

# REPORT ON MACHINERY.

SEP 17 1901

Port of Glasgow.

Received at London Office

No. in Survey held at Glasgow.

Date, first Survey 23 Octr '00

Last Survey 7 Sept 01.

g. Book.

(Number of Visits 52)

on the Screw Steamer Kumano Maru.

Tons { Gross 4655.40  
Net 2880.82

Master Hasiwell Built at Glasgow. By whom built Fairfield Shipbldg Coy Ltd When built 1901.

Engines made at Glasgow By whom made Fairfield Shipbldg Coy Ltd when made 1901.

Wheels made at Glasgow By whom made Fairfield Shipbldg Coy Ltd when made 1901.

Registered Horse Power 650 Owners Nippon Yusen Kaisha Port belonging to Tokio

Indicated Horse Power as per Section 28 788 Is Refrigerating Machinery fitted Yes for ship use. Is Electric Light fitted Yes.

**GINES, &c.**—Description of Engines Triple Expansion. No. of Cylinders Three No. of Cranks Three

No. of Cylinders 31-51-85 Length of Stroke 54 Revs. per minute 90 Dia. of Screw shaft 16 1/2 as per rule 16 1/2 as fitted 16 1/2 Lgth. of stern bush 5'6"

No. of Tunnel shaft 1 Dia. of Crank shaft journals 16 1/4 as per rule 16 1/4 as fitted 16 1/4 Dia. of Crank pin 16 1/4 Size of Crank webs 31 x 11 1/2 Dia. of thrust shaft under bars 16 1/4 Dia. of screw 14'6" Pitch of screw 22'0" No. of blades 4 State whether moveable Yes Total surface 86 sq ft.

No. of Feed pumps 2 Diameter of ditto 5 1/2 Stroke 27 Can one be overhauled while the other is at work Yes Keels Feed pumps

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes 2 (12' x 9' x 24')

No. of Donkey Engines 3 Sizes of Pumps (8' x 8') (10' x 12') (10' x 12') No. and size of Suctions connected to both Bilge and Donkey pumps 4

Engine Room Four 3 1/2 dia. In Holds, &c. No 1 Hold: 2-3 1/2 dia. No 2 Hold: 2-3 1/2 dia.

No. of bilge injections 1 sizes 16" Connected to condenser, or to circulating pump Connected to a separate donkey suction fitted in Engine room & size Yes 4 1/2

Are all the bilge suction pipes fitted with roses Yes. Are the roses in Engine room always accessible Yes. Are the sluices on Engine room bulkheads always accessible Yes.

Are all connections with the sea direct on the skin of the ship Yes. Are they Valves or Cocks Both.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes. Are the discharge pipes above or below the deep water line Above

Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes. Are the blow off cocks fitted with a spigot and brass covering plate Yes.

Are all pipes carried through the bunkers Head Suctions How are they protected By casing

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes.

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes.

Were the stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight Yes.

Is it fitted with a watertight door Yes. worked from Top platform in engine room.

**BOILERS, &c.**— (Letter for record S.) Total Heating Surface of Boilers 14940 sq. ft. Is forced draft fitted No.

No. and Description of Boilers 4: Cylt. 2: 2 Dble Ended 2 Single Ended Working Pressure 185 lbs. Tested by hydraulic pressure to 370 lbs.

Date of test 9/5/01. Can each boiler be worked separately Yes. Area of fire grate in each boiler 125 sq. ft. No. and Description of safety valves to boiler 3: Direct Spring. Area of each valve 10.32 Pressure to which they are adjusted 190 lbs. Are they fitted with easing gear Yes.

Least distance between boilers or uptakes and bunkers or woodwork About 4' Mean dia. of boilers 15'6" Length 18'0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 27-32 tons Are they welded or flanged No. Descrip. of riveting: cir. seams Top: Double Rivet long seams Dble Butt Shaps.

Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 20"

Percentages of strength of longitudinal joint rivets 87. plate 85. Working pressure of shell by rules 212 lbs. Size of manhole in shell 16' x 12"

No. of compensating ring Flanged Ring No. and Description of Furnaces in each boiler 6: Mounson's. Material Steel Outside diameter 50 1/2"

Thickness of plain part 7'0" Thickness of plates 5'8" Description of longitudinal joint Weld. No. of strengthening rings 3: at top & bottom.

Working pressure of furnace by the rules 200 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"

No. of stays to ditto: Sides 7 1/2 x 7 1/2 Back 7 1/2 x 7 1/2 Top 8 x 7 1/2 If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 187 lbs.

Material of stays Steel Diameter at smallest part 1 3/4 x 1 1/2 Area supported by each stay 62 x 47 Working pressure by rules 185 lbs. End plates in steam space:

Material Steel Thickness 1 1/8" Pitch of stays 15' x 15' How are stays secured Dble nuts. Working pressure by rules 252 lbs. Material of stays Steel

Diameter at smallest part 2 3/8" Area supported by each stay 225 Working pressure by rules 213 lbs. Material of Front plates at bottom Steel

Thickness 3/8" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 9 1/2" Working pressure of plate by rules 213 lbs.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 1/2"

Thickness across wide water spaces 1 1/2" Working pressures by rules 223 lbs. 228 lbs. Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 4 x 13 1/2 Length as per rule 22' Distance apart 8' Number and pitch of Stays in each 5: 7 1/2"

Working pressure by rules 266 lbs. Superheater or Steam chest; how connected to boiler None. Can the superheater be shut off and the boiler worked

separately

Material Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Strengthened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

