

REPORT ON MACHINERY.

No. 3307.

Received at London Office

TUE 14 MAR, 1916

of writing Report 1st March 1916. When handed in at Dept Office 6th March 1916. Port of Gothenburg

in Survey held at Oscarshamn Date, First Survey 10th May 1915 Last Survey 20th January 1916

on the Steel s.s. "Andalusia" (Number of Voids 34) Gross 1335

Master C. G. K. Sahlsjö Built at Oscarshamn By whom built Oscarsh. Mek. V. & Skopped. Abt. When built 1916

Engines made at Oscarshamn By whom made Oscarsh. Mek. V. & Skopped. Abt. when made 1916

Boilers made at Oscarshamn By whom made Oscarsh. Mek. V. & Skopped. Abt. when made 1916

Registered Horse Power 204 Owners Försting, Abt. & Svanke Lloyds Port belonging to Gothenburg

Com. Horse Power as per Section 28 204 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 19" 31/2" x 51/2" Length of Stroke 33" Revs. per minute 90 Dia. of Screw shaft 10 5/16" Material of Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 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 Cedervall's patent prot. box fitted Length of stern bush 43"

Dia. of Tunnel shaft 9 7/16" Dia. of Crank shaft journals 9 3/32" Dia. of Crank pin 10 5/8" Size of Crank webs 11 3/4" x 7 1/2" Dia. of thrust shaft under

collars 10 7/8" Dia. of screw 12" - 6" Pitch of Screw 14" - 5" No. of Blades 4 State whether moveable No Total surface 8 sq. feet

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

No. of Bilge pumps 2 Diameter of ditto 3 3/16" Stroke 15" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 7 7/8" x 7 7/8" x 7 7/8" & 5 1/2" x 3 1/2" x 4 7/8" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3" In Holds, &c. Two 3" in fore hold, Two 3" in after

hold, One 3" in after hold well & One 3" in tunnel well

No. of Bilge Injections 1 size 5 1/4" 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 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 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 None

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 27/10/15 of Stern Tube 27/10/15 Screw shaft and Propeller 21/11/15

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from engine room top grating

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Kochan & Hultén, Västerås

Total Heating Surface of Boilers 3636 sq. ft. Is Forced Draft fitted No No. and Description of Boilers 2 cylindrical multitubular

Working Pressure 185 lbs. per sq. in. Tested by hydraulic pressure to 370 lbs. per sq. in. Date of test 22/11/15 No. of Certificates 74 & 75

Can each boiler be worked separately Yes Area of fire grate in each boiler 43.5 sq. ft. No. and Description of Safety Valves to

each boiler 2 direct spring loaded Area of each valve 13.56 sq. in. Pressure to which they are adjusted 190 lbs. per sq. in. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 12" - 10 5/8" Length 10' - 9" Material of shell plates Steel

Thickness 1 3/16" Range of tensile strength 42,145 lbs. per sq. in. Are the shell plates welded or flanged No Descrip. of riveting: cir. seams None

long. seams Double butt shape Diameter of rivet holes in long. seams 1 5/32" Pitch of rivets 7 7/32" x 3 3/4" Lap of plates or width of butt straps 16 7/32"

Per centages of strength of longitudinal joint: rivets 82 Working pressure of shell by rules 193 lbs. Size of manhole in shell 11 13/16" x 15 3/4"

Size of compensating ring 5 7/8" x 1 3/16" No. and Description of Furnaces in each boiler 3 corrugated Material Steel Outside diameter 3' - 1 1/4"

Length of plain part 7' - 1 13/16" Thickness of plates 9/16" Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 236 lbs. Combustion chamber plates: Material Steel Thickness: Sides 9/32" Back 9/32" Top 9/32" Bottom 9/32"

Pitch of stays to ditto: Sides 6" x 6" Back 6" x 6" Top 6" x 7 1/2" If stays are fitted with nuts or riveted heads on margin Yes Working pressure by rules 250 lbs.

Material of stays Steel Diameter at smallest part 1 1/4" Area supported by each stay 36 sq. in. Working pressure by rules 275 lbs. End plates in steam space

Material Steel Thickness 3/4" & 3/8" Pitch of stays 15" x 13" How are stays secured Double butt shape Working pressure by rules 189 lbs. Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 195 sq. in. Working pressure by rules 260 lbs. Material of Front plates at bottom Steel

Thickness 5/16" Material of Lower back plate Steel Thickness 7/32" Greatest pitch of stays to top plan Working pressure of plate by rules ✓

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates Steel Thickness: Front 1 5/16" Back 2 5/32" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 13 3/4" Working pressures by rules 189 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 7 15/32" x 3 1/4" Length as per rule 36 7/32" Distance apart 7 1/32" Number and pitch of stays in each 3 - 6"

Working pressure by rules 235 lbs. Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked

separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet

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

If stiffened 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 ✓

W472-0050

Lloyd's Register
Foundation

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:

1 IP slide valve, 1 IP loose cylinder face, 2 conn. rod top and bolts and nuts, 2 conn. rod bottom end bolts and nuts, 2 main bearing bolts and nuts, 1 set of coupling bolts with nuts, 1 propeller, 1 propeller shaft, 1 set of feed and bilge pump valves with seats, 1 set of piston springs, 2 main boiler check valves, 1 set of ballast & 1 donkey pump valve with seats, 1 air pump rod, 2 safety valve springs, 2 air pump valves, 1 circulating pump disc, 10 condenser tubes, 1 ordinary boiler tubes 3 stay tubes, a quantity of assorted bolts and nuts, iron of various sizes.

The foregoing is a correct description,

FOR OSCARSHAMNS MEKANISKA VERKSTADS

ACH SKEPPSDOCKAS AKTIEBOLAG.

Asportman.

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1/15 - April 14, May 19, June 21, 22, July 11, Aug 7, Sept 13, Oct 8, 9, 26, 27, Nov 22, Dec 12, 1916 - Jan 14, 15. During erection on board vessel - 1915 - Dec 22, Jan 5, 15, 29, 30. Total No. of visits 34. Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts - Cylinders 14/4, 11/7, 11/15, 13/9, 8/10/15. Covers 19/11, 13/9/15. Pistons 11/7, 13/9/15. Rods 13/9/15.

Connecting rods 13/9/15. Crank shaft 13/9/15, 29/11/15, 30/11/15. Thrust shaft 13/9/15, 29/11/15. Tunnel shafts 22/24/15, 29/11/15. Screw shaft 23/24/15, 29/11/15. Propeller 13/9/15.

Stern tube 9/10/15. Steam pipes tested 14/4, 11/7, 11/15. Engine and boiler seatings 21/6, 11/7/15. Engines holding down bolts 22/12/15.

Completion of pumping arrangements 29/11/16. Boilers fixed 22/12/15. Engines tried under steam 29/11/16.

Main boiler safety valves adjusted 29/11/16. Thickness of adjusting washers None fitted.

Material of Crank shaft Steel. Identification Mark on Do. 7.5.15.13. Material of Thrust shaft Steel. Identification Mark on Do. 7.5.15.13.

Material of Tunnel shafts Steel. Identification Marks on Do. 27.10.15, 14. Material of Screw shaft Steel. Identification Marks on Do. 27.10.15, 14.

Material of Steam Pipes Steel. Test pressure 555 lbs per sq. inch.

Is an installation fitted for burning oil fuel No. Is the flash point of the oil to be used over 150°F. Yes.

Have the requirements of Section 49 of the Rules been complied with Yes.

Is this machinery duplicate of a previous case Yes. If so, state name of vessel S.S. "Orvar".

General Remarks (State quality of workmanship, opinions as to class, &c.)

This machinery has been built under special survey, and all the requirements of the Rules have been complied with.

The shafting as per forging reports attached.

The boilers have been built in accordance with the approved plan, except that the stay tubes marked x on the plan have been omitted.

The workmanship is good.

Rpt. 13.

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