

Rpt. 4b

Date of writing report.....

Received London.....

Port.....

No. 3546

Survey held at Yokohama

No. of visits

In shops 69

First date 15-2-1960

Last date

16-11-1960

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Gross tons

Owners Managers Port of Registry

Hull built at Hiroshima, Japan By Hiroshima Works, Mitsubishi Shipbuilding & Eng. Co., Ltd. Yard No. S 144 Year Month

Main Engines made at Yokohama, Japan By Yokohama Shipyard & Engine Works, Mitsubishi Nippon Heavy Ind. Ltd. Eng. No. D 37824 When 1960-10

Gearing made at By

Donkey boilers made at By Blr. Nos. When

Machinery installed at By When

Particulars of restricted service of ship, if limited for classification

Particulars of vegetable or similar cargo oil notation, if required

Is ship to be classed for navigation in ice? Is ship intended to carry petroleum in bulk?

Is refrigerating machinery fitted? If so, is it for cargo purposes? Type of refrigerant

Is the refrigerating machinery compartment isolated from the propelling machinery space? Is the refrigerated cargo installation intended to be classed?

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other, signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but the port and report number should be stated.

No. of main engines one No. of propellers Brief description of propulsion system Oil engine 2SA 7 cyl. 780mm x 1400mm direct coupled

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Yokohama M.A.N. K7Z 78/140 C

No. of cylinders per engine 7 Dia. of cylinders 780mm stroke(s) 1400mm 2 or 4 stroke cycle 2 Single or double acting single

Maximum approved BHP per engine 8950 (metric) at 118 RPM of engine and 118 RPM of propeller.

Corresponding MIP 8.40kg/cm2 (For DA engines give MIP top & bottom) Maximum cylinder pressure 60 kg/cm2 Machinery numeral

Are the cylinders arranged in Vee or other special formation? no If so, number of crankshafts per engine -

TWO STROKE ENGINES. Is the engine of opposed piston type? no If so, how are upper pistons connected to crankshaft? -

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? ports No. and type of mechanically driven scavenge pumps or blowers per

engine and how driven 7-piston under side scavenging & 2-exhaust gas turbo supercharger type YTV 675A

No. of exhaust gas driven scavenge blowers per engine 2 Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? -

If a stand-by or emergency pump or blower is fitted, state how driven - No. of scavenge air coolers 3 Scavenge air pressure at full

power 0.55 kg/cm2 Are scavenge manifold explosion relief valves fitted? Yes

FOUR STROKE ENGINES. Is the engine supercharged? Are the undersides of the pistons arranged as supercharge pumps? No. of exhaust gas driven blowers per

engine No. of supercharge air coolers per engine Supercharge air pressure Can engine operate without supercharger?

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel one Inlet none Exhaust none Starting one Safety one

Material of cylinder covers electric furnace cast steel Material of piston crowns electric furnace cast steel Is the engine equipped to operate on heavy fuel oil? Yes

Cooling medium for:—Cylinders fresh water Pistons fresh water Fuel valves fresh water Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? no Is welded construction employed for: Bedplate? yes Frames? no Entablature? no Is the crankcase separated from the

underside of pistons? yes Is the engine of crosshead or trunk piston type? yes Total internal volume of crankcase 141 m3 No. and total area of explosion relief

devices 7 & 17160cm2 Are flame guards or traps fitted to relief devices? no Is the crankcase readily accessible? yes If not, must the engine be removed for

overhaul of bearings, etc? - Is the engine secured directly to the tank top or to a built-up seating? - How is the engine started? by compressed air

Can the engine be directly reversed? Yes If not, how is reversing obtained? -

Has the engine been tested working in the shop? yes How long at full power? 2 hr.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 5/10/60 State barred speed range(s), if imposed

for working propeller - For spare propeller - Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

Where positioned? - Type - No. of main bearings 9 Are main bearings of ball or roller

type? Distance between inner edges of bearings in way of crank(s) 1035mm Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Built, semi-built, soild. (State which) Semi-built with 212mm.dia. central hole

Diameter of journals 570mm Diameter of crankpins Centre 570mm for cyl. Nos. 1, 3 & 6 and 927

with 72mm.dia. central hole Side - 72mm.dia. central hole for cyl. Nos. 2, 4, 5 & 7 Axial thickness of webs 320mm

If shrunk, radial thickness around eyeholes 257.5mm Are dowel pins fitted? no Crankshaft material Journals O.H. steel Minimum 53 kg/mm2

Webs O.H. steel Tensile strength 53 kg/mm2

Diameter of flywheel 2300mm Weight - Are balance weights fitted? yes Total weight 3,400 kg. Radius of gyration 83.1 cm

Diameter of flywheel shaft - Material - Minimum approved tensile strength

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Fly wheel at thrust/intermediate shaft coupling

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GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations, for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

This oil engine has been constructed under special survey in accordance with the Society's Rules, approved plans and secretary's letters.

The materials and workmanship are sound and good.

The Engine has been examined under full working condition during shop trials and found satisfactory.

Crank case explosion relief devices fitted as per Rules.

It is submitted that this engine is eligible to be classed with this Society and have the notation
 * LMC (with date) when it has been satisfactorily installed and tested on board.

J. Linn. Dupuis
Engineer Surveyor to Lloyd's Register of Shipping.

PARTICULARS OF IDENTIFICATION MARKS (Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

Piston rod:- ST 22-5-59 ST 22-5-59 ST 1-7-59 ST 1-7-59 ST 1-7-59 KI 31-8-59 KI 31-8-59 Spare ST
RODS LLOYD'S YKA Y-13155 A, D, M, N, Y13172-A Y13192-A B Y13155-L
Connecting rod:- Tie rod:-
LLOYD'S YKA Y13181-A,B,C,D,E,F LLOYD'S KOB KF2776-1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
KI 5-8-59 EI 14-10-59

CRANKSHAFT OR ROTOR SHAFT LLOYD'S KOB KT-CK427 E.I. 19-7-60

FLYWHEEL SHAFT

THRUST SHAFT integral with crank shaft

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS

Cylinder cover:-
LLOYD'S YKA M34YC1239, M34YC1240 LLOYD'S YKA M34YC1276, M34YC1397 LLOYD'S YKA M34YC1398, M34YC1399
I.S. 28-9-60 I.S. 29-9-60 S.T. 30-9-60
LLOYD'S YKA M34YC1400, M34YC1437
I.S. 1-10-60

Piston crown:-
LLOYD'S YKA M34YC1238, M34YC1259, M34YC1277 LLOYD'S YKA M34YC1439, M34YC1840, M35CY 572 I.S. 16-4-60
J.W. 7-6-60 M34YC1818, M35YC 571,

Is the installation a duplicate of a previous case? If so, state name of vessel

Date of approval of plans for crankshaft 27-1-60 Straight shafting Gearing Clutch

Separate oil fuel tanks Pumping arrangements Oil fuel arrangements

Cargo oil pumping arrangements Air receivers Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube Fitting of propeller Completion of sea connections Alignment of crankshaft in main bearings

Engine chocks & bolts Alignment of gearing Alignment of straight shafting Testing of pumping arrangements

Oil fuel lines Donkey boiler supports Steering machinery Windlass

Date of Committee FRIDAY - 4 AUG 1961 Special Survey Fee ¥ 525,000-

Decision

Expenses

Date when A/c rendered

JAN 28 1961
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Foundation