

REPORT ON MACHINERY

No. 4229

28 MAY 1927

Received at London Office

4a.

of writing Report *May 9th 1927* When handed in at Local Office *May 11th 1927* Port of *Newport News Va.*
 in Survey held at *Newport News Va.* Date, First Survey *April 28 1926* Last Survey *April 15 1927*
 Book *Support the Machinery for the Twin Screw Turbine Steamer "IROQUOIS"* (Number of Visits *52*)
 Tons { Gross *6209*
 Net *3405*
 Built at *Newport News Va.* By whom built *Newport News S. B. & D. Co.* When built *1927-4.*
 Lines made at *Newport News Va.* By whom made *Newport News S. B. & D. Co.* when made *1927-4.*
 Deckers made at *Bayonne N.J.* By whom made *Balmain & Wilson Company* when made *1927-4.*
 Registered Horse Power *2248* Owners *New York & Maine S. S. Corp.* Port belonging to *New York*
 Net Horse Power at Full Power *8500* Is Refrigerating Machinery fitted for cargo purposes *Yes.* Is Electric Light fitted *Yes.*

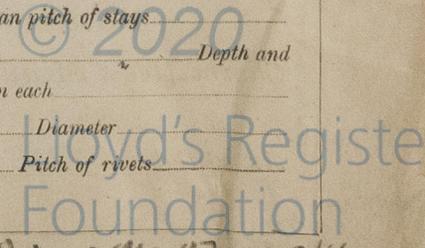
TURBINE ENGINES, &c.—Description of Engines *Twin Screw Single Reduction Turbines* No. of Turbines *4*
 Diameter of Rotor Shaft Journals, H.P. *7* L.P. *7* Diameter of Pinion Shaft *7*
 Diameter of Journals *7 3/4* Distance between Centres of Bearings *2-5/2* Diameter of Pitch Circle *8.702*
 Diameter of Wheel Shaft *5 1/2* Distance between Centres of Bearings *6-1/2* Diameter of Pitch Circle of Wheel *104.869*
 Diameter of Face *42 (2-21)* Diameter of Thrust Shaft under Collars *13 5/8 (Kingpin Thrust)* Diameter of Tunnel Shaft as per rule *12.19*
 as fitted *12.75*
 Number of Screw Shafts *2* Diameter of same as per rule *13.29* Diameter of Propeller *13-3* Pitch of Propeller *14-5*
 as fitted *14*
 Number of Blades *3* State whether Moveable *No.* Total Surface *600 sq (one propeller)* Diameter of Rotor Drum, H.P. *1800* L.P. *150* Astern *Yes*
 Mass at Bottom of Groove, H.P. *Yes* L.P. *Yes* Astern *Yes* Revs. per Minute at Full Power, Turbine *1800* Propeller *150*

DETAILS OF BLADING.

	H. P.			L. P.			ASTERN. H. P.		
	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.
EXPANSION	<i>1 1/8 1 1/16</i>	<i>44 7/8 45 1/8</i>	<i>2</i>	<i>2 3/8</i>	<i>52 3/8</i>	<i>1</i>	<i>2 1/8 2 1/16</i>	<i>45 1/2 46 3/8</i>	<i>3</i>
"	<i>7/8 15/16</i>	<i>46 1/4</i>	<i>1</i>	<i>2 9/16</i>	<i>53 1/8</i>	<i>1</i>	<i>4 1/2 4 7/8</i>		
"	<i>1</i>	<i>46 3/8</i>	<i>1</i>	<i>3 3/8</i>	<i>54 1/4</i>	<i>1</i>			
"	<i>1 1/8</i>	<i>46 5/8</i>	<i>1</i>	<i>4 1/4</i>	<i>56 1/2</i>	<i>1</i>			
"	<i>1 1/4</i>	<i>46 7/8</i>	<i>1</i>	<i>5 1/8</i>	<i>58 7/8</i>	<i>1</i>	<i>2 7/8 4 7/16 4 6</i>	<i>56 5 7/8 9</i>	<i>3</i>
"	<i>1 1/2</i>	<i>47 1/8</i>	<i>1</i>	<i>7 3/8</i>	<i>62 3/4</i>	<i>1</i>	<i>59 1/2</i>		
"	<i>1 9/16 1 1/16</i>	<i>47 1/2 47 3/4</i>	<i>1</i>	<i>8</i>	<i>64</i>	<i>1</i>			

and size of Feed pumps *2. 8 1/2 x 13 1/2 x 24 Vertical Duplex.*
 and size of Bilge pumps *1. 7 1/2 x 9 x 10. F. & B. 1. 14 x 11 x 12 Vertical duplex Ballast 10 x 12 x 12 duplex.*
 and size of Bilge suction in Engine Room *2. 3 1/2. 1-3. For. Water. 2-3. After Bilge. 3-3 dia.*
 In Holds, &c. *1-1. 1-3. 2-3. 2-3. 2-3. 2-3. 2-3. 2-3. 2-3.*
 of Bilge Injections *1-3. 1-3. 1-3. 1-3. 1-3. 1-3. 1-3. 1-3. 1-3.* Is a separate Donkey Suction fitted in Engine Room & size *Yes. 3 1/2*
 all the bilge suction pipes fitted with roses *Yes.* Are the roses in Engine room always accessible *Yes.*
 all connections with the sea direct on the skin of the ship *Yes.* Are they Valves or Cocks *Both.*
 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 *Along plates.*
 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.*
 pipes are carried through the bunkers *None.* How are they protected *Yes.*
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes.*
 the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *Yes.*
 the Screw Shaft Tunnel watertight *Yes.* Is it fitted with a watertight door *Yes.* worked from *Top plating.*

BOILERS, &c.—(Letter for record *S.*) Manufacturers of steel *Bethlehem Steel Company*
 Heating Surface of Boilers *29784* Is Forced Draft fitted *Yes.* No. and Description of Boilers *6. Water Tube (B.W. Type)*
 Working Pressure *275 lbs* Tested by hydraulic pressure to *550 lbs* Date of test *April 7 27* No. of Certificate *216*
 each boiler be worked separately *Yes.* Area of fire grate in each boiler *Oil fuel.* No. and Description of Safety Valves to *Yes.*
 boiler *One H duplex.* Area of each valve *2.50 sq* Pressure to which they are adjusted *275 lbs.* Are they fitted with easing gear *Yes.*
 least distance between boilers or uptakes and bunkers or woodwork *3-0* Mean dia. of tubes *4 1/2* Length *7-1 1/2* Material of shell plates *Steel*
 thickness *2/32* Range of tensile strength *60-70000 lbs.* Are the shell plates welded or flanged *No.* Descrip. of riveting: cir. seams *D.R.L.A.P.*
 not seams *T.R.D.B.S.* Diameter of rivet holes in long. seams *29/32* Pitch of rivets *2 9/32 9 4 9/16* Jap. of plates or width of butt straps *18 9/16*
 rivets
 percentages of strength of longitudinal joint Working pressure of shell by rules Size of manhole in shell
 of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter
 top
 thickness of plain part Thickness of plates crown Description of longitudinal joint No. of strengthening rings
 bottom
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 stays, to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space
 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
 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



SUPERHEATER. Type *B.W. Type*. Date of Approval of Plan _____ Tested by Hydraulic Pressure to *550 lbs*
 Date of Test *April 7, 1927* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes*
 Diameter of Safety Valve *1"* Pressure to which each is adjusted *285 lbs* Is Easing Gear fitted *Yes*

IS A DONKEY BOILER FITTED? *No*. If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—*Two sets of bolts for each size of bolt bearing: 2 sets of bolts for main bearings
 two sets of bolts for each pinion bearing. 1/20" total number bolts for gear case joint: 1/20" total number bolts for
 each turbine casing joint: two pinions: two thrust washers for oil circulating system: set of bearing bushes for gear wheel
 and pinion shafts: set of packing rings for each size of bolt head: one set of pads for Ruyfleur thrust: one set of
 turbine thrust: one set of liners of various thicknesses: one set of safety valve springs: one set of feed, oil & lubricating
 pump valves: one bucket for lubricating oil pumps: 50 lbs for main engine: 50 lbs for same: 25 lbs
 for aux. condenser: impeller shaft, pinion rod, brass & packing rings for main circulating pump: One set
 valves for all auxiliary pumps: boiler tubes
 & small jackets. Mild steel flat iron*

The foregoing is a correct description, _____
 Manufacturer.

Dates of Survey while building
 During progress of work in shops -- *1926. Ap. 28. May 13. 19. 22. June 1. 2. 8. 23. 24. July 8. 17. 28. Aug. 5. 6. 9. 13. Sept. 2. 3. 15. 23. 24. Oct. 10. 18. 29. 30. Nov. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Dec. 6. 9. 11.*
 During erection on board vessel --- *Dec. 20. 29. 30. 1927. Jan. 10. 12. 24. 25. Feb. 3. 10. 11. 17. Mar. 11. 23. 24. 29. 31. April 4. 6. 7. 9. 14. 15.*
 Total No. of visits *52*. Is the approved plan of main boiler forwarded herewith *Yes*.

Dates of Examination of principal parts—
 Casings *8/6/27 28/7/27* Rotors *9/11/26* Blading *5/11/26* Gearing *5/11/26 23/11/26*
 Rotor shaft *15/9/26 5/11/26* Thrust shaft *19/5/26* Tunnel shafts *29/12/26* Screw shaft *6/8/26* Propeller *28/7/26 15/9/26*
 Stern tube *8/7/26* Steam pipes tested *7/4/27* Engine and boiler seatings *18/10/26* Engines holding down bolts *10/1/27*
 Completion of pumping arrangements *29/12/26* Boilers fired *29/12/26* Engines tried under steam *3/3/27*
 Main boiler safety valves adjusted *9/4/27* Thickness of adjusting washers *Lock nuts fitted*
 Material and tensile strength of Rotor shaft *Q.A. Steel 77500-76550 lbs.* Identification Mark on Do. *26. 8867. 195*
 Material and tensile strength of Pinion shaft *M. Steel 93000 lbs.* Identification Mark on Do. *26. 410. 419. 164*
 Material of Wheel shaft *Soft Steel* Identification Mark on Do. *26. 8866. 195* Material of Thrust shaft *Soft Steel* Identification Mark on Do. *26. 8866. 195*
 Material of Tunnel shafts *Soft Steel* Identification Marks on Do. *26. 8867. 8868. 8869. 195* Material of Screw shaft *Soft Steel* Identification Marks on Do. *26. 8880. 8881. 8882. 8883. 8884. 8885. 8886. 8887. 8888. 8889. 8890. 8891. 8892. 8893. 8894. 8895. 8896. 8897. 8898. 8899. 8900.*
 Material of Steam Pipes *Steel tubing* Test pressure *963 lbs.*
 Is an installation fitted for burning oil fuel *Yes*. Is the flash point of the oil to be used over 150° F. *Yes*.
 Have the requirements of Section 49 of the Rules been complied with *Yes*.
 Is this machinery a duplicate of a previous case *No* If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The Boilers and Machinery of this vessel have been constructed under Special Survey and in accordance with the Rules and approved plans. The materials (A.B. Steel) and workmanship are good and efficient and the hydraulic test on boilers proved satisfactory. The Boilers & Machinery have now been efficiently fitted on board, tested under steam and proved to be in good working order. The oil fuel burning equipment complies with all the requirements of Section 35 of the Rules and is now in good, efficient working order.
 The case is respectfully submitted for the notation of L.M.C. 4-27 in the Register Book.*

The amount of Entry Fee ... £ : : When applied for, *May 10 1927*
 Special ... *\$780.00* : :
 Donkey Boiler Fee ... £ : : When received, *May 27 1927*
 Travelling Expenses (if any) £ : :

J. Hudson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *NEW YORK MAY 18 1927*

Assigned *+ L.M.C. 4-27*

Note - *F.D. C.L. 6 W.T.B. Steam Pressure - 275 lb □*

CERTIFICATE WRITTEN *27/5/27*

