

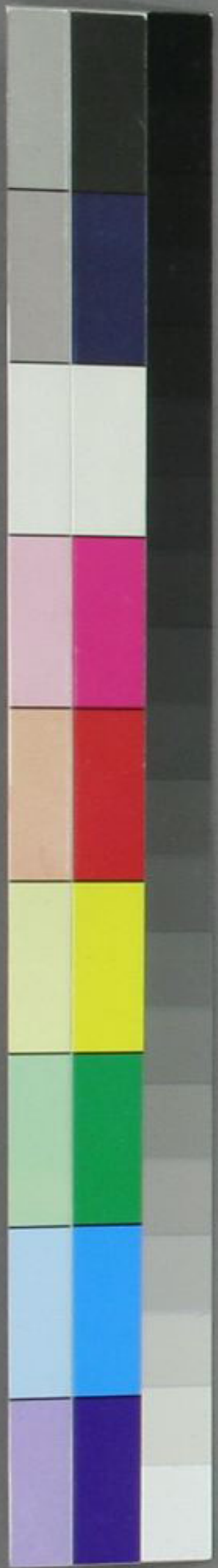
At the request of the Government I have this day surveyed the Machinery and Boilers of the Steamship "Luzon" anchored in Yokohama Harbour; and find it consisting of a pair of direct acting inverted Engines of about 150 Horsepower nominal with common Condensers, supplied with steam from 2 ordinary return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

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Survey Report on

Machinery

Screw Steamer "Luzon"

August 16th 1874

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