

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 22940 Inversuir

First Entry

Received at London Office

NOV 28 1938

Date of writing Report 21<sup>st</sup> Nov 1938 When handed in at Local OfficePort of **HAMBURG**No. in Survey held at **HAMBURG** and **Angsburg** Date, First Survey 3<sup>rd</sup> April 1937 Last Survey 9<sup>th</sup> November 1938

Reg. Book.

76500 on the **Single** **Triple** **Quadruple** Screw vessel**"INVER SUIR"**

Number of Visits at Hamburg 63

Tons Gross 9456 Net 5561

Built at **HAMBURG**By whom built **Deutsche Werft A.G.**

Yard No. 203 When built 1938

Engines made at **Angsburg**By whom made **Maschinenfabrik Angsburg-Hamburg** Engine No. 90/80 When made 1938Donkey Boilers made at **HAMBURG**By whom made **Deutsche Werft A.G.**

Boiler No. 679+680 When made 1938

Brake Horse Power 4100

Owners **Inver Tankers, Ltd.**Port belonging to **Dublin**

Nom. Horse Power as per Rule 1000 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

Trade for which vessel is intended 997 carrying Petroleum in bulk

OIL ENGINES, &c. Type of Engines **Heavy Oil - Mahan type K 8 2 1/2 68/120** 2 or 4 stroke cycle 2 Single or double acting singleMaximum pressure in cylinders 4.5 kg/cm<sup>2</sup> Diameter of cylinders 680 mm Length of stroke 1200 mm No. of cylinders 8 No. of cranks 8Mean Indicated Pressure 5.6 kg/cm<sup>2</sup>

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 925 mm Is there a bearing between each crank yes

Revolutions per minute 115 Flywheel dia. 2100 mm Weight 4380 kg Means of ignition **diesel system** Kind of fuel used **diesel oil**

Crank Shaft, Solid-forged dia. of journals as per Rule 432 mm as fitted 460 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth 880 mm Mid. length thickness 285 mm Thickness parallel to axis 285 mm Thickness around eye-hole 205 mm

Flywheel Shaft, diameter as per Rule 423 mm as fitted 460 mm Intermediate Shafts, diameter as per Rule 338 mm as fitted 340 mm Thrust Shaft, diameter at collars as per Rule 355 mm as fitted 400 mm

Tube Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule 372 mm as fitted 382 mm Is the shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule 19 mm as fitted 22 mm Thickness between bushes as per Rule 15 mm as fitted 16 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 -

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 -

If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft - If so, state type - Length of Bearing in Stern Bush next to and supporting propeller 1700 mm

Propeller, dia. 4800 mm Pitch 3720 mm No. of blades four Material **bronze** whether Moveable no Total Developed Surface 7.616 sq. feetMethod of reversing Engines **direct** Is a governor or other arrangement fitted to prevent racing of the engine when de-clutched yes Means of lubrication**forced** Thickness of cylinder liners 42 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and oil-cooled or lagged with

non-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 -

Cooling Water Pumps, No. 4 fresh water and 2 steam pumps the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. 1 Diameter 150 mm Stroke 120 mm Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line No. and Size 1 Bridge pumps 15 m<sup>3</sup>/h - 1 Bridge pumps 7.5 m<sup>3</sup>/h - 1 Ballast pumps 250 m<sup>3</sup>/h How driven main engine steam duplex type steam duplex type

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 - driven by main engine

Ballast Pumps, No. and size 1 Duplex pumps 250 m<sup>3</sup>/h Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 Duplex pumps 38 m<sup>3</sup>/h 1 Duplex pumps 45 m<sup>3</sup>/h

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 frame 35/36 one of 50 mm φ frame 30/31 one of 50 mm φ In Boiler Room frame 40/41 one of 90 mm φ In Pump Rooms pump, 4 of 90 mm φ

In Hold, 4 forepeak pump room connected to ballast pumps 7.5 m<sup>3</sup>/h frame 184/185 two of 90 φ for cargo hold frame 195/196 one of 60 φ for pump room

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2, one of 127 mm φ to bilges, one of 152 mm φ to ballast pumps

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces

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 from one margin plate in way of sea inlet chest built into double bottom Are they fitted with Valves or Cocks yes

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

What pipes pass through the bunkers none How are they protected -

What pipes pass through the deep tanks cargo suction lines 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 mach. aft Is it fitted with a watertight door - worked from -

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

Main Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 265/105 mm Stroke 250 mm Driven by compound steam eng.

Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

What provision is made for first Charging the Air Receivers compressors driven by steam engines

Scavenging Air Pumps, No. 1 (tandem) Diameter 1380 mm Stroke 850 mm Driven by main engine

Auxiliary Engines crank shafts, diameter as per Rule for 2 cyl. 25C. SA. aux. oil eng. No. for compound steam eng. driving generator + compressors

as fitted 100 mm (tested by Angsburg Surveyors) Position 75 mm (Mahan's Standard Type)

Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith -

5500-9116

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AIR RECEIVERS:—Have they been made under survey *yes* State No. of Report or Certificate *Certificates of material attached*  
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 and cleaned *yes* by *manhole* Is a drain fitted at the lowest part of each receiver *yes*  
Injection Air Receivers, No. — Cubic capacity of each — Internal diameter — thickness —  
Seamless, lap welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure *by Rules —*  
Starting Air Receivers, No. *2* Total cubic capacity each *12 m<sup>3</sup>* Internal diameter *1700 mm* thickness *24.5 mm*  
Seamless, lap welded or riveted longitudinal joint *riveted* Material *S-TC-Steel* Range of tensile strength *END PL. 41-47* Working pressure *by Rules 25 kg/cm<sup>2</sup>*  
*Actual 25 kg/cm<sup>2</sup>*

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 *yes*  
PLANS. Are approved plans forwarded herewith for Shafting *28.7.37* Receivers *13.11.35* Separate Fuel Tanks *27.1.35, 5.2.38.*  
(If not, state date of approval)  
Donkey Boilers *20.5.38, 27.2.36* General Pumping Arrangements *29.11.37, 36.1.38* Pumping Arrangements in Machinery Space *24.1.38, 28.4.38.*  
Oil Fuel Burning Arrangements *17.5.38.*

#### SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*  
State the principal additional spare gear supplied *1 propeller shaft marked: LLOYD'S No. 13735, M.B. 12.3.38*

The foregoing is a correct description.

DEUTSCHE WERFT  
AKTIEGESSELLSCHAFT

Manufacturer.

Please see Augsburg Rep. 2035 dated 8<sup>th</sup> July 1938.  
Dates of Survey while building  
During progress of work in shops: 1938 Jan 15, March 8, 11, 18, May 6, 9, 12, 31, June 17, 30, 27, 28, 30, July 4, 5, 6, 8, 14, 15, 19, 22, 23, Aug 1, 4, 11, 16, 22, 25, 26, 29, 30  
During erection on board vessel: 1938 Aug 25, 30, Sept 9, 13, 19, 22, 26, 28, 30, Oct 4, 11, 17, 21, 25, 28, 31, Nov 2, 4, 7, 9.  
Total No. of visits *63*

Dates of Examination of principal parts—*Ch. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.*  
Crank shaft *Augsburg* Flywheel shaft *Augsburg* Thrust shaft *25.8.38* Intermediate shafts *25.8.38* Tube shaft —  
Screw shaft *25.8.38* Propeller *27.7.38* Stern tube *25.8.38* Engine seatings *30.8.38* Engines holding down bolts *26.9.38.*  
Completion of fitting sea connections *30.8.38* Completion of pumping arrangements *31.10.38* Engines tried under working conditions *31.10.9.11. 1938*  
Crank shaft, Material *S-TC-Steel* Identification Mark *12284 J.L. 9.7.37* Flywheel shaft, Material *S-TC-Steel* Identification Mark *13127, M.B. 21.5.37*  
Thrust shaft, Material *S-TC-Steel* Identification Mark *3466, H.B. 6.8.38* Intermediate shafts, Material *S-TC-Steel* Identification Marks *290, H.S. 2.3.38*  
Tube shaft, Material — Identification Mark — Screw shaft, Material *S-TC-Steel* Identification Mark *1960, L.S. 5.3.38*  
Identification Marks on Air Receivers *Yard No. 681.* *Yard No. 682*  
*No. 218* *No. 219*  
*LLOYD'S TEST* *LLOYD'S TEST*  
*41 ATM* *41 ATM*  
*W.P. 25 ATM.* *W.P. 25 ATM.*  
*W.F.C. 22.8.38.* *W.F.C. 22.8.38.*

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 —

If so, have the requirements of the Rules been complied with —

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with —

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *INVERLIPPEY Hamburg Rep. No. 22830*  
*INVERDARLE* *22865*

General Remarks (State quality of workmanship, opinions as to class, &c. *The main heavy oil engine has been built at Augsburg, the auxiliary oil engine at Darmstadt under Special Survey of the Society's Surveyors. Material and workmanship of this machinery are of good quality and the outfit is ample.*

*It has been fitted under Special Survey at Hamburg in accordance with the approved plans, the Secretary's letters and otherwise in compliance with the requirements of the Rules.*

*During the trial trip the machinery has given satisfaction under full working and manoeuvring conditions.*

*The machinery is eligible in my opinion to be classed with notations in the Register Book*  
**L MC 11, 38 OIL ENG. TS (CL)**

The amount of Entry Fee *1/5 & RM.: 24-*

Special ... *1/5 & ..: 500-*

Donkey Boiler Fee ... *& ..: 516-*

Travelling Expenses (if any) *& ..: 72-*

**2 STARTING AIR RECEIVERS 168-**  
**Committee's Minute**

Assigned

*+ Lamb 11.38*  
*2 S.B. - 180th*  
*(W.T.) S.B. - 180th*

When applied for,

*16.11.1938*

When received,

*29/12.1938*

**Yb. Röhre**

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register  
Foundation