



# Metrology and Testing of Parts and Materials



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## Project Objective:

The project objective is to find a suitable replacement for the protective coating used on radar systems aboard U.S Navy ships. This involves long hours of testing and examination of various samples.

## Methods Used:

Non-Destructive Test Methods:

- Atmospheric Environmental Exposure
- Modified Salt Spray
- Atmospheric Corrosion
- Water Vapor Transmissibility
- Cyclic Salt Fog/ UV Exposure

Machines:

- Q-Fog Prohesion Chamber
- Weathering Chamber
- Water Vapor Transmission Rate Tester
- Microclimate Chamber

## Assignments:

- Data collection, Data Analysis & Research

## Contributions:

- Measured the thickness, the specular gloss & the water transmissibility of the protective coatings.
- Recorded and analyzed the data collected
- Researched possible replacements for the existing protective coating.



## Results / Accomplishments / Next Steps:

- We demonstrated that more testing is needed to find a suitable replacement for the existing protective coating.
- The U.S Navy loses hundreds of millions of dollars due to corrosion damage. Finding a suitable replacement is important to mitigate corrosion and reduce costs.
- What's most important is mission readiness. The protective coatings we are testing will be used on the radar systems aboard US Navy ships.
- In the future this work will be able to help identify a suitable coating replacement.
- The next step is to find a suitable replacement for the thinner.

## **What are you most proud of this summer [with respect to your experience/project]?**

- The work done is very important and the team took it very seriously. Our contributions may very well be published one day and that is something to be very proud of.

## **Why was the internship valuable?**

- Gained hands-on experience using various machines and testing equipment in a lab environment
- Met lots of interesting people and had the opportunity to network

## **Advice for future cohorts?**

- Ask lots of questions, no matter how “dumb” you think it may be.
- Have a solution, or be willing to find a solution to every problem you bring to your boss/lead’s attention.

