US Coast Guard Corrosion Program Office

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ASETSDefense Workshop  
Nov 19, 2014

Distribution Statement A: Approved for public release. Distribution is unlimited.
**1. REPORT DATE**  
19 NOV 2014

**2. REPORT TYPE**

**3. DATES COVERED**  
00-00-2014 to 00-00-2014

**4. TITLE AND SUBTITLE**  
US Coast Guard Corrosion Program Office

**5a. CONTRACT NUMBER**

**5b. GRANT NUMBER**

**5c. PROGRAM ELEMENT NUMBER**

**5d. PROJECT NUMBER**

**5e. TASK NUMBER**

**5f. WORK UNIT NUMBER**

**6. AUTHOR(S)**

**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**  
US Coast Guard, North Carolina Sector, 721 Medical Center Drive Suite 100, Wilmington, NC, 28401

**8. PERFORMING ORGANIZATION REPORT NUMBER**

**9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)**

**10. SPONSOR/MONITOR’S ACRONYM(S)**

**11. SPONSOR/MONITOR’S REPORT NUMBER(S)**

**12. DISTRIBUTION/AVAILABILITY STATEMENT**  
Approved for public release; distribution unlimited

**13. SUPPLEMENTARY NOTES**  
ASETSDefense 2014: Sustainable Surface Engineering for Aerospace and Defense, 18-20 Nov 2014, Fort Myer, VA.

**14. ABSTRACT**

**15. SUBJECT TERMS**

**16. SECURITY CLASSIFICATION OF:**

<table>
<thead>
<tr>
<th>a. REPORT</th>
<th>b. ABSTRACT</th>
<th>c. THIS PAGE</th>
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<tbody>
<tr>
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**17. LIMITATION OF ABSTRACT**  
Same as Report (SAR)

**18. NUMBER OF PAGES**  
48

**19a. NAME OF RESPONSIBLE PERSON**
Corrosion Control Program

Program is to mitigate corrosion through:

- Policy
- Training
- Processes
- Awareness
- Data Analysis
- Failure Investigation
- Implementing Technology
- Industry & Government Interaction
- Corrosion Prevention Products and Tools
Coatings on Coast Guard Aircraft

Coatings have two purposes.
Coatings on Coast Guard Aircraft

Coatings have **two** purposes.

1. They **protect** the structure from the severe corrosive environment where Coast Guard aircraft operate.
Coatings have **two** purposes.

2. They provide *trademark identification* for the USCG.
Structural Integrity

We strive to use the *best corrosion coatings available* and still…. 
Traversing Classic Boundary Primer Test Environments with Extrinsic Coast Guard Maritime Environmental Realism of Select Non-Chrome Primers
Traversing Classic Boundary Primer Test Environments with Extrinsic Coast Guard Maritime Environmental Realism of Select Non-Chrome Primers

In other words…

How do you test & capture real world effects equally on multiple coating systems?
Realism Testing of Select Non-Chrome Primers

Airframe Tests
# Realism Testing of Select Non-Chrome Primers

## 8 Aircraft

<table>
<thead>
<tr>
<th>Phase</th>
<th>W/O</th>
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<td>6597</td>
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# Realism Testing of Select Non-Chrome Primers

## Interim

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| Phase 3 |
| 1100 | 6518   | 1-Aug-12 | Port Angeles | Chrome RT | Non-Chrome LT | Non-Chrome |
| 1101 | 6564   | 25-Aug-12 | Corpus   | Chrome LT | Non-Chrome RT | Non-Chrome |
| 1102 | 6554   | 12-Sep-12 | Corpus  | Non-Chrome | Non-Chrome | Non-Chrome |

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Realism Testing of Select Non-Chrome Primers
Realism Testing of Select Non-Chrome Primers

Coupon Tests
Realism Testing of Select Non-Chrome Primers

Coupon Test

Port Angeles, WA
Corpus Christ, TX
Jacksonville, FL
Realism Testing of Select Non-Chrome Primers

Coupon Test

MIL-PRF 23377 Type I, Class C2
Realism Testing of Select Non-Chrome Primers

Coupon Test

MIL-PRF 23377 Type I, Class C2

SAE-AMS 3144 Type I, Class N
Realism Testing of Select Non-Chrome Primers

Coupon Test

MIL-PRF 23377 Type I, Class C2

SAE-AMS 3144 Type I, Class N

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Realism Testing of Select Non-Chrome Primers

Coupon Test

MIL-PRF 23377 Type I, Class C2

SAE-AMS 3144 Type I, Class N

MIL-PRF 23377 Type I, Class N

Magnesium Rich Primer
Realism Testing of Select Non-Chrome Primers

Coupon Test

Scribe
Realism Testing of Select Non-Chrome Primers

Coupon Test
Realism Testing of Select Non-Chrome Primers

Coupon Test
Realism Testing of Select Non-Chrome Primers

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Coupon Test

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Coupon Test
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MIL-PRF 23377 Type I, Class C2
Realism Testing of Select Non-Chrome Primers

MIL-PRF 23377 Type I, Class C2

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SAE-AMS 3144 Type I, Class N
Realism Testing of Select Non-Chrome Primers

SAE-AMS 3144 Type I, Class N

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Magnesium Rich Primer
Realism Testing of Select Non-Chrome Primers

Magnesium Rich Primer

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Corroded Area

2,825,844 15.2%
Realism Testing of Select Non-Chrome Primers

Corroded Area

2,825,844  15.2%

7,484,786  40.1%
Realism Testing of Select Non-Chrome Primers

Corroded Area

2,825,844  15.2%
7,484,786  40.1%
5,480,302  29.4%
Realism Testing of Select Non-Chrome Primers

Corroded Area

- 2,825,844 15.2%
- 7,484,786 40.1%
- 5,480,302 29.4%
- 2,853,541 15.3%
Realism Testing of Select Non-Chrome Primers

Corroded Area

[Graph showing a trend line with data points]
Realism Testing of Select Non-Chrome Primers

Corroded Area
Realism Testing of Select Non-Chrome Primers

Corroded Area
Realism Testing of Select Non-Chrome Primers

Corroded Area

![Graph showing corrosion rate vs severity]

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Current CG Aircraft Coating Policy

- Depot applies Chromate Primer MIL-PRF-23377 Type I, Class C1 or C2, where necessary
- Units use non-chrome epoxy polyamide primer, MIL-PRF-23377K, Type1, Class N, only.
- All topcoats are already non-chrome
- Minimizes chrome exposure risk to only sanding/repairing