15 NOV 1961 1502

Rpt. 4c

Date of writing report 23.9.61. Received London Port Liverpool 22 NOV 1962 No. 157460

Survey held at Newton le Willows No. of visits 14 First date 5.5.61. Last date 15.9.61.

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship Denny Bros. No. 1502 "ARAMOANA" Owners New Zealand Government
(Or Contract No. if name unknown). (Or Consignees)

Ship Built at Dumbarton by Wm. Denny & Bros. Ltd. when Yard No. 1502

Auxiliary Engines or Gas Turbines made at Newton le Willow by English Electric (Vulcan Foundry) when 1961 Eng. Nos. (5575

Total No. of sets and description (including type name) 3 - English Electric type 6CSRM3M (5576 (5577

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 ✓ Dia. of cylinders 10" ✓ Stroke 12" ✓

2 or 4 stroke cycle 4 ✓ Maximum approved BHP 6521 ✓ at 750 ✓ RPM Corresponding MIP 147 ✓ p.s.i. Maximum pressure 950 p.s.i.

Fuel Marine Diesel 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 One ✓ Is welded construction

used for: Bedplate? No Entablature? No Total internal volume of crankcase (if 20 cu. ft. or over) 63 cu.ft. ✓ No. and total area of

crankcase explosion relief devices 3 - 74 sq.ins ✓ Are flame guards or traps fitted? Yes Cooling medium for: Cylinders Fresh water

Pistons Oil splash No. of attached pumps: F.W. cooling One S.W. cooling One Lubricating oil Two How is engine started?

Compressed air

SHAFTING. Is a damper or detuner fitted? No ✓ No. of main bearings 7 Are bearings of ball or roller type? No Distance between

inner edges of bearings in way of cranks 12½" ✓ Crankshaft: ~~Built, semi-built~~, solid. Material of crankshaft Carbon steel ✓ Approved

minimum tensile strength 35 tons/psi Dia. of pins 7.244" ✓ Journals 8.244" Breadth of webs at mid throw 8½" ✓ Axial

thickness 3¼" ✓ If shrunk, radial thickness around eyeholes - Dia. of flywheel 4'5" Weight 2320 lbs Are balance

weights fitted? No Total weight - Rad. of gyration - Dia. of flywheel shaft Integral with crankshaft

Has each engine been tested in shop? Yes How long at full power? 4 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) 4.5.61. ✓

Date of approval of shafting 30.9.61. Identification marks on shafting 5575 - NTM 6945, 5576 - NTM 6947, 5577 - NTM 6944

Particulars of driven machinery English Electric 450 kW alternators

501-U 2.5.62

Port and No. of Certificate for Starting Air Receivers

22/1/62

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

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)

N. Blackburn
For THE ENGLISH ELECTRIC CO. LTD. 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.

These engines have been constructed in accordance with the Rules, approved Plans and Secretary's letters and as far as could be seen materials and workmanship were good throughout.

The machinery is eligible in my opinion to be installed in a classed vessel and to have a record of + LMC with date on completion.

Certificates attached for Crankshaft, Blowers and Coolers.

Nottingham LD 957 LD 1052
Liverpool 7511, 7512, 7513
Birmingham 9808/61, L221-SR-61, L222-SR-61, L220-SR-60

Survey Fee £166-17-6 3 × £55 12. 6
Expenses £8-14-0
Date when a/c rendered 10 NOV 1961

C.A.W. Rennie.
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 T.S. "ARAMOANA" at Dumbarton in a proper manner and found satisfactory when tested on the (date) 8-6-62 under full working conditions.

A.B. Sinclair.
Engineer Surveyor to Lloyd's Register

Transmit to London MB

LIVERPOOL 14 NOV 1961

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.*

.....

Engineer Surveyor to Lloyd's Register

(m.11/56 T. (MADE AND PRINTED IN ENGLAND.)