

Rpt. 4.

## REPORT ON MACHINERY.

No. 52025

Port of *Newcastle on Tyne*Received at London Office **MON. DEC 10 1906**No. in Survey held at *Newcastle*Date, first Survey *July 31*Last Survey *6 Dec 1906*

Reg. Book.

37 on the *SS S. S. Tindenfels*(Number of Visits *37*)Gross *5591*Net *3540*Master *Swan Hunter & W Richardson* Built at *Newcastle* By whom built *Swan Hunter & W Richardson* When built *1906*Engines made at *Newcastle* By whom made *Swan Hunter & W Richardson* when made *1906*Boilers made at *D.* By whom made *D.* when made *1906*Registered Horse Power *528* Owners *Deutsche Impf Ges Harra* Port belonging to *Bremen*Nom. Horse Power as per Section 28 *528* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*ENGINES, &c.—Description of Engines *Quadruple Expansion* No. of Cylinders *4* No. of Cranks *4*Dia. of Cylinders *24-34-51-74* Length of Stroke *54* Revs. per minute *60* Dia. of Screw shaft as per rule *15.34* Material of screw shaft *1 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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If twoliners are fitted, is the shaft lapped for protected between the liners *Yes* Length of stern bush *72*Dia. of Tunnel shaft as per rule *13.5* Dia. of Crank shaft journals as per rule *14.17* Dia. of Crank pin *14.74* Size of Crank webs *22.5 x 9.5* Dia. of thrust shaft undercollars *15* Dia. of screw *19-0* Pitch of Screw *21-0* No. of Blades *4* State whether moveable *Yes* Total surface *112 ft*No. of Feed pumps *2* Diameter of ditto *4* Stroke *28* Can one be overhauled while the other is at work *Yes*No. of Bilge pumps *2* Diameter of ditto *4.5* Stroke *28* Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *2* Sizes of Pumps *15.75 x 23.75 - 6 x 11.75* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *6 - 3.5* In Holds, &c. *Two 3.5 in each hold*Tunnel will run *3.5*No. of Bilge Injections *1* sizes *8* Connected to condenser, or to circulating pump *CR* Is a separate Donkey Suction fitted in Engine room & size *Yes 3.5*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 *For bilge pipes* How are they protected *Strong wood casing*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 *Oct 1906* of Stern Tube *Oct. Nov 1906* Screw shaft and Propeller *Nov 1906*Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Main deck*BOILERS, &c.—(Letter for record *R*) Manufacturers of Steel *J Spence & Son*Total Heating Surface of Boilers *7014 ft* Is Forced Draft fitted *Yes* No. and Description of Boilers *3. Cyl. Single Ends*Working Pressure *213* Tested by hydraulic pressure to *426* Date of test *18-10-06* No. of Certificate *7337*Can each boiler be worked separately *Yes* Area of fire grate in each boiler *56 ft* No. and Description of Safety Valves toeach boiler *2 Spring* Area of each valve *9-6* Pressure to which they are adjusted *218* Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers or woodwork *24* Main dia. of boilers *14-6* Length *12-0* Material of shell plates *S*Thickness *1.5/32* Range of tensile strength *28.3/32* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *d lap*long. seams *d shap* Diameter of rivet holes in long. seams *1.5/32* Pitch of rivets *9.3/4* Lap of plates or width of butt straps *22.7/4*Per centages of strength of longitudinal joint *91* Working pressure of shell by rules *226* Size of manhole in shell *16 x 12*Size of compensating ring *9 x 1.5/32* No. and Description of Furnaces in each boiler *3 Main* Material *S* Outside diameter *44*Length of plain part *top* Thickness of plates *crown* Description of longitudinal joint *welded* No. of strengthening rings *Yes*Working pressure of furnace by the rules *228* Combustion chamber plates: Material *S* Thickness: Sides *2.1/32* Back *1.1/16* Top *2.1/32* Bottom *1.1/16*Pitch of stays to ditto: Sides *7.3/4 x 7.7/8* Back *7.7/8 x 7.7/8* Top *7.7/8 x 7.7/8* If stays are fitted with nuts or riveted heads *nut* Working pressure by rules *243*Material of stays *lin* Diameter at smallest part *2-36* Area supported by each stay *62* Working pressure by rules *245* End plates in steam space:Material *S* Thickness *1.1/16* Pitch of stays *16.5/8 x 14.3/4* How are stays secured *d 2 x 4* Working pressure by rules *219* Material of stays *S*Diameter at smallest part *6-11* Area supported by each stay *243* Working pressure by rules *250* Material of Front plates at bottom *S*Thickness *1* Material of Lower back plate *S* Thickness *1* Greatest pitch of stays *as per plan* Working pressure of plate by rules *213*Diameter of tubes *2.1/2* Pitch of tubes *3.3/4 x 3.3/4* Material of tube plates *S* Thickness: Front *1* Back *7/8* Mean pitch of stays *9.3/8*Pitch across wide water spaces *13.5/8* Working pressures by rules *224* Girders to Chamber tops: Material *S* Depth andthickness of girder at centre *11.1/4 x 1.3/8* Length as per rule *33.7/16* Distance apart *7.5/8* Number and pitch of stays in each *3. 7.5/8*Working pressure by rules *230* Superheater or Steam chest; how connected to boiler *Yes* Can the superheater be shut off and the boiler workedseparately *Yes* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivetholes *—* 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 *—*



# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. One Description See attached report  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed Shetland.  
 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:— Crank Shaft, Tail shaft, propeller blade, two  
top end, two bottom end, two main bearings & one set coupling bolts,  
fuel & bilge valves, sundry braces, Slide rods, Air pump rod, assorted  
bolts & nuts, a few bars of iron & other gear.

The foregoing is a correct description,  
 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1906 July 31 Aug 19 10 15 17 21 22 23 Sep 4 7 10 14 18 19 27 28 Oct 2 5 6 9 10 11 12 19 20 21 Nov 18 19 26 27 28 30  
 During erection on board vessel— Dec 1  
 Total No. of visits 37

Is the approved plan of main boiler forwarded herewith Yes  
 " " " donkey " " Yes duplicate

Dates of Examination of principal parts—Cylinders Sept 1906 Slides Sept 1906 Covers Sept 1906 Pistons Sept 1906 Rods Sept 1906  
 Connecting rods Sept 1906 Crank shaft Sept 1906 Thrust shaft Sept 1906 Tunnel shafts Sept 1906 Screw shaft Oct 1906 Propeller Nov 1906  
 Stern tube Oct 1906 Steam pipes tested 11-10-06 Engine and boiler seatings Oct 1906 Engines holding down bolts Nov 1906  
 Completion of pumping arrangements 4 Dec 1906 Boilers fixed Nov 1906 Engines tried under steam 30 Nov 1906  
 Main boiler safety valves adjusted 30 Nov 1906 Thickness of adjusting washers 1/32 1/32 7/16 7/16 13/32 3/8 5/16  
 Material of Crank shaft IS Identification Mark on Do. K.H. 1110 Material of Thrust shaft S Identification Mark on Do. Sept 1. H.H. 06  
 Material of Tunnel shafts IS Identification Marks on Do. Sept 1. H.H. 06 Material of Screw shafts IS Identification Marks on Do. Sept 1. H.H. 06  
 Material of Steam Pipes Steel Test pressure 640 lb.

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The material & workmanship is good.  
The Mach<sup>y</sup> is eligible in our opinion for classification &  
the record I.M.C. 12.06.

It is submitted that  
 this vessel is eligible for  
 THE RECORD I.L.M.C. 12.06. F.D. Elec. Light.

10.12.06  
10.12.06  
10.12.06

The amount of Entry Fee... £ 3 : :  
 Special ... £ 46.8 : :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 8 DEC 1906  
 When received, 11.12.06

Committee's Minute TUES. DEC 11 1906

Assigned + L.M.C. 12.06  
F.D. Elec. Light

MACHINERY CERTIFICATE  
 WRITTEN



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Lloyd's Register  
 Foundation

Howarth-on-Syde

Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Rpt.

No. 1  
 Reg. Bo

37

Master

Engines

Boilers

Register

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Boilers

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Description

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