

SHIP'S NAME *Arizona*

23516 Iron

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rev 22/5/79

Description *Compound Inverted Direct Acting*
Made by *Super John Elder & Co*
When 18 *79* At *Glasgow*
Diameter of cylinders *Two 62"* Length of stroke *66"*
No. of revolutions per minute
Point of cut off
Diameter of screw shaft *21" Tunnel 20"*
Diameter of crank shaft journals *22 1/2"*
Diameter of screw, ~~and paddle wheel~~ *20 ft*
Pitch of screw *33 ft*
No. of blades *Four* Total surface *142 ft*
No. of bilge pumps *Two* and sizes *4" dia x 37" stroke*
Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
No. of feed pumps *Two* and sizes *7" dia x 37" stroke*
What gauges are there attached to the engines and boilers *Ten Steam Two Vacuum*
Description and size of Donkey Pumps *Two Double Acting 8" x 12" stroke 12 cylinder Coupled*
Where do they pump from *From the Sea Pipe & Hot Well*
No. of bilge injections *Two* and sizes *4" 10"*
Are they connected to air, or circulating pumps *To Circulating*
Is there a hand pump in the engine room *Yes*
Can it be worked by the main engines *Yes*
Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *Seven* Description *Round Horizontal Six Double Ended & One Single Ended*
Made by *John Elder & Co*
When 18 *79* At *Glasgow*
Working pressure *90 lbs*
Tested by hydraulic pressure to *180 lbs*, Date *Mar 4th 1879*
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 *Two Direct Spring each 30.6" area*
No. of square feet of fire-grate surface in each boiler *120 ft*
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*

DONKEY BOILER.

Description *The Single ended Boiler above referred to is used as an auxiliary.*
Where fixed *Auxiliary.*
Working pressure *90 lbs*

Tested by hydraulic pressure to *180 lbs*, Date *Mar 4th 1879*
Description and area of safety valves *Two Direct Spring each 15" area*
No. of square feet of fire grate *60 ft*

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 *Screw down valves & Cocks*
Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *All fitted above the turn of the Bilge*
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 *Main Steam pipes & pipes to bilge*
How are they protected *By Iron casing*
When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *On Ship previous to being launched*
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*

John Elder & Co Manufacturer.

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 *Arizona* owned by *Liverpool & Great Western Steam Ship Coy* of the Port of *Liverpool* *32928* Tons Register, and *1200* Registered Horse Power, and that they have been carefully inspected and examined by me at *Glasgow* and found to be at this date, viz., *20th May* 18 *79* in good order and safe working condition.

Amount of Fee for Survey ... £60: 7: 6 Paid
(Travelling Expenses, if any, £)

James Morrison
Engineer Surveyor to Lloyd's Register of Shipping.
Clyde District

The Engines and Boilers of this vessel
 have been smothered and filled in accordance
 with the rules and regulations of the U.S. Navy
 relative to the disposal of the U.S. and its
 machinery equipment from 20 May 1979 -

W. S. 79