

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rev 22/2/77

Description *Inverted Compound Surface Condensing*
 Made by *W. G. Clark*
 When *Feb'y* 18 *77* At *Sunderland*
 Diameter of cylinder *5 3/4 x 6 1/2* Length of stroke *39*
 No. of revolutions per minute *about 60*
 Point of cut off *5/8*
 Diameter of screw shaft *10 3/4*
 Diameter of crank shaft journals *10 3/4*
 Diameter of screw, or of paddle wheel *13 1/2*
 Pitch of screw *16 1/2*
 No. of blades, *4* Total surface *47 sq. feet*
 No. of bilge pumps *2* and sizes *5 1/4 x 19 1/2 stroke*
 Do they pump from each compartment *from engine room, fore hold & aft well*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *5 1/4 x 19 1/2 stroke*
 What gauges are there attached to the engines and boilers ... *1 steam gauge on each boiler in stoke hole & 1 in the engine room. 1 vac. m.*
 Description and size of Donkey Pumps ... *2 inverted double acting. 8" dia. x 10 stroke & 4" dia. x 6 stroke*
 Where do they pump from ... *large one from sea tanks, Condenser, & bilges of engine room. aft well & fore hold. Small one from sea bilges, Hotwell.*
 No. of bilge injections *1* and sizes *4" dia.*
 Are they connected to air, or circulating pumps *to Circulating.*
 Is there a hand pump in the engine room *No. donkey can be used.*
 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.*

MAIN BOILERS.

Number *Two* Description *Cylindrical & Multitubular*
 Made by *W. G. Clark*
 When *Feb'y* 18 *77* At *Sunderland*
 Working pressure *75 lbs per sq. inch*
 Tested by hydraulic pressure to *150 lbs*, Date *Dec 14/76*
 Description of super-heating apparatus *none*
 Can each boiler be worked separately *yes.*

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. = 25 sq. inches area.*
 No. of square feet of fire-grate surface in each boiler *45.*
 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 bilge roses in the fore hold. when filled.*

DONKEY BOILER.

Description *Upright Cyl. with 4 Cross tubes.*
 Where fixed *in the stokehole.*
 Working pressure *51 lbs per sq. inch.*

Tested by hydraulic pressure to *100 lbs*, Date *Dec 18/76*
 Description and area of safety valves *loaded direct 3 1/4" = 8.29*
 No. of square feet of fire grate *18.*

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.*
 Are the discharge pipes above or below the deep water line *at the deep lead line.*
 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 *now.*
 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 *Tunnel Caulked and sluice door fitted.*
 I was present when steam was raised and the safety valves tested, & engines worked. *Steam 70 lbs vac 28" revs 72. all worked well Jan'y 13/77 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 *"Commonwealth"* owned by *J. Day, Farlam & Co* of the Port of *Newcastle* of *1225* Tons Register, and *160* Registered Horse Power, and that they have been carefully inspected and examined by me at *Sunderland* and found to be at this date, viz., *February 20th* 18 *77* in good order and safe working condition.

Amount of Fee for Survey ... £ *8:0:0*
 (Travelling Expenses, if any, £ *0:5:0*)
 Received at *Sunderland* *5/2/77 W. A.*

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