

World's First LNG Export Terminal

A First-Hand Account from American Tank & Vessel



01 Calcasieu River, Lake Charles, LA LNG storage tank and barge mounted LNG liquefaction unit



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Having helped design the first successful LNG export project, William J. Cutts, CEO of American Tank & Vessel (AT&V), was a key factor in establishing the future of LNG exporting.

THE BIRTH OF LNG EXPORTS

A plethora of professionals can reference different points in history as the birth of LNG, but "Constock Breakthrough," a phrase first coined by C.M. Sliepcevich, established the birth of LNG flat bottom storage and LNG shipping. In 1951, William Prince conceived the idea of liquifying natural gas on the Gulf Coast and barging it up the Mississippi River to Chicago. Although this idea was not economical, Prince continued to work on the concept and realized countries without natural gas had better markets. Prince, then President of Union Stockyard and Transit Company and a trustee of the 30 company, Prince Trust, conceived the idea in 1951 and started propelling it into motion. By 1954, with a contract to Ingalls Shipbuilding in Pascagoula, MS., Ingalls would develop and construct a barge-mounted LNG liquefaction plant. By the fall of 1957, Prince had a customer, British Gas Council, and moved quickly to fill the other two gaps, storage and transportation. The storage and terminal site would be the Calcasieu River near Lake Charles, LA. Chicago Bridge & Iron (CB&I) would be given a contract for the flat bottom tank, design, fabrication, and erection.



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Calcasieu River, Lake Charles, LA LNG storage tank, drawn by Cutts, and barge-mounted LNG liquefaction unit

A BRIEF HISTORY OF WILLIAM J. CUTTS EXPERIENCE AND THE CONSTOCK LNG STORAGE TANK

In 1955, William J. Cutts, current CEO of AT&V, had graduated from the Alabama Polytechnical Institute (now Auburn University) with a degree in engineering and acquired a position at Chicago Bridge & Iron (CB&I) in their Birmingham office. By 1958, Cutts was a member of the CB&I Drafting Department. "One day, a day like any other, my boss, Francis Garrett, handed me a work order to draft a tank. I didn't know at the

time how this tank would change the world", Cutts stated. The process was simple, Garrett would receive instructions from headquarters often generated by Leonard P. Zick, previous V.P. and Chief Engineer at CB&I, then hand them to one of the draftsman to be detailed. For Cutts, it was his lucky day. Cutts went on to say, "the tank I would draft would become the world's first successful flat bottom LNG tank. I had no knowledge about the industry disasters of the past and it would not be a big concern because the checker behind me had 10 years' experience and I am sure that

my boss and Zick would see the drawings on such a unique project”.

Thus, the process began. The inner tank would be made out of aluminum and 67' in diameter. Next, there would be a 3' perlite insulation gap with an outer carbon steel tank. Cutts recalled, “I learned that not only did I know very little about perlite, but none of us did.” Compaction of the perlite and having to top-off the tank was not something the CB&I team anticipated. After Cutts finished the drawings, and received feedback from the checker, it was time for the next job. Cutts was busy and recalls CB&I turning down work. Cutts said, “I remember telling my boss that the tank business is a great place to be. 63 years later I still feel the same way.”

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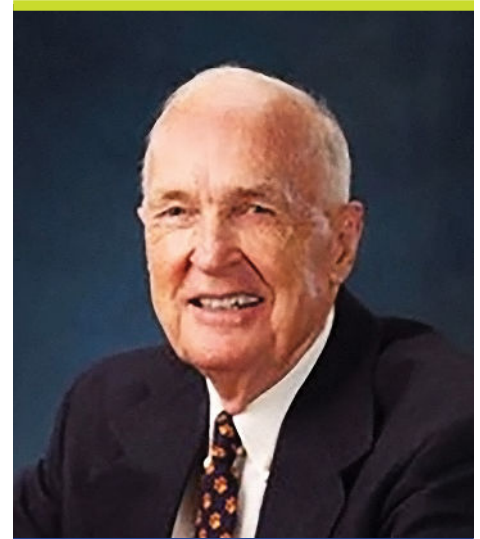
METHANE PIONEER, WORLD'S FIRST LNG SHIP

According to Helderline, *Methane Pioneer* was built in yard number 344 by Walter Butler Shipbuilders in Duluth, Minnesota as a Type C1-M-AV1 cargo ship for the United States Marine Commission. The ship was delivered to Marline Hitch in July 1945. As World War II came to an end, shortly after the ship was delivered, Hitch was sold privately under the name Don Aurelio in 1946. In 1951, the ship was renamed Normarti. In 1958 Normarti was converted into the

world's first LNG tanker at the Alabama Drydock and Shipbuilding Company, located in Mobile, AL. That same year, Normarti was renamed *Methane Pioneer*.

On January 28, 1959 the *Methane Pioneer* was loaded with the first LNG dispatch from the new flat bottom tank and ready for its maiden voyage to Canvey Island in the UK. It had taken 9 years since Prince had conceived the idea to solve his local power company problem in Chicago. The Lake Charles facility continued to export LNG until they met the qualifying requirements of the contract.

Methane Pioneer, originally built in 1945 to be used as a cargo ship in WWII, had a deadweight tonnage (DWT) of 5,000 tons. The LNG Ship made its maiden voyage, transporting LNG, between Louisiana and the islands of Canvey in Great Britain. For eight years, the vessel transported LNG

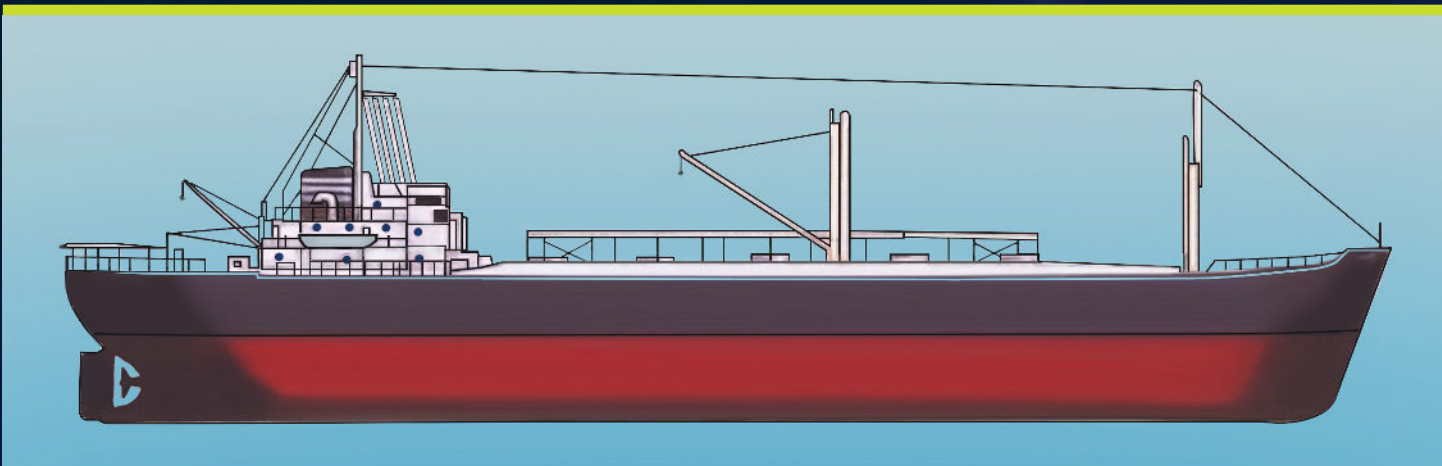


03 William J. Cutts, CEO of AT&V

in its 2,000 ton aluminum storage holds. Following its success as an LNG carrier, *Methane Pioneer* was re-commissioned to be utilized as a storage vessel for LNG consignments before being decommissioned in the early 1970s.



04 Methane Pioneer in Louisiana loading world's first export cargo of LNG bound for UK, January 1959



05 M.V. Methane Pioneer Conversion

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