

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office JUN 11 1937
NEWCASTLE-ON-TYNE

Date of writing Report 10 When handed in at Local Office 7/6/37 Port of **NEWCASTLE-ON-TYNE**
 No. in Survey held at **Wallsend** Date, First Survey **30 July/36** Last Survey **3 June 1937**
 Reg. Book. on the Steamer **"INKOSI"** (Number of Visits **99**) Tons { Gross **6618** Net **4055**
 Built at **Wallsend** By whom built **Swan Hunter & Wigham Richardson Ltd** Yard No. **1525** When built **1937**
 Engines made at **Wallsend** By whom made **Wallsend Slipway & Eng Co. Ltd** Engine No. **921** When made **1937**
 Boilers made at **Wallsend** By whom made **Wallsend Slipway & Eng Co. Ltd** Boiler No. **921** When made **1937**
 Registered Horse Power Owners **Charente S. S. Co. Ltd** Port belonging to **Liverpool**
 Nom. Horse Power as per Rule **835** Is Refrigerating Machinery fitted for cargo purposes **Yes** Is Electric Light fitted **Yes**
 Trade for which Vessel is intended

ENGINES, &c.—Description of Engines **Quadruple Expansion** Revs. per minute
 Dia. of Cylinders **28" - 41 1/2" - 59" - 84"** Length of Stroke **54"** No. of Cylinders **4** No. of Cranks **4**
 Crank shaft, dia. of journals as per Rule **16.38"** Crank pin dia. **17 1/2"** Crank webs Mid. length breadth **27"** Thickness parallel to axis **11"**
 as fitted **17"** Mid. length thickness **11"** Thickness around eye-hole **11"** PIN **7 3/8"** JOURNAL **8 3/8"**
 Intermediate Shafts, diameter as per Rule **15.6"** Thrust shaft, diameter at collars as per Rule **16.38"**
 as fitted **16.5"** as fitted **16.58"**
 Tube Shafts, diameter as per Rule **17.14"** Is the **screw** shaft fitted with a continuous liner **Yes**
 as fitted **17.12"** as fitted **17.12"**
 Bronze Liners, thickness in way of bushes as per Rule **26.39"** Thickness between bushes as per Rule **19.78"** Is the after end of the liner made watertight in the propeller boss **Yes**
 as fitted **7 1/8"** as fitted **3 1/4"**
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **Yes**
 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 **Yes**
 If two liners are fitted, is the shaft lapped or protected between the liners **Yes** Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft **No**
 Propeller, dia. **18-6"** Pitch **21-0"** No. of Blades **4** Material **Brass** whether Moveable **Yes** Total Developed Surface **116** sq. feet
 Feed Pumps worked from the Main Engines, No. **None** Diameter **5 1/2"** Stroke **25 1/2"** Can one be overhauled while the other is at work **Yes**
 Bilge Pumps worked from the Main Engines, No. **2** Diameter **5 1/2"** Stroke **25 1/2"** Can one be overhauled while the other is at work **Yes**
 Feed Pumps { No. and size **3 - 13 1/2" x 10" x 26"** Pumps connected to the { No. and size **2 - 5 1/2" x 25"** | **10 1/2" x 13" x 24"** | **2 - 7" x 7" x 15"** | **1 Emergency**
 How driven **Steam** Main Bilge Line { How driven **off engine** | **steam** | **steam** | **Electrical 5"**
 Ballast Pumps, No. and size **1 - 10 1/2" x 13" x 24"** | **1 - 8" CENTRIFUGAL** Lubricating Oil Pumps, including Spare Pump, No. and size **4**
 Are two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room **4 @ 2 1/2"** **TUNNEL 1 - 2 1/2"**
 In Pump Room **None** In Holds, &c. **Nº1 - 2 @ 3"** | **Nº2 - 2 @ 3"** | **Nº3 - 2 @ 3"** | **Nº4 - 2 @ 2 1/2"**

Main Water Circulating Pump Direct Bilge Suctions, No. and size **1 @ 12"** **Independent Power Pump Direct Suctions to the Engine Room Bilges,**
 No. and size **1 - 5" | 1 - 4" | 1 - 5" Electrical Emergency Pump (Boiler Room)** Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes **Yes**
 Are the Bilge Suctions in the Machinery Space 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 **Yes** Are they fitted with Valves or Cocks **Yes**
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold 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 **Yes**
 What Pipes pass through the bunkers **None** How are they protected **Yes**
 What pipes pass through the deep tanks **None** Have they been tested as per Rule **Yes**
 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 **Yes** Is it fitted with a watertight door **Yes** worked from **Upper Deck**

MAIN BOILERS, &c.—(Letter for record **Yes**) Total Heating Surface of Boilers **12000 Square feet.**
 Is Forced Draft fitted **Yes** No. and Description of Boilers **4 S.S. Multitubular** Working Pressure **235 lbs**
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? **Yes**
 IS A DONKEY BOILER FITTED? **No** If so, is a report now forwarded? **Yes**

Are approved plans forwarded herewith for Shafting **Yes** Main Boilers **Yes** Auxiliary Boilers **Yes** Donkey Boilers **Yes**
 Superheaters **Yes** General Pumping Arrangements **Yes** Oil fuel Burning Piping Arrangements **Yes**

SPARE GEAR.

Has the spare gear required by the Rules been supplied **Yes**
 State the principal additional spare gear supplied: **Impeller shaft for Circulating pump; 1 Impeller shaft for Ballast Circulating Pump; 1 Screw shaft for Bilge Pumps; 3 Cast Iron & 1 Bronze propeller blades; 1 set of air pump, feed, Ballast, General Service Pumps valves; 1 steam chest for General Service, Ballast, & Oil fuel pumps; 1 set of escape valve springs for main engine steam chest, cylinders and for donkey pumps; 50 Condenser tubes; 1 air pump rod; 2 top end bearing bushes; 1 bottom end bearing bushes; 1 set of air pump head valves & head valve seating; 12 Mitchell Thrust shaft pads; 4 main feed check valves; spare parts for Emergency Bilge pump; spares for superheaters; spare plain & stay tubes for main boilers.**

The foregoing is a correct description,
 FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED,
J. W. Pherson.

Manufacturer.

DIRECTOR.

003513-003524-0214/12



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1936
 During progress of work in shops -- Jan. 30, Aug. 7, 12, 19, 24, Sep. 8, 16, 17, 18, 24, Oct. 5, 6, 8, 21, 23, 26, Nov. 4, 5, 12, 13, 16, 17, 18.
 19, 20, 25, 26, 27, 30, Dec. 1, 2, 4, 5, 7, 9, 10, 11, 14, 15, 16, 17, 18, 21, 23, 24, 30.
 1937
 During erection on board vessel -- Apr. 2, 6, 7, 8, 14, 15, 16, 19, 22, May 6, 20, 21, 22, 24, 27, 31, June 3.
 Total No. of visits **99.**

Dates of Examination of principal parts—Cylinders	14-12-36	Slides	14-1-37	Covers	20-11-36
Pistons	14-12-36	Piston Rods	1-12-36	Connecting rods	14-1-37
Crank shaft	25-11-36	Thrust shaft	16-11-36	Intermediate shafts	(6) 2-2-36; 1-2-11-36; 3-4-12-36
Tube shaft	—	Screw shaft	13-11-36	Propeller	13-11-36
Stern tube	30-12-36	Engine and boiler seatings	2-3-37	Engines holding down bolts	22-3-37
Completion of fitting sea connections	2-3-37	Boilers fixed	22-3-37	Engines tried under steam	
Completion of pumping arrangements	27-5-37	Thickness of adjusting washers	PORT: 5/16" AFT: 3/16" STARBOARD: 5/16" AFT: 3/16"		
Main boiler safety valves adjusted	20-5-37	Identification Mark	LLOYDS No 921 - J.E.S.	Thrust shaft material	Steel
Crank shaft material	Steel	Identification Mark	LLOYDS No 921 - J.E.S.	Tube shaft, material	Steel
Intermediate shafts, material	Steel	Identification Mark	LLOYDS No 921 - J.E.S.	Steam Pipes, material	S.D. Steel
Screw shaft, material	Steel	Identification Mark	LLOYDS No 921 - J.E.S.	Test pressure	705 lbs
Is an installation fitted for burning oil fuel	Yes	Is the flash point of the oil to be used over 150°F.	Yes	Date of Test	31-3-37
Have the requirements of the Rules for the use of oil as fuel been complied with	Yes				
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	Yes		
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with	Yes				
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 machinery of this vessel has been constructed under Special Survey, in accordance with the Rules and approved plans, the material and workmanship are good. The machinery has been fitted on board in an efficient manner, tried under working conditions and found satisfactory and is eligible in my opinion to be classed with record of + LMC 6-37: T.S.C.L: F.D. + S.B (Spt). Fitted for oil fuel 6-37. F.P. above 150°F.*

The amount of Entry Fee ... £ 6 : 0 :
 Special ... £ 116 : 15 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 14.7.37
 TUE 15 JUN 1937
 Committee's Minute
 Assigned + Lamb, 6.37 J.D., C.L.
 (Spt)
 Intt. for S.B. &c

Memo to Report 1 on S.S. INKOSI Swan Hunter's No 1525.

Steering Gear trials at Sea on 2nd June 1937.

Approx. Condition of Ship *to aft 18-5' mean 15-8'*
to fore 12-11'

Approx. displacement 6725 tons.

An opportunity was taken, while the ship was working up, to test the hand gear. Time taken to effect change over 15 Secs.

The following helm movements & times were taken:-

Midships to 15° S	43 Secs
15° S to Mid.	50 "
Mid to 15° P	34 "
15° P to 15° S	2 m. 15 S. When a complete circle was made.
15° S to 15° P	2 m. 22 S
15° P to Mid.	52 Secs.

The ship was also kept to her course for 15 minutes, with two men at each hand wheel, the normal helm movements being made.

During these trials the speed of ship had worked up to about 12 or 13 knots.

With steering engine operating & vessel running about 14 knots the following helm movements & times were taken:-

	At Bridge	At Engine
Midships to HP.	10 Secs	15 Secs
HP. to HS.	15 "	25 "
HS. to HP.	15 "	24 "
HP. to Mid.	8 "	13 "

J.E. Kester
 10.6.37

