

REPORT ON OIL ENGINE MACHINERY.

No. 9317.

PLEASE SEE MANCHESTER REPORT No 14917

Received at London Office

13 OCT 1952

Date of writing Report 7-10-1952 When handed in at Local Office 7-10-1952 Port of SINGAPORE

No. in Survey held at SINGAPORE. Date, First Survey 22nd JANUARY, 1952 Last Survey 2nd JULY 1952
Reg. Book. Number of Visits 27

90157 on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel "BUNEA" (WATER TANKER) Tons Gross 213.19
Net 74.03

Built at SINGAPORE By whom built SINGAPORE HARBOUR BOARD Yard No. 1512 When built 1952

Engines made at OPENSRAW WORKS By whom made CROSSLEY BROS, LD Engine No. 143491 When made 1951

Donkey Boilers made at NONE By whom made — Boiler No. — When made —

Brake Horse Power 300 Owners W. HAMMER & CO, LD Port belonging to SINGAPORE

M.N. Power as per Rule 60 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

Trade for which vessel is intended SINGAPORE AND PULAU SAMBONG AND PULAU BUKAN

OIL ENGINES, &c. — Type of Engines VERTICAL SOLID INJECTION, Heavy Oil 2 or 4 stroke cycle 2 Single or double acting SINGLE

Maximum pressure in cylinders — Diameter of cylinders — Length of stroke — No. of cylinders — No. of cranks —

Mean Indicated Pressure — Ahead Firing Order in Cylinders — Span of bearings, adjacent to the crank, measured from inner edge to inner edge — Is there a bearing between each crank — Revolutions per minute —

Flywheel dia. — Weight — Moment of inertia of flywheel (lbs. in² or Kg. cm.²) — Means of ignition — Kind of fuel used DIESEL

Crank Shaft, ^{Solid forged} ~~Semi built~~ ^{as per Rule} ~~as fitted~~ dia. of journals — Crank pin dia. — Crank webs ^{Mid. length breadth} — ^{Mid. length thickness} — Thickness parallel to axis — Thickness around eye hole —

Flywheel Shaft, diameter ^{as per Rule} ~~as fitted~~ — Intermediate Shafts, diameter ^{as per Rule} ~~as fitted~~ 5 5/8" Thrust Shaft, diameter at collars ^{as fitted} ~~as per Rule~~ —

Tube Shaft, diameter ^{as per Rule} ~~as fitted~~ — Screw Shaft, diameter ^{as per Rule} ~~as fitted~~ 5 5/8" Is the ^{tube} ~~screw~~ shaft fitted with a continuous liner YES

Cylinder Liners, thickness in way of bushes ^{as per Rule} ~~as fitted~~ 1/2" 9/16" Thickness between bushes ^{as per Rule} ~~as fitted~~ 3/8" Is the after end of the liner made watertight to 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 —

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 — Is an approved Oil Gland or other appliance fitted at the after end of tube shaft No If so, state type —

Length of bearing in Stern Bush next to and supporting propeller 1'-8 3/8"

Propeller, dia. 5'-0" Pitch 4'-25" No. of blades 4 Material BRONZE whether moveable FIXED Total developed surface 10 sq. feet

Moment of inertia of propeller (lbs. in² or Kg. cm.²) — Kind of damper, if fitted —

Method of reversing Engines DIRECT Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Means of lubrication FORCED Thickness of cylinder liners — Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water cooled lagged with non-conducting material LAGGED If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being sucked back to the engine —

Cooling Water Pumps, No. 1 Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES

Bilge Pumps worked from the Main Engines, No. 1 Diameter 4 1/4" Stroke 3" Can one be overhauled while the other is at work —

Pumps connected to the Main Bilge Line No. and size 1 2 1/2" (SEPARATE HAND ROTARY PUMP (ER) AND HAND PUMP FOR RAINES) How driven MAIN ENGINE OPERATED FROM UNDER DECK

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 arrangements —

Ballast Pumps, No. and size NONE Power Driven Lubricating Oil Pumps, including spare pump, No. and size —

Are two independent means arranged for circulating water through the Oil Cooler — Suctions, connected to both main bilge pumps and auxiliary pumps, No. and size: In machinery spaces 1 2 1/2"; 1 2 1/2"; 1 2 1/2"; DIRECT Suction 3" In pump room —

Holds, &c. FORWARD HOLD CREW SPACE 1 2 1/2"; CHAIN LOCKER 1 2 1/2"; AFT DRY COMPARTMENT 1 2 1/2"

Dependent Power Pump Direct Suctions to the engine room bilges, No. and size 1 2 3" (DIESEL DRIVEN CARGO PUMP)

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes YES Are the bilge suction in the machinery spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges YES

Are all Sea Connections fitted direct on the skin of the ship OVERBOARD YES Are they fitted with valves or cocks VALVES Are they fitted efficiently 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 BELOW

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 NONE

Do pipes pass through the bunkers NONE How are they protected —

Do pipes pass through the deep tanks NONE Have they been tested as per Rule —

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 compartment to another YES Is the shaft tunnel watertight — Is it fitted with a watertight door — worked from —

Is the 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. — No. of stages — diameters — stroke — driven by —

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All Auxiliary Air Compressors, No. 1 No. of stages 8 diameters 1 9/16" 4 1/2" stroke — driven by CATERPILLAR DRIVEN

Is provision made for first charging the air receivers AUXILIARY AIR COMPRESSOR AS DETAILLED ABOVE

Refrigerating Air Pumps, No. — diameter — stroke — driven by —

Auxiliary Engines crank shafts, diameter ^{as per Rule} ~~as fitted~~ NONE No. — Position —

Are the auxiliary engines been constructed under special survey — Is a report sent herewith —

010624-010630-0027

AIR RECEIVERS:—Have they been made under survey YES State No. of report or certificate NOTTINGHAM C/28/11 & C/1345/1
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 Is a drain fitted at the lowest part of each receiver YES
Injection Air Receivers, No. — Cubic capacity of each — Internal diameter — thickness —
Seamless, welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure by Rules
Starting Air Receivers, No. 2 Total cubic capacity 20 cu ft Internal diameter 2'-0 1/2" thickness 3/8" & 1/2"
Seamless, welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure 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 YES Receivers — Separate fuel tanks —
(If not, state date of approval)
Donkey boilers — General pumping arrangements — Pumping arrangements in machinery space —
Oil fuel burning arrangements —
Have Torsional Vibration characteristics been approved YES Date of approval 28/11/51

SPARE GEAR.

Has the spare gear required by the Rules been supplied AS PER RULE REQUIREMENTS ✓
State the principal additional spare gear supplied —

The foregoing is a correct description,

R. W. G. G. G.
Ag. Dockyard Manager

Manufacturer.

Dates of Survey while building
During progress of work in shops — JAN. 22, 31; FEB. 11, 19, 21, 26; MAR. 31; APR. 8, MAY 26
During erection on board vessel — APR. 10, 14, 17, 18, 21, 22; MAY 10, 20, 22, 29, 30; JUNE 12, 18, 25, 27, 28; JULY 1, 2
Total No. of visits 27
Dates of examination of principal parts—Cylinders — Covers — Pistons — Rods — Connecting rods —
Crank shaft — Flywheel shaft — Thrust shaft — Intermediate shafts 31/1/52 Tube shaft —
Screw shaft 31/1/52 Propeller 22/4/52 Stern tube 21/4/52 Engine seatings 10/5/52 Engine holding down bolts 20/5/52
Completion of fitting sea connections 14/4/52 Completion of pumping arrangements 25/6/52 Engines tried under working conditions 2/7/52
Crank shaft, material — Identification mark — Flywheel shaft, material, — Identification mark LLOYDS D4544
Thrust shaft, material — Identification mark — Intermediate shafts, material O.H. STEEL Identification marks 31/1/52 W.P.W.
Tube shaft, material — Identification mark — Screw shaft, material O.H. STEEL Identification mark 31/1/52 W.P.W.
Identification marks on air receivers 81/500055 Lloyd's HT 700 lbs WP 350 lbs T.D.S. 7/5/51 T 204
" " " " " " T.D.S. 29/8/51 T 206

Welded receivers, state Makers' Name —
Is the flash point of the oil to be used over 150°F —
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with YES ✓
Description of fire extinguishing apparatus fitted 5-2 GALL FOAMITE MAR DOUBLE SEAL (VESSEL FITTED WITH FIRE FIGHTING APPARATUS)
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.)

The engine has been constructed under Special Survey of tested materials in accordance with the Secretary's letters approved plans and Requirements of the Rules (Manufacturer's Report No 14917 forwarded herewith)
The machinery has been securely fitted on board and tested under full working conditions and found satisfactory. The materials used and the workmanship are good.
The machinery is eligible, in my opinion, to be classed with the Society.
Forging Certificate No D4544/55 in respect of the Screw shaft and Intermediate Shaft is forwarded herewith.

LIST OF APPROVED PLANS: DETAILS OF STERN GEAR BILGE PUMPING ARRANGEMENT "AS FITTED" FORWARDED HERWITH
STERN GEAR ARRANGEMENT
PUMPER BLOCK

The amount of Entry Fee ... £ —
Special ... £ 400 When applied for 7/8/52
Donkey Boiler Fee... £ — When received 19
Travelling Expenses (if any) £ 20
Committee's Minute FRI. 21 NOV 1952
Assigned + LMC 752 Oil Eng
CL.

W. R. Watson
Engineer Surveyor to Lloyd's Register of Shipping.
Lloyd's Register Foundation