

REPORT ON MACHINERY.

CHICAGO.

No. 168

Date of writing Report 10 When handed in at Local Office 19 Port of Chicago, Illinois
 No. in Survey held at Indianapolis Reg. Book. Midwest Engine Co. Date, First Survey 27/2/20 Last Survey 7/5/20 19
 on the Twin Screw Steamer Gymp Maru (Number of Visits)
 Tons } Gross 5600.18
 Net 6255.34
 Master Giichi Yamamoto Built at Yaurumi By whom built Asano S.B.C. When built 1921
 Engines made at Indianapolis Ind. By whom made Midwest Engine Co. when made 1920
 Boilers made at Yaurumi By whom made Asano S.B.C. when made 1921
 Registered Horse Power Owners. Gymp Kisen Kaisha Port belonging to Yokohama
 Shaft Horse Power at Full Power 5600 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engines Parsons Cross Compound. No. of Turbines 2.
 Diameter of Rotor Shaft Journals, H.P. 4" L.P. 4" Diameter of Pinion Shaft 8.050" Outside teeth
 Diameter of Journals 5" Distance between Centres of Bearings 28x28x6 1/2" Diameter of Pitch Circle 7.75 H.S. 16.5" Int.
 Diameter of Wheel Shaft 12" Int. 14" Int. S. Distance between Centres of Bearings 58.75" Int. 43" Int. S. Diameter of Pitch Circle of Wheel 51.25" Int. 93.25" Int. S.
 Width of Face 14" Int. 26" Int. S. Diameter of Thrust Shaft under Collars 9.073" Diameter of Tunnel Shaft as per rule
 No. of Screw Shafts Diameter of same as per rule Diameter of Propeller Pitch of Propeller " " " " L.P. H.P.
 No. of Blades State whether Moveable Total Surface Diameter of Rotor Drum, H.P. 13.16 L.P. 22 astern 21.125 23.3125
 Thickness at Bottom of Groove, H.P. 12.2, 15.3 L.P. 21.2, 20.3 Astern 21.75 20.125 Revs. per Minute at Full Power, Turbine 3600 Propeller 90 19.50 22.5625

ASTERN. { 23.0625
 { 22.3125
 { 21.5625

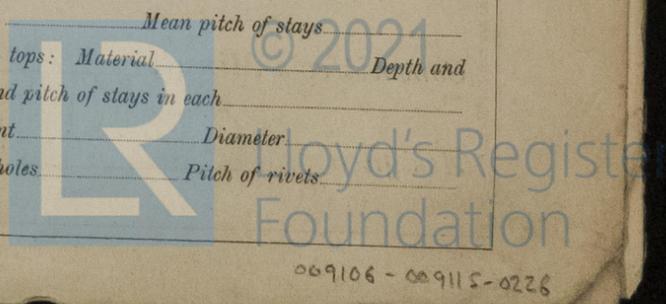
ARTICULARS OF BLADING.

	H. P.			L. P.			H. P. ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	.605	14.19	5	2.23	26.44	2	1.562	27.187	1
2ND "	.7925	14.565	6	2.79	27.565	2	2.312	27.937	1
3RD "	1.0425	15.065	5	3.475	28.93	2	3.062	28.687	1
4TH "	1.3550	15.69	5	4.345	30.67	2	L.P. ASTERN.		
5TH "	1.105	18.19	3	4.965	31.91	1	2.656	28.062	1 1st EXPANSION
6TH "	1.4125	18.815	3	"	"	1	4.281	29.687	1 2nd "
7TH "	1.8500	19.68	3	"	"	1	5.906	31.312	1 3rd "
8TH "	2.3500	20.68	3	"	"	1			

No. and size of Feed pumps
 No. and size of Bilge pumps
 No. and size of Bilge suction in Engine Room

In Holds, &c.
 No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate
 What pipes are carried through the bunkers How are they protected
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Manufacturers of Steel
 Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers
 Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate
 Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to
 Each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear
 Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates
 Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
 Long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
 Percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell
 Size of compensating ring plates No. and Description of Furnaces in each Boiler Material Outside diameter
 Length of plain part top crown bottom Description of longitudinal joint No. of strengthening rings
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space
 Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
 Thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 Working pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter
 Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
 Working pressure of shell by rules Crown plates: Thickness How stayed



CHICAGO
SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____
 Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____
 Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

IS A DONKEY BOILER FITTED? _____ If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied:— _____

The foregoing is a correct description,
Midwest Engine Company. Manufacturer.
J.C. Bopp Asst. Supt. Managrs.

Dates of Survey while building { During progress of work in shops -- } 27/2/20, 12/3/20, 13/4/20, 7/5/20
 { During erection on board vessel --- }
 Total No. of visits _____ Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Casings 27/2/20, 7/5/20 Rotors 27/2/20, 7/5/20 Blading 12/3/20, 13/4/20, 7/5/20 Gearing 13-7-20
 Rotor shaft 27/2/20, 7/5/20 Thrust shaft _____ Tunnel shafts _____ Screw shaft _____ Propeller _____

Stern tube _____ Steam pipes tested 7/5/20 Engine and boiler seatings _____ Engines holding down bolts _____
 Completion of pumping arrangements _____ Boilers fixed _____ Engines tried under steam _____

Main boiler safety valves adjusted _____ Thickness of adjusting washers _____
 Material and tensile strength of Rotor shaft *ON Steel H.P. 62800, L.P. 72050 lbs per sq in* Identification Mark on Do. *H.P. 14800-22, L.P. 1480*

Material and tensile strength of Pinion shafts *Chrome Vanadium Steel - 111,240 lbs tensile* Identification Mark on Do. *LLOYD'S 1570, 1574, 4-5-20 J.F.*

Material of Wheel shafts *S* Identification Mark on Do. *1868 27-4-20 J.F.* Material of Thrust shaft _____ Identification Mark on Do. _____
 Material of Tunnel shafts _____ Identification Marks on Do. _____ Material of Screw shafts _____ Identification Marks on Do. _____

Material of Steam Pipes _____ Test pressure _____
 Is an installation fitted for burning oil fuel _____ Is the flash point of the oil to be used over 150° F. _____

Have the requirements of Section 49 of the Rules been complied with _____
 Is this machinery a duplicate of a previous case _____ If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above turbines have been constructed under special Survey.*

*The material and workmanship employed in their manufacture are, so far as can be seen, sound and good.
 The casings pipes and connections have been submitted to the required hydraulic tests with satisfactory results.*

Certificate (if required) to be sent to _____
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

	When applied for,	When received,
The amount of Entry Fee ... £	Chicago 19 20	19
Special ... £	<i>1/3 Chicago charged. 54 00</i>	
Donkey Boiler Fee ... £		
Travelling Expenses (if any) £	<i>\$ 68 96 charged.</i>	

H. Magoris, J. Hockhart,
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 22 NOV. 1921

Committee's Minute TUE. NOV. 11 1921

Assigned *See Zka Rpt No. 288*

