



Surface Maintenance Engineering Planning Program (SURFMEPP)

DATE: 25 Oct 2018

PRESENTED TO:
ASNE

PRESENTED BY:
Captain Andy Johnson

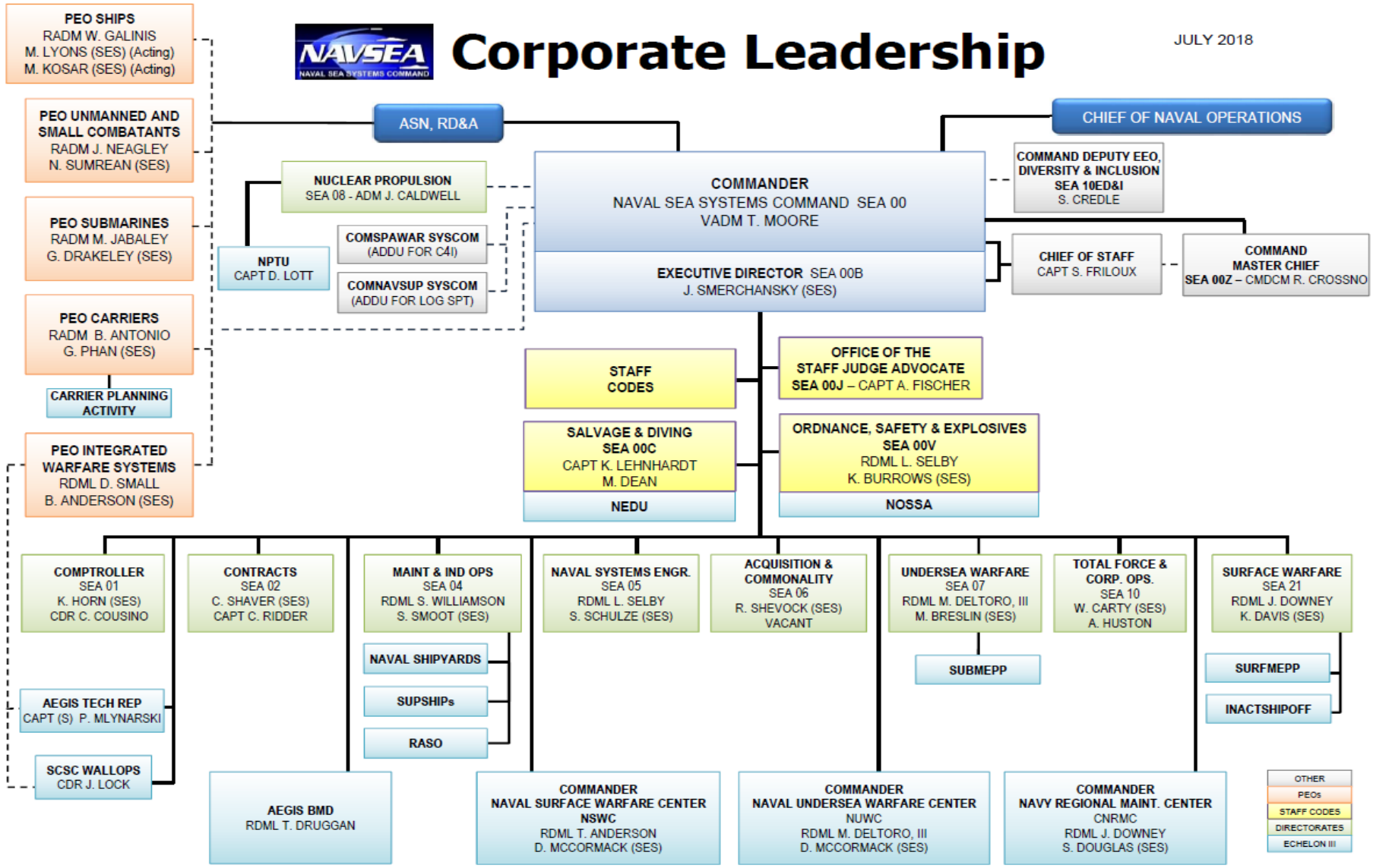
SURFMEPP Commanding Officer

Agenda

- *Organizational Alignment*
- *Evolution of SURFMEPP*
- *Mission and Vision*
- *Global Footprint*
- *Maintenance Requirement Development and Product Value Stream*
- *Directive Maintenance*
- *Waterfront Offices*
- *SSEOC and LCHA*
- *What we are doing to improve on time delivery*

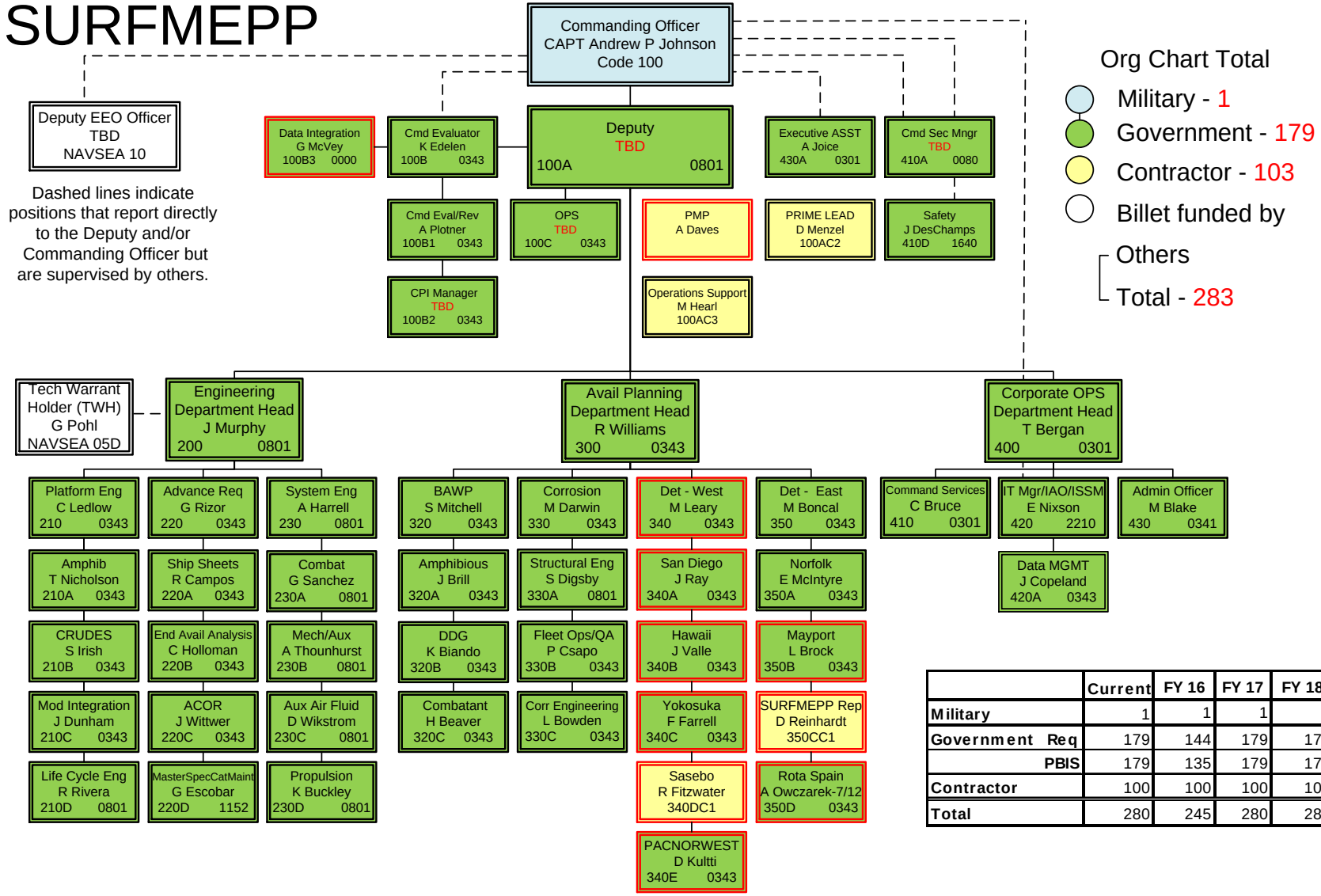
SURFMEPP has an enduring focus on the maintenance requirements

NAVSEA Organization



Last Modified: 25 Jul 2018

SURFMEPP Top Level Organization Chart



	Current	FY 16	FY 17	FY 18
Military	1	1	1	1
Government Req	179	144	179	179
PBIS	179	135	179	179
Contractor	100	100	100	100
Total	280	245	280	280

Last modified: 02 Feb 2018

SURFMEPP Mission & Vision

Our Mission

To enable the Surface Fleet to meet its Expected Service Life by providing centralized Life Cycle Engineering, Class Maintenance, and Modernization Planning.

Our Vision

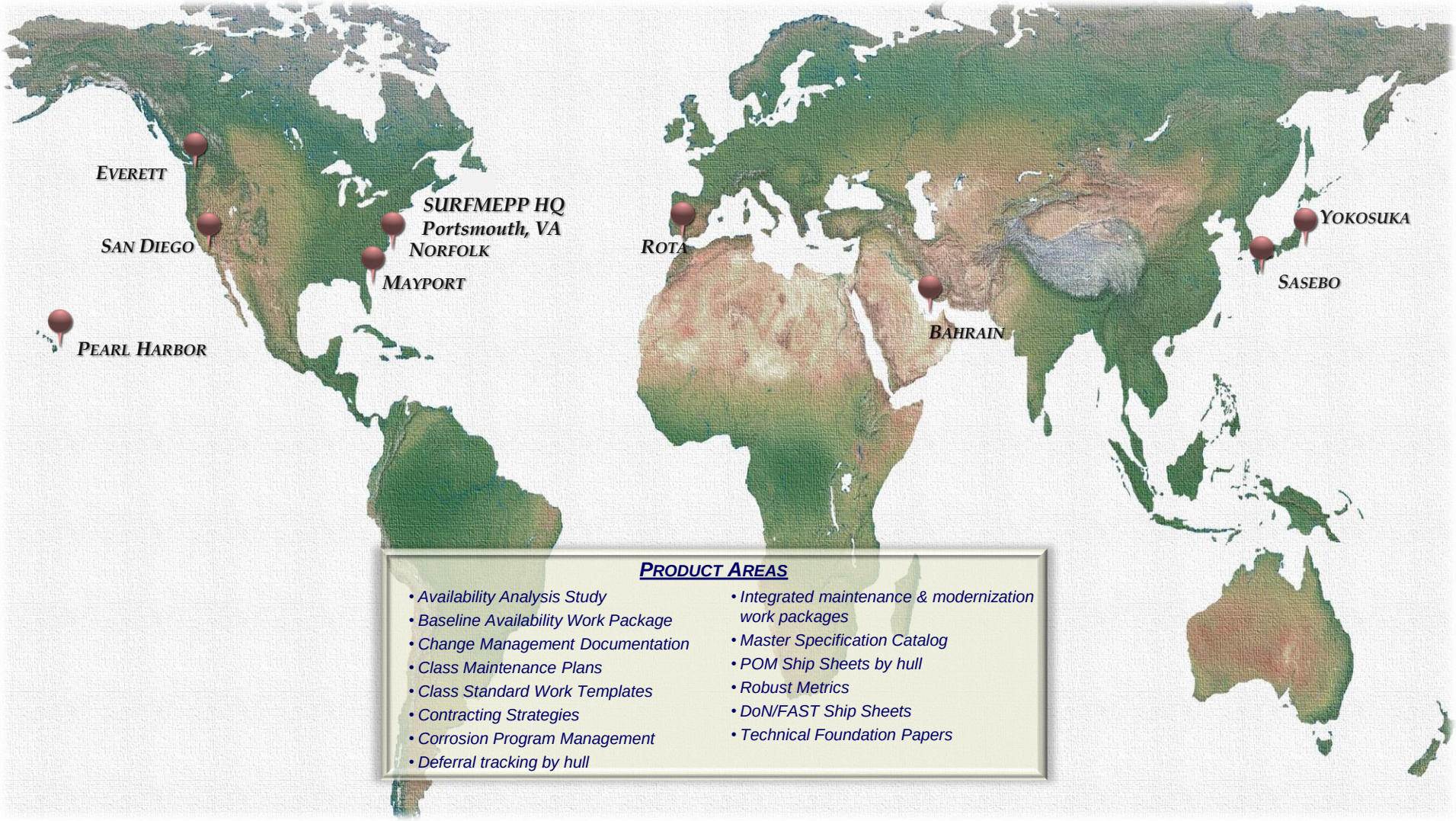
Excellence in Advance Planning. Empowering the Surface Warrior.

Our Values

- **Persistence – *Supporting the War Fighter***
- **Innovation – *Challenging the status quo***
- **Excellence – *Pursuing with rigor***
- **Respect – *Treating others the way we want to be treated***
- **Accountability – *Owning what we do***

Last Modified: 25 Jul 2018

SURFMEPP Global Footprint



PRODUCT AREAS

- Availability Analysis Study
- Baseline Availability Work Package
- Change Management Documentation
- Class Maintenance Plans
- Class Standard Work Templates
- Contracting Strategies
- Corrosion Program Management
- Deferral tracking by hull
- Integrated maintenance & modernization work packages
- Master Specification Catalog
- POM Ship Sheets by hull
- Robust Metrics
- DoN/FAST Ship Sheets
- Technical Foundation Papers

Last Modified: 5 Mar 2018

Evolution of SURFMEPP

- **2008 Pre-Surface Ship Life Cycle Management Activity (SSLCM)**
  - 14 people for entire surface Navy
  - Surface Navy was not performing all required life cycle maintenance
  - No Technical Foundation Papers (TFPs)
  - No Baseline Availability Work Packages (BAWPs)
  - Ship Sheets at the Class level
- **SSLCM – May 2009**
  - 36 total staff
  - Class Maintenance Plan (CMP)
  - TFP for DDG 51 class only
  - BAWP
  - Deferral tracking
  - Ship Sheets based on deferrals
- **SURFMEPP – Nov 2010**
  - 83 total staff
- **SURFMEPP today**
  - 280 total staff
  - CMP strengthening
  - TFP for all major ship classes
  - BAWPs for all CNO availabilities
  - Deferral tracking by hull
  - Ship Sheets for every CNO availability
  - Long Range Maintenance Schedules by hull
  - Corrosion Control (CCIMS, TPRs, LRTPRs)

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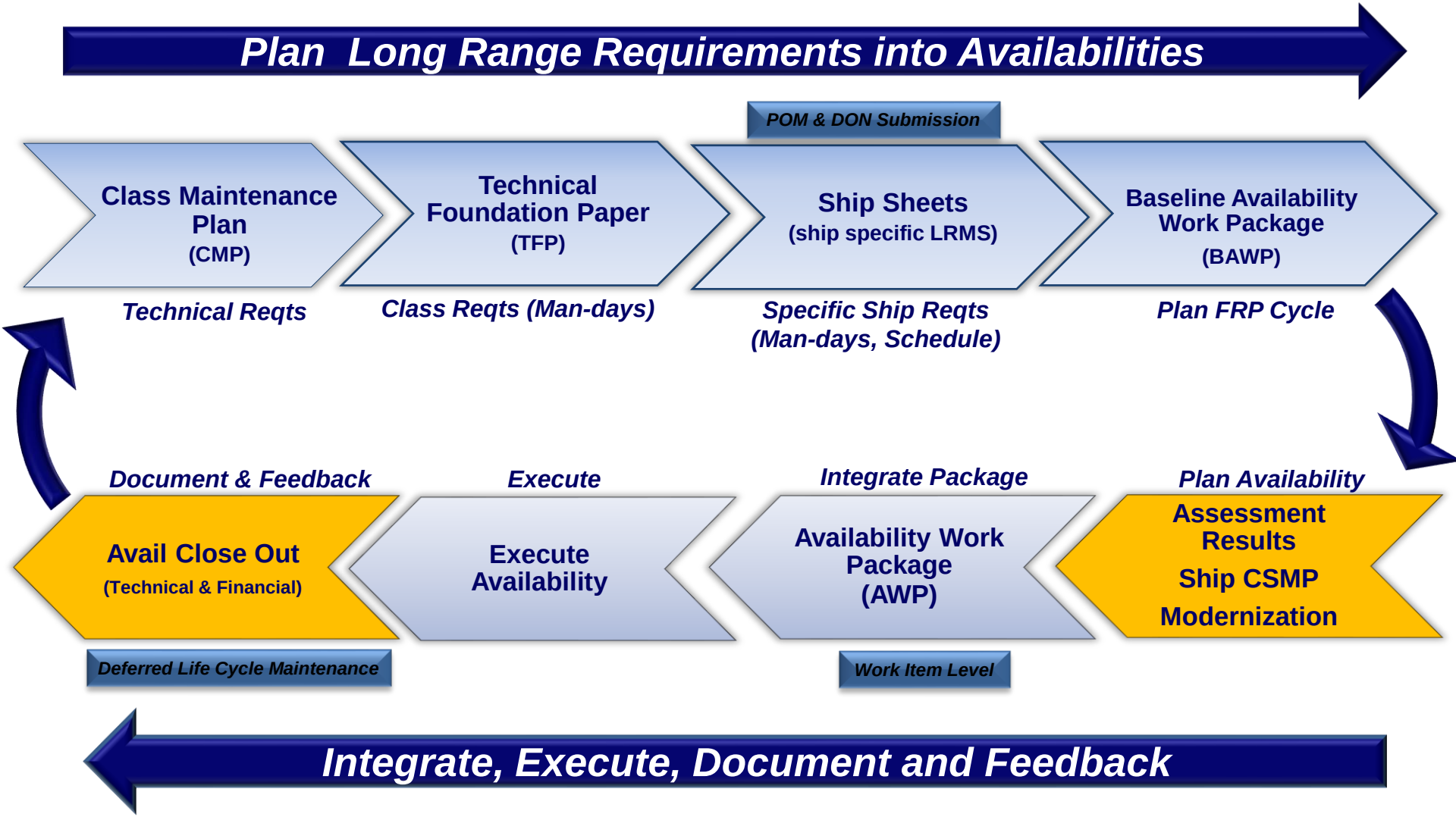
SURFMEPP Product Value Stream



Last Modified: 5 Mar 2018

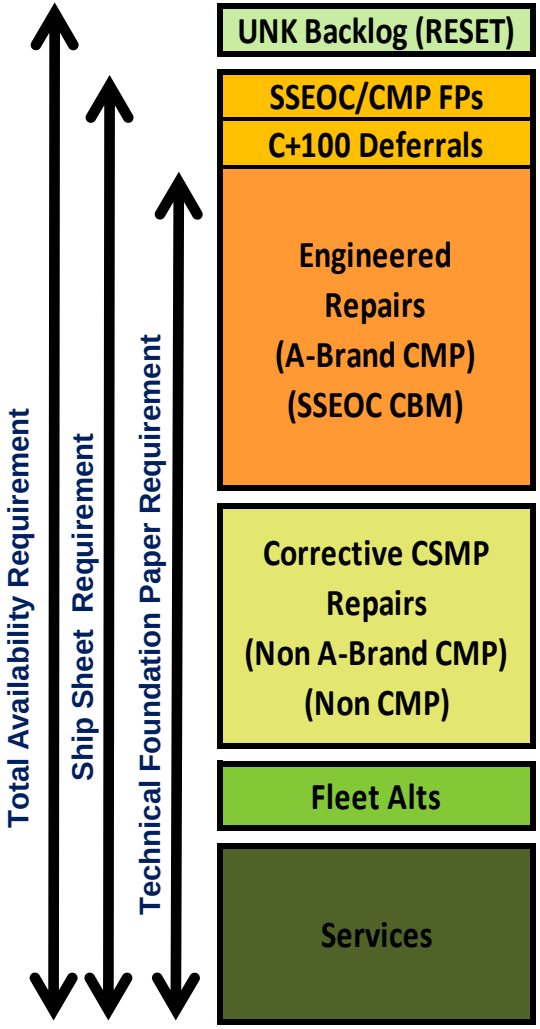
Class Maintenance Plans

- Class Maintenance Plans (CMP) are the "maintenance manual" of the ship class. Specifically included are:
  - Maintenance Delivery Plan including required dry-docking intervals
  - Engineered maintenance requirements such as equipment overhauls, shaft replacements, and corrosion protection
  - System certification requirements
- CMPs are continuously updated based on class maintenance history

CMP = "Automobile's Maintenance Manual"

Last Modified: 18 Aug 2017

Ship Sheets Overview



- Ship-specific requirement for a specific availability at a point in time defined by a Ship Sheet
- TFP forms the basis for Ship Sheets and the BAWP
- A Ship Sheet contains the following adjustments/ considerations:
  - Configuration differences/errata. (Passive Countermeasure Systems, Shafts)
  - C+100 maintenance deferrals from previous avail(s)
  - SSEOC Review (Tanks, corrosion, CSMP, etc.)
  - TYCOM Alterations
  - Program Alterations to support Duration Analysis
  - Duplicate requirements reconciled
- Ship Sheets tailor the TFP for each hull/avail twice before execution: POM (~A-900) and DON/FAST (~A-360).

Total depot-level requirement for a specific availability

Executing the Requirement

Developing & Tracking CMP / CSWT Tasks

Analysis

- Review CMP, SWTs, CSWTs, and LWTs
- Technical Doc.
- Configuration Data
- Failure Analysis
- Return Cost Data

Develop Strategy

- Identify Gaps
- Engage with ISEA
- Identify tasks to be inactivated, modified or created
- Draft Maintenance Strategy

Approval / Develop Task

- TWH Approval
- AP cards
- SWTs or CSWTs and IGEs
- Fielding Plan
- Resource Plan
- CMP task in M&SWP

Implementation

- Socialize with the Waterfront
- Master Spec Catalog
- M&SWP – Go Live
- TWH Follow-up

Avail Close Out (Variation Analysis) → **Execution** (Track growth vs. Est.) → **AWP** (Gov. Est.) → **BAWP** (Est. $, Scope) → **CMP / CSWT** (Technical. Req.)

Class Standard Work Template (CSWT)

- Standardizes recurring repair planning – reduces planning costs
- Reduces variance of work scope between ports/contractors
- Provides contract vehicle for detailed technical instructions
- Standardizes cost estimating
- Improves cost return analysis for feedback into the requirement process
- Incorporates best practices/lessons learned

Currently 6,902 active FY 19 & 20 templates in the Master Spec Catalog

Last Modified: 18 Dec 2017

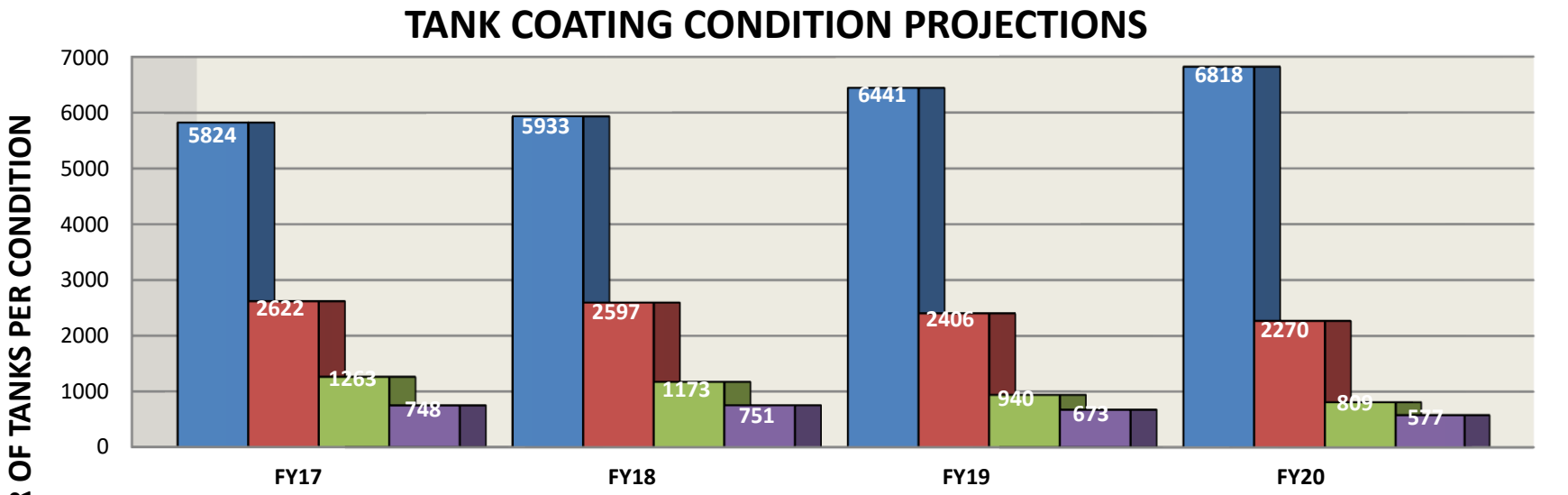
Directive Maintenance Overview

- **'Go do' vice 'Go look'**
  - Major paradigm shift from cost contracting
  - Work scope based on historical requirement derived from similar/identical work performed on other ships.
  - To minimize potential for contract growth.

- **Over 20 in total, examples include:**
  - Diesel Maintenance strategy (DMS)
  - Tank Directive Maintenance Strategy (TDMS)
  - Intake/Uptake Maintenance Strategy

- **Represent ~40% of total package value**
  - Commonly referred to as Baseline Availability Work Package (BAWP) tasking

Tank and Void FY Projections



	FY17	FY18	FY19	FY20
P1	5824	5933	6441	6818
P2	2622	2597	2406	2270
P3	1263	1173	940	809
P4	748	751	673	577

Key Messages and Takeaways

- ***Metric includes coating aging factor and applies degradation curves to accurately project future tank conditions.***
- ***Considers avails scheduled and avail types to determine when tanks will be reset and applies reset to the projection model (docking avails will have more resets of inner-bottom P3 and P4 tanks)***
- ***Model projections can be analyzed at a Class/Hull/AOR granularity level to better determine projected workloads***
- ***Improves POM submission process and Advance Planning accuracy by projecting requirements in out years***

Tank coating demographics based on 75% probability of being in projected condition

Last Modified: 14 JUN 2017

SSEOC Life Cycle Critical Systems

100 Structure	200 Propulsion	300 Electrical	400 Command/Surveillance	500 Auxiliary	600 Outfits/Furnishings	700 Armament
• U/W Hull • Superstructure / Mast • Sonar Dome • Decking, Structure • Bilges • Tanks / Voids • Bulkheads, Structure • Corrosion, General	• Steam Turbines • Boilers • MPDE • MRG • Shafts • Struts • Hubs / Propulsors • Intakes / Uptakes • Forced Draft Blowers • Main Feed Pumps • Main Steam Valves (>4”) • Gas Turbine Module Mounts • Piping: • Fuel • Main / Aux • Steam	• SSDG • EDG • SSTG • GTG Module Mounts • Cabling Distribution • Switch Boards	• SPY Array • PCMS • MK 82 • SPG 62	• Ventilation System - Structure • Ballast Systems • Steering • Hangar Doors • Rudders • Aux Blr /WHB • Elevators - Aircraft • Boat Davits • Stern Gate • Piping: • CHT • Firemain • CMWD • Main / Aux SW	• ICCP System • Corrosion, General • U/W Hull Paint Systems	• VLS • Magazines • Elevators - Weapons

JSNs are branded and tracked throughout the E2E process

Last Modified: 16 Oct 2017

Lifecycle Health Assessment (LCHA)

CONDITION CRITERIA	CG DDG	LCS	LHD/A LSD	LPD 17	MCM	PC
1. Ship has been dry-docked since FY 2010 or was BAWP pilot ship	X	X	X	X	X	X
2. No technical SSEOC violations	X	X	X	X	X	X
3. Life cycle material condition is known *	X	X	X	X	X	X
4. Actual # of condition 4 tanks are less than:	5	5	10	10	N/A	5
5. Dry docking requirements were reset within periodicity	X	X	X	X	X	X
6. Deferred mandatory ESL tasks ("A6" JSN) are less than:	10	10	10	10	10	10
7. Structural repair tasks ("N" TA1/ A5H5 2-kilo) are less than:	40	20	70	50	10	10
8. MCM MRG is assessed and mitigated	N/A	N/A	N/A	N/A	X	N/A
9. LCS VARIANT structure assessment	N/A	X	N/A	N/A	N/A	N/A
10. Cruiser Level 2 Structure Assessment	X	N/A	N/A	N/A	N/A	N/A

* Life cycle material condition known: Encompasses a detailed review of multiple items. Separate Excel process.

LCHA criteria focused on ship's executing engineered lifecycle maintenance requirements in order to reach Expected Service Life

Waterfront Offices

Norfolk Mayport Everett San Diego Pearl Harbor Yokosuka Sasebo Rota Bahrain

- **Communicate the technical requirement**
  - Plan and host Life Cycle Planning Conference, and Mid-Cycle Review to ensure Maintenance Team (MT) understands the technical requirements for the current cycle
  - Review all technical requirements with MT prior to entering in CSMP shore file
  - Track and report the status of Mandatory Technical Requirements
  - Work with the MT and RMC to resolve issues
- **Validate the technical requirement**
  - Visit ships to validate work in progress
  - Ensure all current technical requirements are on CSMP shore file
  - Verify that MTRs have a clear path for accomplishment by the due date
  - Identify gaps in CMP (missing, incorrect, or unnecessary requirement)
  - Review work specifications to validate that they meet the intent of the MTR, and that Class Standard Work Templates are used when applicable
- **Represent SURFMEPP HQ at the waterfront**
  - Provide SURFMEPP perspective
  - Communicate changes to the End-to-End Process; educate the waterfront maintenance community
- **Be the advocate for the waterfront community**
  - Provide a voice back to the technical requirement owners
  - Ensure the process can be executed (barrier ID and removal assistance)

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What we are doing to improve 'On time delivery'

- Improving Class Standard Work Templates
  - Goal: Reduce RCC volume by 20% FY19
- Engineered Maintenance and Mod Plan
  - Generate EMMPs for LHDs in FY19. IPTD tool to aid visualization of crit path and challenges to work integration
- Material forecasting with CNRMC, NAVSUP
  - Execute material forecast and procurement for diesel overhauls on LSDs

Questions / Back-up

Win Them All.

Achieving Expected Service Life...One Ship at a Time