

ed and
ckho

t. 4b

110 OCT 1958

of writing report 28-9-58.

Received London

Port of HONG KONG.

No. 14447.

y held at Hong Kong.

In shops

No. of visits

On vessel 14.

First date

5-3-57.

Last date

19-9-58.

BEST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

64627

Name "IAN CROUCH"

Gross tons 495.

R.M. Crouch Esq.

Managers -

Port of Registry Port Adelaide.

Hong Kong.

By Cheoy Lee Shipyard

Yard No. 669

Year Month
When 1958

es made at Openshaw U.K.

By Crossley Bros. Ltd.

Eng. No. 147107

When 1956

e at -

By -

rs made at -

By -

Blr. Nos. -

When -

nstalled at Hong Kong.

By Cheoy Lee Shipyard.

When 1958.

f restricted service of ship, if limited for classification

Australian Coastal Service and to Tasmania.

f vegetable or similar cargo oil notation, if required -

lassed for navigation in ice? No.

Is ship intended to carry petroleum in bulk? No.

g machinery fitted? No.

If so, is it for cargo purposes? -

Type of refrigerant -

ating machinery compartment isolated from the propelling machinery space? -

Is the refrigerated cargo installation intended to be classed? -

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 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 not be repeated below, but the port and report number should be stated.

engines One

No. of propellers One

Brief description of propulsion system Direct drive to propeller.

ECIPROCATING ENGINES. Licence Name and Type No. H.R.N. 5. Heavy Oil.

rs per engine 5 Dia. of cylinders 10 1/2" stroke(s) 13 1/2" 2 or 4 stroke cycle 2 Single or double acting Single.

proved BHP per engine 400 at 400 RPM of engine and 400 RPM of propeller.

MIP 92 p.s.i. (For DA engines give MIP top & bottom) Maximum cylinder pressure 950 p.s.i. Machinery numeral 80.

ers arranged in Vee or other special formation? No.

If so, number of crankshafts per engine -

KE ENGINES. Is the engine of opposed piston type? No.

If so, how are upper pistons connected to crankshaft? -

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

w driven One Double Acting Scavenge Pump.

gas driven scavenge blowers per engine Nil. Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? -

or emergency pump or blower is fitted, state how driven - No. of scavenge air coolers Nil. Scavenge air pressure at full

s.i. Are scavenge manifold explosion relief valves fitted? Yes.

KE ENGINES. Is the engine supercharged? No.

Are the undersides of the pistons arranged as supercharge pumps? -

No. of exhaust gas driven blowers per

No. of supercharge air coolers per engine -

Supercharge air pressure -

Can engine operate without supercharger? -

IR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel One. Inlet -

Exhaust -

Starting One. Safety One.

nder covers Cast Iron.

Material of piston crowns Cast Iron.

Is the engine equipped to operate on heavy fuel oil? No.

for : Cylinders Water.

Pistons

Lub. Oil.

Fuel valves -

Overall diameter of piston rod for double acting engines -

with a sleeve? - Is welded construction employed for: Bedplate? No. Frames? No. Entablature? No.

Is the crankcase separated from the

ons? No. Is the engine of crosshead or trunk piston type? Trunk Total internal volume of crankcase 54 cub.ft. No. and total area of explosion relief

41.07sq.in. Are flame guards or traps fitted to relief devices? Yes. Is the crankcase readily accessible? Yes. If not, must the engine be removed for

ings, etc? - Is the engine secured directly to the tank top or to a built-up seating? Seating. How is the engine started? Compressed air.

be directly reversed? Yes.

If not, how is reversing obtained? -

been tested working in the shop? Yes.

How long at full power? 6 hours.

YWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 16-2-57.

State barred speed range(s), if imposed

oller -

For spare propeller -

Is a governor fitted? Yes.

Is a torsional vibration damper or detuner fitted to the shafting? No.

ed? -

Type -

No. of main bearings 6

Are main bearings of ball or roller

Distance between inner edges of bearings in way of crank(s) 14-11/16"

Distance between centre lines of side cranks or eccentrics of opposed piston engines -

e: Built, semi-built, solid. (State which) Solid.

rnals 7 1/2"

Diameter of crankpins

Centre 7 1/4"

Breadth of webs at mid-throw 9 1/4"

Axial thickness of webs 3-23/32"

l thickness around eyeholes -

Are dowel pins fitted? -

Crankshaft material Journals

Minimum 40 T.P.I.

Webs

Tensile strength 35.6 36.4

6,19, of flywheel 37 1/2"

Weight 1656 lbs.

Are balance weights fitted? Yes.

Total weight -

Radius of gyration -

of flywheel shaft -

Material -

Minimum approved tensile strength -

l shaft: separate, integral with crankshaft, integral with thrustshaft. (State which)

Flywheel bolted to crankshaft.

004230-004231-0071

Lloyd's Register
Foundation

MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines Open or closed cycle BHP per set at RPM of output
 How is drive transmitted to propeller shaft?
 ARRANGEMENT OF TURBINES. HP drives at RPM HP gas inlet temperature pressure
 (A small diagram should be attached showing gas cycle.) IP drives at RPM IP gas inlet temperature pressure
 LP drives at RPM LP gas inlet temperature pressure
 No. of air compressors per set Centrifugal or axial flow type? Material of turbine blades
 compressor blades No. of air coolers per set No. of heat exchangers per set How are turbines started?
 How is reversing effected? Are the turbines operated in conjunction with free piston gas generators?
 Total No. of free piston gas generators Diameter of working pistons Diameter of compressor pistons No. of do
 minute at full power Gas delivery pressure Gas delivery temperature Have the turbines and attached equipment been
 in the shop? How long at full power?

ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

No. of generators KW per generator at RPM AC or DC? Position
 No. of propulsion motors SHP per motor at RPM Position
 How is power obtained for excitation of generators? Motors?

REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

Is gearing of single or double helical type? If single, position of gear thrust bearing Is gearing of epicyclic
 PCD of pinions: First reduction Second reduction PCD of wheels: First reduction Main
 Material of pinions Tensile strength Material of wheel rims Tensile strength
 Are gear teeth surface hardened? How are teeth finished? Diameter of pinion journals
 journals Are the wheels of welded construction? Is gearcase of welded construction? Has the wheel/gearcase been heat treated?
 of welding? Where is the propeller thrust bearing located? Are gear bearings of ball or roller type?

CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line

description and, for clutches, state how operated
 Can the main engine be used for purposes other than propulsion when declutched? If so, what?

STRAIGHT SHAFTING. Diameter of thrustshaft. 5 3/4" Material O.H. Steel. Minimum approved tensile strength 28

Shaft separate or integral with crank or wheel shaft? Separate. Diameter of intermediate shaft. 6 3/4" Material O.H. Steel
 Minimum approved tensile strength 28 t.p.s.i. Diameter of screwshaft cone at large end. 7 1/2" Is screwshaft fitted with a continuous liner?

Diameter of tube shaft. (If these are separate shafts) Is tube shaft fitted with a continuous liner in way of stern tube Thickness of screw
 bearings 17/32 Thickness between bearings 17/32 Material of screwshaft O.H. Steel. Minimum approved tensile
 Is an approved oil gland fitted? No. If so, state type Length of bearing next to and supporting propeller 3'-0"

Material of bearing White Metal. In multiple screw vessels is the liner between stern tube and A bracket continuous? If not, is the exposed length
 liners readily visible in dry dock?

PROPELLER. Diameter of propeller. 63" Pitch 41.34" Built up or solid Solid Total developed surface

No. of blades 3 Blade thickness at top of root fillet 1.87" Blade material Bronze Moment of inertia of dry propeller
 If propeller is of special design, state type Is propeller of reversible pitch type? No. If so, is it of approved design?

State method of control Material of spare propeller Bronze. Moment of inertia 169
 AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine One. Can they be declutched? No.

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) One two stage capacity
 driven by auxiliary engine. Installed port side engine room. Ham 164023

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Two main each 15 cub. ft
 How are receivers first charged? Hand starting aux. engine. Maximum working pressure of starting air system 350 p.s.i. Are
 accordance with the Rules? Yes. Has the starting of the main engines been tested and found satisfactory? Yes.

COOLERS. No. of main engine fresh water coolers Nil. No. of main engine lubricating oil coolers One.
 OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure. One engine room port for

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Four - One bilge 3,360 G.P.H. One cooling water
 One lub. oil lift 3,528 G.P.H. One Lub. oil engine 2,232 G.P.H.

INDEPENDENT PUMPS

essential pumps, state position and
 en. Give capacity of bilge pumps. Service
 port fwd.) 30M³/hr. X X
 at Washer Pump
 port side).

Service for which each pump is connected to be marked thus X												
SUCTION						DELIVERY						
Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main
X	X				X				X			X
					X		X					

IONS. No. and size in each hold, deep tank or pump room. Two 2 1/2" dia.

connected to main bilge line in main engine room One 2 1/2" dia.

In tunnel Size and position of direct bilge suction in machinery spaces 2 1/2" E.R. aft.

Size and position of emergency bilge suction in machinery spaces 3" dia. E.R. forward.

ballast system fitted with means for separating oily water on the overboard discharge side? No. Do the piping arrangements comply with the Rules including
 for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (strike out words not applicable). Yes.

STEAM & OIL ENGINE AUXILIARIES

Location of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Room (Port).	Oil Eng.	Deutz.	Eng No 23347013 B	2 KW 110V. D.C. Gen. Air
Midships)	Oil Eng.	Deutz.	Eng No 2105490191	2 KW 110V. D.C. Gen. & Hyd. pump.

used for essential services at sea? No. If so, state the minimum No. and capacity of generators required in order that the ship may operate
 Is an electric generator driven by Main Engine? Yes. 2 kw

RELATION. No. of donkey boilers burning oil fuel W.P. Type
 Are these boilers also heated by exhaust gas? No. of donkey boilers heated by exhaust gas only? W.P.

Position Can the exhaust heated boilers deliver steam directly to
 do they operate only as economisers in conjunction with oil fired boilers? Port and No. of report on donkey

Is steam essential for operation of the ship at sea? No. Are any steam pipes over 3 ins. bore? If so, what is their
 For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? No. of oil burning pressure

No. of steam condensers No. of Evaporators
 (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Hand hydraulic.

Arrangements for fire extinguishing arrangements been complied with? Yes. Brief description of arrangements E.R. one hydrant with hose & jet/spray nozzle. Two - 2 gall. extinguishers (foam & soda-acid). 1 qt. C.T.C. boxes. Six - 2 gall. foam extinguishers available but not housed in E.R.

required by the Rules been supplied? Yes. Has all the machinery been tried under full working conditions and found satisfactory? Yes. Date and duration of full
 engines 17-9-58. 4 hours. Does this machinery installation contain any features of a novel or experimental nature? (Give particulars)

tion of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable).

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, 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.

The Machinery of this vessel has been built and installed under survey by Society's Surveyors in accordance with the approved plans and Secretary's letters. materials have been satisfactorily tested as required and the workmanship is good. completion of installation the machinery was examined under working conditions, found satisfactory, and in my opinion, is eligible to be classed as contemplated +LMC NE

Plans forwarded herewith

Diagrammatic Pumping Arrangement. Re-Arrangement of Pumping Connections
Details of Stern Tube and Shafting. Detail of M.S. Thrust Shaft.

Documents forwarded herewith

Interim Certificate.
Report (6) on Engine Forgings & Castings.

James A. Anderson
Engineer Surveyor to Lloyd's Register
James A. Anderson

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

RODS P. 75, P. 74, P. 89, P. 77, P. 75, L.V.H. 4-9-56. (Birmingham).

CRANKSHAFT OR ROTOR SHAFT 3438 - 55 R.F. 27 L.V.H. 1-6-56. (Sheffield).

FLYWHEEL SHAFT -

THRUST SHAFT 5150 - 54 E.B.T. 11 L.V.H. 21-9-56. (Manchester).

GEARING -

INTERMEDIATE SHAFTS Lloyd's H.Kg. No. 632 J.A.A. Nov. 21-57.

SCREW AND TUBE SHAFTS Lloyd's H.Kg. No. 627 J.A.A. Apr. 10-57.

PROPELLERS Lloyd's Rot. No. 7354 A.v.H. 18-2-57. Spare Lloyd's Rot. No. 7000

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? No.

If so, state name of vessel

Date of approval of plans for crankshaft 4-5-56.

Straight shafting 11-6-57.

Gearing -

Clutch -

Separate oil fuel tanks -

Pumping arrangements 20-5-58.

Oil fuel arrangements 13-

Cargo oil pumping arrangements -

Air receivers -

Donkey boilers -

Dates of examination of principal parts:-

Fitting of stern tube 27-3-57.

Fitting of propeller 27-9-57.

Completion of sea connections 5-3-57.

Alignment of crankshaft in main bearings

Engine checks & bolts 13-11-57.

Alignment of gearing -

Alignment of straight shafting 13-11-57.

Testing of pumping arrangements

Oil fuel lines 17-9-58.

Donkey boiler supports -

Steering machinery 17-9-58.

Windlass 17-9-

Date of Committee

Special Survey Fee \$640.00

Decision

See Rpt. 1.

Expenses

\$21.00

© 2020
Date when A/c rendered

22nd Sep



Lloyd's Register
Foundation