

# REPORT ON MACHINERY.

Received at London Office

MON. 2 DEC 1907

Date of writing Report

19

When handed in at Local Office

19

Port of Copenhagen

No. in Survey held at Copenhagen

Date, First Survey 13 March

Last Survey 19 November 1907

Reg. Book.

(Number of Visits 37)

on the S.S. Bintang

Tons Gross 2860

Net 1819

Master J. F. Gale

Built at Copenhagen

By whom built A. Bernmeister & Søn Masking Skibbyggeri

When built 1907

Engines made at Copenhagen

By whom made A. Bernmeister & Søn Masking Skibbyggeri

when made 1907

Boilers made at Copenhagen

By whom made A. Bernmeister & Søn Masking Skibbyggeri

when made 1907

Registered Horse Power 252

Owners Det Østasiatiske Kompagni

Port belonging to Copenhagen

Nom. Horse Power as per Section 28 252

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

ENGINES, &c.—Description of Engines 3 Triple exp. exp. condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 21 1/2, 34 1/2, 60 Length of Stroke 39 Revs. per minute 70 Dia. of Screw shaft 12 1/2 Material of screw shaft 1 1/2" 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 5'-0"

Dia. of Tunnel shaft 10.68 as per rule 10.68 as fitted 10.4 Dia. of Crank shaft journals 11.21 as per rule 11.21 as fitted 11.2 Dia. of Crank pin 1 1/2 Size of Crank webs 8 x 15 3/4 Dia. of thrust shaft under collars 1 1/2 Dia. of screw 15-9 Pitch of Screw 15-9 No. of Blades 4 State whether moceable no Total surface 75 sq

No. of Feed pumps 2 Diameter of ditto 4" Stroke 19 1/2 Can one be overhauled while the other is at work yes One 15 tons water pump

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 19 1/2 Can one be overhauled while the other is at work yes One feed water cleaner

No. of Donkey Engines 1 Sizes of Pumps 6" x 4" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps 1 1/2" x 8" x 12"

In Engine Room 4 off 3" dia., one in dry well 3" dia. In Holds, &c. 1" 1/2" 2 off 3" dia., 1" 2" 2 off 3" dia., 1" 3"

No. of Bilge Injections one sizes 6" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 6 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 no

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves except blow off cocks from boilers

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 to fore hold How are they protected by the ceiling, pipes fitted in gutters

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 18/9 of Stern Tube 3/9 Screw shaft and Propeller 11/9

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

BOILERS, &c.—(Letter for record N) Manufacturers of Steel Blackmore & Co. Ltd. Glasgow, Scotland; Schulz & Co. Ltd.

Total Heating Surface of Boilers 4000 sq Is Forced Draft fitted no No. and Description of Boilers 2 single end. hor. return tubular

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 25 July 07 No. of Certificate 279, 280

Can each boiler be worked separately yes Area of fire grate in each boiler 50 sq No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve 9.6211 sq Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodcock 11" Mean dia. of boilers 14'-4 1/2" Length 10'-4" Material of shell plates 1 1/2" steel

Thickness 1 3/16 Range of tensile strength 28-32 Tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double rio.

long. seams double rio. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 3/4"

Per centages of strength of longitudinal joint rivets 87.8 Working pressure of shell by rules 183.8 lbs Size of manhole in shell 16" x 20"

Size of compensating ring 3'-6" x 2'-6" x 1" No. and Description of Furnaces in each boiler 3 horizontal flat Material 1 1/2" steel Outside diameter 44 1/2"

Length of plain part top 9.12 bottom 9.16 Thickness of plates crown 9.12 bottom 9.16 Description of longitudinal joint welded No. of strengthening rings 1

Working pressure of furnace by the rules 180.05 Combustion chamber plates: Material 1 1/2" steel Thickness: Sides 9/16 Back 5/8 Top 9/16 Bottom 3/4

Pitch of stays to ditto: Sides 8 1/4" x 7" Back 7 1/4" x 7 1/4" Top 7 1/2" x 7" If stays are fitted with nuts or riveted heads nuts inside & outside in boundary rows riveted outside in middle heads Working pressure by rules 187 1/2 lbs

Material of stays 1 1/2" steel Diameter at smallest part 1.534 Area supported by each stay 57.75 sq Working pressure by rules 233 lbs End plates in steam space: Material 1 1/2" steel Thickness 1" Pitch of stays 17" x 15" How are stays secured double nuts & washers Working pressure by rules 184.2 lbs Material of stays steel

Diameter at smallest part 2.634 Area supported by each stay 255 sq Working pressure by rules 213.5 lbs Material of Front plates at bottom 1 1/2" steel

Thickness 3/4" Material of Lower back plate 1 1/2" steel Thickness 1 3/16 Greatest pitch of stays 2 3/4" x 7 3/4" Working pressure of plate by rules 204.3 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates 1 1/2" steel Thickness: Front 1" Back 1 1/6" x 1/32" Mean pitch of stays 11 1/4"

Pitch across wide water spaces 14" Working pressures by rules 183 lbs Girders to Chamber tops: Material 1 1/2" steel Depth and thickness of girder at centre 7 1/4" x 3 1/4" x 2" Length as per rule 2'-5" Distance apart 7 1/2" Number and pitch of stays in each 3 off 7 feet

Working pressure by rules 186.4 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately yes

Diameter 1" Length 1" Thickness of shell plates 1" Material 1 1/2" steel Description of longitudinal joint double rio. Diam. of rivet holes 1" Pitch of rivets 1" Working pressure of shell by rules 183 lbs Diameter of flue 1" Material of flue plates 1 1/2" steel Thickness 1"

If stiffened with rings yes Distance between rings 1" Working pressure by rules 183 lbs End plates: Thickness 1" How stayed by stays

Working pressure of end plates 183 lbs Area of safety valves to superheater 183 lbs Are they fitted with easing gear yes

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 2 com. rod Top & bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set of feet, bilge pump valves & seats, 1 Ramshot bottom ring to each piston, a quantity of assorted bolts & nuts, iron of various sizes, 1 Propeller, 1 propeller shaft, 1 pair of connecting rod top and bottom end braces, 1 pair of air pump valves, 2 check valves, 3 valves for each donkey pump, 6 junking bolts, 35 boiler tubes, 36 condenser tubes, 1 set of safety valve springs, 24 water-gauge glasses. For centrifugal circulating pump:— 1 set main bearing braces, 1 set vertical crank braces.

The foregoing is a correct description,  
*M. M. M. M.* Manufacturer.

Dates of Survey while building: During progress of work in shops— 13/3, 23/3, 15/4, 16/4, 17/4, 3/5, 14/5, 29/5, 3/6, 17/6, 21/6, 27/6, 1/7, 8/7, 9/7, 17/7, 25/7, 2/8, 9/8, 9/8, 19/8, 22/8, 27/8, 3/9, 11/9, 18/9, 23/9

During erection on board vessel— 5/10, 10/10, 23/10, 30/10, 6/11, 11/11, 14/11, 16/11, 18/11, 19/11

Total No. of visits 37

Is the approved plan of main boiler forwarded herewith *yes*

Is the approved plan of donkey " " " " *none*

Dates of Examination of principal parts— Cylinders 3/5 Slides 15/4 Covers 15/4 Pistons 14/5 Rods 3/6

Connecting rods 17/6 Crank shaft 8/7 Thrust shaft 9/7 Tunnel shafts 8 & 9/7 Screw shaft 27/8 & 5/10 Propeller 11/9

Stern tube 27/8 Steam pipes tested 21/10 Engine and boiler seatings 5/10 Engines holding down bolts 10/10

Completion of pumping arrangements 23/10 Boilers fixed 5/10 Engines tried under steam 19/10

Main boiler safety valves adjusted 18/11 Thickness of adjusting washers 3/8" & 3/8" & 1/2"

Material of Crank shaft *S.M. Steel* Identification Mark on Do. 7.07 ATP *R. N: 834* Material of Thrust shaft *S.M. Steel* Identification Mark on Do. 7.07 ATP *R. N: 859-874*

Material of Tunnel shafts *S.M. Steel* Identification Marks on Do. 7.07 ATP *R. N: 833-37* Material of Screw shafts *S.M. Steel* Identification Marks on Do. 8.07-10.07 ATP

Material of Steam Pipes *Steel* Test pressure 360 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. *In accordance with the rules for special survey we have examined the material and workmanship from the commencement until the final trial under steam and found it good in every respect. All the forgings are of Siemens Martin steel and have been found good. All the castings are sound and good, the bearings of proper dimensions and sound material. The boiler material has been tested as per rules as per test notes received and satisfactory hot & cold tests of the material has been carried out by us. The dimensions are as specified and in accordance with the rules and the approved plan. On the trial trip the engines & boilers worked satisfactorily.*)

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 11.07* ELEC LIGHT.

The amount of Entry Fee... *Per 36.74* : When applied for. *20/11.1907*

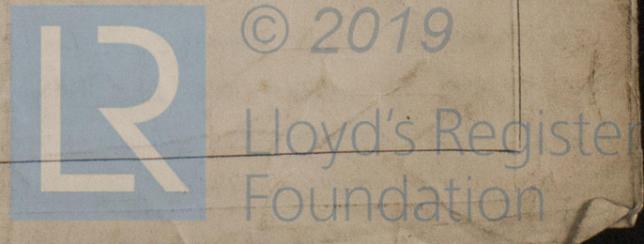
Special... *Per 598.86* : When received, *11.12.1907*

Donkey Boiler Fee *Elect. Light 91.85* : *13/12/07*

Travelling Expenses (if any) £ : :

*J. S. Some*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 10 DEC 1907**  
 Assigned *+ L.M.C. 11.07 elec. light*



Certificate (if ventricle) to be sent to Surveyors' office Copthorne