

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Inverted, Compound, Surface Condensing.*
 Made by *Mr. John Dickinson*
 When *May 18 77* At *Sunderland.*
 Diameter of cylinder *5 2 1/2 x 50* Length of stroke *33.*
 No. of revolutions per minute *about 65*
 Point of cut off *1/2 stroke.*
 Diameter of screw shaft *9.*
 Diameter of crank shaft journals *9.*
 Diameter of screw, or of paddle wheel *12.6.*
 Pitch of screw *16.6.*
 No. of blades, *4* Total surface *40 sq. feet.*
 No. of bilge pumps *2* and sizes *3 1/2 x 16 1/2 stroke.*
 Do they pump from each compartment *from Engine room & fore hold.*

Are all the bilge suction pipes fitted with roses *yes.*
 No. of feed pumps *2* and sizes *3 1/2 x 16 1/2 stroke.*
 What gauges are there attached to the engines and boilers ... *1 steam gauge in Engine room*
 Description and size of Donkey Pumps ... *1 inverted double acting 8 dia x 10 stroke*
 Where do they pump from ... *1 simple acting 4 1/2 x 6*
 No. of bilge injections *one* and sizes *4 dia.*
 Are they connected to air, or circulating pumps *to Circulating pump.*
 Is there a hand pump in the engine room *yes.*
 Can it be worked by the main engines *no*
 Is there a deck hose of sufficient length to reach to any part of the vessel *yes (from line pipe)*

MAIN BOILERS.

Number *one* Description *Cylindrical & Multitubular*
 Made by *Mr. J. Dickinson.*
 When *May 18 77* At *Sunderland.*
 Working pressure *70 lbs per sq. inch.*
 Tested by hydraulic pressure to *140 lbs.* Date *March 28/77*
 Description of super-heating apparatus *none.*
 Can each boiler be worked separately *only 1 boiler.*

Can the super-heater be shut off and the boilers worked separately
 Description and area of safety valves on each boiler *2 spring safety valves 4 dia.*
 No. of square feet of fire-grate surface in each boiler *49 3/4.*
 Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *yes.*
 Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times. *yes (except the life pipe in fore hold when full)*

DONKEY BOILER.

Description *Upright Cyl. with 3 cross tubes.*
 Where fixed *in the stokehole.*
 Working pressure *50 lbs per sq. inch.*

Tested by hydraulic pressure to *120 lbs (reported).* Date *March 6/77*
 Description and area of safety valves *1 loaded dia 3 1/2*
 No. of square feet of fire grate *12.*

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *yes.*
 Are they Kingston valves or common cocks ... *Stop valves and cocks.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *yes (except ash and donkey boiler cock)*
 Are the discharge pipes above or below the deep water line *above.*
 Are they each fitted with a discharge valve on the plating of the vessel *yes.*

What pipes are carried through the bunkers *none.*
 How are they protected
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *new.*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *yes.*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *yes*

Manufacturer.

Except of the Donkey boiler *I was present on April 25th when steam was raised and the engine worked. Steam 70 lbs, revs 27 1/2. Revs 65 and on May 7th when safety valves were tested, all satisfactory.*
W. A.

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood)

Screw (or Paddle) Steam Vessel *"Ferndale"* owned by *Dixon & Nelson*
 at the Port of *Sunderland* of *604* Tons Register, and *95* Registered Horse Power,
 that they have been carefully inspected and examined by me at *Sunderland.*
 to be at this date, viz., *May 12th* 18 *77* in good order and safe working condition.

for Survey Certificate £ 4 : 15 :
 if any, £ 5 : 0 : 0

William Allison.
 Engineer Surveyor to Lloyd's Register of Shipping.