

# REPORT ON MACHINERY.

No. 12189

Received at London Office TUE. 14 MAR. 1922

Date of writing Report 13-3-22. When handed in at Local Office

Port of Rotterdam

No. in Survey held at Rotterdam

Date, First Survey 20 Oct 1921. Last Survey 4-3-1922.

Reg. Book.

(Number of Visits 11.)

9463. on the Steel Screw Steamer "ARENDSKERK"

Tons } Gross 7390.  
Net 4566.

Master

Built at Rostock

By whom built A.K. Gys. Neptun

When built 1914

Engines made at Rostock

By whom made A.K. Gys. Neptun

when made 1914

Boilers made at

By whom made

when made 1914

Registered Horse Power

Owners Koenigke Nedell. Scheeps. Mij.

Port belonging to Copenhagen

Tom. Horse Power as per Section 28 740

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

GINES, &c.—Description of Engines

Vertical Triple Expansion. No. of Cylinders 3. No. of Cranks 3.

Dia. of Cylinders 30 3/4 x 40 1/2 x 31

Length of Stroke 55" Revs. per minute 60

Dia. of Screw shaft as per rule 17.15" Material of screw shaft as fitted 1 1/4"

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

Is 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

If two

When shafts are fitted, is the shaft lapped or protected between the liners

Length of stern bush 8" - 7"

Dia. of Tunnel shaft as per rule 15.78" Dia. of Crank shaft journals as per rule 16.58"

Dia. of Crank pin 16 3/4" Size of Crank webs 10 5/8" x 7 3/8" Dia. of thrust shaft under

Blades 16 1/2" Dia. of screw 20" Pitch of Screw 18"

No. of Blades 4

State whether moveable Yes Total surface 112 sq ft

No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

Independent

No. of Bilge pumps 2 Diameter of ditto 4 3/4" Stroke 27 1/2" Can one be overhauled while the other is at work

Yes

No. of Donkey Engines 4

Sizes of Pumps 330 x 1225 x 610 mm, 230 x 152 x 240 mm, 230 x 260 x 305 mm

No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 4 a 3 3/4" - 1 independent tunnel 1 a 3 3/4" In Holds, &c. Hold No. I. 2 a 3 3/4" - No. II. 2 a 3 3/4" - No. III. 2 a 3 3/4" - No. IV. 2 a 3 3/4" - No. V. 4 a 3 3/4" - No. VI. 2 a 3 3/4" - No. VII. 2 a 3 3/4"

No. of Bilge Injections 1 sizes 10 1/4" Connected to condenser or to circulating pump Yes

Is a separate Donkey Suction fitted in Engine room & size Yes a 4"

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

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 below

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

How are they protected

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

Is the Screw Shaft Tunnel watertight Yes

Is it fitted with a watertight door

Yes worked from Top platform

MILLERS, &c.—(Letter for record) Manufacturers of Steel

Total Heating Surface of Boilers 11120 sq ft Is Forced Draft fitted Yes

No. and Description of Boilers 4 single ended boilers.

Working Pressure 205 lb

Tested by hydraulic pressure to 310 lb

Date of test 22-2-22

No. of Certificate

Can each boiler be worked separately Yes

Area of fire grate in each boiler 60 sq ft

No. and Description of Safety Valves to

boiler 2 spring loaded

Area of each valve 11.04 sq in

Pressure to which they are adjusted 205 lb

Are they fitted with easing gear Yes

Least distance between boilers or uptakes and bunkers or woodwork over 18" Mean dia. of boilers 15' 4" Length 12'-1" Material of shell plates

Thickness 1 3/8" Range of tensile strength ? Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams Lap 2 x riv.

Double butt diam. of rivet holes in long. seams 1 1/2" Pitch of rivets 20 1/16"

Lap of plates or width of butt straps 31" x 1 1/8"

Percentages of strength of longitudinal joint rivets 96.2% plate 92.2%

Working pressure of shell by rules 221 lb

Size of manhole in shell 11 7/8" x 15 3/4"

No. and Description of Furnaces in each boiler 3 Morrison's Material ? Outside diameter 40 1/4" 49'-2"

Length of plain part top bottom Thickness of plates crown bottom 1 1/16"

Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 231 lb

Combustion chamber plates: Material Thickness: Sides 7/16" Back 1/16" Top 1/16" Bottom 7/8"

Thickness of stays to ditto: Sides 7/8" x 7/8" Back 8" x 1/2" Top 1/2" x 7/8" If stays are fitted with nuts or riveted heads nutted

Working pressure by rules 240 lb

Material of stays Area at smallest part 207 sq in Area supported by each stay 61.40 sq in Working pressure by rules 240 lb

End plates in steam space:

Material Thickness 1 1/16" Pitch of stays 15" x 10 1/2" How are stays secured nutted Working pressure by rules 240 lb

Material of Front plates at bottom

Thickness 1 1/16" Material of Lower back plate Thickness 1" Greatest pitch of stays 13 3/8" Working pressure of plate by rules 221 lb

Working pressure of plate by rules 221 lb

Diameter of tubes 3" Pitch of tubes 5 1/2" x 5 7/8" Material of tube plates Thickness: Front 1 1/16" Back 1 1/16" Mean pitch of stays 10 1/4"

Mean pitch of stays 10 1/4"

Thickness across wide water spaces 14 3/16" Working pressures by rules 233 lb

Girders to Chamber tops: Material Depth and

Thickness of girder at centre 2 x 12" x 3/4" Length as per rule 35 7/16" Distance apart 7 1/2" Number and pitch of stays in each 3 x 7/8"

Number and pitch of stays in each 3 x 7/8"

Working pressure by rules 310 lb

Steam dome: description of joint to shell % of strength of joint

Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Description of longitudinal joint Diam. of rivet holes

Working pressure of shell by rules Crown plates Thickness How stayed

Thickness How stayed

Superheater. Type Schmidt's Date of Approval of Plan Tested by Hydraulic Pressure to

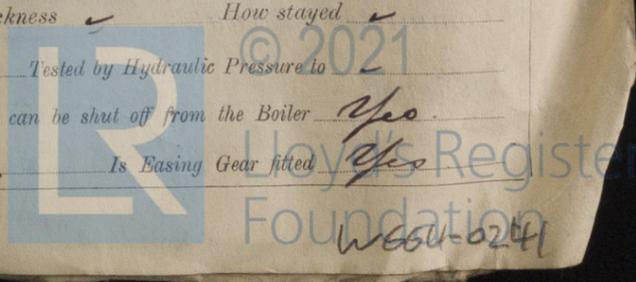
Tested by Hydraulic Pressure to

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Pressure to which each is adjusted 220 lb Is Easing Gear fitted

Is Easing Gear fitted



IS A DONKEY BOILER FITTED? *na.*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 top end bolts and nuts, 2 bottom end bolts and nuts, 2 main bearing bolts and nuts, one set of coupling bolts, one set of bilge pump valves, one set of valves for independent pumps (feed), a set of piston springs, 1 eccentric strap complete, 1 air pump rod, 1 valve spindle, 1 spare propeller shaft, 1 crankshaft, 40 condenser tubes and ferrules, 12 boiler tubes, 1 set of safety valves springs, a quantity assorted bolts and nuts and iron of various sizes.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - }  
{ During erection on board vessel - - - }  
Total No. of visits *11.*

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders *20-10-21*. Slides *20-10-21*. Covers *20-10-21*. Pistons *20-10-21*. Rods *20-10-21*. Connecting rods *20-10-21*. Crank shaft *20-10-21*. Thrust shaft *0-2-22*. Tunnel shafts *0-2-22*. Screw shaft *0-2-22*. Propeller *0-2-22*. Stern tube *0-2-22*. Steam pipes tested *13-2-22*. Engine and boiler seatings *2-3-22*. Engines holding down bolts *2-3-22*. Completion of pumping arrangements *2-3-22*. Boilers fixed *2-3-22*. Engines tried under steam *2-3-22*. Completion of fitting sea connections *0-2-22*. Stern tube *0-2-22*. Screw shaft and propeller *1-3-22* *3-5-22* *5-5-22* *7-5-22*. Main boiler safety valves adjusted *2-3-22*. Thickness of adjusting washers *2-5/8"* *4-8"* *6-5"* *8-5"*. Material of Crank shaft *Q.L.* Identification Mark on Do. *Q.L.* Material of Thrust shaft *Q.L.* Identification Mark on Do. *Q.L.* Material of Tunnel shafts *Q.L.* Identification Marks on Do. *Q.L.* Material of Screw shafts *Q.L.* Identification Marks on Do. *Q.L.* Material of Steam Pipes *Steel*. Test pressure *620 lbs.*

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 Section 49 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. *This vessels Machinery has been examined as required by the Rules, scantlings found as per report, boilers tested as required and all found in order, the whole found in a good working condition when tried under steam and I am of Opinion that this vessel is eligible to be recorded in the Society's Register Book with L.M.C. 3-22.*

The Rotterdam Surveyors.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ *600.00* When applied for, 19...  
Special ... £ : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ *4.00* When received, *3/4/22*

Committee's Minute *FRIDAY MAR. 24 1922*  
Assigned *L.M.C. 3.22*  
*F.D. O.L.*

*J.H. Bourne*  
Engineer Surveyor to Lloyd's Register of Shipping

