

REPORT ON MACHINERY.

No. 6162
FRI. 16 III. 1909

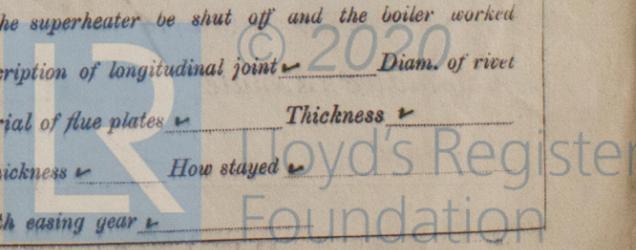
Received at London Office

Date of writing Report 11th July 1909 When handed in at Local Office 10 Port of Rotterdam
 No. in Survey held at Rotterdam Date, First Survey 5 Nov. 1908 Last Survey 10th July 1909
 Reg. Book. on the Steel S.S. Duiveland (Number of Visits 22)
 Master A. de Gel Built at Rotterdam By whom built N.V. Werf v/h Ryke & Co. When built 1909
 Engines made at Flushing By whom made Koninklyke Maatschappij - when made 1909
 Boilers made at Flushing By whom made de Schelde when made 1909
 Registered Horse Power ✓ Owners Scheepvaart & Steenkolen Maats. Port belonging to Rotterdam
 Nom. Horse Power as per Section 28 150 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Inverted Triple No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 17 1/2", 28" & 45" Length of Stroke 36" Revs. per minute 80 Dia. of Screw shaft as per rule 10 3/16" Material of steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight
 in the propeller boss yes If the liner is in more than one length are the joints burned ✓ 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 ✓ Length of stern bush 42"
 Dia. of Tunnel shaft as per rule 9 1/16" Dia. of Crank shaft journals as per rule 9 1/2" Dia. of Crank pin 10" Size of Crank webs 6 3/8" x 4 3/8" Dia. of thrust shaft under
 collars 9 3/4" Dia. of screw 12'-6" Pitch of Screw 14' No. of Blades 4 State whether moveable no Total surface 51.2 ft.
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 15 3/8" Can one be overhauled while the other is at work yes.
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 15 3/8" Can one be overhauled while the other is at work yes.
 No. of Donkey Engines 1 Sizes of Pumps 7 1/2" x 4 1/2" x 6" B 10" x 10" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Centre in well 2 1/2"; each wing 2 1/2"; tunnel 2 1/2" In Holds, &c. One 2 1/2" suction in each wing in
 forehold and in afterhold.
 No. of Bilge Injections 1 sizes 4 1/2" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes 3"
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible none
 Are all connections with the sea direct on the skin of the ship yes. Are they Valves or Cocks Both.
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes. Are the Discharge Pipes above or below the deep water line above.
 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 are carried through the bunkers none How are they protected ✓
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes.
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes.
 Dates of examination of completion of fitting of Sea Connections 5 June of Stern Tube 5 June Screw shaft and Propeller 5 June 09.
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from main deck height.

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Phoenix Act. Ges. Hoerder Verein
 Total Heating Surface of Boilers 2558 Is Forced Draft fitted no No. and Description of Boilers Two single ended.
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 8 April 09 No. of Certificate 263.
 Can each boiler be worked separately yes. Area of fire grate in each boiler 39 sq. ft No. and Description of Safety Valves to
 each boiler 2 Spring loaded Area of each valve 5.94 Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes.
 Smallest distance between boilers or uptakes and bunkers or woodwork over 12" Mean dia. of boilers 12'-15 1/16" Length 10'-1 1/2" Material of shell plates steel
 Thickness 1 1/32" Range of tensile strength 28-32 % Are the shell plates welded or flanged at Descrip. of riveting: cir. seams lap 2 x riv.
 long. seams dbl butt 5 x 2 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 1/16" Lap of plates or width of butt straps 16 5/8"
 Per centages of strength of longitudinal joint 90.9 Working pressure of shell by rules 184 lbs Size of manhole in shell 12" x 16"
 Size of compensating ring flanged. No. and Description of Furnaces in each boiler 2 Morrison's Material steel Outside diameter 4 ft
 Length of plain part top 19 1/32" Thickness of plates bottom 19 1/32" Description of longitudinal joint welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 7/8"
 Pitch of stays to ditto: Sides 8" x 8" Back 8" x 7 3/4" Top 8" x 8" If stays are fitted with nuts or riveted heads riveted Working pressure by rules 189 lbs
 Material of stays steel Diameter at smallest part 1.478 Area supported by each stay 64 Working pressure by rules 184 End plates in steam space:
 Material steel Thickness 15/16" Pitch of stays 14" x 16" How are stays secured and nuts Working pressure by rules 181 lb Material of stays steel
 Diameter at smallest part 5.41 Area supported by each stay 272 Working pressure by rules 207 Material of Front plates at bottom steel
 Thickness 15/16" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 13" x 8" Working pressure of plate by rules 180
 Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" Material of tube plates steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 8 3/4"
 Pitch across wide water spaces 13 3/4" Working pressures by rules 190 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 8" x 13 1/4" Length as per rule 32" Distance apart 8" Number and pitch of stays in each 3-8"
 Working pressure by rules 194 lb Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked
 separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet
 holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

If not, state whether, and when, one will be sent



VERTICAL DONKEY BOILER— Manufacturers of Steel ✓

No. *11* Description _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety Valves _____
 No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____
 If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____
 Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____
 Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____
 Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____
 Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 2 bolts & nuts for bottom ends, 2 for top ends; 2 main bearing bolts; 1 set of coupling bolts; 1 set of feed & bilge pump valves; 1 set of springs for each piston; a quantity of assorted bolts & nuts; Iron of various sizes, 1 stern shaft; 1 propeller; 1 feed p. plunger; 1 air- & 1 circ. p. rod; 1 eccentric strap complete; 1 set of crank pin bushes; 1 set of air p. valves; 12 condenser tubes & 25 ferrules; 6 punking bolts; 6 studs & nuts for cylinder & slide valve covers; 4 boiler check valves; 12 boiler tubes.

Koninklijke Maatschappij „DE SCHELDE“
 Scheepswaerke en Werktuigbouw

Manufacturer.

Dates of Survey while building
 During progress of work in shops— 5, 27 Nov; 15 Dec 08; 19, 30 Jan; 3, 4, 11 Febr; 8 March; 7, 8, 28 April; 21 May; 4, 5 June 09
 During erection on board vessel— 14, 22, 25, 30 June; 6, 9 and 10 July
 Total No. of visits _____

Is the approved plan of main boiler forwarded herewith yes
 pumping plan & shafting yes
 " " " donkey " " yes

Dates of Examination of principal parts—Cylinders 5/11 - 8/3 Slides 5/11 - 8/4 Covers 5/11 - 28/4 Pistons 19/1 - 28/4 Rods 5/11 - 7/4
 Connecting rods 5/11 - 7/4 Crank shaft Made Thrust shaft in Tunnel shafts Ger - Screw shaft many Propeller 28/5 - 4/6
 Stern tube 7/4 - 21/5 Steam pipes tested 25 June Engine and boiler seatings 14, 22/6 Engines holding down bolts 14, 22/6
 Completion of pumping arrangements 22/30 June Boilers fixed 22 June Engines tried under steam 6th of July
 Main boiler safety valves adjusted 6 July Thickness of adjusting washers in millimeter 1st boiler 2.1, 2.3, 5 2nd 2, 2.4 3rd 2.2, 2.4 4th 2.4, 2.5
 Material of Crank shaft steel Identification Mark on Do PA 2818 Material of Thrust shaft steel Identification Mark on Do PA 2829
 Material of Tunnel shafts steel Identification Marks on Do PA 2839 Material of Screw shafts steel Identification Marks on Do KH 4520
 " " 2840 " " 1038
 Material of Steam Pipes Steel Test pressure 360 lbs.

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

A 9 Tons evaporator fitted.

The machinery and boilers having been built in accordance with the approved plans and the Secretary's letters; Materials tested as required; the workmanship being good and all having worked in a satisfactory manner when tried under full steam we are of opinion that this vessel is eligible to be recorded in the Society's Register Book with + L.M.C. 7.09 ✓

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7.09.

Elec. light.
 JWR
 19/7/09
 ARK
 19.7.09

M. F. D. van Ollefen
J. N. Blomski
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee.. \$ 24. : When applied for.
 Special .. \$ 270. : 14.7.1909
 Donkey Boiler Fee .. \$: :
 Travelling Expenses (if any) \$ 32. : 15.7.1909

Committee's Minute TUES. 20 JUL 1909

Assigned Home 7.09

MACHINERY CERTIFICATE WRITTEN.



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Certificates (if required) to be sent to the Secretary, not to be written on or below the space for Committee's Minutes.