

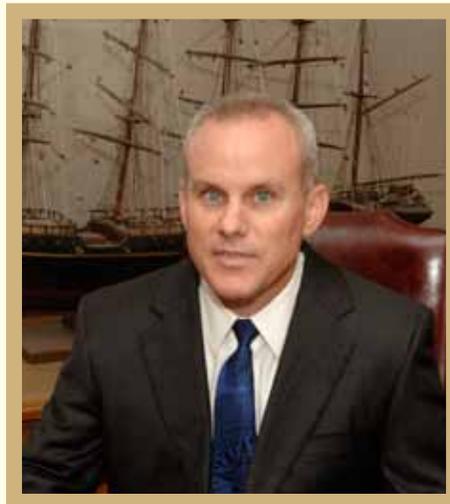
Texas Well-Positioned as Panama Canal Expands

Capt. Diehl, president of the Greater Houston Port Bureau, was U.S. Coast Guard liaison officer to the Panama Canal Authority from 2004 to 2006. A maritime safety, security and environmental response expert, he served on the operational managers board, charged with moving up to 14,000 vessels safely through the canal each year.

Q. What are the history and economic significance of the Panama Canal?

A. When it opened in 1914, the Panama Canal revolutionized shipping in the Americas by shortening the ocean route between the East and West coasts by 8,000 miles. The United States built the canal for economic and trade reasons, and President Teddy Roosevelt saw it as a military necessity. Before becoming president, Roosevelt served as assistant secretary of the Navy and was particularly concerned that it took the naval fleet—our defenses—60 days to travel across the country via Cape Horn at the tip of South America.

Once the U.S. decided to build the canal, the project overcame enormous natural barriers. Not only did the Americans wipe out malaria and yellow fever (diseases that defeated the French), they also solved rain forest water-flow problems. They dug through the continental divide, creating the largest artificial lake of its time with the largest dam in the world (until the Hoover Dam was built), and built the largest locks ever imagined. Those locks are located at both ends of the 50-mile system, and involve a series of three chambers through which ships are elevated 85 feet to the level of Gatun Lake so they can cross Panama.



The United States ran the canal until Dec. 31, 1999, when Panama assumed full responsibility for it. The canal figures in 15 percent of all U.S. oceangoing cargo and serves as a vital link in world supply chains.

Q. The Panama Canal Expansion Project, a \$5.25 billion undertaking funded in 2006, is scheduled for completion in 2014. Why did Panama decide to expand the canal, and what does expansion entail structurally?

A. Since the 1970s, by mixing vessel sizes and setting the order of movement, about 38 vessels per day pass through the canal, its practical capacity. Over the years, the size of ships using the waterway has grown, more than doubling in just the past 15 years, primarily because of increasing containerized cargo shipments.

Transpacific trade between Asia and the U.S. East Coast accounts for more than half of canal traffic. By 2020, post-Panamax ships (vessels larger than the current locks) are projected to comprise 30 percent of the global fleet. To attract this maritime trade, the canal seeks to double capacity by adding a

third set of locks. This entails construction of two complexes of locks—one on the Atlantic side, the other on the Pacific. These three-level locks will have water-saving basins that allow the canal to reuse a portion of the freshwater that would otherwise be released from Gatun Lake to the open sea. The project also involves construction of approach lanes to the new locks and widening/deepening of the existing navigational channels.

The canal is expanding so it can remain competitive, ensuring that Asia-U.S. East Coast trade routes do not shift west from Asia through the Suez Canal [in Egypt]. On average, the Suez route involves an extra day, rendering it less efficient. But, at the moment, it is the only ocean-bridging canal with lanes wide enough for the post-Panamax ships. Panama must meet the challenges of moving the larger vessels, and the expansion is a major step toward enhancing its position in international supply chains.

Q. In assisting with planning and preparation for the expansion, what did you perceive was the project's biggest challenge and how was it overcome?

A. I was not on the canal expansion team but knew of some of the issues it worked through. I think the design of the new lock chambers was the biggest decision. The authorities made an excellent choice, going with the European-designed rolling gates, which slide into the side of the lock when opened. By using sets of two of them at each end of the locks, they have provided redundancy, allowing canal personnel to perform maintenance and be more responsive if damage occurs. Each lock chamber also will have three water-saving basins, which will reuse 60 percent of the water in each transit. This makes the expansion environmentally sustainable by diminishing water loss and by preserving freshwater resources.

Q. How will the expansion affect U.S. container trade with Asia?

A. In 1999, about 86 percent of eastbound containers coming from Asia were unloaded at a West Coast port and shipped by train



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across the country to the East Coast. Eleven percent went by an all-water route through the Panama Canal. By 2004—when I arrived in Panama—the canal’s market share had risen to 38 percent. That’s the sheer volume of goods moving from Asia to the East Coast by skipping a West Coast port. Once the canal expansion is completed in 2014, the size of container ships able to cross will go to 12,600 TEU (twenty-foot equivalency units) from the current 4,800-TEU capacity. This will ensure that the canal can handle the next few generations of container vessels.

There are many variables at play when trying to figure out how larger ship movements will affect the East Coast ports and how rapidly change will come. I predict a slight surge in shipping traffic in 2015, but consumer demand is the major component to watch. Once the expanded canal settles into operation, cargo volumes will grow 2 to 3 percent annually over the longer term. The canal, the fleet and the ports can support this growth—though ancillary port equipment, labor, productivity and operating practices must work to keep pace.

What will be interesting to watch is the toll rate: How fast will the canal raise tolls to recover expansion expenses? Most likely, canal operators will limit growth to 2 to 3 percent per year by using the fees. For example, if there is a particularly high-volume year, they can raise tolls to slow growth, much the same way that the Federal

Open Market Committee uses interest rates to keep inflation inside a targeted range. Conversely, operators can maintain their current tariff structure if they need to encourage more movement. This pricing approach lets the canal system expand operations gradually without being compelled to bring on new staff and equipment immediately.

Q. Gulf ports process mostly bulk cargo and petrochemicals and relatively little container trade. Will they still be impacted by the canal expansion? How can Texas ports such as Houston expect to be affected? What preparations are being made?

A. The fastest-growing market for Houston regional ports is East Asia, with total tonnage increasing more than 30 percent in the last three years. We eagerly anticipate further steady growth with the opening of the new locks.

When it comes to moving cargo to the end consumer, Houston has an advantage: While East Coast ports will compete with each other for market share in the eastern U.S., Houston is the logical gateway into the middle of the country and the northern Mexico market. We have 20 million people living within 500 miles of the port, and our population in this area is growing at three times the national rate. Why is that important? Having a port so close to your customers means your cargo can go from a ship to a truck, as opposed to a West Coast port, where cargo must move to the customer in three steps—ship to rail to truck.

Infrastructure is key: On the land side, local ports are gearing up for increased traffic. For example, the Port of Houston Authority is building new facilities to accommodate cargo growth. The authority is tripling the design capacity of its container yards with the build-out of the Bayport container facility as well as improving access to road and rail hubs in the region.

One area of concern is maintaining dredging of our ship channels. Currently,

only 52 percent of the revenue generated from a nationwide harbor maintenance tax is spent to keep our channels deep and wide. This underspending will be a serious problem as larger ships arrive.

Q. What are the projections for the canal expansion’s overall impact in a decade or two?

A. As the ships and the market grow into the larger locks, we must adjust our supply chains. The larger ports will become hubs where—just like oil supertankers transferring crude oil to smaller ships—large ships will dock, unload their cargo and then move on to the next hub. This will create growth in short-sea shipping as smaller vessels move up and down the coast from the hub, delivering their part of the load.

We’ve already seen Panama gearing up by adding massive container yards on both sides of the canal and the corresponding construction of heavy, double-tracked short-line railroad capacity to enable ships to come to the canal, drop their containers off, then turn around as another ship pulls up on the opposite coast to take the containers from a railcar and move them to their port of destination.

I think we will see steady growth, regulated by the Panama Canal Authority, of 2 to 3 percent a year that allows all the players involved to increase their cargo handled while keeping congestion to an acceptable minimum.

