

Rpt. 4b  
FROM ACCTS. 23/11  
Date of writing report 10.11.59.  
FROM ADMIN/F 27/11  
Survey held at APPELDRE.  
D. 23/11  
PIS. 3/12

Received London

20 NOV 1959

Port

PLYMOUTH

No. 8725

No. of visits

In shops

On vessel Eight

First date

16.9.59.

Last date

13.11.59.

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name "STRANTON"

Owners British Transport Commission Managers Gross tons 144.75

Hull built at Appledore By P.K. Harris & Sons Ltd. Port of Registry W. Hartlepool Year Month

Main Engines made at Stamford By Blackstone & Co. Ltd. Yard No. 124 When 1959 11

Gearing made at Slough By Modern Wheel Drive Co., Eng. No. ERS8.PR.59E.204 When 1959 7  
ERS8.PR.59E.203

Donkey boilers made at None By Blr. Nos. When

Machinery installed at Appledore By P.K. Harris & Sons Ltd. When 1959 11

Particulars of restricted service of ship, if limited for classification

Particulars of vegetable or similar cargo oil notation, if required None

Is ship to be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? No

Is refrigerating machinery fitted? No 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 closed?

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

No. of main engines 2 No. of propellers 2 Brief description of propulsion system Diesel driving Propellers through Reverse Reduction Gear boxes  
MAIN RECIPROCATING ENGINES. Licence Name and Type No. Lister Blackstone ERS8GR 8 Supercharged

No. of cylinders per engine 8 Dia. of cylinders 8 3/4 stroke(s) 11 1/2 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum approved BHP per engine 540 at 750 RPM of engine and 212 RPM of propeller.

Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 216 (2x108)

Are the cylinders arranged in Vee or other special formation? If so, number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type? 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? No. and type of mechanically driven scavenge pumps or blowers per

engine and how driven

No. of exhaust gas driven scavenge blowers per engine 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 Scavenge air pressure at full

ower Are scavenge manifold explosion relief valves fitted?

OUR STROKE ENGINES. Is the engine supercharged? Yes 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?

WO & FOUR STROKE ENGINES--GENERAL. No. of valves per cylinder: Fuel Inlet Exhaust Starting Safety

aterial of cylinder covers Material of piston crowns Is the engine equipped to operate on heavy fuel oil?

oling medium for :—Cylinders Pistons Fuel valves Overall diameter of piston rod for double acting engines

the rod fitted with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the

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

ices Are flame guards or traps fitted to relief devices? Is the crankcase readily accessible? If not, must the engine be removed for

haul of bearings, etc? Is the engine secured directly to the tank top or to a built-up seating? Seating How is the engine started? Comp. Air

the engine be directly reversed? No If not, how is reversing obtained? Gear Box

the engine been tested working in the shop? How long at full power?

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

working propeller For spare propeller Is a governor fitted? Is a torsional vibration damper or detuner fitted to the shafting?

re positioned? Type No. of main bearings Are main bearings of ball or roller

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

shaft type: Built, semi-built, solid (State which) Breadth of webs at mid-throw Axial thickness of webs

ter of journals Diameter of crankpins Centre Pins Minimum

nk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved Tensile strength

iameter of flywheel Weight Are balance weights fitted? Total weight Radius of gyration

imeter of flywheel shaft Material Minimum approved tensile strength

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

011330-011340-0204

© 2021

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 shaft.

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. Material of 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 double strokes per minute at full power.

Gas delivery pressure. Gas delivery temperature. Have the turbines and attached equipment been tested working 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.) See Lon.rpt. MWD.1999

Is gearing of single or double helical type? If single, position of gear thrust bearing. Is gearing of epicyclic type?

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. Wheel shaft.

journals. Are the wheels of welded construction? Is gearcase of welded construction? Has the wheel/gearcase been heat treated on completion 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 shafting give brief 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 in gearbox. Material. Minimum approved tensile strength.

Shaft separate or integral with crank or wheel shaft? Diameter of intermediate shaft. 5 1/2". Material Steel.

Minimum approved tensile strength 28 tons/sq". Diameter of screwshaft cone at large end. 7". Is screwshaft fitted with a continuous liner? No.

Diameter of tube shaft. (If these are separate shafts) None. Is tube shaft fitted with a continuous liner in way of stern tube. Thickness of screw/tube shaft liner.

bearings. Thickness between bearings. Material of screwshaft. Steel. Minimum approved tensile strength 28 tons.

Is an approved oil gland fitted? Yes. If so, state type. U.S. Metallic Gland. Length of bearing next to and supporting propeller. 28".

Material of bearing White Metal. In multiple screw vessels is the liner between stern tube and A bracket continuous? None. If not, state the exposed length of shafting between lines readily visible in dry dock?

PROPELLER. Diameter of propeller. 8' 2". Pitch. 4' 10 1/4". Built up or solid. Solid. Total developed surface. 20.9 ft<sup>2</sup>.

No. of blades. 3. Blade thickness at top of root fillet. 3 1/2". Blade material. Manganese Bronze. Moment of inertia of dry propeller. WK<sup>2</sup> = 706.

If propeller is of special design, state type. No. Is propeller of reversible pitch type? No. If so, state of approved design?

State method of control. Material of spare propeller. C.I. Moment of inertia. 9022 lbs/ft<sup>2</sup>.

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine. One. Can they be declutched? Belt driven from Port.

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) One driven by Elec. Motor 33.2 cu.

F.A.D. Sou. D.13847. Engine Room Stbd. Aft.

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 3 - 11.25 cu.ft. each Eng. Room Stbd.

(For'd, Centre & Aft) Lds. C.34768, 34720 & 34711

How are receivers first charged? Elec. Comp. power from Hand Started Aux. Eng. driven Generator. Maximum working pressure of starting air system. 300 lbs/sq". Are the safety devices in 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. 1 per. No. of main engine lubricating oil coolers. 1 per. Eng. (Including Aux.) & 1 per. Gen. (including Aux.)

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure. One divided tank. Engine Room For'd.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) 1 F.W. & 1 S.W. Cooling & 2 lub. oil pumps per engine.

One belt driven Air Compressor by Stbd. Engine only.

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.

	SUCTION										DELIVERY				
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Sal. Conn.	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil
All in Engine Room															
Salvage Pump Elec. Mtr. 130 ton/hr. (Sigmund)	X	X				X			X					X	
Bilge & Ballast Port. Elec. Mtr. 25 ton/hr (Mono)	X	X	X			X								X	
Ballast Stbd. Elec. Mtr. 25 ton/hr. (Mono)	X	X	X			X								X	
Lub. Oil Standby Elec. Mtr. (Mono)								X							X
O.F. Transfer Pump Elec. Mtr. (Mono)				X									X		

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room. F.P.T., Chain Locker, Cofferdam, Accomd., After Store, Steering Comp. A.P.T., One each all 2" dia.

No. and size connected to main bilge line in main engine room. One 2" dia.

In main engine room. Size and position of direct bilge suction in machinery spaces. One 3" dia. aft.

Size and position of emergency bilge suction in machinery spaces. Aft 6" dia.

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Yes.

Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (strike out words not applicable).

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Eng. Rm. Port For'd	Diesel	Lister 70 HP	Brs. SC.8019	46 KW. Generator 6 cyl
" " Stbd. "	"	Lister 70 HP	Brs. SC.8020	46 KW. Generator 6 cyl
" " Port Aft	"	Lister 23 HP	Brs. SC.8021	15 KW. Generator 2 cyl

Is electric current used for essential services at sea? Yes. Steering. If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea. One, the smallest 15 KW.

Is an electric generator driven by Main Engine? No.

STEAM INSTALLATION. No. of donkey boilers burning oil fuel. W.P. Type.

Position.

Is a superheater fitted? Are these boilers also heated by exhaust gas? No. of donkey boilers heated by exhaust gas only? W.P.

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

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

No. of steam condensers. No. of Evaporators.

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars). Vickers Hydraulic. Hyd. Pump driven by Elec. Motor Lds. 34998

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes. Brief description of arrangements. 2 - 2 gall. Pyrene Extinguishers & 1 - 10 gall. Pyrene & hose connection.

Has the spare gear 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 power sea trials of main engines. 13.11.59. 3 hrs. after previous 6 hrs.

Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) No.

The foregoing description 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 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.

The machinery of this vessel has been fitted on board under Special Survey in accordance with or equivalent to the approved plan, Secretary's letters and the Rules.

The workmanship and materials are good and when tried at sea under working conditions it was found satisfactory in every respect and is eligible in my opinion to have the records of

+ L.M.C. 11,59 OG 11,59 and the notations

2 Oil Eng. driving propellers through Reverse Reduction Gearboxes,

each 8 Cyl. 8 $\frac{3}{4}$ " dia. x 11 $\frac{1}{2}$ " stroke 4 S.C.S.A.

The gear boxes were opened out after the trials and found satisfactory.

No gear hammer was apparent during trials.

*[Signature]*

Engine Surveyor to Lloyd's Register of Shipping.

(Digby L.H. Collinson)

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

RODS Lon. rpt.

CRANKSHAFT OR ROTORSHAFT Lon. rpt.

FLYWHEEL SHAFT ---

THRUSTSHAFT Lon. rpt.

GEARING Lon. rpt.

INTERMEDIATE SHAFTS LR. 2559, 2560, 2557, 2558 Couplings 2561, 2562 LVH. 30.7.59. Mch. C. 6771

SCREW AND TUBE SHAFTS LR. 2556, 2556 LVH. 30.7.59. Mch. C. 6771

PROPELLERS LR. 8182, 8181 LVH. 30.7.59. Mch. C. 6771

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? Yes If so, state name of vessel " Hart " (Ply. rpt. 8664)

Date of approval of plans for crankshaft 17.6.58. Straight shafting 16.11.58. Gearing Lon. rpt. Clutch Lon.

Separate oil fuel tanks 23.12.58. Pumping arrangements 11.8.58. Oil fuel arrangements 11.8.58.

Cargo oil pumping arrangements None Air receivers Lds. rpt. Donkey boilers None

Dates of examination of principal parts:—

Fitting of stern tube 24.9.59. Fitting of propeller 29.9.59. Completion of sea connections 16.9.59. Alignment of crankshaft in main bearings Lon. rpt.

Engine chocks & bolts 23.10.59. Alignment of gearing Lon. rpt. Alignment of straight shafting 23.10.59. Testing of pumping arrangements 10.1

Oil fuel lines 27.10.59. Donkey boiler supports None Steering machinery 13.11.59. Windlass 13.11.59.

Date of Committee

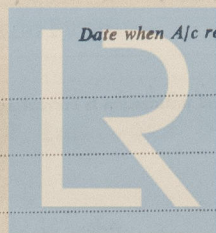
Special Survey Fee £ 64. 10. 0.

Decision

See Rpt. 1.

Expenses £ 12. 1. 0.

Date when A/c rendered 16. 11. 59.



© 2021

Lloyd's Register Foundation

Rpt. 4b

Date of writing

Survey held at

FIRST

No. in R.B.

Owners

Hull built at

Main Engines m

Gearing made at

Donkey boilers m

Machinery insta

Particulars of res

Particulars of veg

Is ship to be classe

Is refrigerating ma

Is the refrigerating

The following par  
wording is not app  
report need not be

No. of main engin

MAIN RECI

No. of cylinders per

Maximum approve

Corresponding MI

Are the cylinders a

TWO STROKE

Is the exhaust disc

engine and how dr

No. of exhaust gas

If a stand-by or e

power

FOUR STROKE

engine 1

TWO & FOUR S

Material of cylinder

Cooling medium for

Is the rod fitted with

underside of pistons?

Devices 4-44

overhaul of bearings,

Can the engine be di

Has the engine been

CRANK & FLYWE

for working propeller

Where positioned? F

pe? No

rankshaft type: Buil

diameter of journals

shrunk, radial thickn

diameter of flywheel

diameter of flywheel s

wheel shaft: separa

C. D.