

Rpt. 4b

Date of writing report _____ Received London _____ Port IPSWICH. No. 141869.
 Survey held at WIVENHOE. No. of visits _____ In shops _____ First date 17/11/59. Last date 21/1/60.
 On vessel 2

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 42733 Name "REDSHANK C." Gross tons 146.35.
 Owners J.W. Cook & Co Ltd Managers _____ Port of Registry HULL.
 Hull built at WIVENHOE. By JAS. W. COOK & CO (WIVENHOE) LTD Yard No. 1192 Year Month 1960. 1.
 Main Engines made at STAMFORD, Lincs. By LISTER BLACKSTONE & CO LTD Eng. No. EV4.P59H.127 When 1959. 11.
 Gearing made at SLOUGH, Bucks. By MODERN WHEEL DRIVE LTD Blr. Nos. _____ When _____
 Donkey boilers made at _____ By _____ Blr. Nos. _____ When _____
 Machinery installed at WIVENHOE. By JAS. W. COOK & CO (WIVENHOE) LTD When 1960. 1.

Particulars of restricted service of ship, if limited for classification FOR SERVICE IN HUMBER RIVER AND ESTUARY.
 Particulars of vegetable or similar cargo oil notation, if required CARRYING PETROLEUM IN BULK, FLASH POINT BELOW 150°F.

Is ship to be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? YES.
 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 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 report need not be repeated below, but the port and report number should be stated.

No. of main engines 1 No. of propellers 1 Brief description of propulsion system OIL ENGINE WITH REVERSE REDUCTION GEARING TO SINGLE SCREW.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. LISTER BLACKSTONE EVM. GR4. VERTICAL DIESEL.

No. of cylinders per engine 4 Dia. of cylinders 8 3/4" stroke(s) 12 1/2" 2 or 4 stroke cycle 4 Single or double acting SINGLE.

Maximum approved BHP per engine 180 at 600 RPM of engine and 300 RPM of propeller

Corresponding MIP 106 Lbs/sq" (For DA engines give MIP top & bottom) Maximum cylinder pressure 300 Lbs/sq" Machinery numeral 36

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? _____ 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 power _____ Are scavenge manifold explosion relief valves fitted? _____

FOUR STROKE ENGINES. Is the engine supercharged? No Are the undersides of the pistons arranged as supercharge pumps? No No. of exhaust gas driven blowers per engine NONE No. of supercharge air coolers per engine NONE Supercharge air pressure _____ Can engine operate without supercharger? _____

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel 1 Inlet 1 Exhaust 1 Starting TWO IN SERIES. Safety 1

Material of cylinder covers CAST IRON. Material of piston crowns ALUMINIUM ALLOY. Is the engine equipped to operate on heavy fuel oil? No

Cooling medium for:—Cylinders FRESH WATER. Pistons NONE. Fuel valves NONE Overall diameter of piston rod for double acting engines _____

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

underside of pistons? No Is the engine of crosshead or trunk piston type? TRUNK Total internal volume of crankcase 30 ft³ No. and total area of explosion relief

devices Two - 22 sq" Are flame guards or traps fitted to relief devices? YES 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 sear? BUILT UP SEAT How is the engine started? COMPRESSED AIR.

Can the engine be directly reversed? No If not, how is reversing obtained? M.W.D REV/RED GEAR BOX TYPE MW.3B N° 12405.

Has the engine been tested working in the shop? YES. How long at full power? 4 HOURS PLUS 1 HOUR ON 10% OVERLOAD.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 17-6-59 State barred speed range(s), if imposed

for working propeller NONE 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 6 Are main bearings of ball or roller

type? No Distance between inner edges of bearings in way of crank(s) 10 1/16" Distance between centre lines of side cranks or eccentrics of opposed piston engines _____

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

Diameter of journals 6 3/4" Diameter of crankpins Centre 6 1/8" Side _____ Breadth of webs at mid-throw 7 3/4" Axial thickness of webs 2 25/32"

If shrunk, radial thickness around eyeholes _____ Are dowel pins fitted? _____ Crankshaft material Journals EN.8 STEEL. Minimum 40 TONS/sq"

Diameter of flywheel 40" Weight 2180 LBS. Are balance weights fitted? No Total weight _____ Radius of gyration _____

Diameter of flywheel shaft 6 3/4" Material EN.8 STEEL. Minimum approved tensile strength 40 TONS/sq"

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) INTEGRAL WITH CRANKSHAFT.

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.)
Is gearing of single or double helical type? SINGLE If single, position of gear thrust bearing. MAIN THRUST. Is gearing of epicyclic type? No.
PCD of pinions: First reduction 8.6675" Second reduction 7.9452" PCD of pinions: First reduction 16.85322" Main 16.1312"
Material of pinions EN. 25. IDLER EN. 9. Tensile strength 55/65 + 45/45 Material of wheels EN. 9. Tensile strength 45/55 Tons.
Are gear teeth surface hardened? No How are teeth finished? SYKES CUT. Diameter of pinion journals 3.93" + 3.75" Wheel shaft journals 4.5" + 3.5440"
Are the wheels of welded construction? No Is gearcase of welded construction? No Has the wheel/gearcase been heat treated on completion of welding? - Where is the propeller thrust bearing located? OUTPUT SHAFT INTEGRAL WITH GEAR BOX. 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. OIL OPERATED CLUTCHES INCORPORATED IN GEAR BOX. RUBBER BONDY FLEXIBLE COUPLING BETWEEN ENGINE AND GEAR BOX.

Can the main engine be used for purposes other than propulsion when declutched? No If so, what? -

STRAIGHT SHAFTING. Diameter of thrustshaft _____ Material _____ Minimum approved tensile strength _____
Shaft separate or integral with crank or wheel shaft? INTEGRAL WITH WHEEL SHAFT. Diameter of intermediate shaft NONE. Material _____
Minimum approved tensile strength _____ Diameter of screwshaft cone at large end 4 1/4" 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 at bearings _____ Thickness between bearings _____ Material of screw/tube shaft S.M. STEEL. Minimum approved tensile strength 28 Tons.
Is an approved oil gland fitted? YES. If so, state type "BRUNTONS" Length of bearing next to and supporting propeller 18 7/8"
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 of shafting between liners readily visible in dry dock? -

PROPELLER. Diameter of propeller 50" Pitch 42" Built up or solid BUILT UP. Total developed surface 6136 cm²
No. of blades 4 Blade thickness at top of root fillet 63 M.M. Blade material NYLON Moment of inertia of dry propeller NOT AVAILABLE
If propeller is of special design, state type NYLON BLADES. BRONZE BOSS. Is propeller of reversible pitch type? No. If so, is it of approved design? -
State method of control _____ Material of spare propeller NONE (2 SPARE NYLON BLADES) Moment of inertia _____

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine ONE Can they be declutched? YES (ABERDEEN CERTIFICATE N° 1)
No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of Certificate) ONE: 7.15 CU. FT. (MIN. F.A.D.) DRIVEN BY PORT AUXILIARY ENGINE. SOUTHAMPTON CERTIFICATE N° D. 14082
No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 2 MAIN AIR RECEIVERS EACH 3 1/4 CU. FT. FORWARD BULKHEAD S.S. ENG. ROOM. NOTTINGHAM CERTIFICATE N° C. 30818 + C. 30819.
How are receivers first charged? HAND START. AUXILIARY DIESEL ENGINE. Maximum working pressure of starting air system 350 LBS/IN² 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 No. of main engine lubricating oil coolers 1

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure ONE DAILY SERVICE TANK IN ENGINE ROOM AT AFT END OF CASING.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) ONE PRESSURE AND ONE SCAVENGE LUBRICATING OIL. ONE SEA WATER AND ONE FRESH WATER COOLING.

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	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	OVER BOARD
GENERAL SERVICE PUMP. 23 Tons/Hour. Driven BY AUXILIARY ENGINE SITUATED PORT SIDE OF ENGINE ROOM.	X		X			X							X			X
OIL FUEL HAND PUMPS				X								X				
HAND BILGE PUMPS (5 THROUGHOUT SHIP).		X														X

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room HAND BILGE PUMPS: - FORE PEAK 1 @ 2" BORE. FORE CABIN 1 @ 2" BORE.
FORWARD COFFERDAM 1 @ 2" BORE. PUMP ROOM 1 @ 2" BORE

No. and size connected to main bilge line in main engine room ONE @ 2 1/2" FORWARD. ONE @ 2 1/2" AFT.

In aux. engine room _____ In tunnel NO TUNNEL.

Suction Aft. _____ Size and position of direct bilge suction in machinery spaces 2" HAND PUMP.

Size and position of emergency bilge suction in machinery spaces 2" AT FORWARD END.

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? No.

Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk. YES. (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)
PORT.	2 CR. 19.5 B.H.P.	LISTER & CO	BRISTOL S.C. 8324	5 K.W. 110 VOLT GENERATOR. G.S. PUMP. AIR COMPRESSOR.
STARBOARD.	3 CR. 29.0 B.H.P.	LISTER & CO	BRISTOL S.C. 8151	5 K.W. 110 VOLT GENERATOR. CARGO OIL PUMP.

Is electric current 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 at sea _____

Is an electric generator driven by Main Engine? YES. ONE 600 WATT 24/32 VOLT.

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. _____

Type _____ Position _____

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) HAND STEERING GEAR ONLY.

Have the Rule Requirements for fire extinguishing arrangements been complied with? YES. Brief description of arrangements 1-2 GALLON FOAM IN E.R. 1-2 GALL. FOAM F.R. ENTRANCE. 1-2 GALL. FOAM CABIN ENTRANCE FORE END. 1-2 HYDRANT F.R. 3-2 HYDRANTS ON DECK.

Has the spare gear required by the Rules been supplied? No 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 16-1-60. TWO HOURS.

Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) BUILT UP FOUR BLADED PROPELLER WITH NYLON BLADES AND BRONZE BOSS. SEE LONDON LETTER REF. ENG. 21-B-59 AND SUBSEQUENT CORRESPONDENCE.

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

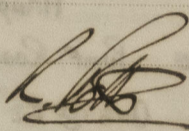
State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing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

THE MACHINERY OF THIS SHIP HAS BEEN BUILT AND INSTALLED UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE SOCIETY'S RULES, PLANS APPROVED AND THE SECRETARY'S LETTERS.

THE MATERIALS AND WORKMANSHIP ARE OF GOOD QUALITY THROUGHOUT.

UPON COMPLETION THE MACHINERY WAS TRIED AT SEA UNDER WORKING CONDITIONS AND FOUND SATISFACTORY. NO GEAR HAMMER OR SHAFT VIBRATION WAS OBSERVED DURING THE TRIALS WHEN THE MACHINERY WAS OPERATED AND MANOEUVRED THROUGH THE WHOLE SPEED RANGE.

THE MACHINERY OF THIS SHIP IS IN THE OPINION OF THE UNDERSIGNED ELIGIBLE FOR CLASSIFICATION IN THE REGISTER BOOK * LMC, 1.60 (N). ONE ENGINE AND TS. 05 1.60. When one nylon propeller blade was fitted and weighing only 12 lbs 8 ozs. is replaced with one of the same weight as the other three blades fitted to the bronze boss (i.e. 12 lbs 14 ozs.) and two spare nylon blades each weighing 12 lbs 14 ozs are supplied. Subject to the nylon blades of this experimental propeller being removed for examination after six months service. See Secretariat letter dated 2/8/59 reference Yand W. 185/6. The two spare blades now held as depot spares for this vessel weigh 11 lbs 8 ozs and 12 lbs 10 ozs respectively and are not considered suitable. The machinery has been tried under working conditions with the 11 lbs 8 oz blade fitted and considerable propeller vibration was evident at full operating R.P.M. The Owners' Surveyors have arranged with the manufacturer to supply three new nylon blades each weighing 12 lbs 14 ozs and these blades varying in weight from 11 lbs 8 ozs to 12 lbs 10 ozs are to be returned to the manufacturer.



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.)

RODS BCX.161-162-160-140. W.W. Lon. 7-9-59. COVERED BY BATCH CERTIFICATES BHAM. C.38703, C.39118, AND C.35753.

CRANKSHAFT OR ROTORSHAFT 6600 T.D.S. NOT. W.W. Lon. 21-10-59.

FLYWHEEL SHAFT INTEGRAL WITH CRANKSHAFT.

THRUSTSHAFT INTEGRAL WITH WHEEL SHAFT.

GEARING LLOYDS LONDON. T.H.G. 27-10-59. M.W.D. 12405.

INTERMEDIATE SHAFTS

SCREW SHAFTS E.28473. LLOYDS L.T.H. 2731 W.C. 19-5-59. IPS. 2-7-59 JP.

PROPELLERS P.84467 RP. BAL. CPN. ED. 20-7-59.

OTHER IMPORTANT ITEMS CYLINDER BLOCK WITH LINERS AND HEADS :- LLOYDS TEST 100 LB. W.W. Lon. 27-8-59.

Is the installation a duplicate of a previous case? **Yes.** If so, state name of vessel **"SEAGULL C"**

Date of approval of plans for crankshaft **17-6-59** Straight shafting **-** Gearing **-** Clutch **-**

Separate oil fuel tanks **-** Pumping arrangements **8-9-59** Oil fuel arrangements **8-9-59**

Cargo oil pumping arrangements **23-3-59** Air receivers **-** Donkey boilers **-**

Dates of examination of principal parts:-

Fitting of stern tube **12-11-59** Fitting of propeller **17-11-59** Completion of sea connections **5-11-59** Alignment of crank shaft in main bearings **11-12-59**

Engine checks & bolts **11-12-59** Alignment of gearing **11-12-59** Alignment of straight shafting **11-12-59** Testing of pumping arrangements **14-1-60**

Oil fuel lines **14-1-60** Donkey boiler supports **-** Steering machinery **14-1-60** Windlass **14-1-60**

Date of Committee **FRIDAY 21 OCT 1960** Installation Special Survey Fee **£25.0.0**

Decision **See Rpt. 1.** **18.2.60**

Expenses

£6.0.0

Date when A/c rendered **15 FEB 1960**



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