

Analysis of the Location of the Head of the Forepeak Tank Vent on *Titanic*

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Introduction

This article will attempt to locate the head of the forepeak tank vent on *Titanic*. There is ambiguity and contradiction in various sources which will be analyzed. The analysis will utilize photos, plans, and post-disaster testimony

Function

The forepeak tank was a water tank located just above the stem bar at the lowest and most forward part of the ship. It extended up to the level of the Orlop deck. Its purpose was to provide ballast. The forward trim of the ship was adjusted by either pumping water into or out of the tank. As with all water tanks, the forepeak tank had an air vent. The purpose of the tank vent was to facilitate filling of the tank by providing a path of escape of air at the top of the tank. It also functioned as an overflow to indicate when the tank had reached its capacity. Figure 1 shows the location of *Titanic's* forepeak tank in blue.

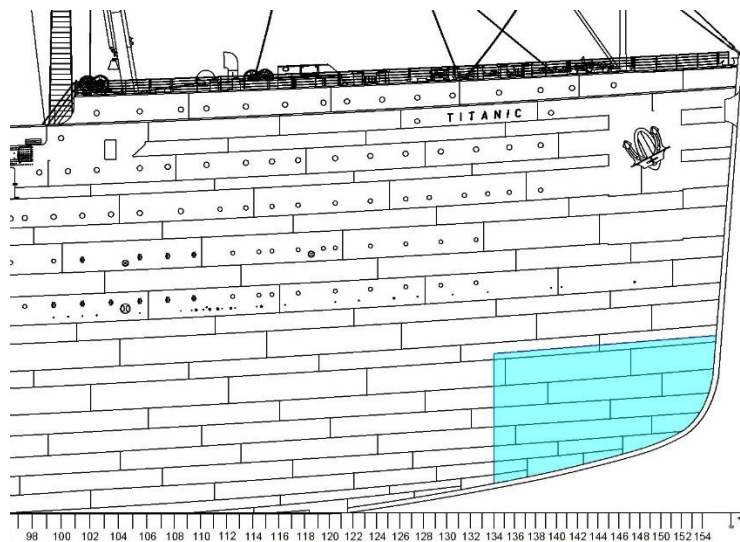


Figure 1

The Photos

At the time this article is being written there are no known photos which unmistakably show the forepeak tank vent. Up until recently there was an object seen on the port side of the forward anchor well which was thought to be a pipe stub and more specifically was identified as the forepeak tank vent pipe. This object as it was seen in previous photos is shown in Figure 2.

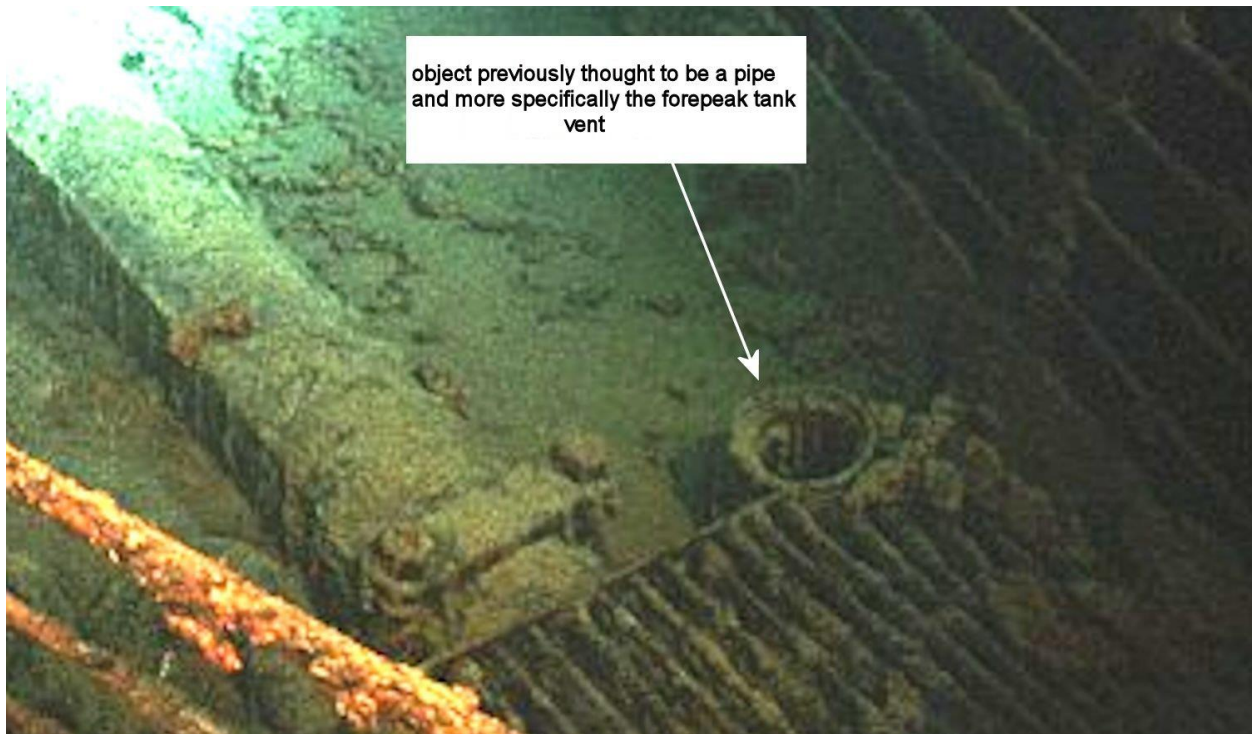


Figure 2

Recently a wreck photo has been discovered which sheds new light on this object. Figure 3 shows this object. It is clear that this object is not a pipe but rather is an object that is not native to the forward anchor well. While its identity is somewhat uncertain, it has many of the characteristics of a lantern whose chimney has been removed. Further consideration of the forepeak tank vent would suggest that it couldn't have been located on the port side of the anchor well because this was a removable panel used to deploy the center anchor. Therefore the most likely location of a forepeak tank vent located in the forward anchor well would be on the starboard side.

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Figure 3

The Plans

There is only one plan which directly bears on this analysis. It is a plan of the water mains of *Titanic*. There have been a few photos taken of the original plan which have at times showed up on the internet. From these images one can see the forepeak tank vent. This is the first piece of evidence which provides contradictory information to the notion that the identity of the pipe in the forward anchor well is the forepeak tank vent. The forepeak tank vent head in the image of the plan ends just short of the floor of the forward anchor well. To show what the plan shows, I have made a drawing showing how the forepeak tank vent head terminates just short of the floor of the forward anchor well. The drawing is shown in Figure 4.

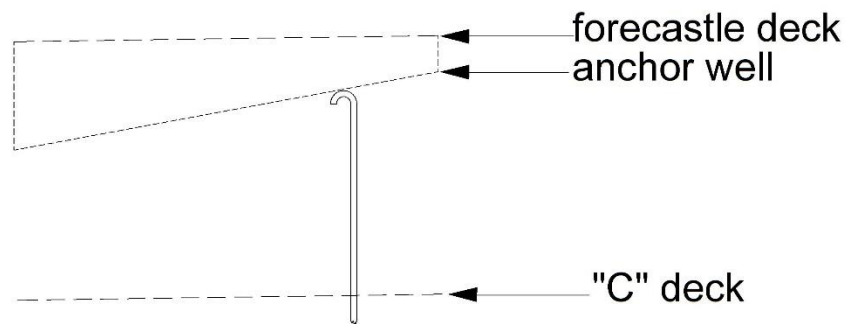


Figure 4

Although not a plan, there is information from the *Britannic* Specification Book regarding the forepeak tank vent. It lists the diameter of the pipe as 2-1/2 inches. It also says that it runs up to the Shelter Deck which is C deck. This is below the forecastle. What is not clear is whether the forward anchor well is considered part of the forecastle (B) deck or since it is below the level of the forecastle whether it is part of the shelter (C) deck.

Testimony

Usually plans and photos are sufficient to identify objects in a technical analysis. Since there is no vent head present at the top of the pipe in the forward anchor well and the water mains plan doesn't show the head of the forepeak tank vent piercing the floor of the forward anchor well, we must look to other avenues of evidence to try to find a solution to the identification problem. To do this we will look at the only testimony of a survivor which directly refers to the forepeak tank vent head and its location. The testimony is that of Samuel Hemming the Lamp Trimmer on board Titanic. He gave testimony in both the American and British hearings. In the sections which follow, Hemming's testimony as it relates to this issue will be presented and analyzed.

Testimony of Samuel Hemming before the British Inquiry

17702. You were a lamp-trimmer on the "Titanic," I think?
- Yes.

17703. Do you remember the evening of Sunday, the 14th?

- Yes.

17704. Do you remember reporting to Mr. Murdoch, the first Officer, that all the lights had been placed?

- Yes.

17705. About what time was that?

- I think about a quarter-past 7.

17706. Do you remember what he said to you when you reported that?

- Yes.

17707. What did he say?

- I was walking off the bridge, and he called me back, and he said: "Hemming, when you go forward get the fore -scuttle hatch closed, there is a glow left from that, as we are in the vicinity of ice, and I want everything dark before the bridge."

17708. Where is the fore -scuttle hatch?

- On the fore-castle head.

17709. Did you carry out those orders?

- I closed it myself.

17710. When the ship struck, I think you were asleep?

- Yes.

17711. Were you wakened by the jar?

- Yes.

17712. What did you do?

- I came out of the room, put my head out of the port to see what we struck, and could not see anything.

17713. Did you hear a noise?

- I heard a hissing noise.

17714. Did you go and try to find out what that was?

- I did.

17715. Where did you go?

- Right forward under the fore-castle head.

17716. Will you describe what you did and where you went?

- I went there and could not see anything, so me and the storekeeper took the hatch off the

storeroom and went down to see if she was making water and she was dry. We went down as far as the tank top.

17717. Do you mean a storeroom in the fore part of the ship?

- Yes, right forward, in the very fore part.

17718. Would that be the storeroom above the four-foot tank?

- Yes, directly above it.

17719. When you got down to the storeroom what did you find?

- Nothing; everything was dry.

17720. You could not find any sign of damage?

- No.

The Commissioner:

Just tell me where it is.

Mr. Raymond Asquith:

I will point out what I think he means. Your Lordship sees this tank in the blue (*Pointing on the cartoon.*) I think he means the place just above that, Marked "Store."

The Commissioner:

Very well, that is sufficient; I see where it is now.

17721. (*Mr. Raymond asquith - To the witness.*) Was the store -room you went to immediately forward of the chain-locker?

- Yes. That is the place where you pointed out just now.

17722. You told us you did not see any sign of damage?

- No.

17723. Did you still hear the hissing noise?

- Yes.

17724. What did you do then?

- I came up to ascertain where the noise was coming from, and I went on the fore-castle head again, and I found it was coming from an exhaust pipe in the four-foot tank.

17725. Was that a pipe which came out on the top of the fore-castle?

- Underneath the fore-castle head.

17726. (*The Commissioner.*) What purpose does it serve?

- It is the air exhaust for the water going into the tank.

17727. (*Mr. Raymond Asquith.*) Was that a pipe which connected with the four-foot tank?
- Yes.

NOTE: The above question references "four-foot tank" which is undoubtedly referring to the forepeak tank.

17728. Do you know whether the four-foot tank had water in it when you started on the voyage or not?
- I could not say.

17729. At any rate, you found air coming out of this exhaust pipe?
- Yes.

The Commissioner:
That indicates that water was coming into the tank.

17730. (*Mr. Raymond Asquith.*) Yes, My Lord, that is the effect of it. (*To the witness.*) Was the air coming out with considerable force?
- It was.

The Commissioner:
That would indicate, would it not, that the vessel had been injured in the fore part forward of the collision bulkhead?

17731. (*Mr. Raymond Asquith.*) Yes, that is the importance of this Witness. We have never got the wound so far forward before. (*To the witness.*) Did you see the Chief Officer shortly after that?
- Yes.

17732. What did you say to him?
- He asked me what it was. I said: "It is the air coming out of the four-foot tank. She must be making water there."

17733. Nothing more?
- He said: "All right." I said; "The store rooms are dry though." He said; "All right," and went away.

Testimony of Samuel Hemming before the American Inquiry

Senator SMITH.

Where were you the night of this accident?

Mr. HEMMING.

I was in my bunk.

Senator SMITH.

Were you asleep?

Mr. HEMMING.

Yes, sir.

Senator SMITH.

Were you awakened by anybody?

Mr. HEMMING.

I was awakened by the impact, sir.

Senator SMITH.

What did you do when you were awakened?

Mr. HEMMING.

I went out and put my head through the porthole to see what we hit. I made the remark to the storekeeper [possibly J. Foley]. "It must have been ice." I said, "I do not see anything."

Senator SMITH.

What made you think it was ice?

Mr. HEMMING.

Because I could not see anything.

Senator SMITH.

You mean you looked to see if you saw the lights of another boat, and, not being able to see any such thing, you thought it was ice?

Mr. HEMMING.

Yes, sir.

Senator SMITH.

Had you ever seen ice in that part of the ocean before?

Mr. HEMMING.

No, sir.

Senator SMITH.

Had you ever been through that part before, on your route?

Mr. HEMMING.

Yes, sir.

Senator SMITH.

What did you do then?

Mr. HEMMING.

I went up under the forecastle head to see where the hissing noise came from.

Senator SMITH.

What did you find?

Mr. HEMMING.

Nothing.

Senator SMITH.

Go right along and tell what you did.

Mr. HEMMING.

I did not see anything. I opened the forepeak storeroom; me and the storekeeper went down as far as the top of the tank and found everything dry.

I came up to ascertain where the hissing noise was still coming from. I found it was the air escaping out of the exhaust of the tank.

At that time the chief officer, Mr. Wilde, put his head around the hawse pipe and says: "What is that, Hemming?" I said: "The air is escaping from the forepeak tank. She is making water in the forepeak tank, but the storeroom is quite dry." He said, "All right," and went away.

Analysis of Testimony

Hemming's testimony needs to be carefully parsed to try to determine exactly what he meant. What is difficult in this exercise is the fact that the examiner does not have the technical expertise to pose precise questions. Additionally the examiner, not having technical expertise, doesn't know when to ask clarifying questions. This task is further complicated by the fact that while Hemming had technical knowledge, his use of technical terms appears imprecise. These facts require a closer examination of this testimony to glean facts which will be found to be unclear because of seeming contradictions.

Locations - In Hemming's testimony we will follow his path in trying to find the source of the hissing noise. Figure 5 is a drawing of the forecastle head area with pertinent locations mentioned in the testimony labeled. Figure 6 is a drawing of C deck directly below the forecastle deck with the same labeling.

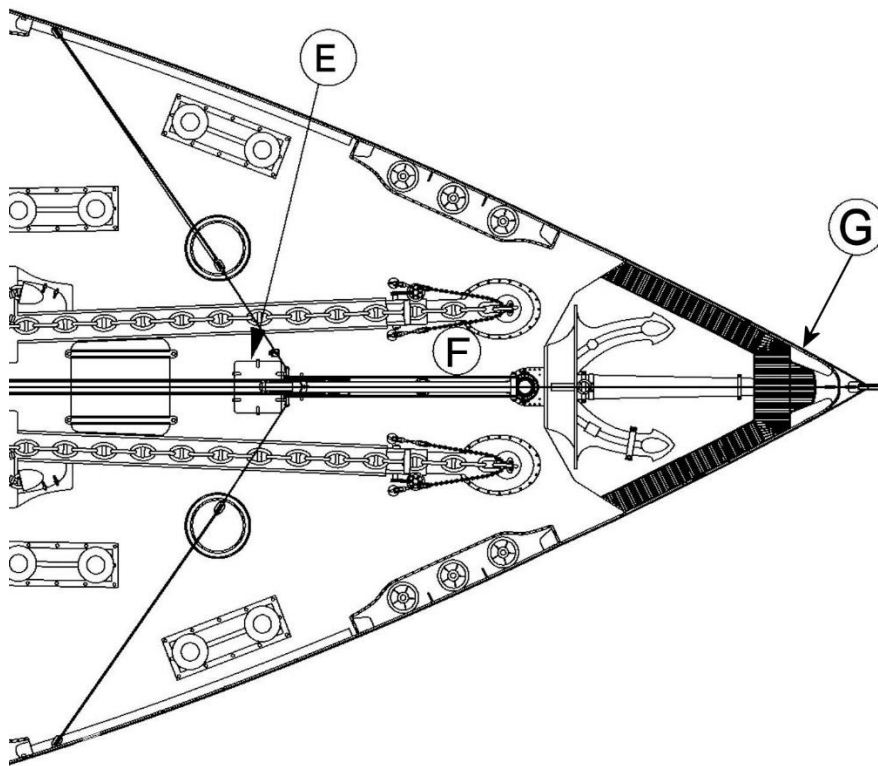


Figure5

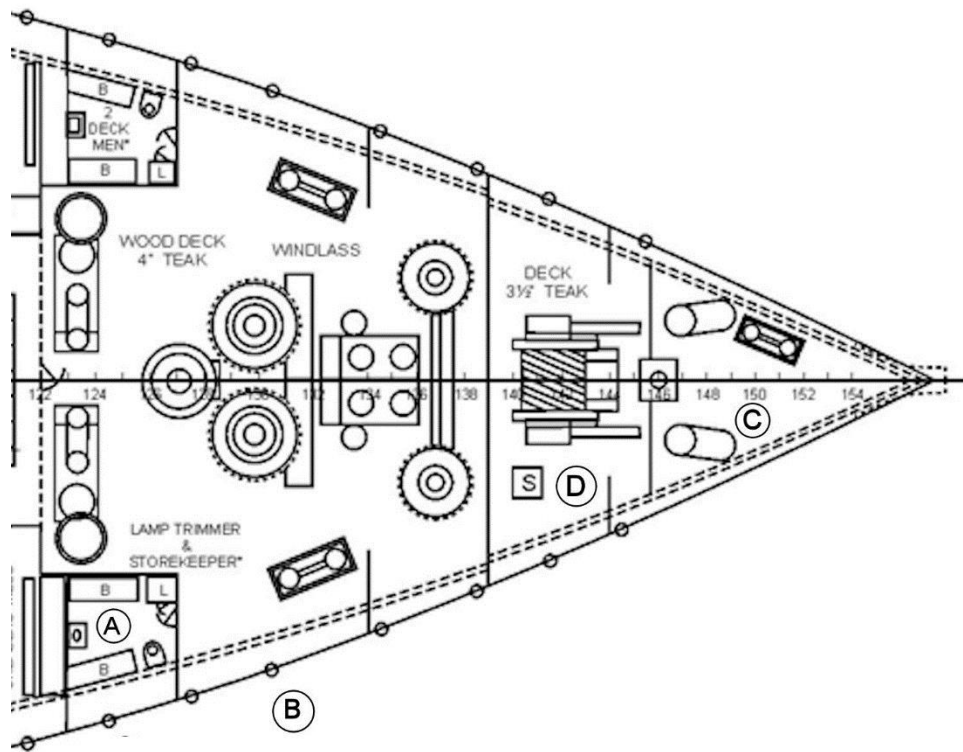


Figure 6

I will primarily rely on the British Inquiry testimony of Hemming because it is more detailed. From his testimony I will try to re-trace his path.

1. Hemming is awakened by the collision. 17711, Figure 6, location A
2. Hemming exits his room and looks out a porthole and hears a hissing. 17712-13, Figure 6, Location B (could have been any of the portholes forward of his room)
3. Hemming proceeds directly forward “under the forecandle head” and finds “nothing”. 17715, Figure 6, Location C.
4. Finding nothing here he took the hatch off the storeroom so that he could descend to look for damage which would explain the hissing. 17716, Figure 6, Location D (“S”) on plan.
5. Hemming proceeds directly downward from deck D to the Orlop deck which forms the top of the forepeak tank. He finds no damage and can proceed no further down. 17716
6. Still not finding the location of the sound, Hemming retraces his path upward and finally exits “on the forecandle head”. Most likely he proceeded from C deck up to the forecandle head via the fore-scuttle hatch which he previously located as being “on the forecandle head” 17708, Figure 5, Location E
7. Hemming goes to the forecandle head and locates the source of the sound as coming from the forepeak tank vent. 17724, Figure 5 proceeding from location F to G.

8. Hemming is asked for a clarification of the location of the forepeak tank vent and he says “underneath the forecastle head”. I believe he uses this term “underneath” for the first time to indicate that the forepeak tank vent was “underneath” the gratings over the forward anchor well. 17725, Figure 5, Location G.
9. How much later we don’t know but Hemming’s journey ends down on C deck again when he reports to Chief Officer Wilde that the hissing noise is coming from the forepeak tank vent. We know they were at Figure 6, Location C because in the American Inquiry he states that “Mr. Wilde put his head around the hawse pipe”. 17732-33, Figure 6, Location C.

Admittedly, the testimony of Hemming is difficult to understand if you don’t parse it carefully but I believe it points to a location of the forepeak tank vent in forward anchor well. I think part of the testimony that lends even more credence to this view is the fact that in his testimony he begins his search on C deck forward and finds “nothing”. If there was a hissing forepeak tank vent head in that area it could have been located easily.

Identification of the Pipe in the Forward Anchor Well

At present we have been unable to identify any forepeak tank vent head in the forward anchor well. We would expect its appearance to be like that of the other tank vent heads such as we see in the forward well deck in Figure 7.

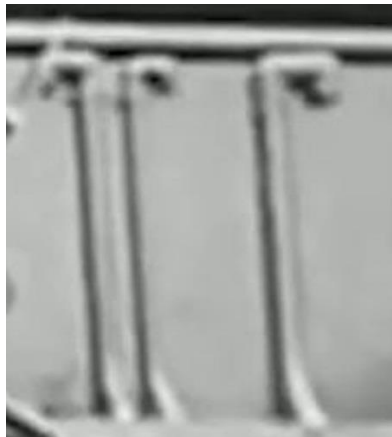


Figure 7

The reason why we may not be able to see this 2-1/2 inch diameter vent head is because it may be located toward the aft part of the forward anchor well where there is an appreciable silt buildup. I believe it is unlikely that it would be located under the forward grating in the anchor well. This is because not only is there an anchor ring at the end of the shank but there is also a shackle and three chain links attached to the shackle which are stowed under the forward grating. As has been discussed earlier, we also would not expect to see the vent head on the port side under the grating because this side of the anchor well was actually formed by a

removable panel which was removed when the anchor was being deployed and retrieved. This panel can be seen removed in Figure 8.

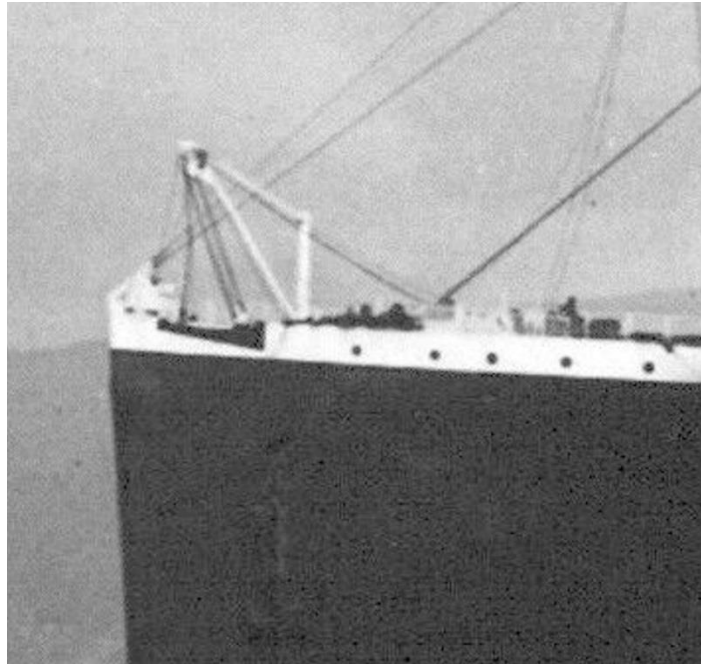


Figure 8

Since I believe the testimony of Hemming indicates that the forepeak tank vent head was located in the forward anchor well, I believe the logical place which remains is on the starboard side of the well. I believe this also because he testified that it was “underneath” the forecastle head which would suggest to me that he was describing the location as being underneath the grating which was contiguous with the forecastle wood decking. Since photos don’t seem to show a tank vent head in the area on the starboard side where the silt is deep, I believe it is likely to be located aft on the starboard side of the well. Figure 9 is a starboard side view showing where the forecastle deck and the bottom of the anchor well are located. I believe that the forepeak tank vent may be located as the pipe in red indicates. The pipe is drawn to scale and I believe this is what the shape of the vent head looked like. The position is near frame 150F. Many pipes ran near frames and beams so that the pipe brackets could be fastened to the frames. In this position the vent head would probably be covered in sediment on the wreck in this location. This is probably why we can’t locate the pipe in photos.

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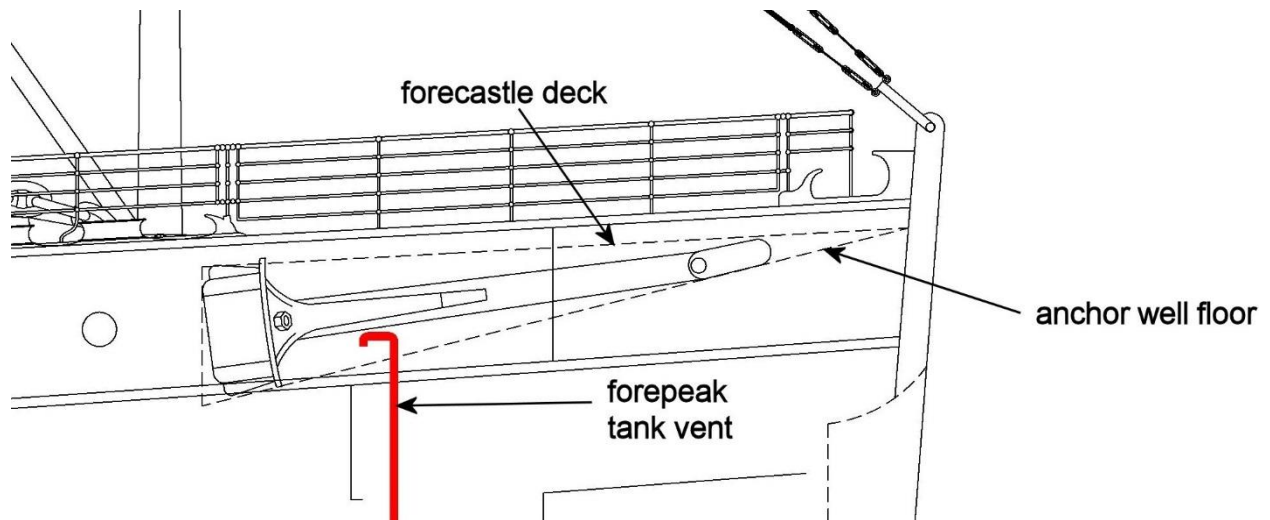


Figure 9

Conclusion

The location of the forepeak tank vent head on *Titanic* has previously been identified as being located in the forward anchor well on the port side. A thorough examination of the evidence shows that the object thought to be the forepeak tank vent was instead an object which is not native to this area. This article has examined the evidence for the location of the forepeak tank vent. The most compelling evidence is the testimony of crewman Samuel Hemming given before the British and American post-disaster hearings. There is no photo evidence from the Olympic class ships or the *Titanic* wreck which identifies the forepeak tank vent. I believe that the forepeak tank vent head may be buried under silt in the aft part of the starboard side of the forward anchor well. Unfortunately the evidence at this point is relatively thin to locate this tank vent head in any specific location. If nothing else has been accomplished by this article, the object on the port side of the anchor well has been eliminated as a possibility for the location of the forepeak tank vent.