Deputy Chief of Naval Operations
Fleet Readiness & Logistics
(OPNAV N4)

Repair CFT Brief for JTEG Forum on "Expeditionary Repair"

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OPNAV N4 Repair Cross-Functional Team

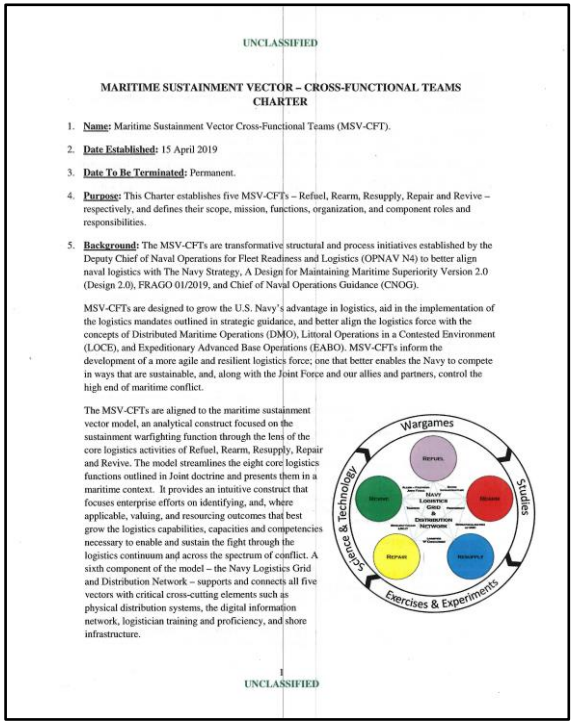
With the rise of great power competitors and high-end threats, the Navy must be prepared to quickly salvage and repair damage to a modern fleet to prevail in 21st century conflicts

- Historical examples show that ships returned safely to shipyards can be returned to service
- Some damaged vessels will be able to clear the “X” and transit to a higher level of care themselves – what about the others?
- The Repair CFT mission is to execute the MSV charter for BDAR, leveraging analysis and assessing risks to provide solutions sets and present innovative options to satisfy operational requirements

BDAR, when resourced and executed properly, will keep the fight moving forward by supporting mobility and warfighting capability

MSV CFT Charter

- Assess and leverage existing analytic products
- Identify and map applicable Logistics Kill Chains
- Perform gap analysis and produce detailed valuation and risk assessments for logistics outcomes
- Incorporate COCOM and Fleet Experiential Data to support and justify recommended solutions
- Identify the trades in logistics capabilities and capacities across time, distance, geography, and threat environment to inform operator risk discussions and decisions
- Provide DOTMLPF-P solutions sets and present innovative options to satisfy operational requirements



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MARITIME SUSTAINMENT VECTOR – CROSS-FUNCTIONAL TEAMS CHARTER

1. **Name:** Maritime Sustainment Vector Cross-Functional Teams (MSV-CFT).
2. **Date Established:** 15 April 2019
3. **Date To Be Terminated:** Permanent.
4. **Purpose:** This Charter establishes five MSV-CFTs – Refuel, Rearm, Resupply, Repair and Revive – respectively, and defines their scope, mission, functions, organization, and component roles and responsibilities.
5. **Background:** The MSV-CFTs are transformative structural and process initiatives established by the Deputy Chief of Naval Operations for Fleet Readiness and Logistics (OPNAV N4) to better align naval logistics with The Navy Strategy, A Design for Maintaining Maritime Superiority Version 2.0 (Design 2.0), FRAGO 01/2019, and Chief of Naval Operations Guidance (CNOG).

MSV-CFTs are designed to grow the U.S. Navy's advantage in logistics, aid in the implementation of the logistics mandates outlined in strategic guidance, and better align the logistics force with the concepts of Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO). MSV-CFTs inform the development of a more agile and resilient logistics force; one that better enables the Navy to compete in ways that are sustainable, and, along with the Joint Force and our allies and partners, control the high end of maritime conflict.

The MSV-CFTs are aligned to the maritime sustainment vector model, an analytical construct focused on the sustainment warfighting function through the lens of the core logistics activities of Refuel, Rearm, Resupply, Repair and Revive. The model streamlines the eight core logistics functions outlined in Joint doctrine and presents them in a maritime context. It provides an intuitive construct that focuses enterprise efforts on identifying, and, where applicable, valuing, and resourcing outcomes that best grow the logistics capabilities, capacities and competencies necessary to enable and sustain the fight through the logistics continuum and across the spectrum of conflict. A sixth component of the model – the Navy Logistics Grid and Distribution Network – supports and connects all five vectors with critical cross-cutting elements such as physical distribution systems, the digital information network, logistician training and proficiency, and shore infrastructure.

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Develop a Log Force that permits us to control the high end of maritime conflict, maximizing the time on station for deployed forces in a contested environment

Repair CFT Strategy

Means

Ongoing Assessment of:

- Doctrine
- Organization
- Training
- Material
- Leadership
- Personnel
- Facilities
- Policy

Ways

- Identify, Align & Unite Efforts
- Form & Leverage a DON Repair Community of Practice
- CFT Process - Games, Studies, S&T, Exercises & Experiments

Ends

- Inform DOTMLPF-P & POM Decisions
- Inform Joint Capability
- Access/ Procure Capability

DOMAINS

- Aircraft
- Ships
- Submarines
- Expeditionary Infrastructure

Ongoing REPAIR Efforts:

- Future of Sailor Maintenance (FoSM)/Navy Afloat Maint Training Strategy (NAMTS)
- Ship Wartime Repair and Maint (SWaRM)
- Expeditionary Port Damage Repair Concept
- Forward Deployed Combat Repair (FDCR)
- Salvage Executive Steering Committee
- Series of Logistics Centered Wargames
- AEGIS Emergent Response
- Wartime Acquisition Support Plan (WASP)
- Navy Enterprise Sustainment Tech Team (NESTT)
- NAVSEA 05T Technology Integration Team
- Logistics Warfighting Improvement Program (LOGWIP)
- Expeditionary Warfare Warfighting Improvement Program (EXWIP)

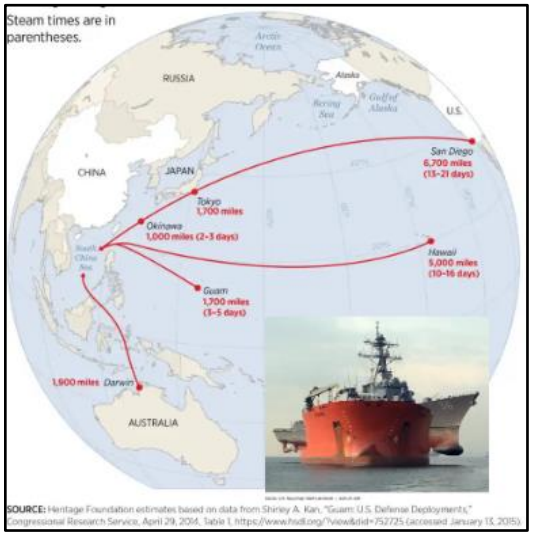
REPAIR Guiding Documentation:

- Operational Logistics in a CME Concept
- Ship Wartime Repair and Maint (SWaRM)
- Expeditionary at Sea Repair Concept
- Mobile Logistics Campaign Plan
- CNO NAVPLAN 2021
- Transforming Naval Logistics for GPC
- Advantage at Sea
- MSV CFT Charter

Building a CoP will align the efforts of the Naval Repair enterprise

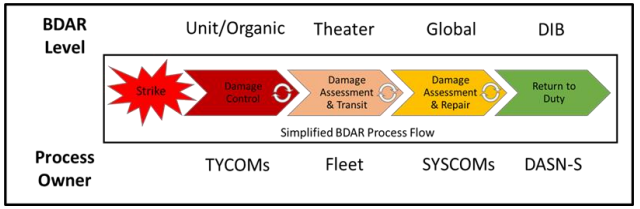
Repair Challenges – "3 Tyrannies"

- The **tyranny of distance** requires a combination of prepositioning materiel, inter-theater lift, and mobile intra-theater assets to perform Battle Damage Assessment and Repair (BDAR).
    - While many of the challenges of BDAR encountered in previous conflicts remain the same, modern threats require Repair capabilities that are mobile, resilient, and flexible to support distributed operations.
- The **tyranny of technology** challenges our ability to perform repair forward.
    - Modern technology enables U.S. Navy aircraft, ships, and submarines to fight and win in fast-paced 21st century conflict. However, high-technology systems are inherently fragile and rely on miles of cable, fiber, and cross-connections, thus repairing these systems will require a substantial effort, likely at the depot level.
- The **tyranny of C2** challenges our ability to return damaged platforms to the Fleet (ready for tasking) as it requires effective triage, enhanced situational awareness, continuous re-evaluation, and effective communications across all levels of Repair stakeholders.
    - BDAR is an iterative process, and successful decision making for triage and repair asset allocation relies on consistently high-fidelity information, communicated effectively, to the right stakeholder at the right time.
    - Information will have to flow from the unit level to the Defense Industrial Base, connecting multiple stakeholders to ensure alignment with Fleet requirements and the best use of limited resources to yield a maximum number of platforms returned to the Fleet for tasking.



The Tyranny of Distance

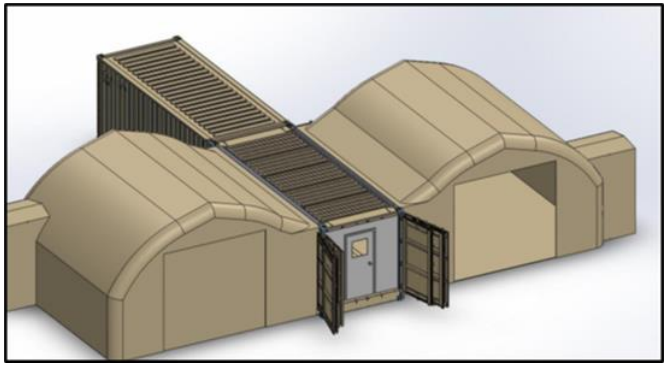
The Tyranny of Technology



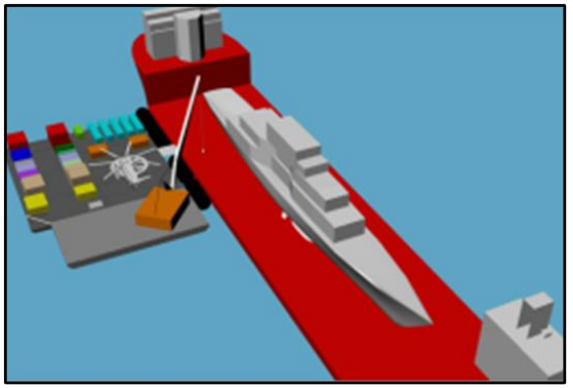
The Tyranny of C2

Repair Learning – New Means

- Expedient, expeditionary repairs must be adapted to meet the demands of modern conflict with innovative platforms such as the Expeditionary Maintenance and Repair Capability (EMARC) and constructs like Expeditionary Repair Afloat (ERA).



Expeditionary Maintenance and Repair Capability (EMARC) mockup.



Expeditionary Repair Afloat (ERA) equipment sets.

Learning from Ourselves – USN Ships Returned to Service

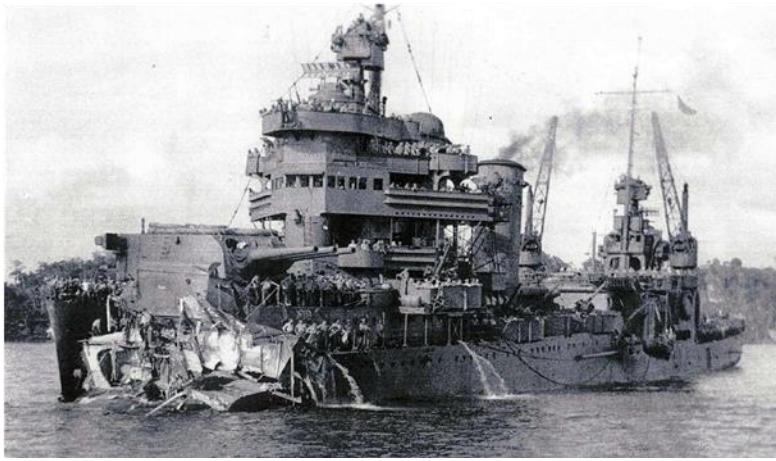
A view of USS Franklin's (CV-13) wrecked flight deck due to a Japanese air attack, as the ship steams up the east river to the New York Navy Yard for repairs (28Apr45).

U.S.S. SOUTH DAKOTA was struck on the 01 deck by a bomb on 19Jun44.

Damage to USS Fitzgerald (DD-62) after a collision with a merchant vessel in 2017.

Another view of USS Franklin's (CV-13) wrecked flight deck as the ship steams up the east river to the New York Navy Yard for repairs (28Apr45).

A view looking through the hole in the hull of USS Samuel B Roberts after a mine strike on 14 Apr 88.



The USS New Orleans (CA-32) after a torpedo blew off her bow on 30 Nov 42. The torpedo detonated the forward magazines and destroyed 150 feet of hull. A further 50-yard length of the ship's bow and forecastle tore away from the ship as she struggled to stay afloat.

Learning from Others – Failed DC/Salvage

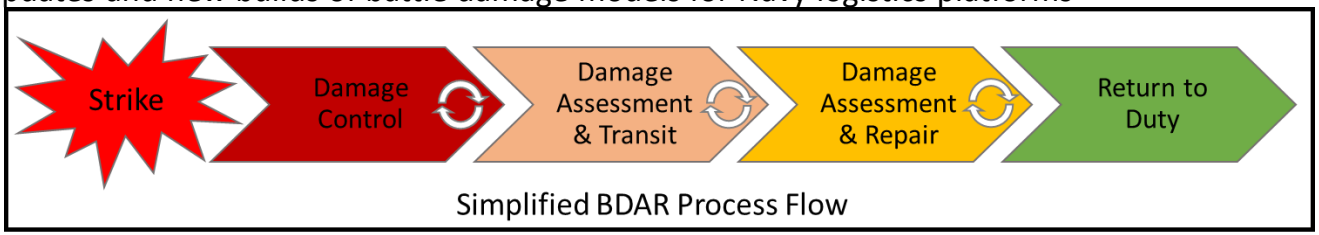
FY23 Repair Analytic Agenda

Games/TTXs

- Naval Contested Logistics Wargame (NCLWG) III – TBD 2023 – NWC
  - Third of a three event series; will incorporate MSV-CFT lessons learned from NCLWG I and II in a workshop forum to continue capability and CONOPS development with the objective of producing DOTMLPF-P tasks for the NLE
- Wartime Acquisition Response Plan (WARP) Exercise/Experiment Support – ASN RD&A
  - Leverage warfare center expertise in a collaborative effort to respond to ASN RD&A requirement to incorporate the findings from WARP TTX events into Fleet Exercises/Experiments; focus is on keeping platforms and capabilities forward and in the fight

Studies

- "Technology and Architecture Enhancements to BDAR" – NASP – TBD
  - Systems analysis and design effort to generate a process flow which leverages technology to incorporate timely information collection, evaluation, and dissemination necessary to execute effective BDAR in a contested environment
- "Optimization of NAVAIR Forward Deployed Combat Repair (FDCR) Teams" – NPS
  - Naval Air Systems Command requires an optimization assessment for Forward Deployed Combat Repair (FDCR) teams, which will deploy with depot-level aviation battle damage assessment and repair capabilities during contingencies or conflict
- "BDAR – System of Systems Integration in a DMO" – NPS
  - Mapping and understanding interface points and connections between commanders, damaged platforms, BDAR platforms/capabilities and C4 processes to understand end-to-end systems design and process flow as enhanced by training, technology and TTP
- "N4i Battle Damage Repair Follow-on Effort – Part II" – NSWC CD (*if necessary*)
  - Complete updates and new builds of battle damage models for Navy logistics platforms



Simplified BDAR Process Flow

Discussion, Q&A