

REPORT ON MACHINERY.

No. 13237

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Date of writing Report 29th March 1913 When handed in at Local Office 19 Port of Hamburg
 No. in Survey held at Kiel Date, First Survey 18th Octbr. 1911 Last Survey 15th March 1913
 Reg. Book. 53 Supp. on the Steel Twin Screw Motor Vessel "Hagen" (Number of Visits 35) Tons { Gross 5960
 Net 3145
 Master Curtin Built at Kiel By whom built Fried. Krupp A.G. Germaniawerk When built 1913
 Engines made at Kiel By whom made Fried. Krupp A.G. Germaniawerk when made 1913
 Boilers made at — By whom made — when made —
 Registered Horse Power 450 Owners Deutsch Amerika Petroleum Ges. Port belonging to Hamburg
 Nom. Horse Power as per Section 28 450 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Twin Screw two cycle Diesel Motors No. of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 18 1/16" Length of Stroke 3 1/16" Revs. per minute 120 Dia. of Screw shaft 11 3/32" Material of Steel
 as fitted 11 1/16" screw shaft
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube without liner 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 48"
 Dia. of Tunnel shaft 10 5/8" Dia. of Crank shaft journals 12 1/16" Dia. of Crank pin 12 3/16" Size of Crank webs 7 1/2 x 17 1/2" Dia. of thrust shaft under
 collars 11 1/8" Dia. of screw 11 1/6" Pitch of Screw 9" - 11 1/6" No. of Blades 4 State whether moveable yes Total surface 42 sq. ft.
 No. of Feed pumps — Diameter of ditto — Stroke — Can one be overhauled while the other is at work —
 No. of Bilge pumps each 4 1/2" Diameter of ditto 4 5/16" Stroke 8" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 5 Sizes of Pumps See specifications No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 off 2 3/4", 1 off 3 1/2" from engr. well, 1 off 3 1/2" from funnel peak, 2 off 3" from oil well, 3 off 4" from oil fuel tank,
Pump room, 4 off 6" from Cofferdam No. 2 & 3, 2 off 5" from Cofferdam No. 1, 1 off 5" from aft Peak, 1 off 5" from Fore Peak 2 off 3" from
 No. of Bilge Injections 1 sizes 6" Connected to condenser Ballast or 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 Valves & Cocks.
 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 —
 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 21. 11. 12 of Stern Tube & 21. 11. 12 Screw shaft, and Propellers 21. 11. 12
 Is the Screw Shaft Recess Funnel watertight yes Is it fitted with a watertight door yes worked from main deck eng. room.

BOILERS, &c.—(Letter for record —) Manufacturers of Steel no Boilers fitted.

Total Heating Surface of Boilers	Is Forced Draft fitted	No. and Description of Boilers
Working Pressure	Tested by hydraulic pressure to	Date of test
Can each boiler be worked separately	Area of fire grate in each boiler	No. of Certificate
each boiler	Area of each valve	Pressure to which they are adjusted
Smallest distance between boilers or uptakes and bunkers or woodwork	Mean dia. of boilers	Length
Thickness	Range of tensile strength	Material of shell plates
long. seams	Diameter of rivet holes in long. seams	Descrip. of riveting: cir. seams
Per centages of strength of longitudinal joint	Working pressure of shell by rules	Size of manhole in shell
Size of compensating ring	No. and Description of Furnaces in each boiler	Material
Length of plain part	Thickness of plates	Description of longitudinal joint
Working pressure of furnace by the rules	Combustion chamber plates: Material	Thickness: Sides
Pitch of stays to ditto: Sides	Back	Top
Material of stays	Diameter at smallest part	Area supported by each stay
Material	Thickness	Pitch of stays
Diameter at smallest part	Area supported by each stay	Working pressure by rules
Thickness	Material of Lower back plate	Thickness
Diameter of tubes	Pitch of tubes	Material of tube plates
Pitch across wide water spaces	Working pressures by rules	Girders to Chamber tops: Material
thickness of girder at centre	Length as per rule	Distance apart
Working pressure by rules	Superheater or Steam chest; how connected to boiler	Can the superheater be shut off and the boiler worked
separately	Diameter	Length
holes	Pitch of rivets	Working pressure of shell by rules
If stiffened with rings	Distance between rings	Working pressure by rules
Working pressure of end plates	Area of safety valves to superheater	Are they fitted with easing gear

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:— Please see continuation sheet attached.

The foregoing is a correct description,
Fried. Krupp Aktiengesellschaft
Essen-Maniawardt
Manufacturer.

Table with 2 columns: Dates of Survey while building, and Total No. of visits. Includes dates like 18/10, 20/11, 6/12, 19/11, etc.

Dates of Examination of principal parts—Cylinders 23/1, 14/2, 13/2, 14/2 Slides — Covers — Pistons 12/2, 23/5, 7/8, 12 Rods 23/5 12
Connecting rods 11/5 12 Crank shaft 7/6 12 Thrust shaft 7/6 12 Tunnel shafts 10/5 12 Screw shaft 14/6 12 Propeller 9/9 12
Stern tube 16/7 12 Steam pipes tested — Engine and boiler seatings 31/10 12 Engines holding down bolts 31/10 12
Completion of pumping arrangements 14/2 13 Boilers fixed — Engines tried under working condition
Main boiler safety valves adjusted — Thickness of adjusting washers —
Material of Crank shaft Steel Identification Mark on Do. 3561 XX, 2082 XX Material of Thrust shaft Steel Identification Mark on Do. 3376 XX
Material of Tunnel shafts Steel Identification Marks on Do. 1123 MB, 3324 XX Material of Screw shafts Steel Identification Marks on Do. 1123 MB, 3375 XX, 2043 XX
Material of Steam Pipes — Test pressure —

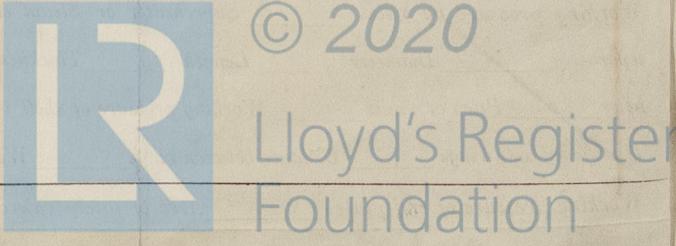
General Remarks (State quality of workmanship, opinions as to class, &c. Material and workmanship of these Diesel Oil Engines are of very best description, the general outfit is very ample. The Forgings certificates of shaping will be found attached. The pumping arrangements both for bulk oil cargo and bilges, double bottom and engine room, bunkers, Peak tanks and oil fuel tanks are very complete. I attended to a satisfactory trial trip on the 12th inst when the vessel was ballasted to her light load line, the engines developing 1200 HP when running at 140 revolutions per minute and 11 knots. The full power stern revolutions were 130 and about 10 knots. The lowest number of revolutions attained was 32-33. The machinery of this vessel having been constructed under Special Survey in accordance with the Society's Rules, I beg to recommend that they be classed LMC 3,13. and Oil Engines be entered in the Register Book, and that a certificate to this effect be issued.

Certificate (if required) to be sent to Hamburg Office.

Table with 2 columns: Fee type and Amount. Includes Entry Fee (65), Special (872), Donkey Boiler Fee (45), Travelling Expenses (280).

Committee's Minute TUE. APR. 1--1913
Assigned + LMC 3.13

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



MACHINERY CERTIFICATE WRITTEN.

