

# SS. "Harley" REPORT ON BOILERS.

Hpl. No. 12719  
No. 4248.

Port of **MIDDLESBROUGH-ON-TEES.**

Received at London Office **MUN. 2 OCT. 1905**

No. in Survey held at **Stockton** Date, first Survey **15th May 1905** Last Survey **28th July 1905**  
 Reg. Book. **174** on the **Donkey Boiler No. 3523 for Furness, Withy's S/S 283 Harley** Tons { Gross **3518.24**  
 Master **E. I. Smith** Built at **W Hartlepool** By whom built **Furness Withy & Co Ltd** When built **1905**  
 Engines made at **W Hartlepool** By whom made **Richardsons Westgarth & Co Ltd** when made **1905**  
 Boilers made at **Stockton** By whom made **Riley Bros** when made **1905**  
 Registered Horse Power **319** Owners **J & C Harrison Ltd** Port belonging to **London**

## MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.—Manufacturers of Steel **J. Spencer & Sons**

(Letter for record **(5)**) Total Heating Surface of Boilers **1070 sq ft** Is forced draft fitted **No.** and Description of Boilers **One, Cylindrical Tubular** Working Pressure **180 lbs** Tested by hydraulic pressure to **360 lbs** Date of test **29/7/05**  
 No. of Certificate **3493** Can each boiler be worked separately **Yes** Area of fire grate in each boiler **35 sq ft** No. and Description of safety valves to each boiler **Two spring loaded** Area of each valve **5.94 sq in** Pressure to which they are adjusted **185 lbs**  
 Are they fitted with easing gear **Yes** In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **No**  
 Smallest distance between donkey boilers or uptakes and bunkers or woodwork **18"** Mean dia. of boilers **11'-0"** Length **10'-6"**  
 Material of shell plates **Steel** Thickness **15/16"** Range of tensile strength **28/32 Tons** Are the shell plates welded or flanged **No**  
 Descrip. of riveting: cir. seams **J.R. Lap** long. seams **J.B. Staps** Pitch of rivets **7 3/4"**  
 Lap of plates or width of butt straps **16"** Per centages of strength of longitudinal joint **91.3%** Working pressure of shell by rules **185 lbs** Size of manhole in shell **16" x 12"** Size of compensating ring **6" broad x 1 1/2" dia** No. and Description of Furnaces in each boiler **2, Monious** Material **Steel** Outside diameter **3'-4 1/4"** Length of plain part **7'-4 1/4"** Thickness of plates **1/2"**  
 Description of longitudinal joint **Welded** No. of strengthening rings **✓** Working pressure of furnace by the rules **187 lbs** Combustion chamber plates: Material **Steel** Thickness: Sides **9/16"** Back **9/16"** Top **9/16"** Bottom **3/4"** Pitch of stays to ditto: Sides **7" x 7 1/2"** Back **7 1/4" x 7 1/8"**  
 Top **7" x 7 1/2"** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **185 lbs** Material of stays **Steel** Diameter at smallest part **1 1/8"** Area supported by each stay **75.30 sq in** Working pressure by rules **202** End plates in steam space: Material **Steel** Thickness **1"**  
 Pitch of stays **15 1/2" x 15"** How are stays secured **Nuts & Washers** Working pressure by rules **211** Material of stays **Steel** Diameter at smallest part **2 3/8"**  
 Area supported by each stay **236.20 sq in** Working pressure by rules **187.3** Material of Front plates at bottom **Steel** Thickness **1"** Material of Lower back plate **Steel** Thickness **1"** Greatest pitch of stays **1 3/2" x 7 1/2"** Working pressure of plate by rules **296** Diameter of tubes **3 1/4"**  
 Pitch of tubes **4 1/2" x 4 1/2"** Material of tube plates **Steel** Thickness: Front **1"** Back **3/4"** Mean pitch of stays **9"** Pitch across wide water spaces **14"** Working pressures by rules **196.5 lbs** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **7 3/4" x 1 3/4"** Length as per rule **2'-6"** Distance apart **7 7/8"** Number and pitch of Stays in each **3, 7" Pitch**  
 Working pressure by rules **191.5** 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

## VERTICAL DONKEY BOILER— No. Description Manufacturers of steel

Made at By whom made When made Where fixed  
 Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves  
 No. of safety valves Area of each Pressure to which they are adjusted 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 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

The foregoing is a correct description,

*Geo. W. Riley*  
FOR RILEY BROS. & CO. LIMITED

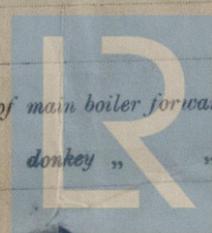
Manufacturer.

Dates of Survey while building  
 During progress of work in shops --  
 During erection on board vessel --  
 Total No. of visits

1905: May 15-19 July 10-14-15-18-25-28

Eight.

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



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**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)

This boiler has been built under special survey  
 the materials and workmanship are good & efficient  
 and when tested with hydraulic pressure was  
 found tight and satisfactory.

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

The amount of Entry Fee...	£	:	:	When applied for.
Special ... ..	£	:	:	3.8. 1905
Donkey Boiler Fee ...	£	2	2	When received.
Travelling Expenses (if any) £	:	:	:	8.8. 1905

*Geo. A. Milner* *P. J. Hudson*  
 Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

TUES. 3 OCT 1905

Committee's Minute  
 Assigned

