

# REPORT ON MACHINERY.

Received at London Office

Date of writing Report 30<sup>th</sup> Jan 1914 When handed in at Local Office Bremen Port of Bremen FEB. 3-1914

No. in Survey held at Bremen Date, First Survey 23<sup>rd</sup> April 1913 Last Survey 27<sup>th</sup> Jan 1914

Reg. Book. on the steel sc SR FRANKENFELS

Master B. v. Timler Built at Bremen By whom built Aktion Gesellschaft Weser Tons { Gross 5854 Net 3622 When built 1914

Engines made at Bremen By whom made Aktion Gesellschaft Weser when made 1914

Boilers made at Bremen By whom made Aktion Gesellschaft Weser when made 1914

Registered Horse Power 520 Owners Teutone Dampftr. fahrts Ges. Hama 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 surface condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 28 3/4, 46 7/8, 75 9/16 Length of Stroke 53 15/16 Revs. per minute 65 Dia. of Screw shaft 16 5/32 Material of 1/2 in. steel

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 yes 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 yes

If two liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 76

Dia. of Tunnel shaft 14 3/4 Dia. of Crank shaft journals 15 17/32 Dia. of Crank pin 15 9/16 Size of Crank webs 10 1/4 Dia. of thrust shaft under collars 15 9/16

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 ft

No. of Feed pumps 2 Diameter of ditto 3 15/16 Stroke 22 9/16 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 15/16 Stroke 22 9/16 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 11 3/16 x 8 1/16, 13 3/4 x 15 3/4, 2 1/8 x 4 3/4, 2 3/8 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 - 3 9/16 dia In Holds, &c. 2 in each hold - 3 9/16 dia. 1 in Tunnel

No. of Bilge Injections 1 sizes 7 7/8 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes - 3 9/16

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 9.12.13 of Stern Tube 12.12.13 Screw shaft and Propeller 18.12.13

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper deck

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Friedr. Krupp A.G., Guss- und Schmiedewerke, Bochum, Westphalen

Total Heating Surface of Boilers 6950 Is Forced Draft fitted yes No. and Description of Boilers 3 cylindrical multibular

Working Pressure 192 lbs Tested by hydraulic pressure to 263 lbs Date of test 10. Oct 1913 No. of Certificate 67, 68, 69

Can each boiler be worked separately yes Area of fire grate in each boiler 49.5 sq ft No. and Description of Safety Valves to each boiler 2 spring loaded

Area of each valve 12.2 sq in 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 in Mean dia. of boilers 174 in Length 153 in Material of shell plates 1/2 in. steel

Thickness 1.3 in Range of tensile strength 28-33 ts Are the shell plates welded or flanged yes Descrip. of riveting: cir. seams double

long. seams quadruple Diameter of rivet holes in long. seams 1.34 in Pitch of rivets 10 in Lap of plates or width of butt straps 23.2 in

Per centages of strength of longitudinal joint rivets 111.5 Working pressure of shell by rules 207 lbs Size of manhole in shell 11.8 x 15.8 in

plate 82 Size of compensating ring 41.2 x 36.5 in No. and Description of Furnaces in each boiler 3 Morrison Material 1/2 in. steel Outside diameter 43.2 in

Length of plain part top Thickness of plates bottom .61 Description of longitudinal joint welded No. of strengthening rings yes

Working pressure of furnace by the rules 198 lbs Combustion chamber plates: Material 1/2 in. steel Thickness: Sides .67 Back .67 Top .67 Bottom .82

Pitch of stays to ditto: Sides 8.3 x 7.1 Back 7.7 x 7.65 Top 8.3 x 7.9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 234 lbs

Material of stays 1/2 in. steel Diameter at smallest part 1.516 in Area supported by each stay 65.5 sq in Working pressure by rules 217 lbs End plates in steam space:

Material 1/2 in. steel Thickness 1.08 in Pitch of stays 1.52 x 1.46 How are stays secured double nuts Working pressure by rules 240 lbs Material of stays 1/2 in. steel

Diameter at smallest part 2.75 in Area supported by each stay 229 sq in Working pressure by rules 270 lbs Material of Front plates at bottom 1/2 in. steel

Thickness 1.06 in Material of Lower back plate 1/2 in. steel Thickness .94 in Greatest pitch of stays 1.52 x 2.5 in Working pressure of plate by rules 216 lbs

Diameter of tubes 3 in Pitch of tubes 4.1 in Material of tube plates 1/2 in. steel Thickness: Front 1.06 in Back .90 in Mean pitch of stays 10.3 in

Pitch across wide water spaces 14 in Working pressures by rules 206 lbs Girders to Chamber tops: Material 1/2 in. steel Depth and thickness of girder at centre 9.25 x 1.58

Length as per rule 24.6 in Distance apart 7.9 in Number and pitch of stays in each 3 - 8.3 in

Working pressure by rules 199 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately yes

Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes

Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes

If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes

Working pressure of end plates yes Area of safety valves to superheater 1 1/8 inch Are they fitted with easing gear yes

ADJUSTING WAREHOUSE  
210-0223

**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 \_\_\_\_\_ Rivets \_\_\_\_\_  
 Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ 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 and piston rod for circulating pump, 1 complete set of links, 1 set of valves for air, feed & bilge pumps, 1 set of safety valve springs, 2% of condenser tubes, 10% of bolts for cylinder, slide valve cover and piston, a quantity of assorted bolts and nuts, iron of various sizes.*

The foregoing is a correct description, *ACTIEN GESELLSCHAFT "WESER" Manufacturer.*

*W. J. Crampton*  
 Dates of Survey while building: During progress of work in shops -- 1913: April 23, May 23, June 10, July 9, 10, 15, 23, 25, Aug 22, Sep 18, Oct 3, 10, 17, 22, Nov 26, Dec 9, 12  
 During erection on board vessel --- 1913: Jul 18, 30. 1914: Jan 8, 15, 19, 23, 27.  
 Total No. of visits 24. Is the approved plan of main boiler forwarded herewith *Y/W*

Dates of Examination of principal parts—Cylinders *23/4, 23/7* Slides *23/5, 10/6* Covers *10/6, 23/7* Pistons *9/2, 23/8* Rods *29/7*  
 Connecting rods *22/8* Crank shaft *10/6* Thrust shaft *10/7* Tunnel shafts *10/7* Screw shaft *10/7* Propeller *10/7*  
 Stern tube *23/4, 18/9, 10/12* Steam pipes tested *22/10, 26/11* Engine and boiler seatings *9/12* Engines holding down bolts *3/10*  
 Completion of pumping arrangements *23/14* Boilers fixed *30/12* Engines tried under steam *22/11*  
 Main boiler safety valves adjusted *22/11* Thickness of adjusting washers *PORT BOILER 1 1/2" CENTRE BOILER 1 3/4" STAR BOILER 1 3/4" DONKEY BOILER 1 3/4"*  
 Material of Crank shafts *M. steel Identification Mark on Do. No 5675, 12912, 2917, 2882* Material of Thrust shafts *M. steel Identification Mark on Do. H.K. 5.13*  
 Material of Tunnel shafts *M. steel Identification Marks on Do. No 4734, 55, 4723, 2918, 18683, 15676* Material of Screw shafts *M. steel Identification Marks on Do. No 2275, No 8613*  
 Material of Steam Pipes *Steel rolled on the Mannesmann plan Test pressure 576 lbs*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*These Engines and Boilers have been manufactured in accordance with the approved plans, the Secretary's letter 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 1, 14.*

*Checked from "Spitzfeld"*

It is submitted that this vessel is eligible for THE RECORD. + LMC. 1. 14. F.D.  
*W. J. Crampton*  
 4/8/14  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	.. \$46 62.-	When applied for,	22.1.14
Special	.. £ 945.-	When received,	19.2.14
Donkey Boiler Fee	.. £ 43.-		
Travelling Expenses (if any)	£ 40.-		

Committee's Minute *FRI. FEB. 6 - 1914*  
 Assigned *+ LMC 1. 14*  
*F.D.*

