



Many Houstonians still think of the “Turning Basin,” shown here, as a singular place where ships turn around to head out to sea. Over the years as more docks appeared along the waterway, the Houston Ship Channel added many locations where ships could turn around, saving time and money.

All photos courtesy of the Port of Houston Authority unless otherwise noted.

What a Deep-water Channel to Houston Created

By Port of Houston Authority

Fifty-two miles long and recognized as a public works engineering marvel, the Houston Ship Channel gave birth to the nation’s busiest port, its leading export port, its leading break bulk port, and its largest petrochemical complex. Indeed, the town that built a port that built a city sums up the Houston Ship Channel’s first century.

Luring customers to a new deep-water port in Houston proved to be difficult, especially during World War I. A few ships ventured up the channel in 1915, but many ships’ captains were skeptical about the channel’s promised depth and were unwilling to risk larger vessels in unproven waters. Also, the first public wharves were not completed until a year after the dredging finished.

Houston’s leaders had worked so long and hard to convince Congress to fund the dredging of a deep-water port that they gave little thought beyond that accomplishment. Marketing the new facilities to potential customers proved more difficult than Houstonians imagined.

Civic leadership knew that regular steamship service was essential to inducing other shippers to stop at the port. Houston succeeded by using the same ingenuity that convinced Congress to fund the dredging. When the Southern

Steamship Company, a subsidiary of the Atlantic, Gulf and West Indies Lines, remained indifferent to the Port of Houston’s ovations in May 1915, Houstonians made the company an offer it could not refuse: a bond signed by 100 Houstonians promising to pay \$1,000 each if the line incurred any losses providing regular service to the port.

Stunned by the conviction and enthusiasm of Houston’s citizens, Southern Steamship Company inaugurated service and graciously declined the bond’s necessity. The company sent its first vessel to Houston, the *Satilla*, loaded with seventy-five car-loads of general merchandise.

Always ready to commemorate a new achievement, Houston’s mayor Ben Campbell declared a holiday for August 19th, when *Satilla* was expected. Preparations began for the largest barbecue ever held in the county, with extensive pits built for two blocks near the Turning Basin. The city anticipated 10,000 to enjoy a parade, a free dance, and a watermelon feast.

Mother Nature, however, had other ideas. A tropical storm moved through Texas delaying the *Satilla*’s arrival. Although flooding waters washed away buoys and beacons along the channel, the depth remained unaffected. Captain



After 100 Houstonians promised the Southern Steamship Line that they would each sign a bond to pay \$1,000 if the company incurred losses in offering regular service to the Port of Houston, the company declined the bond and sent the first of many ships, the *Satilla*, loaded with seventy-five carloads of merchandise.

Charles Crotty of the U.S. Army Corps of Engineers said, “The hurricane dispelled the fears of many Houstonians that the channel would be filled up by such a storm, and, perhaps, disappointed some of the port’s competitors who hoped and expected it to be filled.” The city postponed the festivities, and 2,000 people greeted the *Satilla* on August 22nd instead. The Southern Steamship Company remained a good customer of the Port of Houston for many more years.

Despite a slow beginning, certain factors ensured the deep-water port’s tremendous growth during its first dozen years. Demand for petroleum escalated quickly after World War I, and refineries sprang up all along the ship channel.

Cotton remained an important cargo. By 1919, Houston was the largest spot cotton market in the world, and second only to New Orleans in the number of cotton orders handled. The deeper channel meant that Houston could finally begin shipping this valuable commodity.

The Port of Houston sent the first direct shipment of cotton from the U.S. to Europe. The *Merry Mount* loaded “until not another bale could be stuffed into her holds” left on November 16, 1919, with more than 23,000 bales. Cotton companies rushed to build compressors and wharves along

the channel to take advantage of the new access to waterborne transportation. Cotton exports grew from 275,879 bales in 1920 to 2,069,792 in 1930. Houston led U.S. ports in the cotton trade and ranked second in the world.

New facilities helped develop new customers for the port. A grain elevator opened in 1926 and soon grain arrived from America’s heartland. So much, in fact, that a bond issue passed four years later to more than triple the elevator’s capacity.

Trade flowing through the port contributed to those whose livelihoods depended on it. In 1914, a longshoreman worked a ten-hour shift and earned \$.30 an hour for day labor and \$.40 an hour for work at night. By the end of the 1920s, wages had risen to \$.80 an hour and up to 50 percent more for those with specialized skills.

The growth of Houston’s port was phenomenal, and the citizens’ faith in this venture proved more than worthwhile. In 1919, only 157 ships called at the Port of Houston, carrying 1,247,972 tons of cargo. In 1930, 2,108 ships carried 14,538,452 tons to Houston’s docks. The port ranked third in foreign exports, and its customers included almost eighty shipping lines making regular calls.

Such bountiful results deserved another celebration. The cruiser *Houston* was invited to the city for Navy Day on October 27, 1930. School children, citizens, and business people had participated in an impressive letter-writing campaign imploring the secretary of the Navy to name the ship after their city. So many letters swamped the secretary’s office that he called Mayor Oscar Holcombe personally to tell him to stop the letters as the city had won.

Citizens watched the mighty ship sail up the channel. The largest ship to have navigated the Houston Ship Channel, the cruiser drew 250,000 visitors during its week-long stay. At a banquet at the Rice Hotel, Senator Tom Connally predicted the port would be second in the nation by 1940. John Henry Kirby, who had made his fortune in lumber, pushed aside any reminiscing and declared to those present, “Why, my friends, we are only getting started!”

Houston’s port and civic leaders also aimed their



The USS *Houston* monument in Sam Houston Park displays the bell recovered from the ship, which was sunk in the Sunda Strait on March 1, 1942. An annual commemoration is held at the monument to honor those who lost their lives in the battle.

Photo by Lindsay Scovill Dove.

The USS *Houston* made her way up the Houston Ship Channel in 1930. Approximately 250,000 people visited the ship.

Photo courtesy of the US *Houston* (CA-30) Photograph Collection, Digital Library, Special Collections, M. D. Anderson Library, University of Houston.



marketing efforts at the new oil barons drilling in Texas and encouraged them to locate refineries along the Houston Ship Channel, safe from Gulf hurricanes such as the Great Storm of 1900 that devastated Galveston. By the start of the Depression, forty oil companies had offices in Houston, including the Texas Company (now part of Chevron), Humble Oil and Refining Co. (now part of ExxonMobil), and Gulf Oil Corp. (now part of Chevron). Sinclair Oil Co. built the first major refinery in 1918 on 700 acres along the channel.

One of the first and most successful oil moguls was Joseph Stephen Cullinan, founder of the Texas Fuel company and the Texas Company. Cullinan made a great impact on the Houston Ship Channel when in 1919, he and Ross S. Sterling petitioned the U.S. Army Corps of Engineers to further dredge the ship channel. Their reasoning was simple — large tankers drawing twenty-seven feet could not negotiate the channel, thereby hurting refineries' business. For example, the Petroleum Refining Company reported a loss of \$1.3 million in 1918 because vessels could not navigate the channel to the refinery. Congress made appropriations to fund the project in 1921, and by 1925, the channel reached a depth of thirty feet.

WORLD WAR II

The transportation industry continued to evolve between the great wars. As roads and tires improved, trucks emerged as competitors to the railroads, especially for short hauls. Rail could not match their flexible pick-up and delivery service and ability to carry smaller loads. Men displaced from their jobs by the Depression became entrepreneurs with the acquisition of a truck. The trucking industry emerged so quickly that by 1932 Texas enacted governing laws and the federal government followed suit in 1935.

The Port of Houston recovered steadily after the Depression's sudden onset. Tonnage increased modestly each year after 1932, but competition remained fierce until World War II.

Despite slower business, port improvements continued to keep pace with the shipping industry. Petroleum tankers grew in size requiring a deeper channel. In 1932, a project was approved to deepen it to thirty-two feet and widen it to 400 feet at Galveston Bay and 300 feet at Morgan's Point. Three years later, the depth was increased to thirty-four feet and the bends around Morgan's Point were eased as well. Lights were installed along the channel for the first time to enable navigation along the channel around the clock.

Industry continued to expand along the Houston Ship Channel. Taken as a sign the Depression had ended, Champion Paper and Fibre Company bought 160 acres on the channel and built a \$3.5 million paper mill that employed up to 500 persons.

With Hitler on the move, Americans watched anxiously. Shipping became costly as insurance and cargo rates soared. Some shipping lines discontinued service to Houston. Competition amongst the Gulf ports surged, while East and



The Port Commission ordered the new fireboat Captain Crotty after the Texas City disaster. The boat was named for Charles Crotty who had supervised dredging the channel in the early 1900s and later served as assistant port director from 1922-1945.

Photo courtesy of the Houston Metropolitan Research Center, Houston Public Library, RGJ0001-0188.

West Coast ports shared all the wartime cargo.

By 1943, ship arrivals sunk to its lowest level since 1923 with tonnage reaching only 15,047,871. Luckily, industrial development along the channel reached the most active levels in the area's history.

The military requirements of World War II led to the rapid development of new industries in the Houston area. Demand for motor fuels, especially aviation gasoline, accelerated the expansion of Houston area refineries. New plants converted previously wasted refinery gases into chemicals for the manufacture of explosives and synthetic rubber. The long-range transmission of natural gas and petroleum pipeline operations began and soon established Houston as the nation's major center for this activity.

Shipyards flourished, building subchasers and Liberty ships. The Dickson Gun Plant, operated during World War II by the Hughes Tool Company of Houston, produced centrifugally cast gun tubes of various calibers. The plant occupied 124 acres on the north shore of Buffalo Bayou and was constructed in 1942, at a cost of \$29 million.

War spurred the development of the metals industries, both ferrous and non-ferrous. Sheffield Steel Company built the Southwest's first fully integrated steel mill on 600 acres adjacent to the Houston Ship Channel in 1942 for \$17 million. Magnesium production from sea-water by electrolysis grew into a major industry, led by the Dow Chemical Company in Brazoria County. The aluminum industry also became well established in the region.

POST WAR ECONOMIC BOOM

With Japan and much of Europe in ruins, the U.S. government worked to rebuild these nations and the world's economy. This surge in activity caused the U.S. economy to grow dramatically, and this economic bounce took the Port of Houston along with it. Cotton, grain, petroleum products, vehicles, and other goods were in demand, and the port's

tonnage figures reflected the increased trade. The rebound started in 1945, when tonnage increased to 23.9 million tons up from 17.0 million tons in 1944.

The figures climbed to new records for the next three years: 31.8 million tons in 1946, 34.3 million tons in 1947, and 38.9 million tons in 1948. The value of the cargo also increased and exceeded \$1 billion for the first time in the port's history in 1948. That year also marked an important milestone for the Port of Houston when it became the second-largest port in the United States in tonnage, a position it still holds today.

In 1947, the U.S. Army Corps of Engineers recommended that the channel be deepened to thirty-six feet. Two tunnels were excavated under the ship channel to handle increasing traffic, and once they opened, two ferry boat services on the channel ceased.

Along the Houston Ship Channel, petroleum companies took over the wartime industrial plants and began producing peacetime products. By 1950, the developing synthetic rubber industry spent \$250 million on new construction in the Houston area, and industrial employment jumped from 22,000 to 64,000.

The most serious industrial accident in U.S. history occurred on April 16, 1947, when fire broke out on the French freighter *SS Grandcamp* docked in Texas City. With the ship loaded with ammonium nitrate, a compound used to make dynamite, the fire set off a series of explosions that killed 600 people and injured another 3,000. Property damage exceeded \$50 million, and it took two days to get the situation under control. Shortly after, the Monsanto Chemical Company announced the rebuilding and expansion of its plant, which renewed confidence in ship channel residents as they rebuilt Texas City.

The disaster prompted the Port Commission to order a new smaller, faster fireboat equipped with more modern equipment than the original fireboat purchased in 1926. The

The rise of containerization has revolutionized shipping in the modern era.

Captain Crotty, christened in 1950, helped the port maintain its reputation for safety despite the devastation of Texas City.

The 1950s also saw major improvements at the port's public wharves. New state legislation in 1957 dramatically changed how the port did business when it permitted the Port Commission to issue long-term revenue bonds to finance expansion from future earnings, and general tax bonds could be approved by a simple majority of the voters. Further, legislation allowed up to 5 percent of the gross income from the public docks to be spent on promoting the port. Between 1957 and 1965, more than \$37 million was invested in improving the port's public wharves.

The port commission ordered its third inspection boat, the *M/V Sam Houston II*, in 1957. Immediately more popular than its predecessors, it still operates today. Able to accommodate 100 passengers, it carried more visitors in its first five months of operation than the old vessel could in a year.

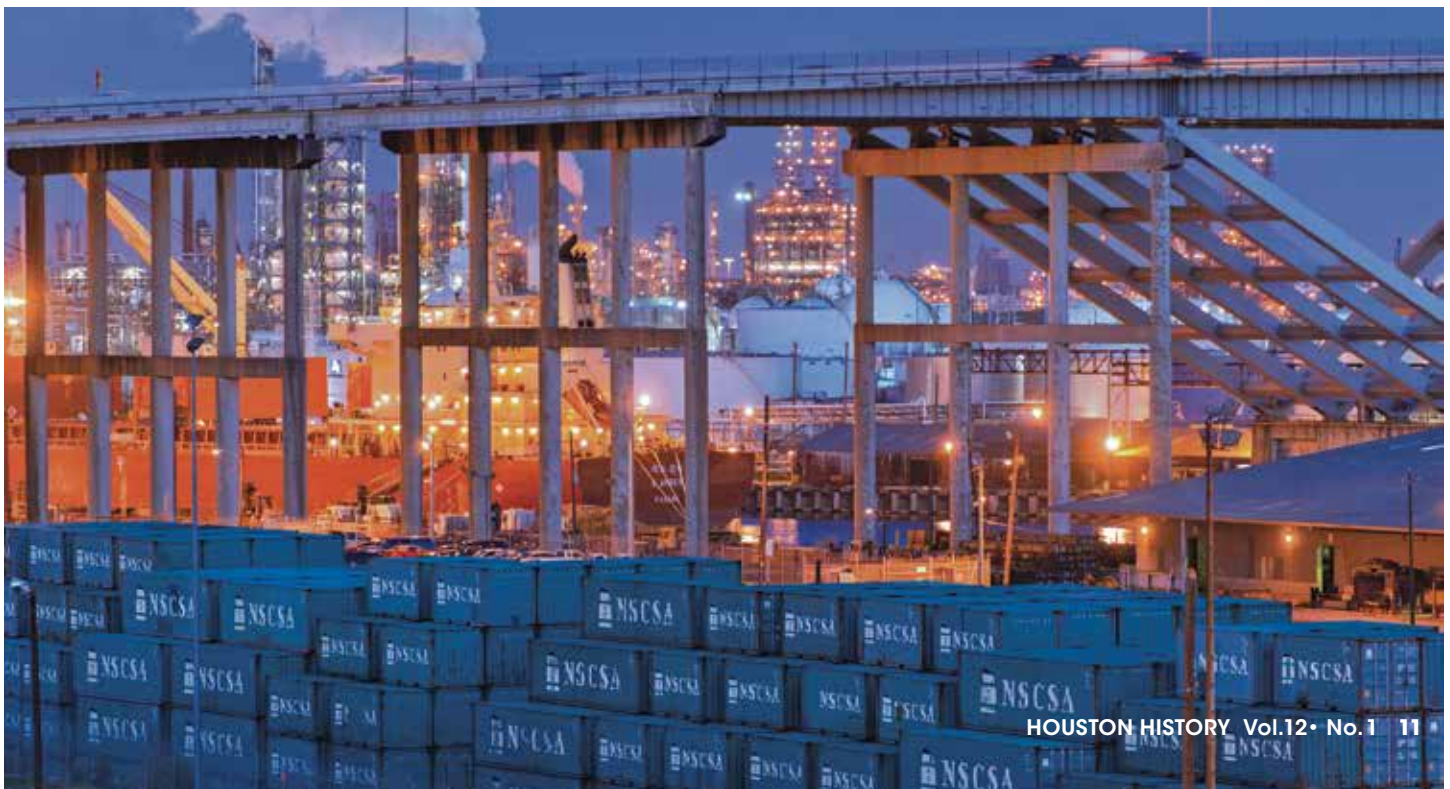
In 1961, the Port of Houston became a deciding factor in the government's selection of Houston as NASA's new headquarters. This outstanding development brought Houston to the forefront of the nation's imagination often for such extraordinary accomplishments as man first setting foot on the moon.

CONTAINERIZATION STARTS IN HOUSTON

Innovations and inventions often change the course of an industry. The shipping container forever changed the shipping of goods throughout the world, and the Port of Houston played a modest role in making that happen.

A prophetic event occurred as the head of a trucking company, Malcolm McLean, sat waiting all day while his truck's cargo was unloaded onto a ship. Watching this time-consuming task, he wished that his truck could simply be placed on the ship instead. The more he thought about it, the more it made sense.

McLean bought two oil tankers and transformed the



trucks' trailers so that they could be stacked on his new ships. On April 26, 1956, the world's first container ship, the *Ideal X* carrying fifty-eight 35-foot containers and her normal liquid cargo, sailed from New York to Houston, transforming the shipping industry. Soon called "Trailer-ships," they were loaded with either shore-based cranes or on-board cranes. McLean named his new company Sea-Land in 1960.

The partnership with Malcolm McLean also flourished, and for many years, Houston was the only port in the Gulf of Mexico visited by Sea-Land's container ships. By 1966, McLean sent the first transatlantic container shipment, which arrived in Liverpool, England, four weeks faster than traditional cargo ships of the time.

Why? Using containers for ocean shipping saves the tedious, expensive job of unloading cargo from a truck or a railroad car, loading it into the hull of a ship, and reversing the process at the destination. Ships often needed to be in each port of a route for ten days to load and unload.

Containerization changed that. A standard container can carry up to twenty tons fully loaded. It keeps all the items in a shipment together, and protects them from the elements, damage in handling, and theft. A container ship spends only a day or two at port, and then it is on its way to the next destination. Containerized shipping revolutionized the industry.

By 1969, the first container shipments from Houston went to Europe, and soon a new sixteen-acre container marshaling yard had to be built to accommodate the containerized cargo coming through Houston. Capable of handling 800 containers, it quickly proved insufficient with Sea-Land alone moving 15,000 containers through Houston annually.

BARBOURS CUT: THE GREAT GAMBLE THAT PAID OFF

By 1970, more than half of the non-bulk freight on the North Atlantic was moving in containers, and experts forecast that half of the non-bulk Pacific freight would soon follow suit. At the Port Commission meeting in August 1970, recently appointed chairman Fentress Bracewell announced the decision to build a marine terminal at Barbours Cut to handle only containerized cargo and with distinct advantages over any other such facility planned in Gulf ports. Covering more than 600 acres, with a forty-foot-deep sea channel, a 1,600-



A cruise ship prepares to depart from the Bayport Cruise Terminal on the western side of Galveston Bay.

foot turning basin and 17,141 feet of berthing space, the new terminal's projected cost was \$100 million.

The first berth in the Barbours Cut container terminal opened in 1977 as the only facility of its kind in the Gulf of Mexico. Sea-Land signed on as the Port Authority's first customer there, and its subsequent owner Maersk remains a major client at the terminal today.

BAYPORT

Barbours Cut Container Terminal made the Port of Houston the largest container port on the U.S. Gulf Coast. Nearly sixty years after the very first container ship sailed to Houston, the port handles 66 percent of all of the Gulf's container activity. The final berth opened at Barbours Cut in 1990, and almost immediately, continued growth of container shipping caused the Port Authority to run out of room. In 1999, Harris County voters approved funds to build a \$1.2 billion container terminal at Bayport to triple the Port Authority's container handling capacity.

After completing the engineering plans but before construction of the Bayport Container and Cruise Terminal began, growth of the container business changed for the Port of Houston. A little over a decade ago, container trade between East Asia and Houston was virtually non-existent. Before 2002, no direct shipping service came to Houston from Asia via the Panama Canal.

This market opened up for Houston because labor and capacity issues at West Coast ports caused shippers to rethink and diversify routes. Houston stood out as an excellent alternative due to the port's stable relations with labor and overall business-friendly environment. Houston also stood out due to an old real estate adage: location, location, location. The city offers excellent transportation connections via road and rail to the consumer-rich markets throughout Texas to the Midwest.

Major retailers starting with Wal-Mart came into the Houston market, built gigantic distribution facilities either near the port, or as far away as Katy in the case of Rooms-To-Go, and began receiving regular shipments. These distribution facilities easily stocked stores throughout the region, state, and beyond because the transportation infrastructure is good, and the port works with TxDOT to ensure that highway growth matches demand.

The Port of Houston's trade with Asia through the Panama Canal increased 85 percent from 2003 to 2011 with containerized cargo being the leading business line.

Today three regular services go all-water through the Panama Canal to East Asia: COSCO's "Gulf of Mexico Express," Hanjin Shipping's "All-Water Texas Service," and CMA CGM's PEX3 service.

Currently the Panama Canal is expanding to accommodate larger ships with expected completion in 2016. The Port of Houston is preparing for the increased trade an expanded Panama Canal will bring. The first century of the Houston Ship Channel developed Houston into an international business center. The next century should bring even more economic opportunity for the town that built a port that built the city. 🐾