

REPORT ON OIL ENGINE MACHINERY

No. 85779

Received at London Office 26 MAY 1930

Date of writing Report

19 When handed in at Local Office

23rd May 1930. Port of

Newcastle-on-Tyne

No. in Survey held at
Reg. Book.

Sestwood

Date, First Survey

8 October 1929

Last Survey

16th May 1930.

Number of Visits 90

40215 on the
Single
Twin
Triple
Quadruple

Screw vessel

M.V. "EVINA"

Tons Gross 6121
Net 3570

Built at

Walker

By whom built

S.W.G. Armstrong Whitworth & Co. (Ship) Ltd. Yard No. 1060 When built 1930

Engines made at

Sestwood

By whom made

S.W.G. Armstrong Whitworth & Co. (Ship) Ltd. Engine No. 87 When made 1930

Donkey Boilers made at

Sestwood

By whom made

S.W.G. Armstrong Whitworth & Co. (Ship) Ltd. Boiler No. 87 When made 1930

Brake Horse Power

2250

Owners

HANSEN TANGEN

Port belonging to KRISTIANSAND

Nom. Horse Power as per Rule

583

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Trade for which vessel is intended

Ocean Going

OIL ENGINES, &c.—Type of Engines *Armstrong Sulzer* 2 or 4 stroke cycle *2*. Single or double acting *Single*

Maximum pressure in cylinders *500 lb/10"* Diameter of cylinders *600 1/4"* Length of stroke *1060 1/4"* No. of cylinders *6*. No. of cranks *6*.

Span of bearings, adjacent to the Crank/measured from inner edge to inner edge *850 1/4"* Is there a bearing between each crank *Yes*.

Revolutions per minute *114*. Flywheel dia. *2100 1/4"* Weight *8.25 tons* Means of ignition *Compression* Kind of fuel used *Crude oil*.

Crank Shaft, dia. of journals *as per Rule 388 1/4"* Crank pin dia. *405 1/4"* Crank Webs *as per Rule 11.6"* Mid. length breadth *550 1/4"* Thickness parallel to axis *as fitted 410 1/4"* Mid. length thickness *225 1/4"* Thickness around eyehole *Solid*.

COMPRESSOR *as per Rule 285 1/4"* Intermediate Shafts, diameter *as fitted 11.75"* Thrust Shaft, diameter at collars *as per Rule 388 1/4"* *as fitted 405 1/4"*

Tube Shaft, diameter *as per Rule 12.75"* Is the *tube* shaft fitted with a continuous liner *Yes*

Screw Shaft, diameter *as fitted 13"* Is the *screw* shaft fitted with a continuous liner *Yes*

Bronze Liners, thickness in way of bushes *as per Rule 6.87"* Thickness between bushes *as per rule 5.15"* Is the after end of the liner made watertight in the propeller boss *Yes* *7.18"* *6.25"* *Continuous*

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *Continuous*

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 *Yes*

Propeller, dia. *13'-10 1/2"* Pitch *11'-9"* No. of blades *4* Material *C.I.* whether Moveable *Solid* Total Developed Surface *70.5* sq. feet

Method of reversing Engines *Servo motor* Is a governor or other arrangement fitted to prevent racing of the engine when detached *Yes* Means of lubrication *Forced*

Thickness of cylinder liners *20 1/4"* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *Cooled* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine *Exhaust Pipe in Funnel*

Cooling Water Pumps, No. *Three* 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. *One* Diameter *150 1/4"* Stroke *300 1/4"* Can one be overhauled while the other is at work *Yes*

Pumps connected to the Main Bilge Line { No. and Size *2 — one @ 8" x 10" x 10" & one @ 6" x 6"* How driven *Steam Electric motor*

Ballast Pumps, No. and size *One @ 8" x 10" x 10"* Lubricating Oil Pumps, including Spare Pump, No. and size *1 @ 10 1/4" x 17 1/4" & 1 @ 5 1/4" x 5 1/4"*

Are two independent means arranged for circulating water through the Oil Cooler *Yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces *2 @ 3" dia 2 @ 2 1/2" dia one @ 3 1/2" dia 2 @ 4 1/2" dia independent suction*

In Holds, &c. *FORD HOLD 2 @ 2 1/2" dia FORD COFFERDAM 4" dia AFTER COFFERDAM 4" dia FORE PEAK 3" dia AFTER PEAK 3" dia*

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *Two @ 4 1/2" dia*

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Yes* Are the Bilge Suctions in the Machinery Spaces *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 pigot and brass covering plate *Yes*

What pipes pass through the bunkers *None* How are they protected *Yes*

What pipes pass through the deep tanks *Yes* 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 *Yes*

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *Yes*

Main Air Compressors, No. *One* No. of stages *3* Diameters *150 1/4" x 480 1/4" x 570 1/4"* Stroke *400 1/4"* Driven by *Main Engine*

Auxiliary Air Compressors, No. *One (150 c.f.t.)* No. of stages *3* Diameters *38 1/4" x 7 1/4" x 13"* Stroke *9"* Driven by *Steam*

Small Auxiliary Air Compressors, No. *One (500 c.f.t.)* No. of stages *3* Diameters *2' x 6 3/4" x 7 1/4"* Stroke *5 1/2"* Driven by *Steam*

Scavenging Air Pumps, No. *One* Diameter *1400 1/4"* Stroke *510 1/4"* Driven by *Main Engine*

ELECTRICAL GENERATORS

Auxiliary Engines crank shafts, diameter *as per Rule 164 1/4"* *as fitted 165 1/4"*

IR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*

Can the internal surfaces of the receivers be examined *Yes* What means are provided for cleaning their inner surfaces *Manhole*

Is there a drain arrangement fitted at the lowest part of each receiver *Yes*

High Pressure Air Receivers, No. *3 @ 1000 lb.* Cubic capacity of each *100 c.f.t.* Internal diameter *470 1/4"* thickness *25 1/4"*

Seamless, lap welded or riveted longitudinal joint *Seamless* Material *Steel* Range of tensile strength *28-32 tons* Working pressure by Rules *1430 lb/10"*

Starting Air Receivers, No. *Two 4250 lb.* Total cubic capacity *400 c.f.t.* Internal diameter *4'-6"* thickness *22 1/4"*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength *29-33 tons* Working pressure by Rules *430 lb/10"*

002830-002831-0096

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes.

PLANS. Are approved plans forwarded herewith for Shafting

14/8/29 26/10/29

Receivers

18/10/29 29/11/29 Separate Tanks

14/4/30.

Donkey Boilers

Yes.

General Pumping Arrangements

22/7/29.

Oil Fuel Burning Arrangements

22/7/29.

SPARE GEAR / 1 cyl cover complete with all valves etc & one complete set of valves with springs etc for one cyl, fuel valve needles for half the number of cylinders, 1 piston complete with all piston rings, studs & nuts, 1 set of piston ring for 1/2 inch 2 telescopic cooling pipes for 1 piston, 1 set of skew wheels for cam shaft drive, 1 set of studs & nuts for one cyl cover, 2 crosshead bolts, 2 crank pin bolts, 1 set of coupling bolts for crank shaft, 1 set of coupling bolts for intermediate shaft, 2 cylinder liners, 1 piston head, skirt, & rod, 1 hr of main, top & bottom end branes Main & Aux Compressor & Pumps. 1 set of piston rings for each compressor piston, 1 half set of suction & delivery valves for each stage, 2 top end bolts, 2 bottom bolts, 1 hr of top & bottom end branes for main compressor, 10% of the suction & delivery valves, 2 top end bolts, 2 bottom end bolts, 1 hr of top & bottom end branes for Scavenge Air Pump, set of piston rings, valves & seats etc for each stage of aux compressor. All working parts of 1 fuel pump. Auxiliary Pumps. 1 suction & delivery valve for O.F. Transfer pump, 1 suction & delivery valve for bilge pump. A quantity of assorted bolts & nuts. A length of pipe & flange used for the fuel del & injection air pipes & the air del from main & aux compressor to receivers with unions & flanges suitable for each. other Spare Gear placed on board.

FOR The foregoing is a correct description, SIR W. & ARMSTRONG WHITWORTH & COMPANY (ENGINEERS) LIMITED.

Manufacturer.

Dates of Survey while building	{ During progress of work in shops - - }	1929	1930																							
		Oct. 8. 14. 17. 22. 25. 29. Nov. 13. 14. Dec. 6. 13. 16. 17. 19. 20. 23. 27. 28. 31. Jan. 3. 6. 9. 13. 14. 15. 16. 17. 20. 22. 24. 27. 28. 29. 30. 31. Feb. 3. 4. 5. 10. 11. 12. 13. 15. 18. 19. 20. 21. 22. 24. 25. 26. 28. Mar. 3. 4. 5. 6. 7. 8. 10. 11. 12. 13. 17. 18. 20. 26. 27. 28. 31. Apr. 1. 2. 3. 4. 8. 9. 10. 11. 14. 15. 16. 17. 23. 24. 28. May 2. 5. 6. 8. 13. 14. 16.																								
	Dates of Examination of principal parts—Cylinders		31.1.30.	Covers	29.1.30	Pistons	8.1.30.	Rods	8.1.30	Connecting rods	11.2.30.															
	CRANK SHAFT		24.1.30	FLYWHEEL	24.1.30	Thrust shaft	24.1.30	Intermediate shafts	27.1.30	Tube shaft	✓															
SCREW SHAFT		24.1.30	Propeller	5.2.30.	Stern tube	4.2.30	Engine seatings	21.2.30	Engines holding down bolts	28.3.30.																
Completion of fitting sea connections		24.2.30	Completion of pumping arrangements	2.5.30.	Engines tried under working conditions	14/5/30.																				
CRANK SHAFT, MATERIAL		Steel	Identification Mark	FORD. 3842. AFTER. 3839.	FLYWHEEL	Steel	Identification Mark	6420																		
THRUST SHAFT, MATERIAL		Steel	Identification Mark	1115.	INTERMEDIATE SHAFTS, MATERIAL	Steel	Identification Marks	1308.																		
TUBE SHAFT, MATERIAL		✓	Identification Mark	✓	SCREW SHAFT, MATERIAL	Steel	Identification Mark	1307.																		

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

Is this machinery duplicate of a previous case Yes. If so, state name of vessel M.V. BISCA.

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery has been built under Special Survey and in accordance with the Society's Rules & approved plans. The materials & workmanship are sound and good. The machinery was efficiently installed on board, tested & manoeuvred on completion under working conditions & found satisfactory. The machinery of this vessel is eligible in my opinion to be classed and to have the notation of "oil Engines" and records of 4 LMC 5.30 and TS Ct.

The amount of Entry Fee ...	£ 6 : -	When applied for, 24 MAY 1930
Special ...	£ 104 : 3	
Donkey Boiler Fee ...	£ 13 : 18	When received, 2.6.1930
Air Receivers ...	£ 6 : 6	
Travelling Expenses (if any) ...	£ 6 : 6	

Committee's Minute

Assigned

CERTIFICATE WRITTEN

5.30 Oil Engines

L. J. J. J.

Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register of Shipping Foundation

Newcastle-on-Tyne

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