

# REPORT ON MACHINERY.

No.

9271

Port of Stull

Received at Lloyd's Office 10 OCT 1894

No. in Survey held at Berkeley & Hull Date, first Survey July 18<sup>th</sup> Last Survey Oct. 5 1894  
 Reg. Book. 1411 on the Iron Steam Trawler "Dorwood" (Number of Visits 16)  
 Master By whom built Cochrane & Cooper When built 1894  
 Engines made at Stull By whom made Amos Smith when made 1894  
 Boilers made at Stull By whom made Amos Smith when made 1894  
 Registered Horse Power 35 Owners The Northwood S. S. Co. Port belonging to Grimsby  
 Nom. Horse Power as per Section 28

**ENGINES, &c.**— Description of Engines Triple Comp. Inv & Acting No. of Cylinders Three  
 Diameter of Cylinders 10" 16" 25 1/2" Length of Stroke 20 Revolutions per minute 120 Diameter of Screw shaft as per rule 4 1/2"  
 Diameter of Tunnel shaft as per rule 5" Diameter of Crank shaft journals 5 1/2" Diameter of Crank pin 5 1/4" Size of Crank webs 6 1/2" x 3 1/2"  
 Diameter of screw 7' 6" Pitch of screw 8' 6" No. of blades 4 State whether moveable - Total surface 18.3 sq ft  
 No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work -  
 No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work -  
 No. of Donkey Engines one Sizes of Pumps 2 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room one 2" In Holds, &c. one 2"  
Also Ejector with suction in the Engine Bilge and Hold. Discharge on deck  
 No. of bilge injections one sizes 3" Connected to condenser, or to circulating pump pumps a separate donkey suction fitted in Engine room & size 3" - ejector  
 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 suction to forward How are they protected wood cased  
 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 how new Is the screw shaft tunnel watertight yes tunnel  
 Is it fitted with a watertight door yes worked from -

**BOILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 706 sq ft  
 No. and Description of Boilers One cylindrical smelt Working Pressure 170 Tested by hydraulic pressure to 340 lb  
 Date of test 19/9/94 Can each boiler be worked separately - Area of fire grate in each boiler 25 sq ft No. and Description of safety valves to  
 each boiler two spring loaded Area of each valve 4.9 sq Pressure to which they are adjusted 170 lb Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 8" Mean diameter of boilers 9' 9"  
 Length 9' 0" Material of shell plates steel Thickness 1 1/16" Description of riveting: circum. seams all on lap long. seams all strap 3/16"  
 Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 6.43" Lap of plates or width of butt straps 1 1/4"  
 Per centages of strength of longitudinal joint 112% Working pressure of shell by rules 172 lb Size of manhole in shell 16" x 12"  
 Size of compensating ring 30" x 26" x 1 1/16" No. and Description of Furnaces in each boiler two plain Material steel Outside diameter 35"  
 Length of plain part top 5' 6" Thickness of plates 1 1/16" Description of longitudinal joint bedded No. of strengthening rings -  
 Working pressure of furnace by the rules 173 lb Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 10/16"  
 Pitch of stays to ditto: Sides 8" Back 8" Top 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 171 lb  
 Material of stays steel Diameter at smallest part 1 1/2" Area supported by each stay 8" x 8" Working pressure by rules 185 lb End plates in steam space:  
 Material steel Thickness 1 1/16" Pitch of stays 1 1/2" How are stays secured all nuts Working pressure by rules 170 lb Material of stays steel  
 Diameter at smallest part 2 1/4" Area supported by each stay 1 1/2" x 12 1/2" Working pressure by rules 204 lb Material of Front plates at bottom steel  
 Thickness 1 1/16" Material of Lower back plate steel Thickness 1 1/16" Greatest pitch of stays 8" Working pressure of plate by rules 170 lb  
 Diameter of tubes 6 1/2" Pitch of tubes 4 3/4" Material of tube plates steel Thickness: Front 1 1/16" Back 5 3/16" Mean pitch of stays 1 1/2" x 9 1/2"  
 Pitch across wide water spaces 1 1/2" Working pressures by rules 170 lb Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 6 1/2" x 1 1/2" Length as per rule 21 5/8" Distance apart 7 1/2" Number and pitch of Stays in each two 8"  
 Working pressure by rules 170 lb Superheater or Steam chest; how connected to boiler - 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 -

HVL40q-0267

Lloyd's Register Foundation

**DONKEY BOILER**— Description *As donkey boiler*

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:— *Two top end bolts. Two bottom end bolts. Two main bearing bolts. One set coupling bolts. One set Dead Pump valves. One set Bilge pump valves. One set check valves. Safety valve spring*

*The vessel efficient with masts and sails as a steamer*

The foregoing is a correct description,  
*Amos Smith* Manufacturer.

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

*The Machinery and Boiler of this Steam Steamer have been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification H.L.M.C. 10.94. in the Register Book.*

It is submitted that this vessel is eligible for  
**THE RECORD** + L.M.C. 10-94

*Amos Smith*  
 2-10-94

Certificate (if required) to be sent to *Hull*

The amount of Entry Fee.. £ 1 : 0  
 Special .. .. . £ 8 : 0  
 Donkey Boiler Fee .. .. £ ✓ : :  
 Travelling Expenses (if any) £ ✓ : : *23.10.1894*

When applied for, *11/10/94*  
 When received, *NCL 24*

*Amos Smith*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUES. 10 OCT 1894*  
 Assigned *+ L.M.C. 10,94*



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