Surface Ship
Availability Project Team Handbook

A Guide and Collection of Best Practices for
Planning and Executing Surface Ship Availabilities

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HANDBOOK SIGNATURES

This Availability Project Team Handbook is published as a product of the Surface Team One (ST1) community. It is intended to be a guide and a set of recommendations for use by surface ship availability project teams as a tool in developing and implementing their respective project management plans. It is not directive in nature, but it is issued simply as a guide or starting point for project teams.

This handbook is a "living" document. Maintenance and Modernization professionals at all levels are encouraged to contribute to this document, particularly based on knowledge gained from meeting and overcoming new challenges with regard to availability planning and execution.

Our signatures below reflect our collective support of this document and its use. We view the Availability Project Team Handbook as a key method through which lessons learned can be communicated to future project teams for their use, and, ultimately, to continuously create value for the surface ship maintenance and modernization community.

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1.0 PURPOSE OF PROJECT TEAM HANDBOOK

This document contains guidance, strategies and advice for surface ship availabilities from past Project Teams based on practices proven to create successful availabilities. It is designed to be a road map to facilitate successful availabilities and is not meant to override policy as dictated in Joint Fleet Maintenance Manual (JFMM) Navy Modernization Process-Management and Operations Manual (NMP-MoM). The intended audience is not only new members to the project management team, but also more experienced members who are managing availabilities beyond their past experience or who want to excel and incorporate continuous improvement demonstrated during other successful availabilities. There is recognition that some regional differences exist in the procedures and processes invoked or utilized. It is the objective of this handbook to achieve an increased level of commonality and/or consistency of approach across all regions.

Many desk guides, policy documents, and training programs exist to document the "how to" aspects of nearly all elements of procedure. This handbook provides critical elements and guidelines for improving the chances for success that cannot be written in procedural form. Where appropriate, this handbook provides links to policy or guidelines and does not duplicate them.

1.1 AVAILABILITY COMPLEXITY

There are multiple types of availabilities, based on complexity, for which different strategies could be implemented. This handbook does not try to define the type of Avails, but recognizes there are multiple types of Avails from not complex to very complex.

The most basic level of complexity may be nine-week Chief of Naval Operations (CNO) availabilities in which the limited interrelationship of maintenance and modernization components does not justify a high degree of work integration.

In the middle exists availabilities too complex to be treated as simple availabilities, but still do not warrant the full level of integration that makes complex availabilities successful.

Extended modernization availabilities require more advanced planning, a fully integrated schedule of any work to be accomplished, and risk management strategies.

1.2 CONTENT SOURCES

This handbook is intended to be a living document. It will serve as the primary medium for knowledge sharing throughout the surface ship community. Stakeholder feedback is the main source of the handbook. The key source for modifications to this handbook will be in the form of documented proven practices from all regions. Contact the Handbook Process Coordinators LCDR Hannah Kriewaldt, hannah.kriewaldt@navy.mil, Katie Buckley, kbuckley@mckean-defense.com or Inga Parvani, iparvani@mckean-defense.com for any requested updates.

2.0 PROJECT TEAM MEMBERSHIP AND DEVELOPMENT

Successful availabilities foster and incorporate a sense of teamwork that extends beyond the core Maintenance Team (MT). Ship's Force (S/F), planning representatives from the Ship Program Managers (SPMs), and Alteration Installation Teams (AITs), among many others, are all vital contributors to the availability success. JFMM Volume II, Part II, Chapter 1 defines the roles and responsibilities of the core MT: ship's Commanding Officer (CO), Port Engineer (PE), Ship Material Maintenance Officer (SMMO), ship superintendent, Project Manager (PM), and contractor (KTR). Other people critical to the success of an availability should be embraced as an extension of the core MT.

2.1 PROJECT TEAM MEMBERS

This section explains the roles of these extended team members, and offers tips on how to bring them into the team.

2.1.1 NSA/RMC Project Manager (PM)

The NSA/RMC's PM is the individual who is responsible for the overall management of the availability. The Project Manager is assigned by the Commanding Officer (CO) of the RMC and is the coordinator of the on-site shipbuilding specialist team. The authority of the Project Manager shall be clearly defined, identified to all concerned, and in particular the contractor, in relation to contract administration. Duties of this position are outlined in the JFMM Volume VI, Chapter 7, Paragraph 7.3.3.

2.1.2 S/F

The S/F is the ultimate customer of maintenance and modernization. The S/F can literally make or break the success of availability. Active participation in advanced planning and on the project team are factors that contribute to the greatest amount of success. The project management team, and more specifically, the PM, needs to set expectations, ensure communication channels are always open, and train S/F to be efficient partners in the availability.

Clearly established communication expectations are vital to the success of the availability. S/F needs to know what to expect during the various phases of the project, and the project team needs to know what the ship expects throughout the availability. Otherwise, the key stakeholders may end up pulling in opposite directions, jeopardizing a close working relationship. Proven practices have shown that the project team should engage S/F early and often and be sure to understand their issues, goals, and priorities.

Nearly all successful availabilities have one trait in common: S/F maintained ownership of their spaces. Sailors were almost always present during any production work, asking questions and looking for issues. Cleanliness was a high priority for these ships. All members of a work center knew the scope of repairs and status at all times.

Ask-Learn-Share is a knowledge-management model useful in continuous improvement. Simply put, ask questions of those who know, learn from those people, and share your new knowledge with others who could benefit from it. This is a two-way process; the crew must be encouraged to engage with the work being accomplished, to ask questions, learn about the systems, and share that information throughout their work center. Equally important, the project team must ask questions of the ship, learn, and share that information with other team members. S/F lives with and operates ship systems even when they do not have detailed technical knowledge, and they provide invaluable insight into problems and issues.

At the completion of the availability, S/F must be immediately ready to operate the ship and all of its systems. To prepare for sea trials and beyond, extensive training will be required. Training impacts production, either by removing sailors from production work, forcing systems to be operational during the training, or making some spaces off limits for production. Therefore, S/F and the project team must

communicate their needs and desires to minimize training impacts on production while allowing ample time for training. S/F should also recognize that training should not commence just before light-off but throughout all phases of the availability.

2.1.3 System Commands (SYSCOMs)

There are three SYSCOMs with which a project team is likely to interface: Naval Sea Systems Command (NAVSEA), Space and Naval Warfare Systems Command (SPAWAR), and Naval Air Systems Command (NAVAIR). Each SYSCOM has a headquarters, multiple field activities, and affiliated Program Executive Offices (PEOs). SYSCOMs are responsible for designing, acquiring, and sustaining ships, aircraft, and systems. As such, they are heavily involved in all aspects of modernization, directing resources to properly equip the fleet.

While NAVSEA is the lead in establishing and enforcing technical authority, all SYSCOMs exercise technical authority related to all aspects of system design, operation, and maintenance of their systems and equipment. As the Navy's primary source of technical expertise, SYSCOMs develop technical standards to ensure systems are engineered properly, operate safely and reliably, and are maintained safely and effectively. As such, SYSCOMs are the final authority for any technical decision related to their ships, aircraft, or systems.

2.1.4 Warfare Centers and In-Service Engineering Agents (ISEAs)

When tasked, representatives from a variety of warfare centers representing ISEAs provide Subject Matter Experts (SMEs) to assist the maintenance and modernization community in system-specific or component-specific technical support. For many modernization efforts, the technical development of the system or software is actually done at a warfare center, typically in collaboration with industry partners. Naval Surface Warfare Center (NSWC) representatives include NSWC Port Hueneme Division, (NSWC PHD) NSWC Carderock Division (NSWCCD) Philadelphia, NSWC Crane, NAVAIR, SPAWAR, NSWC Dahlgren, Naval Supply Command (NAVSUP), NSWC Panama City, NSWC Louisville, and NUWC Newport.

During CNO availabilities, warfare centers and ISEAs may provide On-Site Technical Representatives (OSTRs) to assist with testing of the new system or component and with training of S/F on the new upgrades. The ISEA is also typically responsible for developing certain logistics products to support the new system or component. These products include Preventive Maintenance System (PMS) requirements, technical manuals, operating procedures, Allowance Parts Lists (APLs), and even spare parts/kits to support system testing and training.

For Combat Systems (CS) and C4I, ISEAs are often tasked to develop integrated test plans and schedules to facilitate complete operational testing of the combat system or C4I system. Testing plans are usually tied to a certain milestone in the CNO availability (i.e., AEGIS Light-Off (ALO), CS integration testing, System Operation Verification Test (SOVT), etc.) and are important events in delivering an operational ship back to the fleet, ready for tasking.

2.1.5 Planning Yards (PY)

Each ship class has an assigned planning yard. During an availability's advance planning phase, planned ship changes will be ship-checked as part of the Ship's Installation Drawing (SID) development process. If tasked and funded by the ship change sponsor, the planning yard will conduct the ship-check and develop ship specific SIDs. Alternately, the ship change sponsor may elect to have the ship-check conducted and SIDs developed by a third-party contractor. When this option is exercised, the ship-check should be scheduled to occur in concert with ship-checks being conducted by the planning yard, and the ship change sponsor must still fund the planning yard to review and approve third-party SIDs.

The planning yard will develop an availability analysis if tasked and funded by the SPM. If developed, copies of the availability analysis will be provided to the project team. This document can be a valuable aid in determining the optimal duration of the availability. It can also identify areas that may require extra attention from the project team, such as ship changes that need careful de-confliction and integration. Such items should be considered for inclusion in the critical path.

During the execution phase of an availability, it may be determined that the SIDs cannot be executed as specified and must be revised. When the Executing Activity (EA) discovers a problem with the SIDs, a recommended course of action and planning yard adjudication will be requested via a Liaison Action Report (LAR). Alternately, the planning yard may push these revisions out to the EA in the form of a Reverse Liaison Action Report (RLAR). During an availability in which a number of complex ship changes are to be executed, the SPM may provide funding for one or more planning yard representatives to be co-located with the project team. In previous availabilities, this action has proven to significantly reduce turn-around time for LARs and SID updates, thereby helping to maintain production schedule.

Upon completion of each ship change, the EA will provide a copy of marked-up (red-lined) SIDs to S/F and another to the planning yard. The planning yard copy will be used to update the ship's selected records.

2.1.6 Type Commander (TYCOM)

The TYCOM is cross class surface force level management, oversight, and adjudication for maintenance and fleet modernization issues. TYCOM provides final approval and promulgation of the Maintenance and Modernization Business Plan (MMBP). Maintenance and modernization execution provides warships ready for tasking to the fleet through:

- Scheduling CNO availabilities five year rolling window
- Establishing notional availabilities
- Capability plan
- Programming
- Budgeting
- Execution program management of force level surface ship depot maintenance
- Cross class prioritization
- Habitability program management
- Surface ship Naval shipyard availabilities

See JFMM Volume II, Part I, Chapter 3 for more information about TYCOM roles and responsibilities.

2.1.7 NAVSEA 21 (SEA 21) Fleet Support Office, Washington, D.C. Findings

The SEA 21 Fleet Support Office is responsible for coordinating and managing all program modernization efforts planned for surface ships. SEA 21 is responsible for addressing life cycle issues that inhibit full service life of our ships. They are responsible for issuing the Ship Alteration (S/A) LOAs that provide maturity status of all program alterations intended to be installed during particular CNO availabilities. LOAs are issued to the waterfront one year (A-360) prior to the intended start of execution within a CNO availability. Updates to the LOAs are issued at various times by SEA 21 and reflect revisions to maturity status as elements of the alteration (i.e., drawings, logistics, weapons system, baseline approvals, etc.) are completed in the planning process.

For specific S/As and for large complex modernization efforts such as CG/DDG/FFG modernization and LSD mid-life programs, SEA 21 platform managers (representing a class of ships) are responsible for all planning and budgeting for Future Years Defense Plan (FYDP). The SEA 21 ship managers (representing specific ships in a class) are responsible for executing the platform manager's plan and budget within an execution year. Both PMS 400F and PMS 470 are represented by an SPM who has

legal responsibility under U.S. Code Title 10 to execute these responsibilities. Typically, an SPM (PMS 400F and PMS 470) is a post-command Acquisition Professional (AP) with the Navy rank of Captain.

The SEA 21 Fleet Support Office is also responsible for managing and executing the contracting strategy for the Multi-Ship/Multi-Option (MSMO) contracts currently awarded for ship maintenance and modernization in many homeports. The contracting officer within NAVSEA 02 (SEA 02) is the Procuring Contracting Officer (PCO) while the local RMC typically is designated as the Administrative Contracting Officer (ACO), acting locally to manage the contract. The SPM is typically given the responsibility of being the Fee Determining Official (FDO) for any award fees associated with the contract.

Within the SEA 21 program office are other supporting divisions responsible for logistics, training, manpower, and technical elements that integrate the overall modernization products. SEA 21 also has a funds management division that provides financial management and accounting responsibility for program alterations.

2.1.8 PORT ENGINEER (PE)

The PE is the MT Leader for their assigned ship(s) and is responsible for all off-ship repair, maintenance, and modernization planning and execution. The PE is a technical resource for the ship, RMC, Surface Maintenance Engineering Planning Program (SURFMEPP), NAVSEA, and the TYCOM.

A skilled, qualified PE will possess in-depth knowledge of their ship's equipment and systems, material history, required maintenance, life cycle requirements, and modernization gained through an extended period of involvement with their assigned ship. The PE is typically a seasoned, civilian member of the ship's crew.

A PE's responsibility is broken into six major components: (1) developing requirements, (2) budgeting for ship maintenance, (3) providing technical expertise, (4) maintenance availability planning, (5) maintenance availability execution, and (6) close out.

2.1.9 SEA 21 Program Manager's Representative (PMR)

SEA 21 PMRs are the direct representative of the SEA 21 SPMs on the waterfront. PMRs are located in all major homeports including Norfolk, VA; San Diego, CA; Mayport, FL; Pearl Harbor, HI; Everett, WA; Yokosuka, JA; and Sasebo, JA. PMRs are responsible for maintaining a regular interface with local Navy commands in the region including the RMCs, planning yards, TYCOMs, and local ISEA detachments.

The primary role of the PMRs is to collaborate with the RMCs to maintain and modernize surface ships. PMRs plan, coordinate, and oversee the execution of program alterations. Typically, the SPM is also the Program Acquisition Resource Manager (PARM) and has financial responsibility for the alteration. During execution, PMRs work closely with the applicable RMC MT to ensure that funds are available for the work performed, to help address technical issues with the planning yards, to review Condition Found Reports (CFRs) for applicable alterations, and to work with the RMC PM to review and approve growth work needed to address changes in work scope. PMRs will have access to and maintain historical cost data for alterations to help ensure cost control for follow-on ships of the class.

When directed by the SPM, PMRs investigate a variety of ship system and component life cycle issues. PMRs collaborate with ISEAs, warfare centers, and RMCs to collect data to support options to modernize systems and components in an effort to improve operational availability.

2.1.8 On-site Logistics Representative (OSLR)

Planning Yard Representatives and/or associated OSLRs are responsible for supporting the configuration management of a particular ship. OSLRs are responsible for validating configuration of the ship following modernization efforts. They verify that equipment removed or equipment added is appropriately represented in the ship's Configuration Data Management Database-Open Architecture (CDMD-OA). OSLRs also assist S/F with life cycle logistics issues including parts identification, Coordinated Shipboard Allowance List (COSAL) support, and Class Common Equipment (CCE) warehouse material access.

2.1.9 SPAWAR C4ISR Ship Superintendent

A SPAWAR ship superintendent is permanently assigned to each ship to oversee C4I modernization performed by SPAWAR. The ship superintendent serves as the primary point of contact for all work performed by SPAWAR, serving as a liaison between the SPAWAR AITs and project team/MSMO contractor. The ship superintendent is responsible for tracking delivery of AIT Plan of Action and Milestones (POA&Ms), test plans, and support service requests, monitoring and expediting submission of support service funding for SPAWAR AITs. The SPAWAR ship superintendent will ensure the appropriate AIT manager reviews applicable work specifications for accuracy prior to approval by the project team. Starting at A-120, the SPAWAR ship superintendent will report maturation of planned SPAWAR-sponsored ship changes. The ship superintendent will also assist with both the integration of SPAWAR AIT work into the work package and the development of the integrated total ship test plan. During the execution phase, the SPAWAR ship superintendent will work with the MSMO AIT coordinator/AIT integrator in the daily de-confliction of work schedules, weekly progress reporting, and submission of updates to the integrated work schedule.

2.1.10 AEGIS Modernization Team (AMT)

The AMT (as needed depending on complexity of availability) is a waterfront activity comprised of NSWC PHD, RMC, PARM, and contractor personnel. The mission of the AMT is to ensure the readiness of CS onboard supported ships through modernization, post modernization testing, and technical support. AMTs are established in Norfolk and San Diego. AMT Norfolk will additionally support availabilities in Mayport, while AMT San Diego supports Pearl Harbor, Everett, and Yokosuka availabilities.

The AMT is led by a naval AEGIS Test Officer (ATO) and civilian Technical Manager (TM). The ATO and TM are responsible to Program Executive Office (PEO) Integrated Warfare Systems (IWS) and to the Naval Supervisory Authority (NSA) for the satisfactory completion of all CS testing from Combat Systems Light-Off (CSLO) through the beginning of preparations for Combat System Ship Qualification Trials (CSSQT). The ATO and TM will serve as the principal point of contact for COs, NSWC PHD, RMC class teams, Readiness ISIC, Naval Surface Forces (SURFOR), and other waterfront organizations for CS modernization and testing issues under the cognizance of PEO IWS 1. They will also collaborate with waterfront leadership to identify areas of opportunity to improve AMT processes, align the AMT process to provide technical support to ships outside availabilities with current JFMM FTA procedures, and capture and share lessons learned and best practices from complex CS availabilities. In particular, the AMT is charged with incorporating best practices from AEGIS Modernization (AMOD) avails into their standard operating procedures.

For certain CS intensive availabilities (such as CG and DDG CS modernization availabilities), the AMT will assign a Combat Systems Project Engineer (CSPE) as its On-Site Representative (OSR) throughout the availability. When assigned as a full-time OSR, the CSPE will join the project team at A-135 and will provide oversight for PEO IWS-sponsored AITs. During advance planning, the CSPE will assist with the integration of PEO IWS-sponsored AIT work into the work package and will develop the CS Test Sequence Network (TSN) as an input to the integrated total ship test plan. The CSPE will review

applicable work specifications for accuracy prior to approval by the project team. Other responsibilities include monitoring and expediting submission of support service funding for IWS AITs and acting as a liaison between the AITs and project team/MSMO contractor. During the execution phase, the CSPE will work with the MSMO AIT coordinator/AIT integrator in the daily de-confliction of work schedules, weekly progress reporting, and submission of updates to the integrated work schedule. During the production phase, the CSPE will report directly to the SEA 21 PMR, but the ATO and TM will remain ultimately responsible for his performance.

At CSLO, the CSPE will transition to or join the project team as the CS systems test manager. Responsibilities include assisting in the sequencing of CS test events with other C4I and Hull, Mechanical, and Electrical (HM&E) components of the integrated total ships test plan and directing the execution of CS test events. The CSPE will also direct accomplishment of the ship integration and test event, which validates operability of CS software changes installed during the availability. During the test phase of complex CS availabilities, the CSPE will report directly to the ATO/TM, and all required test progress reports will be issued by the ATO or TM.

The ATO/TM will be responsible for the event readiness review process for CSLO and sea trials milestones and serve as test directors for CS trials testing.

2.1.11 ALTERATION INSTALLATION TEAM (AIT)

AITs are governed by NAVSEA Technical Specification 9090-310 (series, in NMP-MoM) Alterations to Ships Accomplished by AITs / Customer Contract Teams. This document can be found in the Fleet Modernization Program (FMP) Manual, Volume 2, Appendix A.

AITs may be comprised of contract personnel, government employees, or both. Each AIT will have an on-site AIT leader assigned. Unless specifically waived by the NSA, an on-site government representative (military or civil service) will also be assigned to each AIT for oversight and project team liaison.

During advanced planning, the AIT leader or government representative will work with the AIT sponsor activity to ensure timely delivery of required items (i.e., installation POA&M, support service requests, Pre-Installation Check-Out (PICO) and SOVT plans, and AIT support funding). The AIT leader and/or government representative will participate with the project team and MSMO contractor in work package integration efforts, supporting development of the integrated production schedule and total ship test plan.

In the availability's execution phase, the AIT leader or government representative from each AIT will participate in daily production and weekly progress meetings, provide weekly progress reports, and provide periodic updates to the installation POA&Ms and test plans as specified in NAVSEA Standard Item 009-60.

2.1.12 RMC Project/Liaison Engineer

The RMC project engineer will provide technical compliance and engineering services for the MT coincidental to repair and maintenance work accomplished during CNO availabilities. Responsibilities include evaluation of non-conformance issues and liaison with ISEAs, planning yards, and others as necessary to resolve technical issues and document technical lessons learned.

2.1.13 Intermittent Positions

The following positions/roles are not standard in all availabilities or in all ports. In cases where large numbers of AITs are involved with an availability, these positions have proven to be critical in the success of the availability.

- **AIT Advance Planner:** The RMC's AIT Advance Planner will assist the project team in tracking and reporting the maturation of ship changes planned for accomplishment by AITs and tracking SPM/TYCOM authorization of those ship changes. As the RMC's primary point of contact with AITs and their sponsoring organizations, the AIT Advance Planner will promulgate availability milestones, direct the submission of AIT POA&Ms, test plans, and support service requests, and ensure Automated Work Requests (AWRs) are entered into the maintenance database. The AIT Advance Planner will review work specification Items (generated from AIT support service requirements) for accuracy and make them available for review and concurrence by the AIT sponsor. All AIT collected data will be retained in an advance planning notebook and will be turned over to the RMC AIT Coordination Engineer (ACE) during the transition from advance planning to execution phase.
- **ACE:** The RMC's ACE will receive turnover from the RMC's AIT Advance Planner at approximately A-30 and shall be responsible for AIT oversight as well as all electronic and combat-related modernization and repair work performed during CNO availabilities. The ACE's main function will be answering corresponding work item condition reports and evaluation of progress. This position should have a close relationship with the contractor's AIT Coordinator/Integrator.
- **AIT Coordinators/Integrators:** The MSMO or Master Ship Repair (MSR) contractor's AIT Coordinator/Integrator will be required to manage all modernization as well as integration of modernization work with repair package. This position shall be the primary decision-maker for the coordination, integration, and de-confliction of all modernization and maintenance activity schedules. Note: The NSA retains ultimate authority for resolution of work schedule coordination, integration, and de-confliction issues.

2.2 INTEGRATED PROJECT TEAM DEVELOPMENT

Once the team has been identified and assigned, it is imperative to prepare the assigned personnel to function as a team. It takes time for a group of people with different backgrounds and perspectives to understand their roles, to get to know each other, to learn to trust each other, and to understand a common purpose and work approach. People are more willing to take ownership of and support something when they are involved in creating it.

Even with meaningful purpose, a constructive working relationship, and complementary skills of the team, the Project Team leadership will not be able to fully utilize the unique talents of the Project Team members without a well-planned working approach and an integrated training plan.

It is also important to spend a fair amount of time covering the project's Mission, Vision, and Values Statement. Trust is vital to the team's success, and openness should be the norm. How team members will deal with each other should be covered so all members feel they are equally important. The NSA has the responsibility to make sure that these connection points are clear and understood by all stakeholders.

This section provides guidelines for training requirements for the entire integrated project team. For S/F, training is used to bridge the knowledge gap and ensure the crew is ready to support both long-range operational and maintenance commitments. The goal of every team is to function as a high performing team. A high performing team develops a shared understanding of the assigned project and processes and works to build the rapport and trust required to meet their goals. New members, as well as experienced team members, benefit from learning activities which focus on team building and teamwork. Leadership from the team must work together as an equal and balanced group and set the example for all to follow as remaining members come aboard.

In developing, executing, and aligning training, there are many methods and curricula available, at both the corporate level and the individual organization level, to increase team members' effectiveness and to help create an excellent working environment for success.

The IPTD curriculum focuses on development and integration of the project team; development of availability expectations and success criteria; advance planning; development, reviewing, refining, validating, and communicating key strategies; aligning all members of the integrated project team; process improvement; availability execution processes; and knowledge sharing designed for successful availability execution.

The Integrated Project Team Development staff works with the Project Team leadership to identify needs and offer solutions to schedule and logistic questions, topic selection, speaker selection, and best learning techniques for each IPTD. They serve as the cradle to grave for the IPTD process. From facilitation of arranged topics to customized training programs, the IPTD Staff will continually meet the needs of project team.

In the planning process of each IPTD, the IPTD Staff will work with the Surface Team One Community to determine participation at each respective IPTD Program.

The staff will coordinate the event, arrange for speakers, and assemble training materials in preparation for the program. Presentation development and skills practice is available to any presenter in preparation for the IPTD. During each event, staff members open the course, setting participant expectations and goals. IPTD staff facilitators also conduct skills training sessions and offer facilitation support during group discussions, freeing the project leadership to concentrate on other issues.

Post-course follow up communication by the IPTD staff with the Project Manager and individual speakers offer lessons learned, a review of action items taken from the course, and begin preparation for the next Integrated Project Team Development event.

The IPTD program is notionally conducted in five events prior to the availability start date and one mid-availability IPTD event at the 50% point. Integrated Project Team Development is one of our most effective teambuilding tools during the planning process and one of the only opportunities a project team can come together with every stakeholder involved in the availability. It builds a positive team dynamic by creating an environment for identifying and solving issues.

Throughout each IPTD Event, every effort is made to keep participants engaged and actively learning. A variety of learning experiences are offered, including: Experiential events; Interactive skills activities (team tasks and exercises); Facilitated large and small group discussions; Peer-to-peer training; Reading and Lecture.

2.3 LEARNING FROM PREVIOUSLY COMPLETED AVAILABILITIES

As a part of the transition from building the project team and entering the advanced planning phase of this handbook, it is timely and important to incorporate into the availability plan the defined “learning process” upon which this handbook as well as the Lessons Learned Conference (LLC) Process was created. The objective is to take advantage of and actually apply the lessons learned, best practices, and proven practices that have been captured from previously completed availabilities in a way that creates value for the upcoming availability

The LLC meetings are scheduled to take place at various times during ship’s scheduled CNO Availability from A-390 to C+30. The purpose of the three phases of LLC is as follows:

(1) Advanced Planning Session (APS): A-390 to A-360.
1. Initiate Project Team Member communications
2. Develop collective plans / strategies to accomplish what we know needs to be done. Identify “required” strategies
3. Any milestones from A-720 should also be covered during the APS time frame

(2) Planning Lessons Learned (PLL): A-120 to A-80
1. Aid in transition from “Availability Planning” to “Availability Execution” mindset

2. Identify potential risks and establish risk mitigation plans
3. Ensure good communication
4. Share lessons learned / barriers of planning process

(3) Execution Lessons Learned (ELL): C-15 to C+30

1. Discuss overall successes / challenges to include Project Team Lessons Learned and Barriers

Establishing an informal milestone whereby the right people take the opportunity to utilize the LLC information and process will ensure that prior lessons learned will evolve into lessons applied.

The LLC support team is available to assist in the utilization and assessment of past data as it relates to this entire initiative. Lessons packages can be quickly and easily assembled based on the information on the LLC web page, which can be accessed in accordance with Appendix B.

3.0 ADVANCE PLANNING (A-720 TO A-75)

The core MT is responsible for all aspects of planning and preparation for availabilities. All members of the core MT must work together to accomplish the orderly planning of availabilities as outlined in the Planning Process Milestones found in JFMM Volume II, Part II, Chapter 2, Appendix D.

In addition to specifically assign responsibilities, each core team member must work within their extended organization to identify and resolve issues at the earliest point in the planning process. The PM is the RMC's principal advance planning manager for availabilities. The PM works closely with the MSMO representative and MSMO advance planning manager and is tasked with overall responsibility for coordinating all aspects of the availability planning processes.

3.1 IPTD A-270/A-195 EVENT

The A-270/A-195 event marks the true beginning of the project team's formation. Modernization/mid-life availabilities will start at the A-270 milestone date; all standard availabilities will begin at A-195. Team members are identified, roles are defined, the different stakeholders share and shape their expectations and the foundation for a single, solid team with a focus on maintenance is formed. Work development centers around the project timeline, project strategies and identifying potential risk.

The event will include, as applicable:

- View from the bridge given by senior leadership
- Exercises and activities which promote team integration, team learning and socialization
- Formation of the project's Mission and Vision Statements
- Verification of team roles and responsibilities
- Identification of availability expectations and success criteria
- Discussion of the timeline and milestones
- Development of common descriptions of project team & stakeholder priorities
- Discussion and analysis of potential project concerns and risks
- Definition of formal and informal communications and responsibility links throughout the project
- Identification and discussion of key project initiatives & strategies
- Begin the development of proposals for possible risk mitigation strategies
- Identify plans to incorporate corporate lessons learned
- Communication skills and team skills practice
- Development of action items and accountability agreements for the post event period.
- Advance Planning Status Briefs given by PM, PY and PMR to include status of AWRs written, assessments planned/accomplished, LLTM and GFM status, shipcheck/SID status, etc.
- Review of what is in the Maintenance, Modernization and Repair packages led by PE and PMR
- Strategy Introduction given by Facilitators
- Risk Management Introduction and Exercise led by Facilitators
- Team Building/Development Exercises led by Facilitators
- ABS assessment intro, plan, status given by ABS Rep
- TSRA intro, plan, status, scrub results and prioritize/screen given/led by TSRA Rep
- Avail Execution & Work Certification intro and plan given by Gov't Test Coordinator
- 1st Time alt or mod package brief(s) given by PARM or SMR
- CFR/RCC Review/Analysis from previous or similar avail(s) led by members from that avail project team
- LL brief(s) from previous similar avail given by members from that avail project team
- ILO intro, plan, status given by ILO Rep
- Develop Ship's Force brief(s) led by Facilitators
- Discuss, plan for, and status of upcoming INSURV/CERTs and their impact on avail led by Facilitators

Minimum participation at the IPTD A-270/A-195 event should include.

- PM
- PE
- CS PE
- SHIPSUP
- SEA21 SMR(s)
- PY Rep
- TYCOM Rep
- SURFMEPP Rep
- MSMO/MSR
- SPAWAR Ship Superintendent
- PHD CS Project Engineer
- ISIC Rep
- Ship's Force

3.2 DEVELOP PROJECT TEAM STRATEGIES

Development of viable strategies is essential to a successful availability. Development of these strategies will be discussed in Chapter 7.

3.3 MODERNIZATION PLANNING INPUT FROM NAVSEA SPM, SYSCOM INTEGRATORS, AND TYCOM/ READINESS ISIC

All milestones are centered around modernization between A-720 to A-360. However, Modernization planning begins at the establishment of an availability (A-720) to establish the CNO availability in the Navy Maintenance Database (NMD). The SPM is responsible for integrating modernization for a particular hull regardless of which SYSCOM or PARM is the sponsor for the alterations being planned for a particular availability. The SPM can provide an overview of what is being planned and who is the lead on the effort. Additionally, plans for mid-life extension programs and other major modernization efforts reside with the SPM. Contacting the SPM and SYSCOM integrators early will provide visibility into ship changes that, for various reasons, have not been scheduled in Navy Data Environment-Navy Modernization (NDE-NM), but are planned for the Planned Maintenance Availability (PMA).

If the combination of maintenance and modernization work requirements appears to exceed the availability duration, the SPM can assist by tasking the planning yard to perform an availability analysis. Additional key personnel for complex availabilities include PEO IWS System Integration Program Manager (SIPM), PEO C4I PMW 700-Series integrator and the NAVAIR 1.2 integrator. A routine of regular planning meetings may be required earlier than the A-360 planning milestone.

3.4 CONSIDERATION FOR FORWARD DEPLOYED NAVAL FORCES (FDNF) PMA

Special consideration should be given for advance planning milestones associated with FDNF. Contact the maintenance professionals at the Ship Repair Facility in Japan for more information.

3.5 PLANNING BOARD FOR MAINTENANCE (PB4M)

The PB4M is used to manage the ship's maintenance program. The PB4M is a regularly scheduled meeting between the core MT and the ship's leadership to discuss ship-wide maintenance issues. Chaired by the CO, this forum provides a review of current planned maintenance, future maintenance planning, and fiscal concerns. The intent of the PB4M is to ensure clarity of intent of both the ship's efforts and the shore infrastructure with respect to total ship maintenance, operational schedules, modernization plans, and other concerns affecting ship material readiness. Current Ships Maintenance Project (CSMP) quality

and overall communication and planning are expected to improve by the use of this process as well. Guidelines for these meetings are provided in JFMM Volume VOL II, Part 1, Ch. 4 and VI, Chapter 41.

3.6 WORK PACKAGE PREPARATION OVERVIEW

Work items are identified and consolidated into work packages. The items originate from a variety of sources, described in the following paragraphs.

3.6.1 Integrated Class Maintenance Plan (ICMP)

A ship's ICMP is the heart of a well-engineered ship maintenance strategy. ICMP represents a consensus of the best-known engineering practices for each maintenance object. ICMP tasks are the preferred way to assess and generate valid maintenance requirements over local, unique tasks when they match the scope of those requirements. Scheduled ICMP tasks are automatically pushed into the shore file to support planned off-ship maintenance and material assessments of ship systems and equipment. When needed, the PE can also pull pre-written repair tasks, assessments, and service items into the CSMP.

3.6.2 CSMP

All shipboard maintenance is centrally managed via the CSMP. The CO must ensure that the flow of accurate, objective, and prioritized work candidates documenting problems are up lined to the CSMP shore file as material deficiencies are discovered. This file permits work to be planned in a continuous, orderly manner. Using the same database for all maintenance allows the flexibility to redirect work between different windows of opportunity (such as availabilities and other repair activities).

All work is documented in the CSMP. Documenting all maintenance requirements is crucial as the CSMP is the basis for all funding. Only work documented in the CSMP is authorized for accomplishment. An accurate, up-to-date CSMP is the mark of a thorough maintenance approach and is essential for a well-maintained ship. Additionally, the CSMP should be reviewed to ensure capture of Casualty Reports (CASREPs) and temporary departures from specifications.

3.6.3 Departure from Specification (DFS) Clearance and CASREP Correction Plan

The PE will review all open CASREPs and active DFSs for inclusion in the Availability Work Package (AWP). Any DFS issued during the availability as a result of contractor's work will be issued by technical authority and will be included in the work completion certification package. A copy of any DFS issued will be provided to the ship. As per Commander Naval Surface Force, U.S. Pacific Fleet (CNSF) message 031556zmay05 and IAW NWP 1-03.1 (formerly NWP 10-1-10), ship in a CNO availability is to submit Casualty Cancel Reports (CASCANs) on all CASREPs scheduled to be repaired in the availability.

3.6.4 Program and Fleet Alterations

Alterations being designed consist of either program (SYSCOM) or fleet (TYCOM) alterations (often referred to as SYSCOM Alterations (K-Alts) or TYCOM Alterations (D-Alts), respectively). Alterations will be scheduled and coordinated in accordance with appropriate policy and process. Alterations can be accomplished either inside or outside CNO availabilities.

3.6.5 Letter of Authorization (LOA)

All alterations or installations planned for accomplishment during a CNO scheduled availability must be included in a LOA. At A-360 there are two LOAs released: 1. NAVSEA SPM, and 2. TYCOM N43. Principle references for the NAVSEA SPM include:

- The FMP-MoM (formerly known as "One Book")
- NAVSEA Technical Specification 9090.310-Series alterations to ships accomplished by AITs
- Alterations being planned for installation follow an entitled process initiated by a Ship Change Document (SCD). In practice, there are multiple reasons why this does not happen. This is one of the main reasons why the PM needs to correspond with the PMR as specified in the Communication Plan. By policy, all SCDs and legacy alterations being planned for a particular availability can be viewed on the Navy Data Environment (NDE) website.

3.6.6 Routine Work Items

Availability routines are specific recurring work items brokered for accomplishment for any scheduled availability. The 2Ks may be pulled from the ICMP and standard work items from the Master Specification Catalog (MSC). Currently there is a wide variety of routines being used at the RMCs. Efforts are underway to standardize the use of recurring work items. Examples are:

- General requirements for work at a designated location (such as contractor facility, shipyard, etc.).
- Hazardous waste produced on Naval vessels.
- Transportation for personnel and equipment.
- Trade supervision provided.
- Cleaning and pumping services.

3.6.7 MSC

The work package preparation process leverages the large library of planning documents that exist today and are currently stored in the MSC. The MSC provides a ready resource of technically correct and current work items that are universally accessible for use via the NMD. The vast majority of these documents can be reused for planning future repair actions. The primary purpose of the MSC is to reduce maintenance costs by:

- Reducing planning efforts.
- Identifying and promoting best practices.
- Effectively managing lessons learned.
- Minimizing delays associated with maintenance planning.

3.6.8 Heavy Weather Plan

Production work may be impacted by heavy weather. Although the requirements of our work mandate that we maintain continuous operations, there is a remote possibility that extreme weather or emergency conditions such as unexpected heavy snow or ice, earthquake, etc., could create conditions under which it is necessary to curtail non-critical command operations.

3.7 OTHER PLANNING ACTIVITIES

Consideration must be given to the following activities occurring during the planning process:

3.7.1 LMA Planning

The EA or MSMO contractor will perform the planning for depot level repair work.

Note: Exceptions to this may include the first of a ship class SCD. In such a case, the advance planning (drawing preparation and material ordering) is typically performed by the assigned planning yard and follow-on SCDs of such a complex nature that it is determined they should be assigned to the planning yard.

MSMO contractor planning personnel will develop specifications as tasked utilizing NMD. Specifications will be prepared in accordance with the requirements outlined in JFMM Volume II, Ch 4.

3.7.2 Specification Review

To ensure that specifications accurately reflect the work that is required, it is incumbent on the PM to ensure a thorough and timely review of all specifications, regardless of what organization originated the specification (contractor, government, etc). Other factors to address include:

- The PM, PE, and other MT members should ensure the specification accurately reflects the required scope of work, reviewing each specification and soliciting additional review within their respective organizations when required. The PM should ensure that review by other RMC codes Quality Assurance (QA), material, engineering, and Combat Systems is completed as required for applicable specifications.
- The PM should send draft specifications for AIT support services to appropriate resource sponsor for review prior to approval by the project team.
- S/F should be provided an opportunity to review specifications to ensure accurate scope of work and to understand the contents of the work package.
- The PM must establish a timeline for the completion of specification reviews to prevent delays or unnecessary re-work in the planning processes.
- The PM should monitor the MSMO planning process to ensure that all specification review comments are addressed and/or incorporated.
- The PM must ensure that all specifications are prepared in accordance with current technical directives. SMEs in Codes 200 Engineering and QA must be used as required. This is to ensure that all shipboard maintenance, repair, and modernization accomplished under the cognizance of the RMC is accomplished in accordance with approved technical requirements, that technical requirements are identified and specified prior to the commencement of work, and that all non-conformances are documented, submitted, and evaluated using approved processes. It is incumbent upon the MT to verify that approved technical requirements are included in all shipboard work specifications under their cognizance.
- Contractor is responsible for accurate specification development in accordance with the AWR and AIT Support Requests.
- Originators and/or reviewers of AWRs and 2-Kilos must ensure technical accuracy and completeness in order to increase MSMO contractor's first pass yield for specification development.
- Long Lead Time Material (LLTM) that will be required.

3.8 ADVANCE PLANNING MEETINGS

3.8.1 Required Planning Meetings

The JFMM Volume II, Part II, Chapter 2 states the requirement NAVSEAINST 4710.8B to release monthly ship availability advance planning reports starting at A-360 until the ship availability readiness to start message (4710-6B) is released at A-30. Monthly planning meetings are a useful means of gathering team members together and obtaining the information for the advance planning reports.

3.8.2 Advance Planning Meetings

Advance planning meetings provide the following opportunities:

- The customers can relay specific concerns and directions to core MT members.
- Feedback from current efforts and comments can be discussed with the customers and each organization to ensure the core MT's basic understanding of the work package.
- Feedback from MMPR meetings can be discussed for applicability and incorporation into the planning of the work package.
- Understanding the complete package promotes the early development of execution strategies and organizational structure.
- The customers benefit from knowledge of their maintenance providers.
- All members objectively seek the right thing to do for the total project by combining inquiry and advocacy.

3.8.3 Work Package Formation

As these meetings progress, the work package begins to take shape. This allows the project MT members from the various organizations to work with the customers while integrating and developing the total work package. The work package contains work candidates screened from the CSMP, the ICMP, Advance Planning Letters (APL), and modernization Letters of Authorization (LOA) from the SPM and TYCOM.

3.8.4 Monthly Planning Meetings

During work package development, the monthly planning meeting participants discuss progress on action items incorporating new strategies and lessons learned into the plan. The PM normally will chair these meetings. Participants at these meetings should include: core MT, NAVSEA (PMS 400F and PMS 470), PMR, AIT Manager, appropriate NAVSEA planning yard, MSMO shipyard technical codes, and appropriate design agents. A detailed agenda will be developed by the core MT and will be issued by the PM.

Recommended agenda items for the advance planning meetings include the following:

- Describe the planning strategy.
- High level key event schedule and discussion of critical path(s).
- Review of major work items (open items, risk issues, items of significance to participants).
- SCD and/or AIT planning status (including detailed technical discussion of technical issues and open items as needed).
- Windows of opportunity for ship check to support SID development.
- Progress in meeting planning milestones.
- Training strategies for the availability.
- Identification of S/F workload and management strategy.
- Availability process improvement.
- LLTM requirements.
- MMPR feedback candidates.
- Integrated test plan, test procedure requirements.
- Funding status - required and available.
- Discussion of contractor requirements.
- Pre-fab candidates and status.
- AIT installs and support required.
- Status of assessments and requested additional technical support.
- Early start work candidates.
- Docking and pier berthing requirements, temporary services.
- Habitability issues such as crew move, stores, Quality of Life (QOL), etc.
- S/F support issues such as parking, berthing, messing, T1 connectivity, chill water, radio, etc.

- Required S/F training: tag-out procedures, Work Authorization Forms (WAFs), site specific issues, etc.
- Ship operational status upon arrival: dead stick, boiler lay-up, fuel levels, weapons, hazardous materials, etc.
- Anticipated growth and new work acceptance.
- Lay-down requirements.
- Existing special paint systems such as sigma edge guard in tanks or well deck.
- Low Solar Absorbent (LSA) on freeboard or any other coatings that are not in accordance with as-built drawings or documented via Ship Alts.
- Project team core list for distribution list.
- Store room access and industrial impact.

The results of the monthly meeting will provide information that will be used to compose the quarterly/monthly ship availability advance planning report. The message composition should follow the guidance provided in NAVSEAINST 4710.8 (series). The NMD-produced availability Status Report (ASR) can be used to provide the needed information review of the planning milestones and their respective red, yellow, green dates shall provide guidance to the planning activity on determining overall and individual status of the planning effort. It shall be up to the planning activity to determine overall status and is not necessarily reflective of any individual milestone status.

3.9 NMD

3.9.1 Planning Milestones

At A-360, the planning milestones require that CNO availabilities be established in NMD. Availabilities may be established in advance of this date if needed to support building and planning the work package. This is frequently required to support the identification and ordering of LLTM.

For those MSMO contracts that provide for MSMO contractor execution planning to include specification preparation, the PM must establish the availability in NMD and task the MSMO contractor to begin availability planning actions. The NMD Desk Guide provides the details of the actions the MSMO contractor is to accomplish and will help the PM follow the MSMO contractor as the availability is planned. In conjunction with the MSMO advance planning manager, the PM must ensure the following information is properly entered into NMD during set-up:

- **Milestones:** The PM is responsible for the formal establishment of planning milestones in NMD. The PM should work with the other members of the MT, including the MSMO contractor representative, to finalize the availability planning scheduled milestones.

- **SCD Information:** The hull modernization plan is issued by SEA21 annually in the April-May timeframe to support the MMBP development (includes all hulls). The LOA is issued per ship at A-360. The list of authorized S/As should be made available to all MT members and should be used to enter the required information in NMD. Interim information can be found in NDE-NM.

3.9.2 Planning Metrics

Planning metrics are designed to identify delays in the planning process that might jeopardize the definitization of the MSMO contract or award of the firm fixed price contract. Definitions for the planning metrics are found in the JFMM Volume VI, Chapter 31, Appendix A. The PM or another RMC code in conjunction with the PM will normally produce the RMC stoplight reports. These are used to summarize planning performance metrics and are briefed to the RMC commander and the MCIT.

3.10 AVAILABILITY PLANNING MILESTONES FROM A-330 TO A-120

All Milestone dates in this section are the Entitled process Dates, which can be accelerated to support more complex availabilities and regional needs.

3.10.1 (A-330) Task/Fund SID Development

Consistent with the communications plan and the advance planning meeting discussions, liaison with the proper TYCOM and SYSCOM sponsors of alterations will ensure that this milestone is not missed. Slippages in this area will produce a cascading delay effect on the alteration planning process that will hurt execution quality and add premium cost.

3.10.2 (A-270) Ship Checks Completed

Consistent with the communications plan and the advance planning meeting discussions, the PM must appraise the planning yard of opportunities to complete ship checks supporting alteration development.

3.10.3 (A-270) Screening of ICMP

All ICMP tasks that are to be executed during the availability should already be screened by A-270. The PE is responsible for routine review of the ICMP tasks and scheduling completion of tasks prior to their deadline date. Review of the ICMP at this point is designed to provide time to schedule any pre-availability assessments that may be required to fully define the work package and to ensure timely screening of the required shipyard availability routine items.

3.10.4 (A-270) Provide Incremental Funds for Ordering LLTM for Both Repair and ALT/MOD Work to Meet Required Dates

Ensure that this includes Habitability Work Items such as galley, laundry, berthing, heads and lounges. See JFMM Volume VII, Chapter 6, and Volume VI, Chapter 31. The PM is the fund's manager for funds provided from all sources during the availability, ensuring that funds allocated are used appropriately. The goals of the entitled funding process are to reduce premiums paid for maintenance while at the same time improving the ability to respond to maintenance and operational requirements. Identification and ordering of LLTM supports these goals.

3.10.5 (A-240) 50% of D-Level Maintenance Work Package 2Ks Locked Based on Dollars

This requires that at least 50% of the dollar value of the repair work package has been authorized for planning. This is measured by using the MMBP budget and comparing it to the value of the work authorized for planning using the preliminary estimate from Regional Maintenance Automated Information System (RMAIS). Normally the work locked at this point will be modernization work, mandatory shipyard routines (e.g. docking requirements, support services), and major industrial work that is generally known before A-240. At this point, the EA should have a green light to plan that work, order material, and expend funding in preparation for completing the work. The intent is to avoid large batching of work prior to milestones so work that has been identified and is of high priority should have been authorized for planning well in advance of this date.

3.10.6 (A-180) Issue/Deliver SIDs to NSA for KTRs and AITs

The Planning Yard (PY) is responsible for meeting this milestone which is critical to the success of the planning effort and successful availability execution. Although the PY is responsible the PM should use his PMR representatives to ensure the PY provides the items on time.

3.10.7 (A-180) Request All Modernization Funding

All Modernization Funding should be requested IAW JFFM Vol II, Part 2, Chapter 2, Appendix D.

3.10.8 (A-190 to A-60) Work Package Discussion

This includes all milestones related to writing and reviewing specifications. Keys to success during this period include:

- Proactive work identification and management of the continuous estimating and incremental proposal review process is fundamental to an effective planning effort. This process is built on the concept of planning continuously, estimating, reviewing, and scoping at three intervals to meet the complete Technical Analysis Review (TAR) and definitization milestones. The process centers on the 50%, 80%, and 100% 2-K package lock milestones and the MSMO contractor completion of the planning and estimating of the work assigned at those times. For the process to be effective, the MSMO contractor is tasked to plan and estimate the work assigned at the 50% lock milestone by A-190; the work assigned at the 80% lock milestone by A-95; and the work assigned at the 100% lock milestones by A-60. The goal is to identify and plan the work as early as possible in order to right size the entire package to the ship's budget in meeting the A-35 definitization milestone and to eliminate the churn caused by canceling work candidates prior to or after availability start.
- Verification of availability funds control. As the work package reaches the 80% lock point, the PM/PE should verify the funding for the availability to preclude unnecessary churn prior to the availability start date.

3.10.9 (A-175 to A-120) Modernization Discussion

Alterations that are in jeopardy should be identified and actions assigned via the advance planning meetings. If things are not on track, a risk assessment must be requested so that the alteration sponsor can submit their risk assessment by A-175. Guidance on this subject is found in the FMP-MoM, Section 3-6. The TYCOM is required to approve or disapprove waivers by A-150.

The PM must be proactive to ensure that all AIT support, schedule, and impact requirements are received from the corresponding AIT manager at A-135. This information must be provided to the MSMO KTR to allow for effective integration into the availability schedule prior to the Work Package Execution Review (WPER). By A-120, final locking of the modernization package is required.

3.10.10 IPTD A-120 Event

The A-120 event, notionally 2-3 days, shifts the teams focus in three significant ways: (1) the briefings and discussions of the team shift from a strategic to a tactical view, (2) an expanded participation by the Ship's Force is desired, and (3) MSMO and SBSs are brought into the expanded project team. The WPIC will be conducted during this event.

The process strategies identified by the core team serve as the focus of the presentations with a goal of generating discussions between all the major stakeholders toward a document acceptable for signature. Ship's Force participation allows for the ship's concerns and issues to be shared with the team to create a satisfactory solution for all parties in the project.

The A-120 event will include the following topics, as applicable:

- Identification of availability expectations and success criteria (NSA and SF)
- Verification of team roles and responsibilities
- Acceptance or announcement of the project's Mission and Vision Statements.
- Exercises and activities which promote team integration, team learning and socialization
- SBS introductions
- Review of the project's timeline, key events, milestones, and test events

- Explanation of Environmental Health and Safety priorities and requirements
- Whole-team review of key strategies (preparing them for signature) to include: Communication, PCD, Work Integration, Compartment Close-out/Turnover, Schedule, and Risk Management
- Discussion of S/F Resource management and expectations
- Work Authorization
- WPIC requirements from JFMM
- Risk Management exercise
- Clearly define and document common terms/milestones PCD, Hab Complete, etc
- Spec Review
- Strategy writing session
- ABS assessment intro, plan, status
- TSRA intro, plan, status, scrub results and prioritize/screen
- Avail Execution & Work Certification intro and plan
- Contracting do's and don'ts brief
- Tech Authority brief
- First time alt or mod package brief(s)
- Smart Start candidates and timeline discussion
- Proposed access cuts and temporary services discussion
- CFR/RCC review/analysis from previous or similar avail(s)
- LL brief(s) from previous similar avail
- ILO intro, plan, status
- Develop Ship's Force brief
- Discuss, plan for, and status of upcoming INSURV/CERTs and their impact on avail led by Facilitators

The IPTD A-120 expected participation includes:

- PM
- PE
- CS PE
- SHIPSUP
- SBSs
- Code 200 Rep
- Code 400 Rep
- Code 900 Rep
- SEA21 SMR(s)
- PY Rep
- TYCOM Rep
- SURFMEPP Rep
- MSMO/MSR
- SPAWAR Ship Superintendent
- PHD CS Project Engineer
- SSES Rep
- NAVAIR Rep
- Crane Rep
- Corona Rep
- AITs
- MSR Partners/ Subcontractors
- ISIC Rep
- S/F

3.10.11 (A-120) Work Package Integration Conference (WPIC)

A WPIC is should be held at the A-120 milestone. Its purpose is to review all work that has been authorized for accomplishment during the availability and identify any remaining issues and actions required to be completed prior to availability start. Guidance for conduct of the WPIC is found in JFMM Volume II, Part I, Chapter 4, Appendix F. The WPIC marks the end of the advance planning process and the beginning of the execution planning process. Upon completion of the WPIC, emphasis should shift from what work will be accomplished to how best to execute the work to be accomplished.

- **Pre-WPIC Preparations.** The PM is responsible for scheduling and chairing the meeting and preparation of the WPIC agenda. Attendees will usually include all members of the MT, S/F department heads, MSMO contractor advance planning manager and key members of the MSMO availability execution team, AIT sponsors or their designated representatives, RMC production representative, RMC C-300 class leader, RMC AIT advance planning manager if assigned, and waterfront operations officer or designated representative. A message announcing the date and location should be sent prior to the meeting to ensure full participation by required attendees, someone should be assigned to record the meeting minutes, and a post-WPIC message containing meeting minutes should also be sent.
- Work package integration efforts should include modernization, O, I, and D-level work. Some identification in these areas may still remain depending upon exactly when the WPIC is scheduled. Identification of high-impact S/F repairs (painting, non-skid, etc.) and planned maintenance checks (switchboard cleaning, etc.) must be complete. The PB4M is a good venue to move the ship on this identification effort.
- Significant discussions about execution milestones and key events should have been completed prior to the meeting. These discussions include the MSMO contractor, S/F, and modernization sponsors. There must be firm dates and definitions established so that everyone attending the WPIC leaves with a clear understanding of expectations. This will form the basis for the MSMO integrated work schedule which is the centerpiece of the WPER at A-30.
- MMPR lessons learned should be reviewed to identify items applicable to the availability being planned.

- **WPIC Agenda**. The PM will prepare the WPIC agenda. A general guide for development of an effective WPIC checklist and agenda is available in JFMM Volume II, Part I, Chapter 4. Some suggested topic areas include:
  - Review habitability issues (including crew move)
  - Review critical path and controlling items
  - Identify requirements that the ship must meet prior to availability start
  - Discuss new work, deletions, or major rewrites
  - Review AIT requirements
  - Review AIT interface problems
  - Review potential I-level and S/F interface problems
  - Review early start requirements
  - Identify any work items in jeopardy
  - Define work that must be started by a certain date (other than option items)
  - Define work that must be accomplished by Production Completion Date (PCD)
  - Review testing requirements
  - Review option items and invoke NLT dates
  - Review list of pro-rated work items
  - Review availability duration requirements
  - Define LOA requirements and expectations
  - Review remaining advance planning and contracting milestones
  - Review status of outstanding customer funding

  - Review unresolved specification review requirements
  - Conduct MMPR lessons learned review
  - PICO requirements
  - Pre-availability testing and paint-sampling
- **Post-WPIC Follow-Up**. Upon completion of the WPIC, the PM is responsible to draft the post-WPIC summary message summarizing the results of the WPIC and highlighting any areas of concern.

3.10.12 (A-90) Award of AIT Contracts

AIT Contracts should be awarded to non-MSMO AIT's no later than A-90.

3.10.13 (A-75) 100% Lock

In accordance with the JFMM and port milestones, lock work package is based upon estimated cost of package. From this point forward, other work would have to be rescheduled or added as new work during execution to accommodate the additional work required to be accomplished during this time period. A Business Case Analysis (BCA) would be required to justify this decision.

4.0 TRANSITION FROM PLANNING TO EXECUTION

The intent of this section of the Project Team Handbook is to capture the events and steps that may lead to a successful transition from a pure planning phase of a ship availability to the execution phase. Items in this section are intended as guidelines and good ideas based on past project team experience, and therefore should not be considered as verbatim compliance steps. More detailed information on the various tasks can be found in the Fleet Desk Guide.

4.1 (A-50) TAR

Complete TAR process for work package definitization. Ensure this process is started early to support adequate reviews.

4.2 (A-45) MODERNIZATION/AIT FUNDING

AIT funding should be settled by A-45. Therefore, negotiations should take place much earlier than this milestone. The PM should formally (via e-mail) request funding required to definitize the work package.

4.3 (A-45) MODERNIZATION/AIT SUPPORT SERVICES

Support services funding should be in place by this date.

4.4 (A-35) DEFINITIZE THE WORK PACKAGE

The Contracting Officer should formally agree to cost estimate of work package authorized for execution at this point (issue and sign the supplemental agreement for the availability).

4.5 IPTD A-45 / A-30 EVENT

The A-45/A-30 is a 2-3 day event and is the major team integration step just prior to the start of the availability. Modernization/mid-life availabilities will meet at the A-45 milestone date; all standard availabilities will meet at A-30. The WPER will be conducted in conjunction with this meeting. The purpose of this event is to give to ensure the team has the information they each need to successfully guide their work groups through the project. Information about team leadership and structure, roles and communication, work package, and strategies developed through IPTDs are presented to the team by Core Project Team leaders. It is important to remember that many, if not most, of the Ship's Force Supervisors are new to naval maintenance, so care must be taken to communicate clearly at an appropriate level of understanding throughout the IPTD event.

The A-45/A-30 event will include

- Presentation and reinforcement of the project's workforce identity as one integrated project team
- Introduction of the Core Project Team leadership and team structure
- Clear definition of Supervisor roles and responsibilities. Review of the project's key events, milestones and major work issues in the schedule.
- Summary of key strategies and the deckplate-level support required
    - Must have reviews for the whole team: Safety, Communication, Cleanliness, Habitability, Recognition & Awards, Co-location, Temporary Services
- Review of the Smart Start or 100-Hour Plan
- Distribution of supporting documents such as rosters, schedules, maps, etc.
- WPER requirements from JFMM
- Risk Management exercise
- Assessment status
- Exercises and activities which promote team integration, team learning and socialization
- ABS assessment plan

- TSRA plan, status, scrub results and prioritize/screen
- Avail Execution & Work Certification plan
- Access cuts and temporary services plan
- Smart Start Candidates, Plan and Timeline
- Draft System Restoration Plan and Test Schedule
- Review execution processes, CFR/RCC, WAF, Tagouts, etc
- Contracting do's and dont's brief
- Tech Authority brief
- LL brief(s)
- ILO plan,
- Discuss, plan for, and status of upcoming INSURV/CERTs and their impact on the availability

The IPTD A-45/A-30 Event participation includes:

- PM
- PE
- CS PE
- SHIPSUP
- SBSs
- Code 200 Rep
- Code 400 Rep
- Code 900 Rep
- SEA21 SMR(s)
- PY Rep
- TYCOM Rep
- SURFMEPP Rep
- MSMO/MSR
- SPAWAR Ship Superintendent
- PHD CS Project Engineer
- SSES Rep
- NAVAIR Rep
- Crane Rep
- Corona Rep
- AITs
- MSR Partners/ Subcontractors
- ISIC Rep
- S/F

4.5.1 Project Management Processes

All new members of the team not previously briefed need to understand the project management processes and practices that this project is using. Do not assume that S/F will have the most accurate and up-to-date information on how the NSA is managing projects.

4.5.2 Orientation

As team members arrive, each should be given an orientation and introduction to the team.

4.5.3 Performing Goals for the Project

Specifically address what is defined as success for the project. This can be done during the orientation, but do not neglect to address this specifically. Make sure that all members of the team agree to the performance goals and how they relate to the Vision and Values Statement. If the team has a shared understanding of the definition of success for this project, beyond meeting cost, quality and schedule, then the team can truly perform at a high level.

4.5.4 Team Development and Maintenance Activities

For the team to function at a high level of performance, continuing team development and maintenance activities should be an integral, shared, ongoing, and scheduled part of the project availability.

4.5.4.1 Continued Development and Social Maintenance of the Execution Project Team

Execution project teams are business-oriented and must work well together to maximize efficiency during availability planning and execution. Equal emphasis should be placed on the team's social development outside of business to nurture the rapport established in the work place. Friendship combined with partnership is beneficial to the project, promoting unity and teamwork throughout the availability process. S/F representatives who are part of the execution project team potentially remain part of the execution project team for future availability planning. The execution project team's established rapport carries through the ship's availability process and becomes a continuous part of the ship's life cycle maintenance.

4.5.4.2 Team Building Session

The PM and/or availability manager should ensure all new S/F team members are briefed. No later than A-30, the execution project team should host a team building session with managers from all organizations associated with the project. If a ship has just returned from deployment, this training can be conducted following the stand down, but prior to availability start. A trained facilitator normally leads this session away from the project site. It must be evident to all organizations that the CO fully supports the team approach. Various options for this training should be discussed with the CO to finalize the program that best fits. It can be an informal setting wherein all major players involved in the availability are introduced and given an opportunity to socialize, where roles and responsibilities for the team members are reiterated, and work package issues and associated risk assessments are discussed. The session should be kept brief, usually a half day, to encourage S/F participation.

The RMC Project Officer and Prime Contractor should ensure new contractor representatives are briefed. Trust is vital to the team's success and openness should be the norm. How team members will deal with each other should be covered so all members feel they are equally important. The NSA has the responsibility to make this happen.

The following items are the events for the integrated execution project team:

- **Orientation.** As team members arrive or change, each should be given an introduction to the team, how it operates, its vision, etc. The orientation should be conducted by someone highly knowledgeable with the skills to create initial excitement. Many projects have limited the time frame of this orientation to approximately two hours since many of these specifics are covered in more detail in later training sessions.
- High-level agenda for the orientation should include the following topics:
  - Welcome aboard
  - Project management - how to do business
  - Why project management
  - Goals

- Customer focus
- Organizational structure
- Quality plan
- Financial plan
- Schedule plan
- Intensity of the work package in man-days on the deck plates
- Communication plan
- Integrated AIT contractors, S/F, shipyard plan
- New work management plan
- Resources plan
- Overtime plan
- Lessons learned

4.6 PROJECT INTEGRATION

The Contractor should provide a proposed integrated work schedule. The complexities of work integration and coordination must be resolved during planning by the core MT. Incorporating the input of all individuals and organizations that make up the team into a single work integration plan increases the likelihood the project approach will be effective overall. Written project strategies are an effective means to define a common approach within the execution project team and can be useful for exporting lessons learned later to the execution project team as a part of the continuous improvement process. Recommendations for project integration strategies are identified here.

4.6.1 Critical Path, Milestone, and Key Event Schedule

Develop a critical path, milestone, and key event schedule. An overall timeline for key events, ship checks, work item development and work integration must be established early in the planning process. This timeline should also include key financial events, contractor proposal(s), and the fixed price offer if applicable. This will ensure that all authorized work is integrated into an overall schedule.

4.6.2 Identify the Work or Testing that Requires an Execution Strategy

The execution project team members will determine which work or testing requires an execution strategy. Not all work or testing requires the effort and expense, but each item should be reviewed to make this determination. The execution project team meets to review the list of work or testing items requiring strategy development. Each team member discusses the logic of why specific work/testing/process does or does not require a strategy. At the end of the meeting, each organization will have the information necessary to develop its own execution strategies and will understand the work of others requiring this effort. A formal strategy is usually required when the work or testing falls into one of the following categories. *Note: The below items are not all-inclusive, but have the potential to impact successful project completion and warrant execution strategies.*

- The work or testing is in the critical path for the project.
- The work or testing has the potential to have major impact on other organizations' ability to execute their work.
- The work may be impacted by limited resources.
- It may involve major alterations or repairs.
- Highly occupied work areas (even though each work item in a space or area may not be large, the number of work items can be.)
- Industrial work that requires S/F support.
- Proposed execution schedule.
- Number of shifts planned.
- Support services required to accomplish work for both maintenance and modernization.

- Specific steps involved in work accomplishment.
- Spaces affected during execution including space de-confliction and closeout.
- Third Party Indemnity requirements.
- OSR.
- Equipment Access Control.

4.6.3 Development of Execution Strategies

The development of a formal strategy for a controlling/critical work item, test, or process requires specific attributes to be addressed that will differ among strategies. Strategies should be prepared by the corresponding managers responsible for execution. The strategies will be reviewed by the project team for total work package integration. All strategies should include the following attributes:

- Responsibility
- References
- Enclosures
- Introduction
- Discussion
- Schedule of Events (SOE)
- Additional Comments
- Performance Reporting
- Concurrence Signatures
- Enclosures

4.6.3.1 Boiler Plate Strategies

The following strategies are the boiler plate strategies that all availabilities should have. These are available as enclosures in this document as well as online at the ST1 Portal website.

- Risk Assessment / Management Strategy
- Work Integration Strategy
- Schedule / POA&M Strategy
- Communication Strategy
- PCD Strategy

4.6.3.2 Execution Suggested Strategies

The following strategies are examples of work and processes that fall into the above categories and should have execution strategies:

- Early start / Smart start
- Tag-outs
- Pre-fab and staging of material
- Firemain work
- Service steam work
- Main propulsion
- Boiler work (SAI/CAI)
- Hull preservation
- Crew's move aboard, work affecting crew QOL and shipboard habitability
- Equipment Lay-up for Extended availabilities/ Equipment Restarts
- Certifications that may affect schedule
- Temporary services
- Piping inspections for corrosion
- AIT and contractor integration

- Hangar bay and flight deck non-skid
- Work affecting availability of weapons elevators (ACE/CWE)
- Work occurring during the post deployment stand-down
- Tank entry and closure
- LLTM
- Base lining Existing Condition of Equipment
- S/F Work Integration
- Success During Certification:
  - AEGIS Light-Off (ALO)
  - Light Off Assessment (LOA)
  - Aviation Certification
  - Well Deck Certification
  - AEGIS/Fire Control System
  - Gage Calibration

4.7 PROJECT TEAM SHIP VISITS/SHIPYARD VISITS

Ship visits have in one way or another been a part of "good planning" associated with the preparation and execution of an availability. Answering the question of when to visit the ship and who takes part in these visits varies due to the type of ship, schedule of the ship, complexity of the availability and of course the dollars available to fund such travel among other constraints. It also varies based on the policies and perspectives of the respective regions in how they approach this part of the planning process.

Key members of the MT/execution project team should consider a ship visit in advance of the ship starting the availability. Normally, the ship is on their deployment, so a visit is something that requires a good deal of discussion and planning to make the visit as productive as possible. It is not the objective of this handbook to define the timing of this visit, only to outline that some MT/execution project teams tend to visit earlier in the schedule than others.

A visit may be conducted as early as A-220 or may be done just a few weeks prior to the start of the availability. Additionally, there is no clear right or wrong number of visits to the ship. Some MT/execution project teams may find it necessary and important to conduct a phased approach whereby the planning phase requires critical information that necessitates a ship visit. Many MT/execution project teams find the best time to visit this ship is when the ship has completed a good portion of their deployment and are headed back and have the time, focus and capacity to deal with the upcoming availability. The success of the ship visit is ultimately determined by the experienced coordination between the PE and the ship. Typical participants are the PE, PM, contractor PM, planners, and design personnel. During this visit, the project team can reestablish or build new relationships with the ship's personnel. The completed work specification package should be discussed with S/F. New work discovered during the deployment and what the ship can expect to have accomplished should also be discussed (as needed).

Also, if the availability is to be conducted off station, a visit to the shipyard is highly recommended. The ability for S/F to walk the site and develop concrete expectations of their environment will aid in the transition into execution. Typical participants are the CO, Executive Officer (XO), SMMO, SUPPO, Security Officer, and COMMO.

4.8 (A-30) CREW MOVE

In some cases, production work will require the crew to move to a berthing barge; in this case, added emphasis should be provided in keeping the sailors in their work spaces when possible.

4.9 (A-30) CONDUCT WPER

A WPER is conducted for all availabilities by the Lead Maintenance Activity (LMA). All organizations that plan to accomplish work during the scheduled availability should be represented at the WPER. The purpose of the meeting is to review the integrated work production schedule that has been prepared by the EA. This is the final opportunity to resolve any work interface or production support issues between the different activities before actual production work begins. The PM or PE will coordinate the meeting arrangements and attendees. See JFMM, Volume II, Part I, Chapter 4 for specific details and template.

The following specific actions should occur:

- Finalization of technical work documents/work specifications
- Finalizing and issuing project strategies (incorporating ship's input)
- Staging of equipment and material
- Final negotiations of private sector contracts
- Finalize Early Start/Fast Start Plan (work items, services, S/F support, etc.)
- S/F processing of initial WAFs for early start work
- S/F finalize post deployment stand-down schedule, if applicable.
- S/F standing up of availability organization (Work Control, Work Integration, etc.)
- Continuation of S/F training for availability preparation.
- Finalize and issue the integrated arrival plan required to support arrival conditions and availability start.

4.10 (A-30 TO A-0) WPER TO AVAILABILITY START

Between WPER and the availability start, the remaining execution project team members will be identified and brought in as active members of the team. The project strategies and work plans are disseminated and reviewed by those who will be involved with the availability execution. It is important to begin this process before these team members reach the shipyard, Depot Maintenance Facility (DMF), or homeport, since they will immediately be performing their roles upon arrival.

4.11 TOTAL SHIP INTEGRATED TEST PLAN

The time to address the need for a Total Ship Test Plan (TSTP) is during this transition phase. As the clarity of the work package increases, a draft Plan should be developed. This TSTP is of course, highly dependent on the level and complexity of the Availability Work Package, and therefore will require due consideration as to the level of effort needed to build it. It should encompass and stem from the entire ship ranging from CS, C5I to HM&E equipment/systems requirements. This effort stems from the NAVSEA Standard Work Specification 009-67.

4.12 PRESENT THE WORK INTEGRATION PLAN

Following work integration plan completion, the Execution Activity Team briefs the NSA and S/F management. These briefings serve to provide a thorough understanding of the total execution plan. Regularly scheduled meetings are conducted during the availability to address progress and problem areas that impact work integration and work execution.

4.13 PREPARING S/F FOR THE AVAILABILITY

S/F personnel are primarily war fighters and operators of their ships. They are not generally experts in shipyard maintenance. Still, they have a significant role in the success of the availability. It is critical that the project team provide appropriate training to put the ship at ease as they enter into a very different operating environment. In order for the most cooperative and effective coordination with S/F, early coordination is best, as early as 6 months prior to start. However, final coordination training should be

conducted at A-30 days and no later than A-14 days to ensure that the project team is prepared for the upcoming maintenance period.

One method is to conduct a leadership review (key project team members, CO, XO, Dept Heads, SMMO, 3MC, and other key S/F members) that covers a POA&M with the ship that highlights the following key topics:

- Establishment of the Maintenance Information Center (MIC)
- Equipment and Systems Lay-up Requirements and PMS Expectations
- Basic Availability Logistics
- Crew Move Ashore Plans
- Equipment Start up Expectations
- Production Complete Date Expectations
- Cleanliness Plan
- Dock Trails/Fast Cruise/Sea Trials Planning
- Safety
- Key personnel awareness briefings (Availability 101)

4.13.1 Establishment of the Maintenance Information Center (MIC)

The Maintenance Information Center provides an access point for the contractor and government team to access deck plate assistance for WAF tag-outs, QA Checkpoint assistance, Operational Testing support, and other day to day maintenance concerns. Issues that should be covered include:

- WAF tag-out Expectations (Details to follow in 1.14.1)
- Quality Assurance S/F Quality Assurance Support: The RMC QA organization should offer QA training for S/F personnel.
- Expected manning requirements
- S/F Work Schedule
- Testing Support requirements
- Cleanliness requirements (FME).

4.13.1.1 Tag-Out and WAF Proven Practice Development

4.13.1.1.1 Description

The robust requirements associated with the WAF tag-out process can be overwhelming for surface ships due to the initial volume and unfamiliarity with this relatively new process. The MMPR process has highlighted delay and disruption encountered at the onset of CNO availabilities. WAF tag-out teams, comprised of S/F and contractors, do not have adequate time, the proper training or the organizational structure needed to ensure all required tags are hung prior to work commencement. Delay and disruption at the onset often translates to extended availabilities, impacting operational readiness and resulting in increased costs. This proven practice serves as a recommendation to help ensure an efficient WAF tag-out process. Note that local standards should be reviewed in conjunction with the development of a WAF tag-out plan.

4.13.1.1.2 Roles and Responsibilities

Communication is still the key to ensuring a successful availability. Knowing who and where to go to initiate/clear WAF tag-out is paramount to better executing these programs. S/F, the MSMO contractor, and the RMC project team should have a clear understanding and agreement of who the key players are and their respective responsibilities in the WAF tag-out process. The list of key players and their responsibilities should then be communicated to all involved from the supervisors on down to the deck plates prior to the start of and during the availability at meetings.

- S/F Coordinator: Designate (primary and alternate) single S/F WAF coordinator. Designate sub-coordinators for engineering and CS (technical authority for respective systems).
  - Designate and assign an agreed upon number of S/F personnel who will act as the core unit of the WAF tag-out execution group. Recommend utilizing engineering duty officers and duty CS watch standers to cover nights and weekends.
- Contractor coordinator: Designate single contractor WAF coordinator.
- AIT sponsor coordinator: Designate single AIT sponsor WAF coordinator to consolidate AIT requirements and provide to the contractor WAF coordinator. AIT sponsor coordinator should also provide all WAFs to WAF coordinator in preparation for availability start by approximately A-14.
- Designate and publicize contact information for the AIT's single point of contact for the overall project team (including name, location, and mobile/phone number).

4.13.1.1.3 Single Central Location

The designation of a single space for integrating availability management, including the WAF tag-out logs, has proven to be a successful strategy. The size of the ship in availability and the CO's direction should, of course, be taken into consideration. Following listed locations as per respective RMC's are examples of designated central location.

4.13.1.1.4 Common Logs and Binders

Common logs and binders have been used to administer a successful WAF tag-out process. Maintaining similar documents and tools allows for continuity between WAF coordinators and common approaches for organization.

- Contractor binder contains the originals.
- Ship binder contains copies.
- Strongly encourage electronic logs (allows for parsing by department, division or system).

4.13.1.1.5 Training

Effectiveness and efficiency of the project team's management of the WAF tag-out process has proven to stem, in part, from the quality of pre-availability training. The MSMO contractor or the RMC should provide training on WAF tag-out process and procedures that are to be used in accordance with the JFMM by all members of the project team.

Conduct training as soon as practicable (A-30), and NLT A-14 days. More complex availabilities may want to conduct training at the A-120 timeframe. Also note that there is a Norfolk Naval Shipyard Guide that has been used successfully to achieve the intent of this training.

- Include the AIT Government Representative and individual AITs.
- Include all S/F involved with WAF tag-out program.

4.13.1.1.6 Logistics

The contractor should order enough tags to support the increased requirements associated with the WAF process.

4.13.1.1.7 Concluding Comments on WAF Tag-Out

A common theme in past successful availabilities has been due to early planning efforts. We have found that early identification of work and pre-staging of WAFs and tag-outs prior to start of the availability have contributed to a quick start and final success. Finally, use of this Proven Practice is not mandatory. It is offered as a recommendation for use in the future based on its success in the past. It is not a guarantee of success. Feedback on the results of its use is both desired and encouraged.

4.13.1.2 S/F involvement in Checkpoints

By training a group of S/F's personnel in the basic QA procedures, the project team gains an invested, knowledgeable liaison between the general population of S/F and the MT. This cadre of inspectors is aware of the contract requirements to which the contractor is performing. This augmentation of the RMC's QA team increases the team's effectiveness. The greater the involvement by the S/F during the work, the easier it is for S/F to regain their sense of ownership at the end of the availability.

4.13.2 Equipment/System Lay-Up Requirements and PMS Expectations

Another topic that should be covered in the basic familiarization of S/F is equipment/system lay-up requirements and PMS expectations. While the length of availability and corresponding PMS will dictate what type of layup will be required in each system, the time for the crew to be able to accomplish this PMS in conjunction with the work commencement may not be available. For example, if the ship is to return from deployment, enter a POM period, and then transit to be put into dock, the crew availability may not support intensive lay-up maintenance. Therefore, it is advisable as early as possible (prior to definitization of the contract if possible) to identify any lay-up requirements that do not meet the contract timeline. These maintenance activities should be written into the contract specifications.

However, it is advisable during this preparation phase to validate that all equipment lay-up plans are addressed. Key systems examples include coolers, fire main, chill water, and Air Conditioning units.

Plans for any PMS that is due during the availability needs to be addressed at this time.

4.13.3 Equipment/Start Up Requirements

As with any lay-up maintenance, corresponding start-up maintenance will need to be considered.

4.13.4 Basic Availability Logistics

A review of basic mooring positions, tug coordination, and general housekeeping assists the ship in the transition into a maintenance environment.

4.13.5 Crew Move Ashore Requirements

It should be clear to the project team what the expectations are for the crew with regards to Crew Move Ashore. It is critical to not make assumptions as part of this effort. The crew should discuss their comprehensive plan for storage of repair locker equipment, berthing gear, and other pilferable items.

4.13.6 PCD Expectations

All work involving Main Spaces is complete and space will be turned over to S/F.

4.13.7 Cleanliness Plan

Develop a strategy to maintain a high degree of cleanliness in order to promote excellent work and quick restoration at the completion of the availability. The strategy should include:

- Installing activity requirements
- S/F involvement

4.13.8 Dock Trials/Fast Cruise/Sea Trials Planning

Using the philosophy of beginning with the end in mind, the team needs to understand what the basis is for the development of the end of availability activities are.

- **Dock Trials.** JFFM Volume 2, Part I, Chapter 3, Appendix I describes the minimum dock trials requirements for surface ships.
- **Fast Cruise.** JFFM Volume 2, Part I, Chapter 3, Appendix J describes the minimum fast cruise requirements for surface ships.
- **Sea Trials.** JFFM Volume 2, Part I, Chapter 3, Appendix K describes the minimum sea trials requirements for surface ships.

4.13.9 Safety

The ship will be entering into an unfamiliar environment.

4.13.9.1 Fire Department Integration

It is a good practice to coordinate with the local fire department and check any assumptions the project team may have about inherent capability of the response team. Suggestions include setting up a walk-through of the project and a communication of the major work items and risks that the responders would incur if responding to a 911 call. If time allows, further coordinating of an actual drill that integrates ships force and the local fire department can reap great benefits if an emergency should arise.

4.13.9.2 Environmental Issues

Environmental issues are tied to specific facilities. Therefore, the rules that S/F may be used to operating under with regards to painting may change when they enter into a contractor's facility. It is critical that the rules associated with the various sites be briefed and understood. Furthermore, the jobs during maintenance availability may involve more serious environmental hazards. S/F should be made aware of the change of operating procedures.

4.13.10 Key Personnel Awareness Briefings

In order for S/F to be effective partners in the execution of shipyard availabilities, key ship's personnel should be made familiar with practices and processes unique to this environment. In addition to the definitions, the timelines for these processes to be employed should be explained so that everyone is working from a common set of expectations. Some suggested briefing topics should include:

- Condition Found Reports
- Requirements for Contract Change
- Scope Control
- Cost Control
- Delay and Disruption
- Constructive Changes
- Integrated Schedules
- Contractual Documents
- Control of systems and spaces (Hand offs)
- Testing support requirements
- Cleanliness

4.13.11 S/F Related Lessons Learned and Best Practices

For each availability, a portion of the crew will have not experienced a significant maintenance period on board. Regardless if a member of S/F has already been through an availability, it will be different this time due to the change in team members or position they hold during the maintenance period. Therefore, it is advisable that the project team ensures that the team members glean from the best practices of other ships.

Also, the ship should utilize other tools that are available. Maintenance University provides S/F training for those entering into an availability.

4.14 (A-0) ARRIVAL CONFERENCE

Within a week of the availability start, an arrival conference should be held to discuss security, access, contractual authority, in-plant rules, safety, cleanliness, etc. The arrival conference is conducted by the NSA/industrial activity and attended by the CO, XO, heads of department and their principal assistants, key shipboard personnel and a TYCOM representative. Based on the planning meetings, training, and other familiarization efforts, the arrival conference should present very little new information. The conference agenda should include information on the following topics, as applicable:

- Resolve problems not completed at the WPER/WPIC.
- 100 hour plan expectations. This is an explanation to S/F as to what they can expect to happen within the first 100 hours of the availability i.e., which jobs will be starting, conditions of the plant, services installed.
- A discussion of work scheduling and production planning requiring close cooperation between S/F and industrial activity personnel.
- Changes to dates for Key Events such as dry-docking, Dock Trials, Fast Cruise, and Sea Trials shall be made known and agreed upon at this time.
- Resolution of any problems regarding work to be undertaken or material or scheduling problems.

5.0 EXECUTION

The objective of this section is to outline, document, and communicate the essential aspects of a Project Execution Plan. It should be understood that not all ship availabilities are the same in terms of scope, duration, or complexity. Therefore the key elements and recommendations outlined in this section are done so with the understanding that they would be utilized as appropriate to the specific type of availability. The breakdown and description of availability type is that which was outlined in the introduction of this handbook (see Section 1.0).

5.1 DEVELOPING YOUR TEAM

All team members and any replacements must have knowledge of relevant systems and Areas of Responsibility (AORs) key to the project. Screen team members for their availability through the duration of the overhaul prior to their assignment.

5.1.1 Clarify and Reinforce Expectations

The expectations established by the team portray the ground rules, goals and direction for the availability. Periodic review of these established expectations is essential to a functional execution project team.

5.1.2 Integrated Execution Project Team "Team Building" Activities

Whenever possible, the execution project team should delegate time to social activities. Involving the team members in activities outside the workplace is vital to establishing rapport between S/F, shipyard civilian employees, TYCOM and contractors. Social interaction among team members facilitates establishment of trust and friendship, subsequently promoting effective working relationships. Any positive event for the team can be a cause for a celebration, building enthusiasm and teamwork. Celebrations may also be appropriate when the team seems to be losing enthusiasm or is having difficulty meeting its goals. Past teams have held arrival parties, mid-way and completion parties, and other special events that take advantage of local attractions. Family members are often included in these events.

5.1.3 Transitioning People through the Integrated Execution Project Team

Even with screening, the departure of knowledgeable managers (S/F, Area Managers, PMs, etc.) during the availability may be unavoidable. It is essential that a transition or turnover plan is in place that minimizes the impact of their leaving and they must devote adequate time for information turnover to their replacement.

5.1.4 Integrated Execution Project Team Performance Feedback

Feedback regarding the integrated execution project team performance is essential. Review of how the project is doing regarding cost, schedule, and quality, including an assessment of what is working and what is not, is needed on a regular basis. Performance feedback should include organizations and management outside the execution project team to ensure the team is not operating in a vacuum. Constructive feedback helps establish the standard the project utilizes to succeed, and these standards should be aligned to support continuous process improvement.

Rewards and recognition of those who consistently perform in accordance with the execution project team goals can be an effective means of enhancing performance. Numerous opportunities arise during an availability for team recognition whether the ship is in or out of the execution window. Recognition opportunities do not have to be limited to project team members. A method of recognition that could be implemented by a project team during an availability is the "Shipyard Worker Of The Week" award. This award could be designed specifically to recognize outstanding performance by shipyard personnel and

presented weekly to a nominated shipyard worker as a token of appreciation from the ship. The ship's CO could personally make the presentation. The award might be a wooden plaque depicting the combined ship and shipyard logo. An award of this nature can further promote compliance with established standards, and a sense of ownership regarding the availability.

5.2 EXECUTION PROJECT PLAN

A significant contributor to a ship's availability success lies in achieving continuity of availability management through a dedicated, integrated execution project team. The following topics suggest how to achieve and retain an integrated execution project team:

5.2.1 Development of the Work Schedule

Desired start dates are solicited by scheduling personnel and every effort is made to accommodate each work group's start requests, provided those dates can be supported in the integrated work schedule. For example, it might not be a good time to start flight deck resurfacing early in the overhaul. If the schedule does not support the work group's requested work start dates, alternate dates are negotiated. The NSA retains the final authority in the resolution of scheduling conflicts. Maintenance of the integrated schedule by all organizations is necessary for the integrated team to function during execution. An accurate integrated schedule provides the necessary information to assist organizations to make informed decisions**.**

5.2.2 Maintaining the Work Schedule

The work schedule serves as the event planner for the availability, and includes any work that may potentially impact the schedule. This includes S/F, shipyard, contractor, and AIT work. Contractors and AITs provide vital information to scheduling personnel regarding duration, man-hours, and number of personnel on the job. Although contractors and AITs may not be funded nor desire supporting work schedule data input, these work groups are required to meet NSA scheduling requirements.

5.2.3 Integration of New Work Received or Discovered During the Availability

New work identified for accomplishment during the availability must be reviewed and accepted by the NSA. Approval of new work is based on funding availability and on the ability for such work to be added to the schedule without jeopardizing previously scheduled work, a key event, or the scheduled availability completion date. Each time new work is considered for accomplishment during the availability, a work execution plan is formulated. The execution plan addresses details encompassing work requirements (i.e., on-site quality assurance, services support, shipboard requirements such as tag-out procedures and hot-work certification, drawing/planning yard technical support, etc.). The NSA should agree that accepting the new work will not be detrimental to availability accomplishment.

Continuous communication with the PE, NAVSEA, and the ship is necessary to keep the customer informed on the status of new work. The NSA's new work process has many requirements (estimating, funding, scheduling, technical direction, resources, etc.) that may take many days to complete for individual new work items. Communication allows the customer to remain knowledgeable of the status of the new work since immediate action by the NSA to do the work is sometimes expected by the customer.

5.3 KEY EVENTS AND MILESTONES

5.3.1 Key Events

Use key events to clearly mark the path from availability start to end of availability. Examples of Key Events include:

- Docking
- Undocking
- Hot Ops
- Dock Trials
- Fast Cruise
- Sea Trials

5.3.2 Milestones

Use milestones to clearly mark the path from availability start to end of availability.

- Review milestones utilized by past projects for inclusion into the project's schedule.
- Identify new milestones based on first time or critical path work identified in the authorized work package.
- Some examples of milestone usage are high level tests and major work evolutions (AC plant install and elevator work.
- System take-down/restoration (JP-5, Collection, Hold, Transfer (CHT), and chill water).
- Equipment availability (propulsion plant/electrical generators, critical pumps, underwater hull/rudders).
- Transition to event readiness: At least six weeks prior to the key event, the project should begin holding event readiness meetings.
  - Due to the fast paced nature of this work, event readiness meetings will be required for multiple key events during the same period of time.
  - An example of this is the steaming/LOA event readiness requirement, which occurs four weeks prior to PCD. These meetings should be orchestrated to obtain and provide the most data possible in the least amount of time. The use of an off-watch PM is suggested for preparing and conducting these meetings.
- Transition from production to operation, testing and training.
  - Provide S/F time to be successful: Meeting the PCD key event is a must if the ship is going to be successful. The ship must have two weeks prior to LOA/steaming to train and prepare for the event.
  - Event readiness/schedule validation
  - Work control management
  - Move to local isolation
- Propulsion plant key event preparation
  - PCD
  - Walk through process (walk through schedule, briefings)
- Propulsion plant key event execution
  - Prerequisites list management
    - Outside Machinery Space (OMS) key event preparation
    - OMS key event execution

5.3.3 Key Event and Milestone Management

It is important for all the execution project team members to have a clear definition of the key events and milestones, and an understanding of what is required to meet them.

- Clearly articulate definitions to all new project team members, support organizations, and oversight organizations. Do not take for granted that everyone has the same understanding and/or expectation of a particular key event.

- Build and utilize a production complete plan. This plan expands the overall project milestones by building and integrating "sub-Process Control Procedure(s)" (PCP(s)) that address the different areas that the project wants to focus on. For example, one of the most sensitive, however not the only, key event is the engineering PCD.
  - The ideal situation is to complete all originally identified work and testing prior to PCD.
  - Reality does not often allow this clear-cut definition to be utilized, as some new work must be completed in order to support S/F preparations for light-off assessment/steaming. Additionally, there is sometimes original work outstanding that does not impede the ships ability to make preparations for light-off assessment/steaming and should not delay completion of the key event.
  - PCD is defined as the point at which the PM and Chief Engineer (CHENG) agree that work and testing are accomplished to the extent required to support S/F preparations for light-off assessment/steaming.
  - An additional expectation for this key event is that space(s) are accessible and can be utilized for their intended purpose/function, i.e. safe operation of the plant(s). This should normally occur at or about two weeks prior to the key event.
  - Other key event or milestone focus areas might be high level tests and major work evolutions (AC plant install and elevator work) are system take-down/restoration (JP-5, CHT, and chill water).
  - Equipment availability (propulsion plant/electrical generators, critical pumps, underwater hull/rudders).

5.4 AIT SUPPORT AND MANAGEMENT

5.4.1 Responsibilities

The NSA may be the overhauling shipyard or RMC, as appropriate. As such, the RMC is responsible for work accomplished by all activities and acts as the single point of contact. These responsibilities include, but are not limited to:

- Provide government oversight of all work performed during an availability.
- Coordinate with other maintenance activities (planning yards, AITs, etc.).
- Coordinate advance planning meetings as well as WPERs to address all work package and scheduling issues prior to avail execution phase.
- Broker all I and D level work to assigned shipyards.
- Coordinate efforts by assigned repair activities for all key events during avail execution phase (docking, undocking, production meetings, etc.).
- Obtain all NAVSEA availability LOAs and establish the CNO avails in NMD.
- Request availability funding for planning and executing repair work and alterations that will be accomplished by the assigned shipyard.
- Review all planned alterations for maturity and completion of Integrated Logistic Support (ILS) requirements.
- Review all planned alterations/SCDs for equipment removal and disposal request by the SPM/PARM.
- Contact AIT sponsors listed in the LOA and obtain all required support service requests and POA&Ms. Provide this information to the assigned shipyard for planning and schedule integration purposes. Request funding from AIT Sponsors for their support requests.
- Collect lessons learned metrics and schedule post-availability MMPR meetings.

5.4.2 AIT Oversight

The NSA is charged with the oversight responsibility of work being accomplished on Navy ships during any type of availability and has overall responsibility for integrating the planning and execution of work

on Naval ships by all involved activities. As such, the execution project team has the following specific responsibilities:

- Control AIT access to ships.
- Ensure that the AIT's intended work is authorized.
- Ensure AIT work is scheduled and integrated into the total work plan for the availability.
- Ensure that all ship systems and locations impacted by AIT work is known and understood.
- Participate in critiques and problem investigations (trouble reports) as necessary.
- Monitor the effectiveness of AIT manager execution of QA oversight responsibilities. The QA manager will verify the effectiveness of the AIT QA plan.
- Coordinate with the AIT manager and S/F to ensure satisfactory completion of alterations.

5.4.3 AIT Production Work Oversight

AITs can be unfamiliar with policies concerning maintenance procedures while the ship is in a shipyard environment. If there are numerous AIT activities involved in the availability, it may be necessary to assign one person to coordinate support and act as liaison with these activities to ensure conflicts are avoided.

The CS manager and AIT coordinator are dedicated electronics engineers or electronics technicians experienced in the various disciplines involved in CS. They will be assigned to the project team. These specialists monitor the contractor's performance of work and testing in the CS work package. The CS representative provides expert advice in the anticipation, identification, and resolution of problems that may occur during the maintenance, repair, and alteration installation phases, as well as during the grooming and complex systems level testing phases. When AITs are assigned, the CS's representative is the primary POC for all technical and coordination issues related to the AIT work.

5.4.4 AIT Memorandum of Agreement (MOA)

The roles and responsibilities of the AIT's may be further refined, if required, in an MOA. MOAs will be written by the AIT manager to clarify the responsibilities of all participants involved in the alteration installation. AIT sponsors are responsible for ensuring that NSA QA support services and funding requirements to accomplish the responsibilities are planned and clearly defined in a written MOA. Some NSAs provide standard MOA templates for use during their availabilities. The NSA should be contacted by the AIT manager prior to writing an alteration-specific MOA to facilitate incorporation of NSA requirements. The NAVSEA Technical Specification 9090-310 (series) is written to provide general guidance to activities involved in the alteration process. The MOA shall be written to provide specific requirements to each activity involved in accomplishing an alteration. The depth of the specific requirements, identified in the MOA, will depend on the complexity of the subject alteration. Participants include but are not limited to the installing activity, NSA, life cycle manager, ship, and support activity. Topics to be addressed in the MOA depend on the complexity and scope of the alteration. The following are sample topics:

- Funding requirements
- Meeting attendance
- Asbestos
- Tag-out, work control, and testing
- QA, testing, and certification
- Schedules
- Clearances
- Hazardous waste
- Safety
- General cleanliness

- In brief/out brief
- Support services
- Violations of safety/hazardous materials
- NAVSEA standard items that are invoked for the installation
- Clearly defined Technical Authority responsibilities consistent with NAVSEA Instructions 5400.97 and 5400.95.Painting and adhesive application permit
- Diesel engine (50hp or greater) registration/permit
- Site-specific EPA HW Generator ID No. if using a MSR or Agreement for Boat Repair (ABR) to dispose of hazardous waste.
- The AIT Customer Contracted Team Coordinator (AIT CCTC) will process MOAs from AIT government sponsors.

5.5 IPTD MID-AVAILABILITY EVENT

The IPTD Mid-Availability Event is a 1-4 hour meeting that takes place in conjunction with the required mid-availability conference. The intention is to bring the integrated project team back together after the execution period has begun.

The IPTD Mid-Availability Event will include:

- Status and Agreement upon Remaining Production Work Schedule & Milestones
- System Restoration Plan
- Compartment Closeout Plan
- Test Schedule/Plan
- Manning Plan
- Cost and Schedule Estimate to Complete
- Lessons Learned Capture
- Outstanding Discrepancy Tracking Plan
- Risks, Concerns and Issues
- Assessment of Growth Work Impact
- Reinforce mission & vision

5.6 WORK COMPLETION CERTIFICATION

The NSA has the responsibility to ensure that all work under their cognizance is authorized and completed in compliance with applicable technical requirements and maintenance policy.

Work completion will be tracked and reported to management on weekly basis.

The authority to certify completion of all work rests with the regional waterfront engineer and technical authority. Ultimately, the work completion certification says that all production work to support a safe sea trial is complete.

The following list provides titles of recently used memoranda and signatories:

- QA pre-sea trial completion (QA manager)
- Work authorization (project officer and PE)
- Work documents issued (project officer and PE)
- All work completion (project officer)
- Depot level work completion (project officer and Shipyard Ship Superintendent (SSS))
- Intermediate level work completion
- S/A AIT work completion (project officer)
- HAB AIT work completion (project officer)

- Testing complete (test manager)
- DFS certification (technical authority)
- Work to support sea trials complete (PE)
- S/F work completion (ship CO)

5.7 MATERIAL MANAGEMENT— ILS MANAGEMENT

The class logisticians, class material managers, and class NSA representatives provide logistics services in support of ships maintenance. The class logistician becomes the single point of contact for configuration and ILS issues for ships supported by the NSA. The role of being the single point of contact is integral in the execution process in order that true accountability can be placed on delivery of products as well as avoidance of duplication of effort. Additional logistical requirements in support of the class logistician will be given to the logistics department senior port logistician for tasking logistic department branch heads for accomplishment. This process is being developed in order to ensure consistency and promote standardization between class logisticians and the development of working business rules between waterfront operations logistics, RMC logistics department, and outside organizations.

General support tasking consists of:

- Provide direct ILS and Continuous Maintenance (CM) support to the core teams.
- Provide class MT with logistic support inside and outside availabilities.
- Provide ships with logistic assistance as required.
- Interface with outside logistic organizations.
- Represent RMC at conferences/meetings which have logistic impacts.

5.8 PERFORMANCE METRICS MANAGEMENT

As a general objective, the measures developed under the entitled process direction are referenced here. More detail can be found on the MCIT metrics web site located on the Surface Team One portal (Appendix B contains instructions to access).

5.9 ENVIRONMENT, SAFETY, AND HEALTH (ESH) MANAGEMENT

5.9.1 Contractual Requirements

Some ESH contractual requirements can be found in NAVSEA Standard Items. Examples of the more common ESH Standard Items:

- 009-03 Toxic and Hazardous Substances; control
- 009-07 Confined Space Entry, Certification, Fire prevention and Housekeeping; accomplish
- 009-24 Isolation, Tagging and Blanking Requirements; accomplish
- 009-40 Requirements for contractor’s Cranes at Naval Facilities; accomplish
- 009-61 Shipboard Use of Fluorocarbons; control
- 009-74 Occupational, Safety and Health Requirements; accomplish
- 009-86 Recovery of Chlorofluorocarbon (CFCs) and Fire Suppressant Halon (H) Materials; accomplish
- 009-88 CHT and Mogas Tanks, Spaces, and Piping, including Sewage or Mogas-Contaminated Tanks, Spaces, and Piping; certify

5.9.2 Responsibilities

NAVSEA Standard Items, 29 CFR 1915, and applicable Navy regulations describe the responsibilities of NSA, S/F, and contractors for Maritime related work ESH compliance. This ESH Strategy is the project’s plan for ensuring the worksite is free of ESH hazards, and ESH compliance is maintained by risk

mitigation practices and proactive actions. Performance of work in a safe manner and a healthy environment are of the utmost importance to the project team. A coordinated and dedicated effort between the Project Team, contractors, and Ships Force will promote this goal.

- The contractor will be required to manage and dispose of hazardous waste generated by it and its subcontractors' efforts.
- All HAZMAT will be procured, recycled, or disposed as HAZWASTE through local HAZMAT/HAZWASTE process.
- Local Navy ESH Office personnel shall be invited to attend the planning and be invited to attend the WPER, pre-arrival, and arrival conferences.
- All hazardous waste transfers will require a PCP and will be conducted in accordance with federal, state, and local requirements.

5.9.3 Lessons Learned/Previous Projects Reviewed

A joint effort by all organizations will help this effort succeed. Other ESH lessons learned are as follows:

- A safe work environment exists only if project team members take ownership of the strategy.
- A daily walk through with S/F, contractors, and Navy personnel will help identify and resolve project deficiencies.
- Fire retardant materials will be used to protect decks, bulkheads, and machinery.
- Combustibles will be removed or adequately protected within 35 feet of hot work.
- Reviewing past paint and asbestos sample data helps establish work controls and arrange for any additional sampling. Note: Suspected Asbestos Containing Material (ACM) is required to be sampled prior to removal and or repair and must be treated as ACM until proven otherwise. Paint is also to be treated as containing heavy metals if it has not been sampled and proven otherwise.
- Reviewing previous project MMPR notes looking for ESH matters.

5.9.4 Areas of Concern

- Ensure that Project personnel understand ESH requirements.
- Ensure that Environmental Best Management Practices (BMPs) are followed.
- Ensure confined space entry and related work compliance.
- Ensure that Project personnel adhere to and enforce fire prevention requirements.
- Ensure proper routing and labeling of leads in accordance with NAVSEA Standard Item 009-07
- Ensure project personnel adhere to and enforce fall protection requirements.
- Ensure personnel understand Electrical safety and appropriate Lockout/tag-out requirements.
- Ensure that personnel wear the proper Personal Protection Equipment (PPE) when walking on piers, vessels, and for all work being performed. PPE (at a minimum) consists of safety glasses with side shields, hard hats, ear plugs, and safety footwear.

5.9.5 ESH Risk Mitigation Strategies

- Project team will ensure that ESH representative's required attendance at various project meetings is appropriately indicated on the meeting schedule.
- Project ESH representative will write a daily ESH brief to personnel.
- Project ESH Manager will provide environmental BMP information to PMs to brief personnel.
- Project personnel will receive confined space entry awareness training prior to working on navy vessels.
- The ship's safety officer and project hot work coordinator will provide fire prevention awareness information to project personnel via the daily meeting.

- Project ESH, Ship's Safety, and contractor's ESH representatives will conduct daily ESH of worksite inspections.
- The record of the ESH worksite inspection shall be maintained using attachment A, which is found in NAVSEA Standard Item 009-07.
- Requirements for marking and running lines and leads through Fire Zone Boundaries are found in NAVSEA Standard Item 009-07, section 3.9

5.10 GROWTH AND NEW WORK MANAGEMENT PLAN

During the execution of a maintenance availability, it is anticipated that deficiencies will be identified that could be accomplished as growth or new work on the existing contract. Growth work is any additional work that is identified after contract award that is related to a work item included in the original work package and is typically technically required. This strategy describes the project team's process for authorizing new work. The project team shall perform a BCA to decide whether or not to add new work to the current availability or schedule it during another maintenance opportunity. New work will be authorized only if the BCA indicates that this is the best course of action, taking into consideration all applicable business and operational risks and factors.

A BCA will be performed for each D-level work item by the MT with the PE as the lead. The project officer, PE, and PM will provide the following input to the BCA (formal or informal as needed):

- Performance metrics impact
- Availability schedule impact
- Future screening opportunities
- Available emergent work funds
- CO's concerns

At a minimum, the following supporting documentation should be included in the BCA:

- CFR, if identified by the contractor
- Status of remaining funds
- Navy estimate for completing new work item
- Correspondence related to acceptance of new work (i.e., e-mails between members of project team, contractor, S/F, or technical authority)

The MT will make the final decision in accordance with business rules and will maintain all documentation related to, and in support of, all business case decisions.

If additional funds are necessary, the project office will request the additional funding.

All BCAs will be reviewed for lessons learned and will be discussed during the MMPR Conference.

5.11 QUALITY MANAGEMENT PLAN

5.11.1 Purpose

To assign responsibilities and coordinate activities associated with monitoring, reviewing, and verifying the contractor's quality management processes.

5.11.2 Scope

This procedure is applicable to the project management team and describes the activities associated in monitoring the contractor's quality management system as it applies to work being performed.

5.11.3 Responsibilities

- The government is responsible for ensuring that Shipbuilding Specialists (SBSs) and surveyors are appropriately trained and utilized.
- Designated personnel shall understand and comply with the requirements of this procedure.
- Supervisors and managers shall be familiar with this procedure to ensure proper support during contract execution.
- Contractor's QA department will schedule all inspections and tests via standard test/inspection event authorization forms.
- The government will distribute the forms to the SBS/surveyor assigned to that particular work item for Government Checkpoint (G point) witnessing.
- SBSs attending G points shall ensure that all associated Objective Quality Evidence (OQE) submitted by the contractor at the conclusion of scheduled checkpoints accurately describes the evolution(s) completed.
- SBSs shall submit the completed to the supervisory SBS for tracking purposes.
- SBSs shall perform Product Verification Inspections (PVIs) directly related to the work package assigned to them by the PM. A comprehensive list of PVIs is available in NMD, from which the SBS can choose. Each individual Product Verification Inspection (PVI) has specific attributes related to the system(s), procedure(s), or hardware being inspected. Upon completion, the SBS shall turn in the completed PVI checklist to the supervisory SBS for review and submittal to the project team QA manager no later than Friday of each week. The processes to be inspected via PVIs include, but are not limited to:
- Welding: piping, structural, non-destructive testing
- Coating applications: critical, non-critical
- Installations: alignment, foundation work
- Electrical: power, instrumentation
- Tag-out

5.12 REQUIREMENTS

- The project execution team QA manager shall develop and maintain a surveillance plan to effectively monitor the contractor's quality management program. This surveillance plan should include the following:
  - Assist the project team in reviewing work specifications, identifying errors, omissions, and moderate to high risk work.
  - Develop and maintain a checkpoint tracking system.
  - Provide S/F QA training.
  - Update and maintain PVI checklists.
  - Develop and maintain a PVI tracking system.
  - Review, approve, or disapprove contractor generated technical PCPs. Update the PCP control log accordingly.
  - Review the contractor's Test and Inspection (T&I) plan which is submitted on a weekly basis and verifies data submitted against work specification requirements for errors and or omissions.
  - Monitor the accomplishment of checkpoints and other quality related functions. Perform surveillance of in-process work to verify quality requirements have been met.
  - Assist SBSs in generating and issuing Corrective Action Requests (CARs) when warranted. Update CAR log accordingly.
  - Assist the project team in witnessing checkpoints when requested or warranted.
  - Interact with the contractor's QA organization in a team effort to prevent and resolve quality issues.
  - Provide a weekly QA report to the project team management.

- Compile and track all QA project issues ensuring that open items do not affect ships safety or operation
- Provide a written and signed ships certification report as required.
- Organize and archive all QA OQE data generated during contract execution into the QA department's surface ship surveillance program file. In addition, a back-up copy will be put on Compact Disc (CD) that will be in the possession of the execution project team QA manager.

5.13 DFS CLEARANCE AND CASREP CORRECTION PLAN

The PE will identify all CASREPs and any DFSs. Any DFS issued during the availability as a result of contractor's work will be issued by technical authority and will be included in the work completion certification package. A copy of any DFS issued will be provided to the ship. As per CNSF Message (DTG 031556ZMAY05) and IAW NWP 1-03.1 (formerly NWP 10-1-10), ship in a CNO availability is to submit a CASCAN on all CASREPs scheduled to be repaired in the availability.

5.14 CONTRACTOR'S PERFORMANCE ASSESSMENT REPORTING

Critical success factors. Many of the details of how to assess the contractor's performance are located in the individual contracts. Most current MSMO contracts grade the contractor's performance in four critical areas:

- Cost
- Schedule
- Technical
- Management

The attributes to assess each of the above areas are usually located in the Award Fee Evaluation Board Appendix of the contract.

Contractor's performance assessment plan. The Project Officer among others will be required to testify to the MSMO's performance as they monitored it during planning and execution. Formatting and other requirements of monitoring reports and testimony development can be obtained by contacting the contracting office.

6.0 S/F AVAILABILITY PREPARATION AND INTEGRATION

This section is intended as a guide for S/F in preparation for an availability. There are many "moving parts" with regard to availability planning and execution, and time after time, it has been communicated that the most successful availabilities are those that have an engaged and involved participation from the S/F. As noted in Section 2.1.2, the ship is the ultimate customer of the maintenance and modernization accomplished during the availability. S/F can make or break the success of an availability. Active participation in the project team has proven to be the single greatest indicator of success.

6.1 KEY S/F PARTICIPANTS

The following personnel are typically the S/F representatives who interact directly with the availability project team.

- COXO
- Availability coordinator: designated by A-180 (or at Project Team request) and serves as the S/F primary point of contact for availability planning and execution activities. It is critical that the availability coordinator is engaged with the project team, is present at the planning meetings, daily coordination meetings, as well as weekly production meetings. During maintenance and modernization availabilities, team continuity is key to success. Whenever possible, the availability coordinator should not transfer mid-availability.
- CHENG
- CS officer

6.2 COMMUNICATION

Clearly established communication expectations are vital to the success of the availability. The ship needs to know what to expect during the various phases of the project, and the project team needs to know what the ship expects throughout the availability. Otherwise, the key stakeholders may end up pulling in opposite directions, jeopardizing a close working relationship. Proven practices have shown that the project team should engage S/F early and often and be sure to understand their issues, goals, and priorities.

Ask-learn-share is a knowledge-management model useful in continuous improvement. Simply put, ask questions of those who know, learn from those people, and share your new knowledge with others who could benefit from it. This is a two-way process; the crew must be encouraged to engage with the work being accomplished, to ask questions, learn about the systems, and share that information throughout their work center. Equally important, the project team must ask questions of the ship, learn, and share that information with other team members. S/F lives with and operates ship systems even when they do not have detailed technical knowledge. They provide invaluable insight into problems and issues.

6.3 AVAILABILITY PLANNING PREPARATIONS

6.3.1 (A-120) S/F Work List

All Organizational Level work that S/F plans to accomplish during the availability will be provided to the NSA's PM by A-120. Examples include planned paint and preservation, valve repairs or replacement, piping repairs, engineering equipment repairs, etc. The intent is to provide a work list that will allow the Prime Contractor to develop an integrated execution schedule that ensures minimal conflict between Organization Level work and Depot Level Work.

6.3.2 Attend Planning Meetings

Several meetings take place in the months prior to the start of the availability. The intention of these meetings is to coordinate the work, schedule, resources, manning, etc., that need to be integrated for the availability. Ideally, S/F along with all other organizations should be present at these meetings to ensure all work is considered while coordinating efforts. These items are outlined in greater detail in Section 4.0 and handbook.

6.3.2.1 (A-120) WPIC

The WPIC is the final review of the work package with the MT, contractor, and the AIT representatives. For information, see Chapter 3.10.9.

6.3.2.2 (A-30) WPER

The WPER is the final review of the work package with the MT, contractor, and AIT representatives. For information, see Chapter 4.8.

6.3.2.3 (A-0) Arrival Conference

The arrival conference is the first day of the availability. Critical path items, key POCs, MT, contractor, and AIT representatives are heavily involved with the availability.

6.3.2.4 Dry-Dock Conference (if applicable)

If the ship is being dry-docked, there is a conference held to review the details of the dry-docking plan. This is coordinated by the NSA's dry-docking officer.

6.3.3 Ship's Arrival

When the ship arrives in port or at the shipyard where the work is being accomplished, many events require attention and coordination between S/F and the project team. These are outlined below, and should be finalized by A-30.

- Berthing location: mooring lines and oil boom.
- Tug/pilot service: determine who is responsible and where the boarding location is.
- S/F parking: determine where authorized car and motorcycle parking spots are located (shipyard, pier, etc.) and who is authorized to park in them. Consider where bike racks will be located.
- Crane staging areas
- S/F sanitary trailers: determine where the trailers will be located, who maintains and cleans them, and if there is cleaning service on the weekends and holidays. Ensure the trailers are marked for S/F use only.
- Transportation specification: If the contract will require an outside organization to provide transportation, ensure type, number, capacity, etc. are clearly defined and hours of operation will support S/F working hours and duty sections.
- Temporary reefer/freezer storage: if a temporary reefer/freezer is needed, determine location and authorized use.
- Phone lines: ensure that the ship's phone lines are operational in the shipyard and that the numbers are shared with key availability POCs.
- S/F equipment: Remove **ALL** equipment and materials from the ship. All tools must be locked up. Eliminate any possible opportunity for items to be removed from the ship without the owner's knowledge.
- Force protection requirements:

    - **Access lists:** S/F needs to establish the method by which they will allow access to the ship. Particularly during the first week of the availability, ship access can be a very challenging matter. Past lessons learned have shown that a single, alphabetical (by person's name) list is the most efficient method of allowing access to the ship.
    - **Updates to access list:** Ensure that the proper method of routing access lists to the ship is well communicated with the MT and contractor.
    - **Badges/stickers:** S/F will also need to determine how they will allow repeat ship visitors onboard. Past lessons learned have identified successful methods via S/F providing stickers to place on the visitor's ID badge or S/F providing a unique badge for visitors to wear.
- S/F planned off-loads/on-loads: items that require a plan for off-loads/on-loads include: RHIB boats, life rafts, hazardous material/paint, antennas, 25 MM gun, stores, mattresses, ammunition, and other equipment.
    - Ammunition storage: determine where ammunition will be stored and how the space will be secured from all unauthorized access. Most industrial locations (both public and private shipyards) require offload of all ammunition prior to ship's arrival.
    - During offload, all items should be methodically inventoried and organized. When organizing items at offload, considered which equipment will be required first and store it accordingly.
- Work and lunch hours: All organizations should communicate their working hours with the project team. This includes the contractor, AITs, RMC, S/F, and any others working on the ship. If S/F remains on the ship during the availability, mess hours should also be made known to the project team to ensure contractor traffic is minimal.
- Availability impacts to S/F: during most availabilities, the work being accomplished is very intrusive on the ship. S/F should be prepared for what spaces, system, and equipment will be impacted. The project team should review this with S/F prior to the availability start, preferably no later than the WPER (A-30). S/F should be notified in advance about what spaces are requested to be cleared during the availability. The following spaces are commonly interfered with:
    - Habitability work: galley, mess, freezer, scullery, laundry, sanitary spaces, and berthing.
    - Secure space access: CO and XO staterooms, RADAR Cooling Equipment Room (RICER). As much as possible, all classified material should be removed from the ship. Any space with classified material/equipment that cannot be removed must be manned when contractor employees are working in the space.
    - Potable water
    - Hot water
    - Ship-wide potable water chlorination
    - Firemain
    - Salt water cooling
    - CHT
    - Reefer plant
    - A/C plant
    - Heating/ventilation
    - Low Pressure (LP) air
    - High Pressure (HP) air
- LAN equipment room cooling. S/F training and drills: it is important to communicate the ship's training schedule during contractor working hours. Ensure that the following details are communicated with the project team:
    - Protection drills
    - Expectation of contractors
    - In-port fire party/damage control drills
    - Drill versus main events announcements

- Space material condition: It is important to document the material condition of all spaces that the contractor will work in or traverse through. It is best to document conditions using still photographs or videos. At the completion of the availability, the contractor will repair all items which are their responsibility.
- S/F tools and equipment:
  - Tools: To the maximum extent, all s/f tools and special equipment should be offloaded and stored. Any tools or equipment that are not offloaded must be securely stored. Do not leave tools or drawers or cabinets which can be easily opened.
  - Ship's equipment: It is IMPERATIVE that all ship's equipment be layed-up in accordance with PMS requirements. Failure to do so will result in excessive equipment failure during light off.
- S/F planned repairs or events during availability: it is critical to coordinate and integrate the S/F schedule with the project team. Doing so will alleviate potential space and work conflictions. S/F planned work or events often include the following areas, but all work should be communicated. These items must be identified by A-120 and provided to the NSA's PM.
  - Painting (passageways, spaces, exterior)
  - Firemain repairs
  - Valve work
  - Diving operations
  - Passive Countermeasures System (PCMS)
  - Aviation certification
  - LOA
  - Board of Inspection and Survey (INSURV)
- Planned shore power disruptions: be prepared for potential shore power disruptions. Communicate with the project team whether or not the ship's stand-by generator will be available during that planned period. Review loss of power emergency procedures.
- Affected tanks at low suction: S/F is responsible for de-fueling the ship and de-watering the ballast tanks. Ensure that the schedule for doing so is communicated with the project team. It is important to also have a compensating tank plan.

6.3.4 Crew Move

Production work will require the crew to move to a berthing barge; in this case, added emphasis should be provided in keeping the sailors in their work spaces when possible. Coordination for crew move ashore should be finalized no later than A-30.

6.3.5 LAN Move

If S/F is required to move the LAN SIPR and NIPR to the berthing barge, coordination should be finalized at A-30. The PEis a resource for LAN move coordination.

6.4 AVAILABILITY EXECUTION

During the lead up to, and during, the availability, there will be many key coordination meetings. S/F leadership must ensure appropriate personnel are participating.

There are tools and training available to S/F in anticipation of an availability. These resources include the Maintenance University and the NSA's departmental representatives (QA, Safety, Environmental, etc.). S/F should aggressively pursue the available information from both of these resources. An informed crew will result in improved availability execution and ultimately an improved product for the ship.

6.4.1 Attend Execution Meetings

- Daily production meetings: These meetings are typically held each morning of the availability and are the primary forum for resolving issues. This meeting is the most vital to daily success and requires attendance by S/F Senior Deckplate leadership.
- Availability Plan of the Day (POD) Input: It is recommended that S/F prepare an email list of all personnel who should be included on the daily POD input.
- Daily safety walk: S/F should participate in the daily safety walks. These are typically conducted with the NSA PM and/or SBS and contractor representative.
- Weekly production meeting: During the weekly production meetings, the MT will review progress of each critical path item as well as all AIT progress to determine adherence to the schedule and de-conflict any potential work.
- Mid-Availability Conference: The Mid-Availability Conference is scheduled at approximately the 50% point of the availability, and S/F participation is important to ensure any issues are properly communicated among the regional leadership. Depending on availability length, there may be 25% and 75% conferences, too. Again, S/F participation is key.
- Departure Conference: The Departure Conference is typically scheduled within approximately 14 days of the completion of the availability. During this meeting, any work items that did not get completed during the availability window are identified, and a way ahead is coordinated.
- MMPRs: S/F, along with other Project Team members, will be expected to participate in three Video Teleconferences during the planning and execution of a CNO availability. These VTC's represent an opportunity for the Project Team to initiate availability strategies, communicate and mitigate risk, learn from other availability successes, and provide feedback about the successes or areas for improvement in their own availability. Commander, Navy Regional Maintenance Center (CNRMC) and TYCOM will request participation in the VTC's, S/F will provide input, and the NSA's PM will take charge of presenting the Project Team's availability information.

6.4.2 Maintaining Ownership of Spaces

Nearly all successful availabilities have one trait in common: S/F maintained ownership of their spaces. Sailors were almost always present during any production work, asking questions and looking for issues. All members of a work center knew the scope of repairs and status at all times.

6.4.3 Safety

Safety should always be the number one concern for all personnel.

- PPE: On the pier and on the ship, all personnel are required to wear PPE.
- Smoking: A smoking policy should be established by the ship, and designated smoking areas for S/F as well as contractors should be well communicated.
- Fire watches: Contractor fire watches should be marked visibly with an ID, sticker, vest, etc. If S/F requires a fire watch for any work accomplished, that person should also be wearing clearly marked gear to indicate their role.
- Damage Control: S/F is always the first line of defense in combating fire, flooding, and other damage. Depending on location of the availability, additional resources may be available. These resources should be outlined at the arrival conference. A coordinated drill, with S/F and supporting organization participation, should be held at the beginning of the availability.

6.4.4 Cleanliness

The importance of maintaining cleanliness on and off a ship during an availability is imperative. A high standard of cleanliness improves personnel safety, protects equipment, improves sailors' QOL and promotes good relations between the maintenance providers and S/F.

It is recommended that S/F along with the other members of the MT develop a strategy to ensure cleanliness standards are well communicated and adhered to throughout the duration of the availability. Identify which spaces require end-of-shift broom clean versus vacuum clean. Holding maintenance and modernization providers responsible for cleaning their work areas prior to the end of each shift is the most effective way to maintain overall shipboard, pier, and dry-dock cleanliness. The following are additional initiatives that can be used to maintain cleanliness standards:

- Cleanliness walk-through: Weekly (at a mutually agreed upon time) conduct a cleanliness walk-through with senior S/F personnel and senior project team members.
- Contractor food and beverage on ship: Typically, contractors should not be permitted to bring food or beverage (other than water) on board the ship.
- End of shift cleaning: Holding the workers responsible for cleaning at the end of each shift is the first line of defense in maintaining the ship, piers, and dry-dock to a high standard of cleanliness, but there is always dirt and debris that cannot be directly identified to any one individual. Extra effort by all workers needs to be a focus.
- Daily cleanliness enforcement: Daily enforcement of cleanliness by S/F, NSA, contractor, AITs, and trades supervisors ensures cleanliness is being maintained.

6.4.5 WAF Tag-Out Proven Practice Development

WAF tag-outs are often a challenge to execute smoothly and effectively. If not done correctly, a significant time delay for start of work may be experienced. WAFs must be completed in accordance with JFMM Volume IV, Chapter 10. The following paragraphs in this section are a consolidation of proven practices.

6.4.5.1 Description

The robust requirements associated with the WAF tag-out process can be overwhelming for surface ships due to the initial volume and unfamiliarity with this relatively new process. The MMPR process has highlighted delay and disruption encountered at the onset of CNO availabilities. WAF tag-out teams, comprised of S/F and contractors, do not have adequate time, the proper training, or the organizational structure needed to ensure all required tags are hung prior to work commencement. Delay and disruption at the onset often translates to extended availabilities, impacting operational readiness and resulting in increased costs. This proven practice serves as a recommendation to help ensure an efficient WAF tag-out process. Note that local standards should be reviewed in conjunction with the development of a WAF tag-out plan.

6.4.5.2 Roles and Responsibilities

Communication is still the key to ensuring a successful availability. Knowing who and where to go to initiate and clear WAF tag-out is paramount to better executing these programs. S/F, the MSMO contractor, and the RMC project team should have a clear understanding and agreement of who the key players are and their respective responsibilities in the WAF tag-out process. The list of key players and their responsibilities should then be communicated to all involved from the supervisors to the deck plates prior to the start of and during the availability at meetings.

- S/F Coordinator: Designate (primary and alternate) single S/F WAF coordinator. Designate sub-coordinators for engineering and CS (technical authority for respective systems).
- Designate and assign an agreed upon number of S/F personnel who will act as the core unit of the WAF tag-out execution group. Recommend utilizing engineering duty officers and duty CS watch standers to cover nights and weekends.
- Contractor coordinator: designate single contractor WAF coordinator.

- AIT sponsor coordinator: Designate single AIT sponsor WAF coordinator to consolidate AIT requirements and provide to the contractor WAF coordinator. AIT sponsor coordinator should also provide all WAFs to WAF coordinator in preparation for availability start by approximately A-14.
- Designate and publicize contact information for the AIT's single point of contact for the overall project team (including name, location, and mobile/phone number).

6.4.5.3 Single Central Location

The designation of a single space for integrating availability management, including the WAF tag-out logs, has proven to be a successful strategy. The size of the ship in availability and the CO's direction should be taken into consideration.

6.4.5.4 Common Logs and Binders

Common logs and binders have been used to administer a successful WAF tag-out process. Maintaining similar documents and tools allows for continuity between WAF coordinators and common approaches for organization.

- Contractor binder contains the originals.
- Ship binder contains copies.
- Strongly encourage electronic logs (allows for parsing by department, division, or system).

6.4.5.5 Training

The effectiveness and efficiency of the project team's management of the WAF tag-out process has proven to stem in part from the quality of pre-availability training. The MSMO contractor or the RMC should provide training on WAF tag-out process and procedures that are to be used in accordance with the JFMM by all members of the project team.

Conduct training as soon as practicable (A-30), and no later than A-14 days. Larger type 2 or 3 availabilities may want to conduct training at the A-120 timeframe. Also note that there is a Norfolk Naval Shipyard Guide that has been used successfully to achieve the intent of this training.

- Include the AIT government representative and individual AITs.
- Include all S/F involved with WAF tag-out program.

6.4.5.6 Logistics

The contractor should order enough tags to support the increased requirements associated with the WAF process.

6.4.5.7 Concluding Comments on WAF Tag-Out

Past experience has shown that early planning efforts lead to successful availabilities. We have found that early identification of work and pre-staging of WAFs and tag-outs prior to start of the availability have contributed to a quick start and ultimate success. Use of this proven practice is not mandatory. It is offered as a recommendation for use in the future based on its success in the past. It is not a guarantee of success. Feedback on the results of its use is both desired and encouraged.

6.4.5.8 QA

Many QA checks are set up to formally document the completion of specific work items or installations. These occur often throughout the availability and are typically coordinated by the activity accomplishing the work. The NSA's SBSs are assigned to various work items to serve as the NSA QA inspection for

work items. The contractor or installing activity will also have a designated QA representative. S/F should attend all QA work completion points.

6.4.5.9 Integrated Test Plan Coordination

S/F should be involved with the planning and coordination of the contractor test plan. The contractor and the AITs will likely have test plans associated with the work accomplished, which will require an S/F witness to ensure new equipment or alterations operate properly. S/F should make every effort to be part of every test accomplished.

6.4.5.10 Compartment Close-Out

As the contractor or AIT completes work in a specific space, the compartment will be closed-out. Once this is accomplished, S/F will have bought off on the space and will be responsible for the operation and cleanliness of that space from that point forward. The contractor, AIT, NSA, SBS, as well as an S/F representative should together inspect the space to determine if it is ready to be closed out by the contractor

6.4.5.11 S/F Readiness at Availability Completion

At the completion of the availability, S/F must be immediately ready to operate the ship and all of its systems. To prepare for sea trials and beyond, extensive training will be required. Training impacts production, either by removing sailors from production work, forcing systems to be operational during the training, or making some spaces off limits for production. Therefore, S/F and the project team must communicate their needs and desires to minimize training impacts on production while allowing ample time for training. S/F should also recognize that training should not commence just before light-off but throughout all phases of the availability.

6.4.5.12 NSA Total Ship Readiness Assessment and Availability Execution Work Review

The availability's NSA will be responsible for, among other things, a complete certification of work performed during the ship's availability. The certification will be a product of government quality checkpoints, system operational checks, and readiness assessments performed by the NSA's technical assistance personnel. Again, S/F engagement is key to success. Subject matter experts will put eyes on equipment during TSRA and provide both equipment grooming and S/F training. Support and maximum participation will result in increased knowledge level for sailors and increased self-sustainment for the ship.

6.4.5.13 Fast Cruise, Dock Trials, Sea Trials, Light Off Assessment, and other pre-underway requirements.

S/F must ensure they are informed of and complying with all JFMM, TYCOM, and ISIC requirements when preparing for the above evolutions. Appendices contained in JFMM, Volume II, Part I, Chapter 4 lists all expectations for Fast Cruise, Dock Trials, and Sea Trials. Other pre-underway requirements (either Training or Reporting requirements) will depend on ship's Immediate Superior in Command (ISIC), TYCOM, and executing NSA. Frequent communication with all parties will ensure that S/F is prepared for success.

7.0 STRATEGY DEVELOPMENT

7.1.1 Strategy Definition

A strategy is a long term action plan for establishing a common solution to a problem that all key players in the availability agree upon during the planning phases. A strategy can be considered an element of the Availability Project Team's overall management plan. By using strategies, emergencies and surprises can be avoided since a collective plan is already in place to minimize issues. A strategy allows for better communication of the collective plan.

7.1.2 Strategy Development

When developing a strategy, consideration must be given to the content through SIPOC.

- S: Supplier – who / what contributes to the process?
- I: Input – what tools, guidance, requirements are needed to accomplish the process?
- P: Process – what is the process and how does it tie together the supports?
- O: Output – what are the process outputs?
- C: Customer – who are the process customers?

When all the above questions can be answered, a thorough strategy is developed for all members of the Project Team. Examples of Availability Strategies can be found on the Surface Team One portal (access instructions can be found in Appendix B). Every strategy includes the following elements:

- Responsibility: This section should be as generic as possible with regard to the individual/organization that is responsible, but should be specific to the strategy.
- References: All applicable references.
- Enclosures: List of Enclosures specific to the strategy.
- Introduction: Brief description/overview of the strategy and its purpose.
- Discussion: in depth explanation of the purpose of the strategy to include the "why and how" this strategy is developed.
- SOE: A timeline developed by the Project Team that is applicable to the strategy.
- Additional Comments: Any necessary amplifying information for the SOE.
- Performance Reporting: Identify and explain any key metrics that will be utilized for the strategy, and the frequency which they will be reviewed.
- Concurrence Signatures: All personal that will review and sign the strategy into action.

7.2 STRATEGIES

7.2.1 Work or Testing Requiring Execution Strategy

It is critical to identify early the work or testing that requires an execution strategy. This was discussed in detail in Section 4.6.

7.2.2 Work Integration Plan

The work integration plan developed by the execution project team is vital to the overall success of the availability and is effective when all parties agree to its intent. Adherence to the work integration plan by all concerned will maximize the potential for success.

It is recognized that other strategies may exist with individual project teams, but may be valuable to many project teams. It is intended that a repository of these strategies will be built such that each project team can forward examples for inclusion in this handbook. The web site for this effort is still being discussed.

Listed below are two specific work strategies that illustrate the level of detail and content provided.

- **Work Strategy Example 1: Habitability Strategy Impact of Work on Crew Habitability and QOL**

  Work regarding crew habitability must be included in the execution project team's integrated execution strategies as the crew's QOL is considered by the Navy to be among the most critical issues today. The integrated execution project team should build this habitability strategy with input from all maintenance providers to ensure an all-encompassing plan. The ship is home for many members of the crew, and planning each work evolution should include considerations for crew habitability. Steam, potable water, electrical and sewage systems, shipyard work near occupied spaces, and crew berthing are among the items reviewed when planning work. Alternative services are included in the job scope to minimize impact on crew habitability. To avoid moving crewmembers repeatedly, all items of work that impact a specific berthing area should be grouped for simultaneous accomplishment. A berthing officer assigned from S/F can serve as coordinator for alternate berthing areas onboard the ship; therefore, the execution project team should recommend appointment of a berthing officer if one has not been previously assigned. Whenever possible, work requiring isolation of services should be performed during evening hours when ship operations are minimal. Working jobs during this time frame is the least disruptive to the crew. Depending on magnitude, some work may require more than one evening shift to accomplish. With the execution project team's sensitivity to habitability issues during planning, potential work and crew disruption can be minimized during execution. Work that has the potential to impact crew habitability can be considered for accomplishment prior to the ship entering the shipyard.

  Strict compliance with hangar bay and flight deck designated lay-down areas. The execution project team should discuss requirements for work areas onboard the ship's hangar bay and flight deck. Designation of assigned lay-down areas and the development of a lay-down area drawing prevent industrial clutter and are utilized by the execution project team to enforce staging requirements and prevent conflicts. Lay-down requirements for the shipyard, contractors, and S/F should be identified and agreed upon by the execution project team. The type of work, size of work, and contractor requirements are all considered when assigning lay-down areas that can be modified as shipboard requirements change.

- **Work Strategy Example 2: Finalize Collocation Strategy**.

  Communication is part of building and maintaining the integrated execution project team. Part of the communications strategy includes physically collocating the team, as much as practical, to enhance communication. Once a project enters the execution phase of the availability, many things can affect plans and strategies. Despite daily meetings, strategy sessions, e-mail and other communication links, nothing can replace team members discussing project problems and potential solutions informally face-to-face. Collocation is part of the communications strategy. During the execution project team ship visit, the team members refine their collocation strategy. The PE/PM must leave the ship after the WPER with agreement from all the team members regarding location. The CO also needs to agree on shipboard space provision and allocation of lay-down areas, and these agreements should be formalized on the integrated lay-down plan prior to the team's departure from the ship. If feasible, the use of portable trailers located on the pier adjacent to the ship is expanded. These trailers are to house the contractor's management support personnel (additional area managers and trade foremen) in close proximity to the work. All execution project team and management personnel use a cell phone system that allows "push-to-talk" communication. This enables efficient operation even though they are not all in one facility. The benefits of collocation can be summarized in the following list:

- Deck plate supervision visible and constant
- Quick resolution of ship's concerns/issues
- Building relationship with the customer
- Quick resolution of work issues by NSA
- Enhanced sharing of resources between shops/ship
- Quick resolution of contractor issues by RMC or government sponsor
- Cost savings by limiting travel for shipboard issues (all involved)
- Knowledge shared by all on how to repair Naval ships
- Less time spent off the ship by NSA enhances work effort

7.2.3 Early Start and/or Smart Start

The project must finalize their early start and/or smart start strategy (or strategies) to ensure it includes but is not limited to the following:

- Communications - Make preparations for T1 line installation upon ship's arrival (or other appropriate high speed intranet connectivity for the S/F use during the avail).
- Cleanliness - Implement cleanliness strategy.
- Critical path work - Identify and set priorities.
- Environmental - Review any shipyard specific environmental issues with the ship prior to their entering the shipyard. Complete paint, lagging, and tile sampling prior to availability start.
- Facilities and collocation - Set up shipboard collocation plan in the event that facilities must be moved. Set up collocation with regards to "last off - first on" to facilitate clearing the hangar bay/flight deck for availability completion.
- Flight deck work (for applicable ships).
- Evaluate non-skid work - Accomplish non-skid outside of the availability and during warm weather months where practical.
- Habitability - Implement habitability strategy.
- Pier Set-Up
  - Set up prior to ship's arrival.
  - Run temporary services.
  - Identify lay-down areas/submit lay-down plan.
- Plant Conditions
  - Propulsion plant work is just one of the key work areas during an availability where the team needs to focus their collective management attention. The focus areas normally utilize a "tiger team" or sub-project team approach with the right players building and implementing a plan to effectively complete areas of work. These plans are also often referred to as work strategies and serve to get everyone on the same timeline to successfully focus on and accomplish a particular area of the ship or system.
  - Make as many preparations as possible for establishing required plant conditions for the availability prior to the availability start.
  - Where the ship's schedule allows, establish plant conditions required for the availability prior to availability start.
  - Coordination of operational "tether" requirements for the particular homeport or unit. Ultimately, the availability cannot fully commence until definitive requests are submitted and approval received to waive surge status.
- Temporary Services
  - Route temporary services shipboard as allowed.
  - Make access cuts not to interfere with containment.
  - Tools and necessary equipment staged shipboard.

- Provide early start/smart start WAFs to the ship for processing on return from deployment or at least 30 days prior to the start date.

7.2.4 Growth and New Work Management Strategy

During the execution of a maintenance availability, it is anticipated that deficiencies will be identified that could be accomplished as growth or new work on the existing contract. Growth work is any additional work that is identified after contract award that is related to a work item included in the original work package and is typically technically required. This strategy describes the project team's process for authorizing new work. The project team shall perform a BCA to decide whether or not to add new work to the current availability or schedule it during another maintenance opportunity. New work will be authorized only if the BCA indicates that this is the best course of action, taking into consideration all applicable business and operational risks and factors.

A BCA will be performed for each D-level work item by the MT with the PE as the lead. The project officer, PE, and PM will provide the following input to the BCA (formal or informal as needed):

- Performance metrics impact
- Availability schedule impact
- Future screening opportunities
- Available emergent work funds
- CO's concerns

At a minimum, the following supporting documentation should be included in the BCA:

- CFR, if identified by the contractor
- Status of remaining funds
- Government estimate for completing new work item
- Correspondence related to acceptance of new work (i.e., e-mails between members of project team, contractor, S/F, or technical authority)

The MT will make the final decision in accordance with business rules and will maintain all documentation related to, and in support of, all business case decisions.

If additional funds are necessary, the project office will request the additional funding.

7.2.5 Communications Plan Strategy

The ability of the execution project team to communicate effectively is a critical factor in the development and adherence to the work integration plan. A well-defined communication strategy outlines how information will be shared between team members.

Developing a communications strategy defines the level of communication and methods of implementation. The following topics should be addressed in the project communication strategy:

- Types of schedules to be developed and shared between organizations.
- Meetings that will occur, including time, purpose, and participants.
- Distribution requirements for letters and memoranda.
- Special briefings (i.e., docking, light off, etc.) including time, purpose, and participants.
- Events requiring notification.
- How the MOA will be issued, to whom, and how the contents will be briefed.
- How the work integration plan will be communicated and to whom.
- How inputs to the weekly SITREP will be reviewed by the execution project team.
- Capturing and communicating lessons learned.
- Integrating late added work/ new requirements.
- Planned execution meetings:

    - Daily production meetings.
    - Daily CFR meeting with ship CO.
    - Daily/weekly project team meeting.
    - Weekly command level production meeting.
    - Monthly PB4M meeting.
- Required briefs:
    - Arrival conference.
    - Mid-availability conference.
    - Departure conference.
    - AIT in-briefs to S/F.
    - AIT out-brief.
- Required E-mails:
    - Weekly ASR to N43.
    - Weekly ESH report.
    - Weekly QA report.
    - Weekly AIT ILS discrepancy report.
- Required planning messages:
    - Advanced planning message.
    - Ready to start message.
- Required execution messages:
    - Weekly SITREP.
    - Request to commence fast cruise.
    - Report completion of fast cruise.
    - Monthly availability status message.
    - Readiness for sea trial.
- Required post-availability messages:
    - Availability completion message C+10.
    - Lessons learned message
    - Documentation of significant events as required by JFMM Volume VII Chapter 11. This is one of the most significant actions that every member of the availability management team shall comply with. Significant events are personal observations of conditions or actions by or to any party to the contract that would affect the performance of the contract. Issues of this nature shall be brought to the supervisor's attention immediately for resolution and documentation.

7.2.6 Risk Assessment / Management Strategy

The purpose of Operational Risk Management (ORM) is to help the execution project team:

- Effectively identify and eliminate or reduce potential hazards.
- Minimize the impact of risks (reduce costs and schedule impacts).
- Avoid quality problems.
- Improve the quality of the products and services they provide their customers.
- Develop sufficient proficiency in applying the process such that risk management becomes an automatic or intuitive part of their daily decision-making process.

The basic steps involved in ORM allow the execution project team to work together to assemble a plan that will minimize foreseeable risks. The process takes the team through the following basic six steps:

- Identify the risk groups for the work being reviewed (examples: personnel safety, budget, schedule, etc.).
- Identify the process level groups for the work (examples: cleanliness, noise level, single valve, etc.).

- Select specific job risk that needs to be mitigated. For each risk, define the severity (the magnitude of the loss if the risk comes to pass) and probability (the likelihood that an event will actually occur).
- Develop a mitigation plan.
- Work the plan.
- Supervisory follow-up to ensure plan is being used and is working.

At 60-90 days prior to the CNO availability start, the RMC prepares an ORM assessment formalizing what the team has done to mitigate risk. RMC requests the information needed to complete the ORM from the relevant maintenance providers (for topics assigned to them). This is usually done via email. The responses are then discussed at informally held meetings to discuss risk and what has been done to mitigate it. This helps to bring all parties together and to then consider how all the work fits into the availability period. This is then summarized in a brief to the team (including CO and XO.) It is best to accomplish this brief in conjunction with the one day team building session just prior to the avail start.

7.3 STRATEGY IMPLEMENTATION

Strategies are intended to add discipline to the documented process. In order for a Strategy to be successful, all applicable members of the Project Team must concur and sign-off on the Strategy. The members should include representatives from the Ship, NSA, Lead Maintenance Activity, TYCOM Type Desk Officer, and any other necessary members of the Project Team.

The Strategy must be enforced by all members of the Team. It is critical that everyone agrees on the Strategy, and does their part in ensuring it is followed. The strategy must receive support from the “top down and bottom up.” Key players in helping to enforce the Strategy include the PM, PE, Ship CO, and the RMC.

Template strategies can be found on the Surface Team One (ST1) Portal. Refer to Appendix B for accessing the ST1 Portal.

APPENDIX A ACRONYMS

ABR—Agreement for Boat Repair

ACE—AIT Coordination Engineer

ACM—Asbestos Containing Material

ACO—Administrative Contracting Officer

AIT—Alteration Installation Team

AIT CCTC—Alteration Installation Team Customer Contracted Team Coordinator

ALO—AEGIS Light-Off

AMOD—AEGIS Modernization

AMT—AEGIS Modernization Team

AOR—Area of Responsibility

AP—Acquisition Professional

APL—Allowance Parts List

ASR—Availability Status Report

ATO—AEGIS Test Officer

AWP—Availability Work Package

AWR—Automated Work Request

BCA—Business Case Analysis

BMP—Best Management Practices

CAR—Corrective Action Request

CASCAN—Casualty Cancel Report

CASREP—Casualty Report

CCE—Class Common Equipment

CD—Compact Disc

CDMD-OA—Configuration Data Management Database-Open Architecture

CFC—Chlorofluorocarbon

CFR—Condition Found Report

CHENG—Chief Engineer

CHT—Collection, Hold, Transfer

CM—Continuous Maintenance

CNO—Chief of Naval Operations

CNRMC—Commander, Navy Regional Maintenance Centers

CNSF—Commander Naval Surface Force, U.S. Pacific Fleet

COSAL—Coordinated Shipboard Allowance List

CO—Ship's Commanding Officer

CS—Combat Systems

CSLO—Combat Systems Light-Off

CSMP—Current Ships Maintenance Project

CSPE—Combat Systems Project Engineer

CSSQT—Combat System Ship Qualification Trials

D-Alts—TYCOM Alterations

DCA—Damage Control Assistant

DFS—Departure from Specification

DMF—Depot Maintenance Facility

EA—Executing Activity

ESH—Environment, Safety, and Health

FDNF—Forward Deployed Naval Forces

FDO—Fee Determining Official

FMP—Fleet Modernization Program

FYDP—Future Years Defense Plan

G Points—Government Checkpoints

HP—High Pressure

HP&E—Hull, Mechanical, and Electrical

ICMP—Integrated Class Maintenance Plan

ILS—Integrated Logistic Support

INSURV—Board of Inspection and Survey

ISEA—In-Service Engineering Agent

ISIC—Immediate Superior in Command

IWS—Integrated Warfare Systems

JFMM—Joint Fleet Maintenance Manual

K-Alts—SYSCOM Alterations

KTR—Contractor

LAR—Liaison Action Report

LLC—Lessons Learned Conference

LLTM—Long Lead Time Material

LOA—Letter of Authorization

LOA—Light-Off Assessment

LOA—List of Alterations

LP—Low Pressure

LSA—Low Solar Absorbent

MCIT—Maintenance Continuous Improvement Team

MIC—Maintenance Information Center

MMBP—Maintenance and Modernization Business Plan

MMPR—Maintenance and Modernization Performance Review

MOA—Memorandum of Agreement

MOU—Memorandum of Understanding

MSC—Master Specification Catalog

MSMO—Multi-Ship/Multi-Option

MSR—Master Ship Repair

MT—Maintenance Team

NAVAIR—Naval Air Systems Command

NAVSEA—Naval Sea Systems Command

NAVSUP—Naval Supply Command

NDE—Navy Data Environment

NDE-NM—Navy Data Environment-Navy Modernization

NMD—Navy Maintenance Database

NSA—Naval Supervisory Authority

NSWC—Naval Surface Warfare Center

NSWCCD—Naval Surface Warfare Center, Carderock Division

OMS—Outside Machinery Space

OQE—Objective Quality Evidence

ORM—Operational Risk Management

OSLR—On-Site Logistics Representative

OSR—On-Site Representative

OSTR—On-Site Technical Representative

PARM—Program Acquisition Resource Manager

PB4M—Planning Board for Maintenance

PCD—Production Completion Date

PCMS—Passive Countermeasures System

PCO—Procuring Contracting Officer

PCP—Process Control Procedure

PE—Port Engineer

PEO—Program Executive Office

PHD—Port Hueneme Division

PICO—Pre-Installation Check-Out

PMA—Planned Maintenance Availability

PM—Project Manager

PMR—Program Manager's Representative

PMS—Preventive Maintenance System

POA&M—Plan of Action and Milestones

POD—Plan of the Day

PPE—Personal Protection Equipment

PVI—Product Verification Inspection

PY—Planning Yard

QA—Quality Assurance

QOL—Quality of Life

RICER—Radar Cooling Equipment Room

RLAR—Reverse Liaison Action Report

RMAIS—Regional Maintenance Automated Information System

RMC—Regional Maintenance Center

S/A—Ship Alteration

S/F—Ship's Force

SBS—Shipbuilding Specialist

SCD—Ship Change Document

SID—Ship's Installation Drawing

SIPM—System Integration Program Manager

SIPOC—Supplier, Input, Process, Output, Customer

SITREP—Situational Report

SME—Subject Matter Expert

SMMO—Ship Material Maintenance Officer

SOE—Schedule of Events

SOVT—System Operation Verification Test

SPAWAR—Space and Naval Warfare Systems Command

SPM—Ship Program Manager

SSLCM—Surface Ship Life Cycle Management Activity

SSS—Shipyard Ship Superintendent

ST1—Surface Team One

SURFMEPP—Surface Maintenance Engineering Planning Program (formerly SSLCM Activity)

SURFOR—Naval Surface Forces

SYSCOM—System Command

T&I—Test and Inspection

TAR—Technical Analysis Review

TM—Technical Manager

TSN—Test Sequence Network

TYCOM—Type Commander

VTC—Video Teleconference

WAF—Work Authorization Form

WPER—Work Package Execution Review

WPIC—Work Package Integration Conference

XO—Executive Officer

APPENDIX B ACCESS TO SURFACE TEAM ONE (ST1) PORTAL SURFOR WEB

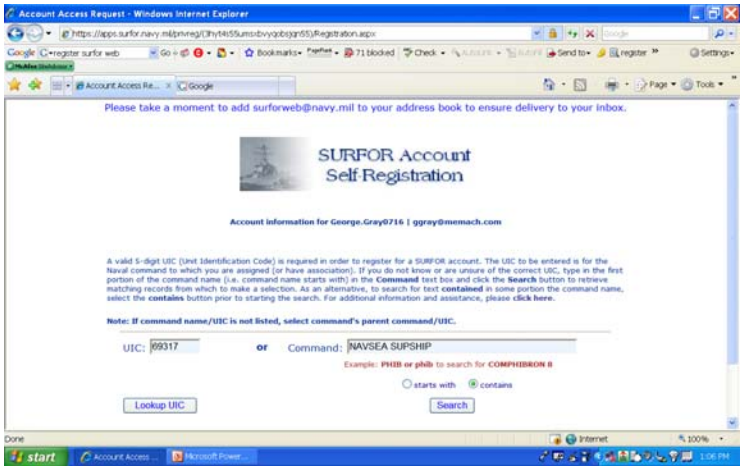
1. Go to: http://www.register.surfor.navy.mil/default.aspx
2. Click on: "Register for 'SURFOR Web' Account"
3. Fill in the information requested and submit.

NMIC Users: *You are finished! You will soon receive an email with a username/password. The first time you log in to the site, you will need to use it. Thereafter, the web site will refer to your CAC and you will not need to enter any information.*

Once you have an account, go to: https://www.surfor.navy.mil/sites/st1

FOR NON-NMCI USERS

4. Follow steps 1-3 above. You will then be directed to the below screen.
    a. In the Command field, type in "NAVSEA"
    b. Select "contains" under the command field.
    c. Click "Search". This should bring up a drop down menu from which you can choose the most appropriate command.
    d. Once you select a command, click on "Lookup UIC".
    e. Click "Submit" at the bottom of the screen.



5. You will be directed to another page requesting additional information. When prompted, enter "Katherine Buckley" or "Inga Parvani" as your Point of Contact.
6. If you require further assistance, email surforweb@navy.mil.

You are finished! You will soon receive an email with a username/password.

Once you have a SURFOR Web account, go to: https://www.surfor.navy.mil/sites/st1/