what is called a *bridge house.* Instead of fitting a turtle back or hood aft, a break is sometimes made in the upper deck and the after portion is raised a step higher than the midship portion, the after portion is then called a *raised quarter deck.* If a poop be extended forward to join the bridge house it is called a *long poop.* In very many cases when a top gallant forecastle is fitted, the gap which occurs between this forecastle and the bridge house is partly shut in at the sides by the ship’s topside plating ; the space so formed is then called a *well,* and the ship a *well-decked* ship.

Vessels arranged as above described are illustrated by figs. 10, 13, 14, on Plate II.; they include most of the vessels in the coasting trades of Europe, and many of the smaller and medium sized ocean-going cargo vessels. In larger vessels the forecastle, bridge and poop decks are frequently joined to form a light continuous

structure. The vessel is then termed a *shade-decked vessel—*if the ship’s sides up to this level are not completely closed in. In still larger ships the sides are completely built in, the deck made stronger, other decks or deck houses are fitted above it, and the ship is called an *awning decked, spar decked, shelter decked* or *three decked vessel—* according to the details of her construction. Above these strong steel decks light *promenade decks, sun decks* and *boat decks* are built according to the requirements of the accommodation for passengers, &c.

*Barges.—*The simplest cargo steamer is the *steam barge* or *lighter,* often merely a long narrow box of wood or steel made small enough in section to pass through locks and canals, with the ends fashioned more or less abruptly, and spaces allotted aft for the machinery and forward for the crew. For service on rivers and estuaries they are made larger and wider as the circumstances of draught and dock or wharf accommodation permit, the bottoms being generally flat in order that they may ground safely in tidal waters; they are used for transferring cargoes of sea-

going vessels to or from warehouses, and are frequently fitted so that they can tow one or more *dumb* barges.

Many sea-going vessels are built to carry a particular cargo on one voyage and a general cargo on the return voyage. This usually results in their having certain features which adapt them for the special cargo, and do not interfere materially with their carrying a general cargo at remunerative rates. Ordinary cargo ships, or “ Ocean Tramps ” as they are called, do a very large portion of the world’s cargo-carrying. They are mostly built of steel, and their usual speed is from 10 to 11 knots. In the early ’nineties well-decked vessels formed a large proportion of the total number; but ten years later comparatively few of this type were being built, and these were principally intended for the coal trade, or were comparatively small vessels for coasting purposes. Partial awning-decked steamers, again,

which were much in favour at the same period, gave place, a decade later, to other types; and vessels having a raised fore-deck went entirely out of fashion, the tendency being to revert to flush-deck vessels, having 3hort poop, bridge house and forecastle.

*Modern Developments.―*The last few years have been remarkable for great development in special types of cargo vessels. While the vessels have frequently been specially designed to meet the requirements of the particular trades on which they are to be employed, certain general features apply to the lines of their develop­ment :—

1. In order to accommodate the maximum cargo possible in vessels of convenient size, the lines of the vessels have been filled out, giving block co-efficients which are frequently over 80 % and in some of the Great Lake freighters have reached 88%.

2. Such portions of the ship above the water as do not contri­bute usefully to carrying cargo, but would be measured for registered tonnage, are cut down to the smallest amount consistent with the provision of sufficient reserve of buoyancy and stability.