

REPORT ON MACHINERY.

No. 430

Received at London Office

THU. 5-FEB. 1920

Date of writing Report 14th Feb 1915 When handed in at Local Office 19

Port of

Bremen.

No. in Survey held at
Reg. Book.

Bremen

Date, First Survey 15th July 1910

Last Survey 15th Feb 1915

1915

on the STEEL SC SR "SONNENFELS"

(Number of Visits 24)

Gross 5848

Net 3661

Master

Built at

Bremen

By whom built

Apt. Yrs. Weser

When built

1914-15

Engines made at

Bremen

By whom made

Apt. Yrs. Weser

when made

1914-15

Boilers made at

Bremen

By whom made

Apt. Yrs. Weser

when made

1914-15

Registered Horse Power 520

Owners Deutsche Dampfschiff. Ges. Hansa

Port belonging to

Bremen

Nom. Horse Power as per Section 28 520

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 28 3/4, 46 3/4, 25 3/4

Length of Stroke 53 1/2

Revs. per minute 65

Dia. of Screw shaft

as per rule 16 7/8

Material of

screw shaft

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

If two

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

Length of stern bush 76"

Dia. of Tunnel shaft

as per rule 14 3/4

Dia. of Crank shaft journals

as per rule 15 7/8

Dia. of Crank pin 15 7/8

Size of Crank webs 10 1/4

Dia. of thrust shaft under

collars 15 7/8

Dia. of screw 19 3/16

Pitch of Screw 19'-8 1/16"

No. of Blades 4

State whether moveable yes

Total surface 102.3 sq'

No. of Feed pumps 2

Diameter of ditto 3 5/16"

Stroke 27 3/16"

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 4 5/16"

Stroke 27 3/16"

Can one be overhauled while the other is at work yes

No. of Donkey Engines 3

Sizes of Pumps 11 13/16 x 8 1/16, 13 3/4 x 15 3/4, 7 1/2 x 4 3/4

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

5 1/2"

In Engine Room 4, 3 9/16" dia

In Holds, &c. 2 in each hold 3 9/16" dia, 1 in

tunnel 3 9/16" dia

No. of Bilge Injections 1

sizes 2 7/8"

Connected to condenser or to circulating pump yes

Is a separate Donkey Suction fitted in Engine room & size yes 3 9/16" dia

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 or below the deep water line both

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 bilge suction pipes

How are they protected by wooden 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

Dates of examination of completion of fitting of Sea Connections 13/11/14

of Stern Tube 13/11/14

Screw shaft and Propeller 13/11/14

Is the Screw Shaft Tunnel watertight yes

Is it fitted with a watertight door yes

worked from upper deck

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel Friedrich Krupp, Lum. Guertelbreck Witten.

3. S. B.

Total Heating Surface of Boilers 6950

Is Forced Draft fitted yes

No. and Description of Boilers 3 cylindrical multitubular

Working Pressure 192 lbs

Tested by hydraulic pressure to 263 lbs

Date of test 21, 22, 23/9/14

No. of Certificate 84, 85, 86

Can each boiler be worked separately yes

Area of fire grate in each boiler 49.5 sq'

No. and Description of Safety Valves to

each boiler 2 spring loaded

Area of each valve 12.2 sq'

Pressure to which they are adjusted 192 lbs

Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 20"

Mean dia. of boilers 174"

Length 158"

Material of shell plates 1/2" steel

Thickness 1/2"

Range of tensile strength 28-33 tons

Are the shell plates welded or flanged flanged

Descrip. of riveting: cir. seams double butt

long. seams quadruple

Diameter of rivet holes in long. seams 1.34"

Pitch of rivets 10"

Lap of plates or width of butt strap 23-25"

Per centages of strength of longitudinal joint

rivets 100% plate 82%

Working pressure of shell by rules 202 lbs

Size of manhole in shell 14.8 x 15.8"

Size of compensating ring 41.2 x 36.5

No. and Description of Furnaces in each boiler 3 Morrison

Material 1/2" steel

Outside diameter 43.2"

Length of plain part top

Thickness of plates crown

Description of longitudinal joint welded

No. of strengthening rings

bottom

bottom

No. of strengthening rings

Working pressure of furnace by the rules 193 lbs

Combustion chamber plates: Material steel

Thickness: Sides 67

Back 67

Pitch of stays to ditto: Sides 8.3 x 7.1

Back 7.7 x 6.5

Top 8.3 x 7.9

If stays are fitted with nuts or riveted heads nuts

Material of stays steel

Diameter at smallest part 1.51, 1.55

Area supported by each stay 66.5 sq'

Working pressure by rules 212 lbs

Material steel

Thickness 1.08

Pitch of stays 15.7 x 14.6

How are stays secured double nut

Diameter at smallest part 1.51

Area supported by each stay 229 sq'

Working pressure by rules 220 lbs

Material of Front plates at bottom steel

Thickness 1.06

Material of Lower back plate steel

Thickness .94

Greatest pitch of stays 15.3 x 14.5

Diameter of tubes 3"

Pitch of tubes 4.1"

Material of tube plates steel

Thickness: Front 1.06

Pitch across wide water spaces 19"

Working pressures by rules 206 lbs

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 9.25 x 1.58

Length as per rule 34.6

Distance apart 7.9"

Number and pitch of stays in each 3-8.3"

Working pressure by rules 199 lbs

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately yes

Diameter

Length

Thickness of shell plates

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear yes

How stayed

Lloyd's Register
Founded 1800

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:—*1/3 crank shaft, 1 propeller shaft, 1 propeller blade, 2 crosshead brasses, 2 crank pin brasses, 2 crank pin & crosshead brass bolts & nuts, 2 main bearing bolts, 2 sets of coupling bolts, 1 slide valve rod, 1 set of piston rings, 1 eccentric strap complete, 1 piston rod for air pump, 1 piston & piston rod for circulating pump, 1 complete set of links, 1 set of valves for air, feed and bilge pumps, 1 set of safety valve springs, 2 % of condenser tubes, 10 % of bolts for cylinders, slide valve covers & pistons, a quantity of assorted bolts & nuts, iron of various sizes.*

The foregoing is a correct description, ✓

Manufacturer.

Dates of Survey while building
During progress of work in shops -- *1913 July 25 Nov 7, 1914 Jan 9, 22, March 3, 4, May 14, 19, June 5, 9, July 23, Aug 17, 22, 31*
During erection on board vessel -- *Sept 4, 8, 11, 15, 21, 22, 30, Oct 10, 14, 23, 28, Nov 16.*
Total No. of visits *39.*

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *7/9/13, 10/10/14* Slides *22/1/14* Covers *27/1/14* Pistons *27/1/14* Rods *27/1/14*

Connecting rods *27/1/14* Crank shaft *23/7/14* Thrust shaft *9/6/14* Tunnel shafts *17/8/14* Screw shafts *5/6/14, 13/11/14* Propeller *14/5/14*

Stern tube *22/8/14, 13/11/14* Steam pipes tested *19/11/14* Engine and boiler seatings *8/9/14* Engines holding down bolts *22/8/14*

Completion of pumping arrangements *13/1/15* Boilers fixed *19/4/14* Engines tried under steam *15/2/15*

Main boiler safety valves adjusted *25/1, 30/1, 10/2/15* Thickness of adjusting washers *STARBOARD .33" CENTRE .28" PORT .29" DONKEY BOILER .34"*

Material of Crank shaft *Steel* Identification Mark on Do. *384-12-13* Material of Thrust shaft *Steel* Identification Mark on Do. *4806*

Material of Tunnel shafts *Steel* Identification Marks on Do. *663-64-65-66/67, 67* Material of Screw shafts *Steel* Identification Marks on Do. *No 14, W. S. 6, 13*

Material of Steam Pipes *Steel* Test pressure *576 lbs.*

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

These Engine and Boilers have been manufactured in accordance with the approved plans, the Secretary's letters and otherwise in conformity with the Rules.

The material and workmanship are good.

They are eligible in my opinion to be classed in the Society's Register Book with the notation of LMC 2, 15.

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 2-15. F.D.*

W.H.C.
9/2/20

The amount of Entry Fee .. *£27*
Special .. *£1 9 6*
Donkey Boiler Fee .. *£1 4 6*
Travelling Expenses (if any) *£1 2 8*

When applied for, .. 19 ..

When received, .. 19 ..

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

Committee's Minute

Assigned

no action

FRI. 17 DEC. 1920



© 2020

Lloyd's Register Foundation