

23 NOV 1964

Rpt. 4c

Date of writing report Received London Port Copenhagen No. 21210
Survey held at Holeby No. of visits 6 First date 12/11-63 Last date 11/2-64

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship m.s. "BIJSK" of Odessa Owners U.S.S.R.
Ship Built at Nakskov by A/S Nakskov Skibsværft when Yard No. 172
Auxiliary Engines of Gas Turbines made at Holeby by A/S Burmeister & Wain when 1964 Eng. Nos. 10267-68
Total No. of sets and description (including type name) 2 off B&W-DM. 725MTBH-40 Turbocharged Heavy oil Trunk piston Solid injection.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 7 Dia. of cylinders 245 mm Stroke 400 mm
2 or 4 stroke cycle 4 Maximum approved BHP 595 at 500 RPM Corresponding MIP 9.8 kg/cm2 Maximum pressure 60 kg/cm2
Fuel Heavy oil Are cylinders arranged in Vee or other special formation? No If so, No. of crankshafts per engine -
Is engine of opposed piston type? No No. and type of mechanically driven scavenge pumps or blowers per engine None
No. of exhaust gas driven blowers or superchargers per engine 1 Is welded construction used for: Bedplate? No Entablature? No Total internal volume of crankcase (if 20 cu. ft. or over) 3.00 m3
No. and total area of crankcase explosion relief devices 2 362 cm2 Are flame guards or traps fitted? Yes Cooling medium for: Cylinders Fresh water
Pistons None No. of attached pumps: F.W. cooling None S.W. cooling None Lubricating oil 1 How is engine started? By air

SHAFTING. Is a damper or detuner fitted? No No. of main bearings 8 Are bearings of ball or roller type? No Distance between inner edges of bearings in way of cranks 315 mm
Crankshaft: Built semi-built, solid Material of crankshaft SM steel Approved minimum tensile strength 44 kg/mm2
Dia. of pins 170 mm Journals 170 mm Breadth of webs at mid throw 292 mm Axial thickness 90 mm
If shrunk, radial thickness around eyeholes 82.5 mm Dia. of flywheel 1500 kgm2 Weight - Are balance weights fitted? Yes Total weight 36 kgm2 Rad. of gyration - Dia. of flywheel shaft -
Has each engine been tested in shop? Yes How long at full power? 6 hours Was it tested with driven machinery attached? Yes Was the governing tested and found satisfactory? Yes
Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) 29/4-63
Date of approval of shafting 29/4-63 Identification marks on shafting Lloyd's CPN Nos. 1912-13 KL 7/1-64
Particulars of driven machinery 2 AC generators Nos. 911840-41 made by Thomas B. Thrige, Odense each 500 KVA 720 amps 400 volts Generator WD2 = 1240 kgm2

AUXILIARY GAS TURBINES. BHP per set At RPM of output shaft. Open or closed cycle?
Arrangement of turbines. HP drives at RPM HP gas inlet temp. pressure
(A small diagram should be attached showing gas cycle) IP " at " " IP " " " " "
LP " at " " LP " " " " "
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?
Are the turbines operated in conjunction with free piston gas generators?
Total No. of free piston gas generators Dia. of working pistons Dia. 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 in shop? How long at full power? Were they tested with driven machinery attached?
Particulars of gearing
Date of approval of plans Identification marks Particulars of driven machinery

ELECTRIC GENERATORS. Port and No. of Certificate for generators of 100 Kw. and over Odense cert. dated 28/9-63
For generators under 100 Kw., has Makers' Certificate been obtained? Are Certificates attached?

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable)
Manufacturer
Is this machinery duplicate of a previous case? If so, which?

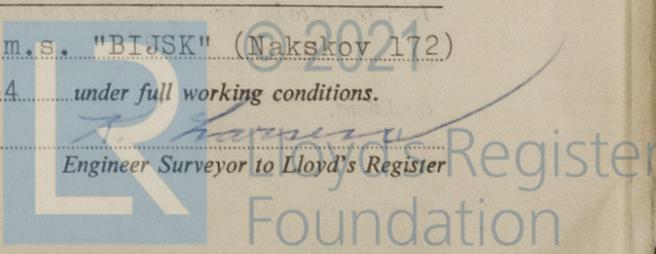
GENERAL REMARKS. State if the machinery has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters.
State quality of materials and workmanship. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.
The heavy oil engines have been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters.
The material has been tested as required by the Rules and the workmanship is good.

Survey Fee kr. 2080,-
Expenses kr. 125,-
Date when a/c rendered 7/3 1964

Engineer Surveyor to Lloyd's Register

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the m.s. "BIJSK" (Nakskov 172) at A/S Nakskov Skibsværft in a proper manner and found satisfactory when tested on the (date) 24.9.64 under full working conditions.

Engineer Surveyor to Lloyd's Register



Rpt. 4c

Date of writing report..... Received London..... Port..... No.....
Survey held at..... No. of visits..... First date..... Last date.....

FIRST ENTRY REPORT ON AUXILIARY STEAM TURBINE OR STEAM RECIPROCATING ENGINES

Name of Ship..... Owners.....
(Or Contract No. if name unknown) (Or Consignees)
Ship Built at..... by..... when..... Yard No.....
Auxiliary turbines or engines made at..... by..... when..... Eng. Nos.....
Total No. of sets and description.....

STEAM TURBINES. No. of turbines per set..... BHP per set..... Steam pressure..... Steam temperature.....
Type of turbines.....
Particulars of gearing.....
RPM of turbine shaft(s)..... PCD of pinion(s)..... PCD of wheel(s)..... Material of pinion(s).....
Material of wheel rim(s)..... Has rotor been dynamically balanced?..... Diameter of rotor shaft at bearings.....
Does the set include a steam condenser?..... Is an emergency governor fitted?..... No. and purpose of attached pumps.....
Has the set been tested in the shop?..... If so, for how long at full power?.....
Was the governing tested and found satisfactory?..... Was the set tested with driven machinery attached?.....
Identification marks..... Particulars of driven machinery.....

STEAM RECIPROCATING ENGINES. BHP of each..... at..... RPM Steam pressure.....
Dia. of cylinders..... Stroke..... Dia. of crankshaft journals..... Pins..... Material of crankshaft.....
Is crankcase enclosed?..... If so, is the internal volume 20 cu. ft. or over?..... No. and total area of crankcase explosion relief devices fitted?.....
Are the bearings forced lubricated?..... No. and purpose of attached pumps.....
Is a Governor Fitted?..... Identification Marks.....
Particulars of Driven Machinery.....

ELECTRIC GENERATORS. Port and No. of Certificate for generators of 100 Kw. and over.....
For generators under 100 Kw., has Makers' Certificate been obtained?..... Are Certificates attached?.....

The foregoing description is correct.

Manufacturer

Is this machinery duplicate of a previous case?..... If so, which?.....

GENERAL REMARKS. State if the machinery has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

Survey Fee.....
Expenses.....
Date when a/c rendered.....
Engineer Surveyor to Lloyd's Register

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the.....
at..... in a proper manner and found satisfactory when tested on the (date)..... under full working conditions.