

# REPORT ON MACHINERY.

Port of Swan

Received at London Office NOV 10 1902  
Date, first Survey June 16<sup>th</sup> Last Survey Nov 14<sup>th</sup> 1902  
(Number of Visits 22)

No. in Survey held at Swan  
 Reg. Book. 40 Supp. on the Steam Sawyer Swan Tons { Gross 239  
 Net 84  
 Master Swan Built at Swan By whom built Cook Weller & Semmell When built 1902  
 Engines made at Swan By whom made Amos Smith when made 1902  
 Boilers made at Swan By whom made Amos Smith when made 1902  
 Registered Horse Power 72 Owners Pickering & Kaldam & Co Port belonging to Swan  
 Nom. Horse Power as per Section 28 72 Is Refrigerating Machinery fitted No Is Electric Light fitted No

Annex 328

**ENGINES, &c.**—Description of Engines Triple Compound No. of Cylinders Three No. of Cranks Three  
 Dia. of Cylinders 12 1/2" 2 1/2" 35" Length of Stroke 24" Revs. per minute 112 Dia. of Screw shaft 7 5/16 as per rule 7 5/16 as fitted 7 9/16 Material of screw shaft Iron  
 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 tight  
 in the propeller boss Yes If the liner is in more than one length are the joints burned no If the liner does not fit tightly at the part  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive - If two  
 liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 36"  
 Dia. of Tunnel shaft 6.63 as per rule 6.97 as fitted 7 Dia. of Crank shaft journals 7 1/2 as per rule 7 1/2 as fitted 7 1/2 Dia. of Crank pin 7 1/4 Size of Crank webs 1 1/2 x 4 1/4 Dia. of thrust shaft under  
 collars 7 1/4 Dia. of screw 9.0 Pitch of screw 11.3 No. of blades 4 State whether moveable No Total surface 28 sq ft  
 No. of Feed pumps one Diameter of ditto 2 7/8 Stroke 12 Can one be overhauled while the other is at work -  
 No. of Bilge pumps one Diameter of ditto 2 7/8 Stroke 12 Can one be overhauled while the other is at work -  
 No. of Donkey Engines two Sizes of Pumps 3 x 6" & 5 x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room two 2" In Holds, &c. two 2"  
Ejection suction in Engine Bilge and hold & discharge on deck  
 No. of bilge injections two sizes 3" Connected to condenser, or to circulating pump as a separate donkey suction fitted in Engine room & size equal  
 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 Suctions 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 Nov 1902 Is the screw shaft tunnel watertight Yes  
 Is it fitted with a watertight door - worked from -

**BOILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 1090 sq ft Is forced draft fitted No  
 No. and Description of Boilers One Cylindrical Working Pressure 205 lb Tested by hydraulic pressure to 400 lb  
 Date of test 16/9/02 Can each boiler be worked separately - Area of fire grate in each boiler 34 sq ft No. and Description of safety valves to  
 each boiler Two Spring Area of each valve 3.98 sq in Pressure to which they are adjusted 205 lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 8" Mean dia. of boilers 12.0 Length 10.3 Material of shell plates Steel  
 Thickness 1 1/8" Range of tensile strength 27.32 Are they welded or flanged - Descrip. of riveting: cir. seams all in lap long seams all chop & all  
 Diameter of rivet holes in long. seams 15/32 Pitch of rivets 7.77 Lap of plates or width of butt straps 16 1/4  
 Per centages of strength of longitudinal joint 89.2% rivets 85.1% plate Working pressure of shell by rules 205 lb Size of manhole in shell 16 x 12  
 Size of compensating ring 40 x 30 x 1 1/8" No. and Description of Furnaces in each boiler two straight Material Steel Outside diameter 45 1/4  
 Length of plain part top bottom 10 1/6 Thickness of plates top bottom 10 1/6 Description of longitudinal joint welded No. of strengthening rings Compound  
 Working pressure of furnace by the rules 222 lb Combustion chamber plates: Material Steel Thickness: Sides 1 1/16 Back 1 9/16 Top 1 9/16 Bottom 1 1/16  
 Pitch of stays to ditto: Sides 7 1/2 Back 7 1/2 Top 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 257 lb  
 Material of stays Steel Diameter at smallest part 1 3/8 Area supported by each stay 7 1/2 x 7 1/2 Working pressure by rules 211 lb End plates in steam space:  
 Material Steel Thickness 1 Pitch of stays 15 How are stays secured all nuts Working pressure by rules 210 lb Material of stays Steel  
 Diameter at smallest part 2 17/32 Area supported by each stay 15 x 15 Working pressure by rules 224 lb Material of Front plates at bottom Steel  
 Thickness 3 1/32 Material of Lower back plate Steel Thickness 1 5/16 Greatest pitch of stays 1 1/2 Working pressure of plate by rules 200 lb  
 Diameter of tubes 3 1/2 Pitch of tubes 4 7/8 Material of tube plates Steel Thickness: Front 3 1/32 Back 2 9/32 Mean pitch of stays 9 3/4  
 Pitch across wide water spaces 14 Working pressures by rules 208 lb Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8 1/2 x 2 Length as per rule 34 1/2 Distance apart 7 1/2 Number and pitch of Stays in each Three 7 1/2  
 Working pressure by rules 204 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 -

If not, state whether, and when, one will be sent? Yes

Is a Report also sent on the Hull of the Ship? Yes

W 18-0205



**DONKEY BOILER**— No. \_\_\_\_\_ Description *None*

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 \_\_\_\_\_ 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 feed pump valves. One set Bilge Pump valves. Safety valve opening &c.*

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

The foregoing is a correct description,

FOR AMOS & SMITH  
*W. J. Hyde*  
MANAGER

Dates of Survey while building

During progress of work in shops—	{	1902:— June 16. July 3. 8. Aug 6. 12. 19. 22. Sep 12. 16. 30. Oct 2. 8. 15. 16.	}	Total No. of s 22	
		During erection on board vessel—			Oct 20. 24. 29. 31. Nov 3. 7. 10. 14.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

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

*The Machinery and Boiler of this Steam Trawler 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 certification + LMC II, 02. in the Register Book*

It is submitted that this vessel is eligible for THE RECORD. + LMC II. 02.

*CM*  
*20.11.02*  
*J.S.*  
*20.11.02*

The amount of Entry Fee. £ 1 : . :.	When applied for, 17/11/02
Special £ 10 : 16 : .	When received, 20/11/02
Donkey Boiler Fee £ - : - : .	
Travelling Expenses (if any) £ - : - : .	

*James Jones*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 21 NOV 1902**

Assigned *+ LMC II, 02*

MACHINERY CERTIFICATE WRITTEN.



Null

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