

REPORT ON MACHINERY.

No. 3798

Received at London Office

THU. FEB. 27. 1913

Date of writing Report 21st Febr. 1913. When handed in at Local Office

Port of Copenhagen

No. in Survey held at Malmö

Date, First Survey 8th May 1912 Last Survey 17th February 1913.

Reg. Book.

Splut. 8 on the Steel S. S. "Thai" (Engines No. 373).

(Number of Visits 42)

Master Andersson

Built at Malmö

By whom built Kockums Mtk. Verkst. Aktiebolag.

Gross 1319.82

Net 925.20

When built 1912 - 13.

Engines made at Malmö

By whom made Kockums Mtk. Verkst. Aktiebolag

when made 1912 - 13.

Boilers made at Malmö

By whom made Kockums Mtk. Verkst. Aktiebolag

when made 1912 - 13.

Registered Horse Power 153

Owners

Rideriaktiebolaget Nordstjernan

Port belonging to

Stockholm

Nom. Horse Power as per Section 28 153

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

No.

ENGINES, &c.—Description of Engines

Inverted triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 18 1/8", 28 3/4" & 48 1/16" Length of Stroke 3 1/2" Revs. per minute at 80 Dia. of Screw shaft as per rule 10.8" Material of S. M. Steel as fitted 11.18" screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 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 44.73"

Dia. of Tunnel shaft as per rule 8.94" as fitted 8.98" Dia. of Crank shaft journals as per rule 9.37" as fitted 9.76" Dia. of Crank pin 9.76" Size of Crank webs 17 7/2" x 7 1/2" Dia. of thrust shaft under collars 9.76" Dia. of screw 12" - 9 1/2" Pitch of Screw 11" - 6" No. of Blades 4 State whether moveable No. Total surface 46 sq

No. of Feed pumps 2 Diameter of ditto 3.94" Stroke 14.17" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 3.94" Stroke 14.17" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 2 duplex Sizes of Pumps 1 off 7.48" x 7.87" x 7.84" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 off 2 1/2" In Holds, &c. Fore hold 2 off 3" After hold 2 off 2 1/2" Tunnel well 1 off 2 1/2" Tank suction, Centre 3" - 3 1/2" Wing 2 1/2" - 2 3/4" Fore peak tank 1 off 3" After peak tank 1 off 4"

No. of Bilge Injections 1 sizes 5 1/4" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 2 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 and cocks for blow off.

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 pipes to fore hold How are they protected Passing through the frame brackets.

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 5/11. 12. of Stern Tube 7/11. 12. Screw shaft and Propeller 9/11. 12.

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck.

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel Blechwalzwerk Schulz, Mandt & Kuhn, Essen.

Total Heating Surface of Boilers 2443 sq. ft. Is Forced Draft fitted No. No. and Description of Boilers Two single ended return tubular.

Working Pressure 185 lbs. Tested by hydraulic pressure to 370 lbs. Date of test 23/12 & 30/12. 12 No. of Certificate 333 & 334

Can each boiler be worked separately Yes Area of fire grate in each boiler 35.5 sq. ft. No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 6.84 sq. in. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 11-8 3/4" Length 10-3" Material of shell plates S. M. Steel

Thickness 1" Range of tensile strength 28-32 Tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap joint long. seams ~~triple riveted~~ riveted Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 6 7/8" + 1/64" Lap of plates or width of butt straps 15 1/2" + 1/64"

Per centages of strength of longitudinal joint rivets 95.5 plate 84.6 Working pressure of shell by rules 185 lbs. Size of manhole in shell 12 7/16" + 1/32" x 16 3/4"

Size of compensating ring 29 1/8" x 33 1/8" x 1" No. and Description of Furnaces in each boiler 2 off Horizontal Material S. M. Steel Outside diameter 43 5/16"

Length of plain part top 9 1/16" bottom 9 1/16" Thickness of plates crown 9 1/16" bottom 9 1/16" Description of longitudinal joint welded No. of strengthening rings 5

Working pressure of furnace by the rules 203.2 lbs. Combustion chamber plates: Material S. M. Steel Thickness: Sides 7/16" + 1/32" Back 7/16" + 1/32" Top 7/16" + 1/32" Bottom 5/8"

Pitch of stays to ditto: Sides 7 7/8" x 7 7/8" Back 8 1/2" x 7 7/8" Top 8 1/2" x 7 7/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 189.5 lbs.

Material of stays S. M. Steel Diameter at smallest part 1.387" Area supported by each stay 64.7 sq. in. Working pressure by rules 186 lbs. End plates in steam space: Material S. M. Steel Thickness 7/8" + 1/32" Pitch of stays 16 1/32" x 15 3/4" How are stays secured ~~dbl. nuts & washers~~ ^{Secured in both plates} Working pressure by rules 186.5 lbs. Material of stays S. M. Steel

Diameter at smallest part 2 1/2" Area supported by each stay 259.2 sq. in. Working pressure by rules 196.5 lbs. Material of Front plates at bottom S. M. Steel Thickness 7/8" Material of Lower back plate S. M. Steel Thickness 3/4" Greatest pitch of stays 14 3/16" x 7 7/8" Working pressure of plate by rules 260 lbs.

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" + 1/64" x 4 7/8" + 1/32" Material of tube plates S. M. Steel Thickness: Front 7/8" Back 3/4" + 1/32" Mean pitch of stays 10 15/16"

Pitch across wide water spaces 14 9/16" Working pressures by rules 193.5 lbs. Girders to Chamber tops: Material S. M. Steel Depth and thickness of girder at centre 6 17/32" x 25 1/2" Length as per rule 25 1/2" Distance apart 8 7/32" Number and pitch of stays in each 2 off 7 7/8" pitch

Working pressure by rules 185 lbs. Superheater or Steam chest; how connected to boiler none 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

002051-002061-0159

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:— 2 piston-rod top-end bolts & nuts. 2 connecting rod bottom-end bolts & nuts. 2 main bearing bolts. 1 set of coupling bolts. 1 set of feed & bilge pump valves. A quantity of assorted bolts and nuts. Iron of various sizes. 1 propeller. 2 check valves. 2 air & 2 circulating pump valves & seats. 1 ballast & 1 donkey pump valve & seat. 6 cylinder cover & 4 valve chest cover studs & nuts. 10 junking bolts. 1 air pump rod. 10 condenser tubes with ferrules. 2 safety valve springs. 7 boiler tubes.

The foregoing is a correct description,

Manufacturer.

KOOKUMS MEKANISKA VERKSTADS
AKTIE-BOLAG.

Dates of Survey while building	During progress of work in shops - -	8/5, 18/5, 24/5, 10/6, 17/7, 17/8, 30/8, 6/9, 18/9, 3/10, 7/10, 23/10, 28/10, 4/11, 5/11, 7/11, 9/11, 15/11, 25/11, 2/12, 11/12, 19/12, 23/12, 30/12, 12, 29/1.13.
	During erection on board vessel - - -	3/10, 28/10, 5/11, 9/11, 25/11, 2/12, 11/12, 19/12, 23/12, 28/12, 12, 10/1, 15/1, 20/1, 23/1, 27/1, 29/1, 31/1, 4/2, 10/2, 12/2, 14/2, 15/2, 17/2.13.
	Total No. of visits	42.

Is the approved plan of main boiler forwarded herewith yes.

Dates of Examination of principal parts—	Cylinders 4/11, 7/11, 15/11, 12	Slides 15/11, 12	Covers 15/11, 12	Pistons 15/11, 12	Rods 15/11, 12
Connecting rods 15/11, 12	Crank shaft 23/10, 12	Thrust shaft 28/10, 12	Tunnel shafts 28/12, 12	Screw shaft 7/11, 12	Propeller 7/11, 12
Stern tube 4/11, 12	Steam pipes tested 29/1, 13	Engine and boiler seatings 19/12, 12	Engines holding down bolts 15/1, 13.		
Completion of pumping arrangements 23/1, 13	Boilers fixed 20/1, 13.	Engines tried under steam 15/2, 13.			
Main boiler safety valves adjusted 10/2, 13	Thickness of adjusting washers 13/16" + 1/64"	Port boiler { F 13/16" A 5/8" + 1/64"	Port boiler { F 1/2" A 11/16"		
Material of Crank shaft S.M.S. Steel Identification Mark on Do. No. 2658 7.12. H.S.	Material of Thrust shaft S.M.S. Steel Identification Mark on Do. No. 2725 7.12. H.S.				
Material of Tunnel shafts S.M.S. Steel Identification Marks on Do. No. 2767 & 2779 7.12. H.S.	Material of Screw shafts S.M.S. Steel Identification Marks on Do. No. 2776 7.12. H.S.				
Material of Steam Pipes Copper	Test pressure 370 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. The dimensions are as specified and in accordance with the rules and the approved plans.

It is submitted that this vessel is eligible for THE RECORD.

+ LMC 2.13

RED 18.2.13

APR 1

Recommend the vessel's machinery to have notation of LMC-2.13.

The amount of Entry Fee	.. £ 36 : 54 :	When applied for, 24-2-13.
Special	.. £ 419 : 30 :	
Donkey Boiler Fee	.. £ :	When received, 13/3/13
Travelling Expenses (if any)	£ 201 : 60 :	

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

Committee's Minute

Assigned

FRI. FEB. 20. 1913

+ LMC 2.13



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