

deemed necessary (See later). Systems tested under working conditions. Electrical equipment examined, with switchboard, dynamos, fittings, cables and megger tested throughout. Fuses and machines run & tested, breakers, tested for overload & reverse current.

Remarks

After examining the machinery arrangements, the following minor alterations have been made.

(1) Two interconnected plunger pumps are driven directly by the main engine, one serving for cooling water and the other for general service, bilge or in an emergency for circulating.

A non return valve has been fitted in the bilge suction line.

(2) A direct bilge suction with straight pipe from the steam box has been fitted at the aft end of the engine room.

(3) The two aux. Ruston generators which each has its own circ. pump have been fitted with an additional cooling line from the general service pump.

(4) The switchboard is somewhat high up at the aft end of the E.R. and a working platform at the back with enclosing end doors has been fitted.

(In London at the beginning of the year, before the vessel set out for Australia, the electrical system and switchboard were renewed at the same time as the Ruston auxiliary sets were installed).

In addition to the engine driven plunger pumps, a horizontal high speed (3000 r.p.m.) centrifugal electrically driven pump is supplied for general service - ballast etc.

The pump when opened up was found to have two impellers in series with a rotary air displacer and was in good condition. It was found to work efficiently on bilges and ballast.

A manoeuvring air compressor is driven off the first end of the engine from the same crank as the pumps.

The auxiliary air compressor is driven by a small two cylinder, hand starting heavy oil engine.

This vessel is designed to carry sulphuric acid in 10 cylindrical tanks arranged athwartships in the hold. The acid is discharged by compressed air supplied from a compressor in the forecabin driven by a four cylinder diesel engine. The discharge pressure is 45 psi and the tanks

have been tested to 90 psi.

This engine also drives the windlass through a clutch and chain.

The engine and compressor have been opened up examined and found in good condition.

The engine built by Workshops under Gardner's license has 4 cyls each 6" stroke $2\frac{1}{4}$ " bore - of the 4 cycle C.I. cold hand starting type. The compressor has two single acting cylinders 6" bore x 6" stroke, R.P.M. 600.

In connection with the machinery and electrical installation the outstanding remaining items are:-

- (1) Provision of spare rotor for scavenge pump.
[Doubtful if necessary as the vessel trades regularly between Tasmania & Adelaide.]
- (2) Lightning conductors required on wood masts - in hand
- (3) Navigation light switchboard has screwed porcelain fuses of continental type - not procurable locally and a new board with approved fuses is being made.

G. E. H.