R} CHAPTER 12
Classification of Commander, Fleet Readiness Center (COMFRC); Fleet Readiness Center (FRC) Organization; and In-Service Support Center (ISSC) Functions

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12.1 Classification of Commander, Fleet Readiness Center (COMFRC) and Fleet Readiness Center (FRC) Organization

12.1.1 Assignment of Responsibilities

12.1.1.1 COMFRC is an Echelon 3 command under COMNAVAIRSYSCOM and an Echelon 4 command under COMNAVAIRFOR. Major responsibilities are assigned to COMFRC by Navy regulations and CNO/CFFC/COMNAVAIRFOR/COMNAVAIRSYSCOM. COMFRC is responsible to CNO/CFFC/COMNAVAIRFOR/COMNAVAIRSYSCOM for the overall management of the I-level and D-level FRC maintenance programs. COMFRC oversees FRC operations in conduct of DON policy and procedures which apply to I-level and D-level FRC maintenance programs. COMFRC retains the authority to approve or disapprove recommendations for continuance, discontinuance, or conversion of FRC in the areas of D-level rework, manufacture, and extension of contract support for reasons other than cost reduction in those same areas.

12.1.1.2 COMFRC plans for and develops the resource capabilities to meet material support needs for the active and reserve operating forces of the Navy and Marine Corps, their assigned shore activities, and other offices and organizations; provides recommendations on the technical and economic feasibility of meeting such needs to CNO, CMC, CFFC, COMNAVAIRFOR, or other higher authority; and keeps higher authority informed on new capabilities to meet needs that may not have been previously expressed.

12.1.1.3 COMFRC also plans for the use of resources in the performance of tasks, performs such tasks, and budgets for such tasks except where it is budgeted or funded by other means.

12.1.2 Organizational Responsibilities

12.1.2.1 COMFRC is responsible for Navy organic shore off-flight line I-level and D-level maintenance and management of mission and NWCFs in support of organic maintenance execution. FRC area commanders are responsible to COMFRC for quality, budget, and schedule execution performance. COMFRC staff will identify and submit FRC budgetary requirements and ensure adequate repair capability is available to support Navy and Marine Corps deployed operations.

12.1.2.2 COMFRC Headquarters includes the staff required for production management, financial management, total force management, and supporting functions to successfully operate and oversee FRC (figures 12-1 and 12-2 and Chapter 3).

12.1.2.3 The COMFRC mission is to produce quality airframes, engines, components, and SE, and provide services that meet the NAE's aircraft RFT goals with improved effectiveness and efficiency. To perform to entitlement requirements, FRCs provide integrated off-flight line repair, in-service I-level and D-level scheduled and unscheduled maintenance, inspections/modifications, and deployable SEAOPDET. To accomplish this mission FRCs:

a. Maintain and operate facilities for and perform a complete range of I-level and D-level off-aircraft maintenance on designated weapon systems, accessories, and equipment.

b. Manufacture parts and assemblies (as required).

c. Furnish professional services on aircraft maintenance and logistics problems.

d. Perform, upon specific request or assignment, other levels of aircraft maintenance for eligible activities.

e. Perform off-flight line component production using the most efficient location to maximize throughputs to meet RFT requirements. This will be accomplished through the movement of D-level artisans/capacity closer to the flight line to provide high velocity repair loops resulting in the reduction of replenishment times, cost, supply inventory requirements, and system inventory requirements to meet war-fighter requirements.

f. Perform off-flight line I-level and D-level engine production, per the level of repair specified to each site by NAVAIR NOTE 4700.

12.1.2.4 Command and Control. COMFRC oversees and provides guidance and direction to the following FRC Area Commands:

a. FRC Southwest, North Island, CA.

b. FRC West, Lemoore, CA.

c. FRC Northwest, Whidbey Island WA.

d. FRC Mid-Atlantic, Oceana, VA.

e. FRC Southeast, Jacksonville, FL.

f. FRC East, Cherry Point, NC.

g. FRC Western Pacific, NAF Atsugi, JA.

h. FRC Support Equipment, Solomons Island, MD.

12.1.2.5 FRC Key Relationships are as follows:

a. FRCs shall comply with COMNAVAIRFOR and COMNAVAIRSYSCOM policy and will make recommendations for changes in policy that affect FRCs.

b. NAVSUP retains overall supply system technical authority and delegates supply policy.

c. NAVSUP WSS is responsible for managing the Navy's wholesale component inventory and shore-based allowances. As such, they have been designated by NAVSUP to promulgate wholesale, allowance, and retrograde control, movement, and management policy for NAE.

d. DLA via Defense Supply Center, Richmond is responsible through the local DLA site CO for industrial supply support.

e. COMNAVAIRFOR provides fleet supply policy, training and inspections for I-level COMFRC activities and provides COMFRC supply policies that standardize procedures and facilitate cost-wise readiness through AIRSpeed initiatives to contribute to the production of RFT aircraft throughout the FRCs.

f. DLA provides fleet supply policy, training, and inspections for D-level activities and provides COMFRC with supply policies to standardize procedures and facilitate cost-wise readiness through AIRSpeed initiatives to contribute to the production of RFT aircraft throughout the FRCs.

g. MALS are affiliated with FRCs through the selective placement of D-level capability where value can be added and efficiencies gained. MALS are deployable commands and must retain those characteristics fundamental to MAGTF expeditionary capability, such as, deployability, agility, and scalability. MALS-FRC affiliation shall therefore be closely managed to ensure it does not encumber, but enhances, Marine aviation's warfighting effectiveness. Each MALS is affiliated with a specified area command FRC HQ. The relationship between the MALS and FRC commanders is one of supported (MALS) and supporting (FRC) commands. The FRC commander retains operational and administrative control of FRC artisans and equipment embedded at the MALS, though the MALS commander is authorized tactical control to direct MALS I-level workload and priorities. In cases relative to D-level ISR support and organic flight line detachments, priorities on workload will be a joint decision between ISR/Detachment Team Leads and the MALS Commander. MAW aviation logistics department assesses FRC-managed commodities, such as ISSCs and P&E expertise.

12.1.2.6 FRC Operational Responsibilities

12.1.2.6.1 COMFRC provides oversight to eight FRC area commands and a headquarters staff, operationally aligned to COMNAVAIRSYSCOM/COMNAVAIRFOR. FRC area command COs are responsible for best practice, best cost, and quality product.

NOTE: FRC area commands encompass I-level and D-level maintenance activities and capabilities. These capabilities are recorded and measured in maintenance MISs, for example, NALCOMIS and DECKPLATE, as 1, 2, and 3 for O-level, I-level, and D-level maintenance, respectively. Consequently, the use of the terms maintenance level 1 (ML1), maintenance level 2 (ML2), and maintenance level 3 (ML3) more appropriately define and measure FRC maintenance types/capabilities without limiting consideration to FRC locations.

12.1.2.6.2 NAVSUP WSS determines wholesale component repair requirements. The FRC Component Manager allocates repair requirements to available capacity throughout the D-level FRC network with input from PMAs, NAVSUP WSS, and Wing/MALS Aviation Supply Officers.

12.1.2.6.3 The assigned ASD Supply Officer is responsible for initiating and supporting component repairs by the FRC Production Officer/FRC MO to obtain replenishment of shelf-stocked repairable components issued to support the O-level demand of the warfighting customer. Flight-line critical R-Pool and EXREP items will have precedence in the induction process established by the FRC MO/Wing MO/Supply Officer triad. This well established method to prioritize component repairs based on customer demands that are seen through the Wing MO/ASD Supply Officer will ensure that flight-line readiness in support of RFT continues in the tradition recognized by the local TMS triads.

12.1.3 Functions

12.1.3.1 Rework of existing aviation end items, systems, components, and SE include maintenance and modification functions.

12.1.3.1.1 Maintenance functions are those functions required to maintain or restore the inherent designed service levels of performance, reliability, and material condition; they span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of system consumables. They also include inspection, calibration, and testing.

12.1.3.1.2 Modification functions are those functions required to change or improve design levels of performance, reliability, and material condition. The term modification, as used in this instruction, includes alteration, conversion, engineering change, and modernization.

12.1.3.2 Manufacture of items and component parts otherwise not available.

12.1.3.2.1 Aviation systems are segmented for industrial production. For the purpose of effectively performing industrial rework and manufacturing functions, aviation systems, subsystems, components, and equipment must be allocated and distributed to the various production shops according to particular industrial function capabilities.

12.1.3.2.2 D-level FRCs support the O-level and I-level by providing technical help and carrying out those functions which are beyond the responsibility or capability of the O-level and I-level activities through the use of more extensive facilities, skills, and materials. D-level functions are carried out by FRCs or in the field by FRC personnel.

12.1.3.3 Facilitating support services functions including professional engineering, logistics management, industrial technology, and calibration services.

R} 12.2 In-Service Support Center (ISSC) Functions

12.2.1 In Service Support Center (ISSC) and Fleet Support Teams (FSTs)

12.2.1.1 Purpose. This paragraph provides the requirements for and the policies and procedures which shall govern the ISSC construct, support to the fleet and FRCs and assignment of cognizance of service equipment, together with related functions from COMNAVAIRSYSCOM groups to selected FSTs within the ISSCs. It delineates the responsibilities assigned and the authority delegated to ISSCs for the performance of the assigned in-service functions. Figure 12-3 illustrates the ISSC and FST relationships.

12.2.1.2 COMFRC maintains specific relationships with COMNAVAIRSYSCOM Program Management and Acquisition (AIR-1.0), Research and Engineering (AIR-4.0), and Logistics And Industrial Operations (AIR-6.0) competencies in a shared and common management of the ISSCs co-located at the FRCs. The ISSCs include the Program Management (AIR-1.0), Engineering (AIR-4.0) and Logistics (AIR-6.0H) personnel and represent the technical authority of COMNAVAIRSYSCOM. They are operationally led and directed by their respective COMNAVAIRSYSCOM National Competencies. The ISSCs are administratively part of the FRC Area Commands at FRCE (Cherry Point), FRCSE (Jacksonville) and FRCSW (North Island) and as such use local services within the commands, such as infrastructure, human resources, and information technology support (AIR-7.0), comptroller services (AIR-10.0), and legal counsel (AIR-11.0). The split chain of command exists to ensure that the operational control of the ISSCs and the application of technical oversight to all customers is maintained under COMNAVAIRSYSCOM control while ensuring the FRCs have sufficient administrative control to ensure it is a fiscally viable entity and maintains unity of command.

12.2.1.3 Program management, engineering, and logistics support shall be provided to all FRCs and associated FRC sites through the three ISSCs. In the event the proper program or ISSC contact is known, the FRCs should contact them directly. In the event a proper POC is not known, contact the ISSC assigned coverage for the respective FRC. Cross platform support or permanent personnel assignment should be provided by the coverage ISSC. For business purposes these ISSCs are a part of the area command with which they are collocated but will provide objective support to all FRCs. The ISSC competencies will report through their respective COMNAVAIRSYSCOM (AIR-1.0, AIR-4.0, and AIR-6.0 National level 1) competency structure and the respective FRCs for administrative, budget, and FRC production support.

12.2.1.4 FSTs are the primary elements of the PMAs IPT organizations chartered with ensuring effective fleet support is identified, implemented, analyzed/assessed, and sustained. The ISSCs house and staff FSTs for their assigned areas of equipment, systems, and platform cognizance as a primary mission element in support of fleet and FRC maintenance organizations. FSTs are assigned to various COMNAVAIRSYSCOM related weapons systems, such as aircraft, engines, and components, through the collaboration of the applicable PMA and COMNAVAIRSYSCOM (AIR-4.0 and AIR-6.0) under the Competency-Aligned

Organization. The FSTs provide responsive support to fleet and FRC maintenance organizations when engineering and logistics technical support issues are encountered as well as providing acquisition support to the PMAs to ensure new equipment and modifications and upgrades to existing equipment are designed, tested and fielded with fleet support and in-service sustainment as a primary consideration.

12.2.1.5 An extension of fleet in-service support is also provided through the NATEC ETS representatives. ETS provides advanced fault isolation and troubleshooting support; technical information research and advice; assistance in resolving complex problems; and training (OJT and formal) in conjunction with the installation, operation, maintenance, modification, and repair of applicable aircraft weapon systems. This includes both ashore and afloat activities. ETS are comprised of both organic Navy ETS and Contractor ETS. NATEC ETS personnel have the authority to provide on-site training and technical advice but do not inherently possess the technical authority to make engineering judgments that affect the safety or flight worthiness of a weapon system. Those decisions must be deferred to the designated FST or other appropriate technical authority for the weapons system, unless NATEC ETS personnel are granted this authority by name and position.

12.2.2 Reliability and Maintainability (R&M)/Reliability Centered Maintenance (RCM) Program

12.2.2.1 COMNAVAIRSYSCOM has directed the application of R&M/RCM to all in-service and future aircraft, engines, aircrew systems, weapon systems, aircraft launch and recovery equipment, and SE, from technology development through disposal per NAVAIR 00-25-403 and NAVAIRINST 4790.20.

12.2.2.2 R&M/RCM shall be applied as a continuous, integrated activity based on sound engineering and logistics principles for developing safe and affordable failure management strategies. Conduct of this analysis shall be the basis for any effort that establishes or adjusts PM tasks/intervals as an element of the overall maintenance planning process. Figure 12-4 illustrates the overall R&M/RCM Based Sustained Maintenance Planning Process.

12.2.2.3 R&M/RCM is a total ownership cost reduction process and shall be applied throughout the entire acquisition life cycle to:

a. Influence design requirements during Phase A (Technology Development) and Phase B (Engineering and Manufacturing Development).

b. Develop initial PM requirements for test and evaluation events and update PM requirements for availability on first production units and subsequent major upgrades or modifications.

c. Sustain PM requirements and recommend design/maintenance improvements through continuous review and update during Phase C (Production and Deployment and Operations and Support phases).

d. Develop an R&M/RCM Program Plan for each end item.

e. Perform data collection and compilation of fleet, depot, AE, and vendor data to support development of each system's failure management strategy.

f. Perform reliability analyses to determine failure distributions and trends based on operational, test and analytical data.

g. Perform decision logic analysis to determine failure management strategies such as PM and the need for redesign based on reliability and consequences of failure. Requirements/tasks shall be either verified as valid, or be eliminated, modified, or adjusted to longer or shorter intervals based on the analysis. Efforts shall be coordinated with cognizant design and ISE and logistics personnel knowledgeable of the design philosophy, functions, functional failures, failure modes, and reliability source data for the system analyzed.

h. Provide results for:

(1) Update of fleet level maintenance specifications, for example, PMICs, Daily/Special/Preservation Requirements, and Phased Maintenance Requirements.

(2) Update of D-level maintenance specifications, for example, IMC/P Phased Maintenance Interval and ASPA.

i. Provide continuous review of fleet local MRC maintenance requirements, therefore directing the performance of only R&M/RCM justified fleet-wide maintenance to maintain a safe and economical maintenance program while ensuring optimum operational readiness.

j. Provide inputs to efforts, such as design changes, reliability testing, and obsolescence issues and parts substitutions.

R} 12.2.3 Structural Life Limits Program

12.2.3.1 The Structural Life Limits Program provides policy and assigns responsibilities to ensure continuing structural safety of fixed and rotary wing aircraft throughout their assigned service life.

12.2.3.2 All levels of maintenance are responsible for ensuring structural life limited items and components do not exceed the specified limits per NAVAIRINST 13120.1 for fixed wing and NAVAIRINST 13130.1 for rotary wing aircraft and applicable Service Life Bulletins, PMICs, TDs, and IRACs. Structural modification or alteration of life limited items and components may be changed by applicable TDs, but not without determining the effect on aircraft assigned service life and approval by COMNAVAIRSYSCOM (AIR-4.3.3).

12.2.3.3 Responsibilities:

a. ISSCs shall ensure all structural life limited items and dynamic components are incorporated in applicable aircraft PMICs.

b. FRCs shall ensure all individual aircraft logbooks reflect work accomplished by FRC that may affect the structural life limited items or dynamic components service life. For aircraft reworked on-site, reflect work accomplished in aircraft logbooks or provide the documentation for aircraft logbook entry by the operating activity (as applicable). A} The ISSC shall include instructions for any required logbook or SRC card entries with FED dispositions.

12.2.4 Integrated Maintenance Concept/Program (IMC/P)

12.2.4.1 IMC/P is a multi-phased (Prototype-to-Implementation) program maintenance philosophy based on RCM analysis and focused on developing pro-active Preventive Maintenance Plans. The following are fundamental requirements of the IMC/P:

a. A comprehensive RCM analysis that includes the justification of all maintenance tasks without regard to specific levels of repair. It relies on decision logic for defining PM tasks that are applicable and effective for a specific set of failure modes and outcomes. RCM engineering analysis shall be used to develop and identify PM tasks that will produce the highest degree of availability and readiness at the lowest overall life cycle cost. IMC/P targets improvement in the overall material condition of the aircraft, optimum life-cycle costs, and reduced out-of-service time while retaining safety considerations.

b. The consolidation of maintenance tasks that safely minimizes the duplication of effort among O-level, I-level, and D-level. Eliminating redundant tasks and combining multi-level artisan skill sets will

allow programs to achieve a wider range of tasks without regard to location. This initiative allows programs to move D-level skilled artisans closer to the warfighter, improves fleet readiness through personnel training, and reduces aircraft downtime.

c. FSPs are established by T/M/S and are based on RCM analysis, operational requirements, safety, and economic considerations. FIDs for IMC/P events are set for the specific Month/Year. Planners may induct an IMC/P aircraft any time during that specified month, or up to 2 months earlier if required, for scheduling purposes to support operational requirements, promote level scheduling of D-level events, or compliment budget submission timelines.

12.2.4.2 The PMI Specification details inspection and processing specification requirements necessary to perform scheduled aircraft D-level maintenance. The PMI Specification is written per NAVAIRINST 13023.2 and can be used by both government and commercial contractor activities.

12.2.4.3 NAVAIR AL-081AO-IMC-000 is used by the PMA for planning to transition to the IMC/P and shall be used in preparing for the prototype and final approval processes to ensure all programmatic requirements are anticipated and put in place prior to the commencement of the first PMI at the IMC/P site. This handbook contains the general requirements that must be met for the plan before seeking concurrence from the Integrated Maintenance Review Board and CNO (N980L). Figure 12-5 describes the IMC/P planning and approval process.

R} 12.2.5 Aircraft Service Period Adjustment (ASPA) Program

12.2.5.1 The purpose of the ASPA Program is to establish a process to evaluate the material condition of fleet aircraft and use this information to more effectively plan FRC maintenance programs.

12.2.5.2 Specific objectives of the program are to:

a. Prescribe the operations, actions, and functions needed to:

(1) Make sound rework induction decisions.

(2) Identify and resolve material deficiencies that preclude adjusting an aircraft's service period.

(3) Establish, validate, and redefine aircraft service periods. This portion of the process is covered by the RCM Program, NAVAIR 00-25-403, and the Age Exploration Program.

(4) Collect and provide technical data for input into the CNO's ASPA Predictor Model.

b. Provide management planning and action necessary to:

(1) Coordinate the various aspects of the ASPA process.

(2) Verify process consistency and measure application performance.

(3) Identify and resolve barriers to improvements of the ASPA Program and specific aircraft program applications.

(4) Ensure ASPA requirements meet the needs of the FRC maintenance program.

c. Assess, with minimum readiness impact, the general material condition of aircraft rework candidates.

NOTE: Other aircraft T/M/S have developed special programs to address their specific standard rework needs. IMC/P/PDM/A} EPM/MCI replaces ASPA/SDLM and related program specifics by T/M/S.

12.2.5.3 ASPA Evaluation Document. The ISSC for each aircraft subject to ASPA shall establish and maintain an evaluation document defining records analysis and physical examination tasks needed to determine general material condition of aircraft examined. The evaluation requirements shall be developed considering all factors known to affect the material readiness of the aircraft during the potential adjustment period and indicators of material condition resulting in FRC rework and restoration workload. Requirements related to general condition assessment and evaluation are documented in the ASPA LES. They are not subject to major change due to age or design change. Items of specific concern affected by accumulated service time, management, or technical action are documented separately in companion inspections to permit focused management attention.

12.2.5.3.1 ASPA LES. General condition assessment tasks, rework induction criteria, and evaluation process requirements shall be documented by an ASPA LES. Requirements for reporting custodian support of the ASPA evaluation shall normally be documented by an ASPA conditional MRC. These requirements shall not normally exceed that which would be provided for the Mobilization Material Condition Inspection. The LES shall apply without regard to aircraft assigned service life or service tour since the induction criteria are based on general condition. The indicators, process, and results shall be subject to continuous analysis and review. Periodic validation and improvements of the requirements shall be performed documenting individual and collective effectiveness of the chosen condition indicators. An analytical review of scheduled O-level maintenance requirements shall be conducted. This review will consider ASPA evaluation results, information contained in the MDS, and information identified by the NAMDRP. The review will also document effectiveness and identify needed change. ASPA is an aircraft material management program which uses RCM as its primary technical supporting program. Certified ASPA evaluators apply process, procedures, and criteria of the ASPA LES to determine aircraft general material condition. The LES establishes criteria upon which the ASPA evaluator bases recommendation that the aircraft:

a. PED/OSM be adjusted 12 months (or equivalent flight hours) beyond the current PED or 18 OSM from date of ASPA inspection, whichever is less.

b. Be inducted for rework or preservation not later than 90 days after the current PED.

c. Be inducted into rework immediately and the service tour be terminated.

12.2.5.3.2 Companion Requirements. Experience and technical data will establish certain items to be of significant airworthiness concern during the potential adjustment interval. Material impediments are classified as significant airworthiness concerns which are not present during each evaluation window and do not effectively contribute to the general condition assessment/require unequal man-hours and process time. Such items constitute an impediment to adjustment of PED/OSM without regard to general material condition. Material impediments should be established as individual companion requirements to the ASPA LES. Execution of the companion requirements shall be predicated on both the preservation of airworthiness and conservation of resources. A companion requirement should be documented as a bulletin/a special MRC (often requiring D-level maintenance support) supported by RCM documentation.

12.2.5.4 ASPA Evaluator. The ISSC for each aircraft subject to ASPA shall establish procedures and criteria to be used to certify ASPA evaluators. The ISSC shall monitor the effectiveness of these procedures and criteria to maintain proficient, rapid, and objective assessments of the general material condition of aircraft candidates for rework. The ASPA evaluator shall normally conduct a review of the aircraft maintenance history with the reporting custodian personnel prior to the physical examination. The ASPA evaluator shall conduct an exit brief with a designated representative of the reporting custodian during which the aircraft condition determination is discussed and the assessed maintenance level of discovered defects is agreed upon.

As part of the exit brief, the reporting custodian shall provide the ASPA evaluator with the JCN assigned to the ASPA support MAF and the ASPA preparation man-hours expended. The ASPA evaluator shall then provide the reporting custodian a countersigned copy of the ASPA Evaluation Record and serve as critical repair coordinator until relieved by the leader of the D-level repair team. The evaluation results in a statement of general material condition that must be published using the ASPA P&E report. The ASPA evaluator shall ensure that the ASPA P&E report is released either from the reporting activity or released from the applicable D-level activity performing the evaluation.

12.2.5.5 ASPA Evaluation Scheduling. OPNAVINST 3110.11 requires an ASPA evaluation between 6 months prior to and 3 months after PED of each ASPA aircraft to determine its general material condition relative to established induction criteria. The 3-month window after PED can only be allowed when no D-level structural life limited item will expire during that period. This determination can be made by screening the aircraft logbook or by contacting the ISSC if information is not available locally. The criteria are based on general material condition and are applicable throughout aircraft service life without regard to duration of service tour. Any aircraft that receives an initial ASPA PED revision shall require additional ASPA inspections as a minimum for any further PED revision. As a general guideline, no more than 18 months should elapse between the ASPA inspection and the resulting adjusted PED. Aircraft will not normally undergo an ASPA evaluation while embarked on a ship. Deviation may be authorized by CNO (N980L) with ACC/TYCOM concurrence. The reporting custodian must consider resource and readiness impacts of ASPA in executing these procedures. Total impact could include: maintenance man-hours required to support the evaluation; facility and equipment requirements of the ASPA evaluator; facilities and equipment needed to correct defects classified as Critical; availability of essential materials and aircraft out-of-service time for examination and repair. Emphasis shall be given to minimizing these impacts during development of the evaluation schedule. Reporting custodians should attempt to schedule the ASPA evaluation to coincide with scheduled maintenance action(s) having disassembly requirements similar to ASPA. ACCs/TYCOMs should establish procedures to coordinate the greatest practicable number of evaluations of similar aircraft at a site/region during an evaluator visit. However, not more than one aircraft should normally be scheduled per reporting activity in the event that a D-level critical defect is discovered and extensive maintenance is required. Those activities with complements of more than 30 aircraft may schedule up to 10 percent of total complement simultaneously for ASPA evaluations.

12.2.5.6 Repair of ASPA Defects. The ASPA evaluator shall provide the reporting custodian a signed copy of the ASPA Evaluation Record. This record includes all discrepancies discovered during the evaluation, classified by assessed defect and maintenance level. An authorized representative of the reporting custodian signifies concurrence with these findings by signature. The reporting custodian shall provide the evaluator, as part of the exit brief, with the JCN assigned to the ASPA support VIDS/MAF and the ASPA preparation man-hours expended. The reporting custodian shall initiate VIDS/MAFs (When Discovered Code U) to correct all O-level or I-level discrepancies. All Critical defects require correction prior to release for flight, regardless of assessed maintenance level or general material condition. The ASPA evaluator shall act as critical repair coordinator until relieved by the leader of the D-level repair team. The ACC/TYCOM shall direct and control procedures for requesting FRC emergency/field repair consistent with D-level management procedures established by COMNAVAIRSYSCOM. This may include repair of D-level Major defects on aircraft not recommended for SDLM/PDM induction. The ACC/TYCOM may decline a recommendation for PED adjustment considering operational and readiness impacts inherent in repair of identified defects. The ACC will render final induction decision based on operational needs and ASPA evaluation recommendation. OPNAVINST 3110.11 requires rework induction not later than 90 days after the current PED when the ASPA evaluation determines that aircraft general material condition satisfies rework induction criteria.

NOTE: The ASPA evaluator will only provide a recommendation to extend a PED. The ACC will authorize the adjustment and has the option to force induct the aircraft into SDLM regardless of extension recommendation.

12.2.5.7 ASPA Defect Definitions. The following discrepancy definitions are considered to be a subclass of the more general DEFECT definitions contained in Appendix A:

a. DEFECT, CRITICAL - A defect that constitutes a hazardous or unsafe conditions, or as determined by experience and judgment could conceivably become so, thus making the aircraft unsafe for flight or endangering operation personnel. The condition is such that corrective action is required prior to release of the aircraft for flight. Coordination with the PMA is required to establish restricted flight conditions and operating limitations which would permit safe flight of the aircraft to an FRC facility.

b. DEFECT, MAJOR - A defect that materially reduces the use of the unit or part for its intended purpose. Aircraft is safely flyable but requires major repair within a specified time frame.

c. DEFECT, MINOR - A defect that does not materially reduce the use of the unit or part for its intended purpose. Deferral of corrective action until the next D-level examination is not likely to impose an unequal economic penalty.

12.2.6 Automatic Test Equipment (ATE) and ATE Test Program Sets (TPS)

12.2.6.1 Introduction

12.2.6.1.1 ATE is required to support present and future complex aircraft weapon systems. The development of Navy organic capability to support these weapon systems includes the requirement to support the required ATE TPS. Functionally, the TPS computer program operates within an ATE system and is connected to a UUT in such a manner to fault detect and fault isolate the UUT to its defective part(s). Such TPS support includes:

a. Management, generation, maintenance, analysis, correction, modification, updating, and replenishment of test programs and test program related documentation.

b. Establishment of organic support capability minimizes future costs while providing a vehicle for timely response to fleet requirements.

c. All ATE and ATE TPS used in common by I-level/D-level maintenance activities in support of designated airborne weapon systems, and all D-level only ATE and ATE TPSs funded and developed by COMNAVAIRSYSCOM.

12.2.6.1.2 The ISSC is the COMNAVAIRSYSCOM Technical and Certification Authority for designated ATE and ATE TPS. The ISSC has the responsibility and accountability to establish, monitor, certify, and approve technical products and processes in conformance to higher authority policy, requirements, architectures, and standards.

12.2.6.2 Automatic Test Equipment (ATE) Test Program Sets (TPS) Development

12.2.6.2.1 TPS Development is provided by COMNAVAIRSYSCOM. The TPSs provided by TPS Development are made up of hardware and software elements and all supporting documentation. The TPSs provide the fleet and FRCs the capability to maintain and repair complex aircraft weapon/avionic systems using ATE. COMNAVAIRSYSCOM furnishes organic TPS Development teams to provide fleet introductions and on site verifications of the TPSs.

12.2.6.2.2 Policy/Responsibility. Organic TPS Development Teams shall be composed of ISSC professional scientists, engineers, logisticians, project managers and supervisors. These teams will be assigned by COMNAVAIRSYSCOM/PMAs.

12.2.6.2.3 Organic TPS Development Teams shall:

a. Design and develop TPSs for emerging aircraft weapon/avionics systems.

b. Design and develop TPSs to offload other legacy ATE TPSs to the Navy's latest ATE systems.

c. Design and develop test program system interfaces which include (but are not limited to) the following:

(1) Interconnecting devices.

(2) Load boxes.

(3) TPS ancillary equipment.

(4) Test adapters.

(5) Test fixtures.

(6) Holding fixtures.

(7) TPS accessory hardware.

d. Design and develop the test program software executed on the target ATE system.

e. Develop technical data packages and documentation for TPSs.

f. Develop and update TPSs to support new aircraft configurations of weapon/avionic systems.

g. Provide technical assistance for TPS design and development.

h. Provide fleet introduction/verification for new TPSs.

12.2.6.3 Automatic Test Equipment (ATE) Test Program Sets (TPS) In-Service Engineering (ISE)

12.2.6.3.1 Responsibilities and objectives are as follows:

a. Design corrections to ATE test programs via a Test Workaround Procedure or SSC/TD.

b. Develop new test programs or add new tests to existing test programs.

c. Update ATE TPS to maintain compatibility with modified ATE or airborne avionics.

d. Perform ATE test program software reprogramming, debugging, reproduction, distribution, and replenishment.

e. Prepare, sign, and distribute TDs for support software changes and kits for modifying test programs and related documentation.

12.2.6.4 Mobile Maintenance Facility (MMF)

12.2.6.4.1 COMNAVAIRSYSCOM is designated as the Technical and Certification Authority on MMF used by the Navy and Marine Corps. The ISSC has the responsibility and accountability to establish, monitor, certify and approve technical products and processes in conformance to higher authority policy, requirements, architectures, and standards.

12.2.6.4.2 Responsibilities and objectives are as follows:

a. Responsible for providing engineering services per NAVAIR 13670.1.

b. Provide engineering services required to take "basic shell" Mobile Facility vans and modify designs to meet new customer requirements. Requirements are specified by the customer via a FRD, a formal written requirements letter, a TBA, or a WSPD.

c. Develop prototype designs for concept and CSC testing (as required).

d. Maintain Configuration Control of Engineering Drawings for fielded MF configurations.

e. Ensure engineering designs and changes conform to CSC standards to ensure safe usage and transport of MF vans.

12.2.6.5 Automatic Test Equipment (ATE) Installation/Validation/Verification

12.2.6.5.1 CASS/RTCASS Installation/Validation/Validation support is provided by COMNAVAIR-SYSCOM to provide effective, reliable CASS and RTCASS testing and support to the naval aviation war-fighter on all aircraft carriers and amphibious assault ships (CVNs/LHAs/LHDs), NASs and MCASs per the requirements of PMA-260, COMNAVAIRSYSCOM, Patuxent River, MD.

12.2.6.5.2 COMNAVAIRSYSCOM responsibilities and objectives are as follows:

a. Perform Site Surveys to various NASs, MCASs, FMS sites and private contractor facilities to verify that the site is ready to receive the ATE.

b. Perform station installations, removals and verifications. These tasks are performed on board carriers, in Marine MFs and at naval bases CONUS and OCONUS.

c. Perform CASS station conversions to reconfigure stations to different configuration as needed by the fleet.

d. Coordinate shipping of ATE and ATE assets to effect required installations, reconfigurations and subsequent verifications.

e. Assemble installation kits to support installation/verification efforts at fleet and DOD engineering activities.

f. Provide inventory support, kitting, material restocking requirements and packaging/trans-portation/receipt of material for CASS stations and all MHE for station installations.

g. Coordinate the scheduling of riggers to load and offload items from trucks and respond to emergent material requirements for off site installation.

h. Maintain a station inventory for the West Coast and East Coast CASS storage facilities, identifying the CASS stations by type and serial number and showing transaction dates for receipts and transfers.

i. Perform technical assistance to the fleet to remedy/repair/assist with fleet station problems.

12.2.7 Joint Deficiency Reporting System (JDRS)

12.2.7.1 JDRS is a centralized web-enabled automated AIS used by the U.S. Armed Forces. Participation includes COMNAVAIRSYSCOM, Air Force Systems Command, Army Aviation and Missile Command,

U.S. Coast Guard Command, and DLA. Within COMNAVAIRSYSCOM, JDRS is used as a means to collect accurate, critical data, perform timely and thorough investigations, facilitate communication, and to share investigation data seamlessly between Navy/Marine Corps maintainers and COMNAVAIRSYSCOM in support of NAMDRP.

12.2.7.2 JDRS is used to report deficiencies detected by O-level, I-level, and D-level activities and other enrolled users concerning aircraft, systems, and equipment. JDRS provides notification to appropriate stakeholders and support teams, guides responses, compiles data, helps resolve problems, and serves as a historical resource to research prior occurrences. Its goal is to ensure that every safety deficiency is resolved promptly and to provide effective leading indicator metrics to prevent reoccurrence of safety, reliability, and maintainability issues. JDRS serves as a single, seamless deficiency reporting system that assists the warfighter and associated engineering, quality and logistics support teams with the reporting and investigative processing of deficiencies for the Joint aeronautical community. Types of NAMDRP deficiency reports in the JDRS system include EIs, HMRs, PQDRs, AIDRs, and TPDRs. Details of the reporting methods and processes for deficiencies are in Chapter 10, paragraph 10.9.

12.2.8 Acquisition Logistics Support Plan (ALSP)

The ALSP is the process used to ensure all support elements are properly planned, acquired, and sustained for adequate support of weapon systems to maximize operational readiness. A well conducted ALSP causes support considerations to influence system design, ensures support requirements are related to design and to each other, ensures acquisition of required support, and provides required support to deployed systems at minimum cost to the government. The mechanism for integrating the individual ILS functional programs, such as maintenance planning, provisioning, personnel and training, SE, facilities, and technical publications into a total support system is an iterative process that continues over the life span of the acquisition or modification program. The Supportability Analysis Plan should be identified as input into the system engineering strategy. To ensure ILS is properly addressed, these processes should be evaluated during each milestone/operational phase by the ISSC personnel using the systems engineering process. The systems engineering/maintenance planning process identifies the initial logistics resource requirements within an ILS Program. Modifications or ECPs must also follow the systems engineering/maintenance planning process to integrate additional ILS or modified support requirements into the Maintenance Plan. This process is a closed loop system which begins with early ILS planning, continuing within systems engineering, and does not end until disposal of the weapon system. The review of sustainment strategies comparing performance expectations as defined in performance agreements to actual performance results shall be conducted on a continuing basis. Deficiencies shall be continuously identified, monitored and addressed and the ALSP shall be updated as necessary to meet system operating requirements.

12.2.9 System Safety Program

12.2.9.1 Purpose. The purpose of the System Safety Program is to identify, eliminate, or mitigate risks in the design of weapons systems to an acceptable level. This includes risks to hardware, software, and human systems interfaces and risks to the system, personnel and the environment.

12.2.9.2 Goal. The goal of this program is to ensure a system safety organization, supported by adequate resources, is in place and capable of effectively managing the System Safety Program.

12.2.9.3 Policy. DODINST 5000.02 requires program managers to establish a System Safety Program, regardless of ACAT category per the methodology in MIL-STD-882. The DODINST 5000.02 and SECNAVINST 5000.2 identify the risk acceptance authorities for System Safety Risks. COMNAVAIRSYSCOM (AIR-4.1.6) is the Technical Warrant Holder for the NAVAIR Risk Assessment and Acceptance process per NAVAIR SWP 4160-001.

12.2.9.4 The following apply to the System Safety Program and are defined in Appendix A:

a. System Safety.

b. System Safety Engineering.

c. System Safety Management.

d. Hazard. The Hazard Severity Definition levels are shown in Figure 12-6.

e. Hazard Control.

f. Hazard Probability. Use MIL-STD-882D, supplemented by the Hazard Risk Matrix example (Figure 12-7).

12.2.9.5 Responsibilities

12.2.9.5.1 ISSCs shall:

a. Review ISSC assigned projects and operations to determine the high priority projects that present the greatest cost mishaps, through EI files, incident and mishap reports, and PQDRs.

b. Conduct initial risk assessments of hazards identified as a screening process to determine if the EI is safety critical.

c. Maintain active liaison with COMNAVAIRSYSCOM (AIR-4.1.6) to communicate newly identified failure modes or hazards to equipment or personnel. Provide supporting documentation/data for the PFS to conduct the formal System Safety Risk Assessment (SSRA).

d. Ensure adequate funding is placed in the budget request to cover system safety requirements for ISSC assignments.

e. Gather, track, and trend safety data from OPNAVINST 3750.6, HAZREPs, EIs, PQDRs, and MIL-STD-882D reports.

12.2.9.5.2 COMNAVAIRSYSCOM (AIR-4.1.6) shall:

a. Conduct the COMNAVAIRSYSCOM System Safety Program per NAVAIRINST 5100.3, the approved System Safety Program Plan, and System Safety Management Plan.

b. Maintain active liaison with ISSC personnel so that newly discovered failure modes and hazards are properly characterized and assessed in terms of severity and frequency. Work closely with ISSC engineers to develop mitigation plans and recommendations to program management.

c. Develop the SSRA and ensure proper program level acquisition authority accepts the current risk and establishes mitigation plans to reduce the risk to an acceptable level.

12.2.10 Central Technical Publications Library (CTPL)

NOTE: FRCWP shall manage CTPL per Chapter 7. All other D-level FRC activities shall manage CTPL per this chapter.

12.2.10.1 The CTPL serves two important functions. It provides a central source of up-to-date aeronautical reference material and is a ready reference source for personnel training and individual improvement. To perform these functions, the Central Technical Publications Librarian must manage and control the distribution of technical publications for every T/M/S aircraft and related equipment in the organization's

physical custody consistent with the maintenance level of responsibility involved. Retention of master copies of publications in the CTPL is optional if the same publications are held by one or more dispersed libraries.

12.2.10.2 Management of the CTPL includes determining which technical publications are needed to support the organization, controlling receipt and distribution, and ensuring all publications are current and in good condition. Internal control and distribution of this instruction is a Central Technical Publications Librarian's responsibility.

12.2.10.3 NAVAIR 00-25-100 contains detailed information about establishing and operating a CTPL. It also describes the requirements, functions, and responsibilities of personnel assigned to maintain aeronautical technical publications.

12.2.11 Technical Authority, Certification, and Qualification

12.2.11.1 The COMNAVAIRSYSCOM (AIR-4.0) Chief Engineers at each ISSC are technical authority Deputy Warranting Officers for the support provided to their associated FRCs and FSTs.

12.2.11.2 The Chief Engineers:

a. Provide Safe for Flight requirements for FRC production and quality processes and FST one time flight recommendations.

b. Provide engineering and technical oversight, guidance, and assistance to CENNAVAVN-TECHTRAU, COMFRC, and COMNAVAIRFOR in the training, qualification and certification of fleet and civilian personnel to:

(1) Develop and issue engineering requirements for special skill certifications for maintenance technologies, such as NDI, Welding and Brazing, and Composite Repair.

(2) Provide products and services in the establishment of training materials and methods, such as course content and testing and examination procedures, as requested by COMNAVAIRFOR, CENNAVAVNTECHTRAU, and COMFRC.

c. Ensure that technology improvements within maintenance technologies are fully integrated within existing training, qualification and certification programs. Assist COMNAVAIRFOR, CENNAVAVN-TECHTRAU, and COMFRC in establishing new training programs (when requested).

d. Perform specialized testing and evaluation of proficiency test specimens as part of qualification and certification programs (when required).

e. Perform qualification or certification of maintenance personnel as required or requested by COMNAVAIRFOR and COMFRC.

12.2.11.3 Technology Transition. Provide engineering selection, evaluation and insertion of new maintenance technologies for COMNAVAIRFOR and COMFRC. Act to transition S&T and RDT&E technologies into maintenance operations performed by COMNAVAIRFOR and COMFRC including:

a. Select and identify advanced technologies necessary to provide improved ISE support of aircraft and engines and related systems.

b. Select and identify advanced technologies to affect new repair and maintenance capabilities, enhance production efficiency, reduce HAZMAT generation, or meet environmental or pollution prevention goals/requirements.

12.2.12 Critical Item Management (CIM)

12.2.12.1 FSTs are designated as the ESA for each aircraft platform for which they are defined as the cognizant authority. The term ESA is synonymous with Design Control Activity. The ESA is responsible for CIM for their platform. CIM denotes the sourcing and manufacturing of naval aviation CAIs and CSIs, collectively referred to herein as CIs. CIs are items the failure of which have been determined to result in MIL-STD-882 severity Category I or Category II consequences.

12.2.12.2 The authority to work technical issues related to CIs is categorized by technical discipline and is delegated by the applicable COMNAVAIRSYSCOM engineering competency. Engineers within an ESA that have authority to officially sign off on completed work related to CIs within their purview are designated as BDEs. BDE tasking includes but is not limited to:

a. Item criticality determinations.

b. Development and approval of manufacturing plans for local one-time manufacture of CIs.

c. Disposition of DLA Form 339, Request for Engineering Support tasks.

12.2.12.2.1 Participation in the resolution of CIM policy issues related to the BDE's platform and area of competence.

a. Participation in the resolution of conflicting ICDs for items that are used on multiple platforms.

b. Participation in the resolution of issues related to alternate sources for CIs.

c. Participation in site surveys for vendors applying to become alternate sources of CIs.

12.2.12.2.2 Each FRC has a Critical Items Management Coordinator (CIMCO). The CIMCO duties fall into the following categories:

a. CIM Oversight. The CIMCO is the local site process owner and functions as a liaison for COMNAVAIRSYSCOM (AIR-4.1), NAVSUP WSS, and DLA for emergency or problem issues with specific vendors. The CIMCO is a member of the Navy CIM Policy Team, and manages CIM funding and metrics for their FRC. The CIMCO maintains the CIM database inputs for their FRC.

b. Engineering Request Coordination. The CIMCO or their delegated representative coordinates DLA/NAVSUP WSS engineering requests to the ESAs at their FRC. This includes tracking and assigning tasks to the appropriate engineering teams, tracking and recording all engineering responses, and expediting turn-around times, questions, etc.

c. Source Approval Request (SAR) Package Review Coordination. SAR packages are formal proposals from vendors seeking to become alternate sources for items procured by the Government. The CIMCO receives all SAR packages from DLA and NAVSUP WSS that are sent to ESAs at their site. The CIMCO then verifies item criticality for the SAR packages received and then routes the SAR packages to the appropriate engineering team. Once completed, the CIMCO closes out the SAR packages per the SAR review process.

d. First Article Test/Production Lot Test Process. Each FRC performs First Article Testing and Production Lot Testing for items procured from alternate sources. Testing is performed as required by the contract, and typically includes some combination of dimensional validation, material property validation, and form/fit/function testing. Upon completion of testing, the FRC notifies the customer (NAVSUP WSS or DLA) of test results (pass, fail, or conditional acceptance).

e. Item Criticality Database System. The Navy has developed and implemented an ICD module into the JDRS (http://www.jdrs.mil/home.html). JDRS is the official database for item criticality determinations. In addition to an item's criticality, the database also contains information on an item's critical characteristics, its NSN (if any), and approved sources.

12.3 Planning and Scheduling

12.3.1 Fleet Readiness Center (FRC) Industrial Workload Definition

12.3.1.1 FRC industrial workload consists primarily of the performance of industrial functions beyond the capability of the O-level and I-level which are described in the NIF Handbook for FRCs and other pertinent COMNAVAIRSYSCOM/COMNAVAIRFOR instructions. FRC industrial workload is normally performed by naval organic, other military services, or commercial contractor aviation repair facilities.

12.3.1.2 The industrial workload is composed of seven major workload programs which are primarily associated with the specific logistic support of naval aviation operating forces and various minor workload programs of general to specific nature. These workload programs include but are not limited to the following:

a. [00] The rework of aircraft airframes and those systems not physically removed from the aircraft, per engineering specifications, under standard rework.

b. [01] The rework of missile guidance and control systems.

c. [02] The rework of power plants.

d. [03] The rework of removed aviation components.

e. [04] Aircraft support services (other support) which includes the following major subprograms:

(1) Salvage.

(2) Preservation/Depreservation.

(3) Customer/operating forces training.

(4) Acceptance and Transfer (aircraft).

(5) Calibration.

(6) Customer service.

(7) COMNAVAIRSYSCOM shipboard work.

(8) SE.

(9) ISSC services.

f. [05] The manufacture of designated items not otherwise available, and the design and manufacture of particular modification change kits for aircraft and aeronautical equipment.

g. [06] The modification of aircraft.

12.3.2 Workload Determination

The determination of D-level industrial workload is based on the requirements of the operating forces as established by the CNO. Older aircraft requirements are established on the basis of PEDs modified by the CNO ASPA Predictor Model and known special requirements. The Predictor Model is a computer program that statistically ages the aircraft inventory by applying ASPA deferral rate data, attrition, and pipeline data resulting in a projected rework induction profile. Aircraft requirements for PDM or IMC/P aircraft are established on the basis of FIDs, with no ASPA deferrals. These requirements for aircraft, power plants, missiles, components, SE, and support services are programmed by COMNAVAIRSYSCOM and assigned for rework at the various naval, interservice, or commercial contractor aviation industrial establishments.

12.3.3 Long Range Plan

12.3.3.1 COMNAVAIRSYSCOM designed and developed the D-level industrial management long range planning system, an MIS which provides a means of rapidly evaluating and assigning available D-level industrial resources to accomplish the required workload in the most effective manner. The system was designed to comply with the DOD guidance for FRC industrial management planning which includes DOD Directive 4151.18 and other guidelines.

12.3.3.2 The primary purpose of the D-level industrial management long range planning system is to provide a continuously updated five-year plan for the most effective accomplishment of D-level industrial support for the operating forces within available resources. It provides the basis for planning future manpower, facility, and equipment requirements. It also provides the input for aviation D-level industrial management planning in the POM development process.

NOTE: The long range plan, when approved within the POM development process, forms the basis for the development of the next fiscal year budget which supports the D-level aviation industrial program.

12.3.3.3 The long range plan provides current information for use by management in making decisions that will improve the effectiveness and efficiency of D-level industrial support in the following areas:

a. Knowledge and assessment of the available aviation industrial support to the Navy/Marine Corps in terms of resources to be used or consumed.

b. Maintenance of the proper balance between assigned or allocated industrial resources and the approved aviation force levels and operating programs.

c. Quantitative and qualitative evaluation and assessment of the impact of major force changes in the D-level industrial program and capabilities along with decisions related to the operating forces.

d. Quantitative evaluation and assessment of the impact of budgetary constraints on the D-level industrial workload requirements.

e. Measurement of projected workload requirements against actual industrial production performance.

f. Evaluation of alternative sources for accomplishing a total D-level industrial program among organic, interservice, and contract establishments to determine the most responsive and economical workload distribution plan within DOD and DON guidelines.

g. Evaluation of current and proposed industrial plant investment plans.

h. Assessment of the planned versus actual usage of current D-level industrial investments in tooling, equipment, and facilities.

i. Analysis of the degree and extent of existing and planned redundancy in organic industrial capabilities and capacities.

j. Identification and analysis of those aviation systems or equipment and items programmed to use or consume the most significant proportions of D-level industrial resources.

k. Validation of current and future D-level industrial budget and manpower requirements.

l. Identification of need for D-level industrial facility and equipment modernization programs as expressed in the Basic Facilities Requirement Lists and COMFRC modernization plans.

m. Projection of operational contingency and mobilization surge workload requirements.

12.3.4 Long Range Planning Procedure

12.3.4.1 The preparation and analysis of a long range plan entails the collection of detailed basic input data from many varied sources to ensure that requirements are complete, costs are accurate, and the resultant plans are feasible. The main elements are categorized as follows:

a. Workload. The aviation forces to be supported are determined. This includes specification of the required force level, aircraft mix, Flying Hour Program, and the deployment parameters for those aviation forces. This process is applicable to any normal, operational contingency, or level of intensity. Using operating force maintenance data and logistics policies involving D-level industrial support, such as the frequency of aircraft, power plant, component, and SE rework inductions, the specific industrial functions and subprograms required to support the approved aviation force levels are calculated. The workload data must also be collected from all sources for which COMFRC provides D-level industrial support, such as Air Force, Army, Coast Guard, other government agencies and departments, and foreign governments.

b. Cost. Labor and material cost data are provided by COMFRC for workload assigned to them. COMFRC is responsible for the development and provision of cost rates for all other D-level industrial sources and for the adjustment of rates to account for workload mix changes and inflation.

c. Industrial Capacity. The data concerning industrial capacity are provided by each naval aviation industrial establishment in ten basic production shop categories:

(1) Airframes.

(2) Power Plants.

(3) Accessories and Components.

(4) Electronics, Communications, and Armament Systems.

(5) Armament.

(6) SE.

(7) Manufacture and Repair.

(8) Test and Calibration.

(9) General Shop Support.

(10) Other areas.

NOTE: Only Navy organic depots are required to furnish capacity data to COMFRC.

d. Other Supportive Information. Additional supportive information from the FRCs, or COMFRC, such as workload distribution factors, cost volume analysis data, manpower attrition and accession data, leave factor data, direct/indirect labor ratios, and overtime limitations are also required in the development of the long range plan.

12.3.4.2 The long range planning procedure applies to CNO or higher authority guidance in terms of related objectives and budgetary constraints to these requirement data inputs. The development of any plan normally requires the exercise of the following three major sets of decisions:

a. The aviation forces to be supported are determined. This includes specification of level, mix, Flying Hour Program, and deployment of the aviation forces.

b. Using operating force maintenance data and logistics policies involving D-level industrial support, such as the frequency of aircraft, power plant, component, and SE rework inductions, the specific industrial functions and subprograms required to support the approved aviation force levels are calculated.

c. The development of a production plan which best meets the industrial support requirements. This includes the assignment of the workload to the available industrial capacity, the resources required, and the total cost of the production plan.

12.3.4.3 A production plan which best meets the industrial support requirements is then developed through a repetitive process in an effort to find the best balance between operating force readiness, workload distribution among the industrial establishments, and budgetary constraints. This plan includes the assignment of the workload to the available industrial capacity, the resources required, and the total cost of the production plan.

12.3.4.4 An additional repetitive process in an effort to assess the impact of new technologies upon this balance may also be needed.

12.3.4.5 Industrial support plans are developed through a repetitive process in an effort to find the best balance between operating force readiness and workload distribution among the industrial establishments, which is within budget constraints. For example, the total cost of the industrial program plan as determined in development of the production plan may so exceed a budget constraint that reconsideration of aviation force levels and logistics policies may be needed.

12.3.4.6 Plans to satisfy calibration servicing requirements require an additional repetitive process in an effort to project application of new technologies to perform calibration functions, as well as to find the best balance between requirements of the naval aviation community and the D-level workload distribution.

12.3.5 Workload Scheduling

12.3.5.1 COMFRC manages the FRCs and is responsible for scheduling D-level workload and commercial rework of aircraft and power plants for contracts in the United States and Canada. Scheduling outside CONUS is accomplished by FRCWP.

12.3.5.2 Fleet Readiness Support Meetings. Industrial workload is scheduled on a quarterly basis by COMFRC for the FRCs. These quarterly rework schedules, along with associated man-hour allocations, funding controls, and personnel targets are updated at fleet readiness support meetings chaired by COMFRC and attended by representatives from each of the FRCs and NAVSUP WSS. At these meetings, representatives review the quarterly schedules of assigned rework to ensure the man-hours available are

sufficient to meet the scheduled requirements. When needed, interim meetings may be called in the event that workload contingencies occur or changes are required between the scheduled quarterly meetings.

12.3.6 Commercial Workload Management

12.3.6.1 The NAE, in support of government policy, accomplishes some of its D-level requirements through contracts with commercial industry. NAE activities, whose aircraft and aircraft power plants are reworked by commercial contractors, shall be knowledgeable in the procedures used to obtain maximum benefits available from the commercial contractor. In addition to the information provided by this chapter, personnel should also be familiar with COMFAIRWESTPACINST/NAPRAINST 13023.1. This instruction is applicable to NAE units in the Western Pacific and Indian Ocean operating areas.

12.3.6.2 Applicability of Regulations and Instructions. Equally important to the proper management of D-level rework at a commercial contractor establishment is the understanding by government personnel that very few regulations and instructions are written that are intended to be applicable to a commercial contractor. Although these regulations and instructions are binding on the organic military establishments they are not binding on the commercial contractor unless specifically identified in the contract. COMFRC is responsible for determining which regulations and instructions are applicable and shall ensure that they are included in the particular contract.

R} 12.4 Execution and Management

12.4.1 Workload Requirements

12.4.1.1 FRC industrial workload requirements are generated within the framework of NAVAIRINST 4790.22 and other associated COMNAVAIRSYSCOM/COMNAVAIRFOR instructions used as the basis for the determination of overall logistic requirements. The resulting FRC industrial workload requirements are primarily influenced by the Navy's current and projected approved force level and approved Flying Hour Program. These are normal (or peacetime) requirements and do not include any national security contingency requirements, much less full scale mobilization (or wartime) requirements. The latter requirements are the driving factors in the Industrial Baseline Mobilization Program.

12.4.2 Rework Specifications

12.4.2.1 FRC industrial rework specifications are drawn up from a multitude of sources that are recorded on WO cards, in the case of FRCs, or a statement of rework specification. Commercial contractors use a variety of techniques and terms to implement the rework specifications requirements, that is, to perform the same function as the WO cards. The rework specification, be it D-level specification (for aircraft rework) or Appendix A to the contract (for Air Force interservice programs), is recorded on operational documents of some type; these specifications provide the statement of rework to be accomplished.

12.4.2.1.1 Scheduled Depot Maintenance. Depot maintenance inspection and repairs that are calendar based per the aircraft’s FSP.

12.4.2.1.1.1 SDLM. Induction could be delayed if aircraft passed an ASPA inspection. Most programs have transitioned to the IMC/P and changed the title and specification to a PMI.

12.4.2.1.1.2 PMI events have a fixed induction date that can only be waivered by OPNAV. Depending on the program, there may be multiple different inspections, each with its own specification, at specified intervals over an OSP, such as PMI 1, PMI 2, or PMI 3.

12.4.2.1.2 D-level Maintenance Specification Classifications

12.4.2.1.2.1 The basic D-level maintenance tasks refer to the requirements set forth in the D-level maintenance specification. This includes, but may not be limited to: induction, pre-strip disassembly, strip and surface conditioning, post-strip disassembly, E&E second check inspection, assembly, ground check, flight test, and final paint.

12.4.2.1.2.2 CCR. The removal, repair and re-installation of DLRs (7R or like items managed by other services) from a higher assembly or end item that was removed during aircraft D-level maintenance events.

12.4.2.1.2.3 Non DLRs. These are items that are removable, for example, not riveted, from the airframe, such as access doors, panels, and some pylons. These subassemblies are not considered concurrent components.

12.4.2.1.2.4 Airframes. These are repairs to the airframe end item that may include all trades. Some examples are LESs, TEIs, 3Rs, or standard repairs. Consideration should be given to:

a. Critical in Nature.

b. Safety of Flight.

c. Not normally accessible by the O-level.

12.4.2.1.3 Concurrent Repair (Concurrent Component Repair/Non-DLR)

12.4.2.1.3.1 Scheduled. Items specifically cited in the Specification. Where an inspection or like event is specifically called out in the specification, then the repair/buy action is a legitimate charge. A repair/buy decision/determination shall be made by the FRC sites.

a. The following should be considered as part of the decision:

(1) Availability of part.

(2) Timeframe available to meet the critical path/TAT Impact.

(3) PBL contract coverage.

(4) Cost.

b. If the item is covered under an active PBL contract, the DLR shall be removed and replaced with an item requisitioned from the supply system. This excludes the repair of 7Rs removed for access. In the event a 7R is removed for access and it is noted repair or replacement is required, the FRC should follow guidelines for unscheduled work per paragraph 12.4.2.1.3.2.

12.4.2.1.3.2 Unscheduled. Items NOT explicitly cited in the specification. A repair/buy decision is authorized only when the IMC/P Coordinator has determined it is a legitimate repair requirement. FRC shall provide the IMC/P Coordinator with estimated repair costs in man-hours, materials and affect on TAT or IMC/P delivery date. These repairs must be funded with the designated account, dependent upon the customer.

12.4.2.1.4 Concurrent Repair (Airframes) - D-level

12.4.2.1.4.1 Scheduled. D-level repairs that result from inspections explicitly cited in the specification or as a result of a local engineering specification. These efforts are covered within the WLS and are specifically funded.

12.4.2.1.4.2 Unscheduled. D-level repairs that are not explicitly cited in the specification, temporary engineering instruction, 3Rs (rapid, reply request) and local engineering specifications recently issued and the FRC has not had the opportunity to budget or include in previous Workload Standards. These efforts must be funded with the designated account, dependent upon the customer for labor. Except for piece parts, material is a FHP charge.

12.4.2.1.5 Concurrent Repair (Airframes) - O level or I-level

12.4.2.1.5.1 Unscheduled. Repairs outside the scope and not explicitly cited in the specification where a standard repair exist. These repairs must be funded with designated account, dependent upon the customer.

12.4.2.2 The rework specifications for in-house or commercial contractor accomplishment of standard D-level rework for any aircraft or power plant is prepared and approved by COMFRC. The rework specification for aircraft and power plants built to military specifications will be under the criteria established by COMFRC. Rework specifications for aircraft built and maintained under commercial/FAA standards will be those rework requirements recommended by the aircraft or power plant manufacturer, as amended or supplemented by COMFRC and the ISSC having engineering responsibility.

12.4.2.3 A review of the rework specification is performed by the ISSC prior to each new contract awarded, annually prior to exercise of any contract extension option, and whenever the rework specification is rewritten.

12.4.2.4 An active rework specification will require a review/rewrite with each contract cycle, depending on the currency of the specification. Once a contract has been awarded, changes to the rework specification must be negotiated with the FRC or contractor and funds made available to accomplish the changes. Recommended changes to the rework specification will be provided to the responsible ISSC.

12.4.2.5 The rework specification is drawn up to show the normal rework requirements that must be accomplished when an aircraft is inducted for scheduled industrial rework. When special or additional rework actions are required while the specific aircraft is undergoing scheduled rework, the reporting custodian prepares and submits a Standard Depot Level Maintenance Special Work Request (CNAF 4790/65) (Figures 12-8 and 12-9). Special work items are normally beyond the capability of the operating activity to perform, for example, incorporation of certain changes/modifications, correction of continuing or unsolved recurring discrepancies, special painting, or tests that require special equipment. When special or additional rework actions are requested, the time frame becomes even more critical, since the ACC and COMFRC must give approval before any action can be taken. Late submission of the special work request and unreasonable requests, particularly when rework over and above the FRC specification is required, may result in rejection or delays in processing and delivery and an abnormal increase in contract cost.

12.4.2.5.1 Standard Depot Level Maintenance Special Work Request (CNAF 4790/65). One month prior to the scheduled induction date of the aircraft, the aircraft reporting custodian submits a Standard Depot Level Maintenance Special Work Request (CNAF 4790/65) (Figures 12-8 and 12-9) to the designated rework activity with one copy to the cognizant type wing commander, ACC, and COMFRC (if the aircraft is administered by COMNAVAIRSYSCOM and going to a commercial rework establishment, see note). Blocks A through L and O through R are self-explanatory and are completed by the aircraft reporting custodian. (If using unrevised SDLM forms for IMC/P aircraft, record FSP/FID number in Block E.) Blocks M and N, regarding technical directives, are filled in by the rework activity. Special rework items requested in Block O are listed in order of priority. Although special request items constitute workload over and above the planned standard rework, the monetary and man-hour limitations in which the rework activity is required to operate allows for a limited amount of this type of rework. The operating activity is expected to perform its own assigned maintenance functions to the maximum to realize the greatest benefit from the rework program. The rework activity, or COMFRC representative for commercial contract standard rework, screens

the list of special rework items and mutually decides which of the items can be performed during standard rework. In cases of repeated requests by activities for special rework items that are normally within the aircraft reporting custodian's capability, the rework activity and COMFRC representative, as applicable and agreed by the ACC, takes such steps as needed to correct the situation. COMFRC field activities delivering aircraft to an FRC maintenance facility will describe in detail any peculiar aircraft instrumentation and include any other pertinent data that may help the rework activity to economically and expeditiously process aircraft.

NOTE: The Standard Depot Level Maintenance Special Work Request (CNAF 4790/65) for aircraft going to commercial rework activities is addressed to COMFRC with a copy to the CAO at the rework activity.

12.4.2.5.2 Loose Gear. All loose gear not required during rework processing should be removed and, if applicable, the inventory log should be annotated by the reporting custodian prior to delivery of the aircraft to the rework activity.

12.4.2.5.3 Ammunition and Pyrotechnics. All ammunition and pyrotechnics, except those required for flight safety, will be removed by the reporting custodian before delivery of the aircraft to the rework activity.

12.4.2.5.4 Logs and Records. The reporting custodian shall deliver up-to-date logbooks and required records with the aircraft. The reporting custodian will verify all entries as of the date of delivery and ensure that SRCs, EHR cards, ASRs, and MSRs are inventoried and verified against installed equipment. For on-site standard rework aircraft, the reporting custodian will verify all entries as of the date of induction and ensure that SRCs, EHR cards, ASRs, and MRS records are inventoried and verified against installed equipment at least once during an OSP/FSP.

12.4.2.5.5 SE. The reporting custodian should deliver/provide special SE with the aircraft as prescribed in the D-level specifications. The ISSC should provide the reporting custodian with a copy of FRC specifications.

12.4.2.5.6 Delivery and Pickup. The reporting custodian is responsible for ensuring timely delivery and pickup of aircraft at the rework facility. The aircraft should be delivered by 1200 hours on the day before the scheduled induction date. The reporting custodian will advise all concerned if a substitution is needed for aircraft scheduled for induction. In this instance, submission of work request items by message may be appropriate to provide planning information in sufficient time to permit orderly, efficient processing.

12.4.2.5.7 Discrepancies. Reporting custodians shall submit AIDRs on each aircraft received.

12.4.2.5.8 Additional Funding Requirement. Reporting custodians of aircraft that have customized interiors or exteriors should ensure that the D-level special work request identifies all special items or special configurations that have to be reworked or replaced. The lead time to obtain special equipment or material may require re-evaluation of requirements before final commitments are made. The source and availability of the additional funding requirements must also be approved before the D-level establishment can be directed to accomplish this type of rework.

12.4.2.6 TDs. All effective TDs, regardless of assigned compliance category, for which material, technical data, and funding are available, shall be incorporated. All immediate and urgent action TDs affecting safety of flight which are received after the rework process has started shall also be incorporated. Waivers or deviations must be authorized by COMNAVAIRSYSCOM. Routine and nonsafety urgent action TDs affecting components and accessories shall only be incorporated when as a result of normal D-level processing the item is disassembled sufficiently for compliance or if the modification is required for aircraft/system compatibility. RAMECs shall not be incorporated during standard rework.

12.4.2.7 EIs. Activities requesting an EI on a product reworked by a naval aviation industrial establishment, government or commercial contractor, follow the procedures in Chapter 10, paragraph 10.9. The ISSC, upon receipt of the EI request from the using activity and deciding that the EI can be best performed by the commercial rework contractor, will request COMNAVAIRSYSCOM to take the required action. COMNAVAIRSYSCOM must then start the action to have the EI conducted, based on terms and conditions of the existing contract.

12.4.2.8 Minor Defects. Minor defects found during D-level rework (Not Applicable to PDM or IMC/P Aircraft) will normally be deferred to the O-level for correction. The rework establishment (organic, interservice, or commercial contractor) will only be required to correct those minor defects incurred during, or as a result of the performance of the rework, or found in inaccessible areas opened only by additional effort or material. Uncorrected minor defects will be identified on a NBNC list prepared by the rework establishment and returned with the aircraft records upon delivery to the reporting custodian.

12.4.3 Unscheduled Industrial Support

12.4.3.1 FRCs provide assistance upon request from the ACCs, coordinated by COMFRC, in all functional areas of D-level industrial support, engineering investigation and analysis, planning and estimating, material planning, and extraordinary or emergency check/test and repair. Assistance is also provided in obtaining material for component repair, industrial training, tooling, and facility planning. Such assistance is rendered under the Aviation Support Services Program (04) customer service.

12.4.3.2 Emergency Repair of Aircraft. When an aircraft is damaged beyond O-level or I-level repair capability but is still considered suitable for repair, a request for a D-level P&E is made to examine the aircraft on-site under OPNAVINST 3110.11. Arrangements to effect repairs exceeding 500 man-hours, if feasible, are requested from COMFRC by the ACC. An FRC field team will be made available to repair the aircraft on-site if needed.

12.4.3.3 Industrial Field Teams. The FRCs are responsible for providing technically qualified personnel for the organization of industrial field teams. These teams are available for assignment worldwide in response to calls from operational commands. This has direct application to all FRC calibration laboratories, but on-site servicing by NPSL personnel is not precluded.

12.4.3.3.1 An industrial field team is composed of a supervisor and the appropriate number of personnel with trade skill backgrounds best fitted to accomplish assigned work in an expeditious manner.

12.4.3.3.2 To expedite dispatching of these teams, pre-designated team specialists must have current passports and world health immunizations.

12.4.3.4 When unscheduled rework requirements are generated which require commercial industrial support, the procedure for obtaining the authority to have the rework performed by a commercial contractor is governed by the activity which has the scheduling authority for that theater of operation; COMNAVAIRSYSCOM in the United States, Canada, and FRCWP outside CONUS.

12.4.3.5 Minimum FCF Requirements Determination. Requirements for, and depth of, FCFs following D-level repair shall be determined by the CO or OINC of an FRC facility (when applicable). When necessary, completion of the FCF shall be accomplished prior to release to the reporting custodian. If D-level maintenance was performed by a field team, the reporting custodian shall, after considering the field team leaders recommendation, determine if an FCF is required.

12.4.4 Contract Work Packages

12.4.4.1 Aircraft being reworked commercially are generally contracted out on the basis of a basic work package, a fixed price work package, and a negotiated over and above work package. The basic package consists of those items required to be completed on every aircraft at every standard rework, for example, disassembly, inspection, servicing, reassembly, and FCF (as applicable). The fixed price section of the contract is a work package of items for which the extent is predictable, but for which the frequency of the requirement is unknown, such as rework of landing gear or change-out of the power plant. The negotiated over and above package consists mainly of those items for which neither the extent nor the frequency is known, such as repair of structural damage or correction of corrosion. Other arrangements may be used based upon good business decisions.

12.4.4.2 Potential contractors propose and quote a fixed price for the basic and fixed price work packages and a composite labor rate for the negotiated work package. These prices may be further negotiated and agreed to at contract award. Negotiations for the over and above work items are carried out on site by personnel from the CAO on an as required basis. When a figure for the man-hours to complete a negotiated over and above item is negotiated, these man-hours are then multiplied by the composite labor rate that was agreed upon to determine the labor cost to be paid for that work. Material is government furnished or negotiated and the two costs are added to determine the price to be paid for that work.

12.4.4.3 The TAT allowed by the contract is a combination of the time allowed in the contract for completion of the basic work package plus any additional time for work in the over and above categories. A formula in the typical contract sets a threshold level of man-hours and when over and above work exceeds this threshold extra days are allowed in the TAT. Additionally, extra days are allowed for certain circumstances beyond the control of the contractor, for example, natural disasters, labor strikes, and the failure of the government to provide government furnished material in a timely manner. To determine the expected delivery date of an aircraft undergoing commercial rework, it is necessary that the above factors be taken into consideration. Enough is known about the physical condition of the aircraft and its technical directive incorporation status, 30 days after induction, to establish an estimated delivery date. It is this date which is published and updated in the weekly progress reports sent to each ACC.

12.4.4.4 Should contractors fail to meet the set delivery dates due to their own fault or negligence, there may be a liquidated damages clause in the contract by which the government may receive from the contractors an amount of money as reimbursement for costs it incurs as a result of the delayed delivery. This cost ranges from a few hundred to over a thousand dollars a day depending on the particular aircraft.

12.4.5 FRC Industrial Workload Priorities

D-level industrial workload is scheduled according to the priorities listed in Figure 12-10. (This also has direct application to all FRC calibration laboratories.)

12.4.6 Workload Programs

D-level workload is scheduled, inducted, and controlled by a production control system used by the FRCs.

12.4.6.1 Aircraft Airframe Program (00) Workload

12.4.6.1.1 Work is performed at determined intervals during the service life of an aircraft to maintain or restore the inherent design levels of performance, reliability, and material condition of the aircraft. These intervals are specified in terms of operating service months, accumulated flight hours, or material condition limits which are determined by ASPA or engineering analysis. OPNAVINST 3110.11 declares the policies and normal planning factors from which these intervals are determined. This includes work done on installed systems, components, and equipment only if they are not physically removed from the aircraft structure. Any

such installed items, in need of rework, which are physically removed from an aircraft structure are turned in for rework under their own appropriate rework program and not concurrently reworked with the aircraft.

12.4.6.1.2 Aircraft Workload Description. Aircraft workload descriptions are as follows:

a. Repair. The accomplishment of industrial repair to restore a damaged or deteriorated aircraft to such a condition that it is safe and ready for continued service. This includes such work as emergency repair and crash damage by industrial field teams but excludes scheduled rework requirements.

b. Modification/AFCs and AFBs. The installation of, or compliance with, TDs which change the performance, reliability, maintainability, or mission capability design characteristics of an aircraft without changing its model or series designation. This is accomplished by field modification teams or a drive-in modification program at an industrial establishment.

c. Conversion. An extraordinary modification which changes the basic design characteristics of an aircraft to the extent that a new model or series designation is assigned.

d. The restoration/replacement of a primary aircraft structure, that has reached material fatigue life limits, to establish a new service life. The specific regions or structural elements to be restored or replaced are determined using the data accumulated from the Structural Sampling Program. The analysis of this data supports the determination of material fatigue life limits and establishes new service life limits.

e. SDLM, PDM, IMC/P, **A}** EPM. The comprehensive inspection of selected aircraft structures and material, critical defect correction, PM (as required), minor modification, and TD compliance to restore the design levels of performance, reliability, and condition at minimum cost for the next established operating period. The scope of SDLM, PDM, IMC/P, **A}** EPM to be accomplished by an aviation depot (naval organic, interservice, or commercial contractor) is defined by specifications prepared and approved by the FST for each T/M/S aircraft according to COMNAVAIRSYSCOM requirements.

f. Preparation. The accomplishment of the preparation for turning the aircraft over from one D-level activity to another for rework. This requires COMNAVAIRSYSCOM approval.

g. Special Rework. The accomplishment of extraordinary industrial work not specified in other rework requirements. Special rework includes conversion, in-service repair, modernization, and preservation.

(1) Accomplish special inspections that come due unless special rework is performed at the reporting custodian site. In this instance, the reporting custodian is responsible for performing special inspections. If special rework procedures are such that special inspections would not apply or could not reasonably be completed, for example, due to disassembly, they need not be accomplished when due but shall be accomplished prior to aircraft FCF.

(2) Accomplishment of conditional inspections is a requirement of special rework when situations requiring conditional inspection compliance occur.

h. Pilot Rework. The accomplishment of prototype rework of an aircraft for the first time to establish in-process times, procedures, and standards. This includes:

(1) Disassembly to the depth sufficient for inspection of all functional components and basic aircraft structure.

(2) Establishment and accomplishment of repair, replacement, or servicing procedures.

(3) Reassembly, preparation for FCF, and correction of discrepancies making the aircraft capable of safe operation, capable of performance of intended missions, and organizationally maintainable for a full service period after completion of the rework process.

i. Mid-Term Inspection. The accomplishment of special rework performed on an aircraft during or near the midpoint of its service period. This rework normally consists of paint stripping, corrosion control, repainting, safety-of-flight discrepancy correction, and ground/flight check.

j. Overhaul. The process of disassembly sufficient to inspect all the operating components and the basic end item. It includes repair, replacement, or servicing as necessary followed by reassembly and bench check or FCF. Upon completion of the overhaul process, the component or end item will be capable of performing its intended service life.

k. Various combinations of the above programs are listed in Figure 12-11.

12.4.6.1.2 Aircraft Workload Requirements. Naval aircraft rework requirements are developed on the basis of the service periods in terms of calendar months of operating service, accumulated flight-hours/degradation limits of material condition, between scheduled standard rework are determined by engineering analysis. For every mission design series T/M/S aircraft in the operating inventory, OPNAVINST 3110.11 states the policies and normal planning factors by which these service periods between standard rework are determined. These planning factors are applied to the currently approved naval force levels from which a summary of required aircraft rework inductions are published in the Depot Requirement Determination Model prepared by OPNAV. When a new aircraft is introduced into the operating inventory, it is assigned a total OSL and a D-level service interval. These assignments are based on the flight-hour limitation developed from the manufacturer's engineering data combined with projected usage and accumulated experience, particularly as gained from comparable aircraft.

12.4.6.1.3 The determination of D-level requirements is based on RCM analysis. Throughout the life cycle of the equipment, D-level requirements are evaluated, refined, and revised as dictated by data and analysis obtained from the application of RCM. The RCM Program is the primary authority for the technical validity of D-level maintenance.

12.4.6.1.4 D-level requirements are expected to restore aircraft subject to this process to the design material condition which can effectively and economically be maintained by O-level or I-level maintenance to ensure maximum mission readiness and capability for the duration of the service period. The requirements and associated rework that is generally accomplished include, but are not limited to:

a. A comprehensive inspection of structurally significant items, systems, and components by industrial methods with subsequent defect correction, repair, replacement, and PM to ensure serviceability of the affected items.

b. All conditional inspection requirements are accomplished during standard rework.

c. All critical and major defects discovered as a direct result of or incidental to, the compliance with rework requirements will be corrected per the applicable documents, for example, LESs, AFBs, and AFCs.

d. Minor defects incurred by the activity performing D-level maintenance shall be corrected by that activity. During on-site D-level rework, all other minor defects within the repair capability of O-level or I-level shall be corrected by the appropriate maintenance level on the spot. During off-site D-level rework, (not applicable to PDM or IMC/P aircraft) the type and location of all other minor defects, those within the repair capability of O-level or I-level shall be fully described on the NBNC report for referral to the reporting custodian for appropriate action. When the defect is discovered in an area not normally opened or inspected by the reporting custodian the defect may be corrected by the activity performing the rework.

e. The classification of defects shall be subject to the approval of the cognizant engineering or contracting authority or government representative.

f. All outstanding aircraft TDs for which material, technical data, and funding are available shall be included in or concurrent with D-level maintenance per paragraph 12.4.2.6. At the request of or with specific approval of the ACC, COMNAVAIRSYSCOM may authorize deviations for the purpose of maintaining standardization within an operating unit, such as airwing or squadron, or if it is decided that SE for that particular TD would not be available at the designated deployment site of the aircraft. RAMECs shall not be incorporated during standard rework.

g. SRCs listed in the applicable PMICs that will exceed their established replacement intervals before the next scheduled standard rework (or be within the 10 percent scheduling time allowance, if applicable prior to return of the aircraft to the reporting custodian) and can only be replaced at the FRC shall be replaced. Other SRCs shall not be replaced during standard rework for reason of high time unless specifically requested by the reporting custodian and approved by both the ACC and COMNAVAIRSYSCOM.

h. Repairable accessories and installed components not otherwise scheduled for removal and replacement shall be subject to rework only on a discrepancy basis, that is, determined defective by in-place or as installed operational and functional checks, tests, and inspections. Work may be done on these repairable accessories and installed components only if they are not physically removed from the aircraft structure. Repairable accessories and installed components in need of rework which are physically removed from aircraft structures are turned in for rework under their own appropriate rework program and not concurrently reworked with the aircraft unless RFI assets are not available in Supply.

i. Specific mission related equipment will normally be inspected for physical safety, integrity, and security of installation only. Such equipment will not normally be subject to rework except for correction of safety-of-flight defects or when rework is authorized by CNO via COMNAVAIRSYSCOM/COMFRC.

j. Accomplishment of the requirements of the next aircraft phase and power plant periodic inspection due is not a requirement of standard rework unless specifically requested by the reporting custodian and approved by the ACC/TYCOM, COMNAVAIRSYSCOM and COMFRC.

k. Special inspection requirements shall be accomplished when due as an integral element of the standard rework process. However, if the D-level procedures are such that during the standard rework process the inspection requirements are precluded, they need not be accomplished when due, but they or their standard rework equivalents shall be completed prior to the aircraft FCF.

l. The MRC exclusion list shall be developed and updated by the ISSC with the concurrence of the ACC. All MRC items required for safety of flight or aircraft ferry shall be included as integral parts of the standard rework requirements. MRC items not otherwise accomplished to their full extent during the standard rework process shall be included in the MRC exclusion list.

12.4.6.1.5 Aircraft Workload Specifications. The D-level maintenance Specification Guide defines standard rework requirements for all aircraft and provides authoritative guidance to designated naval organic, interservice, and commercial contractor aviation for standard work requirements for particular aircraft T/M/S. D-level maintenance specifications define the industrial functions to be performed during the standard rework process and identify selected airframe structures and components, the inspection, defect correction, PM, and TD compliance actions required during D-level maintenance.

12.4.6.1.6 Aircraft Workload Scheduling. Standard rework is performed at determined intervals during the service life of a naval aircraft. These intervals are specified in terms of service months, accumulated flight

hours, or material condition limits which are determined by engineering analysis under the RCM Program. Procedures authorizing changes to the specified service periods are provided by OPNAVINST 3110.11.

12.4.6.1.6.1 Aircraft Period Extensions. For non-IMC/P aircraft, ACCs will request D-level industrial P&E examinations and recommendations to obtain CNO approval for those aircraft which have completed programmed service life or those aircraft, other than ASPA, approaching PED as specified in OPNAVINST 3110.11. The P&E will make recommendations for third and subsequent period extensions to COMNAVAIRSYSCOM. If the material condition of the aircraft is not considered satisfactory for continued service, the P&E will recommend aircraft disposition.

12.4.6.1.6.2 Aircraft Modification Workload, although budgeted under the separate Modification (MOD) Program (06), is scheduled by the aircraft program managers.

12.4.6.1.6.3 Leased Aircraft Equipment. For those aircraft being reworked to commercial standards, for example, CT-39, TC-4C, C-9B, the Navy must rent or lease power plants, thrust reversers, etc., during the period the government furnished power plant or equipment is being repaired or inspected. To reduce these rental costs, it is important to replace the rented equipment with the GFE as soon as possible after its return to the reporting custodians.

12.4.6.2 Missile Program (01) Workload

12.4.6.2.1 Work performed on missile airframe, Guidance and Control (G&C) sections, and air-breathing power plants to maintain or restore design levels of functional readiness and material condition. This does not involve ordnance warhead sections, pyrotechnic tracking or countermeasure devices, or rocket propulsion systems.

12.4.6.2.2 Missile Workload Descriptions are:

a. Missile Component Repair. The accomplishment of the rework and test of missile G&C sections and related components required for the RFI inventory.

b. Missile Component Repair or Modification. The accomplishment of the rework and test of missile G&C sections and related components concurrent with the incorporation of specified TDs which modify the missile components.

c. Missile Component Mini-Repair. The accomplishment of limited rework to return missile G&C sections to RFI condition without undergoing a complete refurbishment.

12.4.6.2.3 Missile Workload Requirements. The missile component repair requirements are based upon the broad outlines of the CNO asset readiness objectives per OPNAVINST 4850.1 which directs the policy and procedures for air-launched missile repairable material. FRC rework requirements for air-launched missiles shall be based on the accumulated energized time, captive flight hours, number of captive flights, or calendar storage time, depending on the particular missile.

12.4.6.3 Power Plant Program (02) Workload

12.4.6.3.1 Work performed on aircraft and missile power plants which provide propulsion or lift and their modules, components, and accessories to maintain, restore, or change their inherent design levels of performance, reliability, or material condition. Airborne auxiliary and SE power plants are provided for under the Component Program (Figure 12-11). This work at FRC is normally necessitated by one or more of the following conditions:

a. Damage due to excessive high temperature (overtemp) operation, extensive fire, or having been subjected to fire extinguishing agents internal to the power plant.

b. Crash damage.

c. Extreme mishandling, such as being dropped.

d. Salt water immersion.

e. Extensive corrosion.

f. Massive oil contamination.

g. Directed removal under the JOAP.

h. Total gas path FOD.

i. Time compliance power plant changes to accessories or components that cannot be removed by IMA/FRC.

j. Threshold sampling of components which cannot be removed by IMA/FRC.

k. Life limited scheduled removal components/assemblies that cannot be removed by IMA/FRC.

12.4.6.3.2 Power Plant Repair. Minimum engine performance is established in D-level maintenance manuals for undergoing an overhaul or major repair and I-level maintenance manuals for engines undergoing repair or as designated by the PMA. These repairs are categorized as work performed on engines or engine modules, for example, compressor and turbine modules, gearbox, torquemeter, power sections, and airborne auxiliary power plants/gas turbine compressors described as follows:

a. Engine/Module Repair. Necessary preparation, correction, inspection, replacement of parts, adjustment, reassembly, calibration, and testing required to restore engine/modules to an acceptable operating condition. All life limited components installed on a repaired engine shall be capable of operating to the next scheduled major inspection that requires removal or a minimum of 500 hours if there is not a scheduled major inspection removal. All engines repaired by DRP shall meet minimum specification performance, for example, thrust, shaft horsepower, and specific fuel consumption as specified in the applicable engine's repair manual.

NOTE: If a TD is not complied with as a result of an approved COMNAVAIRSYSCOM deviation, the industrial facility shall annotate the reason for noncompliance in the AESR and associated records.

b. Engine Overhaul. Complete disassembly and processing of an aircraft engine per the applicable Handbook of Overhaul Instructions, ensuring that all test requirements are met and that the engine is certified ready for issue, and that it is capable of operating to the Maximum Operating Time per the applicable Maximum Operating Time Bulletin.

c. Engine Conversion. Rework which includes conversion and requires disassembly to the depth required for repair. Conversion is a special rework which alters the basic characteristics of the engine to such an extent as to change the model designation.

d. Gearbox/Torquemeter Repair. Necessary preparation, fault correction, inspection, replacement of parts, adjustment, reassembly, calibration, and testing required to restore gearboxes and torquemeters to an acceptable operating condition.

12.4.6.3.3 Power Plant Workload Requirements. Naval aircraft power plant rework requirements are developed by COMNAVAIRSYSCOM (AIR-6.7) with the application of logistics engineering analysis techniques in which spare power plant requirements are compared to the size of the RFI pool inventory, the number of new power plants to be delivered, the backlog of non-RFI power plants at the FRCs, and the number of power plants anticipated to require D-level rework. Spare power plants are computed under OPNAVINST 4442.3.

12.4.6.3.4 Power Plant Repair/Rework Specifications. D-level work specifications for engine repair shall be developed and approved by the PMA for each T/M/S.

12.4.6.3.5 Power Plant Workload Scheduling. Schedules are calculated to provide, within existing budgeting restraints, for power plant rework requirements generated as a result of the CNO's planned Flying Hour Program and to maintain serviceable spare power plants at the levels required by ACCs/TYCOMs to meet probable operational contingencies. The criticality and high cost of aircraft power plants makes it imperative that they be repaired and returned to RFI condition within minimal time frames. TDs issued after the engine/module is inducted shall be incorporated if it does not impact the critical path or cause work to be redone. Safety of flight TDs that are issued while an engine/module is in the disassembly stage shall be automatically incorporated. However, any safety of flight TD issued against an engine in the assembly stage that affects the critical path shall have direction from COMNAVAIRSYSCOM (AIR-6.8 and AIR-4.4). Standard TATs for all power plants have been calculated based on the number of days between removal from shipping container non-RFI, repaired, and returned to shipping container RFI.

12.4.6.3.6 Unscheduled D-level repair requirements for power plants are handled by using the same process for scheduled rework.

R} 12.4.6.4 Component Program (03) Workload

12.4.6.4.1 Work performed primarily on uninstalled or removed aeronautical components, systems, equipment, and training devices which have been designated as repairable items by the cognizant systems command (Figure 12-11). This includes airborne auxiliary and SE power plants and aircraft propulsion or lift power plants components. NAVSUP WSS is the primary ICP responsible for material support of naval aviation. All repairable components and equipment are listed in the FEDLOG. The FEDLOG is also the authoritative source of information concerning DRPs for the repairable components.

12.4.6.4.2 Component Workload Description:

a. Component Rework. The accomplishment of the test, check, and rework of non-RFI repairable aeronautical components, airborne equipment, and training devices from the Supply System and restoration to RFI condition.

b. Component Pilot Rework. The accomplishment of the first time rework of a new repairable aeronautical component, item of airborne equipment, or training device to establish rework capability and to develop and document shop procedures and quality standards.

c. Component Update or Modification. The accomplishment of rework in compliance with TDs to update RFI repairable items in the Supply inventory to current standards prior to issue.

d. Serviceable Tag - Material (DD 1574) and Serviceable - Material (2pt.) (DD 1574-1) shall be used per MIL-STD-129 on material, equipment, and SE indicating all requirements for repair, bench check, overhaul, or modification (as applicable) have been accomplished, making it capable of performing the functions or requirements for which originally designed. The tag/label shall be completed and attached to the material by the individual performing the work, certifying as RFI in the block marked "Inspector's name or stamp and date". The term "inspector", as it applies to D-level personnel, is **R}** the qualified person who has

certified that all pertinent paperwork has been reviewed for completeness and all work operations have been properly stamped and verified.

e. Repair of Repairables. The rework of recently manufactured (new acquisition) repairable items which are new to the inventory that have not yet had a NSN assigned. Such items are identified by manufacturer's part numbers and are normally reworked at commercial industrial establishments.

f. Airborne Auxiliary Gas Turbine Power Plant Rework. The restoration of damaged or inoperable airborne auxiliary gas turbine power plants to RFI condition.

g. SEGTE Rework. The restoration of damaged or inoperable gas turbine engines which are used for air start and air conditioning to RFI condition.

12.4.6.4.3 Component Workload Requirements. DON requirements for repairable components, airborne equipment, and training devices are developed by the cognizant ICPs. These requirements are based upon comparison of the total stocks required to the quantities of serviceable items on hand and scheduled for receipt at the NSN level. (This requirement determination is known as the stratification process.)

12.4.6.4.4 Component Rework Specifications. ISSCs shall develop component rework specifications by the application of maintenance engineering analysis techniques. Repairable components selected for rework are repaired to the depth necessary under these specifications to ensure satisfactory completion of acceptance testing as specified by applicable technical manuals.

NOTE: The depth of rework is determined by E&E of the material condition of the inducted components and screening of accompanying documents, such as EHRs, SRC cards, ASRs, MSRs, and MAFs/WOs.

12.4.6.4.5 Component Workload Scheduling. For workload purposes, the rework of components is allocated man-hours of work at each naval aviation industrial establishment. The scheduling of components is a demand operation based on the immediate needs of the operating forces and is a coordinated function between NAVSUP WSS, the operating forces ACCs/TYCOMs, and COMNAVAIRSYSCOM (AIR-6.8). The scheduling of components for rework is accomplished through the following programs and systems.

12.4.6.4.5.1 The application operation B08 or PROBE provides a schedule based on demand. NAVSUP WSS issues a weekly PROBE to each of the FRCs with the following scheduling information:

a. Level I. NMCS and PMCS special expedite selected project candidate/priorities 01 back orders.

b. Level II. All other end use back orders; funded planned requirements.

c. Level III. Stock Back Orders: planned requirements due within rework TAT. First level shelf stock.

d. Level IV. Planned requirements due within rework TAT plus 30 days demand forecast. Second level shelf stock.

12.4.6.4.5.2 Level Schedule Repair Program. Repairable components are routinely scheduled for D-level rework by means of either the Weekly Automated Repair Scheduling Program (UICP B08) or the Level Schedule Repair Program. The latter program schedules high demand, high dollar value aircraft components by means of periodic joint meetings to determine committed production schedules. These meetings, hosted by NAVSUP WSS, include representatives from COMNAVAIRSYSCOM (AIR-6.8), COMFRCs, COMNAVAIRFOR, COMNAVRESFOR, CNATRA, and the various supporting supply activities. Repair requirements for these items are projected over a five-quarter horizon; actual schedules are based on an average quarterly requirement. This scheduling technique facilitates a smoother flow of units, and allows the rework facility to make optimum, economical use of available industrial resources.

R} 12.4.6.5 Aircraft Support Services Program (04) Workload

12.4.6.5.1 Aircraft Support Services involve only that portion of depot workload that is not funded within the aircraft, missile, power plant, component rework, or aircraft MOD programs.

12.4.6.5.2 Aircraft Support Services Workload Description. The major subprograms of Aircraft Support Services (Figure 12-12) are described in the following paragraphs:

a. Salvage (04). The accomplishment of work required in the removal of usable installed equipment, assemblies, parts from damaged/stricken aircraft, power plants, and components only after SARDIP, RILOP, or component reclamation action (Subprogram (17) under the NAVSUP WSS master save list) has been accomplished prior to transfer and subsequent screening and disposition by the R} DLA Disposition Services. This does not include any rework or preservation and packaging effort since they are not being returned to the Supply System for disposition. Parts, assemblies, or equipment obtained through salvage efforts to support or satisfy an immediate internal depot requirement are properly chargeable to this subprogram.

b. Preservation and Depreservation (05). Work done on aircraft, missiles, power plants, or components under COMNAVAIRSYSCOM specifications for protection and retention of their material condition during periods of idleness or storage.

(1) This function includes all preservation and depreservation work performed on the aircraft, missile, power plant, or component prior to induction for rework, except as indicated in other appropriate direct program codes. Excluded from this subprogram code is:

(a) Preservation work performed during actual rework of aircraft, missiles, or power plants.

(b) Preservation and packaging work performed for the manufacturing and Fleet Equipment Component Rework Programs.

(c) Preservation and packaging services provided to the local supply office/center in support of material turned into supply, more specifically, mandatory aeronautical repairable material turnins that require preservation and packaging prior to storage or shipment under current repairable handling directives. Packaging responsibilities in the Navy/Marine Corps are in OPNAVINST 4030.1, NAVSUPINST 4030.28, the Comptroller of the Navy Manual, and P700-CNP (https://tarp.navsisa.navy.mil/p700.nsf).

(2) Aircraft preservation is designed to protect the material condition of aircraft which are not expected to be flown for extended periods of time. An aircraft may be preserved at any time, regardless of material condition reporting status, when it is determined to be in the best interest of the aircraft or activity. COMFRC has the responsibility to determine when an aircraft is required to be placed in preservation. For aircraft placed in preservation per T/M/S MRCs, all scheduled special inspections may be deferred until the aircraft is removed from preservation. For aircraft without preservation MRCs, preservation shall be performed per NAVAIR 15-01-500. Aircraft may be removed from preservation at the discretion of COMFRC. All scheduled special inspections shall be performed on aircraft not in preservation. Aircraft T/M/S MRCs shall be used to perform system operational checks when not placed in preservation. For aircraft without specific T/M/S operational system check MRCs, aircraft systems will be exercised every 28 days (+/-3 days) using applicable MIMs. The FRCs shall ensure a daily inspection is performed and annotated on the Preflight/Daily/Turnaround/Postflight Maintenance Record (CNAF 4790/38) prior to performing operational systems check.

(3) Levels of preservation for aircraft are defined below. Dehumidification (Level III) is the preferred method of preservation:

(a) Level I: 0 - 90 days (+/- 3 days).

(b) Level II: 0 - 1 year.

(c) Level III: 0 - indefinite.

(4) Aircraft detachable mission equipment, such as troop seats and external cargo hooks/pods, not identified as an end item, shall be preserved to protect the material condition of such equipment when it is not installed or in use. This equipment may be placed in preservation at any time, regardless of ready for use condition. Preservation of equipment and gun systems not addressed in the T/M/S MRCs shall be maintained per applicable MIMs and directives.

c. Customer/Operating Forces Training (06). The training of operating forces personnel at FRCs in current maintenance practices. This type of training includes any training intended to improve operational readiness through proper maintenance procedures and may be accomplished as OJT as well as in a classroom. The travel and per diem costs associated with providing qualified FRC instructors to on-site operating force activities will be initiated by the requesting activity. The training of FRC personnel is not chargeable to this program.

(1) These courses supplement CENNAVAVNTECHTRA Fleet Enlisted Skills Training and other designated maintenance training organization courses. Courses will normally relate to an aircraft weapon system/equipment. Exceptions are those skill areas which have a general application, such as NDI, corrosion control, and welding certification. The short courses are intended to improve skills in troubleshooting, alignment, maintenance, overhaul, repair, and calibration techniques for components, systems, accessories and test equipment.

(2) These courses are primarily designed for naval activity maintenance personnel but may be used by other DOD personnel on a space available basis at no cost to the user. COMNAVAIRSYSCOM (AIR-6.7) is the course curriculum control authority.

d. Acceptance and Transfer (08) (Aircraft). The accomplishment of O-level upkeep maintenance on operating forces aircraft in a delivery status to a FRC or awaiting pickup by a ferry aircrew for later return to an operating force activity. This subprogram allows for the accomplishment of nonproductive work prior to actual induction, such as defuel, defuse/arm, and remove pyrotechnic services and safety/survival gear, performance of aircraft inventory, and screening of logbooks. More specifically, it is the accomplishment of any maintenance on an aircraft that is not in a rework status at a FRC or does not fall within the chock-to-chock concept.

e. Customer Service (Operating Forces) (13). Nonscheduled work to provide D-level industrial services directly to operating and reserve force activities for immediate needs both in hardware rework and technical/engineering services. This service is provided to operating force aviation units for the accomplishment of emergency check/test and minor repair of aeronautical material. This service also provides special industrial processes, such as plating, heat treating, nondestructive testing, and machine shop services, to relieve NMCS/PMCS and work stoppage conditions or other efforts. Customer service for the expeditious repair of components is intended to supplement but not replace existing supply and I-level maintenance capabilities. Requests for customer service expeditious repair are accepted only from the I-level activities. Each request must certify that the required service is beyond the capability of the IMA/FRC activity and that replacements are not available in the supply system. Excluded from this subprogram are SE calibration and rework, government furnished aeronautical equipment component rework, manufacture/assembly of parts, 1R cognizant rework, or any such other effort on a strictly customer service handling basis.

f. SARDIP, RILOP, or Component Reclamation and Material Disposal (17). The removal from an aircraft, power plant, or component incident to its disposal of installed equipment, assemblies, or parts for

which there is a programmed requirement as directed by the NAVSUP WSS master save list. Material disposal consists of the following:

(1) Removal of components.

(2) Disassembly of removed components required to reduce to unit of issue status as carried on the supply officer's records.

(3) Demilitarization of remaining carcass by the removal of classified and ordnance items.

g. COMNAVAIRSYSCOM Shipboard Work (VRT) (18). The repair and maintenance of COMNAVAIRSYSCOM material installed aboard CVs and air capable ships (catapult and arresting gear, visual landing aids, and associated aeronautical equipment) performed by naval aviation industrial establishment VRT personnel. VRT personnel are a select group of naval aviation industrial establishment shipyard trade specialists who are highly trained, skilled, and experienced in D-level rework. VRT personnel are tasked with performing all required scheduled maintenance and unscheduled maintenance, repair, refurbishment, replacement/modification efforts which require industrial skills and are in direct support of COMNAVAIRSYSCOM aircraft launching and recovery system installations both shore-based and shipboard. This does not normally include initial installation of equipment/ships' alterations which may be authorized by COMNAVAIRSYSCOM on a case by case basis.

h. Quality Organization Support (Special Quality Investigations) (31). The accomplishment of Quality Organization support functions which include, but are not limited to the following:

(1) Quality Organization Support which provides for a systematic evaluation through a material review board of designated nonconforming material to ensure that the material can be used or restored to service without compromising safety and reliability.

(2) PQDR. The compliance with current SECNAV/OPNAV/COMNAVAIRSYSCOM instructions in support of the NAMDRP Program (Chapter 10, paragraph 10.9). PQDRs report possible quality deficiencies in new and newly reworked material provided by FRC rework facilities, commercial rework facilities, OEMs, contractors, and subcontractors, and provide a process for conducting quality investigations to determine cause and corrective action required to prevent recurrence and establish improved reliability. Cost effectiveness is part of the basic design of JDRS.

(3) Production planning aspects to assure implementation of workload incorporates proper quality requirements.

i. Other Support Items. A group of miscellaneous O&MN funded subprograms which include:

(1) 03. Special Sea Field Teams (engineering and production support to FRCWP and Indian Ocean carrier battle groups).

(2) 14. NiCad battery support.

(3) 15. Transition support.

(4) 38. COMNAVAIRSYSCOM (AIR-6.0C) assigned task.

(5) 40, 41, 42. SE Rework (Chapter 6).

(6) 50. JOAP/NOAP.

(7) 99. Miscellaneous. Includes maintenance of Elemental Standards data repository and other tasks assigned by COMNAVAIRSYSCOM (AIR-6.0C).

j. Other Funded Subprograms (Not O&MN Funded):

(1) 10, 11, 12, 20. Calibration.

(2) 13. Customer service; funded by the customer for repair and check and test of stock funded material.

(3) 19. Interservice. Work performed for the Army and Air Force.

(4) 22. Van and miscellaneous facilities projects.

(5) 24. COMNAVAIRSYSCOM air tasks.

(6) 25. Other Navy programs.

(7) 26. Other government (Coast Guard, NASA, FAA, etc.).

(8) 27. FMS support.

(9) 28. Private parties (contractor funded in support of government contracts).

(10) 32. ATE (in-service).

(11) 35. Maintenance trainer reworks.

(12) 80. Weapons System Support Department support.

(13) 99. Miscellaneous (other funded).

k. ISSC ISEL Functions. The accomplishment of ISE support and logistics functions which include, but are not limited to, the following:

(1) 57. RCM Program. RCM is used to identify PM requirements to realize the inherent reliability of systems and equipment at minimum expenditure of resources. PM tasks are either scheduled inspections to determine if the equipment is, and will remain in, satisfactory condition until the next scheduled inspection; scheduled removal of items which will exceed life limits; or engineering designed servicing and lubrication tasks. The RCM process is used to identify and develop initial PM task requirements and to refine PM tasks that are found during in-service use to be less than optimal. AE is a major contributor in the refinement of PM tasks and task intervals. It establishes operational age-reliability relationships of in-service systems and equipment by evaluating operating data, analyzing MDS failure data, and assessing inspection findings. RCM and AE form a continuous life cycle process. Specific requirements and procedures for RCM analysis are in NAVAIR 00-25-403 and DOD Directive 4151.18.

(2) 53. EI Program. One of the naval aviation industrial establishment functions is to conduct EIs on failed items under COMNAVAIRSYSCOM direction. These investigations include identifying causes and contributing factors and recommending required corrective actions.

(3) 51. TD ECP. Preparing and sending out formal and informal TD changes and bulletins. The engineering support required is assigned by COMNAVAIRSYSCOM and includes prototyping, TD preparation, TD verification, and preliminary distribution. The documents assist in providing configuration

control, proposed engineering changes, deviations or waivers, and provide the necessary technical, fiscal, and logistic support information which defines the impact of the proposed changes.

(4) 58. Technical Publications. The effort expended in support of updating all technical manuals to ensure that the manuals continually reflect current equipment configurations and the latest operational and support concepts and procedures.

12.4.6.5.3 Aviation Support Services Workload Requirements. These requirements are developed at the individual subprogram level and are normally generated by either specific criteria or on an as required level of effort basis, as in the case of customer service, acceptance and transfer, and salvage subprograms.

12.4.6.5.4 Aviation Support Services Workload Specifications. These specifications vary with the individual subprogram and applicability to the statements of work specification. Sources of workload specifications by function (if applicable) can normally be found in NAVAIR instructions for each of the particular functions and programs.

12.4.6.5.5 Aviation Support Services Workload Scheduling. This workload category provides for the performance of unscheduled D-level industrial services. COMNAVAIRSYSCOM allocates direct labor man-hours to each FRC for the performance of these services on an as required basis.

12.4.6.6 Support Equipment (SE) Rework Program Workload

12.4.6.6.1 The rework of SE is budgeted, funded, and managed as subprograms (40), (41), (42), and (65) under the Aircraft Support Services Program (04).

12.4.6.6.2 SE Workload Description. Accomplishment of rework on SE to restore design levels of performance, reliability, and condition, or to change such design characteristics through modification.

12.4.6.6.3 SE Workload Requirements:

a. SE workload requirements are developed at the individual subprogram level and are normally generated by either specific criteria or on an as required/level of effort basis.

b. SE rework policy, procedures, and responsibilities are established by COMNAVAIRSYSCOM per NAVAIRINST 13680.1. FRC rework requirements for items of SE are developed by either:

(1) ISSCs. The accomplishment of ISE support and logistics functions per paragraph 12.4.6.5.2k.

(2) ACCs/TYCOMs or designated commands, for in-use SE assets under the ULSS, for the specific equipment. If an ULSS has not been published, an FRC rework requirement exists if the end item of equipment is beyond the repair capability of the I-level activity and meets NAVAIRINST 13680.1 requirements.

(3) Appropriate ICPs, to include COMNAVAIRSYSCOM and NAVSUP WSS (for shipment in stock), based on ACC requirements and coupled with new procurement and retirement schedules.

12.4.6.7 Manufacturing Program (05) Workload

12.4.6.7.1 To accomplish a complete range of industrial rework operations on designated aircraft, missiles, power plants, components, and associated accessories and SE, the FRCs are authorized to manufacture or fabricate any parts, assemblies, or components required to support their own requirements as DRPs and to support operating forces activities and other naval aviation.

12.4.6.7.2 Manufacturing Workload Description. Manufacturing is categorized as work performed in the fabrication of finished products from stock materials in support of aircraft, missiles, power plants, and related aeronautical material. The manufacturing program in each FRC is budgeted, funded, managed, and reported under Direct Program (05) and consists of the following subprograms:

a. (01) NWCF Stores. The accomplishment of work required to manufacture end items for Supply/NAVSUP WSS stock.

b. (02) NIF Inventory. The accomplishment of work required to manufacture end items in support of designated aircraft, missiles, power plants, components, and associated accessories and equipment.

c. (03) Other Manufacturing (kits and other funded manufacturing, etc.). Manufacture of parts and assemblies to be incorporated into TD change kits as necessary to support the Modification Program requirements sponsored by COMNAVAIRSYSCOM. This also includes all source coded M and A series items for the aircraft, missile, power plant, and component rework programs. All packing and preservation costs associated with this effort are included in this subprogram.

d. (04) FMS Manufacturing. Manufacturing work for foreign governments.

12.4.6.7.3 Manufacturing Workload Requirements. Navy manufacturing requirements to support the aircraft, missiles, power plants, and component rework programs are developed by COMNAVAIRSYSCOM (AIR-6.0), NAVSUP WSS, operating forces, activities, and other FRCs. Projections are made on an as required basis. The man-hours required in support of this effort are budgeted for and are based upon historical trend data, known backlog, and planned or anticipated workloads.

12.4.6.7.4 Manufacturing Workload Specifications. Specifications for the Navy Manufacturing Program in support of aircraft, missiles, power plants, components, and associated equipment are developed by COMNAVAIRSYSCOM (AIR-6.0), NAVSUP WSS, and ISSCs at each naval aviation industrial establishment, and operating forces activities per the LES.

12.4.6.8 Aircraft Modification Program (06) Workload

12.4.6.8.1 The Aircraft Modification Program is budgeted, funded, and managed as a separate direct program (06) from its parent Aircraft Rework Program (00). The modification of missiles, power plants, components, and SE is included in their respective parent direct programs.

12.4.6.8.2 Aircraft Modification Workload Description. Work performed which changes the original design of an aircraft for the purpose of improving safety, performance, reliability, physical maintainability, readiness, or mission effectiveness.

12.4.6.8.3 Aircraft Modification Workload Requirements. Requirements for the installation of modification changes are developed by the applicable T/M/S Program Manager based upon actual and projected availability of the modification change kits and the availability of the aircraft. These requirements are normally generated by the Operational/Safety Improvement Program and ECP items that are approved by COMNAVAIRSYSCOM with the follow-on purchase of kits and the issuance of TDs prescribing the incorporation of the modification change in aircraft. This type of work is accomplished at the naval aviation industrial establishments (either Navy organic, interservice, or commercial contractor) or on-site by industrial field teams.

12.4.6.8.4 Aircraft Modifications Workload Specifications. The TD system is the authorized medium for directing the accomplishment and recording of modifications and one-time inspections of COMNAVAIRSYSCOM (AIR-6.6) accepted aircraft either in the contractor's or the Navy's possession.

Requirements for the development and preparation of TDs are detailed in NAVAIR 00-25-300, MIL-D-81992B, and AR-41.

12.4.6.8.5 Aircraft Modification Workload Scheduling. The installation of modification change kits in aircraft may be performed concurrent with standard rework. They may also be installed by industrial field teams or at a naval aviation industrial establishment on a drive-in basis. COMNAVAIRSYSCOM (AIR-7.8) allocates direct labor man-hours specifically for the installation of modifications in aircraft under a pre-established schedule.

12.4.7 Support Equipment (SE)

12.4.7.1 SE Rework at FRCs

12.4.7.1.1 The CO is responsible for the D-level rework (including maintenance and modification) and calibration of SE inducted into the FRC per NAVAIRINST 13640.1 and NAVAIRINST 13680.1.

12.4.7.1.2 The following actions are taken to fulfill this responsibility:

a. Prepare a milestone plan for the rework capability to meet scheduled requirements and obtain all publications, drawings, training, and trade skills required when designated by COMNAVAIRSYSCOM as the DRP for an SE end item.

b. Apply the normal industrial disciplines to SE, such as SE rework specifications, E&E, and Quality Organization.

c. Ensure E&E is performed on all SE upon arrival at the D-level; that all required material and all outstanding SE changes, bulletins, and support software changes are ordered and complied with and all applicable approved changes are scheduled for incorporation during rework.

d. Ensure all SE rework and calibration efforts are documented and the SE Custody and Maintenance History Record (CNAF 4790/51), Equipment History Record (CNAF 4790/113), Metrology Equipment Recall Card (OPNAV 4790/58), or Aeronautical Equipment Service Record (CNAF 4790/29) of SE gas turbine power plants, is received, updated, and accompanies each item of SE that is inducted at D-level. Initiate new records or forms whenever efforts to obtain such from the previous reporting custodian are not successful.

e. Ensure adequate SE rework and calibration records are maintained and reports are provided as required.

f. End items of SE requiring D-level maintenance that do not meet the SE rework program requirements as delineated in NAVAIRINST 13680.1 shall be submitted for repair using the Depot Customer Service Program (Chapter 6).

12.4.7.2 Maintenance of SE

12.4.7.2.1 SE installed within IMA/FRC work centers, such as hydraulic test stands (A/F 27T-10) and electrical test units (vari-drives), shall be maintained and documented by the work center having physical custody of that equipment.

12.4.7.2.2 Installed gas turbine power plant (jet engine) test facilities (Class C test cells) maintenance responsibilities are assigned as follows:

a. The structure and basic utility systems such as fuel, water, air, and fire suppression agent shall be maintained by the local public works organization (department or center).

b. The control console, power plant connector panel, and thrust bed shall be maintained by the work center having physical custody.

12.4.7.2.3 The Director of FRC Support Equipment is responsible for:

a. The development of all SE D-level Rework Program policy and guidance per NAVAIRINST 13680.1 and is the primary point of contact for all matters concerning SE D-level rework.

b. Assignment of SE DRPs and establishment of organic SE D-level repair capability based upon the identification of D-level rework requirements by Logistics Managers, Assistant Program Managers (Logistics), and Item Managers. SE Rework Program emphasis is placed on developing SE rework capabilities at the minimum number of sites necessary to meet program requirements without sacrificing quality, cycle time, or cost. The Director of FRC Support Equipment working with NAVSUP WSS develops and manages contract vehicles to support the commercial rework of SE and to ensure that such contract vehicles comply with NAVAIRINST 13680.1 requirements.

c. Conducting annual SE Scheduled Maintenance List Conferences to determine and allocate Scheduled Maintenance List SE rework slots by NIIN and SECA. Based upon the conference results, annual and quarterly SML induction plans detailing expected inductions for each SECA for the current and future Fiscal Years are developed. In concert with the SECAs, FRC Support Equipment manages the Scheduled Maintenance Program to determine rework slot allocations for each SE end item on the Scheduled Maintenance List based on SMP budget and any workload carry over from the previous fiscal years.

d. Developing the SE Rework budget submissions. The Director of FRC Support Equipment allocates all funding for the COMNAVAIRSYSCOM SE D-Level Rework Program requirements in the SEMS based upon SECA induction plans and the constraints of the POM. The Director of FRC Support Equipment assigns all SE Rework control numbers in SEMS for all SE Rework Schedule Requests (CNAF 4790/80) submitted (Chapter 6) and assigns SE items submitted for rework to the authorized SE D-Level Rework Program for repair.

A} 12.4A electronic Continual Analysis and Metrics (eCAM)

D-level FRCs shall use the eCAM system to:

a. Document nonconformances, investigations, corrective and preventive actions, and root cause analysis.

b. Conduct quality, safety, environmental, and calibration out of tolerance investigations.

R} 12.5 NAVAIR Depot Maintenance System (NDMS)

12.5.1 Introduction

12.5.1.1 NDMS manages the COTS and GOTS application and system software that supports the functional business requirements within the COMFRC EIS providing FRC Maintenance Managers with an automated capability to forecast workloads, schedule repair activities, track and control inventories, program staffing, materials, resources, and track and manage production costs for a D-level maintenance repair facility.

12.5.1.2 NDMS CONOPS identifies and describes how the maintenance repair facilities will use this specific suite of application and system software to achieve the functions per the DM-BPM. By defining NDMS

supported functions, the DM-BPM establishes the baseline for managing CPI for business processes. NDMS CONOPS encompasses the business processes listed in paragraph 12.5.4.

12.5.2 Overview

12.5.2.1 NDMS business processes are built upon application software that uses industry best practices. NDMS provides a complete plant operation and costing system that supports manufacture resource planning coupled with capabilities for repair resource planning, induction processing, and re-manufacturing management for industrial maintenance repair facilities.

12.45.2.2 NDMS developed enhancements to meet unique governmental requirements. Enhancements include:

a. High volume customer order automation.

b. Supply chain partnership purchased component inventory and material management.

c. Shop floor control productivity improvements.

d. Time and attendance financial feeder automation.

e. Internal and external reporting improvements.

12.5.3 Business Processes

12.5.3.1 Business Planning

This process defines the FRC Business Plan that expresses long-range direction and required resources to develop:

a. A strategic plan. This process:

(1) Ensures quality directives from management are incorporated into the mission and vision statement.

(2) Compares potential workload to available resources.

(3) Identifies opportunities for potential workload in the competitive business area.

(4) Assesses technologies to enhance and compliment maintenance process capabilities.

b. A contingency plan to define actions to be taken in response to:

(1) Catastrophic events.

(2) Sudden workload surges (increase or decrease).

c. A capability and modernization plan that:

(1) Ensures capabilities are current with emerging technology.

(2) Compares actual capabilities required to support projected work requirements.

d. A resource plan that ensures availability of resources needed to accomplish planned and contingent workloads and acquire essential missing resources.

e. A workload plan that negotiates and postures the workload within maintenance repair facilities.

12.5.3.2 Financial Management

Financial management is not currently part of NDMS. This process is for reference to external systems only, currently DIFMS. This process analyzes, controls, and reports those elements that contribute to the financial status to:

a. Develop a budget of stabilized rates, operating costs, and revenues for future accounting periods.

b. Perform funds administration. This process:

(1) Accepts funding authorization for work to be performed.

(2) Analyzes actual funding execution against funding authority.

c. Manage revenue reports and expenses. This process:

(1) Compares revenue and actual cost incurred for WIP.

(2) Performs variance analysis by category of cost or hours.

(3) Provides multi-level analysis of costs and makes recommendations for corrective action.

(4) Generates billing information.

d. Collect financial data that compiles direct cost, indirect cost, and hour data.

12.5.3.3 Production Planning

This process creates detailed work instructions for customer-authorized work that develops, maintains, and schedules a single integrated plan for production to:

a. Plan and manage the project/product. This process:

(1) Produces a single integrated executable production plan.

(2) Describes critical strategies and actions to complete a project/product.

b. Plan authorized jobs. This process:

(1) Analyzes workload and develops a formal workload response for customer negotiations.

(2) Provides a basis for material and capacity requirements determination.

(3) Issues detailed work instructions.

c. Develop schedules. This process:

(1) Balances workload and resource requirements.

(2) Issues time phased schedules and routings.

12.5.3.4 Resource Management

This process ensures facilities; equipment, skills, technical information, and material, are provided as efficiently as possible to meet the workload requirements to:

a. Manage personnel skills. This process:

(1) Acquires, trains, and dispositions personnel skills.

(2) Allocates personnel skills to workload requirements.

(3) Forecasts future personnel skills requirements.

(4) Monitors and controls personnel skills capacity load profile.

(5) Maintains personnel skills inventory.

b. Manage facilities. This process:

(1) Acquires, maintains, alters, and dispositions facilities.

(2) Allocates facilities to workload requirements.

(3) Forecasts future facilities requirements.

(4) Monitors and controls facilities capacity load profile.

(5) Maintains facilities inventory.

c. Manage equipment. This process:

(1) Acquires, maintains, and dispositions equipment and tools.

(2) Allocates equipment and tools to workload requirements.

(3) Forecasts future equipment and tools requirements.

(4) Monitors and controls equipment and tools capacity load profile.

(5) Maintains equipment and tools inventory.

d. Manage material. This process:

(1) Acquires and dispositions material.

(2) Inducts, ships, and disposes of assets.

(3) Allocates material to workload requirements.

(4) Forecasts future material requirements.

(5) Maintains material and WIP inventories.

12.5.3.5 Production Execution

This process applies resources and material to delivered assets converting them into mission material to:

a. Package work. This process:

(1) Efficiently groups like work across WOs.

(2) Segregates work for safety.

(3) Identifies efficiencies for the use of trades, equipment and other resources.

(4) Manages Package Process Improvements.

b. Assign work. This process:

(1) Confirms resource availability.

(2) Consolidates work and assign as a package.

c. Execute operations. This process:

(1) Provides custody verification and acceptance for transfer of material and equipment.

(2) Converts an item from operational status to maintenance ready.

(3) Assesses item to determine the work required.

(4) Encompasses all work to make the item serviceable.

(5) Manages maintenance quality.

d. Manage production problem resolution. This process:

(1) Identifies and verifies problems.

(2) Routes problems to the appropriate resources for resolution.

12.5.3.6 Operations Support

This process provides support to people, assets, and operations for management of continuous improvements, compliance requirements, and infrastructure.

12.5.3.6.1 CPI Management. This operation acts as the central point for intermediate aggregation and analysis of production and performance data, ensures Lean and Six Sigma methodologies are used to develop process improvements, and maintains engineered process standards.

12.5.3.6.2 Compliance Requirements Management. This operation is a proactive method for regulating and reporting compliance status for positive control of compliance requirements for which maintenance repair facilities must be held accountable, for example, Environmental and Safety.

12.5.3.6.3 Administrative Support Management. This operation is a structured approach for managing external APIs and administrative requests and provides centralized administrative support for people and assets.

12.5.3.6.4 Information Systems Management. This operation provides hardware, software, and system administration; life cycle management of information management and information technology systems; and internal and external software and hardware APIs.

R} 12.5.4 Business Process Applications

The following applications achieve the functional capability defined in the NDMS Program CONOPS:

a. ADCS electronically captures the results of aircraft and engine inspections via a desktop computer or hand-held pen tablet. The application assists to facilitate production execution.

b. Automatic Tool Inventory Control Tracking System (ATICTS). ATICTS, a tool and equipment inventory control system, provides management and control of tools and equipment by automating tool issue, ordering, marking, calibration and maintenance tracking. ATICTS improves tool control, compliance with FOD control, nuclear-contaminated tool control and tracking, tool history/calibration/warranty tracking, and more accurate inventory balances.

c. BOM Workbench provides for building, structuring, modifying and reviewing BOM lists. It generates new material requirements lists from existing material lists and verifies lists prior to committing them to the database and allows the user to add, copy, modify, delete, inquire, release, and reverse of the list.

d. Man hour accounting provides automated labor standard generation and maintenance, time studies, and other standards analysis application and maintenance.

e. CAV-ORM, a process control system from point of repair material request, material inductions and repair returns, storage of material at "G" work center, and shipment of material to **R}** DLA Disposition Services, storage warehouse, or requestor, provides data entry capability for end users via a web browser within a secure network. The system provides a tracking method as material moves through the repair process beginning with the repair facility request for material from the Defense Depot and provides MILSTRIP transactions to the NAVSUP WSS. Streamlined processing minimizes dual tracking by FISC and NAVSUP WSS. The system design is a combination of the BREES and UADPS-SP system for Induction and Return Processing to track repairable material.

f. Concerto, also known as TOC, a management philosophy in which the key objective is to increase throughput of its products and to decrease the repair cycle time without sacrificing the quality of products being produced, uses a set of management principles and tools that identify impediments (constraints). First, it identifies the constraint, exploits the constraint, subordinates everything else to the constraint, and then elevates the constraint. This continuous process, once completed, goes back to the first step and starts over. The benefits gained from TOC are improved readiness and reduced operating costs for the war fighters.

g. The Industrial Budget Analysis System and the Accounting and Financial Information System are the automated financial information systems that provide two basic categories for budgets: formal and supplemental. Each budget category is based on workload information as published by COMFRC. The systems assure the effective management and financial integrity of COMFRC, activities, and resources by developing, implementing, and monitoring FRC policies and systems in the areas of budget administration, program analysis and evaluation, finance and accounting, internal controls, corporate financial systems, and strategic planning.

h. HAZMAT management electronically tracks hazardous materials received, issued, and used through the FRC maintenance facilities. A key feature is the electronic filing system for tracking MSDS.

i. MRO is a maintenance tracking and management system that addresses the need for military aerospace industry efforts to extend the life of aircraft, ships, and ground systems providing the capabilities

to plan and schedule maintenance programs, parts, materials, tools, and labor to meet the asset utilization, cost, and customer service goals of both planned and unplanned activities.

j. MTO is an operations and accounting planning system that is designed to improve operations throughput by leveraging and focusing agility and lean operations providing a fully integrated manufacturing, financial, and contract management system containing an extensive set of applications addressing the need for business planning and control by way of project oriented resource planning and execution; project oriented cost collection and management; production, inventory, and material management; and purchased component management.

k. MAXIMO is a facilities equipment management system that provides for managing industrial fixed assets, plant equipment, SE, inventory, PM, and information for maintenance repair activity maintenance managers.

l. Part of CONOPS framework: AWR expedites the time-consuming, multi-step and repetitive task of releasing SRA WOs created within the T&D process allowing for the identification of all unreleased work and provides the ability to print identified WOs.

m. CRS provides standardized management reports to support management decision making and external reporting requirements.

n. Engineering 16 provides customized input screens with interfaces to supplemental data tables designed to perform analysis.

o. IPS, a web-enabled application consisting of a series of customized screens to perform Production Control and Material Management functionality designed to compress data entry, increases data validation, reduces redundant application usage, reduces maintenance and operation costs, and increases efficiency with enhanced and optimized business processes.

p. Part of CONOPS framework: IAMT uses a statistical sampling methodology to verify inventory accuracy. The objective is to verify inventory accuracy with a reduced labor requirement by using statistical sampling techniques to inventory representative items. The purpose is to validate inventory accuracy frequently and help detect problem areas/declining inventory accuracy trends for corrective action.

q. Part of CONOPS framework: MPT-PRO provides representatives the ability to accurately order material. MPT-PRO provides a Purchase Order Placement Report that recommends ordering materials based upon the BOM, execution requirements, sales orders, and safety stock levels. Additionally, it allows end users the ability to perform ad hoc queries on supporting information such as part usage; purchase order and sales order histories, and allocation by NSN for justification and approval of applicable requisitions.

r. MPT-STP performs a variety of rework operations including repair, overhaul and conversion of aircraft, engines, components, as well as manufacturing and related equipment. The maintenance repair facilities in collaboration with the FISC transferred the responsibility of material and inventory management activities to FISC. MPT-STP provides the capability to perform material and inventory management.

s. MULTIJON Cross Reference allows one project to be assigned multiple JON for Over and Above and Modification processing. It associates separate funding requirements to the end item “Basic” JON for OSIP consideration purposes and for independent processing of Installed Components accountability.

t. PSA converts the NAVSUP WSS quarterly requirements by Family Identity Code allowing the pre-scheduler program to calculate schedule return dates for each component and into DIFMS input data to open Component JONs.

u. Part of CONOPS framework: PROJ-ID-X allows one project to be assigned multiple JONs and subsequently other financial data over the life of the project such as across fiscal years, or quarters. It provides end users the ability to add, modify, and delete JON data originating in DIFMS. End users can assign new JON data for labor and material transactions based upon specified effectively dates.

v. Part of CONOPS framework: QAWB provides for recording the results of QA verifications and disposition instructions for processing nonconforming material when a standard repair procedure does not exist.

w Part of CONOPS framework: TDIR is used to find TDC codes that uniquely match Type, Model, and Series TDs for example, AFC, PPC, and AYC, from the TDSA file generated for APN-5 budget funded modifications to an end item from the NALDA system.

x. TAA allows employees to enter their own labor through reporting computer screens or has labor generated for them to a standing JON as designated by the maintenance repair facility. Labor screens include the MTO Stop and Complete, JON Labor, Group Labor (individual employee), and Bulk Labor (multiple shop employees) screens. Daily labor processing calculates, accumulates and reports labor for each employee at each maintenance repair facility. This labor may be at the Operation level or JON level and entered as Regular, Leave, or Overtime. An employee's Tour of Duty is comprised of the total days per week and hours per day the employee is scheduled to work inclusive of start, shift, lunch, and core work periods. Final processing for the pay period provides detailed Labor Files to support DIFMS and Entitlement processing. Entitlement processing is performed prior to reported labor being transmitted to the DCPS system. Entitlement processing ensures the employee has enough reported labor hours to match their assigned schedule for each day and allows for automated reconciliation between the reported labor and payroll generation.

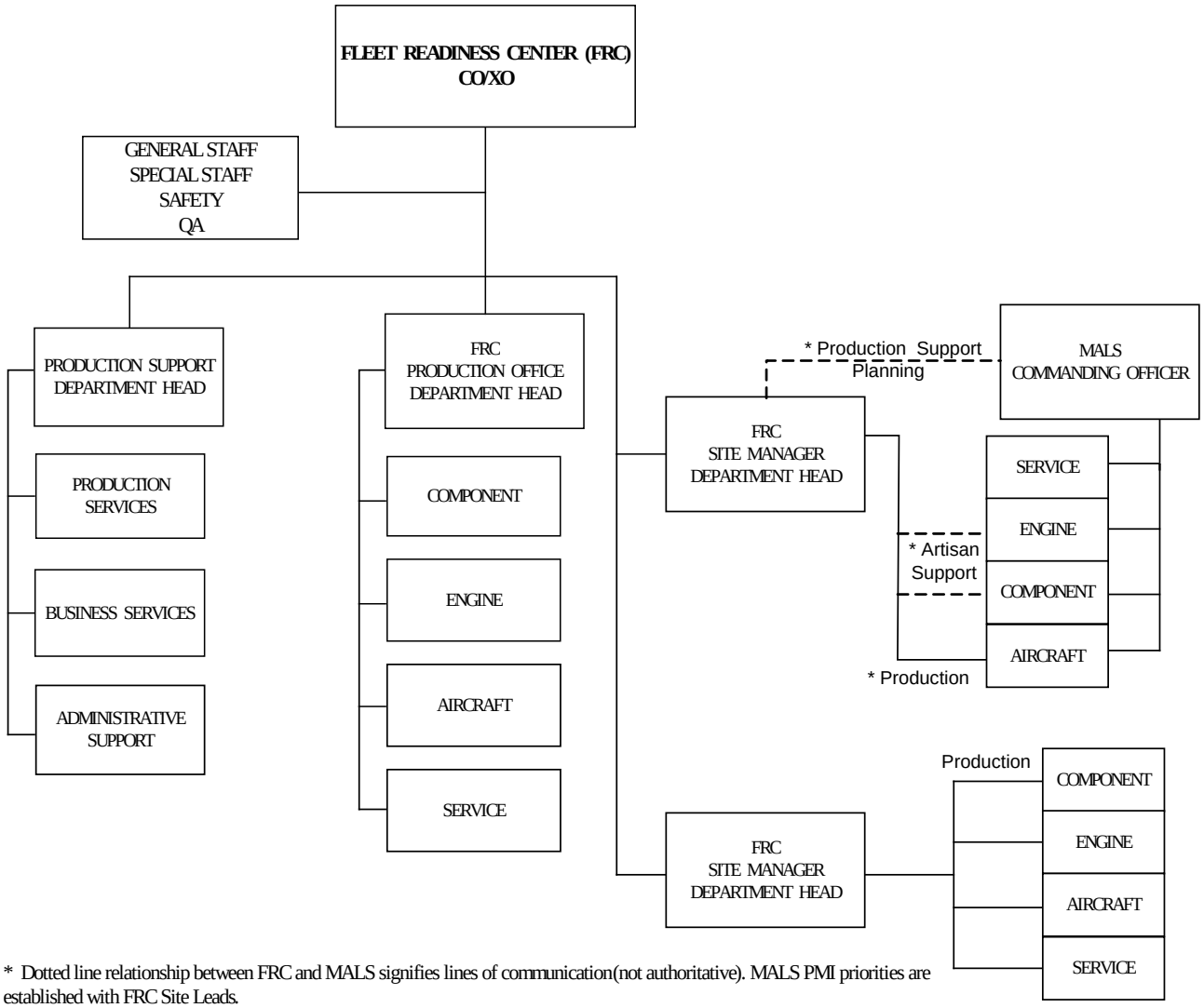
y. OPEN PLAN is the repair scope and workload scheduling tool that provides the ability to define the repair scope and workload schedule for an end item. This effort includes defining the repair requirements at the group level and sequencing activities. The tool provides a preliminary resource-loaded schedule that is coordinated with other workload activities. Once predecessor and successor relationships in the process are defined the tool performs time analysis for calculation of the lead-time offsets. Time analysis is the process of determining the overall schedule of a project by calculating start and finish dates for each event in the project that is paramount in the determination of lead-time offsets. Time analysis calculations are based solely on the Time Now date, the duration of the activities, and the logical relationships between them. Once the time analysis has completed successfully, the end user will have displayed a column showing the difference between the early finish date of the activity and the early start date of the project.

z. Planner Work Bench is a maintenance planning tool that provides a graphical representation of orders and requisitions in the system. Planners can retrieve data and make changes at their workstation, including rescheduling orders, changing start and completion dates, confirming allocations, releasing and printing a WO, generating, viewing, approving, and managing, a requisition, and canceling orders.

12.6 NTCSS Optimized OMA NALCOMIS

NALCOMIS provides a modern, real time, responsive computer based MIS and is the primary system used by fleet aviation activities. The three objectives of NALCOMIS are to increase aircraft readiness by providing local maintenance and supply managers with timely and accurate information required in their day-to-day management and decision making process, reduce the administrative burden on the fleet, and improve the quality of upline reported data. D-level FRCs have not traditionally used NTCSS Optimized OMA NALCOMIS, however it is necessary for D-level FRCs to maintain and update CM ALS records during D-level events and maintenance when naval aircraft, engines, and equipment are in their physical custody. The sole purpose for this requirement is to maintain the actual equipment configuration and history in

preparation for delivery to fleet activities. Specific and unique D-level FRC responsibilities for CM ALS management are in Chapter 5.



* Dotted line relationship between FRC and MALS signifies lines of communication(not authoritative). MALS PMI priorities are established with FRC Site Leads.

Figure 12-1: Basic Fleet Readiness Center (FRC) Area Command Structure

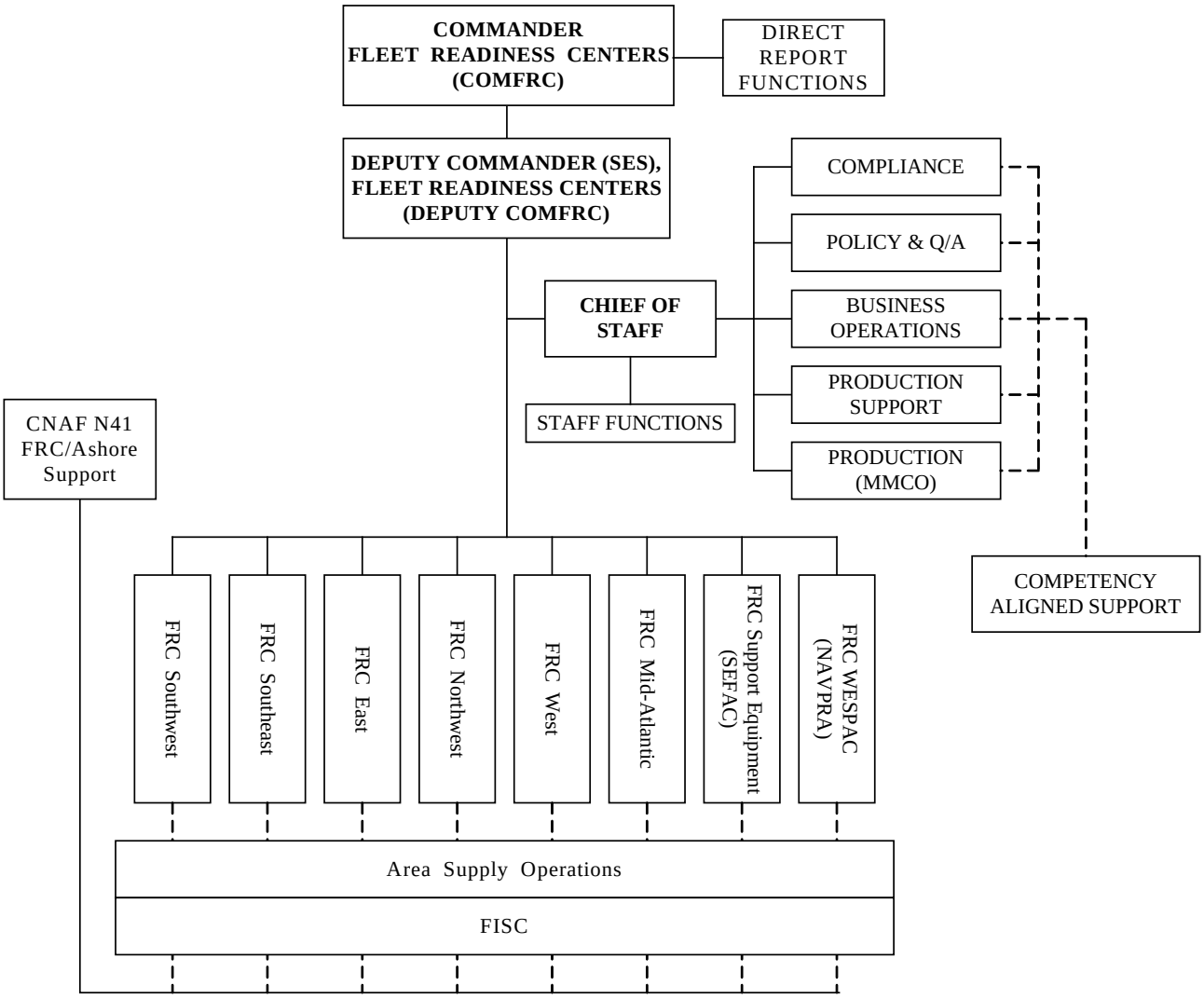


Figure 12-2: Fleet Readiness Center (FRC) Relationship

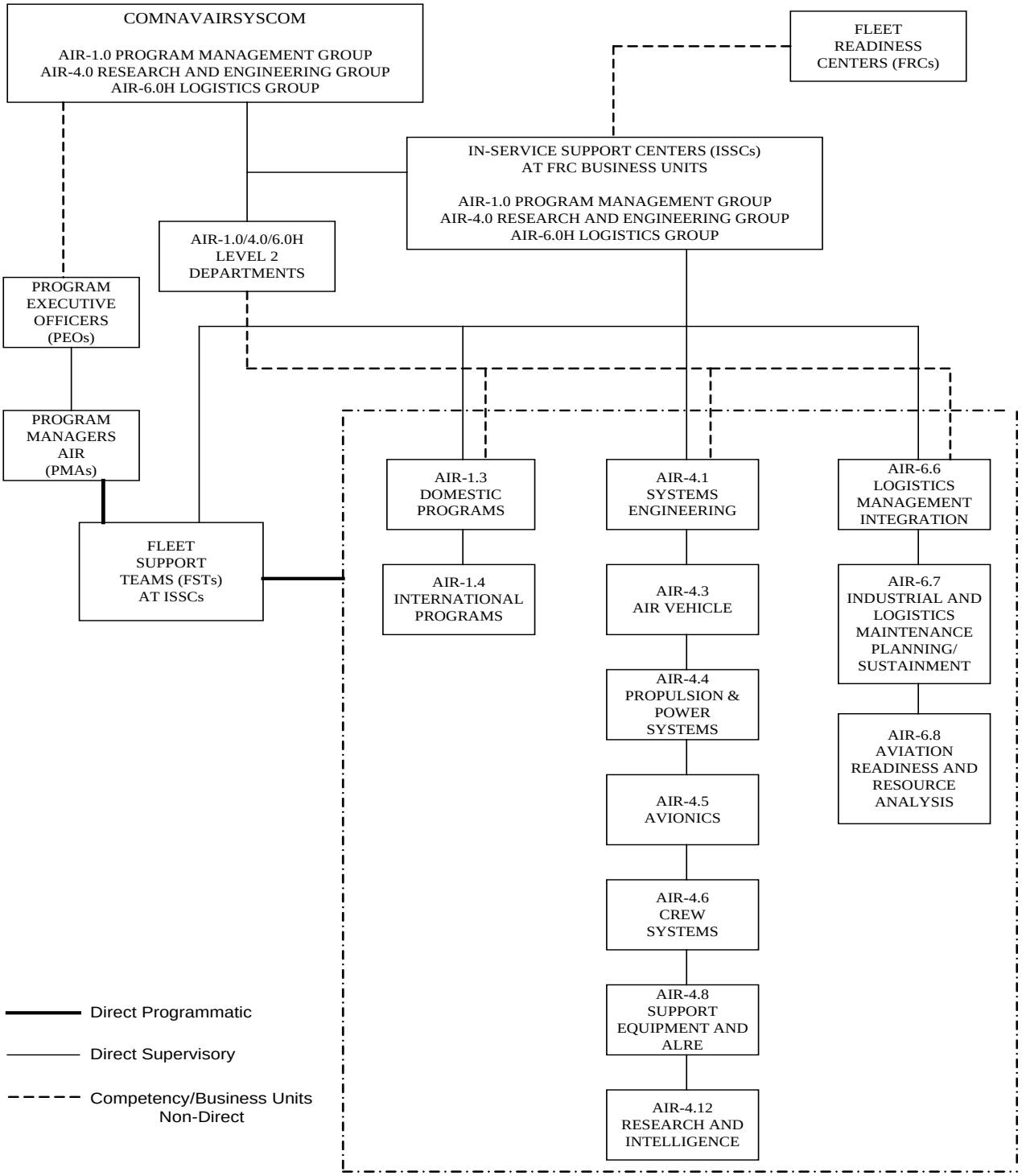


Figure 12-3: In-Service Support Center Relationship

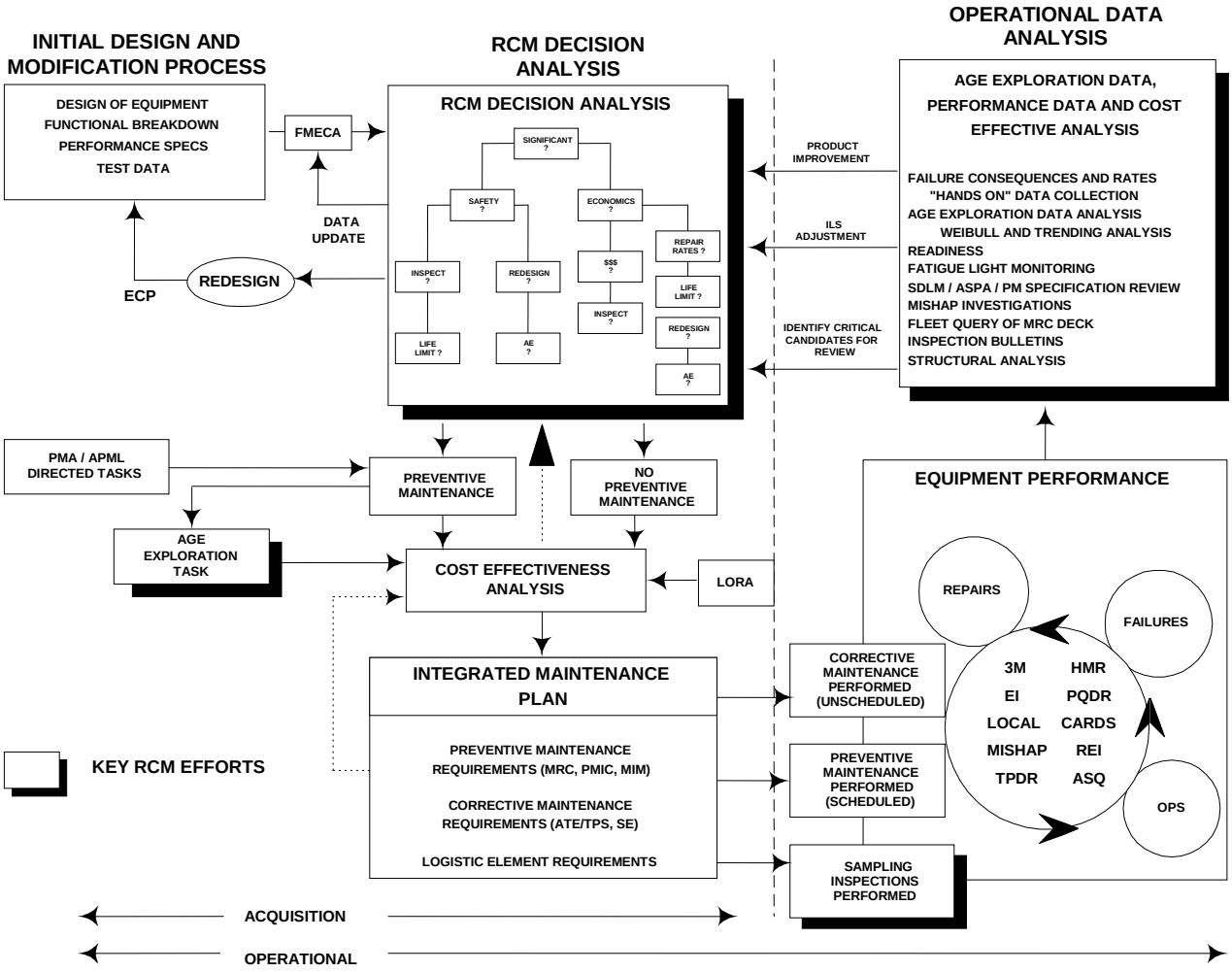


Figure 12.4: R&M/RCM Based Sustained Maintenance Planning Process

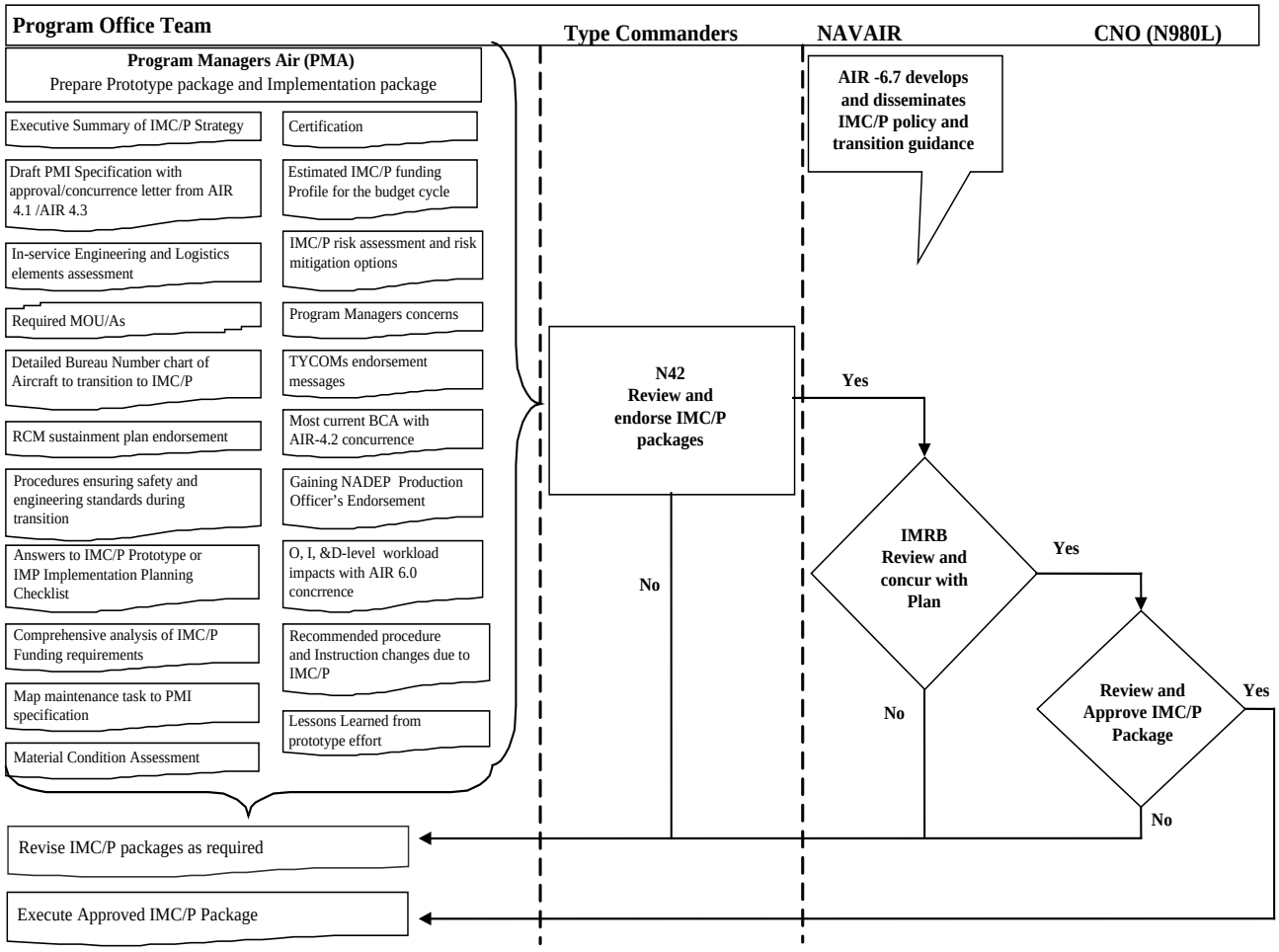


Figure 12-5: IMC/P Planning and Approval Process

Description	Category	Mishap Definition
CATASTROPHIC	I	Death or system loss.
CRITICAL	II	Severe injury, severe occupational illness, or major system damage.
MARGINAL	III	Minor injury, minor occupational illness, or minor system damage.
NEGLIGIBLE	IV	Less than minor injury, occupational illness, or system damage

Figure 12-6: Hazard Severity Definitions

FREQUENCY / SEVERITY	FREQUENT (A) $> 1 \times 10^{3}$ > 1 per 1,000 hours	PROBABLE (B) $> 1 \times 10^{4}$ > 1 per 10,000 hours	OCCASIONAL (C) $> 1 \times 10^{5}$ > 1 per 100,000 hours	REMOTE (D) $> 1 \times 10^{6}$ > 1 per 1,000,000 hours	IMPROBABLE (E) $< 1 \times 10^{6}$ < 1 per 1,000,000 hours
CATASTROPHIC (I) DEATH OR PERMANENT TOTAL DISABILITY LOSS OF A/C OR SYSTEM SYSTEM OR PROPERTY DAMAGE > 2,000,000 IRREVERSIBLE SEVERE ENVIRONMENTAL VIOLATION	1 HIGH	2 HIGH	4 HIGH	8 MED	12 ACCEPT
CRITICAL (II) PERMANENT PARTIAL DISABILITY. THREE OR MORE HOSPITALIZED IMMEDIATE PILOT ACTION REQUIRED TO PREVENT CAT I SYSTEM OR PROPERTY DAMAGE > $500,000 REVERSIBLE ENVIRONMENTAL VIOLATION	3 HIGH	5 HIGH	6 MED	10 LOW	15 ACCEPT
MARGINAL (III) INJURY RESULTS IN ONE OR MORE LOST WORK DAYS MISSION LOSS OR DEGRADATION SYSTEM OR PROPERTY DAMAGE > $50,000 MITIGATIBLE ENVIRONMENTAL DAMAGE	7 MED	9 MED	11 LOW	14 ACCEPT	17 ACCEPT
NEGLIGIBLE (IV) INJURY NOT RESULTING IN A LOST WORK DAY CONTINUE MISSION WITH MINIMAL RISK SYSTEM OR PROPERTY DAMAGE < $50,000 MINIMAL ENVIRONMENTAL DAMAGE	13 ACCEPT	16 ACCEPT	18 ACCEPT	19 ACCEPT	20 ACCEPT

RISK LEVELS:

- HIGH — MANDATORY CORRECTION FOR HAZARD ELIMINATION OR CONTROL. REQIRES PROGRAM MANAGEMENT APPROVAL FOR RISK ASSESSMENT.
- MED — REQUIRES MANAGEMENT REVIEW FOR RISK ACCEPTANCE. PROGRAM MANAGEMENT AND SSWG CONCURRENCE.
- LOW — INFORM PROGRAM MANAGEMENT AND SSWG OF RISK.
- ACCEPT — ACCEPTABLE RISK. REVIEW AS DESIGN MATURES.

Figure 12-7: Hazard Risk Matrix Example

STANDARD DEPOT LEVEL MAINTENANCE
SPECIAL WORK REQUEST

A. REPORTING CUSTODIAN		B. AIRCRAFT MODEL	C. BUREAU NUMBER
D. SCHEDULED INDUCTION DATE	E. PERIOD	F. EXTENSION	G. TIME SINCE ACCEPTANCE MONTHS_____ HOURS____
H. TIME SINCE SDLM MONTHS_____ HOURS____	I. TOTAL CATAPULTS	J. CATAPULTS THIS PERIOD	K. MONTHS DEPLOYED THIS PERIOD

L. ENGINE DATA

ENGINE POSITION	MODEL	SERIAL NUMBER	HOURS SINCE NEW	HOURS SINCE OVERHAUL

M. TECHNICAL DIRECTIVES INCORPORATED (LIST)

N. TECHNICAL DIRECTIVES NOT INCORPORATED

DIRECTIVE	REASON	DIRECTIVE	REASON

CNAF 4790/65 (5-12) FRONT

Copy to:
COGNIZANT WING
TYPE COMMANDER
NAVAVNDEPOTOPSCEN

Figure 12-8: Standard Depot Level Maintenance Special Work Request (CNAF 4790/65) (Front) (Sample)

CNAF 4790/65 (Appendix B, Table B-1, provides additional CNAF fillable forms)

O. SPECIAL WORK ITEMS		
ITEM NUMBER	DISCREPANCY	REMARKS

P. SIGNATURE (REPORTING OFFICER)	Q. TELEPHONE AUTOVON_____ COMMERCIAL_____	R. DATE (DAY/MONTH/YEAR)

CNAF 4790/65 (5-12) (BACK)

Figure 12-9: Standard Depot Level Maintenance Special Work Request (CNAF 4790/65) (Back) (Sample)

CNAF 4790/65 (Appendix B, Table B-1, provides additional CNAF fillable forms)

Priority Number	Type of Workload
1	Special projects. Reserved for specific assignment by COMNAVAIRSYSCOM to fulfill emergency requirements of the CNO.
	Investigations required by aircraft accident boards, boards of investigations, boards of inquiry, or safety EIs under NAMDRP.
2	EIs under NAMDRP.
	Prototypes and projects of an urgent nature directed by COMNAVAIRSYSCOM.
	Component Level Schedule Level One B08
	Emergency in-use SE requirements (carrier deployments, aircraft down for SE).
3	Acceptance and transfer of aircraft/missiles in delivery. Aircraft in COMNAVAIRSYSCOM field activity custody awaiting delivery and requiring correction of discrepancies/compliance with mandatory technical directives (including modifications).
	Manufacturing, B08 weekly level two (including SE components).
	Emergency repairs to missiles, aircraft, power plants, components, and customer services to meet operational requirements established by command authority. Regularly scheduled in-use SE requirements, including calibration and related support activities.
	Industrial field team modifications and on-site SE (including calibration) industrial field team support.
4	Programmed D-level industrial workloads. Aircraft SDLM; rework of missiles, power plants, B08 weekly three or four level requirements (including SE components), support equipment and related routine supporting programs.
	Routine prototypes and projects not specified under Priority 2 above.
5	Preparation of aircraft for delivery to long term storage points.
	Salvage and reclamation.

Figure 12-10: Type of Workload/Priority Number

AIRCRAFT REWORK PROGRAM (00) SUBPROGRAMS

Overhaul	01
Emergency Repair	02
Pilot Rework	10
Mid-Term Aircraft (does not require AFC)	19
Standard Depot Level Maintenance (SDLM) Crash Damage	23
Airframe Change (AFC) Pilot Rework	24
In-Depth Field Level Inspection	25
Airframe Change - SDLM Crash Damage	28
In-Depth Field Level Inspection AFC	30
Standard Depot Level Maintenance (SDLM)	36
SDLM / Conversion	37
SDLM / Modification	38
SDLM / Repair	39
Airframe Change - SDLM	41
Airframe Change - SDLM Conversion	42
Airframe Change - SDLM Modification (SDLM MOD)	43
Airframe Change - SDLM / Repair	44
Special Rework	54
SDLM Modification Crash Damage (MOD C/D)	55
SDLM Modification Repair	56
SDLM Conversion Repair	57
SDLM Conversion Crash Damage	58
Airframe Change - Special Rework	59
Airframe Change - SDLM MOD C/D	60
Airframe Change - SDLM MOD Repair	61
Airframe Change - SDLM Conversion Repair	62
SDLM Conversion - Crash Damage AFC	63

POWER PLANT REWORK PROGRAM (02) SUBPROGRAMS

Overhaul (O/H)	01
Conversion (O/H Conversion)	02
(Requires disassembly to the depth of overhaul rework)	
Repair (1) Major	03
Repair (2)	04
Reclamation In Lieu Of Procurement (RILOP)	05
Mid-Term Update	06
Conversion II (Repair Conversion)	07
(Requires disassembly to the depth of overhaul rework)	
Gear Box/Torque Meter - Overhaul	08
Gear Box/Torque Meter - Repair	09
Pilot Overhaul	10
Repair (Aircraft SDLM Special Repair)	12
(Repair of a power plant in support of a SDLM aircraft. Repair for specific program generally minor in nature for which a separate norm and cost is required.)	
Repair Major Conversion	13

COMPONENT FE PROGRAM (03) SUBPROGRAMS

Component FE Rework	01
High Material Cost Items	03
SDLM Component Support	04
Work for Foreign Governments	05
Military Assistance Program	06

Figure 12-11: Subprograms of Programs 00, 02, and 03

AIRCRAFT SUPPORT SERVICES (OTHER SUPPORT) PROGRAM (04)	SUBPROGRAMS
Subprograms (Industrial)	
Special Field Teams (Sea)	03
Salvage	04
Preservation/Depreservation	05
Customer/Operating Forces Training	06
Acceptance and Transfer (Aircraft)	08
Calibration, Operating Forces	10
Calibration Type I/II - Other	11
Calibration - Other	12
Calibration - Repair (CAL REPR)	20
Customer Service	13
NiCAD Battery Support	14
Transition Support/Special Task (Product Line)	15
Stricken Aircraft Reclamation and Disposal Program/ Reclamation In Lieu Of Procurement (SARDIP)/(RILOP)	17
COMNAVAIR Shipboard Work/Voyager Repair Team (VRT)	18
COMNAVAIR Air-Tasks	24
Unfunded NADOC Tasks	38
Interservice (INTRSV)	19
Van and Miscellaneous Facilities Projects	22
Navy Activities, Other (Industrial Support)	25
Work for other U.S. Government Agencies	26
Work for Foreign Governments (Foreign Military Sales (FMS))	27
Private Parties (Contractor funded in support of Government contracts)	28
Special Quality Investigations (SQI)	31
Automatic Test Equipment (ATE)	32
Trainers	35
SE Rework Fixed Price	40
SE Rework Level Of Effort (LOE)	41
SE Rework Other	42
Federal Personnel Programs/Subprograms	45
Weapon System Manager (WSM)/Product Support Directorate (PSD)	
Operating Forces Training/Certification (Engineering)	67
Laboratory Testing (Engineering)	68
Depot Capacity/Capability Studies	66
COMNAVAIRSYSCOM Assigned Engineering Air Tasks	73
Weapon System Manager	71
Interservice (Engineering)	72
Navy Activities Other Engineering	74
Engineering Work for Other U.S. Government Activities	75
Engineering Work for Foreign Governments	76
Automatic Test Equipment - In - Service Engineering (ATE-ISE)	63
Automatic Test Equipment (ATE) Production Engineering Support	64
Avionics Engineering Support Equipment	65
Miscellaneous Engineering	61
JOAP	50
Preparation of Technical Directives (TDs) and Engineering Change Proposals	51
Verification of Externally Prepared Technical Directives	56
Engineering Technical Assistance	52
Engineering Technical Assistance (Operating Forces)	55
Engineering Technical Assistance Support	59
Engineering Investigation Program (EIP)	53
Technical Publications Program	58
Maintenance of Technical Data	54
Reliability Centered Maintenance (RCM) Program	57
Threshold Sampling	62
Special Engineering Projects (Cognizant Field Activities (CFA))	69
Special Engineering Projects (NonCFA)	70
Materials Engineering (Depot)	60
MSSD Support	80
Miscellaneous	99

Figure 12-12: Subprograms of Program 04