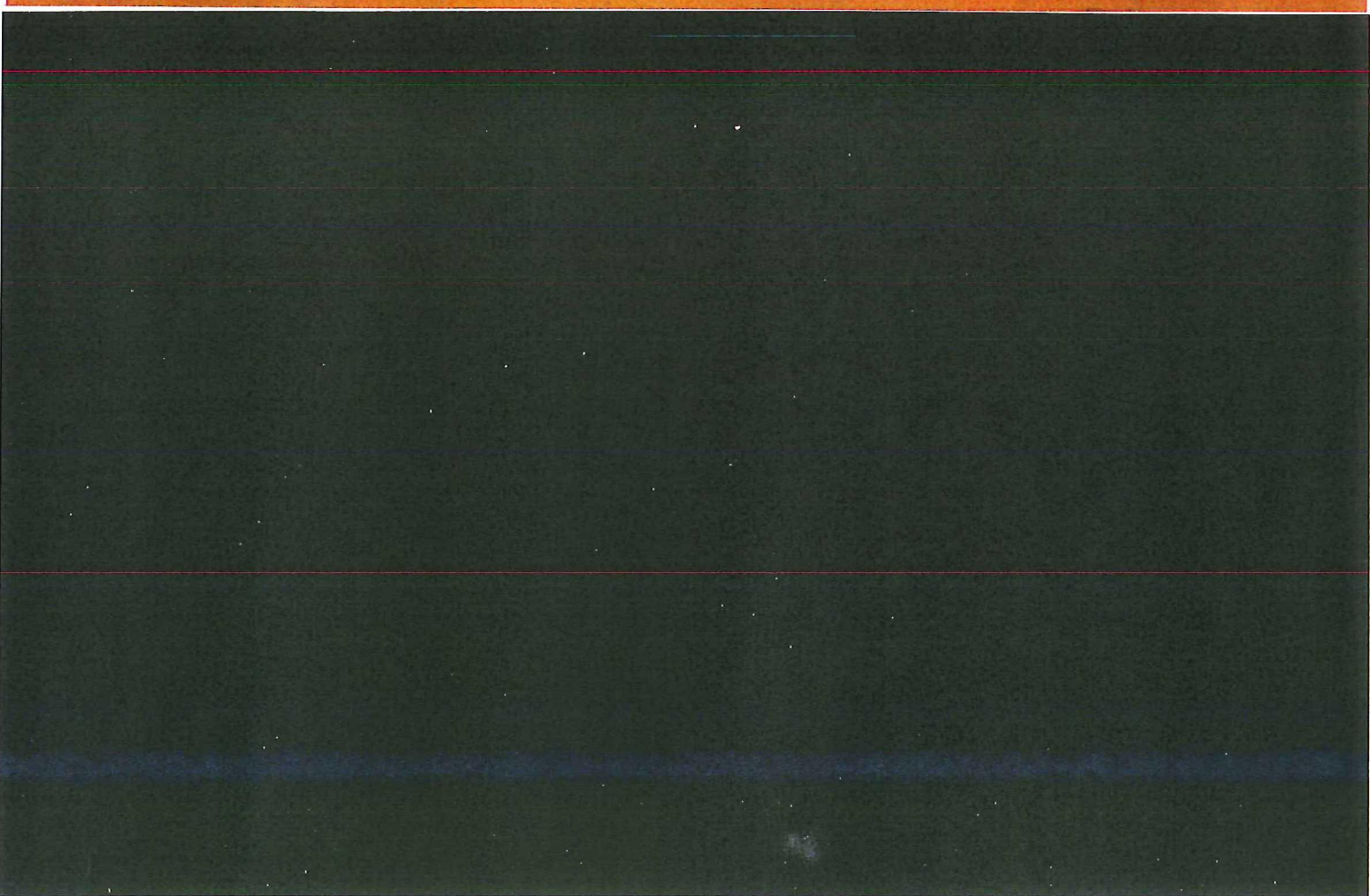


Keel...
Scheepbouw en Werfgebouwen

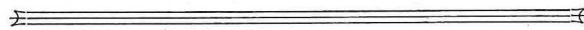
..... THE
ISHERWOOD SYSTEM
..... OF
SHIP CONSTRUCTION



Koninklijke Maatschappij „De Schelde”
Scheepsbouw en Werktuigenfabriek

THE ISHERWOOD SYSTEM OF SHIP CONSTRUCTION.

(PATENT).



SOLE LICENSOR:

J. W. ISHERWOOD,
ZETLAND BUILDINGS,
MIDDLESBROUGH.

AGENTS FOR GREAT BRITAIN:

S. C. CHAMBERS & CO.,
3, KING STREET,
LIVERPOOL.

Telegrams: "ISHERWOOD, MIDDLESBROUGH."
Nat. Tel.: 661.

THE ISHERWOOD SYSTEM OF SHIP CONSTRUCTION.

DESCRIPTION OF THE SYSTEM.

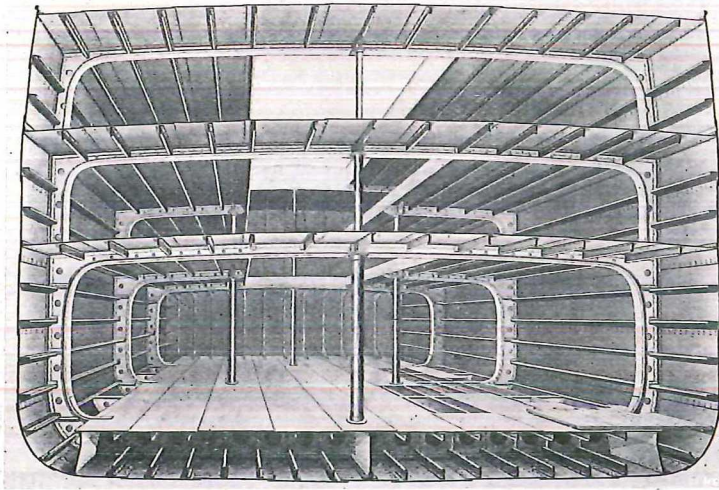
IN the "Isherwood" system of construction, the transverse frames and beams are fitted at widely-spaced intervals, the general practice, so far, having established this at about 12 ft. These structures form complete transverse belts around the ship. They are directly riveted to the shell plating and deck of the vessel, and are made of not less strength than the number of transverse frames that are fitted in ordinary vessels for a corresponding length of ship. These strong transverse girder frames are slotted around their outer edges, in order to admit of continuous longi-

tudinal stiffeners being fitted, not only at the decks, but on the sides, bottom and tank top.

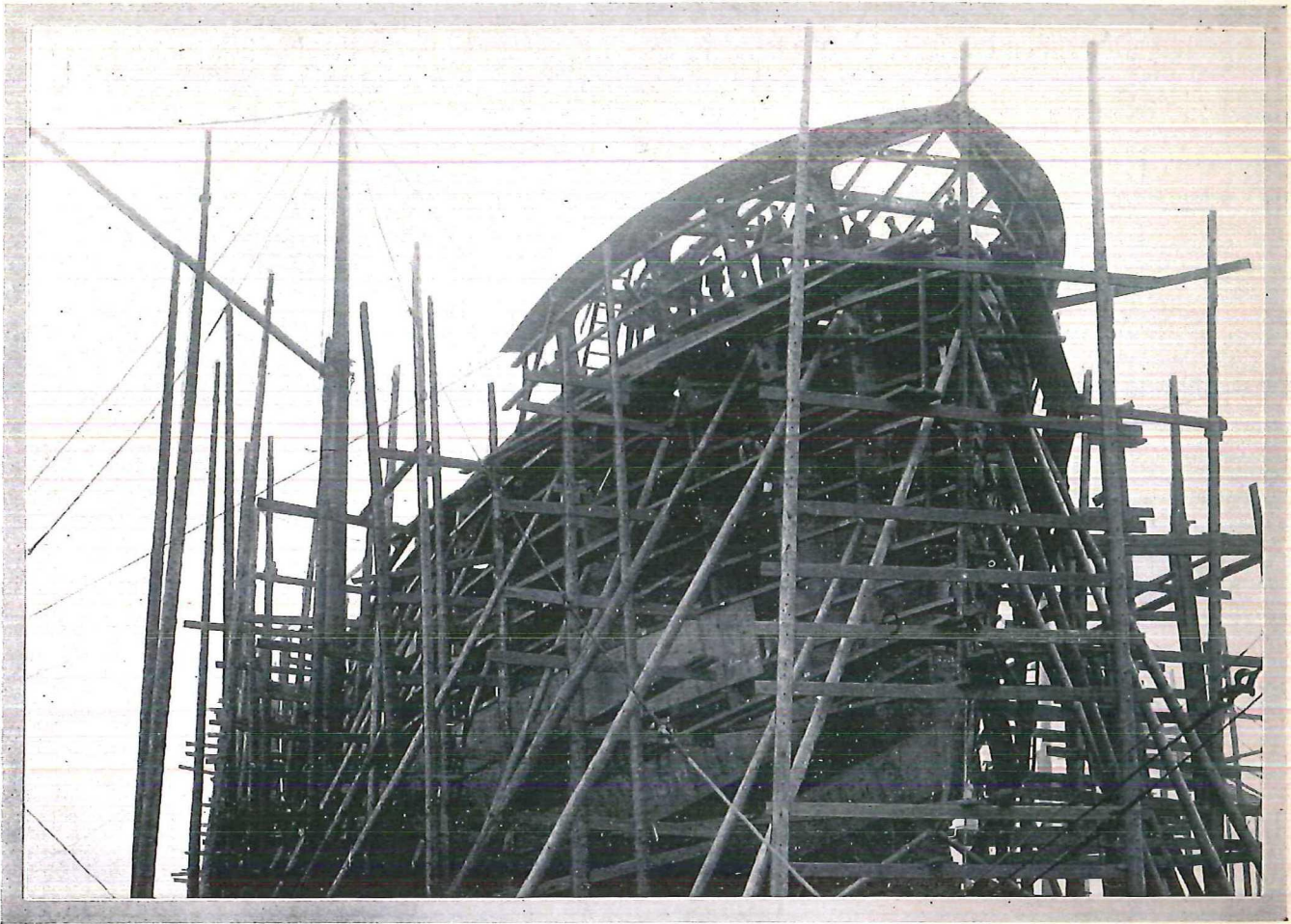
The fitting of these longitudinal stiffeners directly on to the plating prevents damage to the decks

through buckling, which has been sustained in vessels of the ordinary construction which have had no fore and aft support to the plating in between the transverse beams.

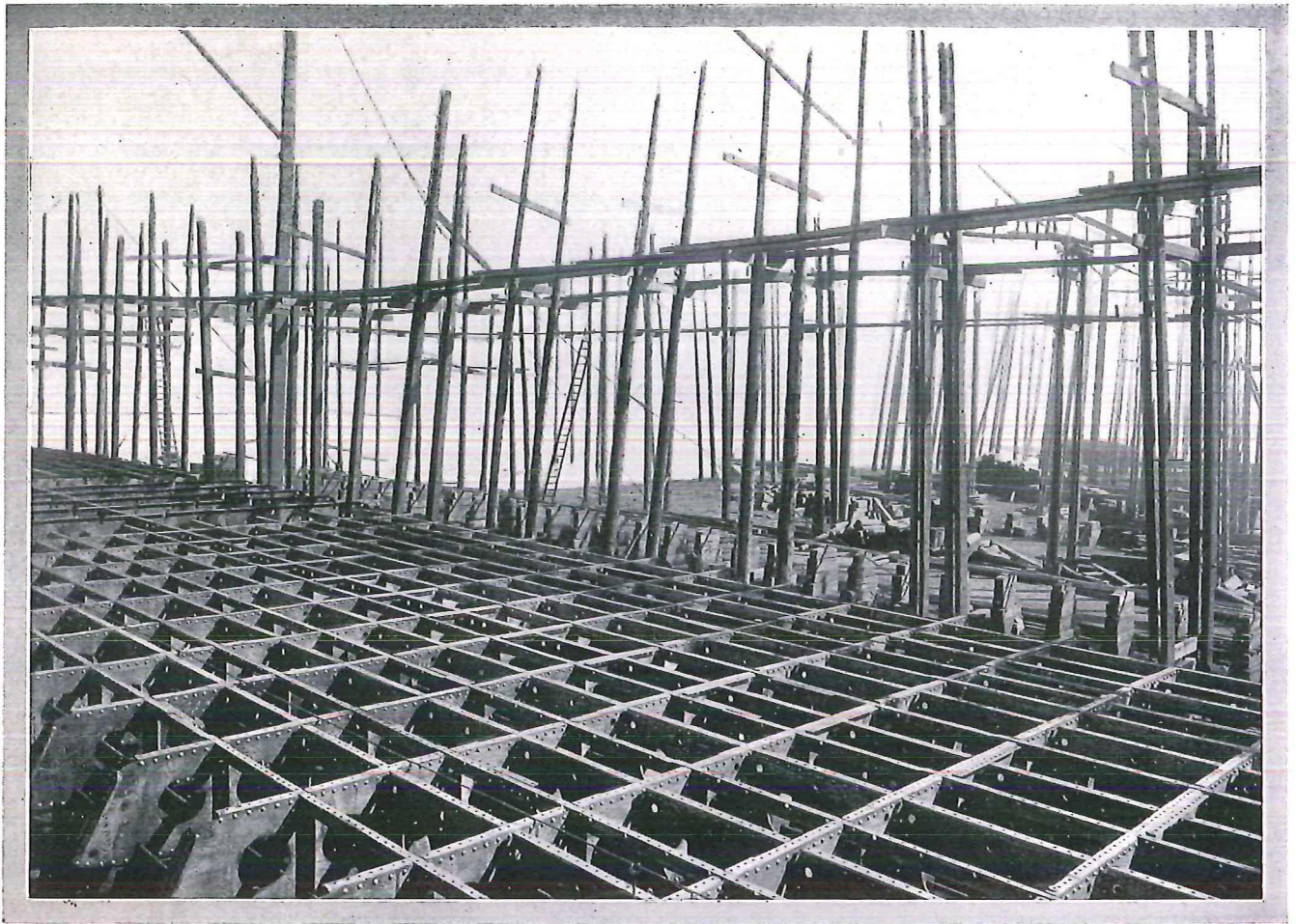
In vessels with double bottoms, transverse floor plates are fitted intermediate to those at the sides and decks of the vessel. These intermediates enable sectional materials, such as bulb angles,



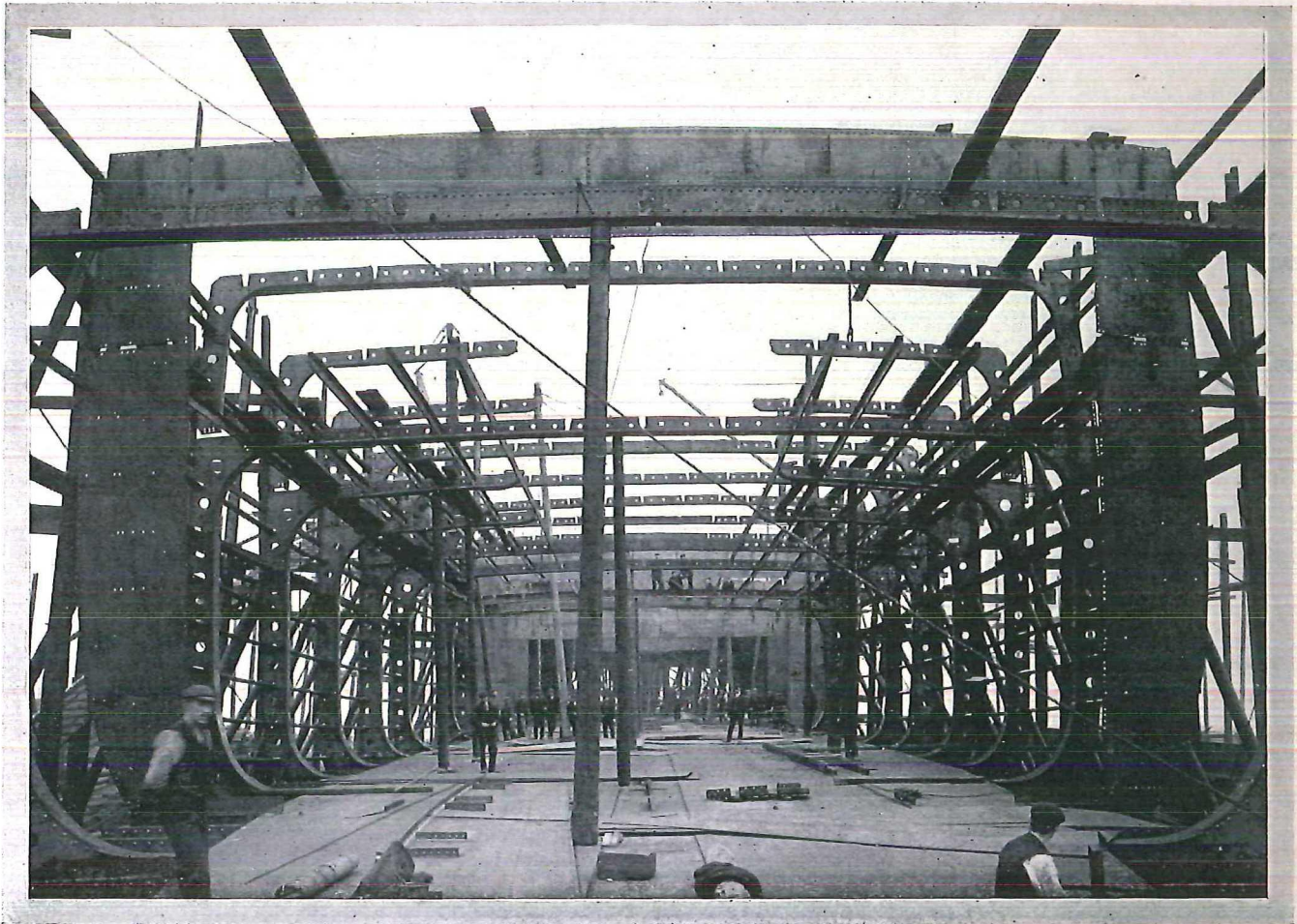
INTERNAL VIEW OF S.S. "GASCONY," BUILT FOR DAVID MAC IVER AND CO., LIVERPOOL.



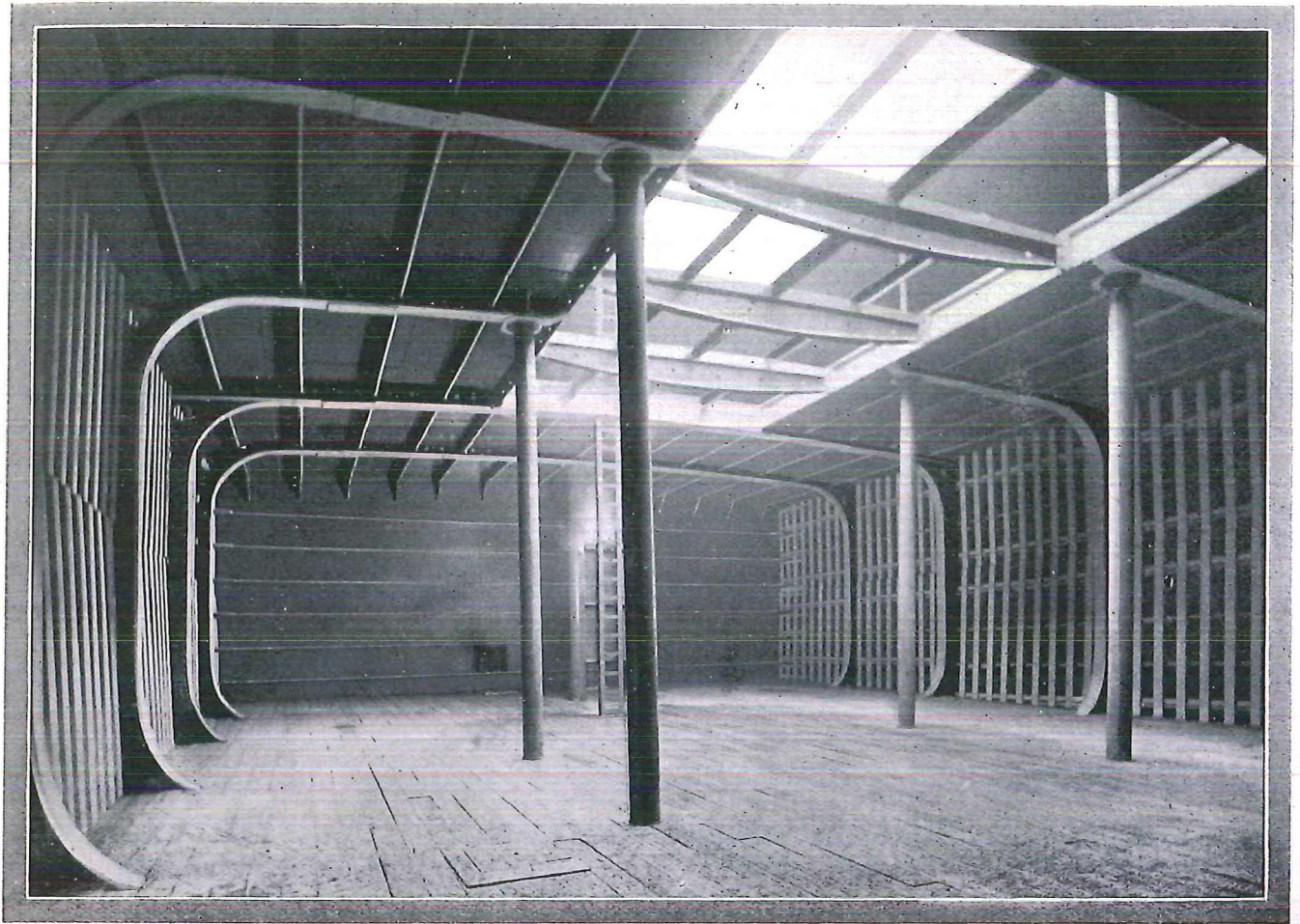
FORE END OF S.S. "ORASTER HALL," BUILT BY WM. HAMILTON AND CO., LTD., FOR CHAS. G. DUNN AND CO., LIVERPOOL.



DOUBLE-BOTTOM CONSTRUCTION OF S.S. "CRASTER HALL," BUILT BY WM. HAMILTON AND CO., LTD.



CONSTRUCTIONAL VIEW OF S.S. "CRASTER HALL," BUILT BY WM. HAMILTON AND CO., LTD.



INTERNAL VIEW OF S.S. "CRASTER HALL," BUILT FOR CHAS. G. DUNN AND CO., LIVERPOOL.

being utilised as longitudinals both at the tank top and on the outside plating, thereby providing a double-bottom construction, which is much more ready of access than one built on the ordinary system.

ADVANTAGES OF THE SYSTEM.

Greatly increased longitudinal strength and the prevention of deck damage through buckling owing to the support given to the plating by the fitting of continuous longitudinals.

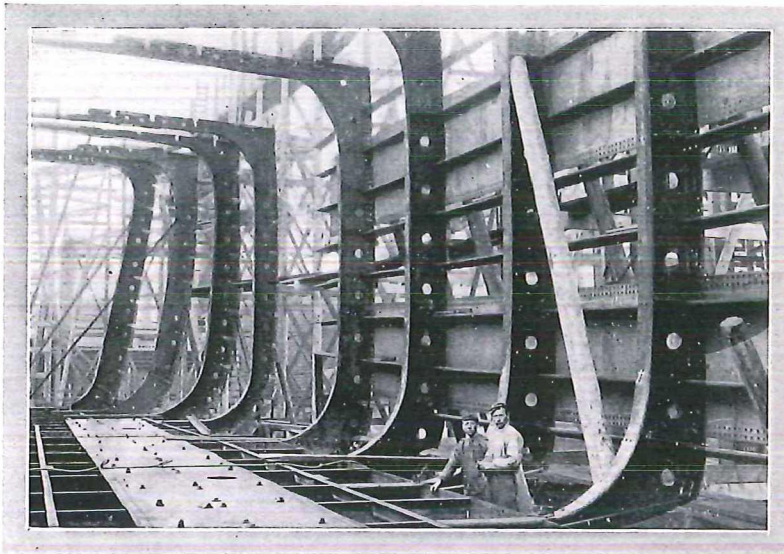
Reduced cost of maintenance due to all parts of the structure being readily accessible.

Increased capacity for bale goods and for bulky cargoes on account of the floor being carried flat to the side of the vessel and the absence of beam knees between the widely-spaced transverse.

Increased deadweight carrying capacity without additional cost to the owners of the vessel. This is important, as the additional deadweight is gained without increasing the draught of the ship. The

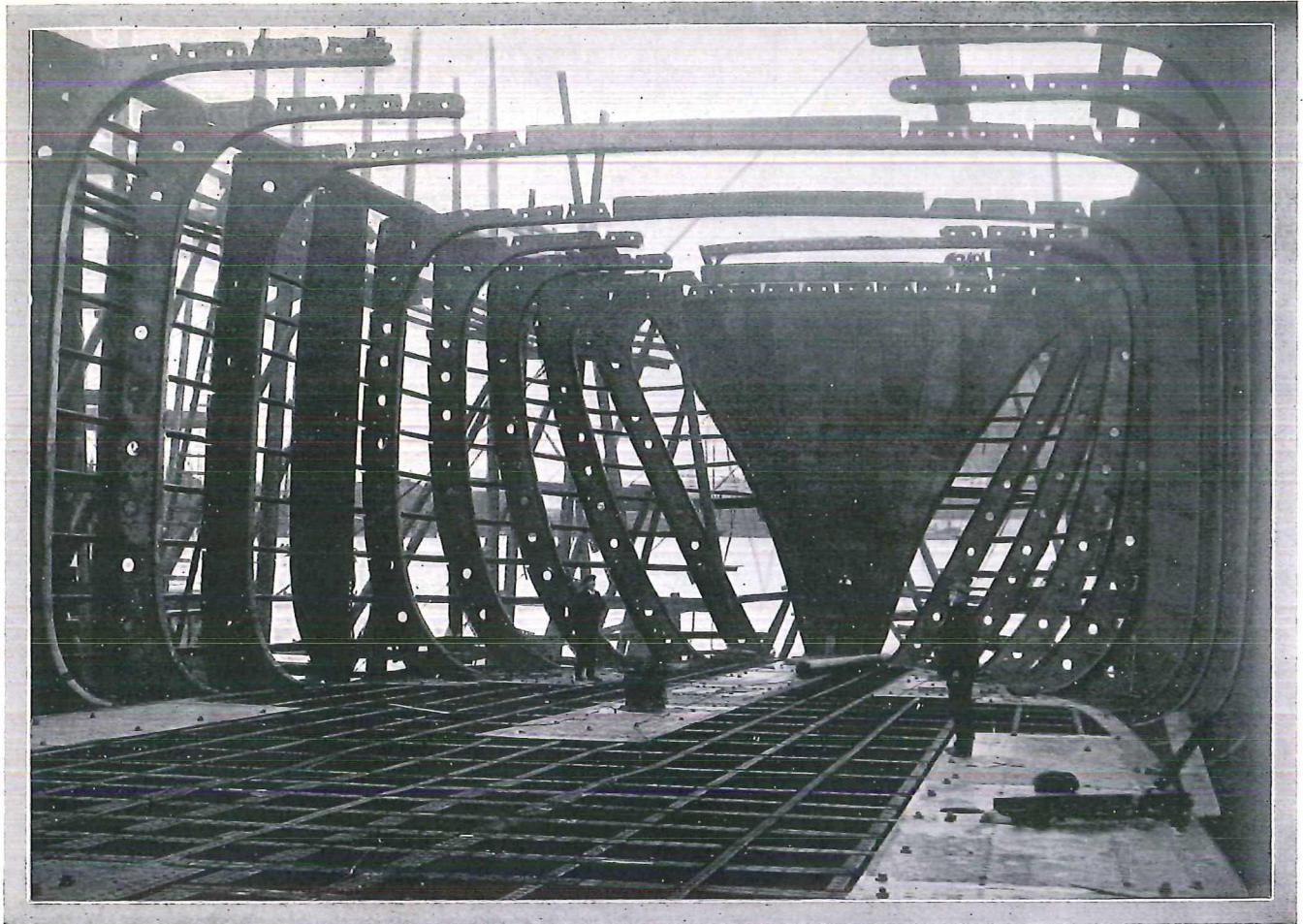
saving in weight of material has been effected by dispensing with beam knees, a number of bilge brackets, tank knees, packing, and many transverse connections which are necessary in vessels of the ordinary construction.

If the additional deadweight capacity is not required, advantage of the saving in weight might



S.S. "SOPHIE H.," BUILT BY KONINKLIJKE MAATSCHAPPIJ "DE SCHELDE,"
FLUSHING, HOLLAND, FOR STOOMVAART MAATSCHAPPIJ "SOPHIE H.," ROTTERDAM.

be taken in producing a finer model, and so provide a vessel easier to drive and, therefore, more economical in the matter of coal consumption, and, at the same time, provide for the same cargo



CONSTRUCTIONAL VIEW OF LARGE SINGLE-DECKED STEAMER "TRABBOCH," BUILT BY ARCH. McMILLAN & SON, LTD.,
DUMBARTON, FOR W. N. BICKET, LIVERPOOL.



SIDE VIEW OF OIL TANK STEAMER "PAUL PAIX," BUILT FOR LENNARD'S CARRYING COMPANY, LTD.

capacity in proportion to the deadweight of the steamer.

Limber space can be recovered and utilised for water ballast when desired, and without the objectionable obstruction caused by the fitting of frame brackets as in the ordinary type of vessel when the tank top is carried out flat to the side of the ship.

Reduction of vibration owing to the continuous fore and aft support given to the plating of the structure.

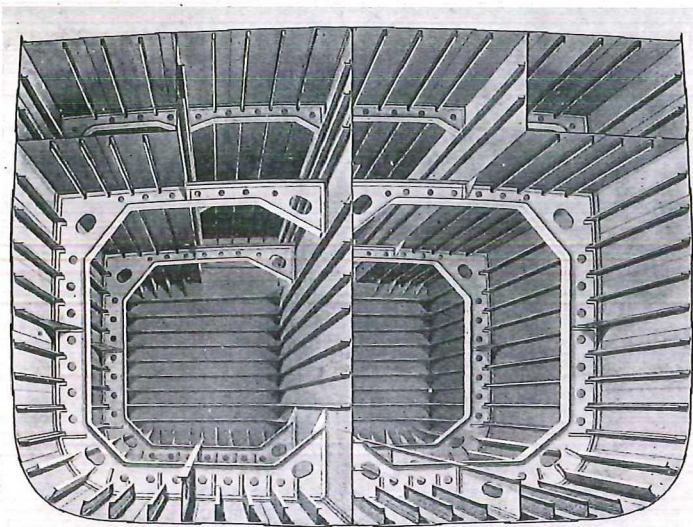
There are few pillars required in the holds, it being only necessary, except in the case of a vessel with great beam, to fit pillars at the centre line at each of the transverse beams. This gives a spacing of about 12 ft., and provides an admirable arrangement in steamers in which large unobstructed

spaces are required for handling and stowing large and bulky goods.

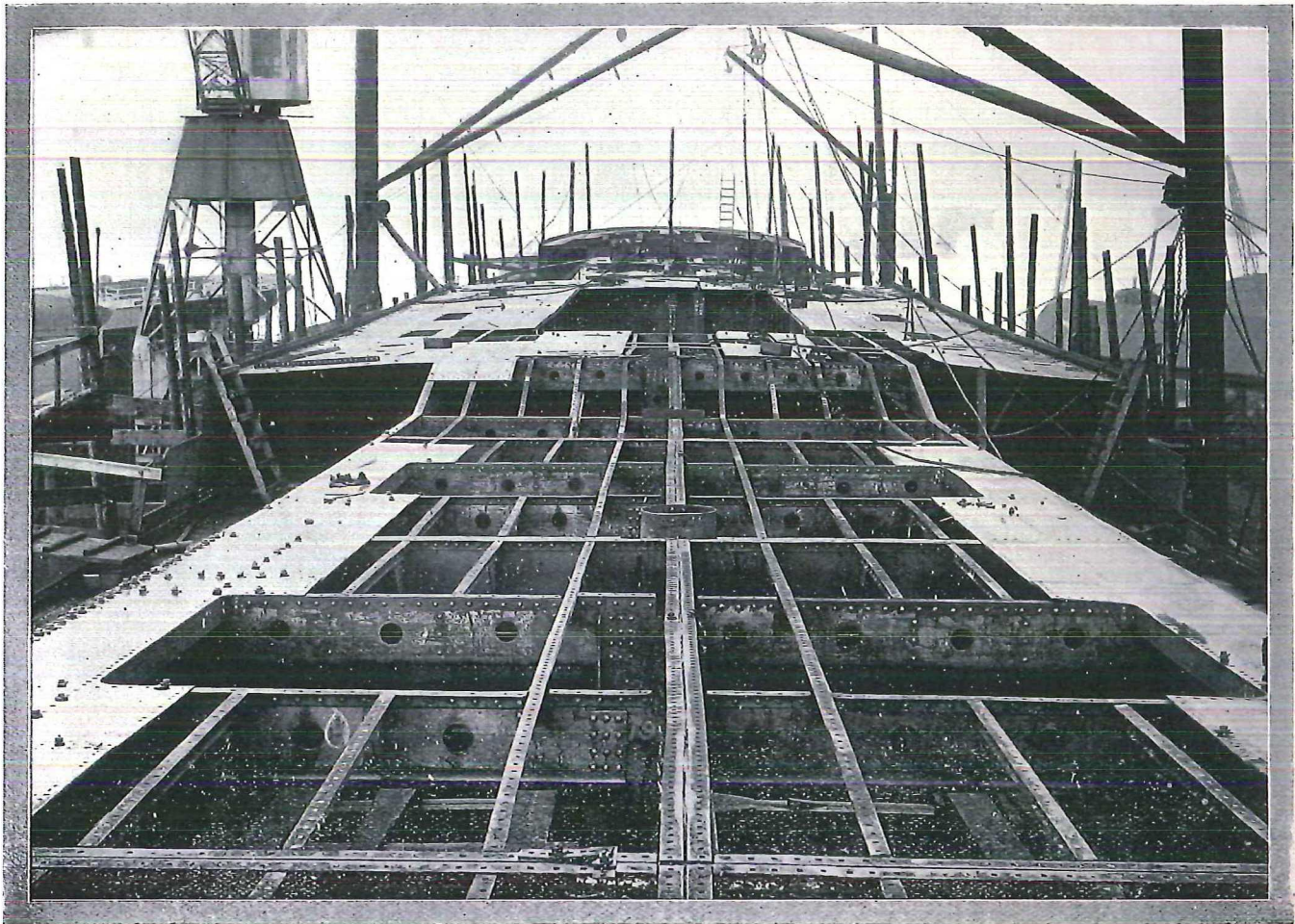
The hatchway pillars, which in some cases have been fitted at the widely-spaced transverses abreast the hatchways, can be readily dispensed with if desired by the owner when the design is determined upon, and this can be done without the "extra" required in vessels of the ordinary construction.

Improved ventilation due to the longitudinals forming fore and aft air courses. This has been strikingly brought home in the case of two "Isherwood" ves-

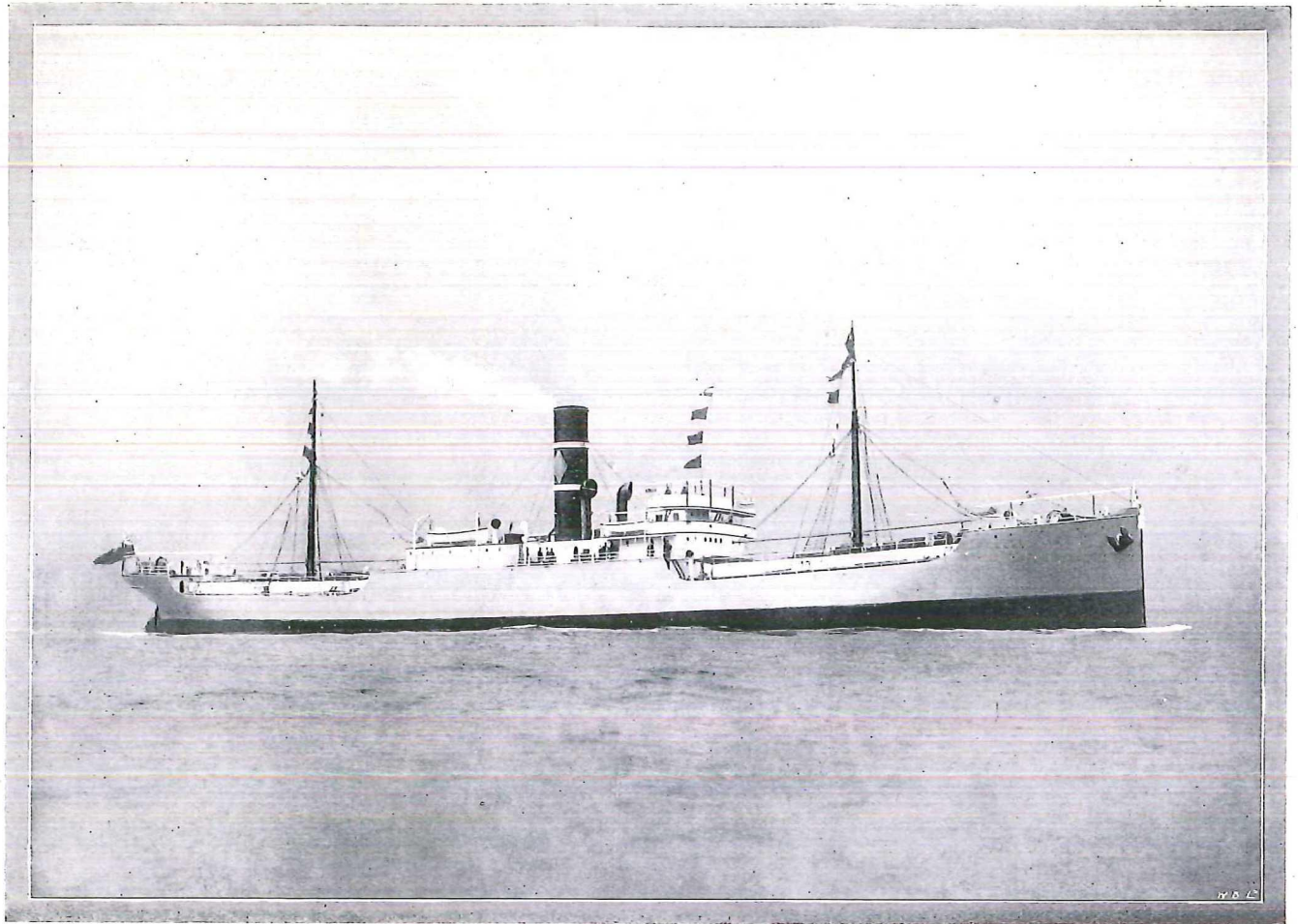
sels employed in the River Plate trade, where there has not been a particle of sweat damage in these vessels when carrying grain either in bags or in bulk. This matter of ventilation will be



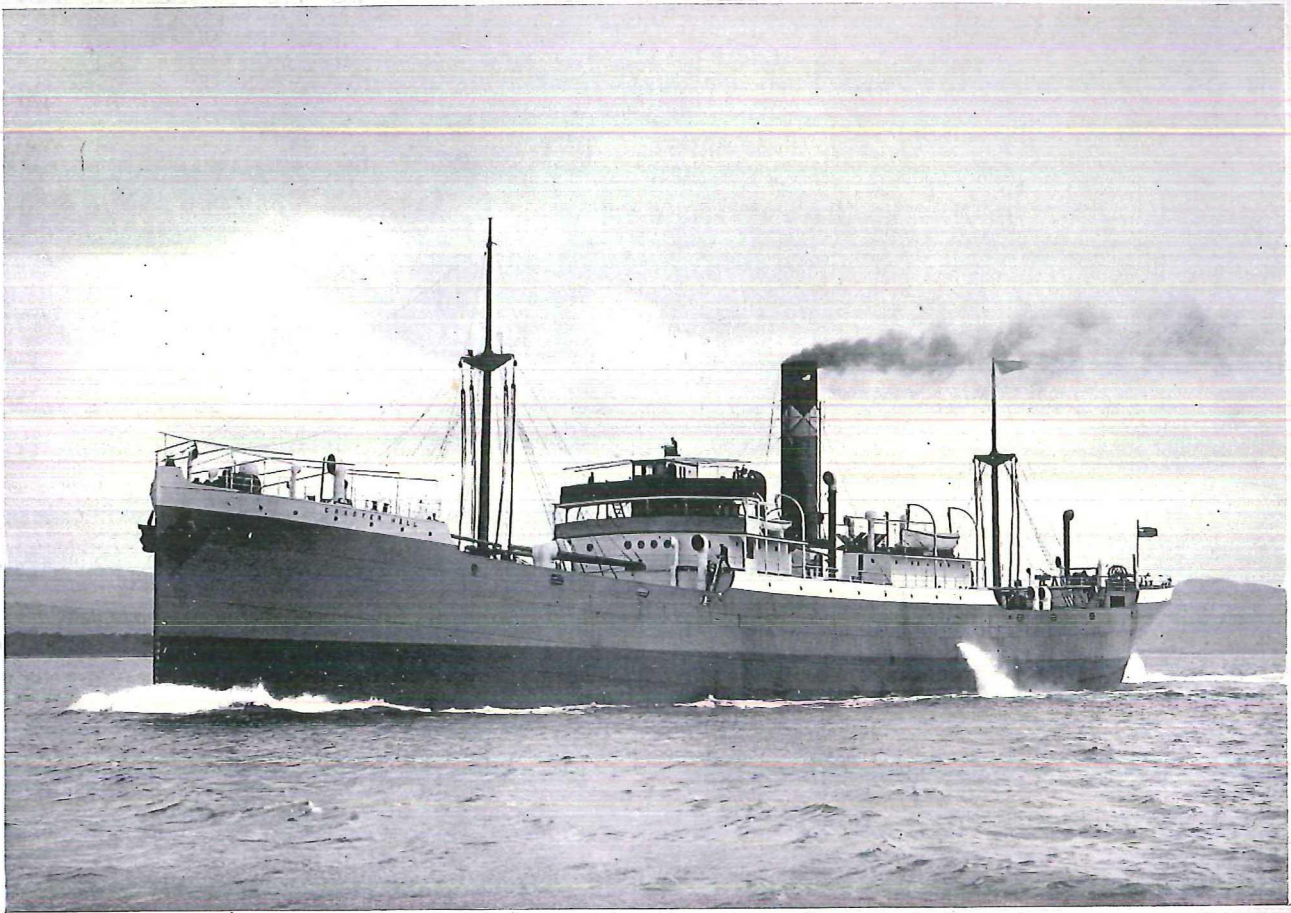
INTERNAL VIEW OF OIL TANK STEAMER "PAUL PAIX," BUILT FOR LENNARD'S CARRYING COMPANY, LTD.



VIEW SHOWING FRAMING OF TRUNK DECK OF OIL TANK STEAMER "PAUL PAIX," BUILT FOR LENNARD'S CARRYING COMPANY, LTD.



OIL TANK STEAMER "PAUL PAIX" ON TRIAL TRIP.



GENERAL CARGO LINER "CRASTER HALL" ON TRIAL TRIP.

found of great value for vessels engaged in the rice-carrying trade.

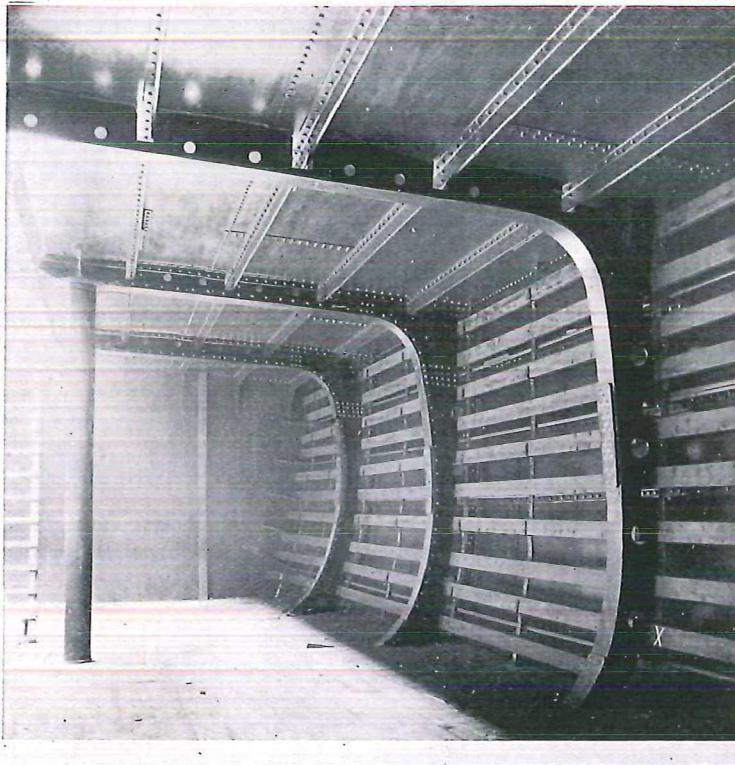
The system is particularly advantageous when applied to the construction of vessels designed for carrying oil or other liquid cargoes in bulk. The simplicity and ease of erection and construction permits of considerably more hydraulic riveting being done on the ground, and most of the inside riveting, caulking and general finishing off can be done to a much greater extent before the outside plating is fitted, or whilst it is being fitted.

The system has met with great success, and has been adopted by

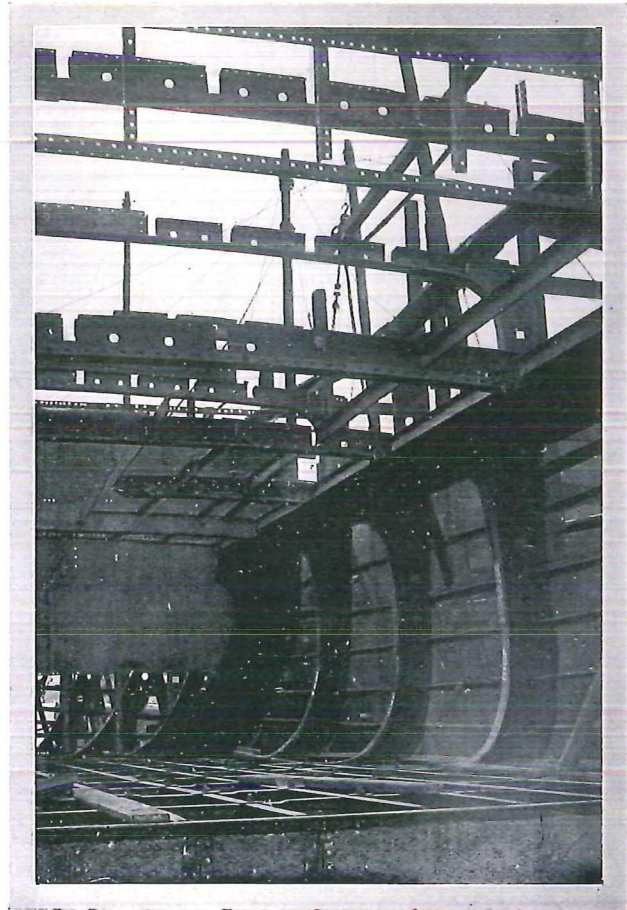
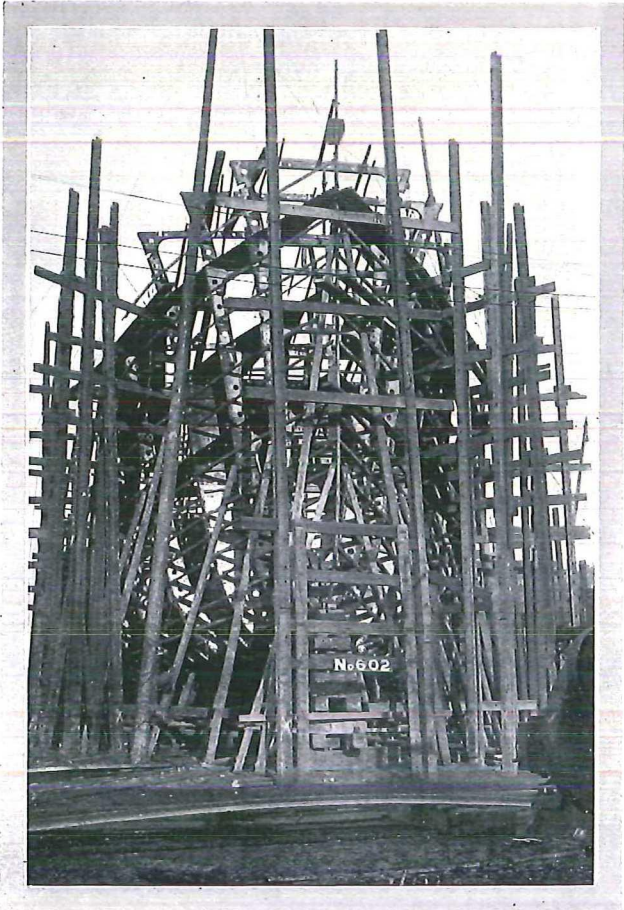
many prominent shipowners, and, although the first steamer has only been at sea for 18 months, there

are now 47 vessels built, or building, representing about 165,000 gross tons. The dimensions of these vessels range from 170ft. to 440ft. for sea-going ships, the deadweight carrying capacity of the latter being nearly 11,000 tons. An ore carrying steamer, 580ft. long, is now being constructed for trading on the Great Lakes of America for the Pittsburg Steamship Company, of Cleveland, Ohio.

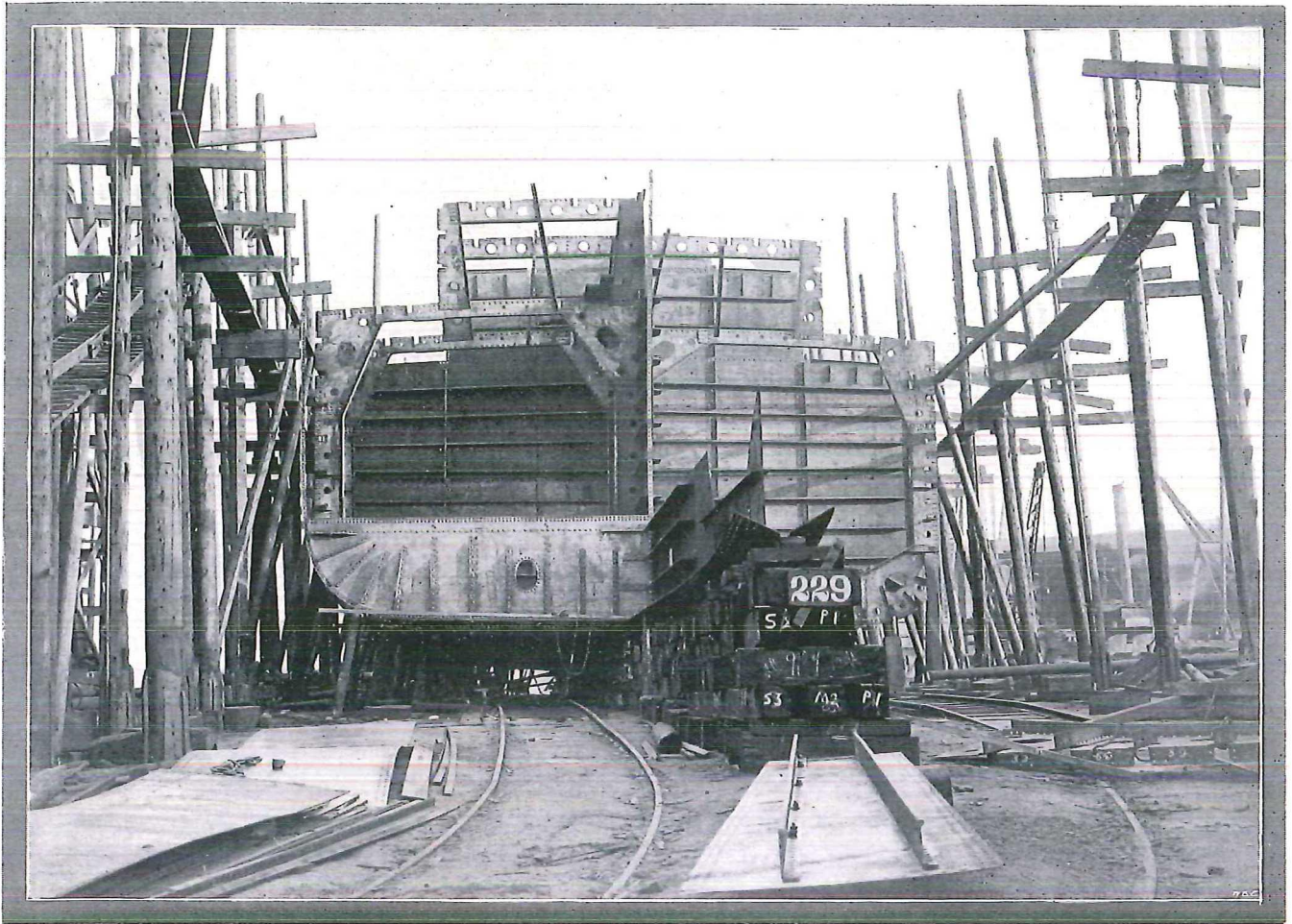
The method of construction has the approval of Lloyd's Register of British and Foreign Shipping, Bureau Veritas, International



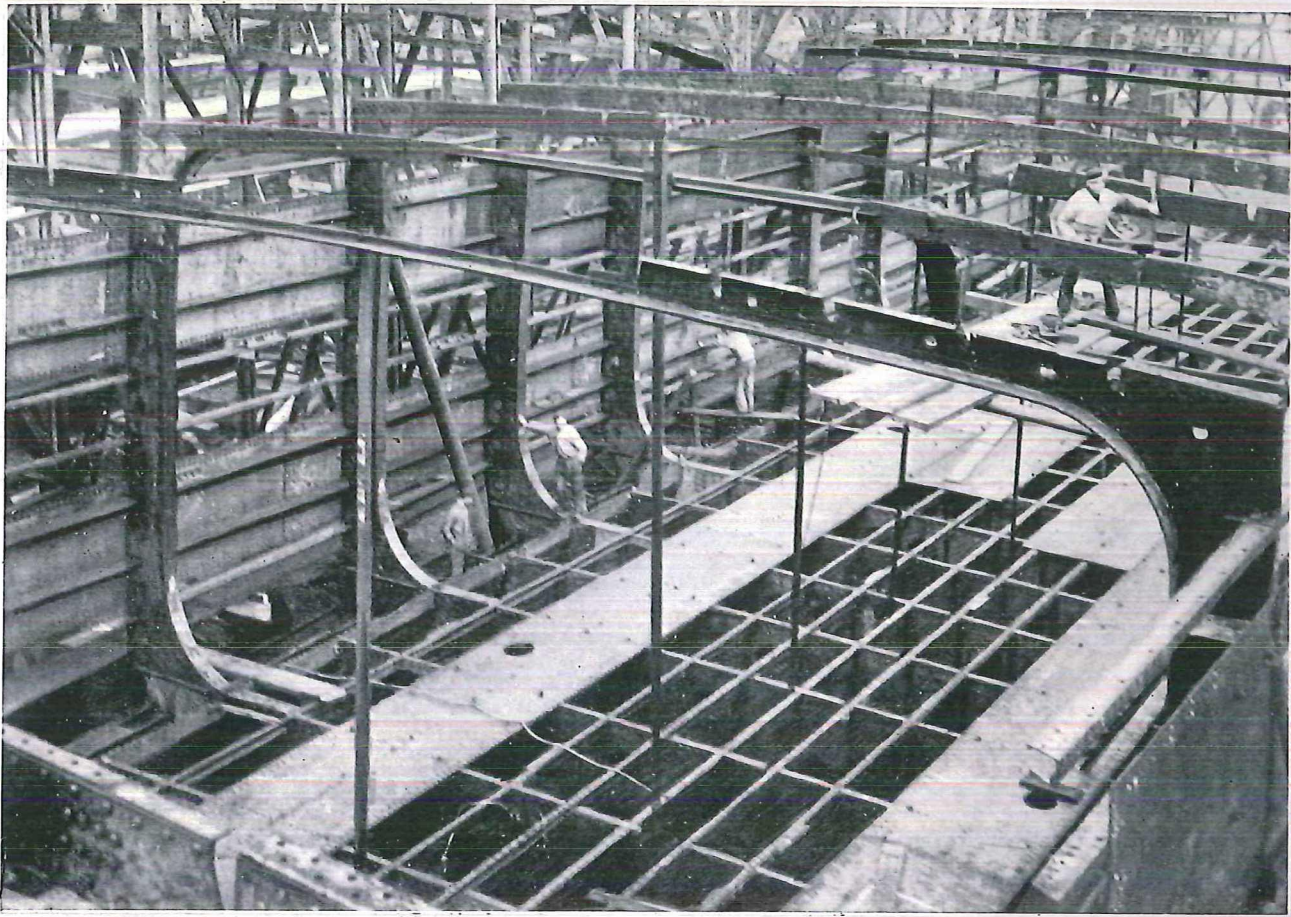
S.S. "THESSALY," BUILT BY RICHARDSON, DUCK AND CO., FOR DAVID MAC IVER AND SON, LIVERPOOL.



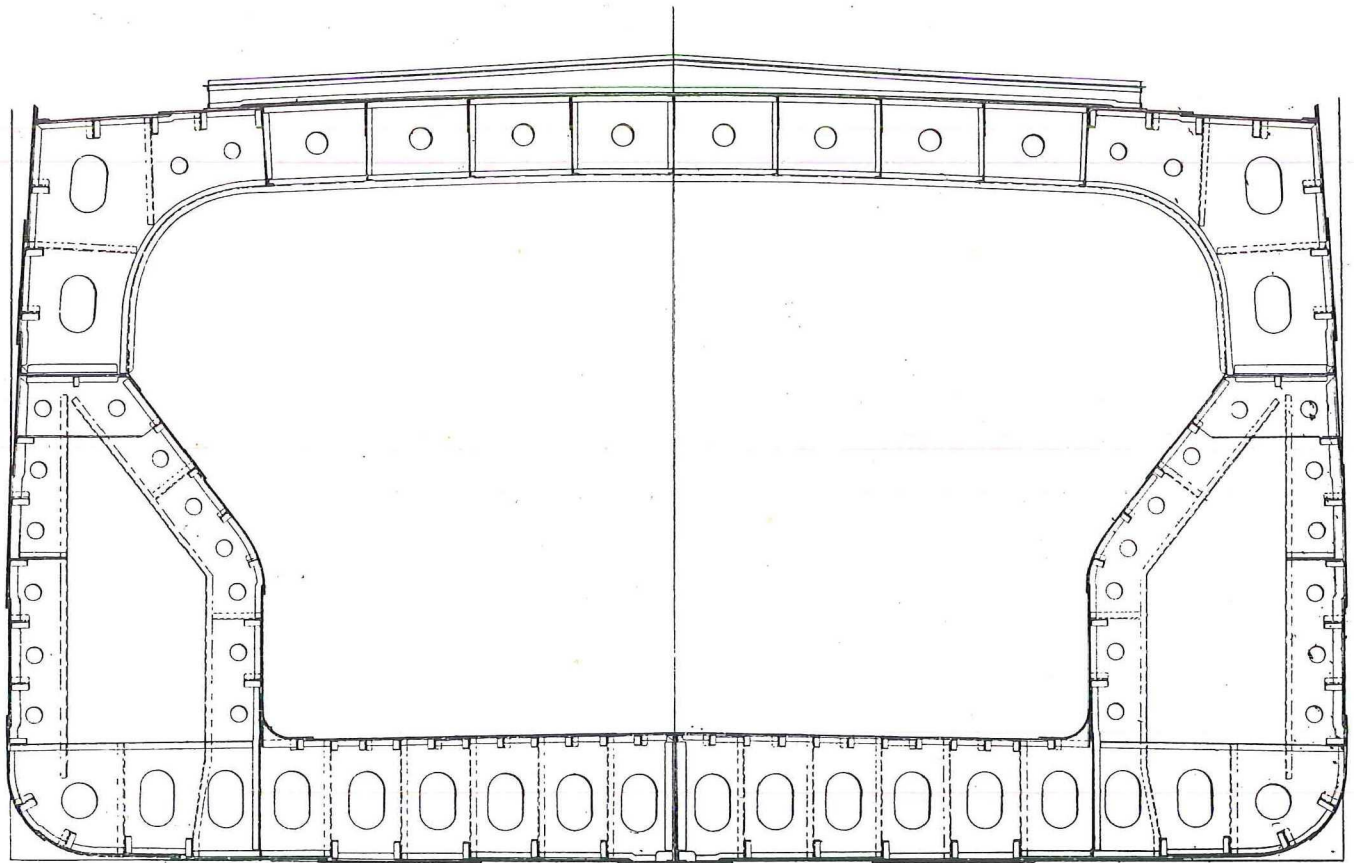
CONSTRUCTIONAL VIEWS OF S.S. "THESSALY," BUILT BY RICHARDSON, DUCK AND CO.,
FOR DAVID MACIVER AND CO., LIVERPOOL.



OIL TANK STEAMER "CONRAD MOHR," BUILT FOR CHR. MICHELSEN AND CO., BERGEN.

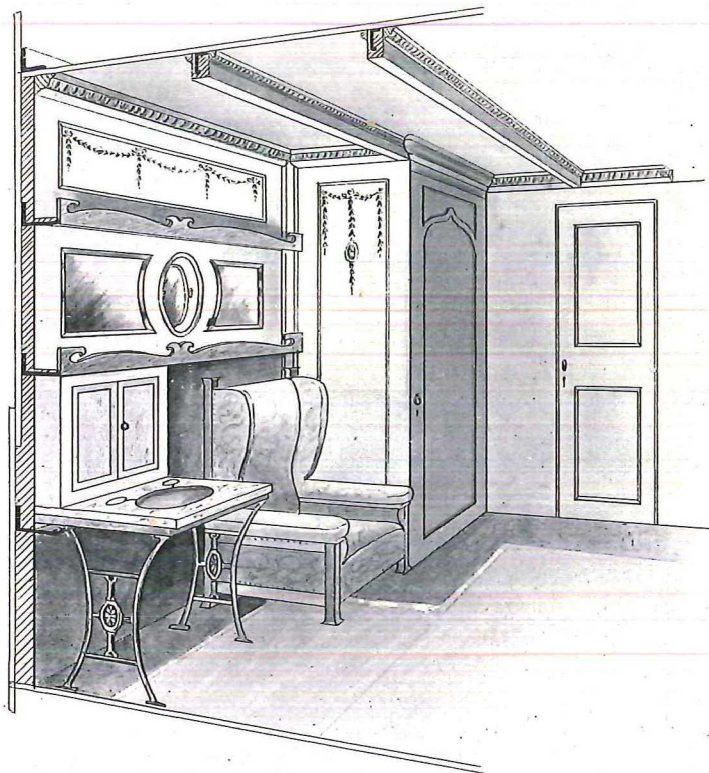


CONSTRUCTIONAL VIEW OF S.S. "SOPHIE H," BUILT BY KONINKLIJKE MAATSCHAPPIJ "DE SCHELDE," FLUSHING, HOLLAND,
FOR STOOMVAART MAATSCHAPPIJ "SOPHIE H," ROTTERDAM.



PLAN OF MIDSHIP SECTION OF GREAT LAKES ORE CARRIER, 580 FT. B.P., BUILDING BY GREAT LAKES ENGINEERING WORKS, DETROIT, U.S.A., FOR THE PITTSBURG S.S. COMPANY, CLEVELAND, OHIO.

Register, British Corporation for the Survey and Registry of Shipping, Norske Veritas, and Germanischer Lloyd.



DESIGN FOR STATEROOM IN VESSEL CONSTRUCTED ON THE "ISHERWOOD" SYSTEM.

The following shipbuilders are at the present time building, or have already built, on the "Isherwood" system of construction :

- Messrs. W. HAMILTON & Co., Ltd.,
Port Glasgow.
- Messrs. RICHARDSON, DUCK & Co.
Thornaby-on-Tees.
- Messrs. ARCHD. McMILLAN & SON, Ltd.
Dumbarton.
- Messrs. CAMMELL, LAIRD & Co., Ltd.
Birkenhead.
- Messrs. KONINKLIJKE MAATSCHAPPIJ., de SCHELDE,
Flushing, Holland.
- Messrs. MARYLAND STEEL COMPANY,
Sparrow's Point, U.S.A.
- Messrs. NEDERLANDSCHE SCHEEPSBOUW MAATSCHAPPIJ.,
Amsterdam, Holland.
- Messrs. SHORT BROS., Ltd.
Sunderland.
- Messrs. Sir W. G. ARMSTRONG, WHITWORTH & Co., Ltd.
Walker Shipyard, Newcastle-on-Tyne.
- Messrs. TYNE IRON SHIPBUILDING COMPANY, Ltd.,
Willington Quay-on-Tyne.
- Messrs. NEWPORT NEWS SHIPBUILDING & DRY DOCK Co.,
Newport News, U.S.A.
- Messrs. GREAT LAKES ENGINEERING WORKS,
Detroit, U.S.A.
- Messrs. ETABLISSEMENT FIJENOORD,
Rotterdam, Holland.
- Messrs. HALL, RUSSELL & Co., Ltd.,
Aberdeen.
- Messrs. BLOHM & VOSS,
Hamburg, Germany.

IN ADDITION SEVERAL OTHER SHIPBUILDERS ARE PREPARED TO BUILD ON THE SYSTEM.

MIDDLESBROUGH, April, 1910.

WILKINSON BROS, LTD.,
PRINTERS,
1-9, GREEN LANES, LONDON, N.