THE MODERN PRACTICE
OF
SHIPBUILDING
IN
IRON AND STEEL.

BY
SAMUEL J. P. THEARLE,
Fellow of the Royal School of Naval Architecture; Member of the Institution of Naval Architects; Surveyor to Lloyd's Register of Shipping.

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Plate 1.

SHEER DRAUGHT OF AN IRON SAILING SHIP.

SHEER PLAN.

HALF BREADTH PLAN.
MIDSHIP SECTION OF STEEL STEAMER (3 DECKED)
WITH CELLULAR DOUBLE BOTTOM.

Scale 1/4 in. = 1 Foot.

[Diagram of a midship section of a steel steamer with cellular double bottom, showing various components such as girders and decks.]
PROFILE OF A SMALL CARGO SCREW STEAMER.
PLAN OF UPPER DECK OF AN IRON OR STEEL SAILING SHIP, SHOWING BEAMS, STRINGERS, TIE PLATES, ETC.

Fig. 1

HALF PLAN OF LOWER DECK SHOWING BEAMS, TIES, ETC.

Fig. 2
Plate VIII

SKETCH OF SCRIVE BOARD FOR FORE BODY.

N.B. To avoid confusion of lines a great many of the frames are omitted from X to amidships.
Ship Construction

The chief objections to floors being lap joined at the middle line lies first in the likelihood of a break in the transverse strength of the frames on account of the frames usually butting there; secondly, because of the difficulty of labour necessary to effect an efficient connection with the frames. - By this method 4 thicknesses are required to be riveted together - on the upper part - reverse frames - lap pieces for same, & the double thickness of floors. - on the lower part - frames, heel pieces & the two parts of floors again. The only recommendation is perhaps on account of cheapness, even that is doubtful in consideration of the extra labour required. A better way is to make the connection alternately on each side of the middle line say at about a foot away so as to clear the heel pieces to frames.

(2) Intercostal keelson with flat-plate keel.

With the ordinary system of transverse framing intercostal keelsons are necessarily fitted between the floors with flat plate keels. When Lloyd's number is under 15,000, a plate bulk is riveted to the intercostal plates above the floors (in steel), or the plates being continued for this purpose or else the bulk plate is scored & riveted between the floors. When the number exceeds 15,000, a vertical keelson plate with double angles top & bottom is substituted, this being scored & riveted to the intercostal plates between the floors (as above). The intercostal plate is connected to the shell plating by short angle bars which should be turned up against the floor plate in the form of a knee at one end to afford a good connection.
SKETCH OF BENDING SLAB. SHOWING PROCESS OF BENDING AN ANGLE BAR TO ITS REQUIRED FORM THEREON.
ELEVATIONS. SHOWING WEB FRAMES, etc., IN MACHINERY SPACE.

Upper Deck Beams.

Web Frame

Web Frame

Web Frame

Web Frame

Stringer

Stringer

Stringer

Stringer

Ceiling

inner bottom
Profile View of Wall Dock Steamer constructed with Web Frames.
Plate XL

SECTION

ELEVATION

PLAN

SECTION AT FRONT

Plate XLI

Centre Pole Rudder.

Fig. 1

Fig. 2

Section of Stepper.

Section showing Arm.

Figs. 1, 2, 3