

REPORT ON ELECTRICAL EQUIPMENT.

SHEET No. 6.

MAIN OIL ENGINES SHAFTING.

Vessel's Name

Shipbuilders

Engineers

Type of Engine

Open Sea, ~~or Smooth Water~~

No. of Cyls.

Maximum pressure

Propeller dia.

CRANKSHAFT.

dia. =

Stroke

Coefficient

Crank Webs.

Built h =

t =

Solid, breadth =

thickness =

Shrinkage allowance

Keys or Dowels, No. and Size

FLYWHEEL SHAFT.

dia. =

INTERMEDIATE SHAFT.

A =

A =

PETROL and PARAFFIN ENGINES.

dia. =

HEAVY OIL ENGINES.

dia. =

resisting material or lined with approved material

YES

Instruments on main switchboard

3

ammeters

2

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Lloyd's Register

Foundation

004534-004540-0160 12

Date

Dwg. No.

Parties of drawing from

Form letter of 11-4-47

7/8/47. Crankshaft 78260

1373

Yard No. 5

Engine No.

No. of Screws

M.I.P. 128 lb/□. (Modified to 115 lb/□)

M.E.P.

R.P.M. 115

No. of liners fitted

Tube Shaft

Screw Shaft

one continuous

Tensile Strength

Piston speed = $\frac{2 \times 1500 \times 115}{25.4 \times 12} = 1132 \text{ ft/min}$

AS PER RULE.

AS PROPOSED.

480

300

219.6

310

227.5

with

chemical

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Inner radius of crown

Working pressure by Rules

Crankshaft coupling bolts

$$d = \sqrt{\frac{480^3}{3.5 \times 12.365}} = 85 \text{ mm. Prop. } \begin{cases} 86 \text{ mm bolts} \\ 110 \text{ mm flange} \end{cases}$$

AMENDMENTS.THRUST SHAFT.

Material

Tensile Strength

$$\text{dia.} = 1.05 d = 1.05 \times 12.81$$

$$= \begin{array}{|l|l|} \hline \text{AS PER RULE.} & \text{AS PROPOSED.} \\ \hline 13.450'' & \\ \hline \end{array} = 342 \text{ mm} \quad 454 \text{ mm}$$

$$\text{Collar. } 27 \times 342 = 92.4 \text{ mm. Prop. } 115 \text{ mm.}$$

TUBE SHAFT.

Material

Tensile Strength

$$\text{dia.} = \frac{1.05 d}{1.075 d} =$$

SCREW SHAFT.

Material

Tensile Strength

$$\text{dia.} = d + \frac{P}{C} = 12.81 + \frac{186}{144}$$

$$= 14.101'' \quad 16''$$

FOR NAVIGATION IN ICE.Screw Shaft dia. $\times 1.05$

Material of Propeller

BRONZE LINERS.

Material

Tensile Strength

Continuous liner is fitted $\begin{cases} \text{in one piece} \\ \text{with joints fused through whole thickness} \end{cases}$

$$t'' = \frac{d + 9.25}{32} \text{ or } t_m = \frac{d + 235}{32} = \frac{14.101 + 9.25}{32}$$

$$= \begin{array}{|l|l|} \hline 23.35'' & 26'' \\ \hline 32 & 32 \\ \hline \end{array}$$

$$\text{between bushes thickness} = .75t = .75 \times \frac{23.35}{32}$$

$$= .547'' \quad .65625''$$

STERN BUSH.

$$\text{Length} = 4d = 4 \times 14.101$$

$$= 56.404'' \quad 60''$$

COUPLINGS.

$$\text{dia. of bolts } \left. \begin{array}{l} \text{flange thickness} \end{array} \right\} = \sqrt{\frac{d^3}{3.5 \times n \times r}} = \sqrt{\frac{325.4^3}{3.5 \times 8 \times 320.5}}$$

$$= 61.95 \text{ mm} \quad \begin{array}{l} 80 \text{ mm dia. Bolts} \\ 100 \text{ mm. Flange.} \end{array}$$

$$\text{Screw Shaft Coupling, flange thickness} = .25 d = .25 \times 325.4$$

$$= 81.35 \text{ mm}$$

$$\text{Fillets, radius} = .125 d = .125 \times 17''$$

$$= 2.125'' \quad 2.5''$$

$$.125 \times 505$$

$$= 63.1 \text{ mm} \quad 50 \text{ mm } \times$$

SEPARATE COUPLINGS.

Material

Tensile Strength

Provision made to resist astern pull

COPY OF APPROVED PLAN IS NOT
RETAINED FOR REFERENCE.

Surveyor's Initials

J.H.R.

Lloyd's Register
Foundation

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$$MEP = \frac{1652 \times 10^7 \times 3200}{740^2 \times 1500 \times 6 \times 115} = 93.4 \text{ lbs/sq. in.}$$
$$\eta = \frac{93.4}{115} = 81.1 \%$$

AMENDMENTS.

