

REPORT ON MACHINERY.

Date of writing Report **Nov. 9th. 1925** When handed in at Local Office **12th. Nov. 1925** Port of **Hong Kong** Received at London Office **14 DEC 1925**

No. in Survey held at **Hong Kong** Date, First Survey **8th. Aug. 1924**. Last Survey **29th. Sept. 1925**.

Reg. Book. on the **S. S. "CHANGTE", Hull No. 618, Engine No. 364.** (Number of Visits **68**)

Master **Built at Hong Kong** By whom built **Hongkong & Whampoa Dock Co. Ltd.** Tons { Gross **4323.75** Net **2579.49** When built **1925.**

Engines made at **Hong Kong** By whom made **Hongkong & Whampoa Dock Co. Ltd.** when made **1925.**

Boilers made at **Hong Kong** By whom made **Hongkong & Whampoa Dock Co. Ltd.** when made **1925.**

Registered Horse Power **Owners G. S. Yuill & Co. Ltd. Sydney.** Port belonging to **Hong Kong**

Nom. Horse Power as per Section 28 **638** Is Refrigerating Machinery fitted for cargo purposes **Yes** Is Electric Light fitted **Yes**

ENGINES, &c.—Description of Engines **Triple expansion, surface condensing** of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **27"-46"-77"** Length of Stroke **48"** Revs. per minute **90** Dia. of Screw shaft as per rule **15.19"** Material of screw shaft **Steel**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **Yes** Is the after end of the liner made water tight in the propeller boss **Yes** If the liner is in more than one length are the joints burned **-** If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **-** If two liners are fitted, is the shaft lapped or protected between the liners **-** Length of stern bush **5'-6"**

Dia. of Tunnel shaft as per rule **13.77"** Dia. of Crank shaft journals as per rule **14.46"** Dia. of Crank pin **15 1/2"** Size of Crank webs **34 1/2 x 6 3/4"** Dia. of thrust shaft under collars **15"** Dia. of screw **17 ft. variable** Pitch of Screw **17 to 19 ft.** No. of Blades **4** State whether moveable **Yes** Total surface **90** **Michell**

No. of Feed pumps **2** Diameter of ditto **4 1/2"** Stroke **24"** Can one be overhauled while the other is at work **Yes**

No. of Bilge pumps **2** Diameter of ditto **4 1/2"** Stroke **24"** Can one be overhauled while the other is at work **Yes**

No. of Donkey Engines **16** Sizes of Pumps **See note** No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room **2.3"** In Holds, &c. **2-2 1/2"** in No. 1 Fore hold, **2-2 1/2"** in No. 1 aft No. 4 hold, **1-2 1/2"** in Tunnel wall.

No. of Bilge Injections **one** sizes **10"** Connected to condenser, or to circulating pump **Cir. pp.** Is a separate Donkey Suction fitted in Engine room & size **2-3 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 **-**

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**

What pipes are carried through the bunkers **oil fuel Forward bilge & tank suction** How are they protected **-**

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**

Is the Screw Shaft Tunnel watertight **Yes** Is it fitted with a watertight door **Yes** worked from **Upper deck**

BOILERS, &c.—(Letter for record **Kobe 22/8/24(S)** **19/9/24** Manufacturers of Steel **Wm. Beardmore & Co. Ltd.** **3SB**

Total Heating Surface of Boilers **9633** Is Forced Draft fitted **Yes** No. and Description of Boilers **3 cylindrical multitubular**

Working Pressure **200 lbs.** Tested by hydraulic pressure to **350 lbs.** Date of test **13/1/25** No. of Certificate **151-2-3.**

Can each boiler be worked separately **Yes** Area of fire grate in each boiler **72** No. and Description of Safety Valves to each boiler **2 - 4" Cock burn high lift.** Area of each valve **12.56** Pressure to which they are adjusted **205 lbs.** Are they fitted with easing gear **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **18"** Mean dia. of boilers **16 ft** Length **12 ft.** Material of shell plates **Steel**

Thickness **1 3/32"** Range of tensile strength **29 to 33 tons** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **Double lap**

long. seams **Triple butt** Diameter of rivet holes in long. seams **1 7/16"** Pitch of rivets **10"** Lap of plates or width of butt straps **1'-9 3/16"**

Per centages of strength of longitudinal joint rivets **85.6%** Working pressure of shell by rules **202 lbs.** Size of manhole in shell **16"x12"**

Size of compensating ring **39"x35"x1 1/32"** No. and Description of Furnaces in each boiler **3 Fox** Material **Steel** Outside diameter **49 3/8"**

Length of plain part top **-** bottom **-** Thickness of plates crown **11/16"** Description of longitudinal joint **Welded** No. of strengthening rings **None**

Working pressure of furnace by the rules **204 lbs.** Combustion chamber plates: Material **Steel** Thickness: Sides **11/16"** Back **11/16"** Top **11/16"** Bottom **7/8"**

Pitch of stays to ditto: Sides **8 1/2 x 9 1/4"** Back **C-8 x 9 1/4"** Top **8 1/2 x 9 1/4"** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **S-209 lbs**

Material of stays **Steel** Area at smallest part **16"** Area supported by each stay **S-78.625"** Working pressure by rules **S-271 lbs** T-209 lbs

Material **Steel** Thickness **1, 3/32"** Pitch of stays **14"x18 1/2"** How are stays secured **Nuts** Working pressure by rules **B-258 lbs** T-271 lbs

Dia. **2 1/2"** Area supported by each stay **259"** inside & outside **206 lbs** Material of stays **Steel**

Thickness **31/32"** Material of Lower back plate **Steel** Thickness **31/32"** Greatest pitch of stays **13 1/4 x 9 5/16"** Working pressure of plate by rules **280 lbs**

Diameter of tubes **2 1/4"** Pitch of tubes **4"x3 3/8"** Material of tube plates **Steel** Thickness: Front **31/32"** Back **13/16"** Mean pitch of stays **8"x11 1/8"**

Pitch across wide water spaces **13 1/4"** Working pressures by rules **W.W. space 246 lbs** Girders to Chamber tops: Material **Steel** Depth and thickness of girder at centre **10"x1 1/8"** Length as per rule **2'-10 1/2"** Distance apart **9 1/4"** Number and pitch of stays in each **3 at 8 1/2"**

Working pressure by rules **204 lbs** Steam dome: description of joint to shell **None** % of strength of joint **-**

Diameter **-** Thickness of shell plates **-** Material **-** Description of longitudinal joint **-** Diam. of rivet holes **-**

Pitch of rivets **-** Working pressure of shell by rules **-** Crown plates **-** Thickness **-** How stayed **-**

SUPERHEATER. Type **None** 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? No

If so, is a report now forwarded? -

SPARE GEAR. State the articles supplied: - See List attached.

The foregoing is a correct description.
HONGKONG & WHAMPOA DOCK Co., Ltd.

R.M. Dyer, Chief Manager, Manufacturer.

Dates of Survey while building: 1924 Aug. 8, 12, 18, 26 Sept. 4, 8, 9, 12, 19, 25, 30 Oct. 3, 8, 11, 22, 27, 28, 30 Nov. 3, 7, 12, 18, 22 Dec. 1, 9, 15, 29 1925 Jan. 8, 13, 28 Feb. 5, 10, 12, 14, 20, 23, 26 Mar. 2, 4, 14, 19, 23, 28 Apr. 9, 24, 27, 28, 29 May. 5, 6, 8, 20, 21, 29, 30 Jun. 8, 9, 18 July 13, 30 Aug. 4, 18, 25 Sept. 9, 16, 26, 29. Total No. of visits 68. Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts: Cylinders 28/1/25 Slides 12/2/25 Covers 12/2/25 Pistons 28/1/25 Rods 28/1/25 Connecting rods 28/1/25 Crank shaft 2/3/25 Thrust shaft 28/1/25 Tunnel shafts 2/3/25 Screw shaft 2/3/25 Propeller 2/3/25 Stern tube 2/3/25 Steam pipes tested 21/5/25 Engine and boiler seatings 4/3/25 Engines holding down bolts 30/5/25 Completion of pumping arrangements 9/6/25 Boilers fixed 24/4/25 Engines tried under steam 26/9/25 Completion of fitting sea connections 4/3/25 Stern tube 14/3/25 Screw shaft and propeller 26/3/25 Main boiler safety valves adjusted 9/6/25 Thickness of adjusting washers Ford, P3/8 S5/16, Port P13/32 S3/8, Starbd. P11/32 S11/32. Lloyd's No. 755. Material of Crank shaft Steel Identification Mark on Do. No. 704 Material of Thrust shaft Steel Identification Mark on Do. Lloyd's No. 704. Material of Tunnel shafts Steel Identification Marks on Do. No. 704 Material of Screw shafts Steel Identification Marks on Do. Lloyd's No. 704. Material of Steam Pipes S. D. Steel Test pressure 600 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 35 of the Rules been complied with Yes Is this machinery duplicate of a previous case No If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c.)
The materials have been tested by the Surveyors to this Society and constructed as shown and amended on approved plans now in London Office.
The workmanship is good and it is recommended that the vessel be classed with Lloyd's Machinery Certificate and the record of L.M.C.9-25, be made in the Register Book.

IDENTIFICATION MARKS ON BOILERS

No.151 HKg. Lloyd's Test 350 lbs. W.P.200 lbs. T.S.M.13.1.25

No.152 HKg. Lloyd's Test 350 lbs. W.P.200 lbs. T.S.M.28.1.25

No.153 HKg. Lloyd's Test 350 lbs. W.P.200 lbs. T.S.M.14.2.25

Identification marks on spare crank & spare Tail Shaft:- LLOYD'S No.905.

NOTE:- Two sets oil fuel pumps 4"x 8" with heaters complete (Wallscud Howden); Two Weirs feed pumps 9"x 12"x 24"; One Weirs General Service pump 6"x 8 1/2"x 13" One 14" centrifugal circulating pump; One Auxiliary centrifugal circulating pump, 6" Two Weirs O.F. Transfer pumps 8"x 7"x 18"; One Vertical duplex. ballast pump 10"x 12"x 10". One vertical duplex. sanitary pump 6"x 6"x 6"; One vertical duplex. Fresh water pump 6"x 6"x 6" One vertical duplex. Fire pump 7"x 4 1/2"x 8; One 75" Forced draught fan, 2 engines 8"x 6". 1-20 K.W. dynamo & one Emergency 5 K.W. dynamo.

The amount of Entry Fee ... \$ 103.00. When applied for, Special ... \$ 1829.00. 22/10/1925 Donkey Boiler Fee ... £ : When received, Travelling Expenses (if any) \$ 200.00. Electric Light \$ 428.00. 28/10/1925

J. Morrison + for L. Young Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+ L.M.C.9-25. F.D. C.L. List for oil fuel 9.25 SP. above 150°F.



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

CERTIFICATE WRITTEN