

REPORT ON MACHINERY

No. 91B

No. in Survey held at

Göteborg

Date, first Survey 1 Sept 1883

(Received at London Office 21/7/84)

Last Survey 10th Juli 1884

(Number of Visits)

on the New Steel S/s "Thorsten"

Tons 1666/1245

Master C. F. Pettersson

Built at

Lindholmen Works

When built 18-83-84

Engines made at Motala Works

By whom made

Motala Långs

when made 1884

Boilers made at

J. J.

By whom made

J. J.

when made J. J.

Registered Horse Power 330

Owners

S/s Nav Comp Mule

Port belonging to

Göteborg

ENGINES, &c.—

Description of Engines Inverted, two cylinders, compound

Diameter of Cylinders 15" x 41" Length of Stroke 41" No. of Rev. per minute 70 Point of Cut off, High Pressure 35:45% Low Pressure 45:50%

Diameter of Screw shaft 12 3/16" Diameter of Tunnel shaft 11 3/8" Diameter of Crank shaft journals 12 3/16" Diameter of Crank pin 12 3/16" size of Crank webs 14 1/8" x 7 3/8"

Diameter of screw 14" Pitch of screw 20" No. of blades 4 state whether moveable No total surface 154 sq feet

No. of Feed pumps 2 diameter of ditto 4 3/8" Stroke 19" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 diameter of ditto 4 3/8" Stroke 19" Can one be overhauled while the other is at work Yes

Where do they pump from each compartment

No. of Donkey Engines 3

Size of Pumps 2 pieces 4 1/2" x 8" double 4 1/2" x 8" single

Where do they pump from 2 from each compartment

for feeding the boilers

Are all the bilge suction pipes fitted with roses Yes

Are the roses always accessible Yes

Are the sluices on Engine room bulkheads always accessible Yes

No. of bilge injections 1 and sizes 10"

Are they connected to condenser, or to circulating pump to circulating pumps

How are the pumps worked by Levers from the crossheads

Are all connections with the sea direct on the skin of the ship Yes

Are they Valves or Cocks Valves

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 Steam- and water pipes

How are they protected by iron tunnel

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock 1884

Is the screw shaft tunnel watertight Yes

and fitted with a sluice door Yes

worked from Upper deck

BOILERS, &c.—

Number of Boilers 4

Description

Horizontal multitubular

Working Pressure 80 lbs

Tested by hydraulic pressure to 160 lbs

Date of test 19/9 1883 of Port boilers 2 1/2 of Starboard boilers

Description of superheating apparatus or steam chest Cylindrical with half spherical ends

Can each boiler be worked separately Yes

Can the superheater be shut off and the boiler worked separately —

No. of square feet of fire grate surface in each boiler 42.25

Description of safety valves Adams Patent Spring

No. to each boiler 2

area of each valve 16 1/2

Are they fitted with easing gear Yes

No. of safety valves to superheater —

area of each valve —

are they fitted with easing gear —

Smallest distance between boilers and bunkers or woodwork about 4 inches

Diameter of boilers 10' 5 1/8" Length of boilers 9' 6" description of riveting of shell long. seams double butt straps circum. seams double lap joints

Thickness of shell plates 10 1/16" diameter of rivet holes 1 1/16" whether punched or drilled drilled pitch of rivets 2 3/4"

Thickness of plating 5" percentage of strength of longitudinal joint 68%

working pressure of shell by rules 82 lbs

No. of manholes in shell 17" x 11" size of compensating rings 4 1/2" x 1"

No. of Furnaces in each boiler 2 outside diameter 39" length, top 6' 9" bottom 8' 9"

Thickness of plates 8 1/16" description of joint Single Lap joint if rings are fitted Yes greatest length between rings 5.66

Working pressure of furnace by the rules 88 lbs

Combustion chamber plating, thickness, sides 7 1/16"

back 7 1/16"

top 7 1/16"

Thickness of stays to ditto, sides 7 3/8"

back 7 3/8"

top 7 3/8"

Are stays fitted with nuts or riveted heads riveted heads

working pressure of plating by rules 81 lbs

Diameter of stays at smallest part 1 1/2"

working pressure of ditto by rules 108 lbs

Plating in steam space, thickness 11 1/16"

pitch of stays to ditto 13 3/8"

Are stays secured double nuts and washers

Working pressure by rules 80 lbs

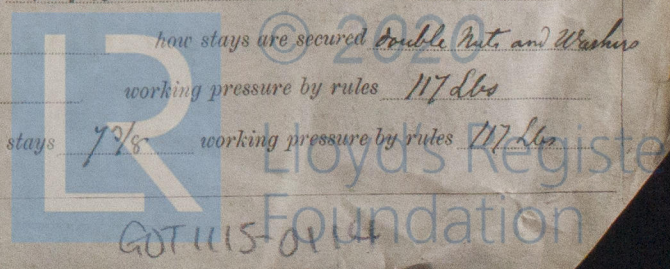
diameter of stays at smallest part 2 3/16"

working pressure by rules 117 lbs

Bottom plates at bottom, thickness 8 1/16"

Back plates, thickness 8 1/16"

greatest pitch of stays 7 3/8" working pressure by rules 117 lbs



Diameter of tubes $3\frac{1}{2}$ pitch of tubes $4\frac{1}{8}$ thickness of tube plates, front $\frac{11}{16}$ back $\frac{13}{16}$
How stayed Stay tubes pitch of stays $13\frac{1}{2}$ width of water spaces $1\frac{1}{8}$
Diameter of Superheater or Steam chest $4'-2"$ length $7'$
Thickness of plates $\frac{11}{16}$ description of longitudinal joint Single lap joint diameter of rivet holes $\frac{11}{16}$ pitch of rivets $2\frac{3}{4}$
Working pressure of shell by rules Diameter of flue thickness of plates
If stiffened with rings distance between rings Working pressure by rules
End plates of superheater, or steam chest; thickness $\frac{9}{16}$ How stayed 2 pieces wrought iron stays 3" diameter
Superheater or steam chest; how connected to boiler Valves and Pipes
DONKEY BOILER— Description Shell tubular, circular, horizontal
Made at Linschoten Works By whom made Metala Longe when made 1883
Where fixed in Middle dock working pressure 80 lbs Tested by hydraulic pressure to 160 lbs No. of Certificate
Fire grate area 8.75 Description of safety valves Common No. of safety valves 1 area of each 1.4
If fitted with casing gear If steam from main boilers can enter the donkey boiler Yes
Diameter of donkey boiler 6'-6" length 7' description of riveting Double lap joint
thickness of shell plates $\frac{7}{16}$ diameter of rivet holes $\frac{12}{16}$ whether punched or drilled punched
pitch of rivets $2\frac{1}{2}$ lap of plating $2\frac{1}{2}$ per centage of strength of joint 71%
thickness of crown plates $\frac{10}{16}$ stayed by $2\frac{3}{16}$
Diameter of furnace, top 30" bottom length of furnace 6'-6"
thickness of plates $\frac{17}{32}$ description of joint outside butt strap
thickness of furnace crown plates stayed by
Working pressure of shell by rules 86 lbs working pressure of furnace by rules 101 lbs
diameter of uptake thickness of plates $\frac{7}{16}$ ^{Donkey} thickness of water tubes $\frac{5}{16}$

The foregoing is a correct description,

Manufacturer.

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

The machinery is of a good construction and the material and workmanships of good quality.
The engine and boilers are examined by me from the commencement of the work until the final test under steam and found to be at this date viz 10th of July 1884 in good order and safe working condition and in my opinion merits the favorable consideration of the Committee to be notified in the Register Book L.M.E.

The amount of Entry Fee £ 2 : : received by me,
Special £ 36 : 10 :
Donkey Boiler 2 : 2 :
Certificate (if required) £ 5 : 5 :
To be sent as per margin 40 : 17 :
(Travelling Expenses, if any, £)
14 July 1884

Committee's Minute

TUESDAY 22 JULY 1884 18

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.