

# REPORT ON MACHINERY.

No. 12348

FRI 21 JUL 1893

Port of Glasgow

No. in Survey held at Glasgow  
Reg. Book.

Date, first Survey 12<sup>th</sup> April

Last Survey 13<sup>th</sup> July 1893

on the Steam Trawler Teal

(Number of Visits 21)

Master ✓ Built at Govan By whom built MacKie & Thomson When built 1893

Engines made at Glasgow By whom made Muir & Houston when made 1893

Boilers made at Glasgow By whom made Muir & Houston when made 1893

Registered Horse Power 35 Owners Great Grimsby Ice Co Port belonging to Grimsby

Nom. Horse Power as per Section 28 33

**ENGINES, &c.**— Description of Engines Triple Expansion inverted direct acting No. of Cylinders three  
Diameter of Cylinders 10, 16, 25 1/2 Length of Stroke 20 Revolutions per minute as per rule 4 1/4  
Diameter of Tunnel shaft as per rule 5 1/4 Diameter of Crank shaft journals 5 1/4 Diameter of Crank pin 5 1/4 Size of Crank webs 3 3/8 x 9 3/4  
Diameter of screw 1' 0" Pitch of screw 9' 0" No. of blades four State whether moveable fixed Total surface 16 sq ft  
No. of Feed pumps one Diameter of ditto 1 3/4 Stroke 10 Can one be overhauled while the other is at work ✓  
No. of Bilge pumps one Diameter of ditto 2 1/4 Stroke 10 Can one be overhauled while the other is at work ✓  
No. of Donkey Engines one Sizes of Pumps 6 + 3 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room Two 2" in engine room In Holds, &c. 2" Centre main hold.  
No. of bilge injections one sizes 2 1/2" Connected to condenser, or to circulating pump in h. Is a separate donkey suction fitted in Engine room & size yes 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 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 none How are they protected —  
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  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight none  
Is it fitted with a watertight door — worked from —

**BOILERS, &c.**— (Letter for record S.) Total Heating Surface of Boilers 540  
No. and Description of Boilers one Cylindrical return tubular Working Pressure 160 Tested by hydraulic pressure to 320  
Date of test — Can each boiler be worked separately ✓ Area of fire grate in each boiler 27 No. and Description of safety valves to each boiler two spring loaded Area of each valve 3 1/4 Pressure to which they are adjusted 160 Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean diameter of boilers 108  
Length 8' 9" Material of shell plates Stal Thickness 25/32 Description of riveting: circum. seams lap. 1. rivet long. seams 8. Butts 4 Rivets  
Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 4 1/2" Lap of plates or width of butt straps 17"  
Per centages of strength of longitudinal joint 101 Working pressure of shell by rules 165 Size of manhole in shell 12 x 16  
Size of compensating ring McNails No. and Description of Furnaces in each boiler two Material Stal Outside diameter 33  
Length of plain part top 5 1/4 bottom 7 3/4 Thickness of plates crown 5/8 bottom 7/8 + 3/4 Description of longitudinal joint Welded No. of strengthening rings none  
Working pressure of furnace by the rules 200 Combustion chamber plates: Material Stal Thickness: Sides 9/16 Back 9/16 Top 9/16 Bottom 3/4  
Pitch of stays to ditto: Sides 8 1/4 Back 8 1/4 Top 8 1/4 x 6 1/2 stays are fitted with nuts or riveted heads nuts Working pressure by rules 161  
Material of stays Stal Diameter at smallest part 1 1/4 Area supported by each stay 8 1/4 x 8 1/4 Working pressure by rules 170 End plates in steam space: Material Stal Thickness 49/64 Pitch of stays 13 How are stays secured 8. nuts & washers Working pressure by rules 165 Material of stays Stal  
Diameter at smallest part 3 1/4 Area supported by each stay 13 x 13 Working pressure by rules 185 Material of Front plates at bottom Stal  
Thickness 49/64 Material of Lower back plate Stal Thickness 49/64 Greatest pitch of stays 11 1/2 Working pressure of plate by rules 188  
Diameter of tubes 3" Pitch of tubes 4 3/8 x 4 1/4 Material of tube plates Stal Thickness: Front 49/64 + 9/16 double Back 9/16 Mean pitch of stays 8 5/8  
Pitch across wide water spaces 13 Working pressures by rules 226 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 6 x 2 1/4 Length as per rule 26 Distance apart 6 1/2 Number and pitch of Stays in each two 8 1/4  
Working pressure by rules 177 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 —

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DONKEY BOILER— Description

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 \_\_\_\_\_

Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *As required by the rules*

The foregoing is a correct description,  
*Wm. Houston* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. These engines and boiler have been built under the conditions of Special Survey. They have been securely fitted on board and were found to work satisfactorily under steam, except that the feed pump valve chest showed a slight leak.

Previous to the trial the feed pump air vessel burst and the connecting rod bolts of the feed donkey broke. Both parts have been renewed. This accident was apparently due to negligence.

The material and workmanship is good. It is submitted that this vessel will be eligible for the record + L.M.C. 7.93. When the feed pump valve chest has been renewed or efficiently repaired.

The Grimsby Hull Surveyors have been advised of this matter and also that this vessel has proceeded to Grimsby.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7.93  
The feed valve chest appears to have been repaired & the owners propose to fit a new one on the next return  
27/7/93 -

*C. E. Schromeyer*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

(The Surveyors are requested not to write below the space for Committee's Minute.)

Certificate (if required) to be sent to \_\_\_\_\_

MACHINERY CERTIFICATE WRITTEN.

The amount of Entry Fee.. £ 1 : " : When applied for, 14/4/93

Special .. .. £ 8 : " : .. .. 18/4/93

Donkey Boiler Fee .. .. £ " : " : When received, 20/4/93

Travelling Expenses (if any) £ " : " : .. .. 18/4/93

Committee's Minute TUES. 25 JUL 1893 FRI 28 JUL 1893  
Assigned Note  
+ L.M.C. 7.93  
Dr. A. Hull 25/7/93

