

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER'S CERTIFICATE.

The following is a true Account of the Particulars of the Machinery and Boilers:—

ENGINES.—Here state description of Engines, whether Direct Acting or Geared, Inverted, Horizontal, Diagonal, or Oscillating Cylinders

*Vertical Steep Engines, direct acting, with
2 Cylinders.*

ENGINES, maker of *R. Napier & Sons*
 „ age of *new*
 „ last time taken out
 „ present condition *new*
 Diameter of Cylinder *44 ins & 7/4 ins.*
 Length of stroke *5 feet*
 No. per minute of Engines *about 35*
 „ of Screw *paddle* *35*
 Estimated power *200 Nominal*
 Effective power *950 indicated*
 Diameter of Screw (or Paddle Wheels) *18' 3" over floats*
 Pitch of Screw
 No. of Blades (or Floats) *11 in each wheel*
 Description of Screw (or Floats) *feathering*
 Holding down Bolts, size *1 7/8" diam*
 „ present condition *new*

Bilge Pumps, No. (*2*) and size *4' dia 30" stroke*
 Feed „ No. (*2*) and size *4' & 30"*
 Spare gear, if usual quantity on board Vessel *yes.*
 Fuel, where stowed *alongside Boilers*
 „ space between Coal Bunkers and Boilers *5 ins*
 „ for what quantity is space provided *abt 120 tons*
 Donkey Engine and Boiler *1 Boiler & 1 Donkey Engine*
 „ if fitted in Engine Room or on Deck *both in Engine room*
 „ can pump be worked by hand *no*
 „ size of pump (*4'*) and stroke *8 ins*
 „ is hose of sufficient length to reach every part of the Vessel *yes.*
 No. (*1*) and continuation of hand pumps, if fitted in Engine Room *fitted in Engine room to pump to Boilers, on deck and overboard.*

BOILER.—Here state description of Boiler, and No.; if Tubular, or Flues; No. of Furnaces; if fitted with superheating apparatus; if Fired athwartships, or from fore, or after end of Boiler, &c.

*Two Cylindrical tubular Boilers, 3 furnaces in each. fired fore & aft — one Boiler from forward end & one from aft end
Two vertical flue Superheaters.*

BOILER, maker of *R. Napier & Sons*
 „ age of *new*
 „ when last taken out
 „ present condition *new*
 „ working pressure *60 lbs & 92 ins.*
 No. of surface Blow off Cocks to each Boiler *1*

Can each Boiler be used separately *yes.*
 What clear space between top of Boiler and woodwork *12 ins*
 What clear space between Funnel and woodwork *35 ins*
 Are Engine and Boiler Keelsons well connected fore and aft *yes.*

Screw Shaft length diameter Tunnel thickness of plating height
 width if water tight door on Engine Bulkhead.

Port *Glasgow*, *25th* day of *March*, 18 *74*

We hereby certify, that the whole of the above Machinery and Boilers of the Iron (or Wood) *the Commissioners of*
~~Screw (or Paddle)~~ Steam Vessel *"Pharos"* belonging to *Northern Lighthouses*
 whereof *Dugald Graham* is Master, *241 1/100* Tons Register, and *200* H.P. have been
 carefully inspected and examined by *us* at *Glasgow* and *we* found the
 same, at this date, in good order and safe working condition.

J. Pro. R. Napier & Sons
D. Bell
 Marine Engineers.