

Titanic's Watertight Door Tell-Tale Indicator: Reconsidering the Evidence

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Introduction

Since the release of James Cameron's *Titanic* movie in 1997 there have been discussions about whether *Titanic* had a watertight door tell-tale indicator or not. The indicator in the movie looked like that in Figure 1.

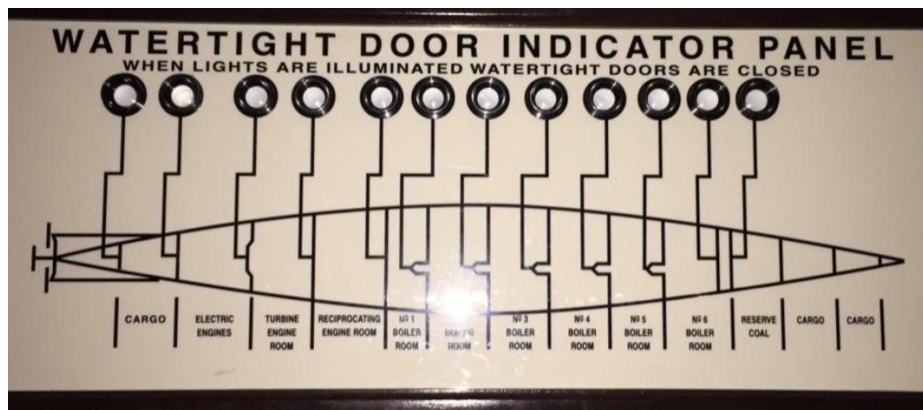


Figure 1

Watertight door tell-tale indicator from *Titanic* movie (1997)

Most likely, the design of this movie prop was taken from actual designs used by other ships at the time. Figure 2 shows the actual watertight door tell-tale indicator from RMS Mauretania.

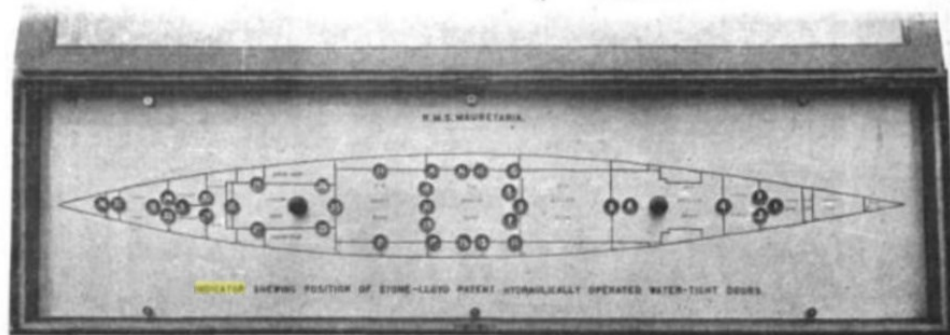


Figure 2

Watertight door tell-tale indicator from RMS Mauretania

The two questions this article will try to answer are:

1. Did *Titanic* have a watertight door tell-tale indicator?
2. What was the possible design of *Titanic's* indicator?

There are a number of aspects of this investigation which have been covered in other articles which are widely accepted and with which there is no controversy. This investigation will primarily concentrate on those aspects which remain in dispute. While it is unlikely that answers which are final and definitive will be uncovered, it is hoped that answers can be moved from the possible to the plausible category.

Arguments for the Absence of a Watertight Door Tell-tale Indicator on *Titanic*

The primary evidence offered for the absence of any watertight door tell-tale indicator aboard *Titanic* is centered primarily on the testimonies of quartermaster Alfred Olliver and 3rd Officer Herbert Pitman at the U.S. Senate *Titanic* hearings. We will begin with the pertinent testimony of quartermaster Olliver.ⁱ

Senator BURTON.

Was there an instrument there to show the doors as they closed? Did you ever see one of those instruments?

Mr. OLLIVER.

No; I never saw one.

Senator BURTON.

With little lights that burn up as each door closes, and then go out?

Mr. OLLIVER.

No, sir.

Senator BURTON.

There was no instrument like that on the *Titanic*?

Mr. OLLIVER.

I did not see that.

Senator BURTON.

Would you have seen it if it had been there?

Mr. OLLIVER.

No doubt I would, sir.

The second testimonial evidence offered for the absence of a watertight door tell-tale indicator at the U.S. Senate *Titanic* hearings comes from 3rd Officer Herbert Pitman.ⁱⁱ

Senator SMITH.

All right; I just wanted to know if you knew about it of your own knowledge. Is there any way for an officer on watch to tell whether the doors actually close when he works the lever from the bridge?

Mr. PITMAN.

No; I do not think there is.

Senator SMITH.

In order to have a perfect test, it would be necessary to have some one below, would it not?

Mr. PITMAN.

I can not say; I am not very well acquainted with those watertight doors. It is the first time that I have been with them.

Senator SMITH.

Did you ever operate a lever on a door of a watertight compartment.

Mr. PITMAN.

From the bridge?

Senator SMITH.

Yes.

Mr. PITMAN.

No, sir; never.

Senator SMITH.

But it stands to reason, and your judgment as a navigator is, that operating the lever from the bridge you can not tell with exactness whether the doors have closed below or not?

Mr. PITMAN.

No. Anyhow, the watertight doors were of very little assistance this time.

Analysis of Testimony

In the testimony of both Olliver and Pitman no inference can be drawn that either man was untruthful or deceptive. The question in the matter of the watertight door tell-tale indicator is whether their testimonies can be considered reliable. As a quartermaster, Olliver spent most of his time in the wheelhouse. The instruments in question are generally believed to have been located on the navigating bridge forward of the wheelhouse. Also, it was not within his responsibilities to ever close the watertight doors from the bridge or to be familiar with any sort of tell-tale indicator. Senator Burton led the witness Olliver by describing what a watertight door tell-tale indicator would look like then asking if he ever saw one. Olliver said no. Where did Senator Burton get his notion of what such an indicator would look like? Was

there only one generally accepted design? Olliver answered truthfully that he didn't see anything like what Senator Burton described.

As 3rd officer, Pitman was considered the highest ranking junior officer. As such, he never routinely stood watch as officer of the watch. Only the officer of the watch would have the responsibility of closing the watertight doors from the navigating bridge or being required to be familiar with the operation of a watertight door tell-tale indicator. Pitman appears to have had general knowledge about the location and operation of the switch to close the watertight doors but did he know all the procedures? Did he know that a switch next to the watertight door switch operated warning bells below next to all the watertight doors? Did he know that before closing the watertight doors the officer of the watch had to ring these warning bells for 10 seconds before activating the switch to close the doors? These were part of the procedure for which the officer of the watch was responsible. It is a real possibility that he did not know about the location or appearance of a watertight door tell-tale indicator.

The question which relates to the testimony of Olliver and Pitman is what might the watertight door tell-tale indicator look like? This question will be examined later.

“Andrews Notebook” Evidence

The so-called “Andrews Notebook” was a record of particulars of RMS *Olympic* from her maiden voyage through her 1912/1913 refit which ended on March 22, 1913. It contains the following entry regarding the watertight door indicator in Figure 3:

30.

13
12 ELECTRICALLY OPERATED W.T. DOORS ON
TANK TOP WORKED FROM CAPTAINS BRIDGE, ONE ELEC. WARNING
BELL PLACED NEAR EACH DOOR, TO BE RUNG BEFORE
CLOSING DOORS ALSO OPERATED FROM CAPTAINS BRIDGE.
TELL TALE INDICATOR ON BRIDGE FOR EACH DOOR TO
SHOW WHETHER OPEN OR CLOSED.

Figure 3

Entry in “Andrews Notebook” regarding watertight door tell-tale indicator on *Olympic*

There is an aspect of the “Andrews Notebook” which must be appreciated when evaluating the entry in Figure 3. The original entries in the book were made in black ink when *Olympic* entered service in June 1911. Subsequently, any alterations were noted in two later updates. The first update covered all alterations made from *Olympic’s* maiden voyage configurations up to January 23, 1912. All alterations made during that date-window were written in red. The second, and final update covered the period from January 23, 1912 to March 22, 1913. The alterations made during this second date-window were written in blue. Available information indicates that the entry about the watertight door tell-tale indicator was made in blue. This then indicates that the entry was made sometime between January 23, 1912 to March 22, 1913. Many have assumed that because the entry was made in blue that this indicated that this alteration was made *during Olympic’s* refit of 1912/1913. However, it could have happened earlier than that. This will be examined in greater detail later. The point here is that just because the entry was made in blue doesn’t mean that the installation of a watertight door tell-tale indicator was made during her refit and thus can’t be used as any kind of proof positive that this piece of equipment didn’t exist on *Titanic*. Figure 4 shows the front cover of the “Andrews Notebook” listing the date windows of the alterations to *Olympic*.

DRAWING OFFICE
COPY.

ALTERATIONS IN BLUE AS VESSEL LEFT BELFAST
22/3/13 WITH INNER SKIN FITTED.

ALTERED IN RED UP TO DATE 23-1-12

Figure 4

Cover of “Andrews Notebook” listing periods covered by colored entries

Arguments for the Presence of Watertight Door Tell-tale Indicator on *Titanic*

Arguments for the presence of a watertight door tell-tale on *Titanic* start with how the need was established for one on *Olympic*. *Olympic* did not enter service with an indicator. After the maiden voyage of *Olympic*, her Chief Engineer Joseph Bell wrote a memorandumⁱⁱⁱ to the White Star Line authorities which evaluated how equipment performed on *Olympic's* maiden voyage. This is the part that pertains to this investigation and relates to the watertight doors:

“Watertight Doors: Have always closed readily and promptly when required for testing; [I consider that a “Tell-tale “indicating on the Bridge when Doors are closed would be an improvement].”

The evaluation memorandum by Bell noted few deficiencies. Those that were noted seemed to be expressed more as a to-do list than a wish list. Bell did not rise to the rank he had as a Chief Engineer by being someone who always told the unvarnished truth to his superiors. If one reads the report in its entirety, he will see that in 90% of the report he heaps praise on *Olympic*. In order to get the things he wants addressed he weaves this 10% of deficiencies into his report. I believe that the watertight door tell-tale indicator was one item passed to him by the senior bridge staff for upgrade. As such, after his memorandum I believe that steps would have been taken to initiate the manufacture of the indicator by Harland and Wolff for installation on *Olympic* and the then-building *Titanic*. I believe that this instrument was manufactured in-house by Harland and Wolff because it was an instrument which had to be tailored to a specific ship rather than being purchased from a third party as a patent item like compasses, sounding machines, electric winches, etc. If it were a patent item, the Engineering article would have mentioned the manufacturer as was their custom.

The *when* of the installation of a watertight door tell-tale indicator on *Olympic* is not clear. One reason its installation may have been delayed during subsequent maintenance and repair visits is that it may have been considered a relatively low priority addition. Since all the watertight doors were closed at once by the activation switch on the bridge, when the warning bells below signaled the closing of the doors there were probably standing orders that if any of the doors did not close automatically that they were to be closed manually.

Earlier it was discussed that the entry in the “Andrews Notebook” indicates that the watertight door tell-tale indicator was installed sometime between January 23, 1912 and March 22, 1913. At this point I will engage in some speculation. I believe that this piece of equipment was likely installed between April 21, 1912 when *Olympic* arrived back in Southampton after the disaster and May 15, 1912 when she set sail for New York on her next voyage. During this 24-day layover in Southampton, the repair facilities there installed the Berthon collapsible boats and the deck spars they were fixed to. Great haste was made in upgrading *Olympic's* lifeboat capacity for understandable reasons. I believe that the watertight door tell-tale indicator may

very well have been installed during this period. During the U.S. Senate *Titanic* hearings which were happening at the same time, there seemed to be interest from the senators regarding this equipment. When *Olympic* returned to New York, arrangements were made for Senator Smith to hold hearings on and take a tour of *Olympic* on what would be the last day of the Senate's hearings on May 25, 1912. White Star probably knew about this some time in advance and wanted to make every effort to prove to Senator Smith and public at large that *Olympic's* safety equipment had been upgraded in light of the *Titanic* disaster.

We don't know how many items may have been installed in this layover after the *Titanic* disaster because they are entered in the "Andrews Notebook" in blue which makes them indistinguishable from those alterations performed during her 1912/1913 refit. We know that some items were altered earlier than the 1912/1913 refit and are also written in blue. An example would be the addition of the Berthon collapsible boats.

This brings us to the question of if and when the watertight door tell-tale indicator was installed aboard *Titanic*. I see no reason that it wouldn't have been installed in due course during the fitting-out process. There were two main events which interrupted *Olympic's* scheduled voyages during her first year. The first, and most major, was her collision with HMS Hawke on September 20th, 1911. Because of the repairs required, she did not enter service again until November 20th, 1911. The second interruption happened on February 24th, 1912 when *Olympic* lost a propeller blade. She headed back to Belfast where she arrived at the Harland and Wolff facilities on March 2nd, 1912. She finally left Belfast for Southampton on March 7th.

Because of the pressure to get *Olympic* back in service as quickly as possible, the opportunity to use either of these occasions was evidently passed up because the watertight door tell-tale indicator was not considered a priority on either occasion. While there were undoubtedly time deadlines in the yard for *Titanic*, many upgrades over *Olympic's* maiden voyage configuration were accomplished during *Titanic's* time fitting-out. Because all these other improvements were made, it seems reasonable that the watertight door tell-tale indicator was also installed.

Evidence from "Popular Electricity" Magazine

One piece of evidence that has been advanced to support the early addition of a watertight door tell-tale indicator on both *Olympic* and *Titanic* is an article which appeared in the July 1911 issue of "Popular Electricity" magazine entitled, "The Latest Leviathan and its Electrical Equipment" by C.B. Edwards.^{iv} The pertinent quote on page 225 is:

"Attached to the wall of the navigating room, a most important piece of apparatus is the electric indicator for the watertight bulkhead doors. This provides means of observing the closing of all the doors and stopping the inflow of water in case of collision. The doors are closed by hydraulic pressure and as they swing too [sic], tiny electric lights within the indicator show exactly which doors are closed or open."

There are many problems with this article. The detailed description of the watertight door tell-tale indicator instrument aboard *Olympic* is given *before* she entered service. This equipment would not be installed on *Olympic* until at *least* January 23, 1912. Therefore, this reference can't be taken as a reliable record of equipment aboard *Olympic* at the time of the writing of the article. Chief Engineer Bell would not even recommend this equipment until after *Olympic's* maiden voyage. This particular article doesn't bolster the case for the inclusion of such an instrument on *Titanic* either.

Proposed Form of Watertight Door Tell-tale Indicator

The final part of this investigation will be to look into the possible form of the watertight door tell-tale indicator. The first piece of evidence will be the indicator as described in the February 27, 1914 issue of "Engineering"^v which describes this piece of equipment for *Britannic*. The relevant passage is on page 274:

"On the bridge there will be fitted indicators, showing each bulkhead door, and a pointer in the aperture corresponding to each door, so that the captain can see not only the position of the door, but the actual closing of the door, the pointer having a travel of about 6 in. This pointer is actuated by electrical means, and its position shows at all times the vertical position of the bottom of the door in the bulkhead."

It can be seen from this description that this instrument is unlike that in either Figures 1 & 2 or the description in Senator Smith's question to quartermaster Olliver. It may very well be that the reason that quartermaster Olliver and 3rd officer Pitman testified that they had not seen a watertight door tell-tale indicator is because they had not seen an instrument as described by Senator Smith or one which may have been in common use at the time. They may have not been aware of this instrument because it was not something which was within their usual responsibilities and that it differed substantially from those in common use.

The next question is whether there is any evidence which could possibly support an instrument as described in the Engineering article which was installed aboard *Britannic*. On *Olympic's* first voyage following the *Titanic* disaster, Senator Smith visited the ship in New York and conducted interviews with several of the crew. He also toured the ship. The date was May 25, 1912. On this date a number of photos were taken aboard *Olympic*. Pertinent to this investigation is one photo taken of *Olympic's* navigating bridge. This photo is shown in Figure 5.

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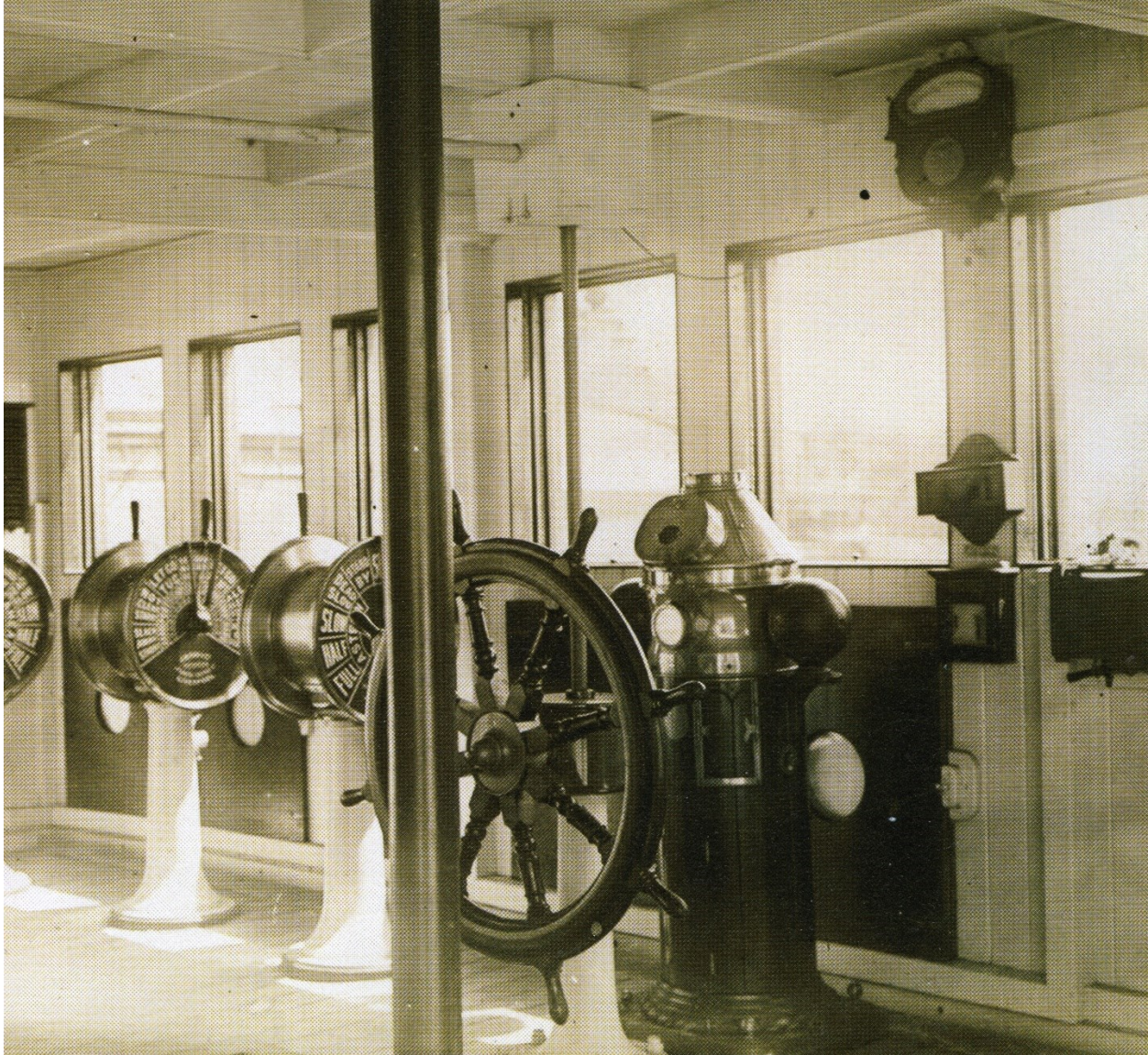


Figure 5

Photo of *Olympic's* bridge taken May 25, 1912

To the far right in the photo is a box-like structure with a handle on the lower side. This would match various descriptions of the watertight door actuator. The handle when rotated counterclockwise would engage the watertight door circuit. Just to the left of this structure is another box-like structure which I have never seen positively identified. I believe that it could match the description of *Britannic's* watertight door tell-tale indicator. Figure 6 is an enlargement of these structures in the photo which are identified as to what may well be their proposed functions.

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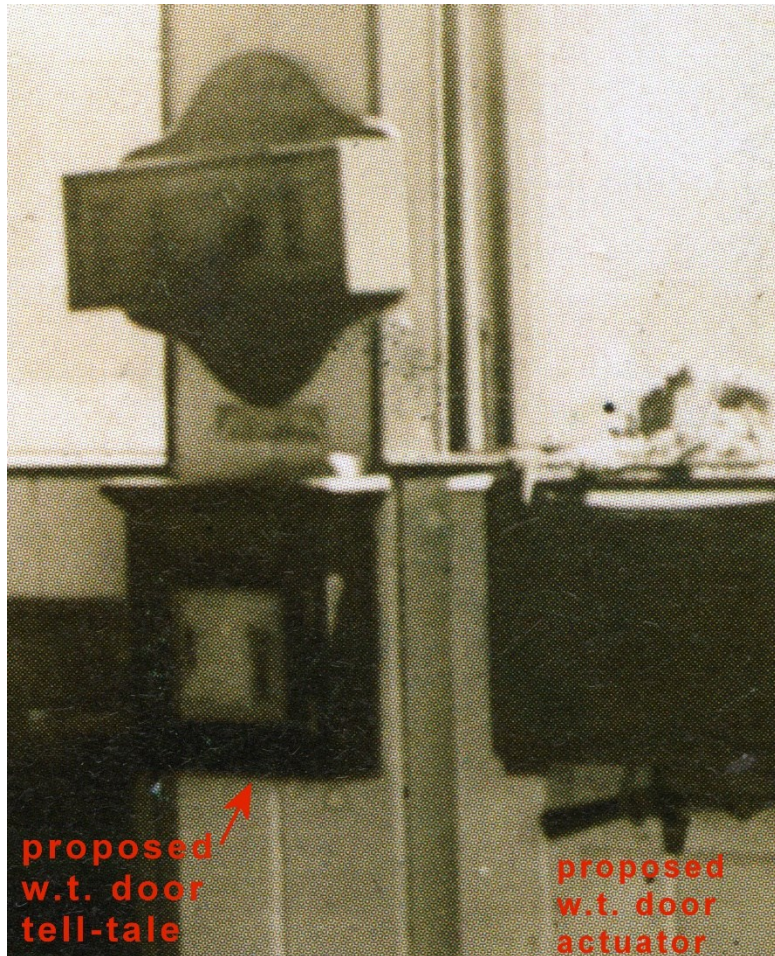


Figure 6

Enlargement and identification of proposed watertight door control instruments

On the top of the proposed watertight door tell-tale indicator is what I believe could be a switch to illuminate the interior of the box. It might be asked whether we are seeing what is inside the box through its glass front. I don't believe so. I believe it is a reflection in the glass. If you look at the boundary between the light rectangle on the front and the dark area above it, this boundary is not parallel to either the top or the bottom of the box which would indicate that it is a reflection rather than something in the box.

Using the description in Engineering of the particulars of *Britannic's* watertight door tell-tale indicator, I have made a scale drawing in Figure 7 which matches the size of the instrument in the photo. I also show the indicators described in the article and how they might look.

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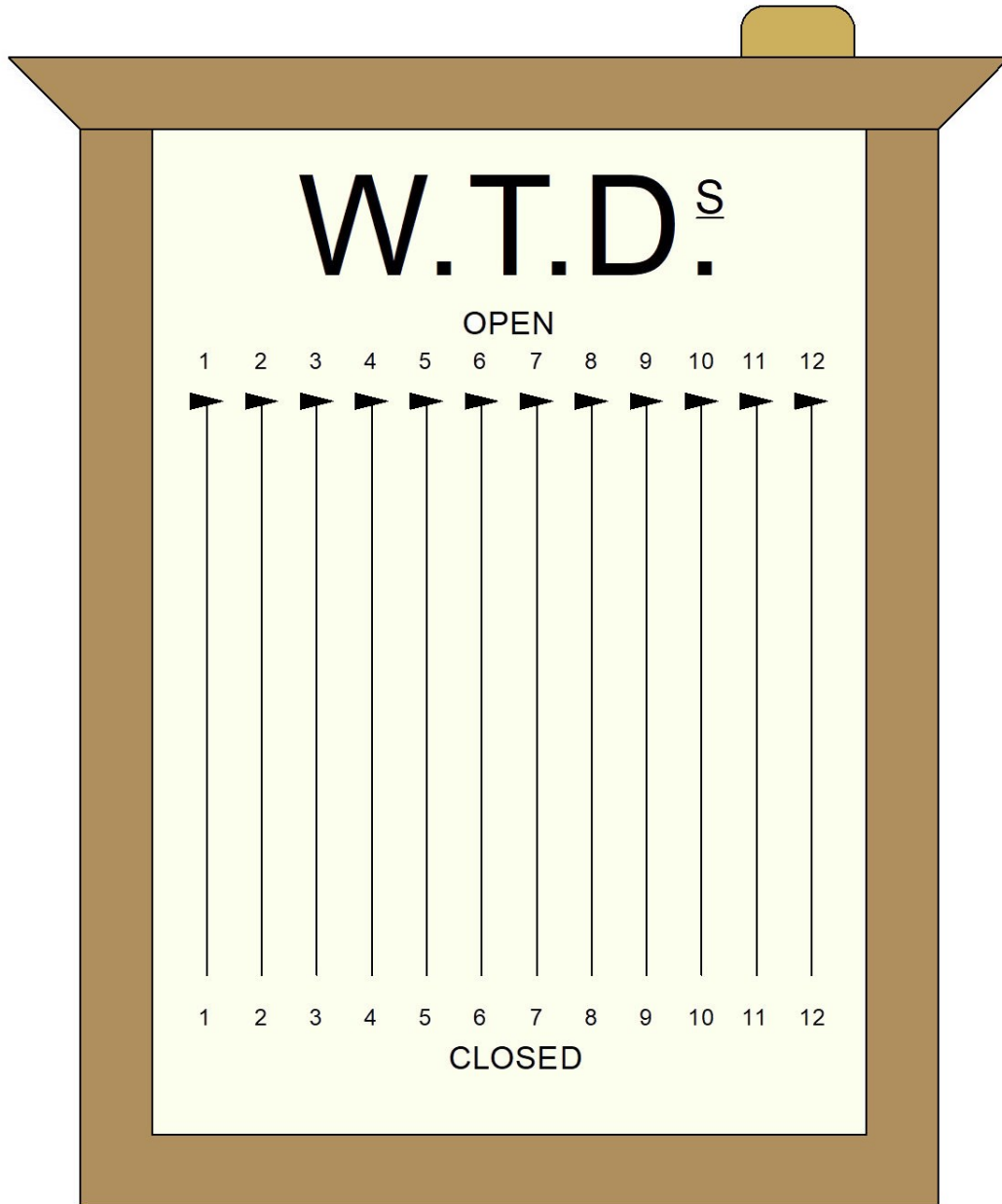


Figure 7

Proposed configuration of watertight tell-tale indicator described for *Britannic* which corresponds to instrument in *Olympic* photo

One can see how this design of the instrument might not be recognized as a watertight door tell-tale indicator in common use and as described by Senator Smith during his interrogation. One might ask why we might assume that the design of *Britannic's* instrument might be the same as that installed on *Olympic* and likely on *Titanic*? Since it appears that this instrument was made in-house by Harland and Wolff, the question would be why would they change a functional design? Harland and Wolff was not known for anything other than utilitarian designs

in equipment built by them. It is not dramatic like an outline of the ship with lights indicating the closure of watertight doors. It is definitely less conspicuous yet would be entirely functional.

Conclusion

This article has sought to answer two questions:

1. Did *Titanic* have a watertight door tell-tale indicator?
2. What was the possible design of *Titanic's* indicator?

Like so many questions about the configuration of *Titanic* there is scant evidence. The researcher must look to evidence mainly from her sister ships *Olympic* and *Britannic*. In doing so one has to navigate a maze of dates and how they might apply to questions about *Titanic*. If the standard of proof must be that if there is no written documentation or photos from *Titanic*, then any conclusion cannot be accepted as proof. Were that standard rigorously applied, there would be many areas of *Titanic* for which we have no information at all. To be sure, any circumstantial evidence gleaned from *Olympic* and/or *Britannic* to form a conclusion about *Titanic* would have to be expressed with caveats. There is a researcher's maxim that states "Absence of evidence does not necessarily mean evidence of absence". This would apply to whether there was a watertight door tell-tale indicator panel on *Titanic*. Many have taken the testimony of Olliver and Pitman at face value and have concluded that this is proof that *Titanic* did not have this instrument. I propose that it is possible that the problem with the testimony of Olliver and Pitman may be not that they didn't see a watertight door tell-tale indicator but rather that they did not *recognize* it as such.

The uncertainty in the date of installation of the watertight door tell-tale indicator on *Olympic* leaves enough latitude in the interpretation of the timeline of events that the installation of a watertight door tell-tale indicator aboard *Titanic* is at least plausible, if not likely.

As to the possible design of a watertight door tell-tale indicator which may have been installed aboard *Titanic*, I believe that it is reasonable to assume that it was the same design as described for *Britannic*. An entirely functional design developed by Harland and Wolff as few as two years before for *Olympic* and *Titanic* would not be discarded by a cost-conscious Harland and Wolff. It is doubtful they felt any need to create an elaborate lighted display.

As with all of these investigations into equipment aboard *Titanic* for which we have limited hard evidence, it will be up to the reader to decide if the circumstantial evidence makes it more likely than not that *Titanic* was equipped with a watertight door tell-tale indicator. My personal belief is that it *is* more likely than not.

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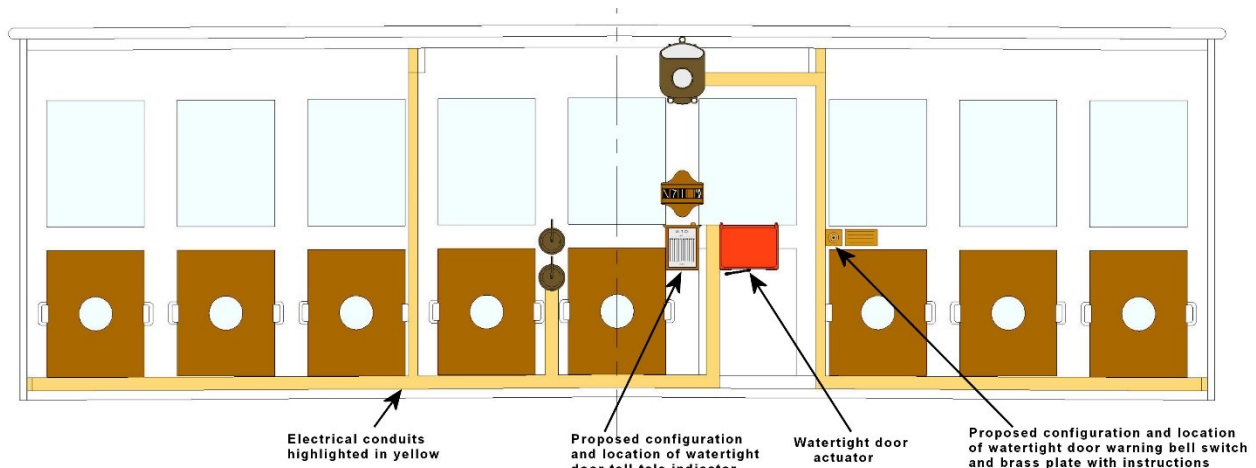
Addendum

This addendum is being written to counter an objection to the proposed configuration and location of the watertight door tell-tale indicator as illustrated in this article. The objection is:

Objection: *The proposed configuration and location for the watertight door tell-tale indicator in this article must be wrong because it fails to account for the watertight door warning bell switch. This switch could not be located to the right of the watertight door actuator when looking forward because it would be blocked by an electrical conduit on the forward bulkhead of the navigating bridge.*

The objection suggests that what this article proposes as the watertight door tell-tale indicator is actually some sort of device for sounding the warning bells prior to using the watertight door actuator.

Instead of a long explanation, the answer to this objection will be illustrated in Figure A1.



May 25, 1912 appearance of Olympic's forward bridge bulkhead Titanic configuration assumed to be identical.

Figure A1

As can be seen in Figure A1, the proposed configuration and location of the watertight door warning bell switch and instruction plate can easily be placed to the right of the most starboard vertical electrical conduit. At this position it is less than two feet from the watertight door actuator.

Therefore, the proposed configuration and location of the watertight door tell-tale indicator is not affected by the placement of the watertight door warning bell switch and instruction plate.

Footnotes

ⁱ Testimony of Titanic quartermaster Alfred Olliver before the U.S. Senate Titanic hearings.
<https://www.titanicinquiry.org/USInq/Amlnq07Olliver01.php>

ⁱⁱ Testimony of Titanic 3rd officer Herbert Pitman before the U.S. Senate Titanic hearings.
<https://www.titanicinquiry.org/USInq/Amlnq04Pitman04.php>

ⁱⁱⁱ Memorandum from Chief Engineer to White Star Line officials regarding the performance of RMS *Olympic* during her maiden voyage. <https://josephbellengineer.com/joseph-bell-engineers-report-rms-olympic-june-1911/>

^{iv} The Latest Leviathan and its Electrical Equipment by C.B. Edwards, Popular Electricity, July 1911, p. 222,
https://www.google.com/books/edition/Popular_Electricity_and_the_World_s_Adva/VJMhAQAAAMAAJ?hl=en&gbpv=1&dq=the+latest+leviathan+and+its+electrical+equipment&pg=PA191&printsec=frontcover

^v The White Star Liner “Britannic”, Engineering, February 27, 1914, p. 273.
<https://www.google.com/books/edition/Engineering/U1DiV41SHs8C?hl=en&gbpv=1&dq=On+the+bridge+there+will+be+fitted+indicators+showing+each+bulkhead+door.&pg=RA1-PA274&printsec=frontcover>