

# REPORT ON MACHINERY.

No. 10718.

SAT. 20 MAR 1909

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Received at London Office

of writing Report 18th March 1909 When handed in at Local Office 19 Port of Hamburg  
 in Survey held at Flensburg Date, First Survey 24th June 08 Last Survey 18th March 1909  
 Book 32 on the Shel L. L. (Number of Visits 28)

Gross 6632  
 Net 4096  
 Tons

ster H. C. Janssen Built at Flensburg By whom built Flensburger Schiffbau Ges. When built 1909  
 ines made at Flensburg By whom made Flensburger Schiffbau Ges. when made 1909  
 ilers made at Flensburg By whom made Flensburger Schiffbau Ges. when made 1909

gistered Horse Power 620 Owners Deutscher-Amerika-Petroleum Ges. Port belonging to Hamburg  
 m. Horse Power as per Section 28 620 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

GINES, &c.—Description of Engines Quadr. Expansion No. of Cylinders 4 No. of Cranks 4  
 a. of Cylinders 24, 34, 51, 74 Length of Stroke 54 Revs. per minute 72 Dia. of Screw shaft 15 3/4 Material of Steel  
 as per rule 13 5/8 as fitted 14 1/4 Dia. of Crank shaft journals 15 as fitted 15 Dia. of Crank pin 15 Size of Crank webs 3 1/2 x 9 1/2 Dia. of thrust shaft under

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 no 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 no If two

ers are fitted, is the shaft lapped or protected between the liners no Length of stern bush 5 1/2  
 as per rule 13 5/8 as fitted 14 1/4 Dia. of Crank shaft journals 15 as fitted 15 Dia. of Crank pin 15 Size of Crank webs 3 1/2 x 9 1/2 Dia. of thrust shaft under

llars 15 1/4 Dia. of screw 19 7/8 Pitch of Screw 15 1/2 No. of Blades 4 State whether moveable yes Total surface 96 sq ft  
 No. of Feed pumps 2 Diameter of ditto 4 Stroke 28 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 28 1/2 Can one be overhauled while the other is at work yes

No. of Donkey Engines 7 Sizes of Pumps see specifications No. and size of Suctions connected to both Bilge and Donkey pumps  
 n Engine Room 10 off 3 1/2 2 from Pump 3 1/2 2 from tunnel In Holds, &c. 28 off 8 frame cargo tanks, 6 off 6 and  
off 5 from upper tanks, 2 off 5 from lower. Bottom Tank, 1 off 5 from forepeak, 1 off 12 from aft peak

No. of Bilge Injections 1 sizes 8 1/2 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 none

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks cocks and 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 none How are they protected no  
 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 3rd. 09 of Stern Tube 25th. 09 Screw shaft and Propeller 25th. 4 3rd. 09  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door no worked from through trunks from Deck

OILERS, &c.—(Letter for record S) Manufacturers of Steel Sheep Thysen & Coe, Furnaces: The Leeds Forge Co.

Total Heating Surface of Boilers 9016 sq ft Is Forced Draft fitted yes No. and Description of Boilers 3 single ended multitubular  
 Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 8. 12. 18 No. of Certificates 105106107

Can each boiler be worked separately yes Area of fire grate in each boiler 61.3 sq ft No. and Description of Safety Valves to  
 each boiler 2 spring loaded Area of each valve 12.6 sq in Pressure to which they are adjusted 215 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2' 0" Mean dia. of boilers 15 1/2 Length 15' 3" Material of shell plates Steel  
 Thickness 1 1/4 Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap, db. riv.

long. seams db. butt quadr. Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 2 1/2 Lap of plates or width of butt strap 33 1/2  
 Per centages of strength of longitudinal joint 151.240 Working pressure of shell by rules 227.3 lbs Size of manhole in shell 19 7/8 x 15 1/2

Size of compensating ring 8 7/8 x 8 7/8 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 47 1/4  
 Length of plain part 5 1/2 Thickness of plates 1 1/2 Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 239.8 lbs Combustion chamber plates: Material Steel Thickness: Sides .65 Back .64 Top .65 Bottom 1  
 Pitch of stays to ditto: Sides 7.8 Back 7.5 Top 7.8 If stays are fitted with nuts or riveted heads both Working pressure by rules 228.9 lbs

Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 3 1/2 sq in Working pressure by rules 309.8 lbs End plates in steam space:  
 Material Steel Thickness 1.09 Pitch of stays 15 How are stays secured all nut and wash. Working pressure by rules 216.1 lbs Material of stays Steel

Diameter at smallest part 3 Area supported by each stay 113.2 sq in Working pressure by rules 326.8 lbs Material of Front plates at bottom Steel  
 Thickness 1.02 Material of Lower back plate Steel Thickness .94 Greatest pitch of stays 19 Working pressure of plate by rules 213.9 lbs

Diameter of tubes 2 1/2 Pitch of tubes 3.8 Material of tube plates Steel Thickness: Front 1.02 Back .9 Mean pitch of stays 7.6  
 Pitch across wide water spaces 13.5 Working pressures by rules 225 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10.6 Length as per rule 35 Distance apart 7.5 Number and pitch of stays in each 3-7.8

Working pressure by rules 352 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked  
 separately no Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet  
 holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no

If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no  
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

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*Manufacturers of Steel*

See Report N<sup>o</sup> 10718<sup>a</sup>

port of

*Haverburg* Continuation of Report No. 10718 dated 18<sup>th</sup> <sup>1909</sup> ~~March~~ on the  
*Lo. St. "Buffalo"* (first entry Report on "Haverburg")

Classification of Steam Drivley Pumps:

a. / 1 Duplex, double acting, Wier, 8" diam by 24" stroke } Feed, bilge,  
 b. / 1 " " " " " " " " " " " " } ballast, deck &  
 c. / 1 " " " " " " " " " " " " } general service.  
 d. / 1 Duplex, " " " " " " " " " " " " } Ballast & bilge  
 e. / 1 " " " " " " " " " " " " } Boiler feed purposes  
 f. / 1 " " " " " " " " " " " " } aft tank and decanal.  
 g. / 1 " " " " " " " " " " " " } Fore. Tank & gen. serv.  
 h. / 4 " " " " " " " " " " " " } Oil cargo and  
 and Ballast water service in Oil cargo tanks  
 and Coppersams.

Mr. Kennedy

L. Köhler

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC.3.09

Elec. light. F.D.

JWR      ARK  
 11/3/09      22.3.09

VERTICAL DONKEY BOILER—		Manufacturers of Steel		See Report No. 107182	
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
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		Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

**S.P.A.R.E GEAR.** State the articles supplied:—4 crank shafts, 1 turnm. shaft, 1 propeller shaft, 1 propeller boss, & prop. flange, 1 set shafts for 1 lead extra, 1 set of piston rings for 2 P.V.D.s & 3 P's, 2 pump cranks, 1 air pump bush & disc & shaft for centrifug circulating pumps, 1 set of main bearing brackets, 2 set of connecting rod top and bottom ends and connecting rods, 2 main bearing bolts, 1 connecting rod top and 2 ditto bottom end & sliderods, 1 sliderod end and link block complete, 1 eccentric stroke compl., 1 ball coupling bolt, 3 main boiler end valve springs, 1 spring for each byld. except valves, & springs for feed & bico pumps, 1 set of feed pump valve seats, 1 set of bilge pump valve & seat, 1 set of main and auxiliary feed check valves for each boiler, 1 set of and seats for their feed pump, 1 piston & bucket for dts 2 s m boiler tubes, 15 condenser tubes & two steam glands, 11 set large & small studs, nuts, rivets, bolts, plate and bar iron assorted.

The foregoing is a correct description,  
**Flensburger Schiffbau-Gesellschaft,**  
 Flensburg  
 Manufacturer.

Dates of Survey while building	During progress of work in shops -	28 <sup>th</sup> , 24 <sup>th</sup> , 7 <sup>th</sup> , 21 <sup>st</sup> , 28 <sup>th</sup> , 20 <sup>th</sup> , 1 <sup>st</sup> , 3 <sup>rd</sup> , 7 <sup>th</sup> , 28 <sup>th</sup> , 24 <sup>th</sup> , 21 <sup>st</sup> , 17 <sup>th</sup> , 7 <sup>th</sup> , 11 <sup>th</sup> , 12 <sup>th</sup> , 14 <sup>th</sup> , 19 <sup>th</sup> , 30 <sup>th</sup> , 22 <sup>nd</sup> , 27 <sup>th</sup> , 28 <sup>th</sup>
	During erection on board vessel -	12 <sup>th</sup> , 14 <sup>th</sup> , 24 <sup>th</sup> , 2 <sup>nd</sup> , 7 <sup>th</sup> , 10 <sup>th</sup> , 19 <sup>th</sup>
	Total No. of visits	28

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders *5/8.08* Slides *1/8.08* Covers *2/9.08* Pistons *2/10.08* Rods *1/8.08*  
 Connecting rods *17/10.08* Crank shaft *7/12.08* Thrust shaft *2/3.08* Tunnel shafts *2/10.08* Screw shaft *19/12.08* Propeller *18/12.08*  
 Stern tube *3/2.09* <sup>Keel</sup> Steam pipes tested *2/3.09* Engine and boiler seatings *2/10.08* Engines holding down bolts *14/2.09*  
 Completion of pumping arrangements *10/2.09* Boilers fixed *2/4.09* Engines tried under steam *2.9.08*  
 Main boiler safety valves adjusted *10/2.09* Thickness of adjusting washers *16.11.12* *2.9.08* = *16.11.12* *2.9.08* = *16.11.12*  
 Material of Crank shaft *Steel* Identification Mark on Do. *PA 6.08* Material of Thrust shaft *Steel* Identification Mark on Do. *PA 6.08*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *PA 6.08* Material of Screw shafts *Steel* Identification Marks on Do. *PA 6.08*  
 Material of Steam Pipes *Steel* *5 1/4" diam.* *1/4" thick* Test pressure *420 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c. Materials and workmanship of the Engines and Boilers are of very good description, the general outfit is very complete. The trial trip could not be attended as Mr. Boardman was prevented by serious illness of a member of his family and Mr. Ketcher was kept busy in port, but Mr. Dykes, who attended, reports the Machinery having worked so far satisfactorily. The detailed results of tests of the Fuel, Boiler Materials, signed by the working officers, are in my hands. The Forging Certificate of the King and other large forgings will be soon attached.

The pumping arrangements both for bulk oil cargo and large  
drum columns, Engine & Boiler Space and Buckers, peak tanks and  
oil fuel tanks are very complete. For particulars of auxiliary  
machines see the list on continuation attached.

The Mastering of this vessel having been completed under the  
 Survey in accordance with the Trinity's Master, I beg to recommend  
 that she be cleared, and \* **L M C 3, 00** be entered in Register.

The amount of Entry Fee..	Rs. 63.-	When applied for.	12/3
Special ..	Rs. 1071.-		1500
Donkey Boiler Fee ..	Rs. 44.-	When received.	
Travelling Expenses (if any)	Rs. 395.-		17/3

Committee's Minute  
Assigned + Lmb. 309  
F. D. Clarke

*M. Remond*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping  
*J. Köhler*

MACHINERY FIELD  
WRITTEN

5,400.—5-2-01.—T

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Lloyd's Register  
Foundation