

Panamax, Post-Panamax, and Sammax

A Primer on Ship Size

Panamax. The Panama Canal was opened in 1914 with two sets of parallel locks, 110 feet wide and 40 feet deep. From that time onward, any vessel intended for regular use in both the Atlantic and Pacific oceans, whether warship, cargo ship, or passenger liner, was built to fit those locks. The term “Panamax” came to be applied to ships of the maximum size, 965-foot overall length, 106-foot beam, and 39-foot draft.

The newest container ships of that size can carry nearly 5000 twenty-foot equivalent units (TEU) of containers. (The term TEU is used because containers are usually either 20 feet or 40 feet in length, although the 40-foot size is most common.)

Post-Panamax. There are ships larger than Panamax, sometimes called “single-ocean” vessels. The Suez Canal is sea level, without locks, and ships larger than Panamax can travel from Asia to Europe or the eastern US via that canal. The largest ships in service today are the *Emma Maersk* and her sister ships, container ships with a capacity of 14,770 TEU. The *Emma Maersk* has an overall length of 1302 feet, a beam of 186 feet, and draws 51 feet. This ship is the “design vessel” for the megaport at Southport planned by the State Ports Authority.

New Panamax. The Panama Canal Authority has in progress a project to construct a third set of locks and to enlarge the connecting channels. These new locks and channels, scheduled to open in 2014, will accommodate ships of 1265-foot overall length, 160-foot beam and 50-foot draft. Those are called “new Panamax.”

The typical container ship being constructed to the new Panamax standard has a capacity of about 8000 TEU. Designs vary; common dimensions are 1155 feet overall length, 141 feet beam, and 47.5 feet draft. Larger vessels could transit the Canal after 2014, but 8000 TEU is regarded as size likely to be most commonly used.

Sammax. In 2011 Maersk put into service the first two of an order of 16 new Panamax container ships with a capacity of 7450 TEU, the *Maersk Lima* and the *Maersk Luz*. These are distinguished from other new Panamax ships in that they draw only 39 feet. Called the “Sammax” class, they are intended for service to the east coast of South America, where the entrance channels to the harbors are typically 42 feet deep.



The Maersk Sammax class vessels have an overall length of 984 feet and a beam of 147 feet. The shape is optimized for operational efficiency; Maersk claims fuel efficiency 8% better than other ships of equivalent capacity.