

REPORT ON BOILERS.

No. 29270

Received at London Office **WED. 7 SEP 1910 SAT. 12 NOV 1910**

Date of writing Report 19 When handed in at Local Office **3/9/10** Port of **Glasgow**

No. in Survey held at **Glasgow** Date, First Survey **11 April 1910** Last Survey **22 Aug 1910**

Reg. Book. on the Boiler **Nº B 146** **"Gopher"** (Number of Visits **16**) Gross Tons Net Tons

Master Built at By whom built When built

Engines made at By whom made when made

Boilers made at **Glasgow** By whom made **David Rowan & Co** when made **1910**

Registered Horse Power Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.—Manufacturers of Steel **Stewart & Lloyds Ltd**

Letter for record) Total Heating Surface of Boilers **2115 sq ft** Is forced draft fitted **—** No. and Description of Boilers **One single ended** Working Pressure **180 lb** Tested by hydraulic pressure to **360 lb** Date of test **22/8/10**

No. of Certificate **10553** Can each boiler be worked separately **—** Area of fire grate in each boiler **59 sq ft** No. and Description of Safety valves to each boiler **—** Area of each valve **—** Pressure to which they are adjusted **—**

Are they fitted with easing gear **—** In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **—**

Smallest distance between boilers or uptakes and bunkers or woodwork **—** Mean dia. of boilers **14' 6"** Length **10' 6"**

Material of shell plates **steel** Thickness **1 3/16"** Range of tensile strength **28-32** Are the shell plates welded or flanged **no**

Description of riveting: cir. seams **S. R. L.** long. seams **S. B. S.** Diameter of rivet holes in long. seams **1 5/16"** Pitch of rivets **8' 7 1/2"**

Width of butt straps **19 1/4"** Per centages of strength of longitudinal joint rivets **96.8%** plate **85%** Working pressure of shell by rules **183 lb** Size of manhole in shell **16" x 12"** Size of compensating ring **Flanged** No. and Description of Furnaces in each boiler **3 Morrison** Material **steel** Outside diameter **3-9 1/16"** Length of plain part **—** Thickness of plates **17 1/2"** crown **32"** bottom

Description of longitudinal joint **weld** No. of strengthening rings **—** Working pressure of furnace by the rules **181** Combustion chamber Material **steel** Thickness: Sides **1 1/8"** Back **1 1/8"** Top **1 1/8"** Bottom **1 1/8"** Pitch of stays to ditto: Sides **9 3/4" x 9"** Back **9 1/2" x 9 1/4"**

If stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **186** Material of stays **steel** Diameter at smallest part **2' 0 7/8"** Area supported by each stay **86 sq in** Working pressure by rules **180** End plates in steam space: Material **steel** Thickness **1 1/16"**

How are stays secured **S. nuts** Working pressure by rules **182** Material of stays **steel** Diameter at smallest part **8' 3"**

Area supported by each stay **470 sq in** Working pressure by rules **180** Material of Front plates at bottom **steel** Thickness **7/8"** Material of rear back plate **steel** Thickness **1 3/16"** Greatest pitch of stays **12 3/4"** Working pressure of plate by rules **185** Diameter of tubes **3 1/4"**

How are tubes **4 1/2" x 4 3/8"** Material of tube plates **steel** Thickness: Front **7/8"** Back **1 3/16"** Mean pitch of stays **11 1/8"** Pitch across wide spaces **13 1/4"** Working pressures by rules **190** Girders to Chamber tops: Material **steel** Depth and thickness of girder at centre **8 3/8" x 3/4" x 2"** Length as per rule **31 1/2"** Distance apart **9"** Number and pitch of Stays in each **2-9 3/4"**

Working pressure by rules **180** 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
Pitch of rivets	Working pressure of shell by rules	Diameter of flue	Material of flue plates	Thickness	

Are they fitted 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

Survey request form **146** attached

The foregoing is a correct description, **pro David Rowan & Co** Manufacturer.

Is the approved plan of boiler forwarded herewith **—** as **B 145**

During progress of work in shops - - - **1910. April 11. 18. 26. 27. June 1. July 11.**

During erection on board vessel - - - **Aug 3. 5. 15. 22.**

Total No. of visits **10**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This boiler has been constructed under Special Survey & is of good materials & workmanship. It is to the order of Messrs. Gabbett & Co., Great Yarmouth.**

Survey Fee **£ 7-1-0** When applied for **5/9/10**

Travelling Expenses (if any) **£** When received **4/11/10**

Hardman-Smith Engineer-Surveyor to Lloyd's Register of British and Foreign Shipping.