At the request of the Government I have this day surveyed the Machinery and Boilers of the Steamship "Luzon" - anchored in Yokohama Harbour; and find it consisting of a pair of direct acting inverted Engines of about 150 Horsepower nominal with common Condensers, supplied with steam from 2 ordinary return tubular Boilers at present carrying 12 lbs of Steam. All 10 & 11 years old.

Everything in the Engine Room was connected and closed up - and both Boilers had all doors on and were partly run up with water, making an internal examination impossible.

The Engines are substantial and complete and apparently in tolerable working order with the following exceptions

1st. The crankshaft has been altered, by substituting 2 cast iron disc cranks, instead of the original solid after Throw Crank, I would recommend a new crank shaft and new Mainbearings complete

2nd. all the small Gear, Links &c require rebushing and repairing - the forward Air pump guide has been broken and patched.

Cocks and pipes appear in good order

The Boilers

The Boilers are old and very thin all over, and have been patched considerably, the tubes and Tubeplates seem in good condition. Their former consumption of coal was about 25 Tons in 24 hours when the ship was making 10 to 11 Knots. I consider them unsuitable for much longer service.—

A prolonged trial run in connection with a thorough internal Examination would be necessary to form an exact estimate of the Machinery, but from what I have seen to day I think that the "Luzon" with a few Repairs and careful handling might be run slowly on the coast for some time — with the understanding that new Boilers and Crankshaft were ordered at once — and while doing so a surface condenser could also be fitted, which would reduce the coal consumption to say 18 tons per diem keeping up her former speed of 10 to 11 Knots.

However considering the steamer "Luzon" in everyother respect very suitable and desirable for transport and trade on the coast of Japan and China Seas. I would recommend both for safety economy, and saving of time — to take the present

Machinery

Machinery and Boilers out and fit a pair of compound Engines of say 100 Horsepower, at present for sale in Nagasaki, which would drive her at a regular speed of 9 Knots on a consumption of 10 Tons of coal a day - and with power to make at least 10 Knots when required - and this alteration would besides add over 100 Tons to her carrying capacity, reduce the number of her crew and make her a very useful Steamer.

Tokio August 16th 1874.

Frederick Krebs
Marine Superintendant,
Mitsubishi Steamship Co.

Survey Report on

Machinery

Screw Steamer "Luzon"

August 16th 1874