United States Marine Corps Corrosion Prevention and Control Program Newsletter

Issue 5 Fall 2012

Inside this issue:

Message from the CPAC Program Office

Matthew Koch and Bernard Friend, CPAC Program Office

In the Spring 2012 issue of the Corrosion Prevention and Control (CPAC) Newsletter, we addressed our commitment toward meeting future challenges within the program. One of those is the fiscal challenge and our ability to identify future CPAC requirements across the enterprise. With the coming months we will be engaged in supporting the consolidated CPAC Program funding profiles through multiple POM-15 Program Reviews. These reviews will include an in-depth examination of the CPAC Program to determine program risk and capabilities impacts at both current and risk-adjusted funding levels, abnormalities in funding profiles, and potential execution issues. The objectives at these reviews will not be much unlike previous years and focus on the Program's benefits and cost avoidance measures. As we move forward, the program will continue to review our processes and procedures, implementing change where we identify opportunity to reduce risk and costs without reducing support or product quality.

Since inception, the Program has established itself as the model for executing a comprehensive program supporting corrosion mitigation measures across the Marine Corps. In recent months, the CPAC Program Management Office (PMO) has made steady progress toward its primary objective of "doing more with the same". For example, the CPAC Mission Engineering (ME) Analysis that was initialized in Fall 2011 has now been completed, and culminated in 24 recommendations resulting from best practices and lessons learned over the past nine years that included developing cost efficiencies through process standardization, improving program effectiveness through earlier involvement in the acquisition lifecycle, and providing strategies for moving forward in FY 13 and beyond. Additional information concerning the program baseline analysis can be found in the article on page 2 of this newsletter.

A major effort currently underway is the consolidation of the CPAC Program efforts and funding profiles at the CPAC Program Office to support future requirements. The consolidation effort will be fully implemented by October, 2013 and as functions are realigned updates are being provided to the Marine Forces.

Additionally, we continue to develop and improve the Programs database tools used by the Corrosion Service Teams (CSTs) and CRFs in collecting, reporting and tracking equipment corrosion conditions, and work performed during rehabilitation at the CRFs. Recent improvements and additions include enhancements to the CPAC Program Dashboard; refinements to the CRF Module; and incorporation of a Government Furnished Equipment (GFE) Inventory. These changes provide the user with additional capabilities that will help in reducing the cost of corrosion.

Lastly, the 2012 CPAC Working Group Conference held this past May provided an opportunity for the CPAC community and affected stakeholders to meet and discuss pertinent corrosion issues impacting the Marine Corps, and progress made over the past year by the CPAC PMO in addressing those issues. A list of major accomplishments made in the preceding 12 months is found in the article on page 4 of this newsletter.

We look forward to working with everyone over the next year and take on the challenges without hesitation knowing that together we will get the job done right.

CPAC Program Office Completes Program Baseline Analysis

By Ouris Pellegrin and Desiree Kinney, CPAC Program Team Members

The CPAC Program Office announced the launch of their baseline analysis using a Mission Engineering® methodology in the Spring 2012 issue of the CPAC Newsletter. The CPAC Program Office has completed the analysis which resulted in 24 recommendations. The intent of this baseline is to capture success and legacy knowledge, and then promulgate the best practices and lessons learned through documentation, analysis, and implementation. The ultimate goal of this entire effort is to continue to produce repeatable results through the consistent and efficient delivery of corrosion prevention and control products and services that extend USMC equipment service life.

First, the baseline creates a common operating picture (CoP) that diverse stakeholders can understand and from which the entire analysis unfolds. This CoP, represented in the form of a Community Model (CM) as depicted in Diagram 1, helps define the CPAC community or environment and the nature of the transactions between stakeholder groups.

This model further depicts the program functions and supporting service areas that support the execution of the mission processes. A result of the baseline was an analysis of the elements (personnel, documentation, tools, and data transactions) that support the four CPAC Program core mission processes: Capability Requirements Management, Technology Development Strategy, Acquisition Support Strategy, and Corrosion Execution and Rehabilitation. This effort yielded 24 recommendations that span across organizational boundaries and authorities.

Diagram 1: CPAC Mission Engineering® Community Model

Using a Mission Engineering® (ME) approach, the team decomposed core process activities by the elements that support them. A consistent taxonomy allows the decomposed elements to be traced back to the program's value chain and supporting core processes. The analysis identified opportunities to increase the Program's effectiveness through earlier involvement in the acquisition

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Mission Engineering Analysis (Continued)

lifecycle, improved systems integration, the overall clarification of roles and procedures, and the development of a performance management framework through policies and manuals.

The ME methodology itself provides a *single*, *integrated framework* which allowed process attributes to be filtered into requirements development, organizational design, associated business processes, governance measures, and the supporting data structure (e.g., CPAC Knowledge Center (CPAC Website), GCSS-MC, etc.). To fully execute the ME methodology, CPAC principals focused on three distinct, yet complementary domains offered by the ME methodology: Community Analysis, Operations Analysis, and Systems Analysis (see Diagram 2).

This approach has established a rigorous yet iterative analytical framework and engineering model from which to derive a variety of requirements and performance measures. These outputs will help to prioritize, develop, and validate future capabilities in achieving a shared future end state.

Adhering to a two-year refresh cycle, this baseline will serve as a consensus strategy to assist leadership in defining and communicating the CPAC Program baseline for FY13 and beyond. Refinements, or cardinal changes to concepts of operation and program processes will be considered based upon priorities, capabilities gaps and overlaps, and introduction of cost reducing efficiencies across the shared CPAC enterprise.

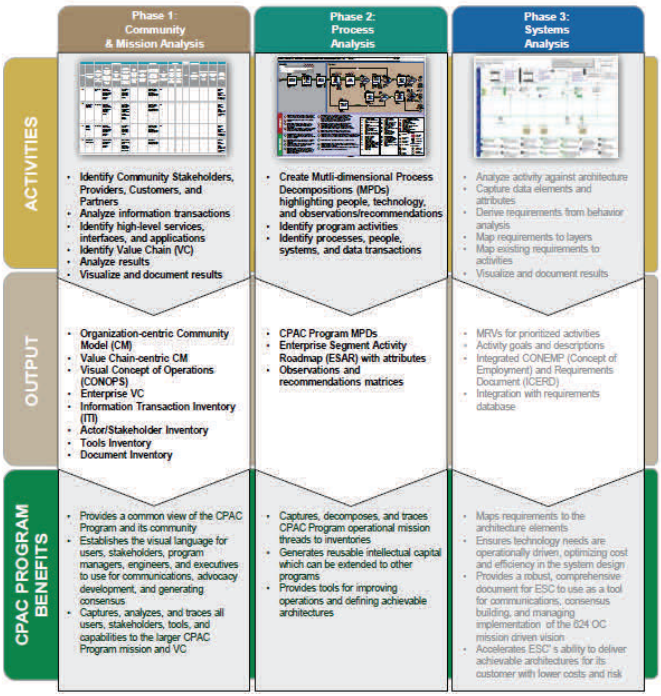

Diagram 2: CPAC Mission Engineering® Analysis Approach

The program intends to gain consensus on the resulting analysis and form a type of shared governance that will cooperatively prioritize identified gaps and address them within the individual stakeholder groups or across groups as applicable. The CPAC Program Management Team, Mr. Matthew Koch and Mr. Bernard Friend, plans to deliver the baseline study to key stakeholders across the enterprise and OSD to identify and address service level priorities across various communities of interest. CPAC PMO leadership will also brief the final baseline and recommendations at the CPAC Working Group conference in May 2013.

To access and/or download the CPAC Program Mission Engineering® baseline analysis, go to the CPAC Knowledge Center (CPAC Website) at ***http://www.marcorsyscom.usmc.mil/cpac/*** or contact the CPAC Program Office at (703) 432-3471 (Program Manager) or (703) 432-3779 (Operations Manager). In the true spirit of continuous improvement at MCSC and the CPAC Program Office, we look forward to hearing your comments and suggestions with regards to this analysis and how we can effectively use this information going forward.

The CPAC Program delivers a *best-value* Return on Investment (ROI) and Net-Savings approach across all phases of the USMC equipment lifecycle model. Through efforts such as this baseline analysis, improved corrosion assessments, and fielding of effective products and services, the CPAC Program Office continues to increase advocacy within the stakeholder community for maintaining a viable, comprehensive, and sustainable corrosion prevention and control capability for tactical ground and ground support equipment throughout the Marine Corps.

CPAC Working Group Results

By James Dulan and Robert Hanke, CPAC Program Team Members

The 2012 Corrosion Prevention and Control (CPAC) Working Group (WG) Conference was held on 08, 09, and 10 May 2012 at the Marine Corps Logistics Command (MCLC), Albany, GA and hosted by the Engineering Support Branch, Maintenance Management Center. The primary theme of this year's conference was to highlight progress made over the last 12 months in identifying and implementing better business practices aimed at capturing new CPAC Program cost efficiencies associated with the support of tactical ground and ground support equipment, leading to more affordable program initiatives. As in previous years, these initiatives included development and execution of effective maintenance practices, applied research, and in-service engineering to support fielded assets and new acquisition efforts.

Col Edward Mays, Marine Corps Systems Command (MCSC) Assistant Commander for Acquisition, Logistics, and Product Support (AC ALPS) provided some opening remarks stating that "… with the declining budget, the Marine Corps faces many new challenges and will have to figure out the best approach to making the most from the limited resources that are available for accomplishing our mission. The CPAC Program is all about sustaining equipment, and with the ongoing reset of equipment we need to take advantage of the experience that everyone brings to the table to come up with new and better ideas that will allow us to operate in a more efficient manner. The CPAC Program has helped the Marine Corps improve its maintenance processes by putting into place the tools necessary to repair, assess and track the corrosion condition of tactical ground equipment, and to provide better visibility on that equipment than any other Marine Corps enterprise system. Organizations like CPAC have become more efficient by making better use of available funds and in doing so have helped the Marine Corps sustain its equipment at a lower operating cost. The CPAC Program has metrics to support its past success story and define the road ahead. This program has shown a substantial return on investment and saved the Marine Corps millions of dollars."

It is estimated that the DoD cost of corrosion amounts to 23% of its annual maintenance budget. Mr. Larry Lee of the OSD Corrosion Executive Office provided an overview on the history of that office and the status on OSD funded CPAC project plans. "The Marine Corps is leading the pack with regard to pushing ahead on corrosion prevention efforts. This year, the Marine Corps ended up with 50% of OSD's corrosion projects due to successful results from past projects." An ongoing key initiative of the OSD Corrosion Executive Office is the establishment of CPAC training and certification throughout the DoD Services. There are currently 15 college level courses (non-accredited) in the works relating to corrosion prevention and control that are either available now, or will be available sometime in the future through the Defense Acquisition University (DAU).

It was pointed out by Mr. Steve Spadafora, DoN Corrosion Executive, that "while Navy corrosion costs associated with ships, aviation, and facilities have remained stagnant, Navy ground vehicle corrosion costs have dropped due to Marine Corps CPAC efforts. The Marine Corps CPAC Program is one of the shining stars of the DoD – it is resourced and has effective operational processes and procedures in place where results are achieved and metrics are captured." One of the keys to success is having a consistent approach which is what the Marine Corps has been able to accomplish through its Corrosion Service Teams (CSTs) and Corrosion Repair Facilities (CRFs). The Naval Sea Facilities Command (NAVFAC) is looking to mirror the Marine Corps CPAC Program and possibly expand out using the Marine Corps CSTs with Navy funding.

An overview and update of

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TM 4750-OD/1 Revision Published August 2012

By Lauren Paladino, CPAC Program Team Member

In August 2012, CPAC published a revision to TM 4750-OD/1 and it is now available for use. TM 4750-OD/1, "Painting, Coating, Underbody and Registration Marking for Marine Corps Combat and Tactical Equipment," addresses procedures and practices for coating operations, at organizational to depot level facilities.

Among the key additions to TM 4750-OD/1, is an upfront textual summary of the Chemical Agent Resistant Coating (CARC) process (beginning of Chapter 2) and a summary table of the CARC process (end of the chapter). These additions provide the user with guidance on what coatings are to be used for specific combat and tactical equipment substrates. Specific guidance from MIL-DTL-53072, "Chemical Agent Resistant Coating System Application Procedures and Quality Control Inspection," was included to make this technical manual a stand-alone USMC guide to CARC painting.

Other specific technical changes to TM 4750-OD/1 include the addition of minimum quality assurance (QA) checkpoints and associated recordkeeping, a requirement for application of a thicker primer coat for CARC (3-5 mils), and stripe coating guidance.

This update also incorporates chapters for underbody coatings and chip and abrasion resistant coatings (bedliners), previously discussed in TM 4795-34. With this publication, TM 4750-OD/1 now encompasses all USMC painting and coating corrosion control efforts and should be utilized in all coating operations.

For more information or to obtain a copy of TM 4750-OD/1, please contact the CPAC Program Office.

CPAC Program to Host Coatings Quality Assurance Training

By Lauren Paladino, CPAC Program Team Member

The USMC Corrosion Prevention and Control (CPAC) program is in the process of providing coatings quality assurance training at each of its Corrosion Rehabilitation Facility (CRF) locations. The training, which is being provided at no cost to the CRF, will encompass the new coatings quality assurance requirements as outlined in TM 4750-OD/1 dated August 2012.

The requirements listed in TM 4750-OD/1, which will be enforced by the CPAC Program Office, include several quality assurance steps for the surface preparation and coating processes. These tests are designed to ensure that the surface is clean and has significant surface profile for adequate coating adhesion. In addition, these tests will help to ensure that the coating is being applied appropriately. A properly applied coating has been shown to last longer and protect USMC assets better.

New requirements include adoption of the following quality assurance tests: Wipe Down Test, Water Break Test, Surface Profile Measurements, Environmental Condition Monitoring, Film Thickness Measurements, Adhesion Tests, and Visual Assessment.

The course will describe in detail how these tests are to be performed, outline pass/fail criteria for each test and define when results should be documented. This course is designed to be hands-on in nature. Students will participate in utilizing standard coatings quality assurance instruments and will be tested on their ability to properly use equipment at the completion of the two day course.

The course is required for all personnel in charge of ground vehicle and tactical equipment coatings quality assurance. Other interested persons may join if space is available. If interested in attending the training, please contact the CPAC Operations and Sustainment Manager at (703) 432-3779.

Consolidated CPAC Program

By Todd Kunst, CPAC Program Team Member

Background

The Corrosion Control Facilities (CRF) as we know them today are the descendants of an active duty organization originally known as Paint and Body Platoons within the Maintenance Battalions. Several years back the active forces determined that these platoons and the mission they performed were not warfighting functions and civilianized them. Some were contracted, some were operated by government employees, others a mix of government employees and contractors, each met the needs of their respective MEF's and the resources available. As these facilities transitioned so did the breadth of the mission they performed, evolving into the CRFs we know today and still managed locally at the MEF level.

With recent unanimous agreements with the MEFs that management of the CRFs is not a warfighting function or competency, and Assistant Commandant level decisions to realign funding for these functions to MARCORSYSCOM, the consolidation of management and funding was required within the CPAC Program. No later than FY14 will see all CRF's funded and managed by the Consolidated CPAC Program.

Today

To prepare for consolidation the CPAC Program Manager initiated an analysis of the four CRFs in the operating forces. This analysis collected data on all resources as well as the repair process at each CRF. Inconsistencies were documented in the support at each facility as well as numerous differences in the repair process. Also documented were efficiencies and some great ideas that could benefit other CRFs. Efforts today focus on writing Statements of Work for management and operation of each facility and their increasingly important corrosion repair mission. Ensuring that each function is properly documented, roles and responsibilities are delineated, and standards are established are key to the success of the consolidated initiative. Also underway are efforts to update technical requirements, as seen in the recently released TM 4750-OD/1 dated Aug 2012, and policy such as the MCO 4790.18 to support our current operating environment to include consolidation.

Consolidation

Although funding realignment will be completed at the start of FY14, the CRFs will not transition at the same time. As contracts and other agreements expire, the opportunity arises for transitioning both the Hawaii and Okinawa CRFs earlier. This gives the PM the opportunity to begin the consolidation in steps rather than a single leap.

The advantages to this consolidation are many. Consolidation removes the management burden from the operating forces. The CRF's will be managed by the CPAC duty experts who will be writing the Statements of Work and evaluating the organizations operating them ensuring that processes are in accordance with current standards. The MEFs/ MARFORs won't have to defend their part of the program budget. The requirement for each CRF to accurately document their repairs via the CRF module will give the PM the ability to create cost models for each CRF and create defendable budgets, critical as DOD faces significant funding restrictions. With consolidation resources will be aligned to requirements to ensure the right assets are repaired at the right time.

Budget constraints require us to think out-side the box and to find efficiencies through process improvements that enable us to "do more with the same". The Consolidated CPAC Program will ensure that the Marine realizes the highest possible return on investment by ensuring that each CRF is effectively and efficiently repairing equipment to extend the equipment's service life and improve its readiness and availability.

2012 CPAC Working Group (Continued)

the CPAC Program was given by Mr. Matthew Koch (CPAC Program Manager) and Mr. Bernard Friend (CPAC Operations and Sustainment Manager) with particular emphasis placed on the top 10 R&D activities, and top 10 O&S activities over the past year. Discussions included current CPAC support to the MarFor(s), the road ahead to include Corrosion Control and Coatings consolidation efforts, the initiation of a Mission Engineering Analysis (MEA) and work breakdown structure (WBS) analysis for the CPAC Program Office. Due to increased standardization of program elements, the CPAC Program has made tremendous progress in the identification, correction and prevention of corrosion across the Marine Corps.

A list of major accomplishments made by the CPAC Program in 2012 are as follows:

- Continued operations of Corrosion Service Teams (CSTs) at each of the MEF locations.
- Continued operations and support to the Corrosion Repair Facilities (CRFs) throughout the Marine Corps.
- Completed a cost-benefit analysis on the CRF blast booth upgrades completed at K-Bay and Camp Lejeune this past year.
- Deployed Dehumidified (DH) shelters and individual Equipment Covers for protection of equipment throughout MEFs.
- Integration of benefits gained from ongoing CPAC initiatives into new system acquisitions and Service Life Extension Programs (SLEPs).
- Continued refinement of the CPAC Program Management Tool.
- Continued refinement of the CRF Module.
- Initiated a Mission Engineering Analysis (MEA) to establish a baseline of the CPAC Program and create a top level master plan to ensure the Program continues moving forward in the future.
- Initiated a Consolidated CPAC Program Study which is a lower level analysis intended to capture current processes and procedures being followed by CSTs and CRFs.
- Established MARFORRES CST Zones 5, 6 and 7 in order to gain efficiencies through reductions in travel costs by leveraging off the CST support contractor's commercial servicing schedule.
- Continued refinement of a reconciliation process to improve the overall quality of the assessment data.
- Update of Marine Corps CPAC TM 4750-OD/1: Painting, Coating, Underbody and Registration Marking for Marine Corps Combat and Tactical Equipment.

There was a Working Group Breakout Session during the first day of the Conference geared toward a briefing and discussion on the POM 14 budget submission. Key points mentioned during this working group session included:

- The accuracy of CPAC data and the use of the corrosion assessment data in identifying CPAC Program requirements.
- Beginning in October 2013, the CPAC funding line will be consolidated and the CPAC PMO will assume all responsibilities with regard to budgeting and contracting for corrosion related activities in support of the MEFs.
- Marine Corps Order 4790.18B (Corrosion Prevention and Control Program) will need to be revised to reflect consolidation changes.
- Reports generated from the CPAC Program Management Database will identify quantities and priorities for induction and processing through a CRF.
- Corrosion Category Codes (CCC) and CRF throughput will be used in planning and building future CPAC budget profiles by location.
- The gathering of the CPAC WG members on an annual basis is critical to the program's effectiveness and success.

Parting Shots

In the next issue:

* Conformal Coatings for Electronics Corrosion
* Consolidated CPAC Program Updates
* Progress Report on Quality Assurance Training
* Support to External Agencies
* Program Advocate Comments

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Marine Corps Systems Command

The Corrosion Prevention and Control (CPAC) Program resides under the authority of the Marine Corps Systems Command (MARCORSYSCOM), who's mission is to serve as the Department of the Navy's systems command for Marine Corps ground weapon and information technology system programs in order to equip and sustain Marine forces with full-spectrum, current and future expeditionary and crisis response capabilities.

United States Marine Corps Corrosion Prevention and Control

Marine Corps Order 4790.18B directed the creation of the Corrosion Prevention and Control (CPAC) program. The program's objectives are to treat and prevent corrosion on existing assets, to implement corrosion control in the design stage of new procurements, and to research and develop corrosion prevention products, materials, technologies and processes.

For more information, contact:
CPAC Program Manager: (703) 432-3471
CPAC Operations and Sustainment Manager: (703) 432-3779
CPAC Agent for S&T and Acquisitions: (301) 277-5037

Online Resources

CPAC Website:
http://www.marcorsyscom.usmc.mil/cpac/default.asp

Department of Defense Corrosion Policy Office Website: http://www.corrdefense.org

2013 CPAC Working Group Conference

Date: 7-9 May 2013
Location: TBD and published at a later date

For more information concerning this or any previous conference, please visit our website: http://www.marcorsyscom.usmc.mil/cpac/meetings.asp.

News and Events

Upcoming Events

Marine West, 13-14 February 2013, MCB, Camp Pendleton

Marine South, 10-11 April 2013, MCB, Camp Lejeune, NC

Modern Day Marine , 24-26 September 2013, MCB, Quantico, VA

News

Goodwill Industries now has the contract for CRF at MCB Kaneohe Bay

Mr Bill Antell, III MEF CPAC Director will be departing as a result of retirement. His professionalism and experience will be missed across the program. Our best wishes go out to Bill in his retirement.