

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
No. of Cylinders, &c.

Compound Inverted Lever Engines of 2 Cylinders

ENGINES, maker of *Alexander Stephen & Sons*
 „ age of *New*
 „ last time taken out *—*
 „ present condition *—*
 Diameter of Cylinder *H.P. 23" L.P. 37"*
 Length of stroke *3 feet 6 inches*
 No. per minute of Engines *70 Revolutions*
 „ of Screw *70*
 Estimated power *90 H.P.*
 Effective power *360*
 Diameter of Screw (or Paddle Wheels) *10 feet*
 Pitch of Screw *16 feet*
 No. of Blades (or Floats) *Four*
 Description of Screw (or Floats) *Common Symmetrical with*
 Holding down Bolts, size *1 1/2" Hollow face*
 „ present condition *New*

Bilge Pumps, No. (*1*) and size *5" diameter 17 1/2" Stroke*
 Feed „ No. (*1*) and size *5" 17 1/2"*
 Spare gear, if usual quantity on board Vessel *Yes*
 Fuel, where stowed *In Bunkers*
 „ space between Coal Bunkers and Boilers *9"*
 „ for what quantity is space provided *50 tons*
 Donkey Engine and Boiler *Yes*
 „ if fitted in Engine Room or on Deck *Stokehole*
 „ can pump be worked by hand *Yes*
 „ size of pump (*3"*) and stroke *6 inches*
 „ 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 *Yes*

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.

One Round Tubular Boiler with Steam dome, 3 furnaces, fired from forward end of Boiler

BOILER, maker of *Alexander Stephen & Sons*
 „ age of *New*
 „ when last taken out *—*
 „ present condition *—*
 „ working pressure *60 lbs*
 No. of surface Blow off Cocks to each Boiler *2*

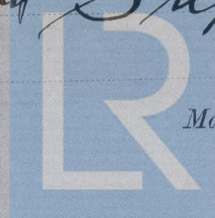
Can each Boiler be used separately *—*
 What clear space between top of Boiler and woodwork *12 inches*
 What clear space between Funnel and woodwork *12 inches*
 Are Engine and Boiler Keelsons well connected fore and aft *Yes*

SCREW SHAFT length *68 feet* diameter *8"* Tunnel thickness of plating *1/4"* height *3' 6"*
 width *3' 6"* if water-tight door on Engine Bulkhead. *Yes*

Port *Glasgow*, *14th* day of *March* 18*74*

We hereby certify, that the whole of the above Machinery and Boilers of the Iron (or Wood) Screw (or Paddle) Steam Vessel *Bruce* belonging to *Sir Macfarland* whereof *Sir Macfarland* is Master, *204-60* Tons Register, and *90* H.P. have been carefully inspected and examined by *us* at *Lithgow* *Govan* and have found the same, at this date, in good order and safe working condition.

Ally Stephen Sons



Marine Engineers.

Lloyd's Register
Foundation

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