

COPY.

8th June, 1942.

"EMPIRE GOLD". NO.23204 in Register Book.

This vessel was examined in the Birkenhead Dry Dock No.3, when the rudder brace to the locking pintle was found bearing hard on the gudgeon, the bottom pintle slack, and the gunmetal sleeve on same loose.

The welding inside the fabricated rudder post above the top pintle was slightly started. The sternframe and rudder are of fabricated design, the rudder having a locking pintle below the horizontal coupling, and a bottom pintle only, the latter bearing on a conical footstep. The weight of the rudder is taken by a Donkin rudder carrier. On lifting the rudder the bottom pintle was removed and the taper in the bottom arm was found badly corroded, as was the taper of the pintle itself.

When the rudder was lifted an examination was made of the rudder carrier, and the lower outer leg of vee bearing was found badly scored, this has now been dressed up as necessary.

The crosshead of the tiller was $\frac{1}{2}$ " low, thereby the recommendations of the makers of the steering gear to keep the gear $\frac{1}{2}$ " high was lost.

The spacing of the girders below the steering flat was approximately 5' 6" each side of the centre line. To test whether the weight of the rudder brought the deck down, four deflection battens were fitted at the corners of the rudder trunk, and on lowering the rudder a deflection of $\frac{1}{2}$ " full was recorded. It was recommended that the five beams between the deck girders be stiffened additionally by means of reverse angles connected to the face angles on the deck girders by half diamond plates. As an additional precaution, and at the request of the Owners' Superintendent, two solid pillars were ^{supplied} fitted ~~at~~ the centre line of the beams forward and aft of the rudder carrier, to act as ties as well as struts.

To obtain a reading as to whether the bottom pintle was bearing on the riser in the bottom gudgeon, a lead was placed below the bottom pintle, and the same did not bear on the riser by 1".

It was recommended the bottom brace be rebored true, a new forged steel pintle of tested material machined to fit the new taper, and a gunmetal sleeve shrunk on.

On completion of the deck stiffening a new riser to suit the altered conditions will be fitted.

A parallel washer will be fitted in way of the locking pintle to prevent the rudder rising more than $\frac{1}{2}$ ".

A liner approximately $\frac{3}{8}$ " thick will be fitted and secured to the top of the rudder carrier for the necessary alignment of the tiller crosshead.

On examination of the locking pintle the cone and the taper in the brace were found in good condition and well fitting.

The fabricated sternframe was closely examined whilst the rudder was unshipped and found in good condition.

As a precautionary measure the A.P. tank was examined under pressure and the transom bulkhead at the after end of tank was found tight.

It was observed that the Donkin Carrier spigot was not a fit in the heavy tapered sole plate on deck plating, and to prevent transverse movement, heavy forged buttress pieces bolted to the deck plating had been fitted some time previously.

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