

# Of Plans and Planes

**Tensor Engineering founder and president Walter J. Gatti shares his experiences from more than 50 years in the structural steel industry.**

BY WALTER J. GATTI



Rob Downey Photography

Gatti and his two-engine Falcon 20.

**MY FASCINATION WITH STEEL STRUCTURES STARTED BACK IN 1951 WHILE COMMUTING FROM THE BRONX TO BROOKLYN WHERE I WAS ATTENDING THE STATE OF NEW YORK COMMUNITY COLLEGE.** The daily trip went past some of the most famous steel bridges we know: the Brooklyn, Manhattan, and Williamsburg bridges. My goal was to get a degree in structural technology, which covered courses in strength of materials, steel and concrete design, shop fabrication, and steel detailing. I looked forward to a career involving field construction projects but found I had a talent for detailing, which I enjoyed, and as a result excelled in.

After graduation in the spring of 1952, I was hired by Babcock & Wilcox in Cleveland, Ohio as a steel detailer, which involved detailing structural steel and piping for power plants. I had to move to Cleveland and in doing so had my first airplane ride. It was in a Viscount turboprop, and it inspired me to one day learn how to fly. After a year in Cleveland, which was one of the coldest places I ever lived, I returned to New York City and worked for a couple of companies, one being a steel fabricator in New Jersey. The daily commute again took me across several steel bridges including the George Washington Bridge. I marveled at the magnificent structures and wondered how such large structures could ever be built. I was determined to find a job detailing steel bridges.

In 1953, I got the opportunity. A company that was producing shop drawings for the fabricator I worked for as an estimator wanted to know if I could estimate a detailing price on a bridge job they were bidding. Being 20 years old and capable of doing anything, including scaling tall buildings, I responded with, "Of course." The project was the reconstruction of the Third Avenue swing span over the Harlem River in New York City. They got the job and offered me a position to start a bridge detailing section in their company. I accepted and struggled through the job, since I knew nothing about bridge detailing. When you are thrown into the middle of a lake, you learn to swim quickly or drown. I avoided drowning by hiring some capable steel detailers and learning from them as fast as I could.

In the following years, the steel bridge industry exploded with the advent of the Interstate Highway Program. Great steel structures were built, like the Verrazano-Narrows Bridge, Mackinac Straits, James River Bridge, and the Chesapeake Bay Bridge. All of the major structures, and a majority of the smaller structures, were made of steel. The steel industry was at its peak. Thousands of detailers were employed, with some companies like Bethlehem Steel and American Bridge employing close to a thousand detailers each.

There were hundreds of bridge fabricators doing a landslide business, and it seemed like it would never end. In 1958 I was running a bridge detailing office of almost 40 detailers. After working a minimum of 80 hours a week for five years, I decided to go into business with a structural engineer. He concentrated on building a design section and I pursued the bridge detailing business. We formed Tensor Engineering Company and started with four detailers and one designer.

On the personal side, in 1962 I began to pursue my other ambition and began taking flying lessons. I got my private pilot's license in 1962 in a single-engine Piper Comanche. I then started flying around the country, gaining new customers and expanding our fabrica-

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tor base for the bridge detailing portion of the business.

The steel detailing business continued to grow. By 1964 we had over 20 employees and had detailed components of many large structures, such as the Staten Island approach to the Verrazano-Narrows Bridge, the Throgs Neck Bridge, Robert F. Kennedy Memorial Stadium, and an unusual structure for the Kennedy Space Center. The structure was the largest moveable structure in the world, and was built to launch the Saturn Rocket. This project brought me to Brevard County, Fla., which was my first trip to Florida.

I fell in love with the palm trees and sandy beaches and thought that this would be a great place to live someday. This project also gave me the opportunity to fly in a jet aircraft when I had to attend a business meeting in California. It was an American Airlines 707, and I was totally fascinated flying at 35,000' at speeds over 500 miles an hour. I dreamed that one day I would learn to fly a jet.

By the late sixties, the Interstate Highway Program started to slow down. Most of the bridges had already been designed and many were under construction. It was during this time that the space program had been progressing at record speeds, and the Apollo Program was well on its way. One of the biggest steel projects at the time was the construction of the Vehicle Assembly Building (VAB) at the Kennedy Space Center. It would use over 100,000 tons of steel, and a group of New York detailers organized a joint venture to bid the job. That is when I met John Alonso and Lenny Ross, both detailers. Even though we didn't get the job, we still remain good friends to this day.

Little did I realize at the time, but this was the beginning of the end for the major steel fabricators in this country. When Bethlehem Steel and American Bridge lost the fabrication of the World Trade Center, which had over 200,000 tons of steel, their dominance in the industry started to erode.

In the years from the mid-50s to the early 1970s, steel prices and the cost of labor continued to rise unchecked. The management of the major steel producers were busy playing golf, so they kept giving in to union demands. Increases in wages and benefits drove the steel prices to a point where alternate materials like concrete started to cut into the bridge construction industry. The steel unions had obtained fringe benefits that were completely out of line with the rest of the construction

industry. Some employees got 12 or more weeks of vacation a year. This immobilized fabrication production during the summer months. By the mid-1970s, Bethlehem informed the union that unless it took a cut in pay and benefits, it would have to terminate its fabrication business. The unions refused to budge and Bethlehem closed its fabricating plants, laying off thousands of employees.

A few years later the same scenario happened at American Bridge Company. By the late 1970s, many of the major bridge fabricators were gone or had reduced their forces. The steel industry was on its decline

## Contracting issues are a major concern for the future of the steel fabrication industry.

and was losing its market share to concrete structures, both for bridges and buildings.

Meanwhile, Tensor Engineering, which maintained a staff of about 15 detailers, continued to keep busy during the decline of our larger competitors, who were retiring or closing their businesses due to the lack of new and large projects. In 1968, we purchased our first computer system—an IBM 1130—and started developing unique and specialized software to calculate complex bridge geometry. It was the basis and formulation for the same software we use today.

I had also further developed my flying skills and owned an aircraft charter business operating out of LaGuardia Airport. We had several aircraft, including a turbo-prop, which I was qualified to pilot. I developed multi-engine and instrument pilot ratings and had accumulated over 1,000 flying hours.

In 1971, after being stranded on the New England Thruway for four hours due to a bridge tender strike, which took place the same time as transit workers' and garbage workers' strikes, I decided to move the company to Florida. Only half of the office accepted my offer to relocate them and to help them buy their own homes. The reduced staff was a benefit—the 70s were a tough time in the construction industry due to a lack of bridge projects and sky-high inflation.

I had diversified my business interests and used the spare time and money to invest in the local real estate market. When we

moved to Florida in 1972, Brevard County's economy was depressed due to the end of the space programs and the moving of most of the technical support to Houston. Real estate prices were at an all-time low, with three- and four-bedroom homes on the water selling for \$25,000. This all changed in less than a year when Disney built Disney World south of Orlando, which is less than 50 miles west of Brevard County. All of my real estate investments soared, and properties that I had bought for interest only with no money down quadrupled in price. Since then I have owned and sold millions of dollars of real estate.

I also formed several aircraft leasing companies and have operated over 10 jet aircraft, for all of which I am qualified to be Pilot-in-Command. I have accumulated over 4,000 hours of jet time and obtained an Airline Transport Pilot (ATP) rating, the highest pilot rating one can achieve. I have been type-rated to fly several different jets, including a three-engine Falcon 50, which I currently own and fly.

The detailing industry improved in the 1980s, but the number of steel bridges continued to decline as more and more structures were being built in concrete.

There were several bridge failures due to poor maintenance and design, and a new highway bill designed to replace aging and functionally obsolete bridges was enacted by Congress. Newer materials, such as weathering steel and high performance steels, were introduced, as well as new coating systems. But these advances did little to upset the balance, and today the number of concrete structures built outnumbered steel almost two to one. A major reason the concrete industry made gains is through standardization, which simplified the design and construction process.

Over the last 47 years in the detailing business, Tensor Engineering has detailed over 3,000 bridges that represent over 2 million tons of structural steel. Many of these were award-winning steel structures, such as the Charles River cable-stayed bridge over the "Big Dig" in Boston. We also detailed the Storrow Drive Bridge, which is parallel to this structure. It is the largest single box girder bridge in the United States. In 2003, we finished detailing an unusual cable-stayed bridge, the Turtle Bay Sundial Bridge in Redding, Calif., which was featured in the October 2004 edition of *Modern Steel Construction* magazine (available online at [www.modernsteel.com](http://www.modernsteel.com)).

Contracting issues are a major concern

for the future of the steel fabrication industry. General contractors are too eager to seek the low bid rather than the most qualified bid. And fabricators too often play their game and reduce their bids in an endless spiral toward financial doom.

The problem is exacerbated by bad payment terms. The fabricator has to buy the steel and pay his workforce upfront but too often doesn't receive payments until the entire project—not just the steel package—is complete.

Today, with the passage of the TEA-21 highway bill, the fabrication industry has an opportunity to improve its pricing policy, eliminate the contractor-led auctions, introduce standardization of material sizes and specifications, and share new technology. The industry must also create a strong steel bridge alliance that pursues political influences to formulate programs and rules that benefit the use of steel structures. A strong steel industry is essential to our national security and economic well-being.

Someone once said if you want to make a small fortune in the fabrication industry, start with a large one. It is time for the fabricators to stand up for their rights and improve their business practices. I hope they can do this—I am too young to retire!

*Is there a steel industry professional whom you think MSC should feature as a "person to know"? Send your suggestions to Lena Singer, Assistant Editor, at [singer@modernsteel.com](mailto:singer@modernsteel.com); or Keith Grubb, Managing Editor, at [grubb@modernsteel.com](mailto:grubb@modernsteel.com).*

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