

The forward screw of one of these latter vessels was estimated to augment the resistance of the hull by 23.5 per cent and its propelling efficiency was only 43 per cent of that of the after screw.

Negative Propulsion.

(p.46) If a screw is placed behind a stern so bluff that the supply of water is impeded, it will draw in water at the center of the driving force and throw it off from the tips of the blades like a centrifugal pump. It is recorded that an attempt to propel a square-ended caisson by means of a screw resulted in the caisson going astern, whichever way the screw was driven.

Inclination of line of Thrust.

(p.47) There is a disadvantage connected with an inclined screw shaft which points to the advisability of placing the shaft nearly horizontal as possible.

The result of depressing the end of the shaft is to cause the effective pitch to vary through every part of the revolution. If the inclination be supposed to be 45° for example, that part of the blade which is intended to have a pitch of three diameters has in reality an effective pitch varying from nothing to infinity.

It is of course obvious that the pitch of the blades in relation to the axis is unchanged by any alteration in the direction of the shaft, but whatever the pitch in relation to the axis may be, if the axis were to pass vertically out through the bottom of the ship, the virtual or effective