28 JAN 1960

Rpt. 4c

Date of writing report 7.3.59 Received London ..... Port LONDON No. 139790

Survey held at Bedford No. of visits 13 First date 5.9.58 Last date 20.2.59.

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship ..... *Owners* Messrs. Hector Whaling Ltd.
(Or Contract No. if name unknown). *(Or Consignees)*

Ship Built at Tamise, Belgium *by* Messrs. Jos. Boel & Sons Ltd *when* ..... *Yard No.* 1362

Auxiliary Engines or Gas Turbines made at Bedford *by* W.H.Allen Sons & Co.Ltd. *when* 1959 *Eng. Nos.* K3/92072/A,/B&/C

Total No. of sets and description (including type name) Three diesel engine driven alternator sets type 5S37C.

INTERNAL COMBUSTION RECIPROCATING ENGINES. *No. of cylinders per engine* 5 *Dia. of cylinders* 325 m/m *Stroke* 370 m/m *2 or 4 stroke cycle* 4 *Maximum approved BHP* 400 *at* 450 *RPM* *Corresponding MIP* 91.3 psi *Maximum pressure* 700 psi. *Fuel* Marine Diesel 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* None *Is welded construction used for: Bedplate?* No *Entablature?* No *Total internal volume of crankcase (if 20 cu. ft. or over)* 81 cu.ft. *No. and total area of crankcase explosion relief devices* Three 24.6sq.in. *Are flame guards or traps fitted?* Yes *Cooling medium for: Cylinders* Fresh water *Pistons* - *No. of attached pumps: F.W. cooling* One *S.W. cooling* None *Lubricating oil* One *How is engine started?* By Compressed air at 300lb/sq.in.

SHAFTING. *Is a damper or detuner fitted?* No *No. of main bearings* 6 *Are bearings of ball or roller type?* No *Distance between inner edges of bearings in way of cranks* 362 m/m *Crankshaft: ~~Built, semi-built~~, solid.* *Material of crankshaft* S.M acid steel *Approved minimum tensile strength* 30 tons/sq.in *Dia. of pins* 205 m/m *Journals* 230 m/m *Breadth of webs at mid throw* 308 m/m *Axial thickness* 88 m/m *If shrunk, radial thickness around eyeholes* - *Dia. of flywheel* 1600 m/m *Weight* 5700 lb *Are balance weights fitted?* No *Total weight* - *Rad. of gyration* - *Dia. of flywheel shaft* 230 m/m
Has each engine been tested in shop? Yes *How long at full power?* 4 hrs.& 1 hr @ 10% overload *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)* 6.8.58. 31.7.58
Date of approval of shafting 30.11.33 *Identification marks on shafting* /A.3783./B.3775./C.3784. RTY.MCH. WM.LON. 19.12.58. 23.12.58 & 30.12.58.
Particulars of driven machinery W.H.Allen 300 KVA. 240 KW. 450 volts. 3 phase 60 cycles, 450 RPM. alternators Nos. Case 422 C
Port and No. of Certificate for Starting Air Receivers NOTTINGHAM. C.29174,5 & 6.

AUXILIARY GAS TURBINES. *BHP per set* ..... *At* ..... *RPM of output shaft.* *Open or closed cycle?* ..... AHR 15.4.59

Arrangement of turbines. *(A small diagram should be attached showing gas cycle)*
HP drives ..... *at* ..... *RPM* *HP gas inlet temp.* ..... *pressure* .....
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* .....
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)
W.H.ALLEN,SONS & Co.Ld.,
..... *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.*

The engines have been built under Special Survey from materials manufactured under the Supervision of Surveyors to the Society in accordance with Approved Plans and Rules of the Society. Workmanship is good throughout. In my opinion they are eligible for installation in a Classed vessel.

Survey Fee £105.0.0.
Expenses £15.15.0.
Date when a/c rendered 8 APR 1959 W.WADDLE. *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.*
..... *Engineer Surveyor to Lloyd's Register*

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