

Exhaust Turbo Electric Installation for the
s. s. "CITY OF VENICE".

IT IS SUBMITTED that with steam reciprocating engines for open sea service having cylinders $28\frac{1}{2}$ ", $39\frac{1}{2}$ ", 57" and 82" diameter by 54" stroke, working pressure 230 lb. per sq. inch combined with an electric motor coupled direct to the intermediate shafting, the IHP developed by the reciprocating engine being 4525 at 89 revolutions per minute, the SHP of the motor being 1400, the exhaust turbine running at 3000 revolutions per minute and the generator at 750 revolutions per minute through single reduction gearing, the following sizes of shafting merit approval, provided that in no case the sum of the tensile breaking strength and corresponding elongation measured on the Society's standard test piece be less than 57, viz:-

Flexible shaft coupled to turbine.. $3\frac{1}{2}$ " and $4\frac{1}{2}$ " at bearings.
Primary pinion shaft.....6" diameter with 4" diameter
central hole at bearings.
Gear wheel shaft.....7" diameter at bearings.
Turbine shaft..... $4\frac{1}{2}$ " diameter at bearings.
Generator shaft.....6" diameter at bearings.
Propulsion motor shaft... $15\frac{1}{2}$ " diameter at forward end and
16" diameter at bearings and at
after end.

The following plans also merit approval:-

Drawing No.800852 (Wellman-Bibby Coupling).

Drawing No.D.652028 (Wheel Forgings).

Further the outline plans of the generator and main propulsion motor are noted.

With reference to the Surveyors' statement that the SHP is 1680 it should be pointed out that in a letter dated the 20th of April, the Belfast Surveyors stated that the SHP of the turbine would be 1400 with an equivalent IHP of 1575 and it is concluded the latter figures are correct, but this should be confirmed.

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The proposals for cables and connections merit approval, subject to their being installed and supported in accordance with the Rules and the watertight trough being to the satisfaction of the Belfast Surveyors, where the work will presumably be carried out.

It should be noted that details of items 78 to 81 on the plan are incomplete.

The Belfast Surveyors should be advised.

*Return one set of plans
Retain copies also plan
of the proposed arrangement
of Cables.*

Lvs 29/5/33

*Low.
G.D.W.
G.H.J.
27.5.33.*



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