

Rpt. 4c

26 NOV 1958

16910.

Date of writing report..... Received London..... Port..... Copenhagen..... No.....  
Survey held at..... Holeby..... No. of visits..... 5..... First date..... 2-4..... Last date..... 6-5 1958

## FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship..... m. t. "ANNAM"..... Owners..... A/S Det Østasiatiske Kompagni.....  
(Or Contract No. if name unknown)..... (Or Consignees).....  
Ship Built at..... Nakskov..... by..... A/S Nakskov Skibsværft..... when..... 1958..... Yard No..... 150.....  
Auxiliary Engines ~~or Gas Turbines~~ made at..... Holeby..... by..... Burmeister & Wain..... when..... 1958..... Eng. Nos..... 6231-32.....  
Total No. of sets and description (including type name)..... 2 off B & W 525 MTH \* 40, Heavy oil, trunk piston, solid Injection.....

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine..... 5..... Dia. of cylinders..... 245 mm..... Stroke..... 400 mm.....  
2 or 4 stroke cycle..... 4..... Maximum approved BHP..... 300..... at..... 514..... RPM..... Corresponding MIP..... 7.0 kg/cm<sup>2</sup>..... Maximum pressure..... 6.0 kg/cm<sup>2</sup>.....  
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..... none..... Is welded construction  
used for: Bedplate?..... no..... Entablature?..... no..... Total internal volume of crankcase (if 20 cu. ft. or over)..... 2.24 m<sup>3</sup>..... No. and total area of  
crankcase explosion relief devices..... 2 - 362 cm<sup>2</sup>..... Are flame guards or traps fitted?..... yes..... Cooling medium for: Cylinders..... 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..... 6..... 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/mm<sup>2</sup>..... Dia. of pins..... 17.0 mm..... Journals..... 17.0 mm..... Breadth of webs at mid throw..... 292 mm..... Axial  
thickness..... 9.0 mm..... If shrunk, radial thickness around eyeholes..... 82.5 mm..... Dia. of flywheel..... 1135 kg m<sup>2</sup>..... Weight..... -..... Are balance  
weights fitted?..... yes..... Total weight..... 44.2 kg m<sup>2</sup>..... 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)..... 17-6-57.....  
Date of approval of shafting..... 17-6-57..... Identification marks on shafting..... Lloyds CPN No. 3711-12 ED 17-3-58.....  
Particulars of driven machinery..... 2 off AC Generators Nos 905585 - 86 with Exitors No 2074742 - 43.....  
..... made by Thomas B. Thrige, Odense.....  
Port and No. of Certificate for Starting Air Receivers..... Ggenerator WD<sup>2</sup> = 665 kg m<sup>2</sup>.....

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..... CPN Certf. No 7b dated 30-4-58.....  
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)

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 engine have been constructed under special Survey in accordance with  
the Rules, approved planes and secretarys letters.  
The Material used, has been tested as required by the Rules and the workmanship is  
good.

Survey Fee kr.: 1060,-

Expenses kr.: 90,-

Date when a/c rendered.....

ENTERED IN COPENHAGEN ROUGH FEE BOOK ON THE 8/5 1958

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the Yard No. 150  
at A/S Nakskov Skibsværft in a proper manner and found satisfactory when tested on the (date) 23/10-58 under full working conditions.

Engine Surveyor to Lloyd's Register

012386-012392-0148