

# REPORT ON MACHINERY.

No. 66429

Date of writing Report 15<sup>th</sup> July 1914 When handed in at Local Office JUL 21 1914 Port of NEWCASTLE-ON-TYNE Received at London Office WED. JUL. 22. 1914

No. in Survey held at Newcastle Date, First Survey 3<sup>rd</sup> Apr 1914 Last Survey 21<sup>st</sup> July 1914  
Reg. Book. 71 on the Machinery of the S.S. 'Van der Duyn' Number of Visits 25

Master Swan Hunter & Co Built at Newcastle By whom built Swan Hunter & Co Tons { Gross 3290  
Net 2021 When built 1914

Engines made at Newcastle By whom made North Eastern Marine Eng. Co when made 1914  
Boilers made at " By whom made " when made 1914

Registered Horse Power 440 Owners Wamberson & Joon Port belonging to Rotterdam  
Nom. Horse Power as per Section 28 440 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

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

Dia. of Cylinders 23", 38", 63" Length of Stroke 39" Revs. per minute 100 Dia. of Screw shaft as per rule 12 1/4" Material of Steel  
as fitted 12 1/4" screw shaft

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 4' 1 1/4"

Dia. of Tunnel shaft as per rule 11.2" Dia. of Crank shaft journals as per rule 11.76" Dia. of Crank pin 11 7/8" Size of Crank webs 19" x 7 1/2" Dia. of thrust shaft under collars 12 1/8" Dia. of screw 14-3" Pitch of Screw 14-3" No. of Blades 4 State whether moceable No Total surface 60 sq ft

No. of Feed pumps 2 Diameter of ditto 7" Stroke 18" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 3 Sizes of Pumps 8x9x8, 7x4 1/2x8 & 4 1/2x3 1/2x4 No. and size of Suctions connected to both Bilge and Donkey pumps 2 of 3" in each hold & 1 of 2 1/2" in tunnel well

In Engine Room 4 of 3" In Holds, &c. 2 of 3" in each hold & 1 of 2 1/2" in tunnel well

No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump pumps a separate Donkey Suction fitted in Engine room & size Yes 3"  
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 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 both  
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 Yes  
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 6/5/14 of Stern Tube 6/5/14 Screw shaft and Propeller 15/6/14  
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

## BOILERS, &c.—(Letter for record B) Manufacturers of Steel J. & Spencer 29 tons

Total Heating Surface of Boilers 7308 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single-ended  
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 22 & 26/5/14 No. of Certificate 8659 & 8661

Can each boiler be worked separately Yes Area of fire grate in each boiler 58 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 9.6 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 17" inside Mean dia. of boilers 15'-0 3/8" Length 11'-8 1/2" Material of shell plates steel  
Thickness 1 5/16" Range of tensile strength 29 3/4-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. lap  
long. seams d. r. d. butt Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20 1/8"

Per centages of strength of longitudinal joint rivets 88.5 Working pressure of shell by rules 208 lbs Size of manhole in shell 16" x 12"  
plate 85.5

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Morrison's Material steel Outside diameter 47 1/2"  
Length of plain part top 19 1/2" Thickness of plates crown 19 1/2" Description of longitudinal joint welded No. of strengthening rings 1  
bottom 19 1/2"

Working pressure of furnace by the rules 198 lbs Combustion chamber plates: Material steel Thickness: Sides 2 3/32" Back 2 3/32" Top 2 3/32" Bottom 7/8"  
Pitch of stays to ditto: Sides 9 1/4" x 10" Back 9 1/4" x 10" Top 9 1/4" x 10" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 191 lbs

Material of stays steel Diameter at smallest part 2.03 Area supported by each stay 92.5 Working pressure by rules 197 lbs End plates in steam space: Material steel Thickness 1 5/32" Pitch of stays 25" x 2 1/2" How are stays secured d. n. w. Working pressure by rules 183 lbs Material of stays steel  
Diameter at smallest part 11.14 Area supported by each stay 543.7 Working pressure by rules 210 lbs Material of Front plates at bottom steel

Thickness 1 Material of Lower back plate steel Thickness 1 Greatest pitch of stays 14" x 9 1/4" Working pressure of plate by rules 246 lbs  
Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates steel thickness: Front 1" Back 3/4" Mean pitch of stays 7 1/2"

Pitch across wide water spaces 14" Working pressures by rules 196 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 3/4" x 1 1/2" Length as per rule 33 1/2" Distance apart 10" Number and pitch of stays in each 2 of 9 1/4"  
Working pressure by rules 181 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately Yes 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 ✓

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

*Two top end & 2 bottom end bolts 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, a quantity of assorted bolts nuts & iron 1 propeller shaft, 13 crank shaft, top & bottom end brasses & minor details.*

The foregoing is a correct description,  
NORTH EASTERN MARINE ENGINEERING Co., LTD.

*J. Harrison*  
Secretary. Manufacturer.

1914  
Dates of Survey while building { During progress of work in shops - - } *Apr. 3. 6. 17. 20. 21. 27. 28. 29. 30. May 1. 5. 6. 7. 11. 15. 22. 25. 26. 27. 28. Jun 15. 18. 23. Jul 7. 9. 13*  
{ During erection on board vessel - - - } *20. 21.*  
Total No. of visits *28* Is the approved plan of main boiler forwarded herewith? *Yes*

Dates of Examination of principal parts—Cylinders *28/5/14* Slides *25/5/14* Covers *20/4/14* Pistons *1/5/14* Rods *28/5/14*  
Connecting rods *28/5/14* Crank shaft *4/5/14* Thrust shaft *29/4/14* Tunnel shafts *20/4/14* Screw shaft *27/4/14* Propeller *15/5/14*  
Stern tube *27/4/14* Steam pipes tested *24/4 27/4/14* Engine and boiler seatings *6/5/14* Engines holding down bolts *15/6/14*  
Completion of pumping arrangements *13/7/14* Boilers fixed *15/6/14* Engines tried under steam *13/7/14*  
Main boiler safety valves adjusted *13/7/14* Thickness of adjusting washers *Apr. P.P. 1/2 S. 7/16 P.S. P. 3/8 S. 3/8 Ford P. 1/2 S. 15/32*

Material of Crank shaft *Steel* Identification Mark on Do. *5/5/14* Material of Thrust shaft *Steel* Identification Mark on Do. *29/4/14*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *20/4/14* Material of Screw shafts *Steel* Identification Marks on Do. *30/4/14*

Material of Steam Pipes *Lap welded iron* Test pressure *540 lbs.*

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

Have the requirements of Section 49 of the Rules been complied with?

Is this machinery duplicate of a previous case? *No* If so, state name of vessel

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

*The machinery of this vessel has been built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full power. In my opinion the vessel is eligible for the record of + L.M.C. 7.14*

It is submitted that  
this vessel is eligible for  
THE RECORD, + L.M.C. 7.14. F.D.

*J.W.*  
*13/7/14*  
*J.P.R.*

The amount of Entry Fee ... £ *3* : " :  
Special ... £ *42* : " :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, **JUL 21 1914**  
When received, *31/7/14*

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

Committee's Minute **FRI. JUL. 24. 1914**

Assigned *+ L.M.C. 7.14. F.D.*

MACHINERY CERTIFICATE  
WRITTEN



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Lloyd's Register  
Foundation

NEWCASTLE ON-TYNE

Certificate (if required) to be sent to  
The Surveyors are requested to write on or before the space for Committee's Minute.