

# The Connection Man

Dave Ricker's insights are still the "last word" in the industry

By Angela Doland

While Dave Ricker was chief engineer at the Berlin Steel Construction Co., he was sometimes called in to assess burned and collapsed buildings and factory explosions, often while fires were still smoldering. He would wander through the wreckage to see what could be salvaged — and to learn what he could from the rubble.

"Seeing the distorted steel, twisted, broken, torn and ripped up, it gives you a feel as to what steel can and can't do," Ricker, 69 and retired, said. "It's very helpful when you go back to the drawing board."

The Berlin, CT-based fabrication and erection company developed an expertise in emergency projects, and Ricker honed his often-mentioned "knack" for steel, said Robert Disque, who met Ricker while serving as chief engineer of the American Institute of Steel Construction.

"Steel's just a living thing with Dave," Disque said. "He has a feel for the behavior of structural steel that is unsurpassed."

Ricker left New England in 1991 to retire in rugged, mountainous Payson, AZ. The former Connecticut Yankee now wears a leather bolo tie on special occasions and spends his time wandering through another kind of wreckage — prehistoric Indian ruins and cliff dwellings. He curates several prehistoric sites and has even discovered an 800-year-old pueblo site in the three-million-acre Tonto National Forest.

But Ricker often pokes his head down from his lofty "paradise," as he calls it, to check up

on the steel business. He is a prolific "question-answerer" in Modern Steel Construction's Steel Interchange forum. And his trademark, 15-page treatises full of charts and legendary dry humor, still make the rounds among his former colleagues.

During his 40-year career, Ricker became one of the country's foremost connection specialists, promoting the use of single-angle, shear plate and seated connections, and defining the proper uses of various other types of connections. He began his career in the American Bridge Division of U.S. Steel and later moved to Berlin Steel, eventually becoming the company's chief engineer and then its vice president of engineering. He championed erector safety, constantly looking for safer-to-erect connections. His special talent is knowing how fabrication designs will work in the field, said Carl Johnson, president of Berlin Steel.

"Dave is a guy who can cut right through the red tape and see what's practical and safe for both the shop and the field to do," Johnson said. "He's one of the most innovative people I've ever met in this industry."

Ricker's advice remains the scripture of fabrication.

"When AISC develops formulas and standards for the fabricating industry, Dave is kind of the last word on whether it's really valid," Disque said. "In the



Dave Ricker and his wife, Jacquelyn, are enjoying their new life in Arizona.

practical aspects of how steel fits together, there's nobody who equals him in the country."

## Theory and Practice

At Berlin Steel, which did both fabrication and erection, Ricker saw connections put up in the field, and he questioned the safety of using standard double angle connections as frequently as was common then. He often points out that companies who do both fabrication and erection have a better understanding of the interaction required between the shop and the field.

"I hate to sound callous about this, but fabricators who do not do their own erection are apt to take a who-cares attitude towards erection," he said. "Some of them just want to do everything as cheaply as possible, often at the expense of another party."

Early in Ricker's career at Berlin Steel, fabricators didn't really understand how to use single-angle and shear plate connections to their best advantage.

But to Ricker, these designs seemed logical when used within their bounds – much easier and safer for erectors than traditional double angle connections.

“With these connections, you can enter a drift pin to align the holes of the connection piece and the main member, and then you can insert a bolt and tighten the bolt without having to consider erecting a second piece using that same bolt,” Ricker explained. With fewer drift pins to worry about, erectors have less risk of dropping a beam if a pin comes loose. And with shear plate and single-angle connections, erectors don’t ever need to worry about swinging in a second beam, a dangerous — though routine — operation that has crushed many toes, and worse.

In the field and as a member of AISC’s manual and textbook committee, Ricker promoted new uses for the two connections, especially when used with hollow structural shapes. He also championed seated connections, a safer beam-to-column web connection. He once wrote a paper entitled, “Selecting the Proper Simple Connection,” in which he pointed out the strengths and weaknesses of each type.

“Sure, double angle connections are stronger, but there’s no sense making a connection much stronger than the pieces that you’re connecting,” he explained. “There are many cases where you definitely should use double angle connections, but for lighter loads, or for beam-to-beam connections, you can often use sin-

gle-angle and shear plate connections to good effect.”

In Connecticut, thanks to Ricker’s constant suggestions, single-angle connections and shear plate connections are now standard, even though engineers in places as nearby as Pennsylvania still resist them out of tradition, said John Siemienowicz, a sales manager at Famm Steel Inc. and a former Berlin employee.

“He just never let up on things

small the job was, in his mind he’d have detailed the whole job through, from anchor rods to the roof,” Siemienowicz said. “He’d know the job better than the engineer who designed it. As I got older and advanced in my career I tried to do the same thing because I thought it was amazing. But I just couldn’t figure out how he did it.”

Ricker laughs about those late nights.

“I spent more time on the din-

## Slippery Surfaces

*Ricker has advocated erector safety throughout his career in his classic memos. Colleagues say he has an uncanny ability to get to see what everyone else has missed, as in this excerpt from a recent annotation by Ricker on proposed OSHA changes:*

“OSHA continues to be myopic in its view of a slippery surface. In reality a slippery situation consists of a lower surface (called a walking or working surface), an upper surface (called the sole of the shoe), and, on occasion, a lubricant. OSHA has traditionally concerned itself with only the lower surface. Of equal importance is the upper surface — the erector’s footwear. Several decades ago the typical erector’s shoe was composed of a very pliable rubber compound impregnated with particles of cork and cotton fiber which had good adhesion to any walking surface — wet or dry. It was treadless for maximum contact. For some reason these are no longer available. Instead, erectors currently use shoes with neoprene compound soles and various tread patterns — great for climbing mountains, but not so great for walking on steel.”

ing room table with plans spread out than we did eating there — my poor family,” he said. “But there are some things you can do in seclusion that you can’t do when the phone’s ringing every two minutes or people are ducking in your office door.”

Even as a child, Ricker spent his time doodling at the table. A hurricane

he considered important,” Siemienowicz said. “His advice had a huge impact in New England.”

### *Practice makes perfection*

When Berlin Steel won a job, Ricker would take the contract drawings home overnight, spread them on the dining room table, and attack. In the morning, he’d come in with a script for fabrication — somehow still alert after a long night, said former colleague Siemienowicz.

“No matter how big or how

that swept through Connecticut when he was nine years old prompted his first design undertaking.

“I remember sitting in the house by lamplight (because the electricity was gone for several weeks) and drawing what I thought would be new bridges to replace the ones that had washed away,” he said. “I’d show all the little dots for rivets on my drawings — can you imagine a nine-year-old kid doing that?”

Ricker’s perfectionism is legendary in the industry, said

Emile Troupe, who met Dave while serving as a regional engineer for AISC in New England. Years ago, when Troupe sent out a letter to members asking for suggestions about economical fabrication, Ricker sent back a 15-page handwritten dissertation on how to improve drawings and specifications from design engineers.

"I said, 'Whoa, who is this guy?'" recalled Troupe, now consulting engineer and consultant to the Structural Steel Fabricators of New England. "It was the start of a very long and beneficial friendship to us both."

Ricker has very strong opinions about what works and what does not. In committee meetings, he argues his points until everyone agrees, said his good friend Disque.

"He's exasperatingly stubborn, but it's OK, because he's almost always right," said Disque, now a consultant at Gibble Norden Champion Consulting Engineers. "Even if he's outvoted, he'll keep on and maybe bring up the subject at the next year's meeting."

Ricker's perfectionism served him well in many of Berlin's tough projects. Once, when a General Motors plant caught fire, Ricker and a 30-person team had the factory up and working again in about three weeks. Another difficult project was the fabrication of an offshore loading facility in Chile. The enormous moveable dock used cranes and telescoping trusses that reached out to load ore into ships. Berlin built the components and loaded the project into huge barges on Staten Island for shipment to Chile.

"Here we were, little Berlin Steel in Connecticut, building something huge and unusual for South America," Ricker marveled. Always, when talking about his former company, Ricker praises the Berlin team. "I was lucky to work with such knowledgeable people," he often says.

### *The Accidental Teacher*

Ricker's notion of team extended beyond just his Berlin co-workers – he always was thinking of the entire steel construction industry. He often shared his insights with colleagues, who still keep his thorough tracts and treatises stashed in their desk drawers for easy reference.

Ricker's AISC papers are still considered industry guidelines many years after he wrote them, especially in areas where existing information was scarce or vague. Articles such as "Tips for Avoiding Crane Runaway Problems," (EJ Vol. 19 No. 4, 1982), "Field Welding to Existing Steel Structures" (EJ Vol. 25 No 1, 1988) and "Design and Construction of Lifting Beams" (EJ Vol. 28 No. 4, 1991) attempted to fill the void, as did his lectures at steel construction conferences.

Still, Ricker is surprised to hear that colleagues say one of his greatest roles has been as a teacher.

"I never realized I had any exceptional skills in that regard," he said. With typical dry humor, he joked, "Maybe there's a defensive reason for helping people. If somebody comes to you with a problem and you explain it well the first time, that keeps them from asking the same question in the future."

Siemienowicz, a detailer while Ricker was chief engineer at Berlin Steel, recalls designing bracing connections for a Connecticut insurance building early in his career.

"All (Ricker) said at first was, 'Just start with the basement and calculate them out until you get to the top,'" Siemienowicz said. "Then he'd check my calculations for me while I watched. He was so supportive and easygoing that you just wanted to do everything right the first time. He made it fun."

Everybody asked for Ricker's advice, from engineers to erectors, said Johnson, Berlin's president.

"He had such a nice way about him, people would really listen to him more than other people," Johnson said. "He would always take the time to talk to people, and they would feel comfortable with him."

### *A Connecticut Yankee in the Southwest*

These days, Ricker spends most of his time riding a Jeep through his remote mountain paradise and traveling with his wife, Jackie. He plans to write a comprehensive history of the Tonto Basin area, where he now resides, and is in the process of collecting reference material. When he discovered a pueblo ruin two years ago, forest authorities wanted to name it the Ricker Ruin. Modestly, he declined; now the dwelling of low walls, fire pits, and entryways is designated with a numeral.

The Southwest offers a welcome change of pace.

"In this town, they don't hardly know what a steel beam is; everything is masonry or wood or adobe," he joked. Unlike many of his colleagues in the industry, when Ricker retired, he didn't take any consulting jobs.

"I had too many friends that would work until they were 70, or even older, and then drop dead three months after they retired," he said. "But Charlie Carter at AISC keeps me busy."

Ricker still attends conferences and keeps up on the industry. And his memos keep coming — his annotations to proposed OSHA changes are currently making the rounds.

"I don't know why I do it," Ricker said. "I guess I do it for the good of the industry," he said.

These days, he worries that team efforts among the construction trades are becoming rarer in today's era of litigation.

"On some jobs, we may lift lumber for the carpenters, or the concrete people may make a pour for us for our convenience," he said. "Our crane may lift some equipment for the mechanical

contractor. But on a lot of jobs it's every man for himself and that creates a hostile environment, which is the last thing that you want to happen because cooperation between the trades is very important and will make for a happy job."

Ricker, hoping to protect steel's market share, is adamant that the steel industry needs to do more to compete with concrete's aggressive marketing campaign.

"Concrete is great for dams and airport runways and sea walls and similar structures. But when it comes to graceful buildings, especially tall buildings or ones that span long distances, steel is so ideal that it's crazy to even think about using something else," Ricker said.

Still, he keeps an eye on concrete's progress, noting that its strength has increased tenfold in the last half-century, while structural steel's strength has increased only 50%.

Ricker, who has seen steel standards change slowly throughout his career from A7 steel to A36 to A992, is waiting for a huge leap forward.

"It seems like the way it's been in the past is whenever they made it stronger the steel became more brittle," he said, ever the perfectionist. "Unless someone discovers Kryptonite on Mars or something, we're stuck with steel as it is. We can just keep hoping for a breakthrough."

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