29 JUN 1956

29 MAY 1957

Rpt. 4c

Date of writing report 15.6.56. Received London ..... Port NOTTINGHAM. No. 1269.

Survey held at Lincoln. No. of visits 3. First date 28.3.56. Last date 18.4.56.

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Order No. 13/540141.

Name of Ship "AYRSHIRE" *(Or Contract No. if name unknown).* *Owners* GRK *(Or Consignees)*

Ship Built at to the order of:- *by* M/S. J.G. Kincaid & Co. Ltd., *when* ..... *Yard No.* 488.

Auxiliary Engines or Gas Turbines made at Lincoln. *by* Ruston & Hornsby Ltd., *when* ..... *Eng. Nos.* 404644.

Total No. of sets and description (including type name) One - Auxiliary Engine - 8VEBZ.

INTERNAL COMBUSTION RECIPROCATING ENGINES. *No. of cylinders per engine* 8. *Dia. of cylinders* 10¼" *Stroke* 14½"

2 or 4 stroke cycle 4 *Maximum approved BHP* 480. *at* 500. *RPM Corresponding MIP* 99.5. *Maximum pressure* 715 ± 3%

Fuel Diesel Oil. *Are cylinders arranged in Vee or other special formation?* No. *If so, No. of crankshafts per engine* None. *Is engine of opposed piston type?* ..... *No. and type of mechanically driven scavenge pumps or blowers per engine* ..... *No. of exhaust gas driven blowers or superchargers per engine* ..... *Is welded construction used for: Bedplate?* No. *Entablature?* No. *Total Internal volume of crankcase (if 20 cu. ft. or over)* 148.2 c.f. *No. and total area of crankcase explosion relief devices* 16. × 380□" *Are flame guards or traps fitted?* ..... *Cooling medium for: Cylinders* ..... *Pistons* ..... *No. of attached pumps: F.W. cooling* One. *S.W. cooling* ..... *Lubricating oil* One. *How is engine started?* .....

SHAFTING. *Is a damper or detuner fitted?* ..... *No. of main bearings* ..... *Are bearings of ball or roller type?* ..... *Distance between inner edges of bearings in way of cranks* 12.5/16" *Crankshaft: Built, semi-built, solid. Material of crankshaft* Steel. *Approved minimum tensile strength* ..... *Dia. of pins* 6¼" *Journals* 8" *Breadth of webs at mid throw* 11" *Axial thickness* 3.7/16" *If shrunk, radial thickness around eyeholes* ..... *Dia. of flywheel* 4'-6" *Weight* 24.5 cwts. *Are balance weights fitted?* No. *Total weight* - *Rad. of gyration* - *Dia. of flywheel shaft* 8"

Has each engine been tested in shop? Yes. *How long at full power?* ..... *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)* 24.11.54.

Date of approval of shafting ..... *Identification marks on shafting* LL.R.1380. LR. VS.1530.

Particulars of driven machinery .....

Port and No. of Certificate for Starting Air Receivers .....

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* ~~XXXXX~~

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)

Ruston & Hornsby, Limited.

Manufacturer

Is this machinery duplicate of a previous case? No. *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.*

This Engine has been constructed under Special Survey in accordance with the Approved Plans and Rules of the Society, materials and workmanship being good.

The Generating Set has been tested in the Shops under working conditions and the Governors tested with satisfactory results.

The Set hasbeen forwarded for installation in the vessel.

Explosion relief device fitted on each crankcase door.

Survey Fee £34.

Expenses Nil.

Date when a/c rendered 27/6/57

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 S.S. "AYRSHIRE" *at* GREENOCK *in a proper manner and found satisfactory when tested on the (date)* 2ND MAY, 1957 *under full working conditions.*

GLASGOW 28 MAY 1957

SEE ACCOMPANYING MACHINERY REPORT

Engineer Surveyor to Lloyd's Register

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