



*Connections*  
**THROWBACK**

Winter 2010





Much appreciation to  
the following individuals  
for their contributions  
to this issue:

Betty Arenth	Anne Madarasz
Don Barto	Mike McCoy
Jack Bryce	Bill Pascoli
Wayne Davis	Brian Peterson
Beanie DeNoble	Wilbert Ridder
Brian Furman	Dave Rees
Bill Gibson	Ben Reeve
Jerry Goodwin	John Schober
Chuck Hardt	Charlie Shipp
Leo Kupiec	Ron Tatum
Kenny Lewis	Frank Vespaziana



Designed & Published by  
Kadi Camardese  
Communications Manager  
American Bridge Company

American Bridge as we know it today is the conglomeration  
of 26 bridge and structural companies merged in 1900.  
The companies were, are:

American Bridge Works, Chicago, IL  
Berlin Iron Bridge Company, East Berlin, CT  
Buffalo Bridge Company, Buffalo, NY  
Detroit Bridge and Iron Company, Detroit, MI  
Edge Moor Bridge Company, Edge Moor, DE  
Elmira Bridge Company, Elmira Heights, NY  
Groton Bridge Company, Groton, NY  
Gillette-Herzog Manufacturing Company, Minneapolis, MN  
Hilton Bridge Company, Albany, NY  
Horseheads Bridge Company, Horseheads, NY  
Keystone Bridge Company, Pittsburgh, PA  
Koken Iron Works, St. Louis, MO  
Lassig Bridge and Iron Company, Chicago, IL  
Lafayette Bridge Company, Lafayette, IN  
Milwaukee Bridge Company, Milwaukee, WI  
New Jersey Steel and Iron Company, Trenton, NJ  
Pencoyd Iron Works, Pencoyd, PA  
Post and McCord, Brooklyn, NY  
Pittsburgh Bridge Company, Pittsburgh, PA  
Rochester Bridge Company, Rochester, NY  
Schultz Bridge Company, McKees Rocks, PA  
Shiffler Bridge Company, Pittsburgh, PA  
Toledo Bridge Company, Toledo, OH  
Union Bridge Company, Athens, PA  
Wrought Iron Bridge Company, Canton, OH  
Youngstown Bridge Company, Youngstown, OH

# American Bridge Innovation Secrets Unveiled at Pittsburgh History Center

**//** Dating back to the Industrial Age, American Bridge has been a leader in bridge building, contributing essential advances to the engineering industry. We are thrilled to have had their cooperation in this exhibit to display these innovations," Betty Arenth, Senior Vice President of the History Center.

The Senator John Heinz History Center, in association with the Smithsonian Institution, has on exhibit "Pittsburgh: A Tradition of Innovation". The event showcases 16,000 square-feet of photographs, hands-on activities, objects, and videos that portray the story of the city's progress from the 1700s to the present and beyond. Spanning the history of the 'Steel City,' the exhibit's content is directly focused on individuals and businesses that have impacted present-day Pittsburgh and the world. American Bridge is one of the major keynotes.

"Out of challenge comes innovation," says Anne Madarasz, Museum Division Director. For the past ten years Anne has been thinking about the innovation exhibit – when asked her inspiration she responded: "It was during work on the glass exhibit, that I realized Pittsburgh had a major story related to industry, venture capital, and market to tell. Pittsburgh's huge impact in attracting and developing new ideas that have changed the world became our focus."


Pittsburgh's 250th birthday in 2008 provided the perfect opportunity to introduce this subject and premier the exhibition. A key piece of the display is a touch-screen database that displays 150 structural innovations designed or built by regional companies and found around the world. American Bridge contributed about half of these high-rise building and bridge projects to the database, some of which feature a detailed explanation of the fabrication and erection processes.

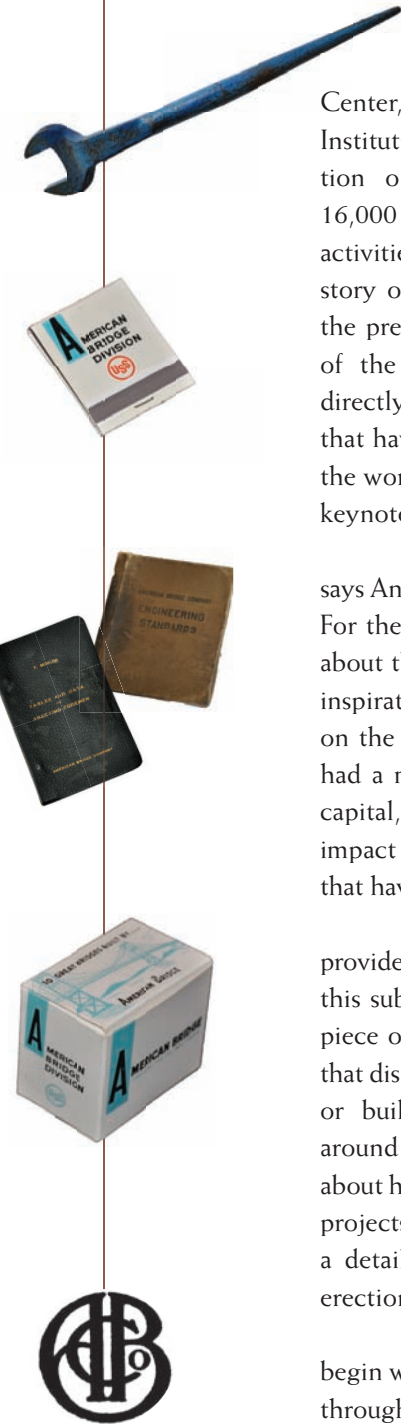
It is a very engaging concept. Users begin with a world map that enables navigation through some of the most renowned American

Bridge projects such as the Alaska Pipeline, Bayonne Bridge and the Boeing 747 Assembly Building, to name a few.

The center saw fit to not only harness the tremendous knowledge and technology available to the manufacturing industry, but also to make the most of American Bridge's indigenous knowledge showcased on foreign structures around the world.

The exhibit, "Pittsburgh: A Tradition of Innovation" is full of instances in which companies and individuals impacted the engineering industry. James Finley known as the "father of modern suspension bridges," transformed the typical covered bridge design that predominated in the early 1800s to open, flowing structures. John Roebling, who designed the Monongahela Bridge, a suspension bridge linking the South Side and downtown, sought efficiency in transportation and building processes as well as aesthetics in an open city feel. More than 180 stories such as these are presented in the exhibit to prove that **"innovation is not just about science but also about art and culture,"** says Anne.

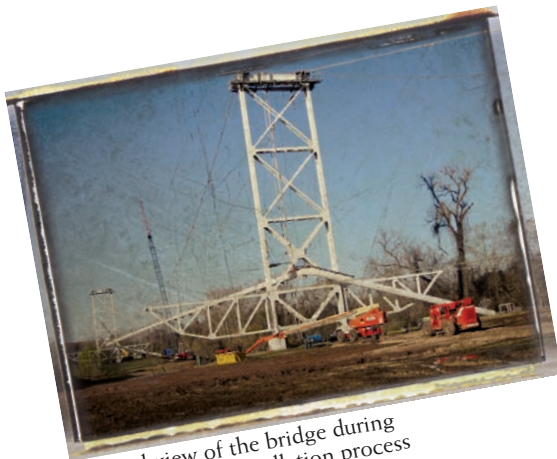
American Bridge boasts its culture of industry innovation and social responsibility. With headquarters right outside Pittsburgh American Bridge makes it an objective to continue community integration by local support of utility companies, newspapers, sports teams, printing services and, of course, the Senator John Heinz History Center. Participation in the "Pittsburgh: A Tradition of Innovation" exhibit corresponds with the innovation advertisements American Bridge has been promoting for years. 





## High-Pressure Pipeline Bridges Remain in Full Service During Rehabilitation

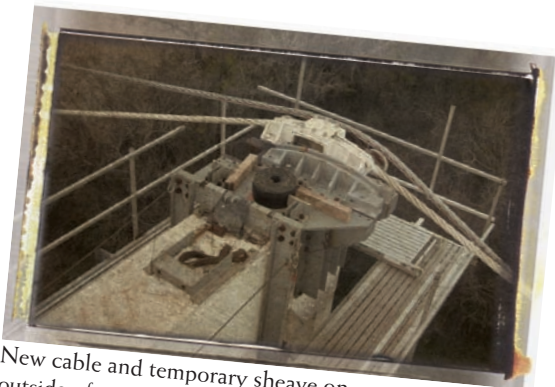
Efforts to rehabilitate the two 30" pipeline bridges for the owner, Williams Gas Pipeline Company, is a critical project as American Bridge self performs the replacement of the main and suspender cables, saddles and anchorages while the 50-year-old, high-pressure pipeline bridges remain in full service.



General view of the bridge during new main cable installation process



Overall view of construction



New cable and temporary sheave on outside of tower

"Very few companies in the United States want to tackle this type of work considering rupture of the active pipeline would lead to serious damage," explains John Schober, P.E., American Bridge Project Manager. American Bridge is one of the select firms scattered across the country with experience in this unusual type of load transfer.

"Actually, only three companies were invited by the owner to bid the project," continues Schober. The other two bidders were a construction firm out of Nebraska and another based in New York.

Both bridges are located near Houston, Texas. The Brazos River Bridge consists of a mainspan 750' long with cable length totaling 1,416', and the Colorado River Bridge spans 550' with 1,190' cable length.


Rehabilitation begins by pulling 2.75" new main cables over the towers using an airwinch to a position alongside the existing cables. Then the new suspenders are attached to the pipeline support brackets using adjustable ratchet hoists. At the same time the existing fixed connections on the old suspenders are replaced with adjustable ratchet hoists.

Ben Reeve, American Bridge Field Engineer explains the next detailed step, "The pipeline load is transferred from the old cable system to the new by lengthening the old suspender and correspondingly shortening the new suspenders. To insure the load is transferred gradually, this process is broken down into 12 separate adjustments of each suspender."

This enables the team to transfer the high pressure natural gas pipeline load safely. For permanent stability the temporary ratchet hoists are replaced with fixed connections.

The 100' towers will also undergo rehabilitation by American Bridge. Without disturbing the 750-800 psi natural gas pipelines, the eight main cable saddles will be replaced. Each new saddle is positioned on the inside of the existing saddles. After the load is transferred the old cables and saddles will be removed. The final step consists of shifting the new saddles approximately 1' 4" toward the outside of the tower in the exact position the old saddles resided since 1959.

American Bridge is well known for its work on major complex bridges around the world, but also takes on equally technically challenging utility suspension bridges domestically. The company has completed and/or renovated dozens of pipeline and conveyor bridges from California to New England over the past four decades, often in challenging geography and conditions.

The unusual and complex Williams Pipeline Bridges project is another major challenge successfully met by American Bridge. The Colorado River Bridge is in its final stages of rehabilitation with minor work, such as grouting the anchorage rods and touch up painting, to complete. The Brazos River Bridge is currently undergoing new cable installation and load transfer. The expected, on time completion date of both bridges is February 28th of this year. 



View of the main cable being pulled off of the shipping reel

#### Williams Pipeline Bridges Team Members

##### **American Bridge Company:**

Rocky Abarca, Ironworker  
John Bullard, Operator  
Grady Clark, Ironworker Apprentice  
Dallas Compeau, Superintendent  
Willie Crockett, Ironworker  
Jesse Enriquez, Ironworker  
Jeremy Fisher, Operator  
James Jonakin, Ironworker Foreman  
Wayne Kirchoff, Ironworker Foreman  
Mike Morales, Operator  
Kent Osby, Ironworker  
Roderick President, Ironworker Apprentice  
Ben Reeve, P.E., Field Engineer  
John Schober, P.E., Project Manager  
Michael Stentz, Oiler  
Larry Tussey, Ironworker General Foreman  
Ed Walsh, Ironworker  
JD White, Ironworker Foreman

##### **Parsons Corporation:**

Maria Grazia Bruschi, P.E., Project Manager  
John Clenace, P.E., Resident Engineer  
Seth Condell, P.E., Project Engineer  
John Schmid, P.E., Project Engineer

##### **Williams Gas Pipeline Company:**

Butch Exley, Principal Engineer  
Kenny Bledsaw, District 35 Field Representative  
Joe Quintero, District 30 Field Representative

## How to Find an In-Network Physician

The quickest way to find a physician or other health care professional in the PPO Network is online!

- 1) Simply go to [www.highmarkbcbs.com](http://www.highmarkbcbs.com)
- 2) Under "Find Providers", click on find a doctor, hospital, or other medical provider.
- 3) You can then locate what you are looking for by zip code, doctor's name or specialty.
- 4) All of your options will come up with street addresses and contact numbers.



## Discover the Ambridge Bridge Works of American Bridge Company

**A**t 9:00 am nearly six days per week, retirees of AB meet in a coffee shop within shouting distance of the famous but now-shuttered Ambridge Works of American Bridge to talk, to reminisce. The men spent their careers working at the plant and living in the town that were both named for the company. These men's lives are intensely interesting.

Their careers were experienced during an age when America's industrial might was at its peak. Their work was meaningful, and they took pride in it. They fabricated the steel that helped build and defend a great nation. Working at what was at that time the largest steel fabricating plant in the world, they produced the bridges, buildings, barges, ships, electrical transmission towers, and furnaces that were the infrastructure of commerce not only in the United States, but in 60 other countries. As the men reminisced on a December morning about their experiences in World War II, their careers at the plant, and their lives in the community of Ambridge (located just five miles downriver from AB's current headquarter office in Coraopolis), Connections had the pleasure of listening in.


Emergence of the new steel industry attracted European immigrants to iron and steel production districts across the country. Ambridge, a suburb about 20 miles northwest of Pittsburgh, is a prime example of this migratory trend. In the 15 years after its incorporation in 1905 this small town's population grew to almost 13,000 residents and by 1940 increased again by an additional 6,000.

As growth continued a natural formation of ethnic districts occurred; it was common for many family members to work in the same factory. Ambridge became known as a worldwide leader in large scale steel fabrication. From 1903 to 1983, the American Bridge plant there produced the structural steel for a growing nation and the world, including the

Empire State Building, the San Francisco Oakland Bay Bridge, the Straits of Mackinac Bridge, the Orinoco River Bridge in Venezuela, the Tagus River Bridge in Portugal, the Ghotour Valley Bridge in Iran, the Verrazano-Narrows Bridge in New York and the Inga Shaba electrical transmission system in Zaire. Despite considerable skill development, by the early 1980s American Bridge had to confront the reality that large scale steel fabrication was destined to move to centers of production more proximate to large scale infrastructure development and lower labor costs. The legendary Ambridge plant shut its doors in 1983. The last major project to leave the plant was the Sewickley Bridge, easily visible from AB's current head office complex in Coraopolis.

Many steel workers abandoned the town after the mills shut down. At the peak of Ambridge's plant operations in the 1960s and 70s the population averaged 13,000 but dropped drastically by 1990, housing only about 8,000 residents. Since then the statistics have continued to decline recording just over 7,500 total inhabitants at the 2000 U.S. Census.

In 1953, Don Barto started with American Bridge as a coal wheeler, next worked on the general labor gang, then as a crane operator and retired as an equipment operator in 1984. He didn't choose to retire per say, but as foreign



Top: AB crane atop Sears Tower, Chicago, IL  
Middle: Angostura Bridge spanning the Orinoco River, Venezuela  
Bottom: AB cable spinning, Tagus Bridge, Lisbon, Portugal

competition persisted the plant closed most of the sections in 1982 and kept minimal employees for the next two years.

When I first sat down with Jerry Goodwin and asked when he started with American Bridge he immediately replied, "May 29, 1941. I drove rivets for 20 years." His father moved the young family to the Baden area in 1929 from their West Virginia farm and worked as a crane operator for 36 years. Naturally I asked if his dad helped him get the job. "No," he said sternly, "I got the job myself." He told me how.

There was a long footbridge crossing the highway that led to the plant (has since been replaced with a vehicular bridge over Rt.65 still in use today) on which a doctor stood ready to give passers a physical examination. Seventy years ago, at age 19 Jerry walked over that bridge, passed the examination and worked five and a quarter hours his first day. His last working years were spent producing plates for the Sewickley Bridge since the work wasn't as hard on the body and paid better. But his favorite was driving rivets.

Some other notable projects for which these men produced plates, knuckles, chains, hooks, bolts, girders, eyebars and other building materials were the US Steel Building and Civic Arena in Pittsburgh, Pennsylvania, the New River Gorge in West Virginia, and the Sears Tower in Chicago, Illinois.

Wilbert Ridder enjoyed 14 years as a foreman for American Bridge after working his way up through the ranks. But first he was fired, perhaps due to company politics. After employed five years with another factory in the area he was told to go home one Friday afternoon. On Monday he walked over the same bridge as Goodwin and worked the 5 pm-1:30 am shift that evening. "You could go from one company to another, to here, to there. The steel fabricators were all hiring, all the time," explained Wilbert. If you brought a friend you were paid an extra \$25 on the spot.

Cheru Biano DeNoble (Beanie) started in the finishing room, went to the maintenance shop and ended in the office for his last 12.5 years.



Top, middle right and bottom: American Bridge Company circa 1940  
Middle left: A Landing Ship Tank (LST) – one of 119 produced at the Ambridge plant


Manufacturing Landing Ship Tanks (LST) for the war is something he remembers well. LST's were rugged and versatile vessels used in WWII for transporting general cargo, prisoners, casualties, locomotives, vehicles and any remaining items. Initially they were built in traditional coastal shipyards, but with increased demand the large scale fabricating facility in Ambridge was tapped to produce higher quantities at quicker rates. These ships were 328' long and could transport loads in excess of 4,000 tons across the Atlantic and Pacific oceans. From 1942 to 1945, the Ambridge Bridge Works plant of American Bridge produced 119 of the LST's, an average of one every eight days or about four per month.

If you drive by the old American Bridge manufacturing plant in Ambridge you will find an old broken down building, but at one time it was booming. It was a great part of what made Pittsburgh the 'Steel City,' produced a large part of the bridges, dams, buildings, and transmission facilities that still serve the USA, fabricated landmark structures across the globe, and was an important component in the massive industrial production that helped win WWII. Along the way, the enterprise also built lifetime relationships, and continues as one of the threads that make up the great American Bridge Company of today.®



## Significant Progress Made on Huey P. Long Bridge

In 2009, American Bridge Manufacturing in Coraopolis, Pennsylvania made significant progress fabricating and painting members for the superstructure widening project of the Huey P. Long Bridge over the Mississippi River in New Orleans, Louisiana. "Erection of the widening members by Massman – Traylor – IHI (MTI) has begun with truss members furnished by Industrial Steel Constructors of Gary, Indiana and floorbeam, strut, portal, sway and lateral members furnished by ABM," explains Brian T. Furman, Project Manager of American Bridge Manufacturing.

Fabrication of the widening members is currently about 90% complete with about 50% painted and ready for shipment. The fabrication, painting and shipping will continue during 2010 on the widening members and fabrication will begin on the roadway stringers. Contract completion is set for early 2011. 



This is the widening members fabricated, painted and stored at ABM plant in Pittsburgh, PA



The Huey P. Long Bridge is being widened to increase the number of North and South bound traffic lanes by the addition of new outside trusses connected to the existing structure by new floorbeams, struts, portals, sways and laterals. This widening will occur on both sides of the existing bridge



The start of erection on one of the two new trusses along with the widening members. Erection will continue along each side of the truss bridge throughout 2010 and into early 2011

## American Bridge Company 2010 Wellness Program Update

On January 4, 2010 we began the American Bridge Company 2010 Wellness Program with great success. Our first initiative that we focused on was the Drop 10 in 10 program. We had an astonishing 174 employees show an interest and request a Drop 10 in 10 kit. We hope that everyone has great success with this program.

We also want to take this opportunity and remind you that January is a good time to schedule your first dental exam for the year. It's an easy way to earn 20 points towards

your goal of 200! If you need a replacement United Concordia dental card, please contact HR at 412-631-1000.

We will be sending out communication regarding our February focus which is the Biometric Screening. You will have the option to go to a LabCorp to get the screening done or you will be able to do the screening yourself at home. More details to come.

Good Luck to all who participate in the Wellness Program!!



## Point Marion Bridge

Employees of American Bridge participated in the ribbon cutting ceremony of the Albert Gallatin Memorial Bridge in Point Marion, Pennsylvania on October 22nd. The new bridge was built adjacent to the existing 79 year old structure to bridge the gap between Fayette and Greene counties in Pennsylvania. As subcontractors to this project American Bridge Manufacturing & American Bridge Company worked together to fabricate, assemble and erect the 412' 6" Parker Truss over the main channel for this 746' new four-span bridge over the Monongahela River.

The truss was trial assembled in American Bridge Manufacturing shops on the Ohio River, disassembled, loaded on AB barges, and floated about 95 miles upstream to the Point Marion site. It was erected on one falsework bent with cantilevered erection to the other pier.

The old bridge was demolished on November 9th, 2009. 

**The American Bridge project team included:**

Barry Bender, P.E., Project Manager

Mike Wade, Superintendent

Daniel Sheehan, Field Engineer

John Perine, Foreman

Larry Tussey, Foreman



## Human Resources Update

### Vision Perfect Plan

For those of you who are enrolled in the vision perfect eye care plan, we have some great news! Effective January 1, 2010 your annual allowance has increased from \$250 to \$300. You can use this allowance to spend at any eye care provider. For all eye care visits, you will need to pay up front and then send a claim to Ameritas for reimbursement. A vision claim form can be found on the American Bridge Access site under Human Resources.

### Preventive Incentive

United Concordia has started something new for 2010. All dental services that fall under Class I Diagnostic and Preventive services do not count toward your annual plan maximum. This means more money for you to spend on other services that you may need throughout the year. To

see a complete list of services that fall under Class I, visit the American Bridge Access site and click on Health & Welfare found under the Human Resources link.

### Preventive Care

Please keep in mind that when you go to get a physical and/or blood work at the doctor, only certain procedures will be covered. Highmark has a preventive schedule which shows all routine covered services. To see a complete preventive schedule, go to the American Bridge Access site and click on Wellness Program found under the Human Resources link. You can always check this schedule to see if the services you are going to receive are covered. If you are ever unsure, please call the member services number located on the back of your Highmark medical insurance card.

## Training Providing Firm Foundation for What Lies Ahead

Employee training, in one form or another, has been a key to our success since we were founded more than a century ago. Since 2008, however, training has taken on a much more structured tone as we work to build a firm foundation for what lies ahead. Starting with construction of a state-of-the-art training facility and presently having three full classes of more than 40 attendees, the multi-year training program has been designed to better prepare each participant for what lies ahead in his or her career with American Bridge.



### Field Engineer Training Class – Session 5

Chad Ford, New York  
Mike Hartranft, Chesapeake Bay Bridge  
Brian Binder, Mayport  
Bruce Phillips, Throgs Neck  
William Campbell, Castaway Cay  
Drew Merritts, Kittery  
Zach Rosswog, Chesapeake Bay  
Kevin Lynch, Kentucky Lock Addition  
James Dipasquale, Kentucky Lock Addition  
Joe Rynn, Kentucky Lock Addition

### Multi-Discipline Approach

AB's training program focuses on both in-depth classroom sessions and field-related experience. According to Wayne Davis, the company's training specialist, the two approaches are inseparable.

"Training must be a continuous process; exposing students to both classroom and field work, and having them connect the two. We typically have attendees come in for a three-day training session and then return to their assigned field project for approximately three months. Classroom sessions are geared to technical instruction while field training is geared to hands-on learning."

Before they leave each session, adds Davis, students are asked to write an action plan detailing how they will apply what they've learned in training to their field-experience. "Then, before they come back for their next classroom session," he says, "we receive reports from their mentors in the field describing their success in following their action plan. This allows us to see how well they are applying what they've learned in training."

### Expert Instruction

The classroom training sessions are most often headed up by what Davis calls "subject matter experts," American Bridge personnel who have a proven expertise in specific aspects of the business. A recent session held January 11-13 covered joint ventures, store house vehicles and equipment, engineer design specifications, safety and related costs, major equipment, field operations and capacity charts for cranes. This was a very robust session that included technical exercises and pop quizzes.

The class had a tour of the storehouse and yard conducted by Joe Crygiel, Superintendant of American Dock and Transfer and John Schober, Chicago District Manager. The purpose was to familiarize them with the equipment and materials the company owns and to show them many of the items discussed in the major equipment presentation. The engineers also had an opportunity to use some of the power tools associated with bolting and try their hand at a welding exercise.

Training continued on page 17





**T**he San Francisco/Oakland Bay Bridge (SFOBB) is truly a brilliant site to see, yet beyond its beauty there lies great art, technology and uniqueness. American Bridge was part of this enormous project as prime superstructure contractor for the original east and west spans in 1936. In joint venture with Fluor Enterprises, AB is today at work on the replacement structure for the East Bay mainspan.

Prior to 1936, many engineers thought the SFOBB project impossible due to the location's climate characteristics. The bay's destructive water and strong winds, some argued, would cause more damage than potential earthquakes caused by two faults (San Andreas and Hayward) on either side of the structure. The regions sparse bedrock, varying water depths and contrasting soil also caused doubts of sustainability. Some people questioned the logistics considering the design revealed it to be three times the length of the longest bridge in the world at the time (Firth of Forth Bridge, Scotland).

It spanned 8.4 miles over water or Yerba Buena Island (12.5 miles including the approaches). At that time it was the largest-ever investment (\$78 million) in a single structure, one which mobilized significant opposition.


Many challenges were overcome with unprecedented strategies and industry breakthroughs still written about today. The book *High Steel* explains that despite the many protests against the SFOBB, the "plans and specifications were completed in late 1932, invitations to bid were sent out and contracts awarded by April 1933. **Two of the seven major contracts comprised the largest structural steel orders ever placed with a single firm, the American Bridge Company.**"\*

American Bridge erected a total of 160,000 tons of structural steel for the project, including 19,100 tons of airspun main cables.

The work included two back to back suspension bridges, a major cantilevered

truss, and many approach spans. The two suspension bridges span the west portion of the bay, between San Francisco and Yerba Buena Island. These bridges have a suspended length of 9,271' and have four steel towers rising to a height of 515'. The cables were airspun in 37 strands of 472 wires each, pulled in two loops – a total of 21,465' of main cable and 1,192 bridge rope suspenders. The cantilevered truss and approaches span the east portion of the bay, from Yerba Buena Island to Oakland. This section consists of a three-span cantilevered truss of 508' + 1,400' + 512', five-spans of 509' trusses, 14-spans of 288' trusses, plus a four-span curved truss at Yerba Buena Island. Both bridges were double deck from start to finish, enabling the transit of 12 lanes of traffic – six on the upper deck and six on the lower.

Seventy years later, American Bridge Company continues its history of success as it constructs the new 2,051' single-tower, self-anchored suspension bridge that will replace the cantilevered truss section on the East Bay section of the bridge.

The original SFOBB was a magnificent engineering achievement. American Bridge is proud to have been primary contractor on a bridge named one of the seven engineering wonders of the world by the American Society of Civil Engineering. Perhaps a similar honor awaits for the even more spectacular Self Anchored Suspension Bridge replacement for the East Bay cantilevered truss. 

AB Order # G-4850-68

\*Dillion, Richard, et. al. *High Steel*. Berkeley, CA: Celestial Arts, 1979.



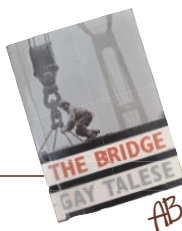
SFOBB completed



Cable spinning wheel at Yerba Buena Island



Truss lifted from barge



ABP published

The cables for the 6,691' Verrazano-Narrows Suspension Bridge remains one of the largest air-spinning projects ever undertaken. American Bridge held the prime construction contract for the cables and suspended spans of the project. The work entailed four 36" diameter main cables, encompassing 143,000 miles and 38,469 tons of wire, and 44,000 tons of structural steel stiffening truss.



Airspinning



Towers completed



Verrazano-Narrows Bridge completed

*The Bridge* by Guy Talese makes much mention of the technical strategies, historical data and individual workers of American Bridge. One colorful story that expresses the way it was back then was that of a 'six-foot, fifty-nine year old, hot-tempered man named John Murphy, who, behind his back was known as "Hard Nose" or "Short Fuse." He had a red hard face – the result of 40 years' booming in the high wind and hot sun of a hundred bridges and skyscrapers around America – which gave Murphy the appearance of always being boiling mad at something, which he usually was. In 1959 he was superintendent in charge of putting up the Pan-Am, the fifty-nine-story skyscraper in mid-Manhattan, and after that he was appointed to head the Verrazano job by the American Bridge Company, a division of United States Steel at the time that had the contract to put up the bridge's span and steel cables.'

Murphy agreed that while the construction of the towers possesses the element of danger, it is not really much different from building a tall building or an enormous lighthouse; after the third or fourth story is built, it is all the same the rest of the way up. **The real art and drama in bridge building begins after the towers are up; then the men have to reach out from these towers and begin to stretch cables and link the span over the sea' – a skill American Bridge has innovated throughout the industry.\***

The book also highlights that as the Verrazano-Narrows Bridge was being built, much of the construction took place between '6 p.m. and 6 a.m., ruining the sleep of a thousand persons within a one-mile radius.' Additionally, residents of New York's Bay Ridge area opposed the bridge regardless of noise, for their houses would have to be demolished to provide enough room for the new structure. Despite much controversy, the Verrazano-Narrows was built, stealing the record of the longest suspension bridge in the world from the Golden Gate. Until 1981, it maintained this title and is still the longest suspension bridge in North America today.

Connecting the New York City boroughs of Staten Island and Brooklyn, this 12-lane double-decked bridge presently services an average of 200,000 vehicles per day. American Bridge fabricated and erected the 101' wide, 24' deep, double-deck, 6,690' suspended truss, which weighed 44,000 tons; hung 389,000 lineal feet of suspender ropes, and fabricated and placed nearly 100,000 square feet of steel grid deck. Under separate contract, American Bridge fabricated and erected 21,000 tons of steel for each approach.

Additionally, in 2005 American Bridge completed the removal and replacement of selected suspender ropes, then tested the ropes to failure in order to establish their current capacity. <sup>AB</sup>

AB Order #'s - V-4803-13, V-6520-26, V-6967, 640310

\*Talese, Guy. *The Bridge*. New York, NY: Walker & Co., 2003.



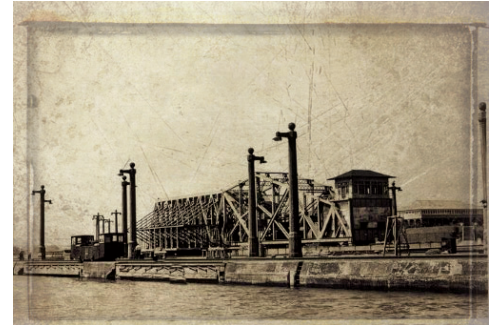
## Flashbacks

100

From 1912 through 1914 AB Forces were at work on the construction of six emergency dams, in the form of swing bridges, which were part of the original construction of the Panama Canal. This project was one of many constructed by AB both during and after the original canal construction,




Overall view of emergency dam




Emergency dam, Gatun Locks, Panama Canal

and it was among the most interesting. The work included the fabrication and construction of six unbalanced (bob-tail) swing bridges that were located in each lock chamber at the upstream end. Each bridge was 231' in length by 32' wide by 46' deep and consisted of horizontal trusses, counterweights, pivot bearings, steel girder 'wickets' that were hinged to the truss and could be lowered into iron pockets in the lock floor, steel shutters that could be slid down the girders to block the flow of water, and all of the associated machinery. In the event of a ship impact at the upstream gate, the bridge would be swung open, the wickets lowered, and the shutters deployed to block the water from inundating the lock chamber. The bridges could be swung in two minutes. The six dams A-F were located at the two lock chambers in each of the three sets of locks: Gatun (Atlantic side), and Pedro Miguel and Miraflores (Pacific side). The dams contained a total of 13,269 tons of structural steel. The projects were led by J.H. Goodwin, Foreman and C.D. Christie, Project Engineer.

The dams were tested on a monthly basis throughout their deployment, but were never used in an actual emergency. They were dismantled in the 1930s after it had been well proven that the locomotives that controlled the ships were adequate protection against ship impact.  AB Order # D-1600-40

25


The Pekin Bridge is the southern-most highway crossing the Peoria metro area in Illinois. Built in 1982 by American Bridge, this is a nine-span bridge over the Illinois River with a 1,320', three-span steel box girder river section, and steel plate girder approaches. To assist in the structures load-bearing behavior, the orthotropic roadway deck has longitudinal and transverse welds. It is named in honor of John T. Naughton, a WWII veteran and native of Pekin.  AB Order # J-1266-68



Pekin Bridge under construction

10

The Mon/Fayette Expressway was one of six Pennsylvania Turnpike projects under construction in 1999. The completion of these new sections provided more than 70 miles of continuous roadway connecting highways in West Virginia and Pennsylvania.

American Bridge's work included erection of two sets of twin 45' wide steel plate girder bridges; one six-span and one (curved) eight-span, aggregating 6,243'. The six and eight span bridges are 1,333' and 1,363' respectively, with spans up to 238', and contain five lines of 80" deep plate girders. The eight span bridges are 1,753' and 1,794' respectively, curved, with spans up to 265', and contain four lines of 98" deep girders. The bridges were erected over deep gorges in the hilly regions of Western Pennsylvania, up to 250' above the valley floor.  AB Order # 481710



Aerial view of Mon/Fayette Expressway

In planning for this issue's retrospective focus, we had the pleasure of speaking with a number of distinguished American Bridge retirees about their time at the company during the period from the 1940s through the 1980s. These are the men who helped make the landmarks of that era happen: the New River Gorge Bridge, the Pam Am (MetLife) Building, the Walt Whitman Bridge, Pittsburgh's Civic Arena with its movable roof, the Straits of Mackinac Bridge, New York City's GM Building, the Verrazano-Narrows Bridge, and many more. These were the longest bridges and largest structures of the day, and current AB employees engaged in the same business have much to learn from the character and competence of these men.



Men working with Derrick Swing Winch 1935



Mackinac Bridge construction



1934 Draftsman at San Francisco Oakland Bay Bridge site

"Whose fingerprints are on the bolts and beams of these soaring structures in these overarching cities? Who are the high wire walkers wearing boots and hard hats, earning their living by risking their lives in places where falls are often fatal and where the bridges and skyscrapers are looked upon as graves by the families and coworkers of the deceased?" the famous writer Gay Talese once asked. The ironworkers and engineers within this group of American Bridge retirees are among the brave and well respected men to whom Talese refers. Former AB superintendent Ronny Tatum knows well whose fingerprints lay static at extraordinary heights. In 1959 he was hired as an apprentice. Throughout the next 44 years he experienced frequent promotions as he contributed to the completion of many monumental projects. Ronny believes working for American Bridge was fate, as his father and three brothers were also part of the company. His favorite projects, until his retirement as a superintendent in 2003, were those that were lead by a knowledgeable and accomplished leader.

What motivates a person to become an engineer, leading a field of men to build these soaring structures? For many it's love at first sight; a passion for bridgebuilding inspired by their father or a first glimpse at one of these massive structures. Retired AB engineer Jack Bryce visited the Trinity Church in Pittsburgh with his father when he was 12 years old to watch a movie about American Bridge's innovative cable spinning on the San Francisco Oakland Bay Bridge. From that day he knew he wanted to become an engineer.

Civil engineering graduates of the 1940s and 1950s launched their careers as draftsmen and climbed the ladder to lead men in the field as engineers. Jack graduated from the University Pittsburgh's civil engineering program and went directly to the American Bridge drawing room. He explained that "everyone (the graduate engineers, that is) started there on the basis that the details are essential not only in the prevention of accidents and the saving of lives, but in the efficiency of the field operation. You progressed to the level of Field Engineer only after a thorough indoctrination in the drawing room."

Charlie Shipp served in the Korean War after high school. After the war he got his engineering degree at the University of Tennessee, and then began a career in the American Bridge Ambridge plant drawing room that would last over 40 years. Over his career Charlie was a construction engineer, senior field engineer and retired as district construction manager. He worked on projects such as Pittsburgh's Civic Arena and Equitable Building as well as the Dan Ryan Expressway in Chicago.

Kenny Lewis started his career with Consolidated Western in California (which later became part of American Bridge), similarly with a position in the drawing room. In contrast however, his experience revolved around plate work. In his 33 years with AB, he was involved with many notable projects such as the nuclear waste storage tanks at the Hanford Reserve in Washington State, the Forth Power House at the Grand Coulee Dam also in Washington,



the Wind Tunnel Test Facility for the US Air Force at Tullahoma, Tennessee, and the many penstocks and siphons associated with the Southern California water supply system.

Dave Rees started in the Ambridge drawing room and enjoyed an exciting and fulfilling 40 year career with the company. His project experience included field engineering and engineering management positions on the Wabash Railroad Bridge, the Delaware Memorial Bridge, the Walt Whitman Bridge, the Mackinac Straits Bridge, the Throgs Neck Bridge, the Verrazano-Narrows Bridge and the New River Gorge Bridge. This eventful career culminated with the position of Chief Engineer for the company, with overall responsibility for all means and methods engineering. Even after his retirement in 1985, Dave was called back when American Bridge started on the Tagus River Suspension Bridge Rail Deck project. When the AB team was developing the engineering for the main cable erection, Dave overdubbed a compilation of the company's extensive film archive of previous airspinning projects, explaining exactly what was done, methods of improving efficiency, potential problems and how to avoid them. This was invaluable in helping a new generation of AB engineers gain the confidence necessary to undertake this complex task.

Dave tells a great story about an experience he had while teaching a class at The University of Pittsburgh's civil engineering department, his alma mater. At least once each year he would make a presentation to students about the projects that American Bridge was working on to try to arise in them the passion that he has for bridgebuilding. In one ordinary session like the many others he had taught, he concluded with an invitation for students to speak with him after the formal lecture about any aspect of American Bridge or the projects it had underway. "There was one tall and intelligent engineering student," Dave remembers, "that had so many

questions and was so interested that he stood out in my mind. His name was Bob Luffy, and I could tell that he loved what we do." Years later, of course, Bob would become the CEO of American Bridge!

Leo Kupiec, another 40 year American Bridge veteran, worked on many of the major New York City area projects, including the Newburgh-Beacon Bridge and the Throgs Neck Bridge. His favorite was the Verrazano-Narrows, due to its sheer size and dominating presence in the metropolis' infrastructure.

Bill Gibson began with the company as a draftsman and retired 43 years later as a senior engineer. His work included such projects as the Louisiana Superdome, the New River Gorge Bridge, the Massachusetts Turnpike Bridges, the Alexander Hamilton Bridge and the Vehicle Assembly Building in Kennedy Space Center, Florida.

Chuck Hardt is a 47 year veteran of the company. After early assignments in the steel swimming pools division of American Bridge in Harrisburg, Pennsylvania, Chuck moved into the contracting department and eventually rose to Chief Contracting Officer. In this role he oversaw the final pricing of the work, the presentation of tenders, and the negotiation of the contracts. For many years Chuck was the face of American Bridge to our customers, a role he played with competence and integrity that is an inspiration for the current generation of the company.

Despite their disparate careers with American Bridge, Ron Tatum, Jack Bryce, Kenny Lewis, Charlie Shipp, Dave Rees, Leo Kupiec, Bill Gibson, and Chuck Hardt share many common bonds that reveal the deep cultural roots of the American Bridge Company.

One of these is competence. There has always been an American Bridge Way. This means that every option for constructing a bridge was well studied, checked, and vetted by an experienced group of engineers so that when the project went to the field, it was ready to go.

Because of this, the construction operation was always impressive. The company always came well equipped, with a well thought out plan, and with experienced engineers and bridgebuilders who understood the plan in detail and could also improvise and improve as the opportunity presented itself. In a word, the American Bridge Way is 'CAN DO', or 'we can make it happen'. This competence came from the company's tradition of not only hiring the brightest young engineers, but also in fostering their growth through exposure to the older ones. Accomplished personnel pass down their attributes of great leadership and work ethic to continue the strong reputation of American Bridge. "The company has always been a training ground for young engineers" says Bill Gibson. "I enjoyed spending many days contributing to this cause. It's a great place to work." And Jack Bryce: "I feel proud to have worked for American Bridge and never hesitate to tell people I did. I think you could talk to just about any one of the retirees and they would say the same."

Another is integrity. You have to do the right thing, even when it costs the company money. There has always been a clear understanding that success over the long term is dependent on your reputation, and that this is infinitely more important than a short term gain. As Leo Kupiec says "We did the job according to the specifications, period."


Another is the importance of Country, community, and family. This generation of American Bridge personnel all came of age in the 1930s and 1940s. They were raised to understand that their Country was first, so when they graduated from High School they went off to the Armed Forces and served in World War II or the Korean War. In their communities they were teachers, volunteers, and ambassadors for their profession. And in spite of their demanding professions, they successfully balanced their careers with their family life. Though many had big families, Chuck

Hardt wins out with nearly 50 living descendents!

The retirees of American Bridge gather each year in January for a reunion, where they exchange stories about the past and learn about the current happenings in the company. They are impressed with what they see. "Bob Luffy is a great leader with a great vision," said Leo Kupiec. Bill Gibson says: "He is more innovative than any other CEO I've seen, and he has built a terrific senior management team. In spite of major sea changes in the US construction industry, the advent of foreign steel, the decline and fall of industry giants such as Morrison Knudsen, Atkinson, Utah Construction, Raymond International, and others, AB continues to thrive." Chuck Hardt agrees: "Bob has done one heck of a job at turning the company around. It is not without great leadership that a company can continue growth, even in the worst of times, for 110 years."

What do the retirees have to say to the current generation of engineers and managers at American Bridge? Jack Bryce advises young engineers to "Pay close attention and learn solid engineering practice. If you need any help don't hesitate to ask because everyone up the ladder is willing to teach you the profession." Dave Rees advises to develop close rapport with the foremen and skilled hands in the field, because they can teach you the tools of the trade. "I'll never forget Turbo Kurtis; he was the first foreman I worked with. I was a graduate engineer, but he taught me about construction. A lot of my best memories have to do with fellow engineers, superintendents and iron workers. This is the type of experience that cannot be learned from a textbook". Charlie Shipp says: "You've got to give it hell. This is not an eight hour a day job. My philosophy was always to apply more than 100%".

There are many differences between the recruiting classes of the 1940s and the ones of today. This includes some welcome developments; the fact that a rapidly increasing portion of today's engineering recruits are women, and the far ranging and well honed computer skills of the entry level engineer. The 'drawing room' of yesterday resides in the laptop of today's engineer. However, there are many similarities as well. The passion and intelligence are still there. They still develop under the watchful eye of experienced AB people, and within the cultural environment of competence, integrity, and commitment to community. Therefore these distinguished alumni of American Bridge are real inspirations to all of us that are part of the company today. They were certainly overwhelmed at the beginning of their careers. But they stuck it out and went on to accomplish great things, to successfully deliver some of the world's greatest bridges and structures, and along the way they made life-long friends. They wanted to do the right thing because it was the right thing to do. They believed in the company and making it better, in both the seen and the unseen. They went out of their way to teach the younger engineers the ropes. They were successful in bringing about the greatest projects of their day, and they were stand up citizens.

In researching this article we talked with dozens of people; those of the senior generation of the company today as well as the retirees. We asked them all a closing question: How would you describe American Bridge? The answers were remarkably the same: "the greatest", "the best". In this retrospective issue of Connections, we can all do well to look back on the last generation's success as inspiration in overcoming the technical and business challenges we face in the company today. 



New River Gorge Bridge, West Virginia



Civic Arena, Pittsburgh, Pennsylvania




Mackinac Bridge, Michigan



Alexander Hamilton Bridge, New York



## Bay Bridge Update

The American Bridge Fluor Joint Venture (ABFJV) has been awarded the contract for the permanent repair of the cracked eyebar on the existing San Francisco Oakland Bay cantilevered truss bridge. The eyebar crack was discovered during an inspection by Caltrans in September 2009. AB has long experience in the development of the methods of making structural repairs on steel bridges, and of executing the work during live traffic. ABFJV is the general contractor on the \$1.5B replacement bridge for the cantilever span, which will open in 2013. The value of the eyebar repair contract is \$7.2M. 



Training continued from page 10

While Davis ensures training happens, he is quick to point out that this is anything but a one-person show. "This is really a concerted effort on behalf of people from all levels of management and operations here at AB," says Davis. "In addition to the key roles played by the various subject matter experts, Bob Chance, our Vice President of Administration and Human Resources, has not only been instrumental in helping us get the training program up and running, he's played a huge role in its continued development."


The level of involvement, he adds, literally goes to the top. "Our President and CEO, Bob Luffy, is very committed to training and, in fact, has led sessions himself."

### Valuable Input

Every successful business endeavor relies on two-way communication and the training program at American Bridge is no exception. At the completion of each session,

attendees are asked to complete a feedback form indicating what they thought of the program and how it might be improved.

"We are building the program from the ground up, and we know we don't have all the answers. We value the participant's input and, from that perspective, see all of us as members of one team working on a project that will help ensure this company's future success."

All strategies and approaches aside, there's no denying that the ultimate goal of AB's training regimen is a better caliber employee or manager. "That's to the real benefit of everyone involved: our company, our participants and our owners. We want people leaving the program to be fully trained in every aspect of how American Bridge conducts business and how to do things the American Bridge Way. "Based on what we've seen from those who were among the first attendees, we feel we're accomplishing that." 





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Coraopolis, PA 15108

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## CURRENT CONTRACTS BY DISTRICT

### Manufacturing

WPL Memorial Bridge, Annapolis, MD  
Huey P. Long Bridge Widening Fab, New Orleans, LA  
Harold Structures Fab, New York, NY  
East River Park Bridge, New York, NY  
Irvine Mills Road Bridge Plate Girders Fab, Carrollton, NY  
Unicorn Bridges, New York, NY  
Route 31 Girder Bridge Fab, New York, NY  
Park Ave. Bridge, New York, NY  
Larimar Bridge Fab, Westmoreland County, PA  
Clymer Truss and Bridge, Indiana County, PA

### New York

Throgs Neck Bridge Strengthening, New York, NY  
Bronx Whitestone Bridge Strengthening, New York, NY  
South Grand Inland Bridge Redecking, Niagara River, NY  
RFK (Triborough) Bridge Strengthening, NYC

### Pittsburgh

Kentucky Lakes Bridges, Grand Rivers, KY  
Williams Gas Pipeline Bridges Recabling, Houston, TX

### Richmond

Chesapeake Bay Bridge Redecking, Annapolis, MD  
Chincoteague Bridge, Chincoteague, VA  
Vehicular Bridge Replacement, Newport, RI  
Repair Dry Dock, Berth 11, Kittery, ME  
M-140 #2 Complex, Kittery, ME  
Pier R3 Repairs, Yorktown, VA  
Pier 31, Groton, CT

### Tampa

TPA Phase 2B Berth 211/210, Tampa, FL  
McDuffie Coal Terminal, Mobile, AL  
Mayport Wharf Delta, Mayport, FL  
Castaway Cay Enhancements, Abaco, Bahamas  
Estelle Pump Station Work Platform, New Orleans, LA  
Nassau Harbor, Nassau, Bahamas  
Roatan Cruise Terminal, Roatan, Honduras

### Western

ABFJV Oakland Bay Bridge, Oakland, CA  
ABFJV Eye Bar Emergency Repair, Oakland, CA

## 4TH QUARTER 2009 NEW HIRES

Headquarters Office, PA  
Danielle Davison – Tax Accountant  
Ken Sible – Controller

## GREAT RACE RESULTS

The American Bridge men's team won third place in the 10K Richard S. Caliguri Great Race in Pittsburgh, PA this past September. The team participants, all from the headquarters office, were:

Carson Carney, Senior Project Manager  
Amr ElNokali, Chief Legal Counsel  
Andy Graff, Estimator  
Simon Laming, Field Engineer  
Congratulations!

Join us in the Multiple Sclerosis Miles of Smiles Race this spring. For more information contact the marketing department.