

Titanic's Antifouling Paint

Introduction

The shade of Titanic's antifouling color has been a topic of debate for years. There is great variation in what the color is on different model interpretations. Some have the antifouling shade and a very faded red, almost pink, or salmon color. Others have a color that resembles sienna. Others have a color that is maroon in appearance. With so many possible shades, of great variation, it is the point of this article to narrow down the shade of the paint. This article will not tell you an exact shade, rather give you a midrange color, and let the reader decide if variation from the midrange sample is necessary. The reader is of course, entitled to apply any color to their models, however this article is just to give them a color that I believe is the most likely.

Composition

One of the most important factors in deciding the color of the paint is knowing how it was made. The ingredients of the formulation are mercuric oxide and cuprous oxide (based on a report from the US Navy in 1906, the mix ratio will be assumed at 50/50). Also mixed into the formulation was powdered arsenic. The toxics were the arsenic and mercuric oxides. The same report from the United States Navy points out Arsenic had zero effect in the paint as a toxicity agent. Regardless of whether Arsenic was used is relatively irrelevant. The solubility of arsenic is such that it will simply have no tonal effect on the paint. With this information a gradient can be done. That gradient is shown in Figure 3.



Figure 1

Mercuric Oxide



Figure 2

Cuprous Oxide

See Next Page

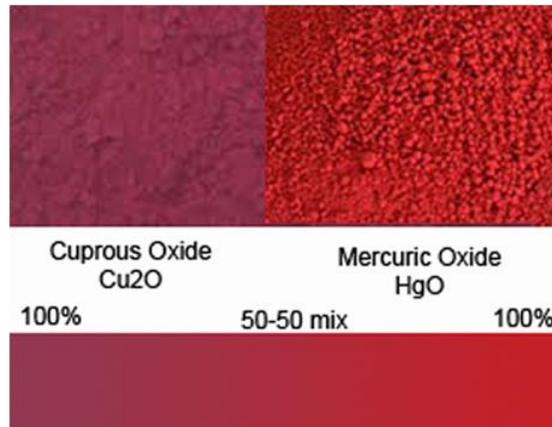


Figure 3

Gradient of the Two Oxides

Application

A second, more minor point is the application process. This will be important in finding out exactly where the antifouling paint was applied. The lower hull was painted in five coats.

The order is as follows

-Red Lead

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-Grade A Gum Shellac (White)

-Suter Hartmann Rahtjen's "Red Hand" Antifouling Composition

Red lead is a common anticorrosive substance. It is a formulation from red oxide. It takes on a somewhat sienna color. White shellac is achieved by simply bleaching out the yellow from normal gum shellac. In turn, it's a clear application. While shellac is a resin, it can be turned into liquid, which was applied after the coats of red lead. Finally for the lower hull was the

antifouling mixture itself. This process doesn't affect the tonality of the final coat. However, it is relevant to where it has been long assumed was applied in the port and starboard anchor hawsers. The final 2 coats of the shellac and antifouling were not applied in the hawsers. This means that the color of paint inside the hawsers would be the sienna colored red oxide, or red lead, as opposed the antifouling. The forward anchor hawse pipe was painted with a light grey, nearly white color.

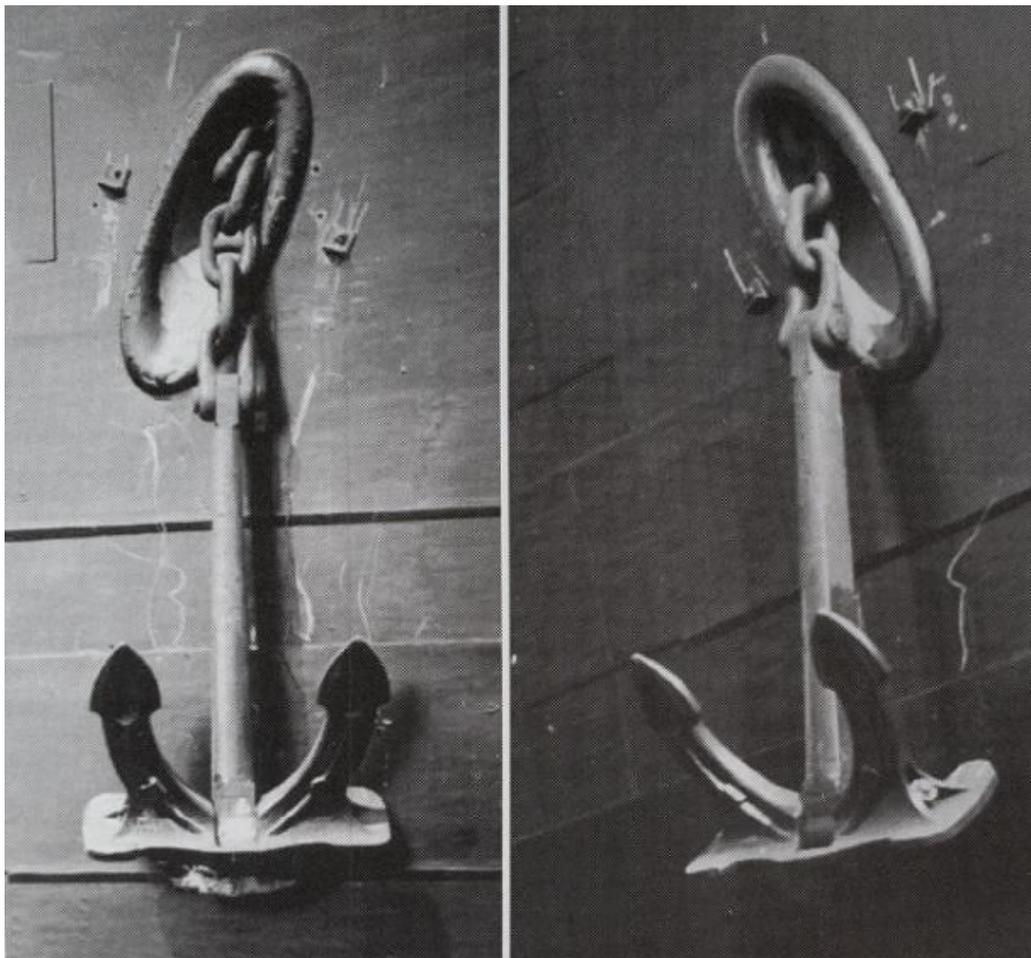


Figure 4

A Look Inside the Anchor Hawsers

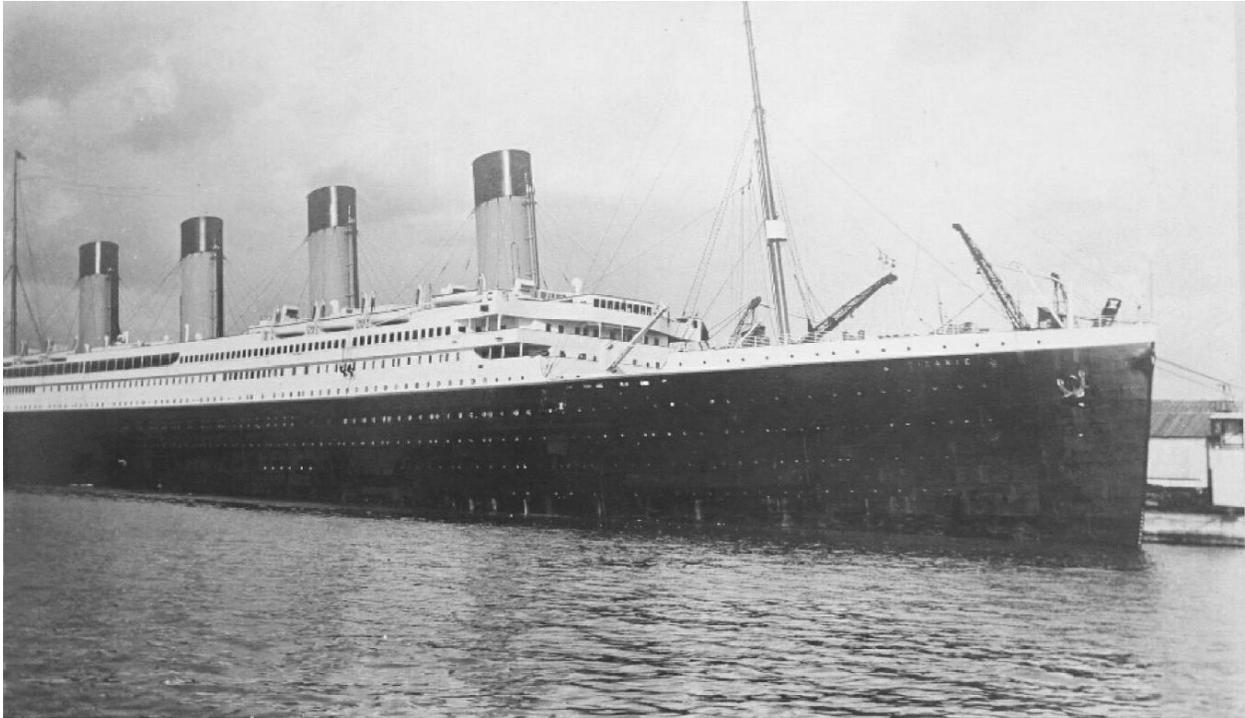


Figure 5

Titanic at Southampton. Note the Light Color Inside the Forward Hawser/Hawse Pipe

Titanic's Wreck

Titanic's wreck could shed some light on the tone. However, before we continue, it is we must consider that the paint on the wreck should not be considered the exact shade. The reason is because of chemical degradation. In simple terms, this will result in the mercuric oxide to "eat" away, leaving behind the purple/pinkish mercuric oxide. It is accepted that a full spectrum photograph of the Titanic yields the most favorable results, so, for the sake of argument, full spectrum photos only.



Figure 6

Titanic's Port Wing Propeller

This wing propeller does not show an exact shade as a result of the previously mentioned chemical degradation process. This means that the shade will resemble the color of cuprous oxide more than the mercuric, as most of the mercuric is no longer there. Looking at the cuprous oxide sample in Figure 2, one can see the fairwater cap on the propeller is quite like the cuprous oxide. To adjust for this, you need to look at the gradient, and add more mercuric oxide to the gradient. The result is a maroon red color. This aligns with the 50/50 mix ratio mentioned previously.

Conclusion

This article should have helped narrow down the range of the color of the lower hull of the Titanic. It should have also cleared up where antifouling was applied, and where it was not.



Figure 7

Red Lead Color Sample. Applied inside the port and starboard anchor hawsers

Hex: #a1493b



Figure 8

Possible Midrange Color of Lower Hull Antifouling