

EXECUTIVE SUMMARY

- The Panama Canal is undergoing a massive expansion that will impact trade routes across North America
- Ships continue to increase in size to obtain greater economies of scale
- Ports on the East Coast are ramping up their capabilities in an effort to attract the larger ships the Panama Canal can accommodate
- West Coast ports are expanding capacity, adding technology and improving rail traffic systems in an effort to become more efficient
- Northern ports such as Prince Rupert and the ports in Washington State will likely be less impacted by the canal expansion than ports in Southern California.
- The Port of Seattle and the Port of Tacoma recently agreed to form an alliance to better compete

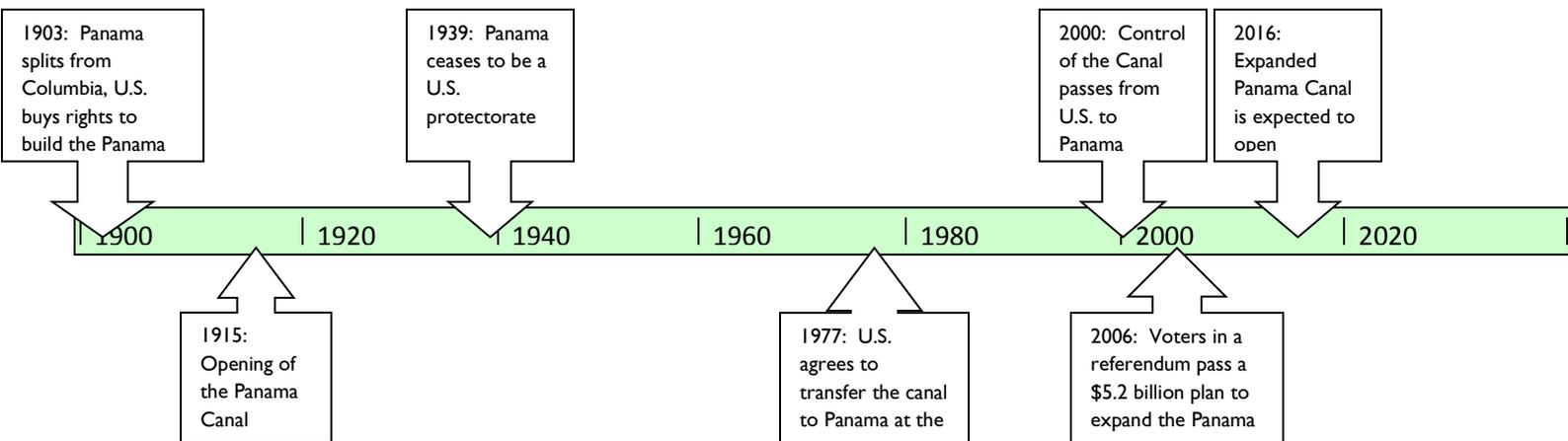


THE PANAMA CANAL

The Panama Canal is a 48-mile long waterway that traverses the Country of Panama, linking the Atlantic and Pacific Oceans. It consists of three lock systems, which limit the size of ships that can travel through. The Panama Canal saves around 8,000 miles of travel around the tip of South America significantly saving time and fuel for shipping companies.

The expansion, which started in 2007, consists of constructing two new locks and widening and deepening of the existing channel in specific locations. The expansion will allow ships larger than the current Panamax ships, capable of hauling up to 4,500 TEU, to traverse the region. The New Panamax ships, capable of hauling up to 12,500 TEU, will be the largest ships able to use the canal.

Panama Canal Timeline

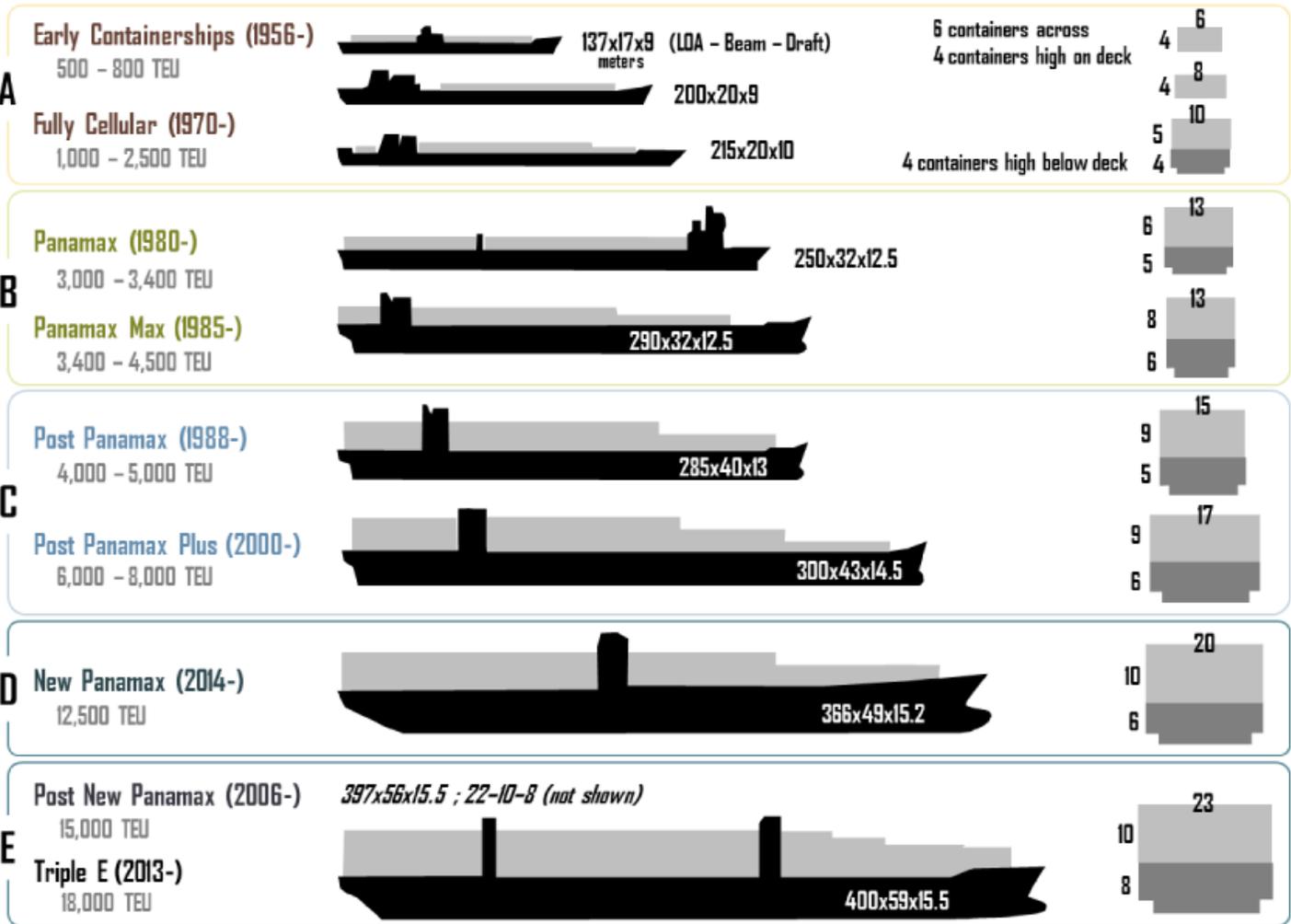


CONTAINER SHIPS

The current size of the Panama Canal is too small to allow all ships to pass through. Since the 1970s when the first ships were built exclusively for hauling containers, the size of the ships has expanded significantly. A large reason for this expansion is due to the economies of scale that occur from increasing the number of containers on the same ship, reducing manpower and fuel. The Panamax ships are capable of going through the

current canal while Post Panamax and New Panamax ships will be able to traverse the expanded canal. Class E ships, the largest of the ships, will not be able to move through the expanded canal. Despite the push to grow, not all ports are able to handle the largest ships.

A description of class A through E ships:



Source: Ashar and Rodrigue, 2012. Dimensions are in meters.

IMPACT OF PANAMA CANAL EXPANSION

The increased capacity of the Panama Canal will have long-lasting effects on trade routes. Ships that previously navigated around South America will now have the ability to traverse the expanded Panama Canal and arrive on the East Coast more quickly.

East Coast and Gulf of Mexico Expansion:

Shipments from China to the United States have long included large ships primarily stopping in West Coast ports such as Los Angeles or Long Beach. This cargo is then loaded on to trains and trucks, which carry the cargo across the United States. With the expansion of the Panama Canal, shippers will have the option of taking these larger ships through the Panama Canal and stopping in the ports along the East and Gulf Coast. Many of the ports including Savannah GA, Miami FL, New York NY, Norfolk VA, Baltimore MD, Jacksonville FL and Houston TX have current plans to expand. Some ports such as Baltimore and Norfolk are already capable of handling these larger ships. With the potential for additional shipping contracts, these

ports are making large investments to be ready when the Panama Canal is operational.

Impact on the West Coast:

The addition of new competition from the East Coast will almost certainly put some pressure on West Coast ports to become more efficient both in terms of expenditures and time. In response to this need, several ports on the West Coast are making additional changes to their ports and systems to increase capacity and the flow of inventory. Some of these changes can be readily seen as the two largest seaports in the United States, the Port of Los Angeles and the Port of Long Beach, upgrade facilities including dredging the bay to

accommodate larger vessels and expanding rail access to increase efficiency.

Another example of expansion is the Port of Prince Rupert, located in British Columbia, Canada, which has made great strides to compete with West Coast ports. This port has the advantages of closer proximity to Asia than other North American ports and the deepest natural harbor on the continent. Due to these advantages, the total number of TEU increased by 235% over the past six years. The port is on track to move just over 600,000 TEU in 2014. Additional plans are underway to increase this capacity to 2.0 million TEU by 2016 and additional capacity could be added farther into the future.

While the West Coast specializes in reaching inland regions, some ports will likely be less impacted by the Panama Canal expansion due to their location. Prince Rupert is positioned well to ship goods to Chicago and Memphis while the ports in Southern California have a competitive advantage when shipping to the Gulf Coast region. The additional time to pass Prince Rupert, move through the Panama Canal, unload at an East Coast port and ship goods to Chicago will add quite a bit more time than a ship that passes the Port of Los Angeles, moves through the Panama Canal and unloads in Louisiana

SUMMARY:

The opening of an expanded Panama Canal will certainly affect the flow of trade from Asia to North America. The impact of the expansion will take years to be seen but it is certain that the port system in North America will become more efficient as a result. With greater capacity, more efficient large ships will become more common resulting in a reduction in the number of ships making port calls, although time in port will likely increase. The East Coast has prepared itself for the expanded Panama Canal and will likely attract new business as shipping directly to the East Coast bests the combined shipping time to the West Coast, including land transit.

Even with these adjustments, the West Coast will still hold on to the majority of trade from Asia and will likely over time regain its dominant presence. Post New Panamax and other Class E ships, capable of transporting 15,000 – 18,000 TEU, will not be able to go through the Panama Canal. These more efficient ships will continue to ship almost exclusively from Asia to the Western Ports and over time these ships will become more and more common due to their efficiencies.

Competition for the Ports of Seattle and Tacoma will continue but it is more likely this competition will come from the North than from the South. As one of the first ports of call from Asia to North America, the time to ship goods to inland markets for Washington State is often shorter than ports farther south. This advantage is strongest when shipping to markets such as Minneapolis or Chicago and becomes weaker the farther south shipments go. The alliance between the Ports of Tacoma and Seattle, as well as the planned improvements to Terminal 5, will continue to keep these ports competitive. Prince Rupert offers the strongest competition to the Washington ports and with its expansion plans, the level of competition will only likely increase.

to serve the gulf region. As such, the more southern ports will likely be more heavily impacted by the canal expansion.

Ports of Seattle and Tacoma:

With the added competition over the last several years from ports to the north and ports to the south, the rival ports of Seattle and Tacoma have announced their plans to join forces creating an alliance that will allow them to better compete against the expansion by the East Coast ports as well as with existing West Coast ports as they vie for additional shipping contracts. The two ports will maintain asset ownership and port commission governance but will work together to position themselves to deal with the challenges and opportunities in the region.

Most of the Port of Seattle is able to handle modern ships but some upgrades are needed. The Port of Seattle is currently undergoing a Terminal 5 modernization plan. The terminal was closed starting mid-July and planning is currently underway, including how funds will be raised to support the heavy costs of this project. Although specifics are not yet determined, the modernization will likely include power upgrades that will be scalable for future use, berth deepening to allow larger ships and dock strengthening for larger cranes. The improvements are expected to be completed by 2018.