

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 12 MAR 1931

Date of writing Report 6<sup>th</sup> March 1931. When handed in at Local Office 10 Port of Copenhagen

No. in Survey held at Elsinore Date, First Survey 8<sup>th</sup> November 1930 Last Survey 26<sup>th</sup> February 1931

Reg. Book. 89470 on the *Steel S. ALEXANDRA* (Number of Visits 25.) Gross 1462.61 Tons Net 765.92

Built at Elsinore By whom built *Niels Helsingørsk Jernskibs- og Maskinbyggeri* Yard No. 200 When built 1931

Engines made at Elsinore By whom made *Niels Helsingørsk Jernskibs- og Maskinbyggeri* Engine No. 279 when made 1931

Boilers made at Elsinore By whom made *Niels Helsingørsk Jernskibs- og Maskinbyggeri* Boiler No. 799 when made 1931

Registered Horse Power 1700 I.H.P. Owners *Det Forenede Dampskibs Selskab* Port belonging to *Esbjerg*

Nom. Horse Power as per Rule 282 Is Refrigerating Machinery fitted for cargo purposes *yes* Is Electric Light fitted *yes*

Trade for which Vessel is intended *Export trade between Denmark and U.S.*

ENGINES, &c.—Description of Engines *Simple Compound Engines* Revs. per minute 90.

Dia. of Cylinders  $2 \times 47\frac{1}{2}$  in. —  $2 \times 100$  in. Length of Stroke 1000 in. No. of Cylinders 2 H.P. + 2 L.P. No. of Cranks 4

Crank shaft, dia. of journals as per Rule 11.78 in. Crank pin dia. 320 in. Crank webs Mid. length breadth 522 in. Thickness parallel to axis 190 in. shrunk Thickness around eye-hole 147.5 in.

Intermediate Shafts, diameter as per Rule 11.22 in. as fitted 11 in. Thrust shaft, diameter at collars as per Rule 11.78 in. as fitted 320 in.  $\sim 12.6$  in.

Tube Shafts, diameter as per Rule 13.48 in. as fitted 13 in. Screw Shaft, diameter as per Rule 13.48 in. as fitted 13 in. Is the *tube* shaft fitted with a continuous liner? *No*

Bronze Liners, thickness in way of bushes as per Rule 13.48 in. as fitted 13 in. Thickness between bushes as per Rule 13.48 in. as fitted 13 in. Is the after end of the liner made watertight in the propeller boss? *yes* If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner? *yes*

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive? *yes*

If two liners are fitted, is the shaft lapped or protected between the liners? *yes* Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft? *yes* If so, state type *Pidwell's patent oil retaining gland* Length of Bearing in Stern Bush next to and supporting propeller 5' 8 3/4"

Propeller, dia. 13' - 6" Pitch 16' - 0" No. of Blades 4 Material *Manganese bronze* Moveable *No* Total Developed Surface 57.2 sq. feet

Feed Pumps worked from the Main Engines, No. 2 Diameter 110 in. Stroke 250 in. Can one be overhauled while the other is at work? *yes*

Bilge Pumps worked from the Main Engines, No. 2 Diameter 110 in. Stroke 250 in. Can one be overhauled while the other is at work? *yes*

Feed Pumps { No. and size 3 off 6"  $\times$  8 1/2"  $\times$  18" Pumps connected to the { No. and size 1 ballcock pump 9"  $\times$  10"  $\times$  10" donkey engine pump 6"  $\times$  8 1/2"  $\times$  18" How driven *Steam driven* Main Bilge Line { How driven *Steam driven* 2 main engine bilge pumps: 110 in.  $\times$  250 in. *Steam driven*

Ballast Pumps, No. and size 1 off 9"  $\times$  10"  $\times$  10" Lubricating Oil Pumps, including Spare Pump, No. and size 2

Are two independent means arranged for circulating water through the Oil Cooler? *yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 4 off 3" branch suction, 2 off 3" and 1 off 3 1/2" direct suction

In Holds, &c. No 1 hold: 2 off 2 1/2", No 2 hold: 2 off 2 1/2", No 3 hold: 2 off 2 1/2", No 4 hold: 2 off 2 1/2", From tunnel fore: 1 off 2 1/2"

Tunnel well: 1 off 2 1/2"

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 off 6" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 off 6" - 1 off 3 1/2" - 2 off 3"

Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes? *yes*

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges? *yes*

Are all Sea Connections fitted direct on the skin of the ship? *yes* Are they fitted with Valves or Cocks? *Valves except boiler blow off cock*

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates? *yes* Are the Overboard Discharges above or below the deep water line? *yes*

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel? *yes* Are the Blow Off Cocks fitted with a spigot and brass covering plate? *yes*

What Pipes pass through the bunkers? *Bilge pipes from forward bilge tanks* How are they protected? *With steel plates*

What pipes pass through the deep tanks? *yes* Have they been tested as per Rule? *yes*

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times? *yes*

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another? *yes* Is the Shaft Tunnel watertight? *yes* Is it fitted with a watertight door? *yes* worked from grating at top of engine

MAIN BOILERS, &c.—(Letter for record 5) Total Heating Surface of Boilers 3960 square feet.

Is Forced Draft fitted? *yes* No. and Description of Boilers 2 off single ended return multiburner Working Pressure 215 lbs per sq. in. 2SB

IS A REPORT ON MAIN BOILERS NOW FORWARDED? *yes*

IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded? *yes*

PLANS. Are approved plans forwarded herewith for Shafting? *yes* Main Boilers *yes* Auxiliary Boilers *yes* Donkey Boilers *yes*

(If not state date of approval)

Superheaters *yes* General Pumping Arrangements *yes* Oil fuel Burning Piping Arrangements *yes*

SPARE GEAR. State the articles supplied:—2 pair crosshead brasses with bolts & nuts, 1 pair of connecting rod bottom end braces with bolts and nuts, 1 pair of main bearing brasses with bolts and nuts complete, 1 set of coupling bolts, 2 set of valves for feed pumps, 1 set of valves for bilge pumps, 1 set of H.P. piston rings, 1 set of L.P. piston rings, 2 H.P. poppet valves, 2 L.P. poppet valves, 4 valve spindles, 2 rollers with bolts, 6 springs each size for valve gear 1 spring for H.P. safety valve, 1 spring L.P. safety valve, 1 eccentric strap and rod with bolts, 50 condenser tubes, 100 steam pipes, 1 set of valves and valve seats for sanitary pump, 1 set of valves for fresh water pump, 1 set of feed check valves and seats, 2 springs for safety valves of boilers, 17 common boiler tubes, 5 stay tubes, 34 fire bars. In quantity of assorted bolts and nuts - Iron of various sizes.

The foregoing is a correct description,  
HELSINGØRS JERNSKIBS- OG MASKINBYGGERI

Manufacturer.



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00416-004124-0141



1930: 8/11 - 11/11 - 5/12 - 8/12 - 10/12 - 16/12 - 18/12 - 19/12 - 22/12 - 27/12 - 29/12 1931: 6/1 - 9/1 - 14/1 - 16/1 - 17/1 - 21/1  
During progress of work in shops - - 28/1 - 3/2 - 9/2  
Dates of Survey while building  
During erection on board vessel - - -  
Total No. of visits 25.

Dates of Examination of principal parts—Cylinders 1930: 11/11 - 8/12 - 10/12 - 16/12 - 18/12 - 19/12 - 22/12 - 27/12 - 29/12 Slides 27/12 - 29/12 Covers 8/12 - 16/12 - 18/12 - 27/12 - 29/12  
Pistons 8/12 - 18/12 - 29/12 Piston Rods 18/12 1931: 6/1 Connecting rods 9/12 - 27/12  
Crank shaft 8/12 - 10/12 - 22/12 Thrust shaft 10/12 - 22/12 Intermediate shafts 10/12 - 18/12  
Tube shaft 10/12 - 16/12 1931: 21/1 Screw shaft 10/12 - 16/12 1931: 21/1 Propeller 21/1  
Stern tube 8/12 - 16/12 1931: 21/1 Engine and boiler seatings 8/12 - 16/12 - 22/12 Engines holding down bolts 1931: 3/2 - 9/2  
Completion of fitting sea connections 10/12 - 16/12 1931: 21/1  
Completion of pumping arrangements 27/12 1931: 6/1 - 16/1 - 21/1 - 3/2 - 7/2 Boilers fixed 1931: 3/2 - 9/2 Engines tried under steam 1931: 25/12 - 26/12  
Main boiler safety valves adjusted 1931: 26/12 Thickness of adjusting washers Port boiler: Fore 2.10 7/16 Mid 2.7 7/16 Aft boiler: Fore 2.4 7/16 Mid 2.7 7/16 Aft 2.8 7/16  
Crank shaft material *Gunmetal* Identification Mark *39464-18-12-30* Thrust shaft material *Gunmetal* Identification Mark *4.2.2.12.30*  
Intermediate shafts, material *Gunmetal* Identification Mark *39464-18-12-30* Tube shaft, material *Gunmetal* Identification Mark *4.2.2.12.30*  
Screw shaft, material *Gunmetal* Identification Mark *92074-16-12-30* Steam Pipes, material *Gunmetal* Test pressure *64.5 lb per sq in* Date of Test *1931: 1/12 - 17/12*  
Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *✓*  
Have the requirements of the Rules for the use of oil as fuel been complied with *✓*  
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *No* If so, have the requirements of the Rules been complied with *✓*  
Is this machinery duplicate of a previous case *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery has been built under Special Survey in accordance with the Rules, the approved plans, and the requirements contained in the Secretary's letters E dated 4/10-1930, 13/10-1930, 24/10-1930 and 21/1-1931.

The material used in the construction has been tested as required by the Rules as per certificates produced or by us, and the workmanship is of good description throughout.

On the trial trip the machinery and the boilers were tested under full power working conditions and found to work satisfactorily.

The special requirements for the machinery of a vessel classed with the notation "Strengthened for navigation in ice" have been complied with.

Recommend the vessel's machinery to have notation of *L.M.C. 2.31. O.G.*

The amount of Entry Fee ... £ 72.80 :  
Special *A* ... £ 1224.86 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) *£* 2.79.00 :

When applied for,

10.3.1931

When received,

14.4.1931

Committee's Minute

Assigned

WED. 8 APR 1931

+ L.M.C. 2.31

O.G.



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