

# letters to the editor

## Taking the Point Further

The article “Reinforcing the Point” (01/2014) is interesting and appropriate. I have some additional information concerning compression members, namely the effect of residual stresses on the strength of steel columns, and specifically how merely adding a weld bead to a loaded column could probably strengthen it sufficiently for the purpose in hand. Of course, the addition of plates would certainly be appropriate if the weld bead and the resulting residual stresses did not give sufficient additional strength. The effect of residual stresses on compression members was first published by me and my coauthor, Lynn Beedle, in “Basic Column Strength,” ASCE Vol. 86, July 1960. There have been many papers on the topic of residual stresses in the following 30 years, and indeed residual stresses did play an important role in the determination of column curves as the basis for column design specifications.

Perhaps the one paper that is very appropriate to the January article, and discusses this topic further, is my article “The Reinforcement of Steel Columns” in the

## New Year, New Look

The cover to the January issue is terrific (very chic)! And you are correct [in your January editorial] about how people refer to the magazine. In all the years I was privileged to work with you and *Modern Steel Construction*, I do recall referring to it, on occasion, as *Modern Steel*—but never as *MSC*.

—**Brenda Aschliman**  
Formerly of **Walter P Moore**

I have put off writing for far too long to say how much I look forward to receiving my monthly copy of *MSC*, but this January’s new format is particularly impressive, so I am compelled to chisel out some time to compliment you on what a classy production you edit.

Your upbeat, engaging “Editor’s Note” casts the die each month for an uplifting introduction to what is invariably an outstanding collection of articles that I tear out and archive for reference. Indeed, I had to begin extracting the articles, rather than keeping the entire magazines, because of bulk. They had already taken

first quarter 1989 *Engineering Journal*.

—**Lambert Tall, P.E., Ph.D.**  
**Professor Emeritus**  
**Founding Dean of Engineering**  
**Florida International University**  
**Miami**

It was interesting to read the article “Reinforcing the Point” in the January issue. One thing in this article caught my attention: reinforcing W-beam with WT-section as shown in Fig. 1c on page 17. This would be our last option because of the following reasons:

- It is difficult to match both sections. Existing W-beam normally already has vertical deflection, and WT-section may bow in our out depending on rolling stresses. On the other hand, AWS D1.1:2010 allows a  $\frac{3}{16}$ -in. maximum gap to bridge with fillet weld. Even if we can bridge the gap, we are typically looking for multiple-pass overhead welds.
- It is a challenge for the erector to position and hold WT-section in place until permanent welds are

made; WT-section can’t be easily clamped to W-beam bottom flange as, for example, horizontal plate.

over my office, our bathroom vanities and the commode tanks, and they were beginning to encroach on the dining room table when my wife finally put her foot down. Which brings me to the weighty topic of how the world will end. I first heard this hypothesis applied years ago to *National Geographic*, so in applying it to *MSC*, it goes like this: Because none of us wants to throw away our back issues of *MSC*, the accumulating weight, concentrated principally in North America, will at some point cause the earth to become lopsided, shift on its axis and spin off into space, thereby spelling doom for civilization—alas, all attributable to your publication.

I had a chuckle at your January editorial this month leading off with, “It’s not unusual for me to use diminutive forms when I talk with my children.” Having taught the CAD detailing, welding inspection and nondestructive testing courses at Austin Community College since 1985, I have developed similar circumlocutions and euphemisms, though not strictly

made; WT-section can’t be easily clamped to W-beam bottom flange as, for example, horizontal plate.

- From a fabrication standpoint, it might be a waste of material if an uneven number of WT-sections is required for the reinforcement. When the fabricator makes WT-sections splitting W-sections, he is making two WT’s out one W.

If for any reason we need to proceed with a similar reinforcement at W-beam bottom flange, we would prefer the following options over WT-section:

- HSS section (we can avoid overhead weld if HSS horizontal wall is wide enough).
- Channel oriented vertically or horizontally with toes down.
- W-section (with this option there is even a chance to select reinforcing W-section to avoid overhead weld: for example, reinforcing W16×31 (*bf* = 5.5 in.) with W8×24 (*bf* = 6.5 in.).

—**Victor Schneur, P.E.**  
**Chief Engineer**  
**LeJeune Steel Company**

the diminutive forms you cite. If anyone can foul up a computer, it is a student, so experience has taught me all the standard workarounds to use on the fly to navigate past frozen screens and application errors.

But seriously, *MSC* provides must grist for my AWS Certified Welding Inspector (CWI) prep courses. I preach that while a thorough knowledge of AWS D1.1: Structural Welding Code—Steel will get them past the CWI exam, if they are not conversant with at least (1) the *AISC Manual*, (2) *AISC 360: Specification for Structural Steel Buildings* and (3) the *RCSC Specification for Structural Joint Using High-Strength Bolts*, they can expect to be ground to powder the minute they step through the doors of steel fab shops and encounter adversarial fabricators.

I wish the best to you and *MSC* in 2014!  
—**Warren Donworth, Ph.D.**

**Professor of Welding Inspection and**  
**Nondestructive Testing**  
**Welding Technology Department**  
**Austin Community College**  
**Riverside Campus**