

B.S.

REPORT ON OIL ENGINE MACHINERY.

No 8793

Received at London Office

26 AUG 1941

Date of writing Report 18th June 1941 When handed in at Local Office 18th June 1941 Port of Hongkong

No. in Survey held at Hongkong Date, First Survey 27th Feb. 1940 Last Survey 17th June 1941

on the Single Screw vessel "HINSANG" Tons { Gross 4643.91 Net 3453.55

Built at Hongkong By whom built The H.K. + Whampoa Dock Co. Ltd. Yard No. 836 When built 1941

Engines made at Hongkong By whom made - do - Engine No. 546 When made 1941

Donkey Boilers made at None By whom made - do - Boiler No. - do - When made - do -

Brake Horse Power 2050 Owners Indo-China Steam Navigation Co. Port belonging to Hongkong

Nom. Horse Power as per Rule 404 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Hongkong / Borneo trade.

L ENGINES, &c.—Type of Engines Harland - B + W. ^{Solid} Injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 500 mm Length of stroke 900 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 7 kg/cm² Crank pin dia. 340 mm Crank Webs Mid. length breadth 800 mm Kind of fuel used Tarakan Diesel

Distance between bearings, adjacent to the Crank, measured from inner edge to inner edge 708 mm Is there a bearing between each crank Yes

Revolutions per minute 160 Flywheel dia. 1654 mm Weight 1000 Kgs Means of ignition Compression Kind of fuel used Tarakan Diesel

Crank Shaft, { Solid forged dia. of journals as per Rule as approved Crank pin dia. 340 mm Crank Webs Mid. length thickness 208 mm Kind of fuel used Tarakan Diesel

Flywheel Shaft, diameter as per Rule Fitted on Thrust Shaft Intermediate Shafts, diameter as per Rule 9.5" Thrust Shaft, diameter at collars as per Rule as approved

Propeller Shaft, diameter as per Rule 10.47" Screw Shaft, diameter as per Rule 10 5/8" Is the shaft fitted with a continuous liner Yes

Cylinder Liners, thickness in way of bushes as per Rule .8665" Thickness between bushes as per Rule 4624 Is the after end of the liner made watertight in the

propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner One length

Does 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 fits tightly.

When two liners are fitted, is the shaft lapped or protected between the liners. Is an approved Oil Gland or other appliance fitted at the after end of the tube

Propeller, dia. 11'-9" Pitch 8'-3" No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 54 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication

Speed Thickness of cylinder liners 33.5 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

insulating material Lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine. Laid up funnel.

Boiling Water Pumps, No. Two S.W. + Two F.W. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Ice Pumps worked from the Main Engines, No. None Diameter - do - Stroke - do - Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and Size Three, each 80 Tons per hour How driven Electric Motor

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

Oil Pumps, No. and size 1- 80 Tons per hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2- each 84 Tons/hr.

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces 4- 2 1/2" in E.R., 2- 2 1/2" in cofferdams + 1- 2 1/2" in tunnel In Pump Room

Holds, &c. 2- 3" dia. in No. 1 Hold, 2- 3" in No. 2 hold, 2- 3" in No. 3 hold, 2- 3" in No. 4 hold, 2- 2 1/2" in fore cofferdams.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3- 4 1/2" dia. Are the Bilge Suctions in the Machinery Spaces

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

Are they fitted with Valves or Cocks Valves

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Overboard Discharges 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

Do any pipes pass through the bunkers None How are they protected Yes

Do any pipes pass through the deep tanks None Have they been tested as per Rule Yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

department to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Auxiliary Air Compressors, No. One No. of stages Two Diameters 3 1/8" + 7 1/4" Stroke 6" Driven by Electric Motor

Auxiliary Air Compressors, No. One No. of stages Two Diameters 1 3/4" + 4" Stroke 3" Driven by Oil Engine

Small Auxiliary Air Compressors, No. - do - No. of stages - do - Diameters - do - Stroke - do - Driven by Emergency Set, (Hand Starting)

What provision is made for first Charging the Air Receivers Air Compressor on Emergency Generator Set.

Scavenging Air Pumps, No. Two Diameter Rotary Stroke - do - Driven by Main Engine.

Auxiliary Engines crank shafts, diameter as per Rule 132 mm No. 3 Position Port, Centre + Starboard at Bridge deck level

Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith copy enclosed.

AIR RECEIVERS:—Have they been made under survey yes State No. of Report or Certificate Copy Certificate enclosed
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes
 Can the internal surfaces of the receivers be examined and cleaned yes (manhole) Is a drain fitted at the lowest part of each receiver yes
Injection Air Receivers, No. None Cubic capacity of each ✓ Internal diameter ✓ thickness ✓
 Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules
Starting Air Receivers, No. Two Total cubic capacity 300 cub. ft. Internal diameter 4'-7 1/8" thickness 2 5/32"
Auxil. " " No. One 11.5 1-10" 1 1/2"
 Seamless, lap welded or riveted longitudinal joint Riveted Material O.H. Steel Range of tensile strength 28/32 Tons Working pressure by Rules as approved
Auxil. Riveted O.H. Steel 28/32 356 lbs.
 Actual 350 lbs.

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? ✓
 Is the donkey boiler intended to be used for domestic purposes only ✓
PLANS. Are approved plans forwarded herewith for Shafting Kobe 29/3/40. Receivers Kobe 12/12/39 Separate Fuel Tanks Kobe 10/1/41
 (If not, state date of approval)
 Donkey Boilers ✓ General Pumping Arrangements Kobe 14/5/40 Pumping Arrangements in Machinery Space 14/5/40 Kobe
 Oil Fuel Burning Arrangements Kobe 14/5/40. **SPARE GEAR.**
 Has the spare gear required by the Rules been supplied yes
 State the principal additional spare gear supplied See attached list.

HONGKONG & WHAMPOA DOCK Co., Ltd
 Manufacturer. Heoh. CHIEF MANAGER

The foregoing is a correct description,

Dates of Survey while building
 During progress of work in shops—1940
 Feb. 27, Mar. 2, 25, April 3, 11, 13, 18, 20, 22, 23, May 4, 8, 14, 16, 20, 27, June 1, 4, 11, 15, 18, 20, 24, 27, 29, July 2, 8, 12, 15,
 25, Aug. 3, 5, 9, 15, 20, 27, Sept. 3, 6, 11, 17, 20, 24, 28, Oct. 1, 3, 9, 10, 12, 15, 22, 24, 28, 29, Nov. 4, 12, 13, 19, 21, 28, Dec. 3,
 20, 27, 28, 1941 Jan. 3, 8, 10, 13, 15, 20, 25, 29, Feb. 3, 5, 12, 19, 26, Mar. 4, 6,
 During erection on board vessel—Mar. 8, 15, 18, 25, 29, April 2, 9, 17, 24, 30, May 13, 17, 28, 29, June 10, 14, 17.
 Total No. of visits 97

Dates of Examination of principal parts—Cylinders 14/5/40 Covers 15/7/40 Pistons 8/1/41 Rods ✓ Connecting rods 19-11-40
 Crank shaft 28-12-40 Flywheel shaft ✓ Thrust shaft 28-12-40 Intermediate shafts 28-12-40 Tube shaft ✓
 Screw shaft 28-12-40 Propeller 12-10-40 Stern tube 9-10-40 Engine seatings 14-11-40 Engines holding down bolts 9-4-41
 Completion of fitting sea connections 22-11-40 Completion of pumping arrangements 28-5-41 Engines tried under working conditions 14/6/41
 Crank shaft, Material O.H. Steel Identification Mark LLOYDS No 546 28-12-40 T.S.M. Flywheel shaft, Material ✓ Identification Mark ✓
 Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material O.H. Steel Identification Marks LLOYDS No 546 28-12-40 T.S.M.
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material O.H. Steel Identification Mark ✓
 Identification Marks on Air Receivers: Two main One Auxiliary
No 413 No 417
LLOYDS TEST LLOYDS TEST
584 lbs. 575 lbs.
W.P. 356 lbs. W.P. 350 lbs.
T.S.M. 12-11-40 27-12-40, T.S.M.

Is the flash point of the oil to be used over 150° F. yes
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with yes
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with ✓
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with ✓
 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.) This engine has been built under special survey in accordance with the approved plans + the Rules of this Society. The materials have been tested by the Surveyors to this Society + the workmanship is good. Engine was tested under full load 10% overload on the Mather's test bed + working parts were afterwards opened up + examined + found satisfactory. The oil engine electric generator sets were surveyed during construction at Bedford (See London Report No 108800) + the emergency generator set at Ashton-U-Lyne (See Manchester Rpt. No 10159). Forging reports enclosed, Copies of certificates for air receivers + essential pumps + plan of piping arrangements as fitted enclosed. This machinery has been fitted on board in accordance with the Rules + tested under full working conditions + found satisfactory + it is recommended that the vessel be classed with Lloyd's Machinery Certificate + the record of + LMC 6-41, C.L. be made in the Register Book.

The amount of Entry Fee .. £10
 Special £171.4/6 } 2924
 Donkey Boiler Fee £ ✓ :
 Travelling Expenses (if any) £ 200
 Total £ 3124
 When applied for, 18th June 1941
 When received, 19...
 Committee's Minute
 Assigned

J.S. Morrison
 Engineer Surveyor to Lloyd's Register of Shipping.
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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.