

REPORT ON MACHINERY.

No. 14255

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of writing Report 26th Octbr. 1914 When handed in at Local Office 19 Port of Hamburg
 in Survey held at Rostock Date, First Survey 8th Jan. 1914 Last Survey 24th October 1914
 g. Book. 84 on the Steel L. Lr. "Irngard" (Number of Visits 19)
 Master C. Haenschmidt Built at Rostock By whom built Mt. Ges. Neptun Tons { Gross 3816
 Engines made at Rostock By whom made Mt. Ges. Neptun when made 1914 Net 2304
 Boilers made at Rostock By whom made Mt. Ges. Neptun when made 1914
 Registered Horse Power 452 Owners Hamburg Bremer Afrika Linie Port belonging to Bremen
 om. Horse Power as per Section 28 452 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 ia. of Cylinders 25 1/16, 41, 46 7/8 Length of Stroke 47 1/2 Revs. per minute 70 Dia. of Screw shaft 14 1/4 as per rule 14 1/4 as fitted 14 1/4 Material of Steel
 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
 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
 ers are fitted, is the shaft lapped or protected between the liners — Length of stern bush 4 1/2
 ia. of Tunnel shaft 13 7/16 as per rule 13 7/16 as fitted 13 7/16 Dia. of Crank shaft journals 13 7/16 as per rule 13 7/16 as fitted 13 7/16 Dia. of Crank pin 13 7/16 Size of Crank webs 8 1/2 x 11 1/2 Dia. of thrust shaft under
 llars 13 7/16 Dia. of screw 17 1/2 Pitch of Screw 17 1/2 No. of Blades 4 State whether moveable yes Total surface 83.609 sq. ft.
 o. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 2 1/2 Can one be overhauled while the other is at work yes
 o. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 2 1/2 Can one be overhauled while the other is at work yes
 o. of Donkey Engines 5 Sizes of Pumps See Specification No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 4 off 3 1/2, 1 off 4, 1 off 3 1/2 from Well, 1 off 3 1/2 from Tunnel pump Holds, &c. 10 off 3 1/2, 1 off 3 1/2 from forepeak, 3 off 3 1/2, 1 off
3 1/2 and 1 off 4 from Ballast tanks.
 o. of Bilge Injections 1 sizes 7" Connected to condenser, on to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 4"
 re 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 no
 re all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves & Cocks
 re 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
 re 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
 That pipes are carried through the bunkers Forehold suction How are they protected by wood boxes
 re all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
 re the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
 ates of examination of completion of fitting of Sea Connections 25.7.14 of Stern Tube 1.8.14 Screw shaft and Propeller 25.7.14
 the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Cylinder platform

ILERS, &c.—(Letter for record 3) Manufacturers of Steel Schulz Knudt, A. G., Hückingen
 Total Heating Surface of Boilers 6393 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 3 Single ended multitubular
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 25.6.14 No. of Certificate 255, 256 & 257
 in each boiler be worked separately yes Area of fire grate in each boiler 50 sq. ft. No. and Description of Safety Valves to
 ch boiler 2 Spring loaded Area of each valve 9.84 sq. in. Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear yes
 smallest distance between boilers or uptakes and bunkers or woodwork 26" Mean dia. of boilers 13 9/16" Length 12' 6" Material of shell plates Steel
 thickness 1.32" Range of tensile strength 28-32 Tons Are the shell plates welded or flanged — Descrip. of riveting: cir. seams lap dbl. riv.
 g. seams dbl. riv. and cir. riv. Diameter of rivet holes in long. seams 1.34" Pitch of rivets 13.45" Lap of plates or width of butt straps 27.23 x 1.32"
 r centages of strength of longitudinal joint 104.9% Working pressure of shell by rules 209.75 lbs. Size of manhole in shell 14.8 x 15.7"
 e of compensating ring 276 x 3.15 x 102 No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 39.4"
 ngth of plain part 5.11" Thickness of plates 1.65" Description of longitudinal joint welded No. of strengthening rings none
 Working pressure of furnace by the rules 256 lbs. Combustion chamber plates: Material Steel Thickness: Sides .63" Back .69" Top .63" Bottom .95"
 ch of stays to ditto: Sides 7.5 x 7.8 Back 7.5 x 7.5 Top 7.5 x 7.5 If stays are fitted with nuts or riveted heads nuts & rivets Working pressure by rules 215 lbs.
 Material of stays Steel Diameter at smallest part 1.38" Area supported by each stay 58.5 sq. in. Working pressure by rules 241 lbs. End plates in steam space:
 Material Steel Thickness 1.03" Pitch of stays 14.9 x 18.1 How are stays secured Mt. Ges. Neptun Working pressure by rules 241 lbs. Material of stays Steel
 Diameter at smallest part 2.68" Area supported by each stay 270 sq. in. Working pressure by rules 218 lbs. Material of Front plates at bottom Steel
 thickness 1" Material of Lower back plate Steel Thickness .95" Greatest pitch of stays 21.5" Working pressure of plate by rules 241 lbs.
 Diameter of tubes 3" Pitch of tubes 4.25" Material of tube plates Steel Thickness: Front 1" Back .945" Mean pitch of stays 8.5"
 ch across wide water spaces 14.1" Working pressures by rules 212.25 lbs. Girders to Chamber tops: Material Steel Depth and
 ckness of girder at centre 8.65 x 1.41" Length as per rule 30.7" Distance apart 75" Number and pitch of stays in each 3-7.5"
 Working pressure by rules 221 lbs. Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked
 arately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet
 s — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 tiffened 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 —

W445-0125

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No Donkey Boiler fitted

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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	Plates
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 Propellershaft, 1 bronze propeller blade, 1/3 crankshaft, 1/2 bolts with nuts for main bearings, 2 bolts with nuts for bottom end and 4 bolts with nuts for top end & 4 1/2 top end braces, 1 slide rod for all cylinders, 3 bolts with nuts for crankshaft coupling, 6 bolts for tunnel shafts, 1 set of studs with nuts for propeller blades, 1 eccentric strap coupler, 1 eccentric sheave coupler, 1 piston rod for air pump, 1 set of valve for air pump, 1 set of piston packing rings for each cylinder, 2 pump links one for each side, 1 set of valves for feed pumps, 2 springs for safety valves for boilers, 1 spring for each escape valve for cylinders & feed pumps, 50 condenser tubes with 100 ferrules, 1 1/2 set of fire bars, large number of bolts, nuts, rivets, bar and plate iron assorted.

Aktion-Gesellschaft "Neptun"
Schiffwerft & Maschinenfabrik
 Manufacturer.

Dates of Survey while building	During progress of work in shops	During erection on board vessel	Total No. of visits	Is the approved plan of main boiler forwarded herewith
8/1, 3/2, 28/2, 3/3, 26/3, 9/4, 22/4, 15/5, 26/5, + 11/6 1914	25/6, 4/7, 18/7, 25/7, 1/8, 1/9, 23/9, 16/10 + 24/10 1914	19		yes

Dates of Examination of principal parts	Cylinders	Slides	Covers	Pistons	Rods
26/5	18/7	4/7	25/7	15/5	
Connecting rods	22/4	Crank shaft	28/2	Thrust shaft	26/3
22/4	28/2	Tunnel shafts	3/2	Screw shaft	11/6
22/4	28/2	Propeller	11/6		
Stern tube	11/6	Steam pipes tested	1/9	Engine and boiler seatings	23/9
11/6	1/9	Engines holding down bolts	23/9		
Completion of pumping arrangements	16/10	Boilers fixed	23/9	Engines tried under steam	24/10
16/10	23/9	Engines tried under steam	24/10		
Main boiler safety valves adjusted	24/10	Thickness of adjusting washers	Fore. 1/2" aft 9/16, 1 1/2, 2 1/2, 3 1/2, 4 1/2, 5 1/2, 6 1/2, 7 1/2, 8 1/2, 9 1/2, 10 1/2, 11 1/2, 12 1/2, 13 1/2, 14 1/2, 15 1/2, 16 1/2, 17 1/2, 18 1/2, 19 1/2, 20 1/2, 21 1/2, 22 1/2, 23 1/2, 24 1/2, 25 1/2, 26 1/2, 27 1/2, 28 1/2, 29 1/2, 30 1/2, 31 1/2, 32 1/2, 33 1/2, 34 1/2, 35 1/2, 36 1/2, 37 1/2, 38 1/2, 39 1/2, 40 1/2, 41 1/2, 42 1/2, 43 1/2, 44 1/2, 45 1/2, 46 1/2, 47 1/2, 48 1/2, 49 1/2, 50 1/2, 51 1/2, 52 1/2, 53 1/2, 54 1/2, 55 1/2, 56 1/2, 57 1/2, 58 1/2, 59 1/2, 60 1/2, 61 1/2, 62 1/2, 63 1/2, 64 1/2, 65 1/2, 66 1/2, 67 1/2, 68 1/2, 69 1/2, 70 1/2, 71 1/2, 72 1/2, 73 1/2, 74 1/2, 75 1/2, 76 1/2, 77 1/2, 78 1/2, 79 1/2, 80 1/2, 81 1/2, 82 1/2, 83 1/2, 84 1/2, 85 1/2, 86 1/2, 87 1/2, 88 1/2, 89 1/2, 90 1/2, 91 1/2, 92 1/2, 93 1/2, 94 1/2, 95 1/2, 96 1/2, 97 1/2, 98 1/2, 99 1/2, 100 1/2, 101 1/2, 102 1/2, 103 1/2, 104 1/2, 105 1/2, 106 1/2, 107 1/2, 108 1/2, 109 1/2, 110 1/2, 111 1/2, 112 1/2, 113 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