

REPORT ON MACHINERY.

No. 1632

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Date of writing Report 18th Nov 1910 When handed in at Local Office 19 Port of Bremerhaven
No. in Survey held at Geestemünde Date, First Survey 9th June Last Survey 17th Nov 1910
Reg. Book. 596 on the Machinery & Boilers of the steamer S.S. Freienfels (Number of Visits) Gross 5692.66
Master J. Friedrichsen Built at Geestemünde By whom built Joh. C. Tecklenborg A.G. Tons Net 3545.18
Engines made at Geestemünde By whom made Joh. C. Tecklenborg A.G. when made 1910
Boilers made at Geestemünde By whom made Joh. C. Tecklenborg A.G. when made 1910
Registered Horse Power 517 Owners J. J. Ges. Hansa Port belonging to Bremen
Nom. Horse Power as per Section 28 517 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Two, quadr. comp. surf. condensing No. of Cylinders 4 No. of Cranks 4
Dia. of Cylinders 24 1/4 x 34 1/4 x 30 1/4 x 14 1/2 Length of Stroke 53 1/2 Revs. per minute 75 Dia. of Screw shaft as per rule 16 3/16 Material of screw shaft as fitted 16 7/16
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 — 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 10 1/8
Dia. of Tunnel shaft as per rule 13 1/2 Dia. of Crank shaft journals as per rule 14 1/4 Dia. of Crank pin 14 1/2 Size of Crank webs 9 1/2 Dia. of thrust shaft under collars 14 1/4 Dia. of screw 228 7/16 Pitch of Screw 240 7/16 No. of Blades 4 State whether moveable Yes Total surface 103.98
No. of Feed pumps 2 Diameter of ditto 3 3/4 Stroke 27 9/16 Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 27 9/16 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 3 Sizes of Pumps 13 1/2 x 15 1/2 x 9 1/2 x 5 1/2 x 7 1/4 x 4 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 x 3 1/2 diam. In Holds, &c. 2 in each hold a 3 1/2 diam. In tunnel 1 a 3 1/2 diam.
No. of Bilge Injections 1 sizes 8 Connected to condenser, or 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 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 Bilge suction How are they protected wooden boxes
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 15.8.10 of Stern Tube 7.8.10 Screw shaft and Propeller 10.8.10
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Engine room also main deck

BOILERS, &c.—(Letter for record No) Manufacturers of Steel Friedr. Krupp & Rheinische Stahlwerke
Total Heating Surface of Boilers 6780 Is Forced Draft fitted Yes No. and Description of Boilers 3 cylindrical multitubular
Working Pressure 213 Tested by hydraulic pressure to 285 Date of test 26.7.6.8.9.10.12 No. of Certificate 124/125/126
Can each boiler be worked separately Yes Area of fire grate in each boiler 53.8 No. and Description of Safety Valves to each boiler 2 spring valves Area of each valve 12.2 Pressure to which they are adjusted 213 Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 12 Mean dia. of boilers 14 2 3/4 Length 128 3/4 Material of shell plates S.H. steel
Thickness 1 3/4 Range of tensile strength 27.9-31.5 Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams double long. seams treble Diameter of rivet holes in long. seams 2 1/4 Pitch of rivets 9 1/2 Lap of plates or width of butt straps 2 1/4
Per centages of strength of longitudinal joint rivets 84.5 plate 84.1 Working pressure of shell by rules 224 Size of manhole in shell 14 1/2 x 15 1/2
Size of compensating ring 9 7/8 x 12 1/4 No. and Description of Furnaces in each boiler 3 Morison Material S.H. steel Outside diameter 40 3/4
Length of plain part top 7 7/8 bottom 2 7/8 Thickness of plates crown 4 1/4 bottom 4 1/4 Description of longitudinal joint welded No. of strengthening rings corrug.
Working pressure of furnace by the rules 260 Combustion chamber plates: Material S.H. steel Thickness: Sides 4 3/4 Back 4 3/4 Top 4 3/4 Bottom 5 1/4
Pitch of stays to ditto: Sides 8 7/8 Back 6 7/8 Top 8 7/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 222
Material of stays Iron Diameter at smallest part 1 1/4 Area supported by each stay 48.9 Working pressure by rules 238 End plates in steam space: Material S.H. steel Thickness 1 3/4 Pitch of stays 14 9/16 x 4 3/4 How are stays secured nuts Working pressure by rules 250 Material of stays S.H. steel
Diameter at smallest part 2 1/2 Area supported by each stay 206 Working pressure by rules 298 Material of Front plates at bottom S.H. steel
Thickness 1 3/4 Material of Lower back plate S.H. steel Thickness 6 3/4 Greatest pitch of stays 6 7/8 Working pressure of plate by rules 224
Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 Material of tube plates S.H. steel Thickness: Front 1 3/4 Back 5 1/4 Mean pitch of stays 8 1/2
Pitch across wide water spaces 13 3/8 Working pressures by rules 233 Girders to Chamber tops: Material S.H. steel Depth and thickness of girder at centre 10 1/4 x 1 1/2 Length as per rule 36 1/4 Distance apart 6 1/2 Number and pitch of stays in each 3 a 7 1/8
Working pressure by rules 253 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

Manufacturers of Steel

SPARE GEAR. State the articles supplied:—1 crank shaft / 1 propeller shaft / 1 crank pin brass / 1 crosshead brass / 2 crosshead bolts and nuts / 2 crank pin bolts and nuts / 2 slide valve spindle / 1 set of coupling bolts / 1 piston rod for air pump / 1 set of valve for air pump / 1 fan with shaft / 1 brass with nuts for each wire / 1 slide valve spindle for centrifugal pump / 1 set of feed and bilge pump valves / 1 set of links complete / 2 % of condenser tubes / with stuffing boxes / 2 % of boiler tubes for all boilers / 1 set of valve spring for each boiler / 6 sets of gauge glasses / 10 % of cylinder and slide valve cover bolts / 10 % of piston bolts / 1 complete eccentric trap / 1 set of piston rings for each piston / 1 set of fire bars / nuts / bolts / washers and iron of various sizes / 2 complete sets of lifting tools.

The foregoing is a correct
JOH. G. TECKLENBORG A.-G.

Manufacturer.

Dates of Examination of principal parts—Cylinders 27.7 & 28.7 Slides 28.7 Covers 26.7 Pistons 26.7 Rods 26.7
Connecting rods 26.7 Crank shaft 30.7 Thrust shaft 30.7 Tunnel shafts 10.8 Screw shaft 2.8 Propeller 16.8
Stern tube 2.9 Steam pipes tested 28.10 Engine and boiler seatings 27.6 Engines holding down bolts 11.10
Completion of pumping arrangements 7.11 Boilers fixed 11.10 Engines tried under steam 12.11
Main boiler safety valves adjusted 12.11 Thickness of adjusting washers J.B. 4.0. 0.45" alt. 0.43" / M.B. 4.0. 0.42" alt. 0.38" 58.40.37.20.0.
Material of Crank shaft Steel Identification Mark on Do. 5652PA.4.10 5686KH 7.10 Material of Thrust shaft Steel Identification Mark on Do. 6618PA.1
Material of Tunnel shafts Steel Identification Marks on Do. 5468KH.5.10 6619PA.4.10 Material of Screw shafts Steel Identification Marks on Do. 5449KH.5
Material of Steam Pipes Steel 2031/2 PA.4.10 Test pressure 426 lb. 6680 PA.4.10

The boilers have been tested by hydrostatic up to 250 lbs. and were found quite tight, under steam they are also tight and the safety valves lift freely at 250 lbs. In my opinion then L. B. I. would in the future and possibly have a reputation as L. M. C. 11.10

It is submitted

this vessel is eligible
 THE RECORD. 12/1
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

F. D.

MACHINERY CERTIFICATE
WRITTEN.

+ Certified Copy
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