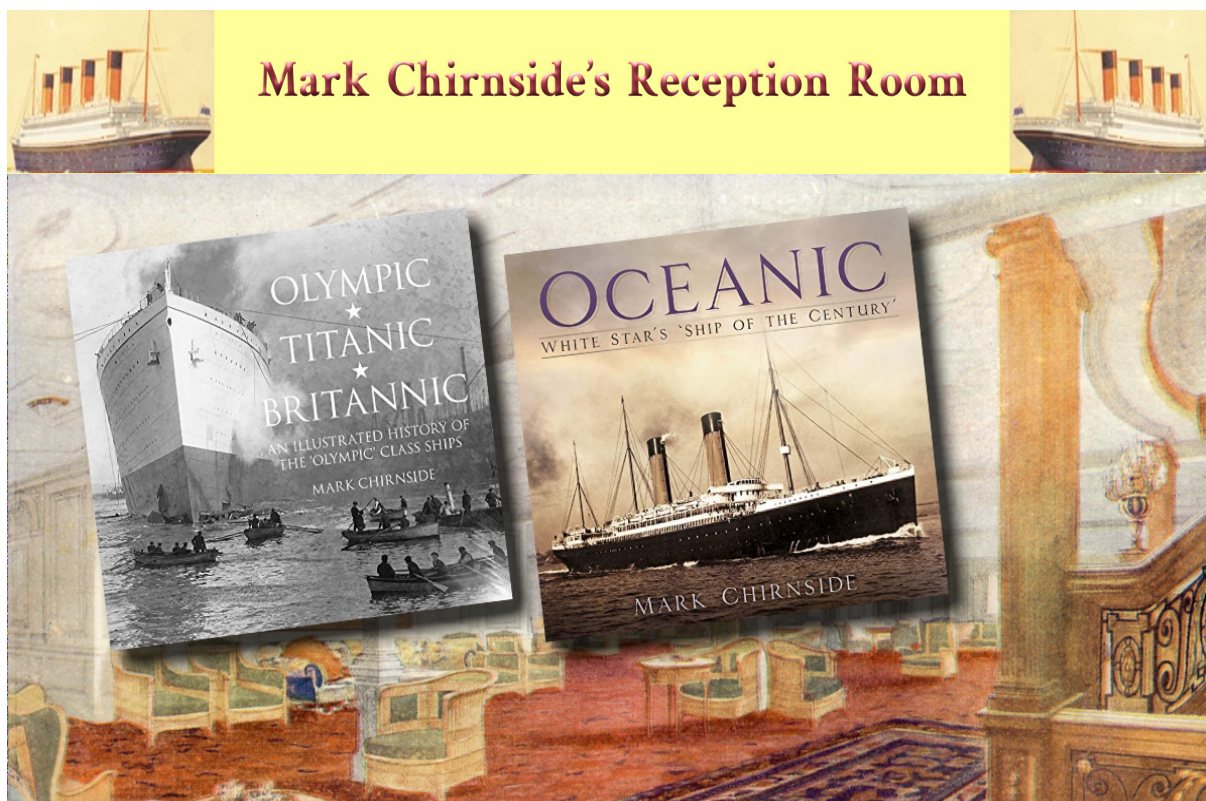




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THE 66,000-TON MYTH

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It is often stated that *Titanic* displaced 66,000 tons. Repeated so often in secondary sources, it is easy to take it as fact. The fundamental problem with this claim is that it is not true, however often it might be repeated or however many books agree.

Confusion is commonplace when dealing with figures and terms such as the ship's gross tonnage. The fact of the matter is that gross tonnage is a measure of enclosed space, not the weight of the ship, and the term 'gross tonnage' can be easily misunderstood by the unwary observer. In looking at the weight of a ship, displacement is the amount of water displaced. When the ship is loaded down to its approved draught, then it will displace a calculated quantity of water. The specific figure of 66,000 tons refers to displacement, and it is not correct.

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It is particularly unfortunate that this should be the case, when we consider that it is so easy to verify *Titanic's* real displacement, as it is confirmed in numerous reliable sources. By examining *Olympic's* displacement scale, which is a progressive table giving the ship's displacement, corresponding draught, and corresponding deadweight, the true figure can be determined. Deadweight is the displacement of the ship's cargo, fuel and other stores, and is included in the ship's total displacement at her assigned, approved load draught.

At a load draught of 34 feet 7 inches, *Olympic* displaced no less than 52,310 tons. The displacement scale goes up to a draught of 36 feet, which is more than the ship would be loaded to in service, yet it demonstrates that if she was loaded down this far, the displacement would reach almost 55,000 tons. On this basis, for the ship to displace 66,000 tons it would have to be loaded down so far that the portholes on the lower decks would be permanently submerged.

Following the displacement scale as it extends further down, if *Olympic* was loaded to a light draught of 27 feet 10½ inches, she would displace 40,850 tons. In this condition, the light draught, the ship's boilers would be full, but there would be no fuel, fresh water or stores onboard the ship.

Is it possible that *Titanic's* displacement would have varied from *Olympic's*? Given that she had more enclosed space than her sister, including larger deckhouses in the superstructure, this raised her gross tonnage. Might she be heavier, also, in terms of her displacement? The answer is essentially in the negative, for Harland & Wolff's Edward Wilding confirmed that *Titanic's* displacement would be 52,310 tons at a draught of 34 feet 7 inches. Given that her hull was the same size – same length, breadth and form – *Titanic* would displace the same amount of water as her sister when loaded to the same draught. (By contrast, since *Britannic* was wider her displacement at the same draught correspondingly increased. However, at a little under 53,200 tons, even her displacement did not come close to the mythical figure of 66,000 tons.)

Wilding's British testimony touched on the subject:

19796. There are two figures here which I think are not in the Register. One is the load draught; how much is that? – 34 feet 7 inches.

19797. And the displacement at load draught is what? – 52,310 tons.

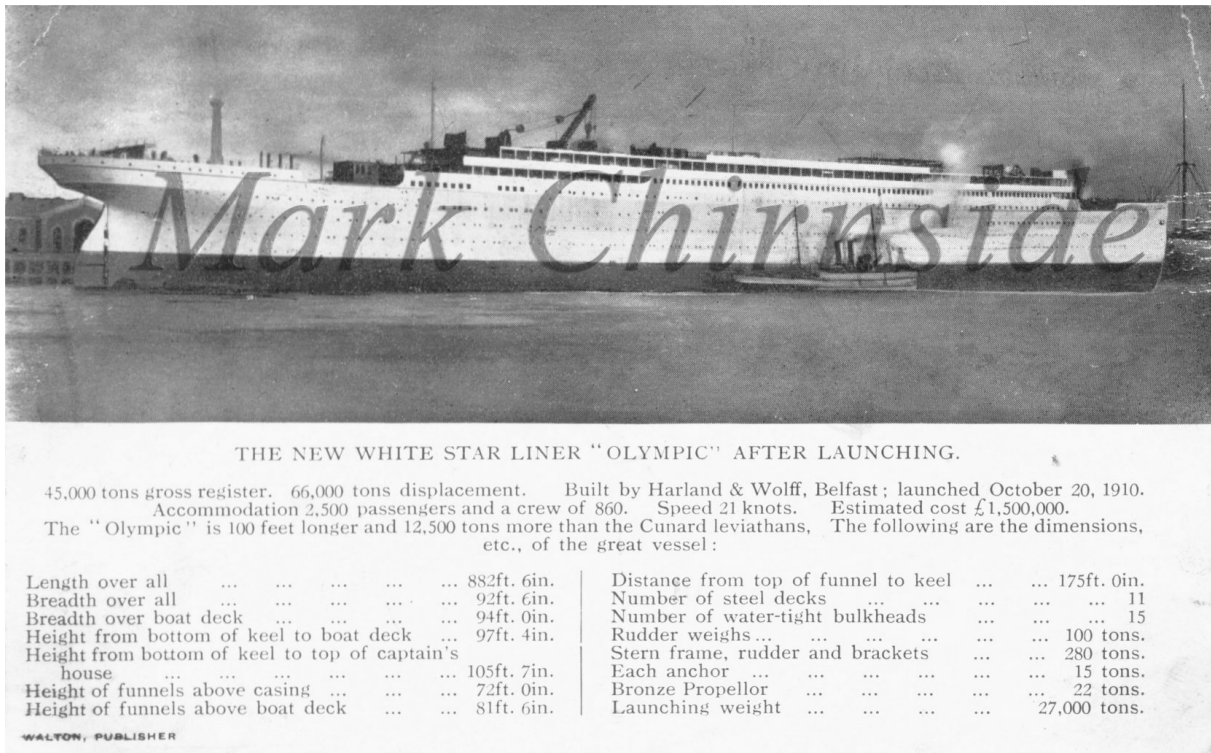
19798. Does that mean that when the ship is loaded down to her load draught she displaces and therefore weighs 52,310 tons of water? – Yes, a ton of 2,240 lbs.

19799. It is distinct altogether from the tonnage of the ship? – Entirely.

19800. That is what the mass of the ship would weigh? – Yes, actually loaded to that draught.

Similarly, Thomas Andrews confirmed the ship's approximate displacement. In 1911, he

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Above: In this postcard issued to mark Olympic's launching in October 1910, the exaggerated displacement figure of 66,000 tons is given. Researcher Dave Gittins suggests that somebody mistakenly added Olympic's deadweight to her total displacement, unaware that it was already included in the total displacement figure. (Author's Collection.)

noted that when the *Olympic* was loaded to 33 feet 6 inches her displacement was approximately 50,500 tons, and she displaced 51,340 tons when loaded to 34 feet. Given our knowledge that *Titanic* displaced 52,310 tons when loaded to 34 feet 7 inches, these figures are very much in line with that, and *Olympic*'s displacement scale as well.

Knowledge of the ship's displacement was a key factor in the design process, for it influenced the calculations of stresses that had to be performed to ensure a ship's strength. As David Archer, Principal Ship Surveyor to the Board of Trade since 1898, explained in his testimony to the British investigation:

24323. How do you test your standard of strength – how do you arrive at your standard of strength apart from the question of scantlings? – We do this. We get from the builders the drawings of the vessel. One of these drawings is a midship section. That midship section is a section as if you cut the ship right through the middle. It shows the thickness of all the plates, the longitudinal members of the ship – for example, the thickness and width of all the plates

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forming the skin of the ship and the deck of the ship.

24324. But those are the scantlings, are they not? – Those are the scantlings of the ship. We then make an estimate of what the stress on the gunwale of that ship in tons per square inch will be, on the assumption that the vessel is subjected to a bending moment equal to the whole displacement of the ship, in this case about 52,000 tons multiplied by one-thirtieth of the vessel's length. In that way we get at a certain figure of so many tons per square inch on the sheer strake...

The fact of the matter is that even White Star's *Majestic* – which entered service in 1922 and was the largest liner the company ever operated – displaced under 65,000 tons, even though she was loaded to 38 feet 6 inches and was a longer and wider vessel. By examining the displacement of *Aquitania* and other ships, this study provides further confirmation that the 66,000 ton figure is entirely wrong.

If so much reliable documentation exists as to *Titanic's* displacement, then why should it be that such an inflated and inaccurate figure of 66,000 tons is repeated so often? One answer comes from the vast amount of secondary literature on the subject, for when a subject so broad as *Titanic* is chronicled then many writers will rely on secondary source material. If many sources repeat the figure of 66,000 tons then this gives it a credibility it does not merit.

However, the figure appeared at a very early stage (see illustration on the preceding page). An advertising booklet for *Olympic* and *Titanic* in 1911 gave a figure of 'about 60,000 tons.' In 1911, *The Shipbuilder's* special number on *Olympic* and *Titanic* also gave a figure of '60,000 tons' for displacement, although in a subsequent article the following year covering *Titanic's* completion it gave a more accurate figure of 52,250 tons.

Unfortunately, given its prevalence, it seems the 66,000 ton figure will be around for a long time to come. It has no truth in reality.

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