

***Titanic's* Center Propeller – The Evidence Mounts**

By Samuel Halpern

(25 July 2022)

In my article, “The Object on the Barge – Part 2,” released on 23 August 2021,¹ it was shown beyond reasonable doubt that the helical object seen resting on a barge in a photograph taken in early February 1912 of *Titanic* in drydock (Figure 01) was a solid-cast, three-bladed marine propeller, and that it matched the H&W design specifications regarding the number of blades, diameter, pitch and blade area for *Titanic's* center propeller.²

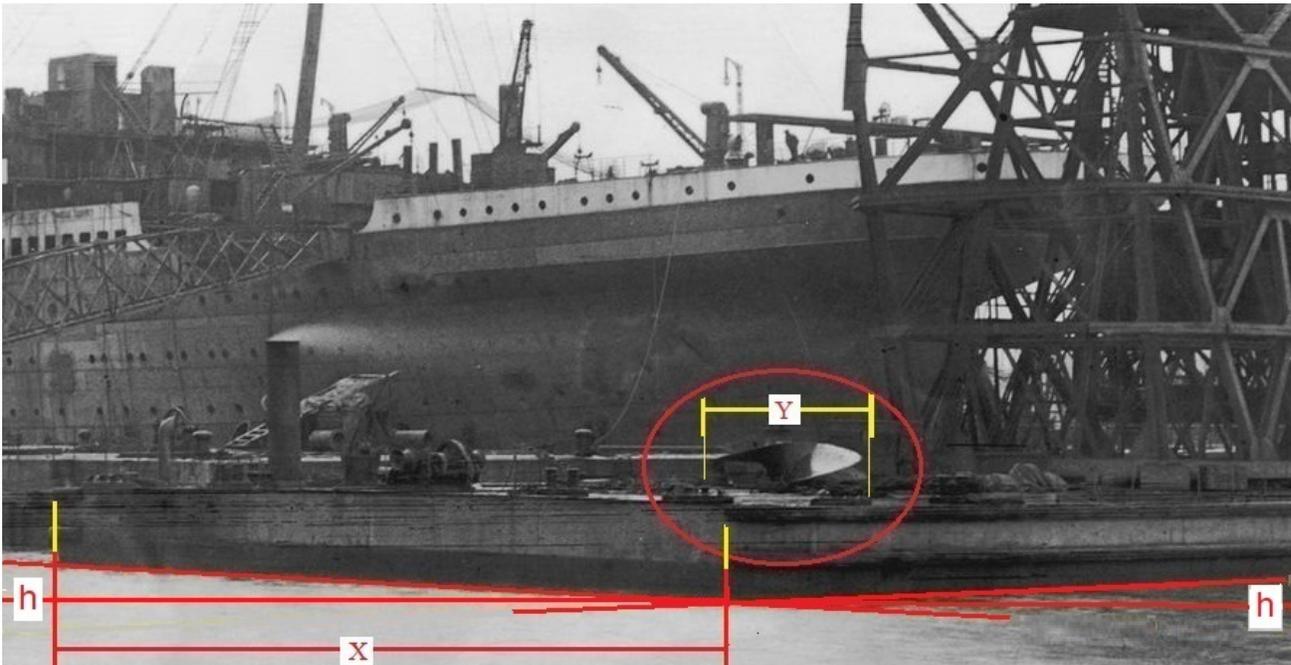


Fig. 01 – Closeup view of the propeller on the barge.

I also said in that article that the photograph of the propeller on the barge may be the only known picture in existence of any of *Titanic's* propellers, other than those of her wing propellers taken at the wreck site. Despite the photographic evidence presented, as well as the primary documentation uncovered by researcher Mark Chirside some years back,³ we still find some people, a few in hysterical denial, that claim that *Titanic* had to have had a four-bladed center propeller just like her sister ship

¹ See: <http://www.titanicology.com/Titanica/ObjectOnTheBarge2.pdf>.

² The specified values for *Titanic's* center propeller that was written in the H&W engineering notebook were: Number of Blades = 3, Diameter = 17 ft 0 in, Pitch = 14 ft 6 in, and Blade Area = 120 sq ft. It also had a Geometric Pitch Angle (the arctangent of the pitch to circumference ratio) = 15.270° and a total Blade Area Ratio (BAR) = 0.529.

³ *Encyclopedia Titanica* (2008) “The Mystery of *Titanic's* Central Propeller” by Mark Chirside (*Voyage*, ref: #6105, published 5 May 2008, generated 12th July 2021 08:24:57 PM); URL: <https://www.encyclopedia-titanica.org/mystery-titanic-central-propeller.html>; and *Encyclopedia Titanica* (2020) “*Titanic's* Centre Propeller: The Stephen Pigott Evidence” by Mark Chirside, (*Titanica!*, ref: #183, published 26 October 2020, generated 13th July 2021 06:11:13 PM); URL: <https://www.encyclopedia-titanica.org/titanic-centre-propeller-new-evidence.html>.

Olympic had in 1911 and 1912. Asked what evidence is there for that erroneous claim, and the only answer that they have is that it must be buried deep under the mud at the wreck site, something that is likely well beyond practical reach.

Of course, that is not an answer to the question of available evidence of a 4-bladed propeller, just conjecture on their part. Their belief of what was fitted on *Titanic* stems from years of seeing pictures in magazines and books showing *Olympic* with a 4-bladed center propeller, many of which were mislabeled as *Titanic*, as well as models of *Titanic* that were built over the years which assumed that *Titanic* was fitted the same as *Olympic*. These same people also point out that *Britannic*, the third *Olympic*-class vessel built by H&W, was fitted with a 4-bladed center propeller, and therefore conclude that *Titanic* must have been so fitted as well. Most of these same people don't realize the *Olympic* was fitted with a 3-bladed center propeller in March of 1913 during a major refit in the aftermath of the *Titanic* disaster, and that she was re-fitted with a 4-bladed center propeller later on, as photos around 1919 show that she carried a 4-bladed propeller once again.

Recently, this author was reviewing Part 6 of a nine-part article series by researcher Ioannis Georgiu called, "The Lifeboat Story," when a picture caught my eye that showed a close up of the aft end of the half-breadth model of *Titanic* that was submitted by H&W for use at the British Wreck Commission inquiry into the loss of the SS *Titanic* (see Figures 02 and 03).



Fig.02 – Picture showing builder's model of *Titanic* that was delivered to the Wreck Commission.



Fig.03 – Close up of builder’s model showing starboard-side aft portion of *Titanic*.

What caught my eye in the closeup photo was the appearance and orientation of the two propellers shown in that builder’s model, the starboard-side wing propeller and the center propeller. Both propellers appear to be oriented with one propeller blade pointing straight up. As Tony Taylor, who does 2D and 3D CAD design work for a living, wrote me, “Any model or depiction like that would show one blade straight up to show the full tip radius.” He also wrote, in reference to the center propeller, “The only reasonable interpretation is that it’s meant to represent a three blade propeller.”

What became clear to me is that H&W submitted a model of *Titanic* that had three-bladed propellers on the wing and center prop locations. That the model delivered to the inquiry was that of *Titanic* and not *Olympic* can easily be seen by the shortened open space on B-deck on the after part of the superstructure in Figure 03 above, and the enclosed part of A-deck that can clearly be seen in the full view of the model shown in Figure 02 on the previous page.

The blade orientation of the center propeller on the model, seen only in profile in the photograph, appears to correspond to that of the front view of the CAD model shown in Figure 04 below; a model that was built to the H&W specifications for *Titanic*’s center propeller.

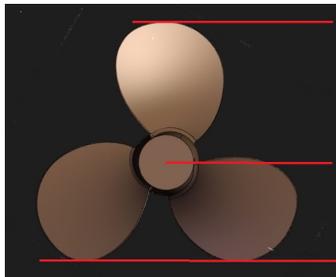


Fig. 04 – View of 3-bladed CAD center propeller.

By superimposing the above CAD model onto an expanded view of the aft end of the builder's model, one can see that it matches well with the one in profile view on the model. This is shown in Figure 05 below. If the center propeller was that of a 4-bladed unit, it would show a much more symmetrical appearance, not the asymmetrical appearance as seen in the photograph.

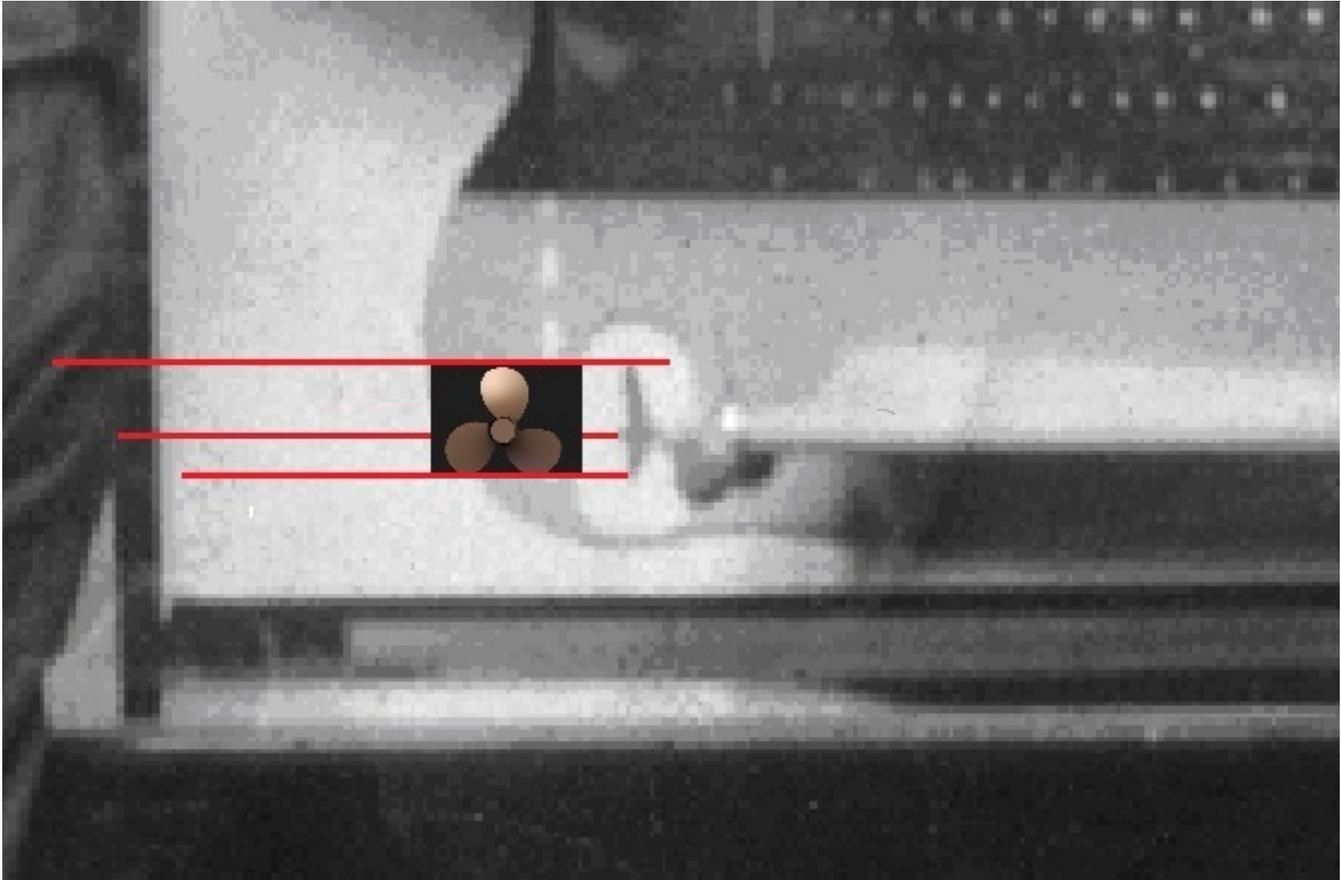


Fig. 05 – CAD view against profile view of center propeller on H&W's builder's model.

The builder's model that was submitted by H&W to the Wreck Commission is just one more piece of mounting evidence that *Titanic*, unlike her sister ship *Olympic*, was fitted with a 3-bladed center propeller prior to her ill-fated maiden voyage in 1912, probably hoping to prove, or disprove, that it might be more efficient than the 4-bladed one that was fitted on *Olympic*. The discovered engineering notebook from H&W giving particulars of the ships that were completed, the notebook from the papers of Stephen Pigott (who was a turbine specialist who work for John Brown Co.) that described 3 and 4-bladed center propeller design proposals for *Olympic* and *Titanic*, the photographic evidence and subsequent analysis of the propeller seen on the floating-crane barge when *Titanic* was having her propellers fitted while in drydock, and now the H&W builder's model that was used at the Wreck Commission inquiry, all point to the same logical conclusion. *Titanic* was fitted with a 3-bladed center propeller.

As my friend and colleague Mark Chirnside recently stated, "You know it's interesting how details can simply be overlooked down the years."