

# REPORT ON OIL ENGINE MACHINERY.

No. 31814  
12 MAY 1936

Received at London Office

Date of writing Report 19. When handed in at Local Office 7 May 1936 Port of Sunderland.  
No. in Survey held at Sunderland. Date, First Survey 18<sup>th</sup> Nov. '35 Last Survey 5<sup>th</sup> May 1936  
Reg. Book. Number of Visits 52

Single }  
Twin } Screw vessel  
Triple }  
Quadruple }

## "PEEBLES."

Tons Gross 4982  
Net 3068

Built at Sunderland By whom built Wm Bayford & Sons Ltd Yard No. 625 When built 1936.  
Engines made at Sunderland By whom made Wm Bayford & Sons Ltd Engine No. 620 When made 1936.  
Donkey Boilers made at Stockton on Tees By whom made Stockton Chem. & Eng. Co & Riley Bros Boiler No. 13232 When made 1936.  
Brake Horse Power 1800 Owners B. J. Sutherland & Co Ltd Port belonging to Newcastle.  
Nom. Horse Power as per Rule 388. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.  
Trade for which vessel is intended 20 1/2" 8 1/2"

**ENGINES, &c.** Type of Engines Opposed Piston Airless injection 2 or 4 stroke cycle 2. Single or double acting Single  
Maximum pressure in cylinders 540 lbs/sq in Diameter of cylinders 520 mm. Length of stroke Lower 1200 mm. No. of cylinders 3 No. of cranks 3 (3 throw)  
Mean Indicated Pressure 88 lbs/sq in Upper 880 mm. Is there a bearing between each crank 3 Throw.  
Distance between bearings, adjacent to the Crank, measured from inner edge to inner edge 820 mm. Kind of fuel used Compression  
Revolutions per minute 115 Flywheel dia. 1950 mm. Weight FOR 49 cwt. Means of ignition Temperature  
Crank Shaft, dia. of journals as per Rule 356 mm. Crank pin dia. 410 mm. Crank Webs as per Rule 286 mm. Mid. length breadth 580 mm. Thickness parallel to axis 230 mm.  
Flywheel Shaft, diameter as per Rule 356 mm. Intermediate Shafts, diameter as per Rule 305 mm. Thrust Shaft, diameter at collars as per Rule 300 mm.  
Main Shaft, diameter as per Rule 300 mm. Screw Shaft, diameter as per Rule 314 mm. Is the shaft fitted with a continuous liner Yes.

Brass Liners, thickness in way of bushes as per Rule 16.4 mm. Thickness between bushes as per Rule 12.5 mm. Is the after end of the liner made watertight in the  
propeller boss Yes. 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 Yes.  
If so, state type No. Length of Bearing in Stern Bush next to and supporting propeller 5'-0"

Propeller, dia. 14'-0" Pitch 10'-6" No. of blades 4. Material Brongze whether Moveable No. Total Developed Surface 80. sq. feet  
Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication  
and Thickens of cylinder liners 20 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with  
conducting material Yes. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Yes.  
Cooling Water Pumps, No. 2 1 Engine Driven 1 Steam Driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.  
Bilge Pumps worked from the Main Engines, No. none Diameter Stroke Can one be overhauled while the other is at work Yes.  
Pumps connected to the Main Bilge Line No. How driven Two 6" x 5 1/2" x 15" Lewis Simplex. Steam Driven.

Is the cooling water led to the bilges No. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
arrangements Yes.  
Oil Pumps, No. and size 1 @ 12" x 10 1/2" x 24" Simplex. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one (main eng.) 80 mm x 520 mm.  
one Lewis 5 1/2" x 6" x 15" Simplex  
Are two independent means arranged for circulating water through the Oil Cooler Yes. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size:—In Machinery Spaces 4 @ 3" in E.R. 1 @ 3" Tunnel well. In Pump Room 1 @ 3" Deep Tank 3 1/2" dia.  
In Holds, &c. N°1 3 1/2" dia. N°2 3 1/2" dia. N°3 3" dia. N°4 3 1/2" dia.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 8" 1 @ 5"  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes. Are the Bilge Suctions in the Machinery Spaces  
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 Both.  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes. Are the Overboard Discharges above or below the deep water line above.  
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.  
Do pipes pass through the bunkers none. How are they protected Yes.  
Do pipes pass through the deep tanks Forward bilge suction 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  
department to another Yes. Is the Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes. worked from E.R. top  
If the vessel is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes.  
Auxiliary Air Compressors, No. Two No. of stages 3. Diameters 10 1/2"-8 1/2"-2 1/2" Stroke 6" Driven by Steam 11 1/2" x 6" Stroke  
Primary Air Compressors, No. none No. of stages 1 Diameters Stroke Driven by 1  
Secondary Air Compressors, No. none No. of stages 1 Diameters Stroke Driven by 1

Engining Air Pumps, No. one Diameter 1510 mm. Stroke 520 mm. Driven by levers from main engine.  
Auxiliary Engines crank shafts, diameter as per Rule No. 1 Position 1



**AIR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes. On discharge from Compressor* Rpt. 5a.

Can the internal surfaces of the receivers be examined and cleaned *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*

**High Pressure Air Receivers, No.** *None.* Cubic capacity of each *180 cuft.* Internal diameter *3'-6"* thickness *1"*

Seamless, lap welded or riveted longitudinal joint *Yes.* Material *Steel* Range of tensile strength *28/32.* Working pressure by Rules *603* Actual *600*

**Starting Air Receivers, No.** *Two* Total cubic capacity *180 cuft.* Internal diameter *3'-6"* thickness *1"*

Seamless, lap welded or riveted longitudinal joint *Yes.* Material *Mild Steel* Range of tensile strength *28/32.* Working pressure by Rules *603* Actual *600*

**IS A DONKEY BOILER FITTED?** *Yes.* If so, is a report now forwarded? *Yes.*

Is the donkey boiler intended to be used for domestic purposes only *No.*

**PLANS.** Are approved plans forwarded herewith for Shafting *as "Sutherland"* Receivers *as "Sutherland"* Separate Fuel Tanks *as "Sutherland"*

Donkey Boilers *Yes.* General Pumping Arrangements *as "Sutherland"* Pumping Arrangements in Machinery Space *as "Sutherland"*

Oil Fuel Burning Arrangements *as "Sutherland"* **SPARE GEAR.**

Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *1 Cast iron propeller, 1 propeller shaft, 2 front fuel valves complete, 2 Back fuel valves complete, 8 Spray plugs, 1 Starting air valve complete, 1 cylinder relief valve complete, 4 Scavenge pump suction & delivery valve discs, 1 fuel pump body complete with ram, guide, succ. del. valve chamber, intermediate crownhead with strut & nuts, 1 fuel pump bell crank lever & suction tappet, 1 roller chain for camshaft drive, 1 cylinder liner & jacket complete.*

The foregoing is a correct description.  
**WILLIAM DOXFORD & SONS, LIMITED.**  
*J. H. Keller* 9<sup>th</sup> April 1936  
 Manufacturer.  
 Manager.

Dates of Survey while building	During progress of work in shops--	1935. 7. 10. 18. 19. 21. 22. 26. 27. Dec. 4. 9. 11. 14. 18. 19. 20. 23. 24. 27. 30. 31.	Total No. of visits	52	23/12/35	24/12/35	10/1/36	10/1/36	29/1/36.		
	During erection on board vessel--	Feb. 3. 4. 5. 10. 11. 12. 14. 17. 21. Mar. 2. 4. 5. 17. 18. 23. 24. 26. 27. Apr. 3. 7. 9. 15. 17. 23. May 5.									
Dates of Examination of principal parts	Cylinders	24/12/35	Covers	✓	Pistons	22/1/36	Rods	22/1/36.	Connecting rods	29/1/36.	
Crank shaft	(G.I.S.) 27/12/35	Flywheel shaft	as crank	Thrust shaft	as crank.	Intermediate shafts	31/2/36.	Tube shaft	✓		
Screw shaft	2/3/36, 14/3/36	Propeller	14/3/36	Stern tube	2/3/36	Engine seatings	Yank tops	Engines holding down bolts	3/4/36.		
Completion of fitting sea connections	4/3/36.	Completion of pumping arrangements	5/5/36	Engines tried under working conditions	5/5/36.						
Crank shaft, Material	Sm. Ingot Steel	Identification Mark	N <sup>o</sup> 3946 C.O.C. 27. 12. 35.	Flywheel shaft, Material	as crank	Identification Mark	N <sup>o</sup> 3062, 3055, 3060, 3051	Intermediate shafts, Material	Sm. Ingot Steel	Identification Marks	3067, 3061, 305
Thrust shaft, Material	as crank.	Identification Mark		Screw shaft, Material	Sm. Ingot Steel	Identification Mark	3054. W.H.F.				
Tube shaft, Material		Identification Mark									

Is the flash point of the oil to be used over 150° F. *Yes.*

Have the requirements of the Rules for oil fuel pipes and tank fittings 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 *Not desired.*

Is this machinery duplicate of a previous case *Yes.* If so, state name of vessel *M/V "SUTHERLAND".*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under Special Survey in accordance with the Rules of the Society & the Secretary's letter E 25/4/34.*

*The materials & workmanship are good. The machinery has been securely fitted on board the vessel & tried under full working conditions at sea, including full requirements for starting, with satisfactory results. The two donkey boilers have also been securely fixed on board the vessel & fitted to burn oil fuel (F.P. above 150°F). Section 20 of the Rules has been complied with, safety valves of boilers adjusted to working pressure & accumulation test carried out satisfactorily. The machinery is eligible in my opinion to have notation L.M.C. 5.36 oil eng., T.S(C-2) 2DB 120 lbs/o"*

The amount of Entry Fee	£ 5 :	When applied for,	
Special	£ 83 :	11 MAY 1936	19
Donkey Boiler Fee	£ 12 :	When received,	
Travelling Expenses (if any)	£ :	12.5 19 36	13/5
Committee's Minute		TUE. 19 MAY 1936	
Assigned		+ Linc 5.36 Oil Engines C/L	
		2 DB 120 lbs.	

*J. H. Keller*  
 Engineer Surveyor to Lloyd's Register of Shipping.



SUNDERLAND. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Date of writing Report  
 No. in Survey Reg. Book  
 on the  
 Master  
 Engines made at  
 Boilers made at  
 Nominal Horse Power  
 MULTITUBULAR  
 Manufacturers of  
 Total Heating Surface  
 No. and Description  
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