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1. Situation. The Ground Equipment Maintenance Program (GEMP) includes activities required to meet Department of Defense (DOD) and Marine Corps readiness, logistics, and sustainability objectives that enable the Marine Corps to maintain operational capabilities per reference (a). As performance requirements for ground equipment continue to increase in order to keep pace with evolving defense strategies and operational concepts of employment, the Marine Corps must continuously improve ground equipment acquisition, sustainment and maintenance practices in order to sustain these capabilities. Roles and responsibilities of Marine Corps' agencies identified in this Order provide an integrated framework for a Total Productive Maintenance (TPM) strategy that supports Continuous Process Improvement (CPI) across the full range of actions required to maintain and sustain ground equipment, from initial requirements determination to final asset disposition. The Marine Corps' TPM strategy supports effective Total Life Cycle Management (TLCM) that is described in reference (b) by supporting or enabling the following actions:

a. Ensures planning in the development and acquisition of combat systems incorporates reliability and maintenance considerations, and that it is informed and supported by meaningful systems performance and maintenance data feedback from the operating forces in accordance with references (c) through (g).

b. Incorporates all facets of maintenance management into the Planning, Programming, Budgeting and Execution (PPBE) process per reference (h), in order to ensure funding is appropriately applied to support TLCM.

c. Integrates Condition Based Maintenance Plus (CBM+) concepts and the Reliability-Centered Maintenance (RCM) process described in references (i) through (k) into acquisition and sustainment planning and maintenance management decision processes supporting TLCM.

d. Maximizes the effective use of field, depot and Original Equipment Manufacturing (OEM) capacities and capabilities through effective maintenance management decision processes that increase unit readiness as reported per references (l) through (n).

e. Informs supply chain management and supports leveraging concepts including Serialized Item Management (SIM), stock positioning, and distribution, as defined in references (o)

through (v), to ensure effective materiel support of maintenance processes.

f. Supports CPI, as defined in reference (w), by identifying, reporting and correcting materiel deficiencies and technical information management practices described in references (x) and (y), which are essential to effective materiel management.

2. Cancellation. MARADMIN 159/13, Levels of Maintenance.

3. Mission. Establish a sustainable maintenance program for Marine Corps' operational forces and supporting activities that incorporates a TPM strategy that includes integration of CBM+ concepts and the RCM process in order to facilitate CPI of maintenance planning, management, operations, engineering, and reporting practices.

4. Execution

a. Commander's Intent. To promulgate guidance on the Marine Corps' maintenance strategy to integrate enterprise-wide efforts in TLCM of equipment and weapon systems. This will be accomplished by clearly defining the respective roles and responsibilities of Marine Corps agencies for TLCM, and through implementation of a TPM strategy throughout the field and depot levels of maintenance. This strategy will leverage people, processes and technologies to improve TLCM by integrating CBM+ and RCM within the Marine Corps' maintenance program. The strategy will be enabled by enhanced data collection and information management practices and technologies that will provide maintenance managers, program managers and operational planners the right information required to support effective materiel management decision making. Implementation of a systemic and integrated GEMP ensures maximum materiel reliability, availability, and maintainability through the below key elements:

(1) Defined roles and responsibilities that govern identification of sustainment Key Performance Parameters (KPP) and Key System Attributes (KSA), per reference (e), which are consistent with Marine Corps maintenance goals and objectives.

(2) Defined roles and responsibilities that govern maintenance planning decisions during acquisition and use of maintenance related personnel, materiel, facilities, and funding for sustainment of Marine Corps ground equipment.

(3) Enhanced maintenance efficiency and effectiveness throughout equipment life cycle, and increased ability for life cycle management to inform requirements generation processes.

(4) Integrated and proactive maintenance training and readiness practices for operators and maintainers which minimize unscheduled repairs, eliminate unnecessary maintenance actions, and employ the most cost-effective methods of maintenance planning and operations.

(5) Implementation of RCM analyses, and CBM+ concepts within the integrated TLCM framework in order to increase materiel availability.

(6) Implementation of systematic data collection and information reporting requirements to measure and respond to maintenance program metrics throughout life cycle planning, execution, and sustainment.

(7) Disciplined collection, analysis, identification of source of funding and communication of equipment failure data to inform development of procedural or design modifications that will improve reliability by ensuring that equipment meets target performance objectives.

(8) Expanded access to timely and accurate technical and historical usage and maintenance data that supports effective maintenance decision making, across the enterprise, required to minimize materiel downtime and extend life cycle.

(9) Efficient leveraging of support from inter-service, joint, and industry maintenance capabilities.

b. Concept of Operations. The Deputy Commandant (DC) Installations and Logistics (I&L) will develop policy supporting the GEMP, ensure integration of GEMP concepts within TLCM plans and programs, and govern implementation of and compliance with the TPM strategy throughout the Marine Corps.

(1) Total Productive Maintenance (TPM). TPM is a comprehensive approach to maintenance intended not only to prevent and correct equipment failures, but also to optimize equipment performance and extend equipment life cycle. In TPM, responsibility for maintenance extends throughout an organization, with operators and maintainers cooperating to predict, prevent, diagnose and correct equipment failures, and to provide feedback to improve maintenance plans and equipment

design and modification to increase performance and reliability. The GEMP includes the following elements of TPM:

(a) Use of metrics to assess and measure equipment performance against established standards and to assess and measure maintenance performance.

(b) Preventive and corrective maintenance performed by crew/operators and maintainers.

(c) Communication among crew/operators and maintainers to assess equipment condition and performance, and to diagnose and correct deficiencies or failures.

(d) Maintenance processes based on CBM+, and maintenance performed on evidence of need provided by RCM analysis and historical data.

(e) Training and education to increase the capabilities of equipment operators and maintainers to perform maintenance and to capture and report data for use in maintainability and sustainability management and planning.

(f) Use of feedback from operators and maintainers to improve maintenance plans and equipment design, manufacturing, and installation during the acquisition process in order to maximize availability throughout equipment life cycle.

(2) TPM Supporting Concepts. The following concepts are established by the DOD and directed to be implemented within Service maintenance strategies. The GEMP integrates these concepts in support of the Marine Corps' TPM strategy:

(a) Condition Based Maintenance Plus (CBM+). CBM+ is the application and integration of processes, technologies and knowledge-based capabilities to achieve target availability, reliability, and operation and support costs of Marine Corps' systems and components across their life cycle.

1. The goals of CBM+ are to perform maintenance only upon evidence of need that is provided through RCM, to increase equipment availability by identifying the optimum opportunity to perform required maintenance, and to optimize use of resources in conducting maintenance. This shifts equipment maintenance from an unscheduled, reactive approach to a more proactive and prognostic approach.

2. To be most effective CBM+ requires processes, technology and capabilities that support RCM and maintenance decision making. These requirements may include, but are not limited to, Automated Information Systems (AIS) for maintenance data collection and process analysis, sensors embedded within equipment platforms to provide operators, crew and maintainers enhanced visibility of equipment condition and/or portable equipment to conduct external tests and measurements to support RCM analysis. Accordingly, the Marine Corps will acquire or develop Automatic Identification Technology (AIT) and other test, measurement and diagnostic equipment, and integrate it with existing and emerging AIS to automate and enhance data collection and sharing to support CBM+. Per DOD policy, CBM+ will:

a. Be used as a principal consideration in the selection of maintenance concepts, technologies, and processes for all new weapon systems, equipment, and materiel programs based on readiness requirements, Life Cycle Cost Estimate (LCCE) goals, Business Case Analysis (BCA), and RCM-based functional analysis.

b. Be implemented into legacy and new start weapon systems, equipment, and materiel sustainment programs where technically feasible, beneficial, and cost-effective. This decision will be based on any of the following: Results of RCM analyses, findings from CPI initiatives, technology assessments, and results of supporting BCA.

(b) Reliability Centered Maintenance (RCM). RCM is a method of analysis that captures and assesses operational and maintenance data to enable decisions that improve design, operational capability and readiness of equipment. RCM is a logical decision process that enables CBM+ by providing the evidence of need for both reactive and proactive maintenance tasks that supports CBM+ processes. In execution, RCM involves performing only those maintenance tasks which will reduce the probability or consequence of a failure, based upon analysis of each failure mode (the specific condition causing the failure) and the consequence of failure (how the failure matters in terms of safety, operational capability of the equipment, etc.). RCM will be incorporated into maintenance planning throughout TLCM. RCM shall be integrated with systems engineering processes to continually improve maintenance tasks and schedules over time as knowledge of system performance and root cause failures are identified through feedback from usage and maintenance data,

thereby enabling capabilities such as predictive maintenance and improved application of maintenance resources.

(c) Performance Based Life Cycle Product Support (PBL). PBL is a support strategy within the Defense Acquisition Management System that focuses upon optimizing equipment and weapon systems support to meet the needs of the warfighter. The Defense Acquisition Management System provides an event-based process where acquisition programs proceed through a series of milestones associated with significant program phases.

1. PBL supports the creation of Capability Development Documents (CDD) that include Key System Attributes (KSA) and KPP that capture operational and sustainment requirements to support the Engineering and Manufacturing Development (EMD) phase of acquisition for the equipment or weapon system being developed, as well as the refinement of KSAs and KPPs for Capability Production Documents (CPD) that support the Production and Deployment (P&D) phase. Reference (e) requires that sustainment considerations be included as mandatory KPPs and KSAs, and the Marine Corps requires the documentation of equipment performance and support requirements as measurable metrics in Performance Based Agreements (PBAs) and the conduct of detailed Business Case Analysis (BCA) to determine best-value product support strategies. Per DOD policy, Marine Corps Systems Command (MARCORSYSCOM), affiliated Program Executive Offices (PEO), (e.g., for Land Systems (PEO-LS) and Enterprise Information Systems (PEO-EIS), Program Managers (PMs) are responsible for working with the users to develop, and obtain concurrence on, PBAs specifying objectives, measures, resource commitments, and stakeholder responsibilities.

2. PMs establish PBAs with Product Support Providers (PSPs) and Product Support Integrators (PSIs) to execute and manage equipment and support strategies and ensure that desired support is achieved during sustainment. The Marine Corps TPM strategy will improve the quality of information accessible to PMs, PSPs and PSIs for conducting BCAs and establishing PBAs by supporting more accurate and meaningful equipment and maintenance support data feedback from equipment users and maintainers gained via RCM and CBM+.

(3) Maintenance Program Components. For the Marine Corps, maintenance is defined as recovery, assessment, troubleshooting, repair, replacement, overhaul, servicing, inspection, and corrosion prevention functions that preserve, or

restore, ground equipment to a serviceable condition in which it is capable of performing the tasks as defined in each platform or weapon system's configured specifications. Maintenance efforts will address maintenance functions regardless of operational environment or location. The following maintenance program components are interdependent and iterative within the GEMP's TPM strategy. The GEMP relies upon each component to support and inform the others to achieve effective TLCM.

(a) Maintenance Engineering. Within the GEMP, maintenance engineering refers to the integration of maintenance considerations within the systems engineering approach used in developing equipment and weapons systems. Systems engineering is the overarching process that applies to transition from a required capability to an operationally effective system, and is intended to integrate capability requirements, design considerations and constraints within limitations of technology, budgets and schedules. The Marine Corps Expeditionary Force Development System (EFDS) is a planning process that uses a systems engineering approach to develop and deliver equipment and weapons systems through the PPBE and Defense Acquisition Management Systems. PMs develop a Systems Engineering Plan (SEP) for Milestone Decision Authority (MDA) approval in conjunction with each milestone review within the acquisition process. A SEP describes a program's overall technical approach, and will include maintenance engineering considerations including technologies, resources, human systems integration and threshold metrics. PMs are responsible for the development of a Life Cycle Sustainment Plan (LCSP) which defines the overall plan and strategy for sustaining the system throughout its life cycle, and includes the maintenance strategy and concept for the system. PMs will ensure BCAs include maintenance engineering assessments and their results are used to develop maintenance requirements to be included among the measureable metrics in PBAs. Data collected by users and maintainers via maintenance and supply records, RCM, and CBM+ following equipment fielding will be analyzed to provide traceable requirements for re-engineering, improvements to equipment design, adjustments to supporting maintenance concepts, and/or opportunities for incorporation or expansion of AIT to better capture performance and sustainment.

1. Configuration Management. Configuration changes to an equipment item or weapon system affect its physical design, performance and support infrastructure. The system and maintenance engineering steps within EFDS and the Defense Acquisition Management System must be repeated in

concert with configuration changes in order to evaluate their impact to existing tools, supporting technologies, operational support and technical data so that the necessary adjustments can be made to support the new design.

a. Technical data within the data management system for product support will influence the language in configuration documents and technical manuals. Authoritative rights for engineering drawings and related maintenance procedures, planning data, resources, provisioning data, and field/depot/OEM feedback data via Product Quality Deficiency Reporting (PQDR) or technical publication change procedures (NAVMC 10772 format) further support configuration management planning and are an essential part of the TPM strategy.

b. Engineering Change Proposals (ECP), Product Improvement Proposals (PIP), and deliberate modifications may impact the logistics chain's performance in supporting equipment and weapon systems. Therefore, coordination of ECPs, PIPs and modifications must be coordinated with supply, distribution, training, and manpower stake-holders as well as among PMs, operators and maintainers.

(b) Maintenance Planning. Maintenance planning is the process of determining the enduring maintenance requirements of equipment based on its planned operating environments and configured design, and is applied throughout the phases of equipment life cycle (development, acquisition, production, operations and employment, support, and disposal).

1. Maintenance planning supports systems and maintenance engineering within the Defense Acquisition and Management System. Maintenance planning begins early, during Materiel Solution Analysis, matures throughout systems development, and is updated and executed during the Production and Deployment and the Operations and Support phases of the process. PMs are required to develop LCSPs based on maintenance planning that minimize total life cycle cost while achieving readiness and sustainability objectives. PMs within MARCORSYSCOM/PEO coordinate with Marine Corps Logistics Command (MARCORLOGCOM), DC I&L, DC for Plans, Policies and Operations (PP&O), DC Combat Development and Integration (CD&I), and DC Programs and Resources (P&R) to develop and update LCSPs, to ensure that they are resourced through the PPBE process. These stakeholders coordinate with and are informed by commanders throughout the Marine Corps' operating forces in the development

and adjustment of sustainment plans, and in prioritization for resourcing. The TPM strategy supports this coordination by providing quality performance and maintenance feedback from equipment users and maintainers via RCM and CBM+ for both systems and maintenance engineering and in evaluating and increasing the effectiveness of field and depot maintenance actions.

2. Enterprise Life Cycle Maintenance Program (ELMP). The ELMP process is the Marine Corps' collaborative and iterative approach to planning and executing depot level maintenance in support of TLCM. ELMP establishes the coordination and communication framework within the TPM strategy that integrates input from all of the relevant Marine Corps TLCM stakeholders in producing accurate, visible and defensible depot maintenance requirements and budgets.

(c) Maintenance Management. Maintenance management integrates requirements, policy, programs, and procedures to synchronize maintenance and sustainment activities. Its goal is to align financial, logistical, maintenance, distribution, and supply chain actions to best support necessary maintenance or sustainment actions to ensure availability of equipment and weapon systems to accomplish the mission. Within the GEMP's TPM strategy, maintenance management not only increases availability and reliability of equipment to better support a unit's operations, but also supports TLCM of equipment by capturing and reporting equipment performance and reliability information that drives ELMP and systems and maintenance engineering decisions. Maintenance management within TPM is the continuous assessment and analysis of maintenance processes and their results, and the development, implementation and/or adjustment of maintenance procedures to achieve improved results based on that analysis, as well as the effective capturing and reporting of equipment performance and reliability data and maintenance production information to support TLCM and CPI of the Marine Corps' TPM strategy.

1. TPM is a process, foundational to the ability to develop and identify successful practices, and then apply them throughout an organization. The GEMP supports a "from the ground-up" methodology that expects and capitalizes upon innovation and adaptation at the user level to inform development of policy, procedures and technologies to improve TLCM throughout the Marine Corps. Commanders at all levels will develop and implement policy and procedures for TPM within their organizations, and publish them in their Maintenance Management

Standard Operating Procedures (MMSOP). At a minimum, policies and procedures will include the following elements that support TPM:

a. Involvement of the commander in maintenance and maintenance management decisions.

b. Analysis of maintenance production, and incorporation of analysis results in making maintenance production decisions.

c. Adaptability of maintenance procedures for CPI.

d. Preventive and corrective maintenance (cleaning, lubricating, adjusting, inspecting, and repairing) performed by crew/operators and maintainers.

e. Communication among crew/operators and maintainers to assess equipment condition and performance, and to diagnose and correct deficiencies or failures.

f. Capturing and reporting equipment performance and reliability data.

g. Training and education to increase the capabilities of equipment crew/operators and maintainers to perform maintenance and to capture and report equipment performance and reliability data.

2. DC I&L will support CPI of maintenance and maintenance management throughout the Marine Corps by driving development, acquisition and implementation of new capabilities, such as AIT and other test and measurement equipment, and the expansion of existing capabilities, such as the Global Combat Support System-Marine Corps (GCSS-MC) AIS, to support integration of CBM+ and RCM. DC I&L Logistics Policy & Capabilities Branch (LPC) Field Supply and Maintenance Analysis Offices (FSMAO) will identify effective maintenance management practices employed by units, which will inform LPC in development and promulgation of policies and procedures that reflect best business practices in furthering CPI.

(d) Maintenance Operations

1. Maintenance production is the physical accomplishment of maintenance actions required to maintain or

return equipment to a determined serviceable condition. In keeping with the TPM strategy, the GEMP applies a broad definition to maintenance production, emphasizing that the responsibility for maintenance extends throughout an organization. Within the GEMP, maintenance production responsibilities are inherent with equipment ownership, stewardship, and use. Because maintenance actions include the active assessment of equipment during operation and deliberate pre/post operation inspection by crew/operators, as well as actions conducted by maintainers within maintenance activities, maintenance production is a continuous process. Maintenance management within the TPM strategy will orient on applying CPI to achieve unity of effort in maintenance production by utilizing and expanding the skill-sets of, and coordination among crew/operators and maintainers, as well as between supported and supporting commands. Doing this improves readiness by increasing corporate capability to predict, prevent, diagnose and correct failures, and to provide feedback to improve equipment design and modification to increase performance and reliability of equipment.

2. Quality control, safety, and training programs are inherent to maintenance operations efforts, and ensure that maintenance actions and the associated data collection meet technical standards, configuration management, Occupational Safety and Health Administration (OSHA), and Environmental Protection Agency (EPA) requirements. Commands and maintenance activities will use the established Quality Deficiency Reporting (QDR) procedures, per reference (x), to identify product deficiencies to program/product support management agencies to resolve nonconforming, counterfeit, and systemic failures associated with the item.

(4) Performance Measurement, Assessment and Reporting. The GEMP's TPM strategy requires continuous measurement, assessment and reporting of both equipment and maintenance process performance in order to support CPI of TLCM. Performance is assessed by measuring it and comparing it to established standards. These standards are established as thresholds within performance parameters for equipment. For maintenance processes, standards may be set by commanders or maintenance managers, or established Marine Corps wide, to support measuring process effectiveness. For example, in supporting CPI, a unit commander may measure the effectiveness of new process relative to a previous process (or the baseline "standard") by collecting and comparing the performance metrics of each. Reporting is the means by which performance data is

made available for use in systems and maintenance engineering, CPI of maintenance management, and in providing unit readiness information to decision makers. The GEMP's TPM strategy will ensure standards are established, metrics are utilized to measure performance, and that performance is reported in order to support CPI throughout the Marine Corps.

(a) Key Performance Parameters (KPP) and Key Systems Attributes (KSA). Within the Defense Acquisition Management System, KPPs are attributes or characteristics of a system that are considered critical or essential to the development of an effective military capability. A KPP normally has a threshold, representing the required value, and an objective, representing the desired value—these are the performance standards for the equipment or weapon system. KPPs are contained in CDD and CPD required for milestones within the Defense Acquisition Management System, and are included verbatim in the Acquisition Program Baseline (APB), the document that defines the benefits, costs, performance parameters, and schedule of an acquisition program. KSAs are attributes or characteristics considered crucial in support of achieving a balanced solution/approach to a KPP or some other key performance attribute deemed necessary by the system user. Feedback from equipment users and maintainers are essential in measuring KPP and KSA, and will be supported and enhanced through RCM and CBM+.

(b) Materiel Condition Reporting. The materiel condition of equipment must be known throughout its entire life cycle to accommodate operational and readiness requirements. AIS (such as GCSS-MC) will be tailored to support near real-time data collection, report generation, and analysis to identify primary causes of equipment and weapon systems' readiness conditions, or excessive support cost. Materiel condition information will be collected, reported, and evaluated at established intervals for comparison against defined or established equipment performance and sustainability metrics. The condition status codes below will be used to describe the capability of equipment or weapon systems to perform missions, will describe the causes for them being unable to perform their missions, and will be used in measuring maintenance and supply effectiveness.

1. Mission Capable (MC). MC is a materiel or equipment condition status indicating that an equipment item or weapon system is capable of performing an identified mission.

2. Not Mission Capable (NMC). NMC is a materiel or equipment condition status indicating that an equipment item or weapon system is not capable of performing an identified mission. NMC conditions are further divided into the following categories:

a. Not Mission Capable Maintenance (NMCM). NMCM is an equipment or weapon system condition status indicating that an item is not capable of performing an identified mission because of a shortfall in a unit's maintenance capacity. Recording NMCM time for unscheduled maintenance will begin when a malfunction is discovered. Recording NMCM time for scheduled maintenance will begin when the determination is made that an item cannot be returned to mission capable status within two hours. Recording of time will end when maintenance has been completed or is interrupted by work stoppage due to supply shortage. NMCM status will resume when required supply or funds are delivered or available to the maintenance activity.

b. Not Mission Capable Supply (NMCS). NMCS is an equipment or weapon system condition status indicating that an item is not capable of performing an identified mission because of maintenance work stoppage due to a supply shortage. Recording of NMCS time will begin when work stoppage results from lack of parts and the NMCS requisition remains unsatisfied one hour after the demand is initiated. When both NMCM time and NMCS time are encountered and the sum is more than 12 hours, the condition is carried against the condition status with the most hours.

(c) Maintenance Process Performance. Performance metrics within the TPM strategy assist leadership in measuring maintenance performance and productivity. The metrics consist of ratios which use data and information gathered from assessed equipment availability, resource performance, and output quality. Commands and maintenance activities will establish and monitor standards and develop assessments to drive CPI in increasing equipment readiness and effectiveness, and in reducing support costs. DC I&L will provide guidance, and monitor and support these efforts by driving expansion of CBM+ and RCM capabilities, to include integration of enhanced data collection and analysis capabilities in AIS, and in developing supporting policy and procedures.

(5) Maintenance Authority. Maintenance authority is the documented establishment of an organization or activity's

capability and capacity to perform maintenance based on available resources such as personnel, training, repair parts, tools and support equipment, facilities, publications, and funds. The principal document that defines a command's authorized maintenance resources is Table of Organization and Equipment (T/O&E). These maintenance resources enable maintenance capabilities that support accomplishment of specific maintenance tasks. Authority to execute specific maintenance tasks is inherent in, and corresponds directly to the maintenance capabilities supported by T/O&E and unit mission statements.

(a) For standing units with Unit Identification Codes (UIC) listed within the Total Force Structure Management System (TFSMS), changes in a unit's maintenance capability must be coordinated with DC I&L; this includes both permanent changes applicable to like units across the total force, which are requested via T/O&E change requests, or temporary changes, that may include acquisition of specific tools that would increase the unit's capabilities.

(b) For temporary/task-organized units supporting exercises or operations of limited duration, commanders will ensure that maintenance resources are aligned to enable the capabilities required for the units to properly maintain their assigned equipment. This includes not only the deliberate alignment of personnel, tools and repair parts, but also the establishment of the appropriate supported and supporting relationships per reference (z).

(6) Maintenance Capabilities. Marine Corps maintenance capability is defined within two Levels of Maintenance (LOM): Field and depot. The distinction between field and depot LOM is based on the maintenance tasks performed within each.

(a) Field LOM. Field maintenance is any maintenance that does not require depot maintenance capability and is performed by crew/operators and maintainers within Marine Corps organizations and activities, and/or by approved commercial/contract sources. Maintenance tasks performed within the Field LOM are categorized as organizational and intermediate. Alignment of tasks within the field LOM is based on supporting/supported relationships and respective capabilities among units. A unit may perform any field maintenance tasks for which it is manned, trained, and equipped. Units are not authorized to conduct maintenance tasks outside of their assigned capabilities.

1. Organizational maintenance tasks are the responsibility of and performed by a using organization on its assigned equipment. It normally consists of inspecting, servicing, lubricating, and adjusting, as well as the replacing of parts, minor assemblies, and subassemblies. It is not only accomplished by maintenance personnel, but also by equipment operators.

2. Intermediate maintenance tasks may require a higher level of technical training, specialized tools and/or facilities. It consists of a range of capabilities including modification, replacement, fabrication, component/subcomponent/assembly/sub-assembly repair, calibration and repair of Test, Measurement and Diagnostic Equipment (TMDE), software maintenance, precision machining, welding, evacuation, disposal, salvage, and demilitarization of equipment or materiel.

3. Alignment of maintenance tasks within the Field LOM is established by supporting/supported relationships which define the framework for alignment of organizational and intermediate maintenance tasks. Supporting/supported relationships may be standing/long-term and defined in unit mission statements and supported with capabilities established in T/O&E, or assigned for specific operations and supported with task-organized capabilities per reference (z). Supporting/supported relationships will be planned and executed to align and manage the respective maintenance capabilities among supporting and supported units as effectively as possible within constraints. Flexibility in alignment of maintenance tasks within the supporting/supported relationship framework is required to enable commanders to best align maintenance requirements to capabilities. Supporting commanders may perform maintenance tasks that are within supported units' capabilities, including but not limited to overflow maintenance and organizational tasks that must be completed in order for intermediate tasks to be performed on equipment evacuated to supporting units. However, in making these decisions commanders must consider their impacts not only to their own operations and resources, but also on those of their supporting/supported units. Supported and supporting unit commanders will coordinate closely in order to ensure the most effective use of maintenance resources within their respective capabilities, and will incorporate local standard operating procedures to ensure the same.

(b) Depot LOM. Maintenance actions taken on material or software involving the inspection, repair, overhaul, or the modification or reclamation (as necessary) of weapons systems, equipment end items, parts, components, assemblies, and sub-assemblies that are beyond field maintenance capabilities, and/or are authorized and directed by DC I&L. Depot maintenance is not defined by location. The Marine Corps' organic depots, other service depots, commercial industrial facilities, OEM, or a combination thereof may perform depot maintenance related activities throughout the logistics chain framework; however, in all cases depot maintenance will be specifically authorized and directed by DC I&L, following coordination with MARCORSYSCOM/PEO, and MARCORLOGCOM. Depot maintenance is an essential part of supporting and/or extending equipment life cycle in TLCM, but may also be leveraged to contribute to field maintenance efforts by providing overflow, on-site maintenance services, and technical assistance as appropriate to maintain enterprise materiel availability.

(c) Maintenance Tasks. Alignment of specific maintenance tasks with the capabilities required to perform them is accomplished through Source, Maintenance and Recoverability (SMR) coding assigned through applicable technical manuals. Maintenance codes within the uniform SMR code format identify the lowest level of maintenance at which specific maintenance actions are intended to be performed, and correspond with capabilities of units that are established by T/O&E. SMR codes are assigned to each item of supply during the acquisition process or follow-on system engineering.

1. SMR codes. SMR codes are used to communicate maintenance, supply and disposal instructions for the logistics support of weapon systems, equipment, and end items. These codes are made available to their intended users by means of technical publications, and are assigned based on the logistics support planned for the end item and its components during maintenance planning.

2. Applicability of SMR codes. Guidance in this Order pertaining to SMR codes should be used in conjunction with reference (aa). Procedures for recommending changes to existing SMR codes are included in reference (aa). SMR code changes do not require arbitrary updates to existing technical documents. Technical documentation will be updated in conjunction with changes in logistics support strategies for existing Marine Corps systems.

(d) Maintenance Capability Enablers. Per reference (i), the DOD authorizes and directs Services to employ the full spectrum of maintenance support structures available to sustain military materiel, including commercial sector support and partnering, to meet readiness and sustainability objectives. Use of maintenance capabilities outside of Marine Corps field and depot may be advantageous or required to support the mission; however, it must be authorized by the appropriate MARCORSYSCOM/PEO PMs in order to ensure that the maintenance being conducted supports the TLCM plan for the equipment and is not redundant to maintenance already planned/programmed, and that costs, performance and reliability data associated with maintaining the end-item or component is captured for use in systems and maintenance engineering. Expansion of CBM+ and RCM capabilities within the GEMP will make collecting and assessing this data both more achievable and more necessary. Commands and maintenance activities desiring to use external maintenance capability will contact MARCORSYSCOM/PEO via the chain of command in order to gain approval for external maintenance.

1. Warranty. The objective of a warranty is to ensure that contractors design, produce, and deliver a quality product, and to give the government recourse if the product does not perform as contractually agreed to by both parties. Determination for whether a warranty is appropriate for a particular acquisition requires consideration of the nature and use of the materiel, supplies and services, cost, administration and enforcement. MARCORSYSCOM/PEO PMs have overall responsibility for warranty planning for Marine Corps acquisitions, and coordinate with MARCORLOGCOM Weapon System Management Center (WSMC) in the development and execution of warranty programs. During the acquisition process, PMs, with support from MARCORLOGCOM Weapon System Management Teams (WSMTs), conduct BCAs to determine if warranties are appropriate for the weapon systems or equipment being procured, and if so, coordinate with the supporting Procuring Contracting Officers (PCO) for warranty inclusion in the procurement contract and shall include warranty data in LCSPs. PMs coordinate with MARCORLOGCOM in the administration of warranties, and provide guidance to weapon systems or equipment users for accessing warranty maintenance via published fielding plans.

2. Cannibalization and Selective Interchange. The maintenance actions of cannibalization and selective interchange increase equipment operational availability when repair parts are not available through the supply chain or when combat conditions warrant increased equipment availability for

mission accomplishment. Requests for cannibalization and selective interchange will be closely scrutinized and authority to execute will be granted when it is necessary for mission accomplishment. These practices double the maintenance effort, degrade the reliability of an asset from established standards, skew lifecycle planning functions, and fail to register demand upon the supply chain if not properly recorded. They further complicate the serialized management of materiel metrics and must be authorized, performed, recorded, documented, and reported on a case-by-case basis.

a. Cannibalization is the removal of serviceable parts from one unserviceable item of equipment in order to install them on another unserviceable item of equipment without replacement in order to return it to an operational status. Approval authority for conducting and reporting cannibalization will reside with MARCORLOGCOM.

b. Selective interchange is the controlled removal and replacement of a serviceable repair part or component from one item to satisfy a deficiency in another item. The exchange must be complete to qualify as selective interchange. It may take the form of a requisition for the replacement repair part/component in lieu of the actual unserviceable repair part/component. Approval authority for conducting and reporting selective interchange will be authorized at the battalion/squadron level.

3. Contractor Logistics Support (CLS). CLS maintenance is performed under contract by commercial organizations as authorized by MARCORSYSCOM/PEO per reference (ab). CLS is a method of obtaining logistics support for a product or service for a specified period of time, and may be used to provide service and material solutions to the warfighter for sustained operations in order to meet established metrics. CLS may include maintenance services and materiel provided under equipment warranty programs and determined by the product support strategy. In order to be effective and to provide continued support for items transitioning to organic support, CLS must be planned and coordinated so that usage data and requirements are tracked, accountability is maintained, readiness is properly reported, and distribution requirements are met while operating in expeditionary or garrison environments. CLS will be integrated and monitored throughout the maintenance planning and execution of equipment life cycle for management, performance tracking, and seamless and effective process flow throughout the supply and distribution chains.

4. Interservice Support Agreements (ISA). Marine Corps activities may request support from DOD activities when organic capabilities do not exist or when support can be obtained more efficiently or effectively from existing DoD capabilities. ISA agreements allow DOD activities to provide requested support when it is determined that it would be in the best interest of the United States Government and capabilities exist to provide support without being detrimental to operations. The quality of support services provided to other DOD activities will be equivalent to the quality of support the supplier furnishes to its own mission unless otherwise requested or approved by the receiver. Marine Corps activities shall ensure ISA for maintenance support are in compliance with equipment sustainment strategies and that appropriate maintenance data associated with an ISA is captured in Marine Corps maintenance AIT systems. ISA determination is signified by signing a support agreement. No further written determinations beyond an ISA are required for agreements between DOD activities.

(7) Non-Traditional Acquisition

(a) Because maintenance responsibilities are inherent with equipment ownership and use, commanders will establish responsive, effective, and responsible maintenance and sustainment practices for equipment and materiel directly procured by field commands, such as Commercial-Off-the-Shelf (COTS).

(b) MARCORSYSCOM/PEO PMs acquiring and fielding equipment via the Urgent Universal Needs Statement (UUNS) process are required to develop a product support concept that is within the framework of the maintenance capability and supply support capacity of gaining units and shall ensure the support concept includes New Equipment Training (NET). These assets will be authorized and assigned in TFSMS and promptly loaded to inventory accounting systems. Equipment procured using the UUNS process and later approved by CD&I as a Program of Record, will be inducted into the supply chain cataloging process for identification, configuration management, and inventory accountability practices that include disposal requirements.

(8) Employment of Ground Maintenance Capabilities. Employment of ground maintenance capabilities is executed through command and support relationships designed to facilitate effective command and control of field and depot maintenance capabilities. The Marine Corps' methods of employing organic or

accessing external maintenance capabilities are described below within the framework of tactical, operational, and strategic levels of operation.

(a) Tactical. Units identify and perform field level maintenance tasks based on their organic capabilities and assigned supported or supporting missions. Organic capabilities are constrained by mission, tactical situation, time available, personnel, skill set, logistical lift, stock positioning of inventory/spares, authorized tooling and other factors. The link between the organizational and intermediate capabilities is based on established command and support relationships.

1. The Marine Air Ground Task Force (MAGTF) or Logistics Combat Element (LCE) will establish command and support relationships according to mission requirements in accordance with reference (z). Central to the concept of employment for the LCE is centralized control and decentralized execution. LCE forces are generally assigned support rather than command relationships to the other subordinate elements of the MAGTF in order to best support this concept. Commanders will define support relationships by clearly identifying supporting and supported elements, purpose of the relationship, effect desired, and the scope of action to be taken. At a minimum, the time, place, level and duration of the relationship will be specified. To the fullest extent possible, maintenance will be identified and performed by internal organizational maintenance capabilities on respective T/O&E assets before being repaired or evacuated by/to another organization. Established command and support relationships will dictate how, and with which units, the LCE supports specific maintenance requirements that exceed a unit's organic field maintenance capabilities. This includes access to the supporting establishment's logistics support network (e.g. OEM, CLS, and other Services).

2. Support Relationships. The Marine Corps employs two categories of support: Direct Support (DS) and General Support (GS). DS is a mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's requests. GS is a mission given to the supporting force as a whole and not to any particular subdivision thereof. The LCE generally employs a portion of its capabilities in DS of specific Ground Combat Element (GCE) or Aviation Combat Element (ACE) units, and a portion in GS of the MAGTF. Support relationships will be planned and executed with a goal of addressing maintenance requirements by aligning and managing the respective

capabilities among supported and supporting units as effectively as possible within constraints.

a. While all or any portion of a supporting organization's maintenance capabilities may be assigned DS or GS relationships. Field maintenance functions that require specialized tools or facilities, low-density skill sets, or are most efficiently performed when centrally managed (e.g. component/sub-assembly repair) are normally assigned in GS. However, this does not preclude assignment of capabilities to meet maintenance requirements that a supported unit would normally address with their assigned capability. For example, use of overflow maintenance (including Maintenance Contact/Support Team (MCT/MST)) may be utilized to support geographically dispersed supported units in order to augment their capabilities and reduce logistical lift requirements associated with evacuation of equipment to central GS repair locations.

b. Support relationships may be standing/long-term and defined in unit mission statements, or assigned for specific operations via operation orders. Support relationships are not confined within the construct of the MAGTF and may also be established via ISA, Memorandum of Understanding or Agreement (MOU/MOA), or CLS contract. Support relationships outside of the MAGTF shall be coordinated with the appropriate MARCORSYSCOM/PEO PMs; commands and maintenance activities will contact MARCORSYSCOM/PEO via the chain of command in order to ensure external maintenance support is in compliance with equipment maintenance strategies and that external equipment maintenance data is captured and available in applicable Marine Corps maintenance AIT systems.

(b) Operational. The maintenance capabilities associated within the operational level support specific geographic actions/requirements external to the tactical level or to particular field unit capabilities. Operational maintenance is focused on requirements that are inherent to specific theater support operations and are usually in the form of host nation, other service, or joint integrated facilities/workforce. These requirements are initiated by the respective Marine component commander or functional component commander of a joint command operation and are facilitated through the integration of the supporting establishment commands MARCORLOGCOM and MARCORSYSCOM. These maintenance requirements are supported by CLS, ISA, OEM, or depot capacities.

(c) Strategic. Strategic logistics maintenance capabilities/capacities are focused on the Marine Corps Title 10 responsibilities, and involve strategic partnering with the private industry sector and Non-Government Organizations (NGO) in the recruitment, training, development, manufacturing, and procurement of the established warfighting capabilities.

(9) Funding and Budgeting. The Program Objective Memorandum (POM) is a major document in the PPBE process, and the basis for the Marine Corps' budget estimates. The POM is the principal programming document that details how the Marine Corps proposes to respond to assignments in the Strategic Planning Guidance (SPG) and Joint Programming Guidance (JPG) and satisfy its assigned functions over the Future Years Defense Program (FYDP). The POM is submitted to the Secretary of Defense (SECDEF) by the DOD Component heads, which recommend the total resource requirements and programs within the parameters of SECDEF's fiscal guidance. The POM drives funding appropriation for the Marine Corps. The preparation of timely maintenance funding/budget requirements to identify total maintenance requirements (modernization, scheduled, unscheduled, field and depot), regardless of funding shortfalls, is critical to the POM cycle. DC I&L coordinates with MARCORLOGCOM, MARCORSYSCOM/PEO and with commanders of Marine Corps Forces (MARFORs) to identify maintenance budgeting requirements, and with DC P&R to ensure that funds are programmed efficiently and economically to support activities for the GEMP. DC I&L also supports development of initiatives for improving the effectiveness and efficiency of Marine Corps maintenance programs through inclusion of Maintenance Modernization (M2) initiatives in the POM process. M2 provides funding and integration support of initiatives in order to synchronize with evolving policy and technology for structural and continuous improvements to the GEMP and enabling processes, until such point that initiatives are adopted or transitioned into formal programs via the EFDS process.

(a) Operations and Maintenance (O&M). The O&M category of appropriations funds operations and maintenance costs and is normally available for obligation for one fiscal year. Categories of expenses that O&M funds include headquarters operations, travel, fuel, minor construction projects of $750K or less, training and education, recruiting, depot maintenance, purchases from Defense Working Capital Funds (spare parts), base operations support, Maintenance Modernization and assets with a system unit cost of less than the current procurement threshold ($250K). Within the Marine

Corps, the O&M appropriation is divided into Operations and Maintenance Marine Corps (OMMC) for active forces or Operations and Maintenance Marine Corps Reserves (OMMCR) for the Reserve Component.

(b) Procurement. Procurement appropriations are used to finance investment items and cover costs necessary to deliver a new system or major modification intended for operational use or inventory. Items classified as investments and financed with procurement appropriations include those whose system unit cost exceeds $250K, centrally managed end items not purchased from Defense Working Capital Funds regardless of unit cost (e.g., handguns), and purchases from the Defense Working Capital Fund furnished as part of a system acquisition, system modification, major service life extension program, and initial spares. With certain limited exceptions, the cost of fabricating and installing additions or modifications to existing end items is also funded with procurement appropriations. Marine Corps funding within the Procurement appropriation is referred to as Procurement Marine Corps (PMC).

(c) Research Development Test and Evaluation (RDT&E). RDT&E appropriations finance research, development, and test and evaluation efforts performed by contractors and government installations to develop equipment, material, or computer application software. This includes the Development Test and Evaluation (DT&E) of weapon systems or equipment during the Initial Operational Test and Evaluation (IOT&E) period, purchases of end items, weapons, equipment, components, and materials and the performance of services. This applies to AIS as well as to weapon systems. RDT&E funds are also used to pay the operating costs of dedicated activities engaged in the conduct of Research and Development programs. RDT&E funds are used for both investments (e.g., sophisticated laboratory test equipment) and expenses (e.g., salaries of civilian employees at R&D dedicated facilities).

c. Tasks

(1) Deputy Commandant, Installations and Logistics (DC I&L)

(a) Serve as the Marine Corps' advocate for ground equipment maintenance management, materiel readiness reporting, and maintenance-related requirements, programs, concepts, and initiatives, and represent the Marine Corps for ground equipment in Joint and DOD forums.

(b) Serve as the Marine Corps' Maintenance Functional Area Manager, and develop, review and guide policy, enabling capabilities and technologies requirements, modifications, implementation, and integration for plans and programs.

(c) Serve as the Marine Corps' Enterprise Ground Equipment Manager (EGEM) for maintenance and sustainment management related issues and programs.

(d) Provide guidance in the EFDS process to register maintenance, logistics, and sustainment requirements.

(e) Review, validate, prioritize, and submit O&M and MILCON funding requirements for maintenance capabilities, operations and activities, and facility requirements to DC P&R.

(f) Receive and review depot maintenance budget requests submitted by CG MARCORLOGCOM, validating planning and pricing assumptions and assessing executability, and submit the Marine Corps' depot maintenance budget request to DC P&R.

(g) Coordinate with DC CD&I and DC P&R to formulate RDT&E and PMC funding requirements in support of maintenance concepts, strategies, and activities.

(h) Develop, assess, evaluate, and periodically adjust maintenance policy, programs and training to improve maintenance effectiveness and agility, increase operational availability, and reduce life cycle total ownership costs of equipment.

(i) Develop and integrate policy, governance, and oversight mechanisms and capabilities for implementation, execution, and reporting of maintenance management and maintenance program requirements in order to support enterprise and program/product level TLCM objectives.

(j) Design, develop, implement, monitor, and report on applicable performance management measures and metrics to effectively enact, resource, and sustain GEMP elements and components for supporting enterprise and program/product level TLCM objectives.

(k) Coordinate and synchronize maintenance related policy and technology initiatives across the Marine Corps and Joint logistics chains.

(l) Administer the Maintenance Modernization program to develop and align maintenance-related technologies and initiatives that improve the effectiveness or efficiency of enterprise TPM processes, including CBM+, RCM, maintenance engineering, planning, production, management or assessment.

(2) Deputy Commandant, Programs and Resources (DC P&R). Coordinate with other DCs and MarFor commanders to ensure GEMP initiatives, capabilities, and maintenance related program activities are incorporated into the POM and budget process.

(3) Deputy Commandant, Combat Development and Integration (DC CD&I)

(a) Use the EFDS process to support JCIDS requirements for development, integration, and standardization of maintenance requirements, concepts, and capabilities for establishment of objectives and thresholds.

(b) Coordinate with DC I&L to identify O&MMC funding requirements in support of MAGTF maintenance and sustainment activities.

(c) Implement CBM+ concepts and RCM analysis methods during requirements development and CBA determinations.

(d) Advocate for RDT&E and PMC funding for new systems in support of maintenance and sustainment requirements.

(e) Provide Core equipment capability and quantity requirements identification in support of Depot Source of Repair (DSOR) determination and ELMP planning.

(f) Ensure that TFSMS reflects the required personnel and equipment to support maintenance capability operations and activities.

(g) Review and update doctrine, requirements, training and education curriculum, and supporting resources to address materiel maintenance and sustainment concepts throughout equipment life cycle.

(4) Deputy Commandant for Plans, Policies and Operations (DC PP&O)

(a) Coordinate and oversee the introduction of weapon systems, equipment, or materiel into maintenance support programs that support joint or combatant commander planning requirements.

(b) Set Commandant of the Marine Corps (CMC) priorities for weapon systems, equipment, or materiel in pre-positioned, storage, rotation, or depot maintenance programs for validated plans that support operational or contingency planning.

(c) Participate in forums requiring equipment life cycle maintenance planning and execution of weapon systems, equipment, and materiel.

(d) Conduct operational analyses of equipment condition reporting requirements via readiness reporting systems and applications supporting organizational or activity Mission Essential Tasks (METs).

(e) Monitor and coordinate operational maintenance and sustainment requirements and planning for established plans and operations.

(5) Commanders, Marine Corps Forces (MARFOR)

(a) Provide to MARCORSYSCOM/PEO, recommended changes or updates to maintenance support plans and supporting documentation.

(b) Identify to DC CD&I and DC P&R any changes in mission needs, operating environments, or financial resources that may impact maintenance or sustainment support strategies.

(c) Recommend to DC I&L O&M funding changes in support of maintenance or sustainment activities to include field and depot capability maintenance requirements.

(d) Identify and prioritize maintenance and sustainment requirements, to include overflow and on-site maintenance or sustainment support services.

(e) Participate in the EFDS/JCIDS process by providing subject matter expertise to register maintenance and sustainment requirements.

(f) Coordinate with DC CD&I for the purpose of formulating RDT&E and PMC requirements in support of maintenance operations or activities.

(g) Develop internal policy/procedures to integrate enterprise policy, governance, and oversight mechanisms/capabilities to evaluate implementation, execution, and reporting of maintenance management and maintenance program requirements in order to support enterprise and program/product TLCM objectives within subordinate organizational/assigned units.

(h) Monitor, analyze, and reconcile maintenance management and maintenance metrics.

(i) Coordinate with DC I&L, MARCORSYSCOM/PEO and MARCORLOGCOM to plan, manage, and coordinate product support arrangements, to include, CLS, PBA, and warranty support throughout respective areas of operation.

(6) Commanders

(a) Ensure maintenance management and maintenance receive full command interest.

(b) Provide standard operating procedures to direct unit efforts in support of the command's maintenance management program within a TPM strategy.

(c) Establish training programs which address maintenance management, reliability, and process improvement targeting operators, crews, maintainers, clerical, and supervisory personnel.

(d) Coordinate and integrate the maintenance management and maintenance efforts of command activities, and implement internal control procedures to ensure compliance with maintenance policy.

(e) Manage, integrate, and report CLS, PBA and warranty support maintenance and sustainment actions throughout respective areas of operation.

(f) Capture and report data used in performance metrics and operational assessments to include equipment readiness reporting.

(g) Provide feedback on deficiencies or initiatives within maintenance procedures, concepts and plans, policy, technical data, equipment design, or logistics chain processes to the appropriate authority via official channels, and through participation in the appropriate Operational Advisory Groups (OAG).

(7) Commanding General, Marine Corps Logistics Command (MARCORLOGCOM)

(a) Develop performance measures and metric standards to assess, improve, and balance depot maintenance and sustainment capability or capacity performance in support of MARFOR readiness and mission accomplishment.

(b) As the Marine Corps ground equipment asset (Class VII Principal End Item (PEI)) manager, coordinate enterprise ground equipment sustainment programs to include PEI rotation, ELMP, Reset and fulfillment plans.

(c) As the Marine Corps' executive agent for ELMP, coordinate with all of the relevant Marine Corps' TLCM stakeholders in developing depot maintenance requirements and conducting depot maintenance execution planning.

(d) Develop the ELMP/depot maintenance budget request, to include requirements and funding priorities, and provide to DC I&L (LPC-1) for validation during the Department of the Navy (DON), Office of the Secretary of Defense (OSD), and Presidential Budget (PRESBUD) submissions as part of the PPBE process.

(e) Implement joint and inter-service depot maintenance policies as directed.

(f) In conjunction with MARCORSYSCOM/PEO, develop, document, assess, and refine program/product maintenance support plans for commodities or programs from initial Materiel Solution Analysis (MSA) support planning to disposal.

(g) Provide to MARCORSYSCOM/PEO recommended changes or updates to program/product maintenance support plans and supporting documentation.

(h) Provide data, information, and reports for supportability assessments, strategy development, planning, and BCA studies.

(i) Execute depot maintenance support strategies to satisfy strategic equipment performance and availability objectives/priorities.

(j) Coordinate with MARCORSYSCOM/PEO in order to support, coordinate, monitor, evaluate, and assess warranty actions and contracted logistics support (CLS) performed on Marine Corps ground equipment.

(k) Monitor, analyze, and reconcile maintenance management and depot maintenance performance to maximize effectiveness.

(8) Commander, Marine Corps Systems Command (MARCORSYSCOM)/Program Executive Office (PEO)

(a) As the Marine Corps ground equipment asset (Class VII PEI) life cycle manager, develop, implement, document, assess, and refine program/product management strategies and maintenance support plans throughout materiel life cycle through RCM analysis to support CBM+ concepts and the performance of maintenance within a TPM strategy.

(b) Tailor maintenance and sustainment strategies to satisfy the performance and cost objectives and thresholds of the total force via established PBA.

(c) Translate and refine MARFOR program/product support requirements into achievable, contractible, and measurable weapon system cost and performance objectives.

(d) Maintain aggressive and collaborative systems and maintenance engineering capabilities to develop technology standardization, insertion, and enhancements that improve weapon system reliability and maintainability, while reducing maintenance and support costs, and minimizing impact on training.

(e) Implement a tailored Configuration Management Program (CMP) in which the PM retains the authority and responsibilities of equipment configuration control. CMP shall include management of training and support systems to ensure currency with parent system.

(f) Conduct BCAs as appropriate during acquisition or major system modification in order to determine the best course of action when developing maintenance and sustainment support concepts to support program level TLCM.

(g) Develop and maintain program/product support level life cycle maintainability and sustainability documentation, and data standards throughout the program/product life cycle for achieving established objectives and thresholds.

(h) Conduct regular, independent assessments and reviews throughout equipment life cycle to ensure validated requirements for program/product thresholds for KPP objectives are being achieved, and to identify causal factors that are responsible for thresholds that are not being achieved.

(i) Develop maintenance and sustainment programs for product support management plans that are in accordance with enterprise policies and objectives.

(j) Establish and maintain technical data standards in supporting enterprise AIS that allow for near real-time access and interaction to facilitate down-stream program/product support and reporting requirements.

(k) Conduct periodic program/product support in-service reviews for equipment life cycle technical, maintenance, training, and engineering sustainment requirements.

(l) Establish, budget, and manage maintenance-related programs (corrosion, calibration, service-life extension, mid-life rebuild, product improvement, repair and evacuation criteria, etc.) for fielded materiel sustainment and support concepts.

(m) Assess and notify DC I&L of fleet safety or deadline actions.

(n) Acquire, employ, and maintain maintenance AIS and AIT which enable, support, and automate, to the greatest extent possible, the full spectrum of maintenance and sustainment operations, including the requirements of CBM+ concepts as defined in reference (j).

(o) Monitor, assess, and analyze equipment maintenance data throughout its life cycle for issues and trends

associated to reliability, availability, maintainability and readiness.

(p) Adjust maintenance and sustainment support strategies based on analyses and business case studies to provide the best value approach for the Marine Corps throughout the life cycle of materiel.

(q) Identify and submit deliberate and emergent field and depot level maintenance and sustainment training requirements data for materiel procurement fielding to DC CD&I and Training and Education Command (TECOM) to support development of Programs of Instruction.

(r) In development of CLS concepts, coordinate and conduct tactical level resources and operations impact assessments on the MAGTF.

(s) Register CLS and warranty contracts, in support of fielded MAGTF ground equipment, with MARCORLOGCOM for coordination and performance tracking.

(t) Coordinate with DC CD&I for the purpose of formulating O&M, RDT&E, and PMC requirements in support of maintenance and sustainment operations and activities.

(u) Maintain resident expertise in RCM and CBM+ to enable use by PMs for TLCM decisions across the equipment life cycle, and as enterprise expertise supporting initial implementation and sustained execution of RCM and CBM+ processes in new and legacy weapon systems.

d. Coordinating Instructions

(1) Develop, review, update, and implement internal policies and procedures to facilitate the intent and execution of this Order.

(2) Ensure accurate reporting of requirements and data into appropriate supporting maintenance and sustainment systems.

5. Administration and Logistics

a. Directives issued by the CMC are published electronically and can be accessed via the Marine Corps' publications electronic library.

b. This Order will be managed in accordance with reference (ac).

c. Records created as a result of this Order shall be managed according to National Archives and Records Administration approved dispositions per reference (ad) to ensure proper maintenance, use, accessibility and preservation, regardless of format or medium.

6. Command and Signal

a. Command. This Order is applicable to the Marine Corps' Total Force as outlined herein:

(1) To organizational and assigned items, equipment, and materiel supporting established T/O&Es, and special allowance listings except as indicated below:

(a) Aviation materiel furnished by the Navy which is subject to policy prescribed by the Chief of Naval Operations.

(b) Medical and dental materiel which are subject to the policies of Bureau of Medicine and Surgery.

(c) Musical instruments.

(d) Industrial plant equipment.

(e) Government Furnished Materiel (GFM), Government Furnished Property (GFP), Government Furnished Equipment (GFE), or Garrison Mobile Equipment (GME), when specific procedures are delineated in other directives.

(f) Research and Development (R&D) equipment unless specified by MARCORSYSCOM/PEO and/or the Marine Corps Warfighting Laboratory (MCWL).

(g) Class V (W), ground conventional ammunition.

(2) This Order applies to equipment maintained by the Marine Corps under approved PBA, ISA, MOA, MOU, Statements of Work (SOW), etc.

(3) Ground equipment maintenance will be managed as outlined in this and other directives and manuals in the 4790 series, and as amplified by the directives from the CMC.

b. Signal. This Order is effective upon date signed and supersedes context or content to maintenance or sustainment terminology and concepts previously published until updated or cancelled therein.

W. M. FAULKNER
Deputy Commandant for
Installations and Logistics

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