

s.s. "POLSEVERA" ex "CUSTODIAN", now to be named "N.T. NIELSEN ALONSO".

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Rule dimensions : 482' x 57' x 34.83' to second deck.  
42.33' to awning deck.  
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This steamer is classed 100A1 "Awning Deck".

Mr. Christensen, of Messrs. Arnesen, Christensen & Smith, has called at this Office and stated that it is proposed to convert <sup>her</sup> ~~this steamer~~ for carrying whale oil in bulk, in a similar manner to the case of the s.s. "LANCING" recently dealt with.

Whale oil is proposed to be carried in four deep tanks aft, between the after peak bulkhead and the after bulkhead of the deep ballast tank. These tanks will be divided ~~longitudinally~~ by two longitudinal bulkheads, extending from the existing twin screw shaft tunnels to the lowest deck.

It is also proposed to carry <sup>whale oil</sup> ~~oil fuel~~ in the deep tank abaft the engine room, and in four tanks extending from the forward end of the boiler space, to a cofferdam between frames 163 and 165. These tanks forward of the boiler space will be divided by a middle line bulkhead, and will extend to the lowest deck.

In addition, it is proposed to carry oil fuel in three tanks extending from the cofferdam above mentioned to the fore peak bulkhead, these tanks being also divided by a middle line bulkhead, and extending to the lowest deck. The fuel oil is intended to be supplied to the small vessels which accompany the whale oil factory, and which are intended for actually catching the whales.

The steamer is built on the web frame system throughout, which facilitates the work of conversion, and the lower steel deck, which will form the crown of the tanks, is supported by beams fitted at every frame.

W107-0178 (1/5)



Mr. Christensen desired that, as in previous cases, he should be informed generally as to the scantlings which could be approved, in order that he might embody these in his specification, which he is preparing on behalf of the new Owners.

It is submitted Mr. Christensen be informed, as requested, that the following scantlings and arrangements can be approved. It must be understood, however, that these are to some extent approximate, as the measurements have had to be taken from the original small scale plans, and also that the contours of the new bulkheads towards the end of the ship are not exactly known. The scantlings and arrangements may therefore require some adjustment, when the working plans are received from the firm who will undertake the alterations.

Subject to the above provisos, the new transverse whale oil bulkheads may be constructed as follows :-

Blkd. No.	Plating	Stiffeners	Brackets top & bottom
23	.30-.39"	15 x 4 x 4 x .70 channels, spaced 24"	49½" x .44 flanged 3½"
51	.30-.38"	15 x 4 x 4 x .70 channels, spaced 24"	37½" x .44 flanged 3½"
134	.30-.38"	15 x 4 x 4 x .64 do.	37½" x .44 flanged 3½"
154	.30-.39"	15 x 4 x 4 x .72 do.	43½" x .44 flngd. 3½"
163	.30-.39"	15 x 4 x 4 x .74 do.	49½" x .44 flanged 3½"

New whale oil middle line bulkhead, fore body.

Frames	Plating	Stiffeners	Brackets top & bottom
125-134	.30-.38"	15 x 4 x 4 x .64" spaced 27"	37½" x .44 flanged 3½"
134-143	.30-.38"	15 x 4 x 4 x .70" spaced 27"	37½" x .44 flanged 3½"
143-154	do.	do. do.	do. do.
154-165	.30-.39"	15 x 4 x 4 x .74" do.	49½" x .44 flanged 3½"



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W107-0178 (2/5)



New whale oil longitudinal bulkheads abaft tunnels in after body:-

Frames	Plating	Stiffeners	Brackets top & bottom
8-23	.30-.32"	10 x 3½ x .60 B.A. spaced 27"	25" x 36 flanged 2½"
23-35	do.	do.	do. do.
35-51	do.	10 x 3½ x .52	do. do.
51-67	.30"	9½ x 3½ x .52 B.A.	24" x 34 flanged 2¼"

The additional stiffening required to the existing transverse bulkheads in the whale oil tanks cannot be exactly stated, as the <sup>arrangement</sup> position of the existing stiffening is not exactly known. The arrangements may be, however, on the following lines, taking the bulkhead at frame 143 as an example:-

The existing horizontal girder if 24" in depth by .35" in thickness, with 12 x .65" <sup>thick</sup> plate on its inner edge, could be approved if adequately supported by brackets, and also efficiently attached by flanged brackets to the middle line bulkhead and side stringers, provided vertical webs be fitted at the half breadth of the ship about 48" in depth by .46" in thickness, with a 9 x 3½ x .50" bulb angle face bar and with double riveted connections to the bulkheads.

The vertical web must be attached to the deck and inner bottom by efficient flanged brackets, and <sup>must</sup> also have efficient supporting brackets. The vertical stiffeners if consisting of 9" flanges spaced 30" apart, would require to be re-inforced by 3 x 3 x .40" reversed angles on their inner edges, and to be efficiently bracketed to the deck and inner bottom plating.

In view of the additional support afforded to the decks by the new transverse and longitudinal bulkheads, it is considered that only local re-inforcement <sup>in the bulk</sup> might be necessary, but this point will be dealt with when the working plans are received.

*The deck tank abaft the machinery space is structurally suitable for carrying whatnot.*  
The arrangements for making the deck at the crown of the tank oiltight in way of the whale oil tanks may be as in previous similar vessels, namely by fitting vertical plates <sup>inside the frames</sup> 18 x .40, filled at the back with cement.

The tunnel will require additional stiffening as arranged in previous cases.

The web frames at the ship's sides must be efficiently connected to the inner bottom plating by large gusset plates, and the existing side stringers must be connected to the bulkheads by large flanged brackets.

The above arrangements are approved with the whale oil hatchways 2'6" in height, as arranged with Mr. Christensen,



and if the height of these is increased the above scantlings <sup>and arrangements</sup> might require modification.

With regard to the oil fuel tanks to be fitted at the forward end of the ship, the scantlings and arrangements should be generally as follows, (the maximum pressure head being arranged to be 8' above the crown of the tank) taking the transverse bulkhead at frame 187 as an example :-

Plating .30-.40". Vertical stiffeners 9 x 3 x .40" B.A. spaced 24", efficiently bracketed at top and bottom. <sup>7th</sup> Horizontal girder in line with upper side stringer (about 8 ft. below the lower deck): - Plating ~~21~~ 21" x .40" with a 7½" x 3 x .46" bulb angle on the face.

Bottom horizontal girder in line with the third side stringer from the top, (about 18' below the deck), plating ~~33~~ 33" x .40" with a 9" x 3" x .50" face bulb angle.

These horizontal girders must be efficiently supported by brackets, and connected to the side stringers and to the ~~smaller~~ horizontal girders on the middle line bulkhead <sup>and middle line bulkhead plating</sup> by large flanged brackets. <sup>and bracketed</sup> The frames must be cut at the lower deck in way of the oil fuel compartments.

The flash point of the oil fuel must be above 150°F., and the Rules for the burning and carrying of oil fuel must be complied with so far as they apply.

The question of the riveting has been discussed generally with Mr. Christensen, having in view the special service of the ship, and the arrangements approved in previous similar cases, which are stated to have proved satisfactory, but these matters will be further dealt with when the working plans are received.

Mr. Christensen stated that the work would be carried out in Norway, Holland, or possibly at Middlesbrough.

It was specially desired that if the work is to be done abroad the Surveyors should be informed, in order to facilitate the work, that it would not be necessary for them



to submit plans of details which do not affect the strength and seaworthiness of the ship, and these matters also will receive attention when the plans of structural alterations come to hand, and it is known where the work is to be carried out.

Mr. Christensen specially desired that his Office, 2, James Cardiff, Cardiff, might be informed as above as quickly as possible.

One copy of the preliminary plan (submitted in duplicate) indicating the positions of the new bulkheads, should be returned and one copy retained.

With regard to the plan (in duplicate) showing the alterations to the stern, Mr. Christensen should be informed that the arrangements could be approved generally in principle, matters of detail and questions regarding the support of the various decks and flats being dealt with when the working plans are received.

Mr. Christensen further left a plan showing the arrangements of the boilers on the upper deck, which are intended for boiling the blubber, entrails, bones, etc. These boilers will be arranged on the upper deck and will protrude through the awning deck. In order that the seaworthiness of the ship may be maintained, the existing plate bulwarks will be carried up to about 9 feet above the awning deck in the vicinity of these boilers, this side plating being adequately supported and made watertight. Fore and aft watertight bulkheads will also be arranged inboard, with a flat above. These details will also be dealt with when the working plans are submitted.

The alterations on deck may affect the equipment, depending on the extent of the new erections.

On completion of the alterations a suitable notation will be made denoting that the vessel will carry whale oil, and also fuel oil in bulk.

W107-0178(5/5)

*Mr. 26/1/26  
2 plans  
3 retained*

*26 26/1*



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