

REPORT ON MACHINERY.

No. 16428

No. in Survey held at
Reg. Book.

Newcastle

Date, first Survey *28 Sep 1882* Last Survey *10 April 1883*

(Received at London Office Rec'd 12th April 1883)

on the *Screw Steamer "Malek"*

(Number of Visits *11*) *1621*

Master *J. W. Jones*

Built at

Newcastle

When built *1883*

Tons *1054*

Engines made at *Newcastle*

By whom made *Righam & Co.* when made *1883*

Boilers made at *Newcastle*

By whom made *Arden & Co.* when made *1883*

Registered Horse Power *180*

Owners *Persian Gulf Steam Ship Co. Ltd.*

Port belonging to *London*

ENGINES, &c.—

Description of Engines *Vertical acting compound Surface condensing*
 Diameter of Cylinders *31 & 62* Length of Stroke *42"* No. of Rev. per minute *70* Point of Cut off, High Pressure *56"* Low Pressure *5"*
 Diameter of Screw shaft *11"* Diameter of Tunnel shaft *10 1/2"* Diameter of Crank shaft journals *11"* Diameter of Crank pin *11"* size of Crank webs *7 & 1/2 x 3 1/2*
 Diameter of screw *14"* Pitch of screw *18"* No. of blades *4* state whether moveable *no* total surface *54 sq*
 No. of Feed pumps *2* diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *Engine space tanks, holds, after well, hot well & sea*
 No. of Donkey Engines *2* Size of Pumps *4 x 9 & 8 x 10* Where do they pump from *Engine space tanks, holds, after well, hot well & sea*

Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*
 No. of bilge injections *one* and sizes *4"* Are they connected to condenser, or to circulating pump *Circulating pump*
 How are the pumps worked *Leads over condenser*
 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 accessible at all times *yes*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *never*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Upper platform*

BOILERS, &c.—

Number of Boilers *2* Description *Cylindrical multitubular Pinfl ended Steel*
 Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *27. 2. 83* No. of Co. *1154*
 Description of superheating apparatus or steam chest *horizontal steam dome*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no*
 No. of square feet of fire grate surface in each boiler *45 sq* Description of safety valves *Spring*
 No. to each boiler *2* area of each valve *12.5* Are they fitted with easing gear *yes*
 No. of safety valves to superheater *✓* area of each valve *✓* are they fitted with easing gear *✓*
 Smallest distance between boilers and bunkers or woodwork *9 3/4"*
 Diameter of boilers *12.3* Length of boilers *10.6* description of riveting of shell long. seams *Lap double riveted circum. seams Lap double*
 Thickness of shell plates *25/32* diameter of rivet holes *1 1/8"* whether punched or drilled *drilled* pitch of rivets *2 1/2"*
 Lap of plating *7/2"* per centage of strength of longitudinal joint *73.1%* working pressure of shell by rules *93 lbs*
 Size of manholes in shell *16 1/2 x 12"* size of compensating rings *6 1/2 x 7/8"*
 No. of Furnaces in each boiler *3* outside diameter *37"* length, top *9.0"* bottom *9.10"*
 Thickness of plates *17/32* description of joint *double butts* if rings are fitted *✓* greatest length between rings *7.0"*
 Working pressure of furnace by the rules *97 lbs*
 Combustion chamber plating, thickness, sides *5/8"* back *5/8"* top *5/8"*
 Pitch of stays to ditto, sides *8 1/4"* back *8 1/4"* top *radius*
 If stays are fitted with nuts or riveted heads *riveted heads* working pressure of plating by rules *94 lbs*
 Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *108 lbs*
 End plates in steam space, thickness *3/4"* pitch of stays to ditto *12 3/8"* how stays are secured *AKB Washers*
 Working pressure by rules *98 lbs* diameter of stays at smallest part *2 1/4"* working pressure by rules *115 lbs*
 Front plates at bottom, thickness *1/8"* Back plates, thickness *5/8"* greatest pitch of stays *12"* working pressure by rules *115 lbs*

Boiler bracing was forwarded

Diameter of tubes $3\frac{3}{4}$ " pitch of tubes 5 " thickness of tube plates, front $\frac{3}{4}$ " back $\frac{11}{16}$ "
 How stayed *Stay tubes* pitch of stays 15 " width of water spaces 6 "
 Diameter of Superheater or Steam chest 36 " length $8:0$ "
 Thickness of plates $\frac{3}{8}$ " description of longitudinal joint *lap joint* diameter of rivet holes $\frac{13}{16}$ " pitch of rivets $3\frac{1}{2}$ "
 Working pressure of shell by rules 140 lbs Diameter of flue --- thickness of plates ---
 If stiffened with rings --- distance between rings --- Working pressure by rules ---
 End plates of superheater, or steam chest; thickness $\frac{3}{8}$ " How stayed *Spherical*
 Superheater or steam chest; how connected to boiler *Contracted neck (iron)*

DONKEY BOILER— Description *Cylindrical, Vertical, Multitubular (Patent Corroctor)*
 Made at *Hyde* By whom made *Josiah Adams & Co.* when made *19th February 1883.*
 Where fixed *Storehoed* working pressure 55 lbs. Tested by hydraulic pressure to 110 No. of Certificate 319
 Fire grate area 7 sq. ft. Description of safety valves *Spring* No. of safety valves 1 area of each 9.6
 If fitted with casing gear *yes* If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler $5:0$ " length $11:4$ " description of riveting *double riveted, lap joint.*
 thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *drilled.*
 pitch of rivets $2\frac{1}{2}$ " lap of plating 4 " per centage of strength of joint 70
 thickness of crown plates $\frac{9}{16}$ " stayed by *Uptake and 17 stay tubes.*
 Diameter of furnace, top $5:0$ " bottom $5:0$ " length of furnace $4:9$ "
 thickness of plates 69 Vertical *tubes* description of joint ---
 thickness of furnace crown plates $\frac{9}{16}$ " stayed by *Uptake and 17 stay tubes.*
 Working pressure of shell by rules 86 lbs. working pressure of furnace by rules ---
 diameter of uptake 10 " thickness of plates $\frac{1}{2}$ " thickness of water tubes $\frac{1}{4}$ " x $\frac{3}{32}$ "

The foregoing is a correct description,

Josiah Adams & Co. Manufacturer.

A. Stoddart.

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

The machinery of this vessel has been specially surveyed during construction the material and workmanship good and hence the vessel eligible in my opinion to have the notification \square S. M. C. 4. 83 in the Register Book of the Society.

As submitted that this vessel is eligible to have the notification & S.M.C. recorded J.M. 17/4/83

The amount of Entry Fee $\pounds 3$: - : - received by me, *W.C.B.*
 Special .. $\pounds 24$: - : -
 Certificate (if required) \pounds - : - : - 9^{th} April 1883
 (To be sent as per margin.)
 (Travelling Expenses, if any, \pounds - : - : -)

Committee's Minute *Friday, 13th April 1883.*

Richard Ainslie
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Wm. Shields