

Four Foot, Eight

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Four foot, eight and a half inches. A rather odd number. And, no that is not the average height of IRWA presidents from 2002-2005.

Four-foot, eight and a half inches is the standard United States railroad gauge, the distance between the rails. And you may be wondering, as I did, why was that gauge chosen? So I went down to the Sacramento Train Museum and did a little research on the topic.

I wear a lot of hats as IRWA Executive Vice President, yet this may be the coolest one. As you know, Sacramento was the western terminal of the transcontinental railroad, building east through the mountains to meet up with the team coming from Omaha at Promontory Point, Utah where the Golden Spike was driven.

Well, when Congress established the uniform width for the transcontinental railroad, it used the most prevalent of 20 different widths in use at that time. That width was the standard that was brought to the United States by English expatriates who brought the English standard with them across the Atlantic.

But why did the English chose such an untidy number? Simple. Actually, the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

OK...but why did they use that gauge then?

Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing. Perfectly good explanation. But why did the wagons have that particular odd wheel spacing? Well, if they tried to use any other spacing, the wagon wheels would break on some of the old, long distance roads in England, because that's the spacing of the wheel ruts.

OK, so now we are getting somewhere. So who built those old rutted roads?

Imperial Rome built the first long distance roads in Europe (and England) for their legions. The roads have been used ever since. And the ruts in the roads?

and a Half Inches

Roman war chariots formed the initial ruts, which everyone else had to match for fear of destroying their wagon wheels. Since the chariots were made for Imperial Rome, they were all alike in the matter of wheel spacing.

The United States standard railroad gauge of 4 feet, 8.5 inches is derived from the original specifications for an Imperial Roman war chariot. And bureaucracies live forever. So the next time you are handed a specification and wonder what horse's behind came up with it, you may be exactly right.

Now there is a little twist to this story.

When you see a space shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRBs. The SRBs are made by Thiokol at their factory at Utah. The engineers who designed the SRBs would have preferred to make them a bit fatter, but the SRBs had to be shipped by train from the factory to the launch site. The railroad line from the factory happens to run through a tunnel in the mountains. The SRBs had to fit through that tunnel. The tunnel is slightly wider than the railroad track, and the railroad track, as you now know, is about as wide as two horses' behinds.

So, a major space shuttle design feature of what is arguably the world's most advanced transportation system was determined over two thousand years ago by the width of a horse's ass. ... and you thought being a HORSE'S ASS wasn't important!

Now many of you may be thinking that I would use this parable to point out the pitfalls of always doing things the way they have been done in the past and I will, but this parable kills two birds with one stone. This story, other than I enjoy telling it, is that while that makes a great tale, there is no underlying historical research that validates it. Of course, my motto has always been never let truth get in the way of a good story.

In fact, the website "Truth or Fiction" (truthorfiction.com) debunks this myth by stating that the Roman ruts were not for chariots but for narrow, hand-pulled carts. Although there are many places where the ruts are still visible, historians question that they played a role in English railroad standards 1400 years after the last Roman legions. One of the claims of this urban legend is that the width of the ruts was affected by the need to make the chariot and its wheels the same width as the combined rears of the horses pulling them. There's a statue by the sculptor

Franzoni in the Vatican Museum that is regarded as the most accurate known depiction of a Roman chariot. The two horses are wider than the chariot and the chariot wheels behind them.

History: one; Legend: zero.

This urban legend has been repeated over and over since before World War II and perhaps it is still being told because that fiction is more fun than the sometimes boring facts.

But you should not base decisions on fiction, on urban myths and on handed down generalizations. Decisions should be made based upon facts, not conjecture, rumor and the association equivalent of urban legend, the dreaded conventional wisdom.

Over the last several years, IRWA has moved from what Kerry Stackpole, the interim vice president before me, wryly commented was an "opinion rich, fact poor" decision-making process to requiring more research and rigor before making decisions.

Understanding the actual demographic makeup of our association is an important step toward better aligning our decisions with the needs and desires of our membership base. Through the past few years, we began to systematically survey our members and other stakeholders on key demographic and service issues. We have learned some interesting things about our membership base in the process, some of which flies in the face of "conventional wisdom".

While IRWA has been considered to be a relatively male-dominated Association, the truth is that is rapidly changing. Nearly 38% of the current membership is now female, a percentage that has been gradually increasing for the past decade. For our decision-makers, it is important that we assure that any lingering barriers for leadership participation by women are obliterated in the near future to take full advantage of their potential contribution to the Association.

Historically, IRWA's membership was overwhelmingly employed by the public sector. The most recent survey shows that 41% of our current members are in the private sector or self-employed, while 41% are government employed with the balance coming from the quasi-governmental or regulated segment such as railroads and utilities. Recent research studies suggest that the private sector will continue to grow as right of way outsourcing accelerates, while the governmental sector will slowly contract over the next five years.

An interesting trend among our members has been the increased role in supervising others. 45% of the membership now report that they supervise at least one other individual. This development requires careful consideration of how we develop courses, plan programs and invest resources as there appears to be a growing need for management and supervisory skills among IRWA members and stakeholders.

Educationally, we find a shift toward a more formally educated membership base. Over 70% of our members have at least an associate's degree with 59% reporting completing a bachelor's degree or higher. Among members 35 years and younger, these percentages were even higher. This information helps us craft our courses and educational programs at the proper level for our membership base.

One of the issues facing IRWA and every other organization is the impact of an aging workforce. Less than one quarter of the IRWA membership is less than 45 years of age with more than a third of the membership at age 55 or older. Look around the room and notice how much distinguished grey there is in the hair, not to mention those incredibly attractive expanses of foreheads.

Replacing those individuals as they retire is the number one headache facing employers in both the public and private sector. The potential brain drain from boomers leaving for the golf course and fishing holes is also a major strategic issue for IRWA as this next generation will need to be trained. The question to be answered is: By whom?

The creation of the International Communications and Marketing Committee last year has helped focus the need for more comprehensive marketing research for the Association. Over the course of the coming year, a variety of other surveys will address specific issues, such as preferences among our magazine readers and for our website. We also will be sharpening our branding of the IRWA identity through the development of a service mark, greater outreach to other organizations and enhanced internal promotion of IRWA programs and services.

By providing our leaders and decision-makers with better information, we believe that we become better stewards of the association's volunteer and financial resources. Indicative of this commitment to increased internal decision-making discipline, the IEC has adopted a formal decision-making process for new projects that require us to assure that the projects are consistent with the mission and approved strategies of the Association, build upon demonstrable strengths in the organization and do not unduly replicate resources available from other resources. It also requires rudimentary marketing analysis to assure that the new project has a financially viable constituency.

This process creates a more analytical foundation for Association decisions and while it is more labor-intensive on the front end, it will help us focus resources on the most pressing needs and greatest opportunities for the Association.

The most obvious lesson from the railroad parable is the prudence of occasionally questioning "why" we do things the way we do. In the past several years, IRWA has used its strategic planning efforts to question many sacred cows, using the theory that sacred cows make the best hamburgers.

Here are some examples of questioning the status quo and the resulting changes:

- Converting the Annual Conference from a Monday-Thursday format to a Sunday afternoon to Wednesday format has increased attendance among IRWA members and increased overall satisfaction with the quality of the programming offered.
- Increasing the responsibility and accountability of the Region Chairs and Vice Chairs and driving down decision making closer to the chapter level. While we are in the early stages of this shift, the early results are quite gratifying as the historical "us versus them" mentality begins to dissolve.
- The historical norm was "incremental changes" and tinkering, while now we have moved to understanding that wholesale changes and restructuring must be a viable option for meaningful change. The massive changes envisioned in our classroom-based course delivery system by the Education Summit and the complete revamping of all our courses to a higher standard of adult learning theory provides an excellent example of this new willingness to tackle large projects and invest on the scale necessary to make a difference. Over the course of the next year, almost every one of the 12 strategies outlined last year by IRWA President Dan Beardsley, SR/WA, will be implemented. This success of those and other initiatives means that no longer will placing band-aids on a corpse be acceptable as a solution within the Association.

In keeping with this desire to seek major improvement through significant actions, the IEC will appoint a special task force to address the role of our designation and certification programs in the 21st century. The IEC, along with the Region Chairs, Vice Chairs and Committee Chairs and Vice Chairs, will be taking a hard look at our governance structure over the coming years to assure that organizational form does indeed follow function. As we prepare to celebrate the 75th diamond anniversary of the Association in 2009, we can anticipate that celebration will honor the best of our past but also launch preparations for an exciting and challenging future.

As most of you know, this will be my last Annual Conference as IRWA Executive Vice President before I retire this November. When I interviewed for this position four years and half years ago, I knew nothing about the right of way profession and the truth be told, I still know nothing about the technical end of the right of way business. However, what I don't know about the substance of the job itself, I do know about the substance of the people who do the job.

At the Railway Museum, we look back at the remarkable accomplishments of the men who built the transcontinental railroad 140 years ago and marvel at what they accomplished in such a short time.

Ten miles of track put down in a single day on April 28, 1869. Thousands of miles of right away acquired and tracks stretching miles through tortuous mountain terrain and hostile plains in only six years. We someday look back at those days as a golden epoch because of the physical obstacles they overcame to build the west and make the cry of Manifest Destiny a reality.

And yet, I wonder which requires more true grit: to lay ten miles of track with virtual slave labor or to wrangle an environmental study through the maze of our modern bureaucracy. Given the choice, would the railroad pioneers have preferred to face native Americans defending their land or a group of enraged citizens facing relocation for a new football stadium? Before you answer, remember the railroaders felt they had the right to shoot back.

The truth is that today building a transcontinental railroad would not take six years, but probably sixty. It would not cost the public treasury \$800 million but probably \$80 billion.

But part of the reason that our forefathers completed the railway faster and cheaper was that we were willing to look the other way when land was swindled from farmers on the prairie or stolen from native Americans in treaties broken before the ink was dry. We were willing, with few qualms and reservations, to import and exploit labor in horrible working conditions. Try laying ten miles of track with an OSHA rep looking over your shoulder.

As right of way professionals today, you are entrusted with balancing the greater needs of a complex growing society with the protections of individual property rights. Unlike our great-great-grandfathers, we must carefully weigh the consequences of public infrastructure needs versus an all too delicate environment. Such stewardship of the land was a concept that would have been unheard of in 1863 in the offices of the railway barons.

As an Association, you readily embrace a 21st century ethical code of professional conduct that would have been alien to the 19th century rail road land man as global positioning and Blackberries.



We have moved from a world where laying track by any means was condoned and encouraged to a society where doing the project the right way is as important as the project itself. The end no longer justifies the means. The means itself is important.

Does that make your job more frustrating? Does that make your job more complex and difficult? Of course, and it's because of that frustration, complexity and difficulty that the International Right of Way Association becomes even more important to you and our members.

As an Association, we provide unique opportunities to share that workplace frustration with others, whether through formal presentations or sitting around the bar later this evening. There is something comforting about knowing others share and understand your experiences, even the bad ones. As an Association, we provide a framework for you and others to solve complex problems and share those solutions through our courses, our publications or our award winning website.

As right of way professionals, what you do daily makes a difference in the lives of millions in North America. And while I will leave my Executive Vice President position later this year unscathed with any real knowledge of the technical aspects of what you do, I leave with a tip of my cap for how you do it and why you do it. Because one highway, one pipeline, one telecom tower at a time, you and your colleagues build the future and for that, I say... thank you, and you and you. ●