

Dry-docks.

The main dry-dock will be situated at Balboa, and will be capable of accommodating any vessel that can pass through the canal locks. It will have a usable length of 1,000 ft., a depth over the keel-blocks of 35 ft. at mean sea-level, and an entrance width of 110 ft. The entrance will be closed by mitre gates similar to those used in the locks. The dry-dock will have a rock foundation, and its sides will be lined with concrete. Its equipment will include a 40-ton locomotive train, with a travel on both sides.

For vessels of smaller type an auxiliary dry-dock will be built at Balboa, in lieu of the marine railways originally contemplated. It will have a usable length of 350 ft., a width at entrance of 71 ft., and a depth over the keel-blocks of 13½ ft. at mean sea-level. It will be provided with a floating caisson. The 40-ton locomotive crane on the main dry-dock will be utilized for this dock also. The work of providing space for these dry-docks, as well as for the new shops, is now under way, and requires the excavation of about 300,000 cubic yards of material from the north-west face of Sosa Hill. The excavated material is used in filling the site for the shops and terminal yard.

On the Atlantic side it is proposed to retain the old French dry-dock at Mount Hope, which has a usable length of 300 ft., a width at entrance of 50 ft., and a depth over the sill of 13 ft. at mean sea-level. It was the opinion of the Board in charge of the dock projects that the commercial requirements in sight would not warrant the construction of a dry-dock at Christobal capable of accommodating large vessels, in view of the building of a dry-dock at Balboa, to which any large vessel on the Atlantic side could be taken and returned, in case it was found necessary to dock it for repairs.

Coaling Plants.

The plans contemplate furnishing vessels with fuel, fresh water, and supplies of all kinds. The main coaling plant will be situated on the north end of the island, opposite deck No. 11, Christobal. It will be capable of handling and storing 200,000 tons of coal, with a possible increase of 50 per cent.; 100,000 tons of the total normal storage is subaqueous. The plant will have railroad connection with the mainland over a bridge of the bascule type, which will cross the French canal at a point about half a mile south of the Mount Hope dry-dock. The preliminary work on this plant has been begun by the Panama Railroad.

A subsidiary coaling plant will be situated at Balboa, at the outer end of the south-east approach wall of the dry-dock, having a frontage of 500 ft. thereon, adapted for discharging vessels. This plant will be capable of handling and storing 100,000 tons of coal, with a possible increase of 50 per cent.; 50,000 tons of the total normal storage is subaqueous.

Fuel-oil Supply.

In addition to coal, facilities will be provided at Christobal and Balboa for supplying shipping and the canal works with fuel oil. In line with this plan, four steel tanks of 40,000 barrels capacity each have been contracted for recently in the United States. A brief description of these tanks was published in the *Canal Record* of the 9th October, 1912.

Shops.

The main repair-shops will be built at Balboa, and are designed to maintain the following equipment: (1) Lock, spillway, and power-plant machinery; (2) water and land equipment retained for the maintenance of the canal; (3) rolling-stock and equipment of the Panama Railroad; (4) mechanical apparatus connected with the coaling plants, fortifications, cold-storage plant, wireless stations, &c.; (5) the making of repairs, &c., required by commercial vessels, and by private individuals and corporations; (6) the making of such repairs as may be required by vessels of the United States Navy.

The approximate floor-area of the principal shop buildings will be as follows:—

Building.	Area. Sq. Ft.
Machine, erecting, and tool shop	68,400
Forge-shop	32,400
Steel-storage shed	18,080
Boiler and shipfitters' shop	46,800
General storehouse	96,000
Paint-shop	12,760
Car-shop	38,800
Planing-mill, carpenter, and pattern shop	49,000
Galvanizing-shop	5,620
Lumber and equipment store shed	67,060
Steel, iron, and brass foundry	37,600
Coke-shed	3,070
Boilerhouse	2,500
Pattern-storage building	14,400
Round-house	24,000
Office building	9,500
Total	525,990

In addition to the above, a number of subsidiary buildings will be erected. All of the structures will be of permanent construction, with steel frames. The sides and ends will be left open for ventilation and light, protection from sun and rain being afforded by overhanging sheds.