

REPORT ON THE DAMAGES OF THE S/S "LE PHOQUE"

Important Remark

It must be well understood that at the moment of the collision the "Le Phoque" was a light vessel and therefore in the most favourable conditions to sustain a deformation. Indeed the chock, in these conditions, has caused a general twisting of at least the after frames, the colliding vessel having struck the shell high on the starboard side and nearly at the extreme after end of the vessel and thus at a place not in contact with the quay. Therefore:-

- 1) the lever arm of twisting comprised between the point of contact of the shell with the quay and the point of collision was nearly the maximum that it could be and the lever arm of ~~twisting~~ was considerable being comprised between the point of collision and the point of contact with the quay.
- 2) The vessel being unloaded and the ~~buoyancy~~ buoyancy aft being very light the propeller came in contact with the quay, causing a displacement of the stern frame resulting in twisting the keel being solid to it.

To make the accident and its results clear, you will find hereunder the description of the different phases of the chock as they will be easily observed by an examination of the different parts of the shell, moreover the sketches explain clearly what has passed during the time of the chock.

First Phase

Before the collision, the "Le Phoque" is moored alongside the quay at berth No.

She was maintained in position in accordance with the requirements by seven hawsers of which four at the foreside and 3 aft and spaced from the quay wall by a number of protection balls between the quay wall and the port shell plating of the vessel (fig.1)

She was struck in this position by the colliding vessel exactly at the superior starboard side aft at height of the firemen's cabins, nearly at the extreme after end of the vessel and this under an angle of about 75° set from forward to aft.

Second Phase

The collision has taken place, at the height of the upper deck at the point N starboard side aft (fig 1)

What happens ?

- 1) The hawsers four in number at the forward end after a severe stress break.
- 2) the protection balls are crushed.
- 3) The shell comes in contact with the quay at P, the vessel not being retained anymore at the foreside starts to pivot, the foreside drifts

It is easy to understand that with such a shake under the effect of a moving mass of 10.000 tons the frames also shake.

Third Phase

The contact of the shell of the "Le Phoque" and the quay is established; at this moment the colliding vessel is still pushing, the superior after

part of the shell at N, the vessel takes a strong list to port side about 10° (fig.2)

This twist has been witnessed by the height of the mark with the quay on the shell of the vessel at the moment of the contact, this mark which is very deep is indeed much higher above the water than the height of the quay wall, about 60 centimeters.

The lever arm of the twist which extends from the point of collision N till the point of the contact of the shell with the quay P was still relatively small at the second phase because the vessel could still go backwards, it became instantly considerable because of the mass of 10.000 tons of the colliding vessel, its remaining speed, and the sudden stop against the quay. The length of the lever arm of twisting is at present about 30 metres, it is the line NP (fig 3).

The frames are submitted to twisting by two causes:-

- 1) The sideways pushing of the colliding vessel high on the shell at starboard side aft with a lever of twisting of 30 m.
- 2) By the list of the vessel, the after end being pushed in one sense and the fore end tending to twist the vessel in the other direction by her weight foreside.

Whilst the vessel pivots alongside the quay and in accordance with her after water lines, the vessel being heavily listed to port side, the quay wall deeply sets into the shell, progressively leaving, gradually as the pivoting goes on, a deep groove, extending from the engine bulkhead to the after peak (see photos)

From the foregoing facts it results that:-

- 1) Rivets are torn away everywhere
- 2) Quantity of frames are twisted and deformed.
- 3) The upper and main decks are out of line and deformed.
- ~~4) The upper and main decks are out of line and deformed.~~
- 4) the stanchions have to be completely verified.
- 5) the hatch coamings of the upper and main decks are out of line.
- 6) at last, and this is worse, the joints of the shell plating starboard side aft have given way to a certain length, leaving the presumption that other rivets are loose at different places, which at sea with heavy weather, with the normal twisting of the vessel could cause leakages impossible to repair at sea and putting the vessel into danger.

Fourth Phase

The pivoting of the vessel along its after water lines is finished; she is completely blocked resulting from the chock of one of the propeller blades against the quay, which a sudden turning of the propeller shaft ~~and~~ the breaking of the pinion wheel of the engine turning gear and straining the propeller shaft, the rotation of the shaft ends when two blades of the propeller come in contact with the vertical part of the quay. (fig.3).

At this moment the pushing is at its maximum as no after part of the ship can move anymore.

After exposing these facts, it is easy to give in a certain way, the explanation of the deviation of the keel, witnessed when the vessel was in dry dock.



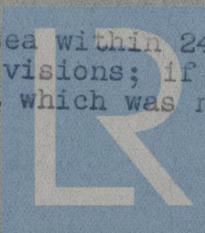
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- 1) The deviation of the keel goes from port to starboard, i.e. in the contrary direction as the push of the colliding vessel and in the contrary direction of the deviation of the stern frame. This remark gives already a first indication to point out that the collision can be a cause of the deviation of the keel, it would indeed be surprising that the keel was bend before the collision in the same direction as this collision could have caused.
- 2) The sternframe, as known and as indicated on (Fig.4) is solidly fitted to the keel as required by the rules of naval construction, it is therefore solid with the keel, therefore any displacement in one way or another of the stern frame from a vertical line passing the axis of the vessel must affect the keel on a length according the intensity of push.
- 3) The stern frame through the medium of the frames and their connections, receiving a very strong push at the moment of the sudden stop of the vessel against the quay, forcibly leans to port side even more as the push takes place at the upper part the shell which is pushed much lower on port side against the quay wall (fig 6).
- 4) The line of shafting \mathcal{L} (fig 6) being buttressed against the quay by two propeller blades S and S' , the stern frames which occupied a vertical position $D D' Q$ (Q being the keel) cannot lean over than by turning on the line of shafting R to take the position $E E'$.
- 5) The stern frame being solid to the keel, the latter will forcibly take the position Q' corresponding to the rotation of the sternframe EE' or at least a position approaching to that, taking into account ~~of~~ the possible twisting.
- 6) This assertion is checked by the inclination of the stern frame as compared with a vertical line passing through the axis of the vessel, the deviation of the keel being nearly proportionally to the leaning over of the stern frame and the length of the lever arm from the axis of the propeller shaft to the keel.
- 7) For these causes the line of shafting has no reason to be deviated, neither ~~xxxxxxx~~ is there any reason for the rudder not working freely, all being displaced in one bloc.

CONCLUSION

For these reasons, the Owners cannot accept local repairs which would not only be against the rules of naval construction, but would also depreciate the ~~value~~ commercial value of the vessel. The vessel must be put in the same condition as she was in before the collision and this cannot be debated. The vessel "LE PHOQUE" was before the collision in a perfect seaworthy condition, with the necessary crew on board to keep her in good condition. She was fit to be put in service at sea within 24 hours, just the time to complete the crew and her provisions; if "Le Phoque" was laid up, it was because of the freight which was not remunerator since a certain time.



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Moreover the "LE PHOQUE", as can be verified, is classed with Lloyd's Register * 100A1, this class must be maintained.

The vessel must therefore be put in the same condition as she was in before the collision, examining moreover the vessel in all its parts to ascertain if the chock has not affected other parts of the vessel than those at the after side.

The Ingénieur of Cie. Marchande Export
Import

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