



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
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WASHINGTON, DC 20350-3000

MCO 4790.18C
LPC
21 Aug 14

MARINE CORPS ORDER 4790.18C

From: Commandant of the Marine Corps
To: Distribution List

Subj: CORROSION PREVENTION AND CONTROL (CPAC) PROGRAM

Ref: (a) MCO 4790.25
(b) MCO P4790.2C
(c) DoDD 5000.01, "The Defense Acquisition System,"
May 12, 2003
(d) DoDI 5000.02, "Operation of the Defense
Acquisition System," November 25, 2013
(e) DoDI 5000.67, "Prevention and Mitigation of
Corrosion on DoD Military Equipment and
Infrastructure," February 1, 2010
(f) TM 4795-OR/1A
(g) TM 4750-OD/1
(h) MCO 5215.1K
(i) SECNAV-M 5210.1
(j) 5 U.S.C. 552a
(k) SECNAVINST 5211.5E

1. Situation. The Marine Corps is experiencing loss of readiness through corrosion of tactical ground and ground support equipment. Corrosion degrades operational and structural capabilities, also affecting the safety of our Marines.

2. Cancellation. MCO 4790.18B.

3. Mission. To establish a comprehensive CPAC program to extend the useful life of all Marine Corps tactical ground and ground support equipment, and to reduce maintenance requirements and associated costs through the identification, implementation, and development of corrosion prevention and control products, materials, technologies and processes. The use of these technologies and processes will repair existing corrosion damage

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and prevent, or at least significantly retard, future corrosion damage on all Marine Corps tactical ground and ground support equipment.

4. Execution

a. Commander's Intent and Concept of Operations

(1) Commander's Intent. Establish and execute a CPAC Program that:

(a) Incorporates a Total Productive Maintenance strategy that supports Continuous Process Improvement in order to minimize the loss of equipment and reduce maintenance costs as a result of corrosion.

(b) Identifies and assesses current and projected CPAC problems across the Marine Corps through regular communication and coordination with Marine Forces (MARFOR), Marine Depot Maintenance Command (MDMC), and Storage Activities.

(c) Incorporates condition-based maintenance principles for servicing and repair of Marine Corps equipment in accordance with reference (a).

(d) Assists the MARFORs, MDMC, and Storage Activities in addressing and solving current and future CPAC problems by establishing formalized procedures to enable a flow of information between Marine Corps Systems Command (MARCORSYSCOM) and the MARFORs, MDMC and Storage Activities regarding CPAC technologies and processes.

(e) Establishes CPAC program requirements and formalized CPAC standards for all future equipment acquisitions.

(f) Continuously studies government and industry (both domestic and foreign) CPAC technology processes in order to improve our ability to prevent and control corrosion of our systems and equipment while avoiding duplication of effort.

(g) Establishes standardized CPAC procedures in formal schools and MARFORs training programs.

(h) Complies with all applicable federal statutes and regulations considering environmental compliance, occupational safety and health, system safety, hazardous material management, and pollution prevention throughout the life cycle of the CPAC process and acquisition phases.

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(2) Concept of Operations. The Commander's intent will be accomplished through continuous management and implementation of primary and supporting elements, which shall include:

(a) Primary elements

1. Preventive Corrosion Control. Preventive corrosion control procedures employ approved techniques, materials, and technologies. Preventing corrosion starts during the acquisition process and is continued throughout the life cycle. The acquisition community evaluates the use of state-of-the-art technologies and processes that directly address corrosion as required by references (a) through (e).

2. Corrective Corrosion Control. Corrective corrosion control focuses on identifying, developing, and implementing technologies and processes that will correct current equipment deficiencies resulting from corrosion and environmental damage. Corrective corrosion control includes all Marine Corps efforts designed to correct corrosion damage (such as general maintenance and Corrosion Control and Coatings).

(b) Supporting Elements

1. Corrosion Prevention Products and Materials (CPPM). The Marine Corps develops corrosion prevention products, techniques, and materials for tactical ground and ground support equipment. This area will also evaluate and approve new or experimental products for use on tactical ground and ground support equipment.

2. Corrosion Control and Coatings. Corrosion Control and Coatings is a means to handle corrosion related maintenance that units cannot execute due to a lack of trained personnel, facilities and environmental constraints. Corrosion Control and Coatings however, does not replace the requirement for crew/operator maintenance.

3. Controlled Humidity Protection (CHP). CHP is a field-tested, time-proven maintenance technology that is designed to eliminate moisture-induced damage and the resulting sustainment costs. Dehumidified protection is the preferred method of storage. Modern technology has made this concept applicable to equipment throughout its spectrum of operation and life cycle. By maintaining relative humidity (RH) below 50 percent, the adverse effects of humidity are eliminated; the rate of corrosion growth shifts from linear to exponential above 50 percent RH. A CHP system is an environment stabilization

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system that can be tailored to meet operational requirements in the most cost effective manner. CHP is designed as a means to evaluate and approve CHP technologies for operational and storage applications.

4. Corrosion Assessments. Assessment of equipment is performed by visual inspection and guided by the Corrosion Assessment Checklist, which is maintained and updated by the CPAC Program Office. The frequency of assessment is based on such factors as the environment, operational conditions, existing preventive maintenance, checks and services, corrosion assessments, and historical knowledge of how prone the component is to corrosion and wear. Frequency of corrosion assessments should increase with the operational tempo, severity of environmental conditions, and priority/essentiality of the equipment. Corrosion assessments are completed to determine the level of corrective actions necessary to return the item to Corrosion Category Code (CCC) 1 condition. The Marine Corps uses the following Corrosion Category Codes in identifying program requirements:

a. Category 1: Item requires no corrosion repair or preservatives, and has been assessed within the established service interval. The goal at this level is to maintain the item in a category 1 condition.

b. Category 2: Item requires surface preparation, spot paint, and preservation at the organizational unit. The goal of CPAC efforts is to return the item to category 1 condition.

c. Category 3: Item requires field level maintenance performed beyond the organizational unit's capability. Spot painting has arrested the corrosion, but the item is now in a condition that requires repainting, overcoat, and undercoat as required. The item must be inducted to the Corrosion Repair Facility (CRF) for repair. The goal of CPAC efforts is to induct the item into the CRF so that it will return to the unit in a category 1 condition.

d. Category 4: Item requires field level maintenance performed beyond the organizational unit's capability and includes repair to sheet metal, major frame components, paint, blasting and undercoating (e.g., replacement or repair of components such as doors, fenders, and chassis frame rails, or battery boxes due to corrosion). Equipment in this category is priority for induction into the CRF. Equipment in this category condition presents a potential safety hazard.

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The goal of CPAC efforts is induct the item into the CRF so that it will return to the unit in a category 1 condition.

e. Category 5: Item is degraded to a degree that requires depot level repair or replacement based on the deterioration caused by corrosion. Equipment in this category condition is non mission capable and presents a safety hazard.

b. Tasks

(1) Deputy Commandant for Installations and Logistics [DC, I&L (LPC)]

(a) Provide policy and advocacy on all aspects of the CPAC program.

(b) Provide advocacy for CPAC Program Objective Memorandum budget submission requirements.

(2) Commander, Marine Corps Systems Command (COMMARCORSYSCOM)/Program Executive Office (PEO)

(a) Incorporate Corrosion Prevention and Control Plans for all Acquisition Category (ACAT) I programs in accordance with reference (c).

(b) Document CPAC strategies for ACAT I programs in accordance with reference (d).

(c) Incorporate CPAC technologies into the acquisition process and depot level maintenance efforts.

(3) CPAC Program Management Office, MARCORSYSCOM

(a) Serve as the Marine Corps executive agent for corrosion prevention and control.

(b) Serve as the central point of contact when interfacing with other federal, Department of Defense (DoD), and industry agencies on Marine Corps CPAC matters and to maintain responsibility for the implementation and execution of CPAC policy, strategy, guidance and methodology.

(c) Advise Headquarters Marine Corps, Department of the Navy and DoD on policy recommendations for CPAC and provide representation to support external agency meetings and working groups.

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(d) Coordinate with MARCORSYSCOM Program Managers and PEOs to ensure that corrosion prevention and control strategies are documented in Corrosion Prevention and Control Plans for all ACAT I programs in accordance with reference (d) and verify that CPAC is adequately incorporated in all other acquisition programs and fielded systems throughout their life cycle.

(e) Coordinate and chair the annual CPAC working group.

(f) Tailor corrosion related maintenance and sustainment strategies to satisfy performance and cost objectives and thresholds of the total force via established performance based agreements using public-private partnerships.

(g) Develop, implement, document, assess, and refine program strategies and corrosion maintenance support plans to support Field Level Maintenance corrosion control procedures. These strategies shall include organizational and intermediate activities for service, preservation, and repair by Corrosion Service Teams and Corrosion Repair Facilities as prescribed in references (f) and (g).

(h) Manage CPPM and ensure CPAC technologies are included in the acquisition process and depot level maintenance efforts. The CPAC program office will coordinate with the Commander, Marine Corps Logistics Command to approve Marine Corps Prevention Products techniques, and materials, for tactical ground and ground support equipment in-stores and long term storage initiatives.

(i) Direct CPAC initiatives that support unit-managed ground equipment staging programs for deferred maintenance (i.e. administrative storage).

(j) Coordinate the reviews, updating, and dissemination of CPAC related technical guidance including technical manuals, military specifications and product standards.

(k) Formulate, submit, and track budget requests through the PPBE process for consolidated CPAC requirements based on assigned CCCs of equipment outlined in this Order.

(l) Provide implementing instructions in support of this Policy.

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(4) Deputy Commandant, Combat Development and Integration (DC, CD&I)/Commanding General, Marine Corps Combat Development Command (CG, MCCDC)

(a) Provide a representative to the CPAC working group. The representative will also serve as the DC, CD&I CPAC point of contact.

(b) Include CPAC technologies and concepts in all capabilities development documentation for tactical ground and ground support equipment.

(c) Establish CPAC training and education standards for all users/operators, maintenance personnel, and managers of Marine Corps weapons systems.

(5) Commanding General, Marine Corps Logistics Command (CG, MARCORLOGCOM)

(a) Provide a representative to the CPAC working group. The representative will also serve as the MARCORLOGCOM CPAC point of contact.

(b) Coordinate with the CPAC program office and include CPAC technologies and processes in all planning and execution of depot level maintenance efforts for tactical ground equipment.

(c) Administer a CHP program that supports in-stores long term storage initiatives.

(d) Coordinate with the CPAC Program Office to approve Marine Corps Prevention Products techniques, and materials, for tactical ground and ground support equipment in-stores and long term storage initiatives.

(6) Commanders, U.S. Marine Forces (MARFOR)

(a) Maintain CPAC as a maintenance-related program in accordance with reference (b).

(b) Coordinate with the CPAC Program Office regarding all matters relative to CPPM, Corrosion Control and Coatings, CHP, Corrosion Assessments, and efforts that support unit-managed ground equipment staging programs for deferred maintenance (i.e. administrative storage).

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(c) Conduct corrosion assessments and identify equipment corrosion category codes utilizing the Corrosion Assessment Checklist in accordance with reference (f).

(d) Schedule, approve, and induct equipment based on CCC priorities to the CRF, approved private vendors, or MDMC for corrosion repairs.

(e) Submit monthly CRF nominations to the CPAC Program Office by the 15th of each month.

(f) Provide a representative to the CPAC working group.

5. Administration and Logistics

a. Recommendations concerning the contents of this Order are invited. Such recommendations will be forwarded to the Deputy Commandant of the Marine Corps, Installations and Logistics, Logistics Policy via the appropriate chain of command.

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

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

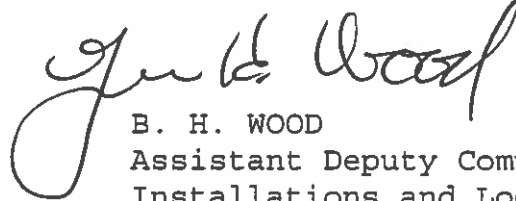
d. The generation, collection or distribution of personally identifiable information (PII) and management of privacy sensitive information shall be in accordance with the Privacy Act of 1974, as amended, per references (j) and (k). Any unauthorized review, use, disclosure or distribution is prohibited.

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6. Command and Signal

a. Command. This Order is applicable to the Marine Corps Total Force.

b. Signal. This Order is effective the date signed.

A handwritten signature in black ink, appearing to read "B. H. Wood". The signature is written in a cursive style with a large, looping initial "B".

B. H. WOOD
Assistant Deputy Commandant,
Installations and Logistics

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