# High Steel News

Informative Articles from High Steel Structures, Inc.

Winter 2005


## the INSIDE structure



# High Steel Plays Key Role in Croton Dam Bridge Construction

High Steel Structures has shone through again as a leader in bridge construction, and in this case helping to preserve a historic structure.

Built originally in the middle 1800s, the Croton Reservoir System, six miles above where the Croton River joins the Hudson in New York State, was used to help supply New York City with fresh drinking water. The Croton Dam Bridge at that point was washed away and was rebuilt and finished in 1907, with several reconstruction efforts since.

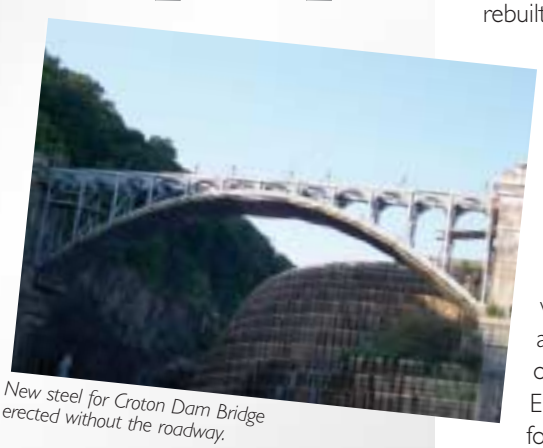
In July 2003, High Steel Structures was contracted to detail shop drawings, fabricate the structural steel and to ensure that all fabricated materials would be coated so as to "last a lifetime."

Because the bridge structure was located over a spillway and in a constant mist of water spray, the owner, New York City Department of Environmental Protection, was looking for maximum coating protection on the inside and outside of all the fabricated members. As a result, a metalizer and galvanizer were contracted to apply a three-coat system—a three-coat paint system, galvanizing and zinc metalizing. This is one of the only structures that High Steel Structures has ever fabricated that used all three.

It was a very laborious process. The following materials were coated:

- **Six fracture critical material (FCM) Box Arches** received a three-coat paint system on the inside of boxes that had to be pre-painted before final welding and assembly, while outside surfaces were zinc metalized with a sealer coat.
- **Twenty-six fracture critical material (FCM) Spandrel Columns** received a three-coat paint system on the inside of columns that were pre-painted before final welding and assembly, while the outside surface was zinc metalized with a sealer coat.
- **Ten Spandrel Box Girders** also received a three-coat paint system on the inside of the boxes that had to be pre-painted before final welding and assembly, while the outside surface was zinc metalized with a sealer coat.
- **Thirty seven Stringers** (rolled shapes) were zinc metalized with a sealer coat.
- **145 Lateral Bracings** (a rolled tube) had the inside galvanized and the outside surface zinc metalized with a sealer coat. This requirement created a challenge to keep the outside surface free of galvanizing when the material was dipped to do the inside. Blasting off fresh galvanizing and having the proper blast anchor profile to zinc metalize wasn't going to work.
- **Twenty-four Aesthetic Arch Panels** required galvanizing and zinc metalizing with a seal coat.

Today, the bridge stands close to what it looked like in 1907 and will last for a very long time. This can be attributed to ingenuity and dedication of the project team at High Steel Structures; Kiewit Construction, the General Contractor; Consulting Engineers Hardesty and Hanover LLC; metalizer, Regal Industries; galvanizer, Voight and Schweitzer; and Tensor Engineering.



*New steel for Croton Dam Bridge erected without the roadway.*

*Croton Dam Reservoir and Bridge, showing box arches supporting spandrel columns. The spandrel box columns in turn support the spandrel box girders with the roadway in between.*

*South abutment of Croton Dam Bridge showing the old structure supporting the fall protection and the new box arches without the keystone erected.*

# Message from CEO Robert Shannon

## Growth & Innovation

Change, growth, and innovation have long been cornerstones of High Steel Structures' approach to business. Two basic tenets of the High Philosophy are to give good value to customers and to provide innovative leadership within our industries. This has provided guidance to us for many years, as these principles are timeless.

Markets and the business climate evolve and issues emerge that dictate changes in how we organize to achieve these tenets. A commitment to continuous improvement has caused us to undertake a transitional phase to a structure where leadership roles are more specialized. The explosive escalation of steel costs and critical interfaces with groups and issues that will shape the future such as the AASHTO/NSBA Collaborative, electronic transfer of drawings and data, and other innovations are examples of change that need greater focused management attention.

Pat Loftus, who has capably led High Steel for almost 20 years as President, has stepped down from that post. In a flextime role as President Emeritus, Pat will continue to serve High Steel and our industry by representing us in the American Road and Transportation Builders Association (ARTBA), the American Institute of Steel Construction (AISC), and the National Steel Bridge Alliance (NSBA) where he holds both board and executive committee positions. He will also represent us as Public Private Venture and Design Build projects develop in the marketplace.

In addition to my duties as Senior Vice President of High Industries, I will function as CEO of High Steel and will be responsible for the operations of the company. My focus will be the execution of a lean strategy to insure that High Steel is the low cost producer in the industry, while maintaining our capacity and quality performance to the expectations of our valued customers.

On the engineering front, Bob Kase, a 30 year leader in our industry and head of engineering, quality, drafting, and field operations, will be transitioning towards a well deserved retirement. Bob will continue with a flextime role supporting the innovation initiatives mentioned above, while mentoring the engineering leadership in the company.

Rick Dickerson will assume the overall leadership role in engineering, scheduling, and lean manufacturing as Manager of Technical Support. A Lehigh University graduate and licensed PE, Rick has served in several management roles within High Steel. Working with Rick on the engineering team are Bob Cisneros, a Cornell educated PE who will function as Chief Engineer, and Scott Krause, Engineering Technical Supervisor.

Russ Panico, Manager of Quality Assurance, will now report directly to me.

We are confident that these changes will provide specific focus on those issues impacting our industry and customers and will help us provide the best value in the industry—as determined by our customers. 2005 will be an exciting year and I look forward to working with you as we move through it. Thank you for your support of High Steel Structures.

Robert J. Shannon, Jr.
Senior Vice President, High Industries
CEO, High Steel

# Lessons Learned from an **Old Friend**

*Dedicated to Ron Whitmeyer*

*– Steve Weinhold, P.E. (January 6, 2005)*

We lost a good friend and coworker last July, 2004. Some called him Ron, others called him "Whit," but most of us at High and within the bridge industry referred to him as "Zeke." Of course, I'm talking about Ron Whitmeyer, our former superintendent of the Field Operations department who tragically lost his life in an automobile accident. He was a veteran of the bridge erection industry with more than 48 years of experience! Through his experiences, good and bad, he taught us some valuable lessons. As contractors, designers, engineers, and builders, it is important that all of us embrace these simple, yet valuable lessons so they do not get lost over time. Let me share some of what he has taught me.

**Lesson #1: Be Practical.**
For bridge designers, being practical may mean that they pay closer attention to girder design. Designing an efficient girder with the smallest possible cross-section just to save on weight and material cost may actually add cost to the project. A decision like this may mean that an extra holding crane or scaffolding may have to be used in the field to erect the girders due to lateral instability, whereas a bit heavier or stiffer girder may have eliminated this requirement. Zeke says to keep this in mind.

**Lesson #2: Keep it Simple.**
For contractors, keep it simple by not backfilling behind the abutments until the steel is erected, if possible. By doing so, the erector may be able to position their crane closer to the abutment back wall, and therefore, closer to the structure. The erector can now use a smaller, less expensive crane because their radius is smaller.

**Lesson #3: Take Pride in your Work.**
Zeke used to kid me by saying, "It's mathematically impossible for someone to give 110 percent effort—you engineers should know that!" But then he would get serious and tell me that taking pride in one's work and simply trying your best are the keys to success in whatever one tries to tackle. By "giving good measure", doing it right the first time, and erecting a quality product, High Steel's Field Operations Department has evolved into an AISC—Advanced Certified Steel Erector. Of course this didn't happen overnight, but Zeke's pride for his work and his leadership were the catalyst of this endeavor.

**Lesson #4: Focus on the Customer.**
Zeke taught me that if one takes care of the customer, they will take care of you in return. You know what? He was right. At High Steel, your success is our priority, which is why we still offer our customers erection services from New York to Virginia. For those customers that use our services regularly, we say thanks for your business. For those of you that have not yet considered our erection services, we say give us a try, and let us make sure your next project will come together smoothly.

Zeke, we miss you. But even in your absence, you left behind fond memories and valuable lessons for all of us: Be practical, keep it simple, take pride in your work, and focus on the customer. Thanks Zeke. Goodbye old friend.

# Employee Spotlight Shines on…Mike Kennedy

A second generation employee in his 24th year with High Steel, Mike Kennedy exemplifies the devotion and integrity of High employees.

Now a Project Manager for Pennsylvania, West Virginia and Virginia, Mike spent sixteen years in the Complex Fabrication Bay, five years in research and development and two in supervision, before getting his Certificate in Project Management from The Pennsylvania State University in 2002 and becoming a Project Manager.

Mike was the first recipient of the Company's "Good Measure Award," given to the individual or team who best demonstrates the "High Philosophy" and goes above and beyond their job responsibilities to provide "Good Measure." His involvement in the development of the articulating welding machine called "The Moon Buggy" was instrumental in his receiving the reward.

Most recently Mike was involved in a project with contractor Aetna Bridge, where high performance steel was used. Mike's project management skills in working with the General Contractor & Erector throughout the tricky assembly process of an extreme curvature, skew and deflection that had been designed into the structure, ensured smooth completion of the project through good teamwork, communication and trust.

Originally from Manheim, Pennsylvania, Mike currently lives in Lititz with his wife Sue and two children.

# High Performance Steel—2005 Availability?

**Steve Bussanmas** Senior Vice President of Sales & Marketing

For many owners and designers of bridges a big question on their minds is "What is the availability of steel for my project?" The purpose of this article is to answer that question, relative to plate steel for bridges, and to alert you to industry plans to increase supply in certain segments of their business.

Let's begin by going back to 2003. Steel prices and demand were historically depressed, several plate mills were shuttered or rationalized, and the US economy was in a trough. By late 2003, driven mainly by China, world demand for steel and associated raw materials surged resulting in shortages, price increases, and the institution of raw material surcharges. Domestically, ISG purchased and subsequently closed U.S. Steel's plate rolling mill, but maintained the heat treat facilities. The unprecedented shift in demand and costs challenged all producers to respond.

The resulting lower supply issue really had two distinct stories. First, the most popular steels used for bridges, Grades 50 and 50 weathering, required a longer lead time but really had little or no effect on bridge steel fabrication/deliveries because their lead time usually didn't stretch past the time required for shop drawings and their approvals. If it did, it was a minor delay that had little effect on the bridge project.

The second story however concerns High Performance Steel (HPS 50 and 70) which, during 2004, saw deliveries from the mill to the fabricator stretch to six months (isolated cases up to nine months). This delayed projects, costing owners and contractors time and money.

The obvious questions surrounding High Performance Steel is what has caused the unacceptable delivery times and what is being done to alleviate this problem?

The causes of delivery delays?

- There is currently only one supplier of HPS and that is ISG. When ISG was failing to meet its commitments, there was no other mill for fabricators to turn to for relief.
- Quality issues exacerbated ISG delivery problems. HPS Steel is more sensitive to surface imperfections and ISG experienced many completed plate rejects. Once rejected, getting a replacement piece rolled caused further time delays.
- High demand, including government armour, limited ISG's ability to devote capacity to solve the problem. Demand from all segments of ISG's business was strong this past year and most of their customers were screaming for more supply. Further, the government rated orders for armor to support the war in Iraq automatically moved to the front line. This continues to be a major issue for ISG in 2005.

So, what steps is the industry taking to solve the HPS delivery problem? Well, there is an aggressive recovery plan underway at ISG and a new supplier is coming on line. Details of this are as follows:

- During 2005, a second mill supplying HPS will come on line. IPSCO has plans to introduce HPS 50 in early 2005, followed in April with HPS 70. This will mean two mills, ISG and IPSCO, will compete in the growing HPS market.
- ISG has a four point recovery plan underway that they say will bring lead times back to the acceptable levels of the past by the second quarter of 2005. Central to the ISG recovery plan is an increase of their supply of slabs. Increasing slab supply will allow them to in turn roll

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# Recent Contracts Awarded

**State Road 309**
Montgomery County, Pennsylvania
Contractor: The Nyleve Company
4457 Tons

**I-195 Interchange**
Providence, Rhode Island
Contractor: Cardi Corporation
7818 Tons

**University Boulevard over I-66**
Prince William County, Virginia
Contractor: General Excavating, Inc.
700 Tons

**Washington Street Bridge**
Providence, Rhode Island
Contractor: Modern Continental
2529 Tons

**I-290 & Rte 146**
Worcester, Massachusetts
Contractor: J.F. White Contracting
1871 Tons

**CRX Railroad over MD 450**
Prince George's County, Maryland
Contractor: Balfour Beatty Construction Co.
749 Tons

**West 3rd St. over Cuyahoga River**
Cuyahoga County, Ohio
Contractor: Walsh Construction Co.
762 Tons

**Sims St. over Cannoquenessing Creek**
Lawrence County, Pennsylvania
Contractor: Thomas A. Mekis & Sons
733 Tons

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*A Division of High Industries, Inc.*

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For the best practices in steel bridge design, visit the **AASHTO/NSBA Collaborative** online at **www.steelbridge.org**

***Public and Private individuals working together to improve the quality and value of steel bridges.***

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# Tech Talk

## Fabricator's Insight for FREE


Bridge engineers have an unparalleled resource in the professionals at High Steel Structures, Inc. We routinely provide information from the fabricator's perspective, at no cost to engineers in an attempt to generate the most cost effective steel bridge design possible.

Since engineers are faced with a great number of variables and a limited amount of time to explore cost-effective alternatives, this service can help you cut through all of the options very efficiently. Providing information about steel material choices, the latest developments in fabrication, design, shipping and erection will get the bridge design moving forward quickly.

We will review your design with a fabricator's insight, including price estimates and details that can help produce an efficient steel design for your project. Providing these resources takes time, but it's an all-important service that many steel fabricators just can't afford to provide. We're pleased to be able to assist you, and we welcome the opportunity.

To learn more about how we can tailor our services to help your design, please visit our web site at **www.highsteel.com.** Here are just a few of the different pages within our site that will assist you in your steel design.

- **Ask the Expert**—Answers to specific steel detailing questions.
- **Shipping Calculator**—Can your girders get to the job site?
- **Project Pricing**—Estimates on steel market prices tailored to your job.

In 2004 we offered answers to over 200 inquiries received through our web site. We hope to hear from you in 2005!

## High Performance Steel

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more plate and alleviate the demand pressures from bridge fabricators. To increase supply they will:

- Add a fourth crew to their Coatesville, PA melt shop increasing their output by 20%.
- Increase slab production in the Burns Harbor, IN, Sparrows Point, MD and Cleveland, OH plants.
- Increase purchases of slabs from US Steel.
- Extend slab supply agreements with international suppliers, to free up domestic melt capacity for bridge grades.

In summary, High Performance Steel is a wonderful product that offers increased strength, durability and superior weathering characteristics. As demand for its use has increased, supply problems have surfaced that are being addressed. The steel industry is taking steps to increase supply and shorten delivery times. If their plans are successful, 2005 will be a much less stressful year than 2004 in the steel fabrication business!