early

LOA – Material

- Damage Control – “long pole in tent”
  - Develop early a DC equipment material check plan to ID issues that require repair
    - This must be done prior to PCD and any engine light off for testing.
    - This includes:
      - HPACs
      - SCUBAs
      - AFFF
      - Main Drainage
      - Halon
      - DC Lockers

LSD 41 Timeline