

The Structure and Function of *Titanic's* 25 ft. Emergency Boats

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Introduction

In the complement of *Titanic's* 20 lifeboats were two lifeboats with a special function. These were the 25 ft. emergency lifeboats. This article will discuss both the structure and function of these boats.

Overview

Titanic's 25 ft. emergency boats were classified as Section D lifeboats. The regulations specified that there were to be no more than two Section D boats. Section D boats were constructed nearly identically to the 30 ft. main lifeboats but by regulation they were not required to have any provision for internal buoyancy. *Titanic's* 25 ft. emergency boats however were constructed with internal buoyancy air cases. The 25 ft. emergency boats could serve as lifeboats but their primary function was to serve as at-the-ready boats which could be deployed rapidly in case of a man overboard.

Construction

Titanic's 25 ft. emergency boats were also called "cutters" and were constructed very much like the 30 ft. main lifeboats. From a Board of Trade document, the scantlings were as follows.

Keel – American Elm – 5" x 2-1/2"

Stem – English Oak – 5" x 2-1/2"

Sternpost – English Oak – 5" x 2-1/2"

Frames – American Elm – 1-3/4" x 7/8" spaced 9"

Keelson – Pitch Pine – 5" x 3-1/2"

Planking – Yellow Pine – 5/8"

Top Strake – American Elm – 4-1/2" x 3/4"

Rubber – Pitch Pine – 1-1/2" x 1-1/2"

Clamp – American Elm – 2" x 2-1/4"

Floors – Every Frame – 3" x 1-3/4"

Thwarts – 4 in number, Pitch Pine – 8-1/2" x 1-3/4"

Plank fastenings all copper clenched on rooves.

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Figure 1 shows the outboard profile of #1 emergency boat on the starboard side of the ship.

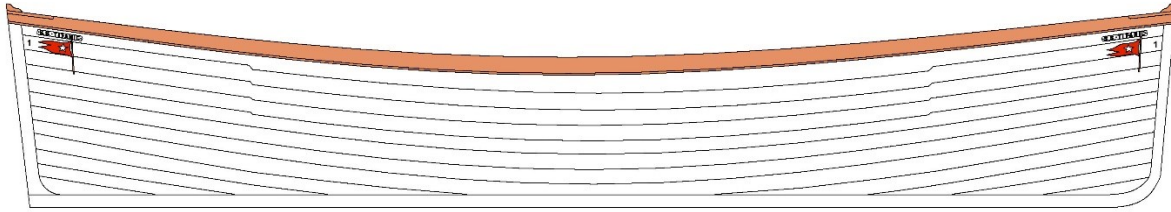


Figure 1

Outboard profile of #1 emergency boat on starboard side of ship

Figure 2 shows the inboard profile of #1 emergency boat on the starboard side of the ship.

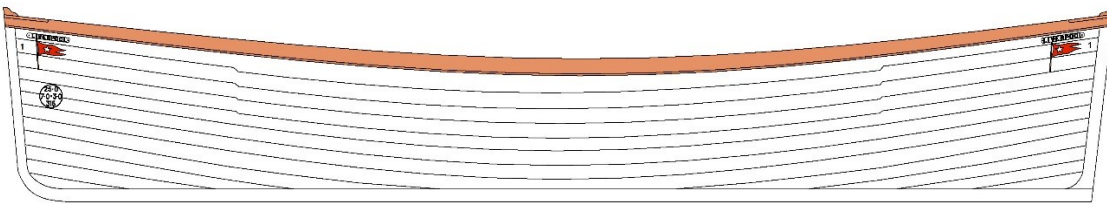


Figure 2

Inboard profile of #1 emergency boat on starboard side of ship

Figure 3 shows a plan view of #1 emergency boat on the starboard side of the ship.

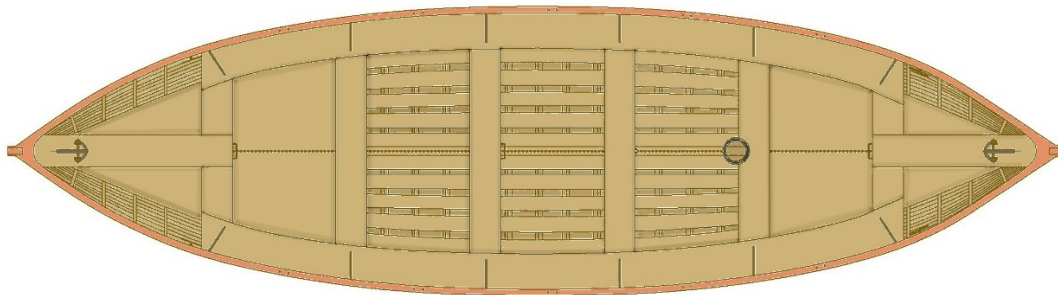


Figure 3

Plan view of #1 emergency boat on starboard side of ship

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Figure 4 show longitudinal cross sections of #1 emergency boat on the starboard side of the ship.

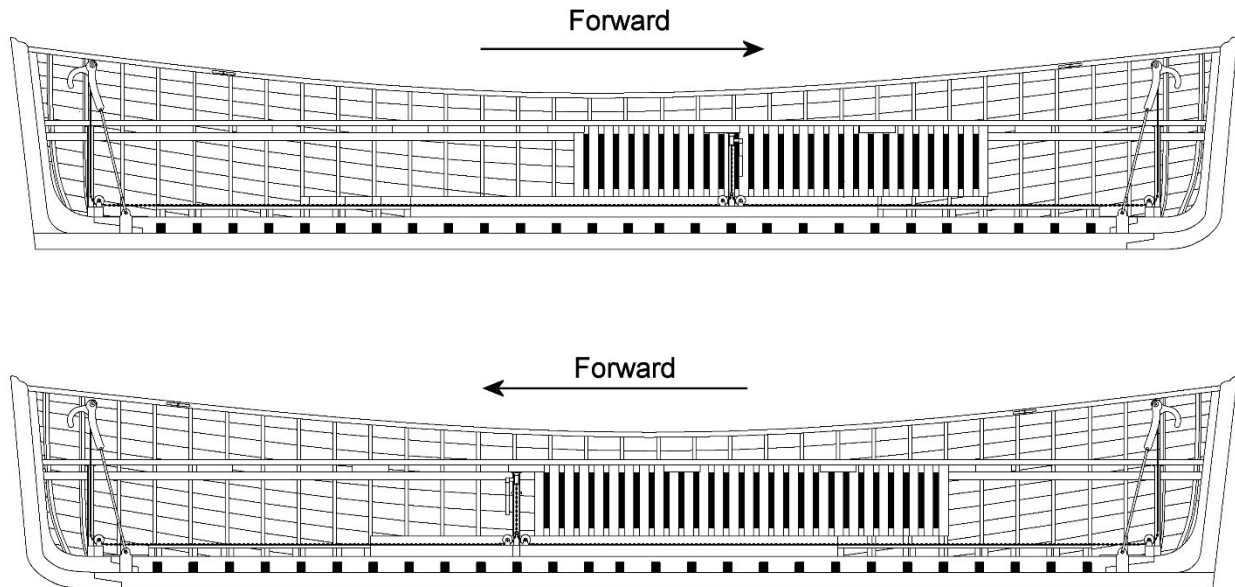


Figure 4

Longitudinal cross sections of #1 emergency boat on starboard side of ship

One difference between the 25 ft. boats and the main 30 ft. boats had to do with the timbers called “cleading” used to confine and enclose the buoyancy air cases. On the 30 ft. main boats, the cleading formed a solid unbroken surface. On the 25 ft. boats the cleading was separated, forming a “picket fence” appearance. Figure 4 shows the cleading in the 25 ft. boat on both the inboard and outboard sides of the boat. On the 25 ft. emergency boats the buoyancy cases were shifted aft on the outboard side of each boat and forward on the inboard side of each boat. This can be seen in Figure 4.

Another aspect for which there was a difference between the 30 ft. main boats and the 25 ft. emergency boats was the Murray’s disengaging gear whose purpose was to release the boat from the falls when it had been fully lowered. On both types of disengaging gear, the “hook” rotated on an axle supported by a “fork”. On the 30 ft. boats the tines of the fork were set just wider than the width of the hook. On the 25 ft. emergency boats the forks of the disengaging gear were set considerably wider than the 30 ft. gear. The reason for this was to make room for a “preventer chain”. This chain wrapped around the tines of the disengaging gear below the axle and attach by safety hooks to the chain link from the lower block which engaged the disengaging gear hook. The reason that the “preventer chain” was needed was because the 25 ft. emergency boats were always suspended from the falls. If one of the two disengaging gear hooks opened up while the boat was suspended, the boat end would fall catastrophically and would likely result in the loss of the boat. With a preventer chain, if the disengaging gear hook failed and opened, the preventer chain would hold the disengaging gear and prevent the end of

the boat from falling. Figure 5 shows the Murray's disengaging gear for the 25 ft. boat with the lower fall block hooked to the disengaging gear.

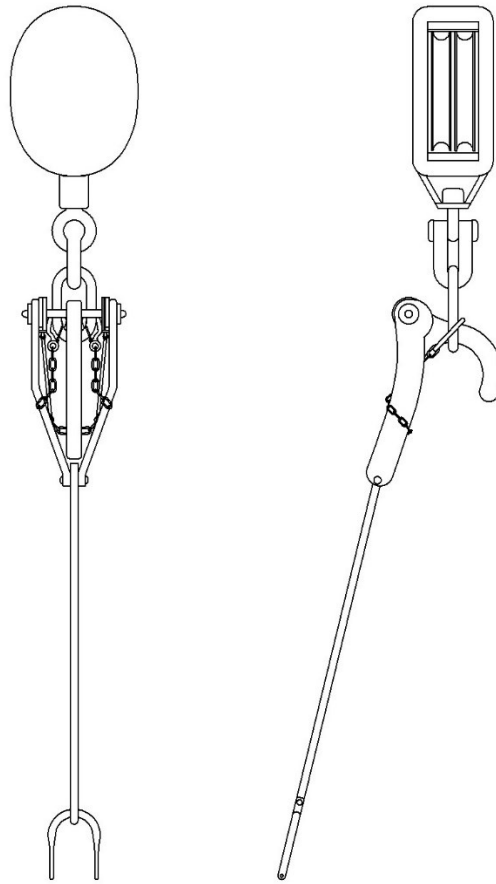


Figure 5

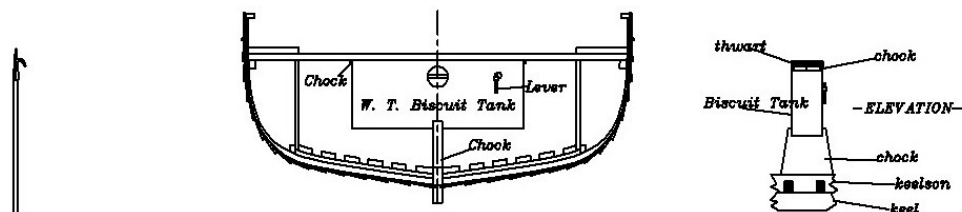
Murray's disengaging gear for 25 ft. emergency boats showing lower fall block and with preventer chain rigged

Capacity

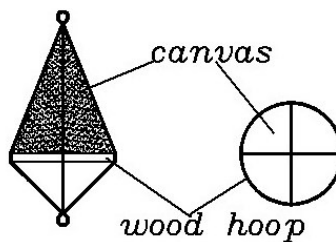
Boat Equipment

The primary function of the 25 ft. boats was emergency duty. However, they had to be equipped with all the items that the 30 ft. lifeboats had for lifeboat duty. The main lifeboats did not keep compasses and lanterns in them while they were stowed. These items were included just before launching. The same applied for the 25 ft. boats except that a lantern was lit and kept in the emergency boats at night. Since the 25 ft. emergency boats were always to be at-the-ready, they did not have boat covers or chocks to rest on. Figures 6-8 show the equipment for the 25 ft. boats.

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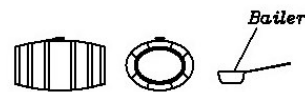
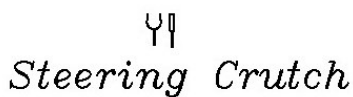


Biscuit Tank Installation

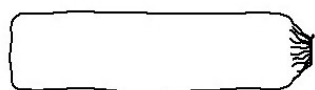


Boat Hook Thole Pin

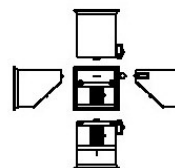
Sea Anchor



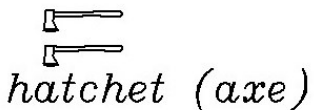
Water Breaker Canvas Oil Bag



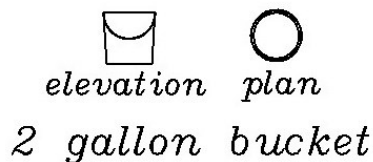
Painted Sail Bag



Boat Compass



hatchet (axe)



2 gallon bucket



*Painters
20 fathoms long
(120 ft.)*

Figure 6

Miscellaneous equipment for 25 ft. emergency boats

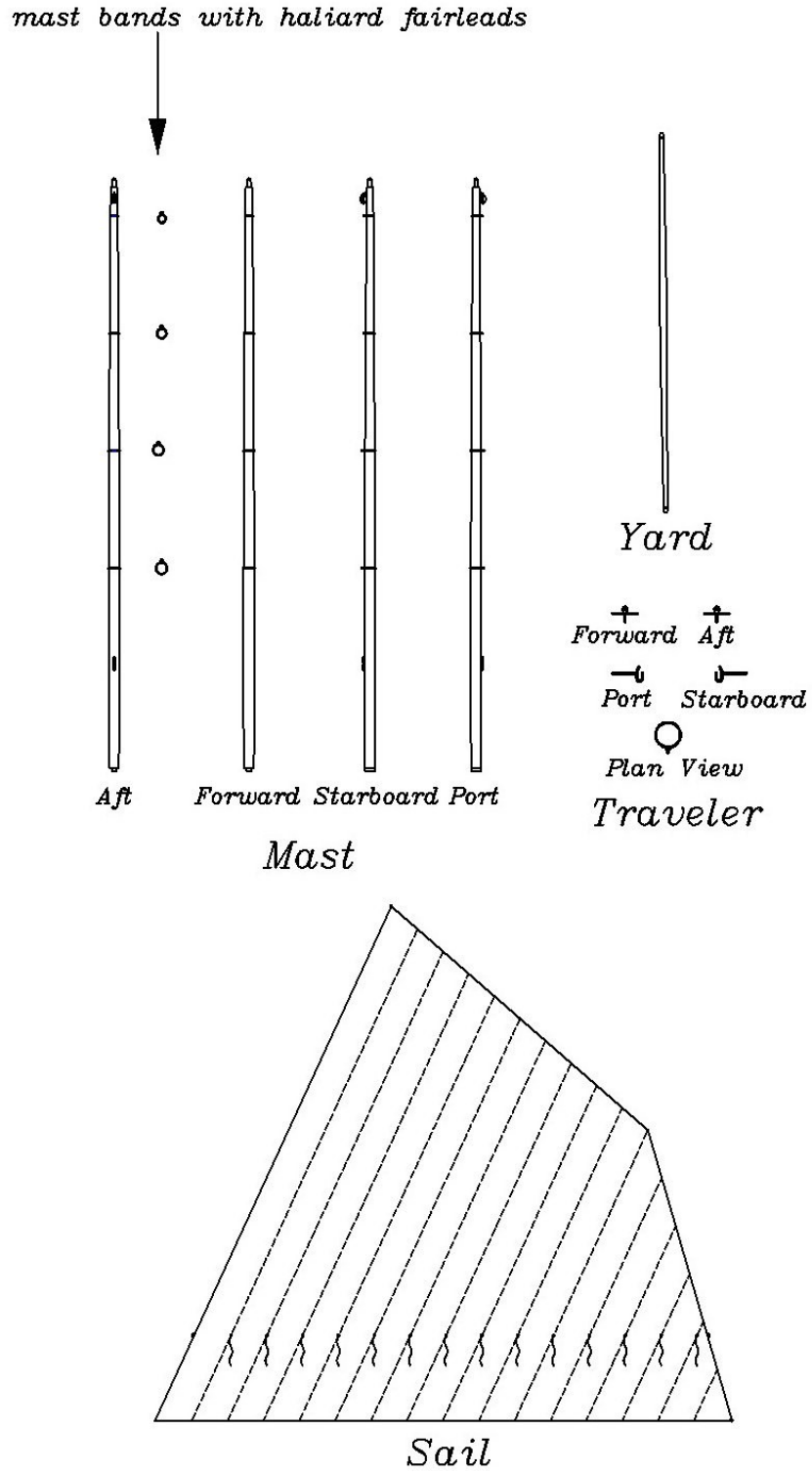


Figure 7

Mast, yard, sail and associated hardware for 25 ft. emergency boats

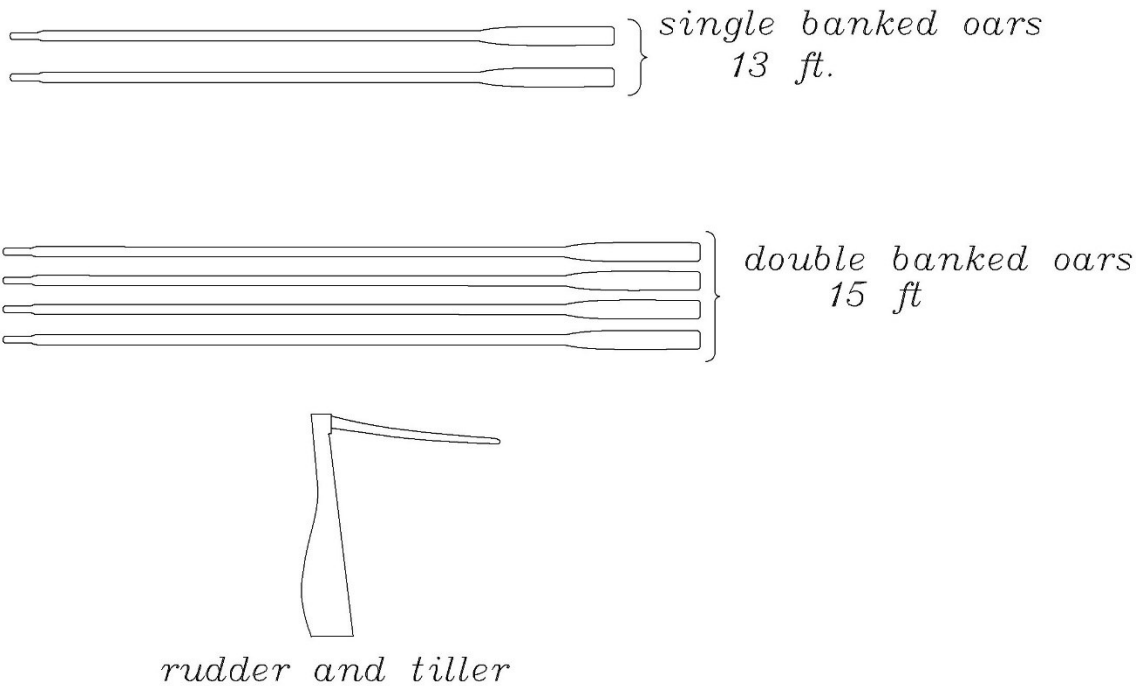


Figure 8

Oars, rudder and tiller kept in 25 ft. emergency boats

Capacity

The two 25 ft. boats aboard *Titanic* were variously referred to as cutters, emergency boats or emergency cutters. They were Section D boats. As such, they were not required to incorporate any buoyancy measures. However, we have evidence that they did, in fact, incorporate buoyancy measures. Figure 9 is an excerpt from the so-called Andrews Notebook. The notations are for *Olympic's* original boats which were the same as *Titanic's*.

ALL THE 30'0" LIFEBOATS ARE FITTED WITH
COPPER BUOYANCY TANKS, ALSO THE
TWO 25'2" CUTTERS.

Figure 9

Excerpt from "Andrews Notebook"

These boats were required to have a capacity allotment per person of 8 cubic ft. The same formula for determining the cubic ft. capacity of the 30 ft. boats is also used for the 25 ft. boats. The nominal measurements of the 25 ft. boats were:

Length: 25 ft.

Breadth: 7 ft.

Depth: 3 ft.

The formula for determining the cubic foot capacity was the same as was used for the 30 ft. boats:

$(\text{length} \times \text{breadth} \times \text{depth}) \times .6 = \text{cubic foot capacity}$

The passenger rating for each boat was calculated by the following

equation: $\text{Total cubic foot capacity}/8 = \text{passenger capacity}$

Like the 30 ft. boats, when being evaluated for their capacity, the owners could opt for actual measurements of the boats rather than the nominal measurements. Since there were only two 25 ft. boats, each was measured individually. For Titanic's two 25 ft. boats the measurements were:

Length = 25.2 ft. , breadth = 7.2 ft. , depth = 3 ft.

Length = 25.2 ft. , breadth = 7.1 ft. , depth = 3 ft.

So, the capacity calculations for the two emergency boats were:

$25.2 \text{ ft.} \times 7.2 \text{ ft.} \times 3 \text{ ft.} \times .6 = \mathbf{326.6 \text{ cubic ft.}}$ Passenger capacity = $326.6/8 = \mathbf{40}$

$25.2 \text{ ft.} \times 7.1 \text{ ft.} \times 3 \text{ ft.} \times .6 = \mathbf{322.1 \text{ cubic ft.}}$ Passenger capacity = $322.1/8 = \mathbf{40}$

Function

Since the 25 ft. emergency boats were designated to be at-the-ready in case of an emergency like a man overboard, it had to be positioned so a minimum of the effort would be needed to launch it. When the ship was leaving or entering port in confined waters where visibility from the bridge wings aft was required, the emergency boats were moved inboard to clear the view down the side of the ship. When the ship was in open water and visibility aft from the bridge wings was not as crucial, the boats were moved to their outboard position and secured with gripes which held the boat fast against the bulwark inboard of the boat.

When the emergency boats were swung inboard, they were allowed to swing freely since there was no danger of them contacting anything in this position and they would be in this position for a relatively short period of time. Figure 10 shows the emergency boat in the inboard position raised above the bulwark.

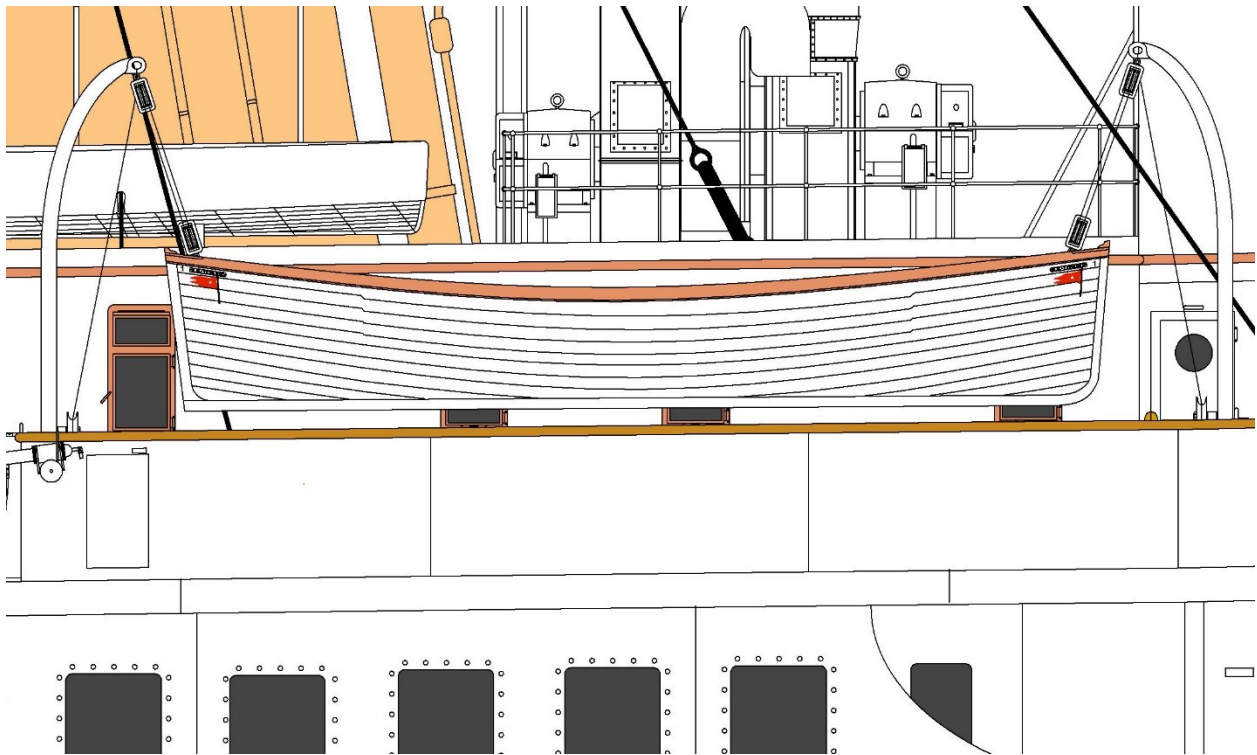


Figure 10

Starboard 25 ft. emergency boat #1 at inboard position

When the emergency boats were swung outboard to their at-the-ready position, they were secured by rope gripes. There were three primary gripes. Two of the gripes were attached to the eyes of the davits at the top and to eyes in the shell plating just below the A deck promenade screen windows. These two gripes were crossed over each other and had links with safety hooks just above the level of the emergency boat gunwales. The safety hooks would be released which would release these two gripes. There was a third gripe which was positioned between the other two gripes which was attached to the emergency boats by a simple gunwale clamp at the top and to the shell plating just below the A deck promenade windows. Figure 11 shows emergency boat #1 secured with 3 gripes.

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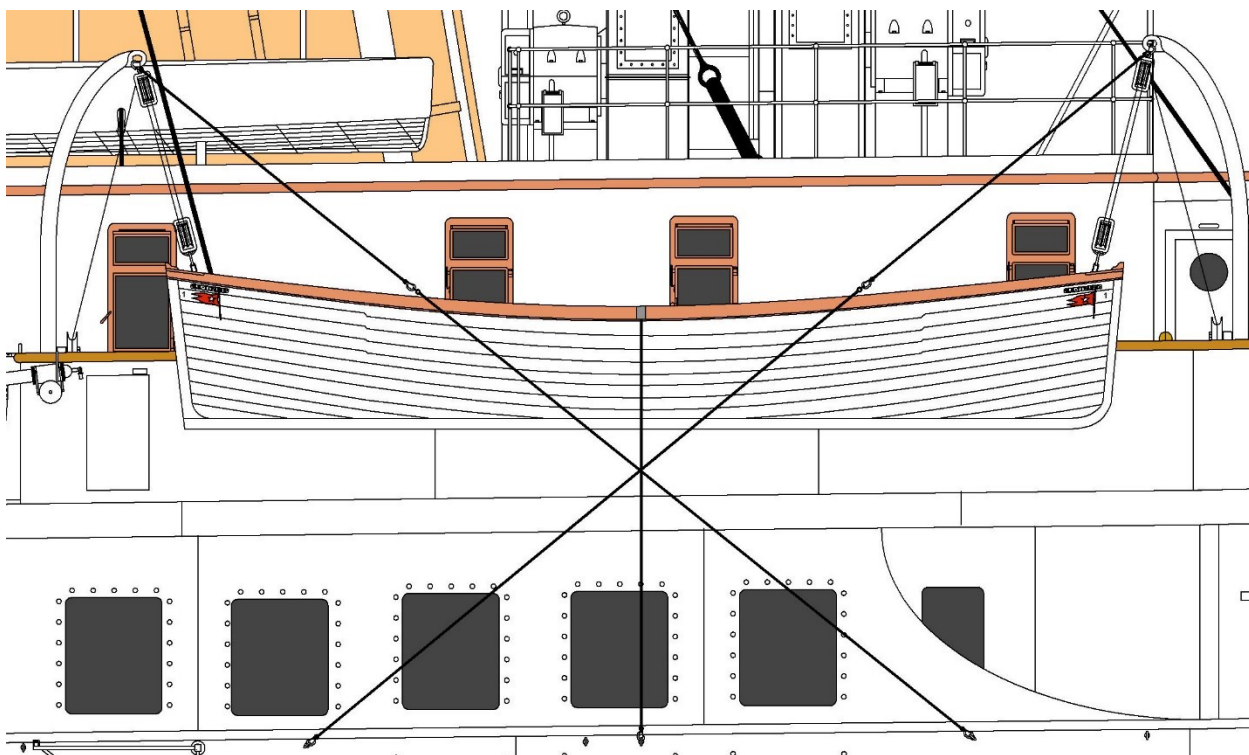


Figure11

Starboard 25 ft. emergency boat #1 secured with gripes in outboard position

The gripes were set so that when the boat was at its stowed position, level vertically and brought inboard by the davits, the inboard gunwale was in contact with a wood fender under the bulwark rail. The forward and aft gripes kept the emergency boats from swinging outboard. The center gripe kept the boat from rotating about the fore and aft axis of the boat. To release the tension on the gripes, the boat was rotated outboard by the davits.

Crew

The ship's crew necessary to man and launch the emergency boats is a crucial part of emergency boat procedures. Unfortunately, there is little to nothing written about this aspect. To man the emergency boat, you would need a crewman to man the rudder tiller at the stern and a crewman at the bow to be in charge of releasing the disengaging gear. The boat could accommodate six oarsman using double banked oars. This was probably the typical crew used to man an emergency boat.

Crew necessary to launch the emergency boat would include an officer to supervise the launch, at least two crewmen to man the davits and at least two crewmen to man the falls and lower the boat. These would be an absolute minimum number of crew and there were likely more.

It is unknown who would be assigned to emergency lifeboat duty and where they would be stationed while on this watch. Signaling the need to deploy an emergency boat was likely done by the bridge bell.

All rescues could be dangerous but some conditions could present special challenges. Any night emergency could present the difficult task of locating someone in the dark in the open ocean. If a man overboard was holding onto a life ring with a Holmes lamp attached, this could make locating them easier. In either day or night, heavy seas present a real danger. The officer of the watch would have to make the difficult decision about whether to launch if conditions were severe enough that the prospects of the emergency boat's crew surviving would be slim.

Conclusion

This article has dealt with aspects of the structure and function of *Titanic's* 25 ft. emergency boats. While the other lifeboats were crucial in situations where the survival of the ship was in jeopardy, the 25 ft. emergency boats' role was just as crucial in that not only would they be used as lifeboats, they were required to stand at-the-ready to for rescues and or recoveries in case of a man overboard.