Application of Paint to *Titanic's* Hull

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Introduction

In research regarding the color of *Titanic's* antifouling paint, there has been confusion when trying to interpret the photos taken of the *Olympic* class ships by Harland and Wolff photographer Robert Welch. In this article these photos will be analyzed in light of the painting specifications found in the *Britannic* Specification Book.

A second purpose of this article will be to offer a rebuttal to the recent argument that Titanic's antifouling color was actually a much darker shade.

Britannic Specification Book hull paint specifications

The *Britannic* Specification Book contains information which has been invaluable in unraveling many of the mysteries of the particulars of the ships of the *Olympic* class. When we consult the specifications for the painting of the hull, there are specifications for the upper and the lower hull. These specifications are shown in Figure 1.

4. PAINTING.

FOR NOTES SEE END OF LIST.

The various surfaces to be painted as follows:—

Surface.	NUMBER OF COATS. White Lead	Boiled Oil	Red Oxide	Knotting	Appvd. Colour	Enamel	Remarks. Colour of Finish, etc.
HULL OUTSIDE.							
Bottom	-	-	3	-	2 x	-	x 1 Coat Anti-corrosive 1 " Anti-fouling Note(1
Topsides	-	-	2	-	2	-	Black Note (2)

Notes(1) The anti-corrosive and anti-fouling compositions to be Suter-Hartmann & Rahtjens.

Figure 1

The specification lists four coats of paint for the upper hull consisting of two primer coats of red oxide (a.k.a. "red lead), and two color coats of black paint.

The focus of this article will be on the specification for the lower hull. The primer coats consisted of three primer coats of red oxide. Exactly when the individual coats were applied is not known. My speculation is that two coats were applied before launch and a final coat was applied in drydock. However, this just speculation and it is immaterial.

The specified color coats for the lower hull consist of a coat of an anticorrosive paint which appears to be nearly white in photos and finally a coat of Suter-Hartmann & Rahtjens brand antifouling paint. This particular antifouling paint was analyzed in a previous research article found here: [Link to Antifouling Research Article].

Knowing that there are three separate paint types applied to the lower hull, we can now look at photos of Olympic in drydock to attempt to identify which paint coat is which. Figures 2 and 3 are two photos of *Olympic* in drydock showing different paint coats on the lower hull.

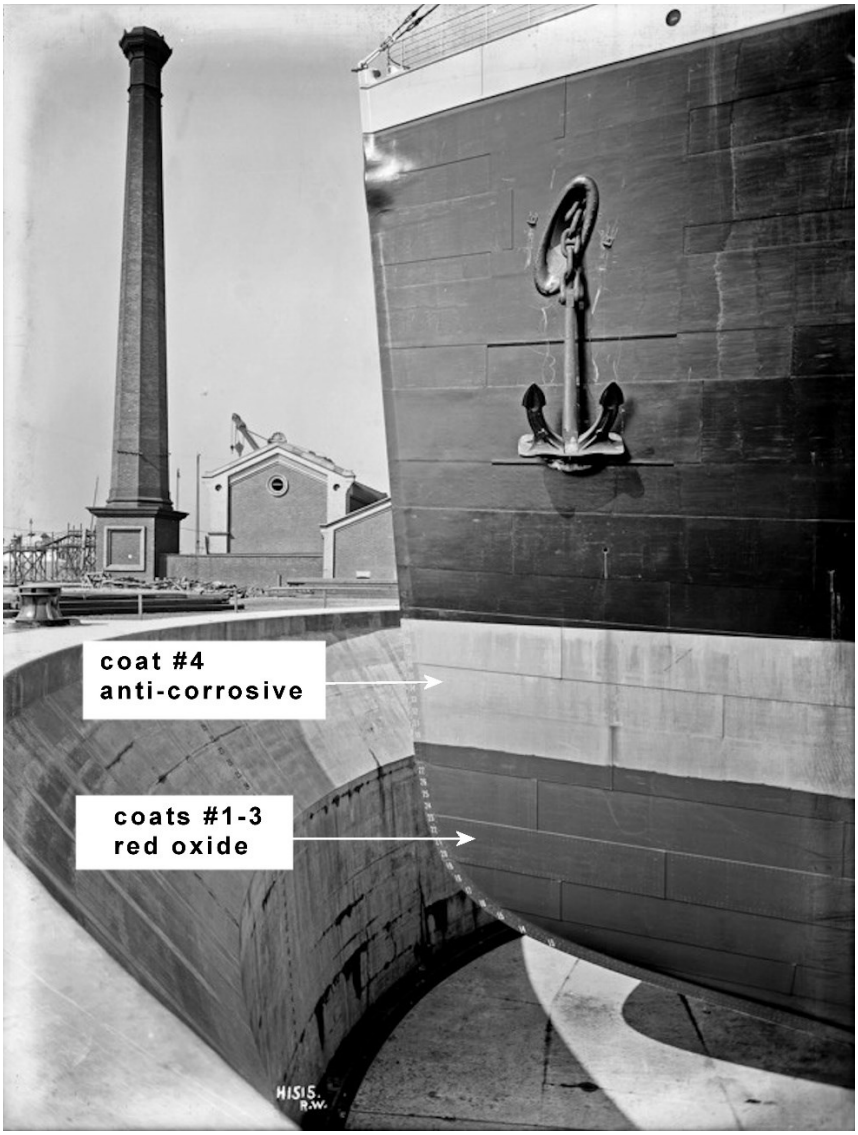

Figure 2

specified

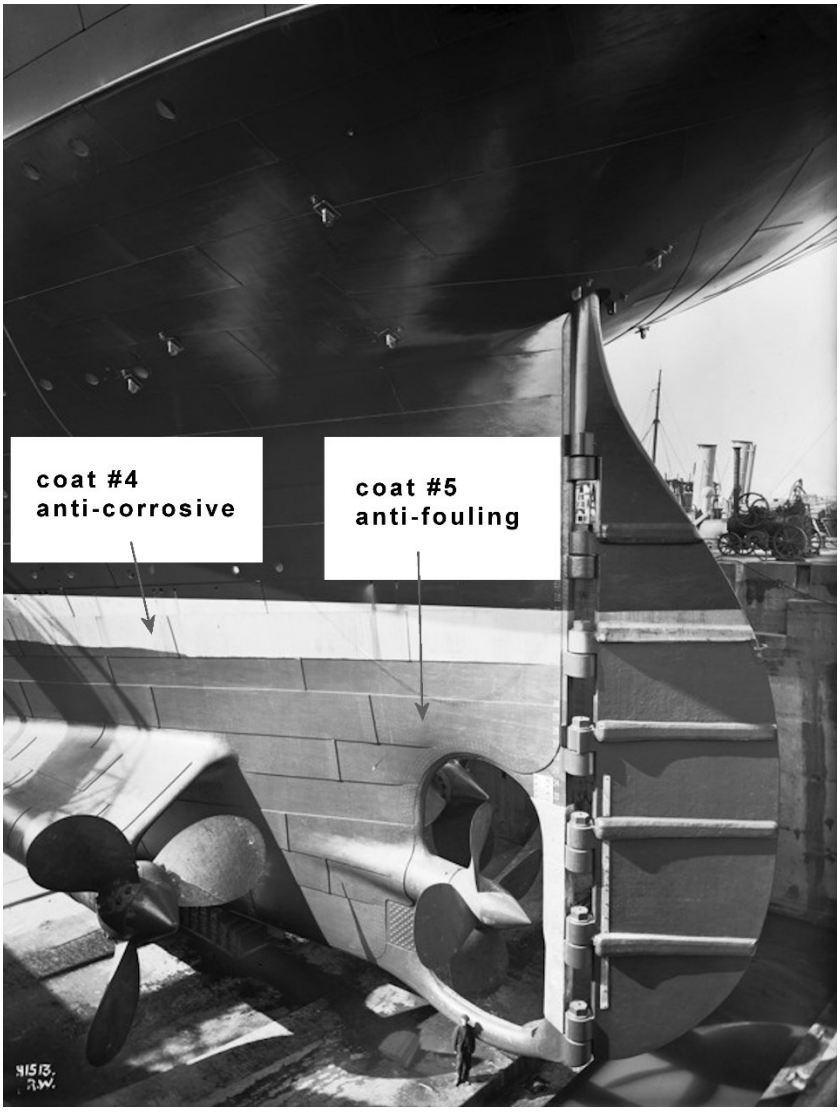

Figure 3

In Figure 2 we see a quite light upper coat near the warterline and a lower very dark coat. In Figure 3 we again see the quite light coat near the waterline but below it we now see a paint coat that is darker than the light waterline coat but lighter that the very dark lower paint coat shown in Figure 2.

In Figures 2 and 3 we can identify three distinct shades of paint coats on *Olympic's* lower hull. Of the five coats of paint applied to the lower hull, the first three coats are specified as red oxide. In figure 4 we see a colored drawing with a red oxide color on the lower hull. If we convert this drawing to simulate a black and white photo taken with an orthochromatic filter which is the same as used by the photographer in Figures 2 and 3, we see that the red oxide becomes quite dark.

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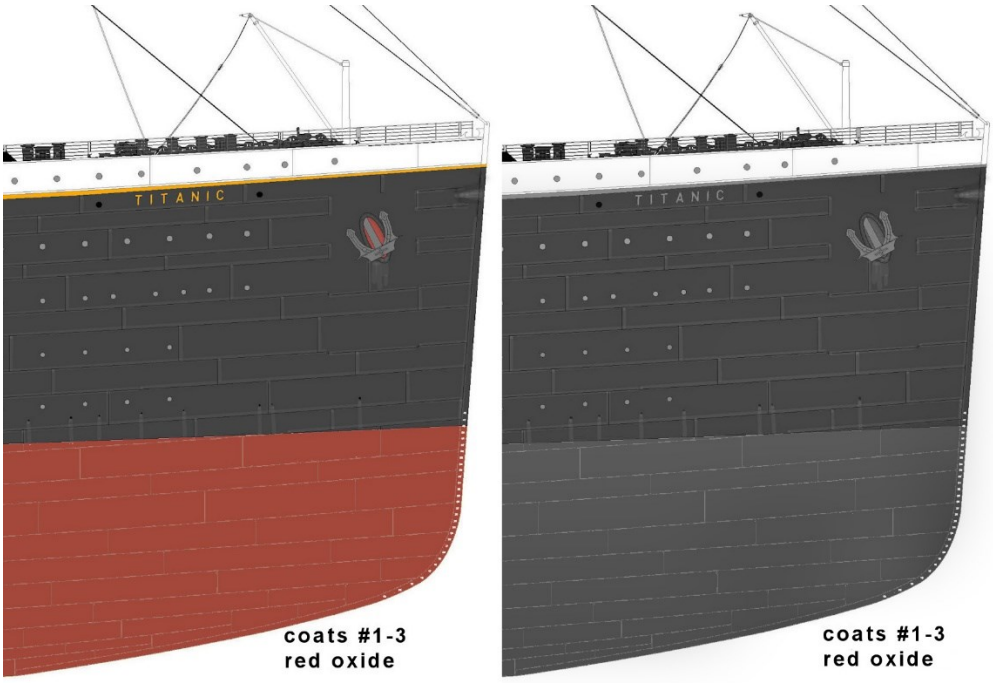

Figure 4

In Figure 5 we see a colored drawing with an off-white color which would be like the anticorrosive paint coat seen in both Figures 2 and 3. When the colored drawing is converted to one which simulates orthochromatic black and white film using the same method as in Figure 4, we can see that the white color remains virtually unchanged.

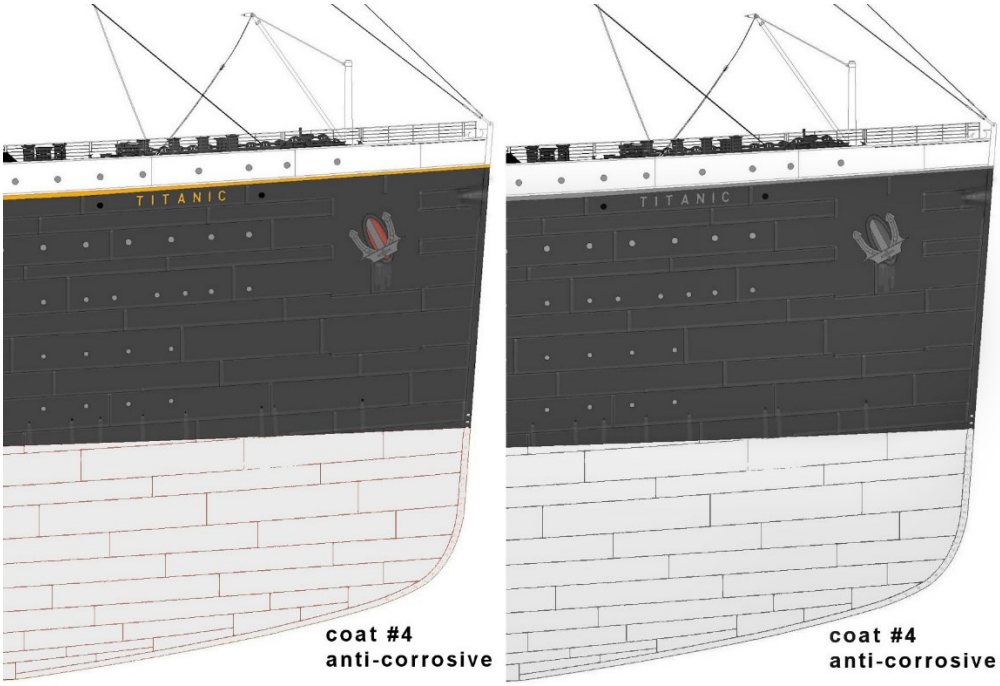

Figure 5

In Figure 6 we see a colored drawing with a proposed color for the antifouling coat which was referenced earlier in a linked article. When the colored drawing is converted to one which simulates orthochromatic black and white film, the result is an intermediate shade of gray.

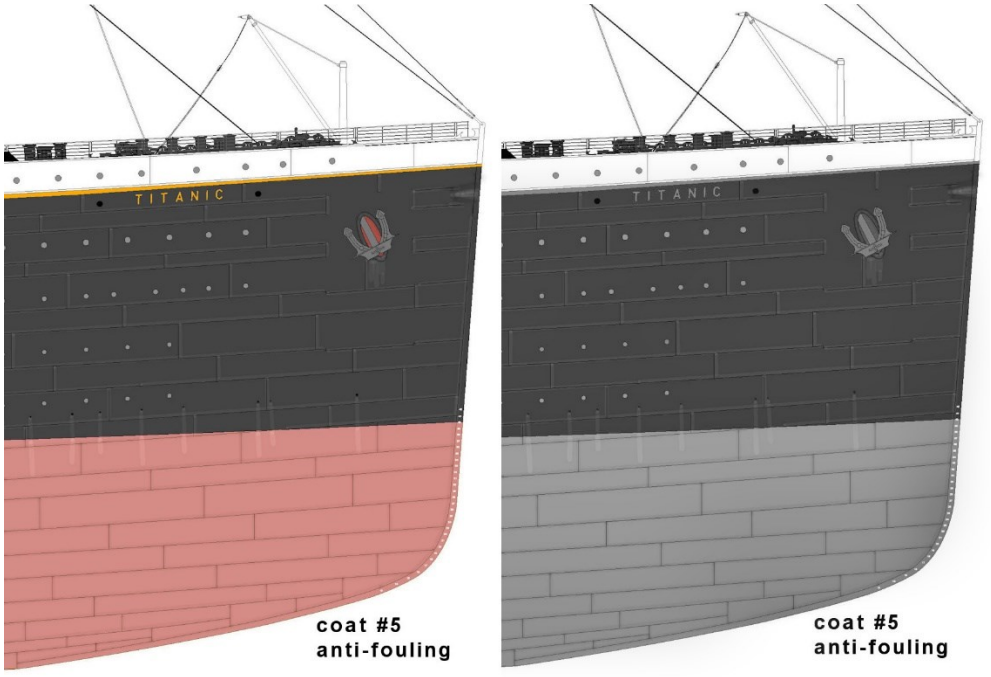

Figure 6

Evaluation of the proposal for an alternate antifouling color

In a recent online Titanic forum post it was asserted that the color of Titanic's antifouling could be a much darker color. The reason for this assertion was that on a color brochure of the Red Hand Compositions Co. (formerly Suter-Hartmann & Rahtjens) a color sample is shown which was assumed to be the antifouling color used on Titanic. Figure 7 shows the Red Hand paint color brochure with the antifouling color sample outlined.

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Figure 7

An enlargement of the antifouling color sample is shown in Figure 8.

Figure 8

In Figure 9 this Red Hand antifouling color is applied to the lower hull in a colored drawing as before and converted to a black and white image which simulates orthochromatic black and white film. Next to it is the drawing with the antifouling color from the linked article which also

has been converted to a black and white image using the same method. Next to it is the image from Figure 3 showing the contrast in shades between the antifouling and the hull black.

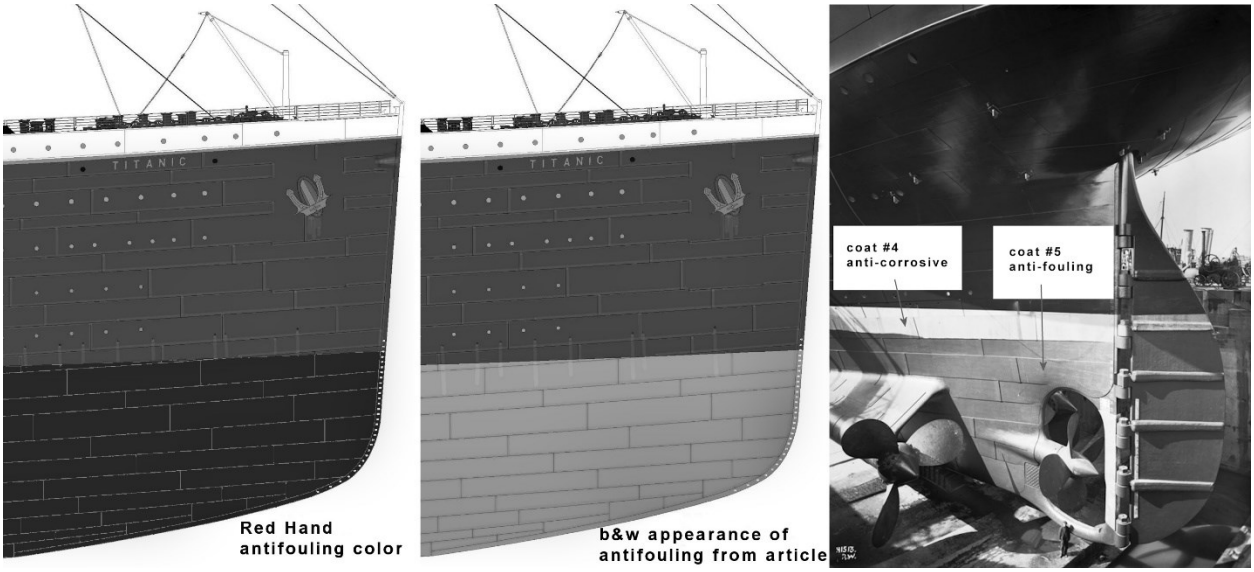

Figure 9

In this comparison we can see how dark the antifouling from the Red Hand color sample would appear in an orthochromatic black and white film compared to that of the proposed antifouling color from the linked article and the photo of *Olympic.* It is therefore my conclusion that the antifouling color from the Red Hand color sample is not an accurate reflection of the true color of Titanic's antifouling paint color.

Conclusion

In the photos of *Olympic* in drydock shown in Figures 2 and 3, we are able to reasonably identify the relative lightness and darkness of the three types of paint coats applied to the lower hull. The darkest coat is the red oxide primer which represents the first three paint coats applied to the lower hull. The lightest coat is the anticorrosive paint which is applied next after the red oxide coats. The intermediate shade of paint is the antifouling paint which is the last paint coat applied to the lower hull before the ship leaves the drydock and enters service. From this analysis, we can conclude that the antifouling paint is not a dark red color but rather is like the color proposed in the earlier linked research article about *Titanic's* antifouling paint.