

REPORT ON MACHINERY

No. 1285. 6

WED. - 4 APR. 1917

Received at London Office

Date of writing Report 14 March 1917 When handed in at Local Office

19 Port of Amsterdam

No. in Survey held at Amsterdam

Date, First Survey 9 August 1915 Last Survey 3 March 1917

Reg. Book.

32 in. Class the steel screw steamer Tijsselaar

(Number of Visits 54)

Master N. W. la Rooy

Built at Amsterdam

By whom built

Ned Scheepbouw Maats

Tons { Gross 5787.
Net 3611.
When built 1917.

Engines made at Amsterdam

By whom made

Werkspoor

when made 1917

Boilers made at Amsterdam

By whom made

Werkspoor

when made 1917

Registered Horse Power 536

Owners

Java China Japan Lijn

Port belonging to

Batavia

Nom. Horse Power as per Section 28 536

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders 27 1/16 x 45 1/4 x 74

Length of Stroke 51 1/16

Revs. per minute 42

Dia. of Screw shaft

as per rule 16 1/4

Material of S.M. ANNEALED

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

No

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

If two

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

Cedwalls put fitted

Length of stern bush 5' 10"

Dia. of Tunnel shaft

as per rule 13 3/8

as fitted 14 3/8

Dia. of Crank shaft journals

as per rule 14 1/2

as fitted 14 9/16

Dia. of Crank pin 14 1/16

Size of Crank webs 9 1/2

Dia. of thrust shaft under

collars 14 1/16

Dia. of screw 19 1/8

Pitch of Screw 17 to 19 ft

No. of Blades four

State whether moveable

Yes

Total surface 98 sq ft

No. of Feed pumps two

Diameter of ditto 4 1/16

Stroke 23 7/8

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps two

Diameter of ditto 4 1/16

Stroke 23 7/8

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines three

Sizes of Pumps

two duplex 8 x 10 1/2 x 21

one 5 x 7 x 12

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

In Engine Room two 2 1/4, two 2, four 3 1/2 int diam

In Holds, &c. two 2 1/4 and fourteen 3 1/2 int diam

No. of Bilge Injections one

sizes 10"

Connected to condenser to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes 3 1/2"

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

Yes

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 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 are carried through the bunkers

Suctions of forebody

How are they protected

iron casings

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 upper deck platform

BOILERS, &c.—(Letter for record R)

Manufacturers of Steel Krupp and Leeds Forge

Total Heating Surface of Boilers 7841 sq ft

Forced Draft fitted

Yes

No. and Description of Boilers Three Single Ended

Working Pressure 12.65 kg

180 lbs

Tested by hydraulic pressure to 360 lbs

Date of test 4-1-16

No. of Certificate 213-214-215

Can each boiler be worked separately

Yes

Area of fire grate in each boiler 5.76 m²

62 sq ft

No. and Description of Safety Valves to

each boiler two direct spring

Area of each valve 6.31 cm²

9.62 sq inch

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

Shipside to side

Mean dia. of boilers 4650 mm

15' 3"

Length 3570 mm

11' 8 1/2"

Material of shell plates

steel

Thickness 37

Range of tensile strength 28 to 32 ton

Are the shell plates welded or flanged

plain

Descrip. of riveting: cir. seams

double riv

long. seams

double strap

Diameter of rivet holes in long. seams 37 mm

Pitch of rivets 246 mm

Lap of plates or width of butt straps 514 mm

Per centages of strength of longitudinal joint

rivets 87.5

plate 85

Working pressure of shell by rules 15.3 kg

Size of manhole in shell 325 x 425 mm

Size of compensating ring 210 x 32 mm

No. and Description of Furnaces in each boiler 3 Morrison Impulse

Material steel

Outside diameter 1270 mm

Length of plain part top 1314 mm

Thickness of plates crown 16 mm

Description of longitudinal joint welded

No. of strengthening rings

Working pressure of furnace by the rules 14.3 kg

Combustion chamber plates: Material steel

Thickness: Sides 17 mm

Back 18 mm

Top 17 mm

Bottom 25 mm

Pitch of stays to ditto: Sides 195 x 180

Back 193 x 209

Top 188 x 225

If stays are fitted with nuts or riveted heads

riveted heads

Working pressure by rules 14.4 kg

Material of stays iron

Area at smallest part 1154.5 cm²

Area supported by each stay 209 x 195

Working pressure by rules 15.3 kg

End plates in steam space:

Material steel

Thickness 28 mm

Pitch of stay 450 x 480 mm

How are stays secured

screwed nuts

Working pressure by rules 13.36 kg

Material of stays steel

Area at smallest part 4454 cm²Area supported by each stay 2160 cm²

Working pressure by rules 15 kg

Material of Front plates at bottom steel

Thickness 24 mm

Material of Lower back plate steel

Thickness 25 mm

Greatest pitch of stays 209 x 300 mm

Working pressure of plate by rules 13.8 kg

Diameter of tubes 70 mm

Pitch of tubes 95 x 101 mm

Material of tube plates steel

Thickness: Front 24 mm

Back 22 mm

Mean pitch of stays 204 x 185 mm

Pitch across wide water spaces 365 mm

Working pressures by rules 13.6-19.8-21.1 kg

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 240 x 44 mm

Length as per rule 940 mm

Distance apart 225 mm

Number and pitch of stays in each four 180 mm

Working pressure by rules 12.8 kg

Steam dome: description of joint to shell

% of strength of joint

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

SUPERHEATER. Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

Date of Test

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

Pressure to which each is adjusted

Is Easing Gear fitted

Diameter of Safety Valve

Lloyd's Register

Foundation

W265-0136

If so, is a report now forwarded? ✓

WERKSP00R.

J. C. Hoas. Manufacturer.

Dates of Survey while building	During progress of work in shops -- 9 Aug. 8 Sept 10. 16. 20. 26 Nov. 4. 13. 30 Dec 1915. 4. 11. 21 Jan. 9. 14. 22 Feb. 6. 10. 23 During erection on board vessel -- March, 1 April, 1. 9 May, 2. 13. 27 June. 11. 19 July. 1. 7. 10 Aug. 9. 20. 23. 28 Sept 11. 19. 19 Oct. 3. 14 Nov. 4. 6. 7. 20 Dec 1916. 2. 8. 11. 23 Jan. 5. 9. 12. 15. 24. 28 Feb. 2. 3 March 1917 Total No. of visits 54 visits
	Is the approved plan of main boiler forwarded herewith Yes. ✓

" " " *donkey* " " "

Dates of Examination of principal parts—Cylinders $\frac{4}{1} \frac{12}{2} \frac{18}{3} \frac{23}{4} \frac{13}{5} \frac{18}{6}$ Heads Ditto Covers Ditto Pistons Ditto Rods Ditto
Connecting rods Ditto Crank shaft $\frac{9}{5} \frac{2}{6} \frac{17}{7} \frac{19}{8} \frac{10}{9}$ Thrust Shaft Ditto Tunnel shafts Ditto Screw shaft Ditto Propeller $\frac{10}{8} \frac{10}{9} \frac{18}{9} \frac{11}{10}$
Stern tube $\frac{18}{9}$ Steam pipes tested $\frac{4-18}{12} \frac{23}{1}$ Engine and boiler seatings $\frac{14}{11} \frac{23}{1} \frac{15}{2}$ Engines holding down bolts $\frac{15}{2}$
Completion of pumping arrangements 14 febr Boilers fixed 20 Dec Engines tried under steam 2nd March
Completion of fitting sea connections 20 Sept Stern tube 20 Sept Screw shaft and propeller 28 Sept
Main boiler safety valves adjusted 20 febr Thickness of adjusting washers 12-9-11-8.5-11.5-9^m
Material of Crank shaft $\frac{S. M. iron}{import steel}$ Identification Mark on Do. 10504 KH 3-16 Material of Thrust shaft $\frac{S. M. iron}{import steel}$ Identification Mark on Do. 10511 KH 3-16
Material of Tunnel shafts $\frac{S. M. iron}{import steel}$ Identification Marks on Do. 10512-5 KH 3-16 Material of Screw shafts $\frac{S. M. iron}{import steel}$ Identification Marks on Do. 10506-9 KH 3-16
Material of Steam Pipes $\frac{Steel}{✓}$ 10284 KH 11-15 Test pressure 540 lbs per sq inch ✓
Is an installation fitted for burning oil fuel Yes. ✓ Is the flash point of the oil to be used over 150°F. Yes. ✓
Have the requirements of Section 49 of the Rules been complied with Yes. ✓
Is this machinery duplicate of a previous case ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. *This vessel's machinery & Boilers good*

been constructed in accordance with the Society's rules & approved plans which are herewith returned to London Office. The material used in the construction is of very good quality & duly tested as required. Workmanship throughout good. Castings perfectly sound. Cylinders, casings, columns, stern tube, Condensers and Steam & Steam pipes tested under hydraulic pressure with satisfactory results. Mountings &c. Boilers 3 in number tested under hydr pressure to 360 lbs per sq in found tight and no setting whatever.

Examined Engines, Boilers & Auxiliaries under Steam whilst during
seatrials found same working most satisfactory & pumps drawing
of all compartments
& complete arrangement to burn liquid ^{fuel} has been fitted although not tried
during trial trip.

We are of opinion that this vessel should be recorded in the Society's Reg. Book.

The amount of Entry Fee ...	£ 36.-	When applied for,	March 1917
Special ...	£ 561.60		
Donkey Boiler Fee ...	£ :	When received,	March 1917
Travelling Expenses (if any) £	20.10		

LMC-3.1917.
 It is submitted that
 this vessel is eligible for
 THE RECORD. + LMC 3.17. F.D.
 Fitted for oil fuel 3.17. F.P. above 150°F.

Committee's Minute

Assigned

ute 152. 1517
+ L. MC 3. 17 J. D
Dipped for Oil Fuel 3. 17. 3. P. above 150° F

MACHINERY CERTIFICATE
WRITTEN.

Lloyd's Register
Foundation