

SYMPOSIUM PRESENTATIONS

R&D, Economy, Hardwood Industry, Legislation & More

Packed with information, RTA's 2010 Symposium & Technical Conference held in Branson in October was very well attended. If you were unable to attend the symposium, presenters' remarks are excerpted below. Refer to the September/October issue of *Crossties* for biographical information on each presenter.



THE ECONOMY

Beth Ann Bovino, "The U.S. Economy: A Slow Recovery"

The worst recession we've experienced since WWII is over; it ended third quarter last year just as expected. However, the economic recovery is occurring at about half speed. We like to call it a "half-fast" recovery, but can't really do so because if you say it three times fast, you see what you get. Housing is stabilizing. Our overseas partners seem to be recovering, which is helping U.S. exports. The financial system took a hit, but it is also stabilizing. We do think recovery is in place, but we expect it to be a slow, uneven one.



Dan Keen, "Recession & Legislation: Drivers of Change in the Coming Decade"

By early 2009, there was not a lot of demand to drive increasing traffic. In 2006/2007, people weren't happy. In 2008, things started to go downhill. And, in 2009, well, you know where that went. During this recession, railroads still kept up their investments. Railroads are thinking 10, 20, 30 years down the line. 2009 purchasing levels were the highest ever for ties for Class 1's. Positive train control is a big issue because it has to be in place in 2015, meaning that other projects that were planned won't get done. Even still, there is good reason to believe in a bright future for the freight railroads due to their affordability, efficiency and environmental responsibility.



Anthony Hatch, "Sustainability of the Railway Renaissance in a Dynamic Economy"

This industry is so dynamic; it changes all the time. But I firmly believe we are in a rail renaissance. I see great opportunity. There is future growth potential in oil, carbon, infrastructure and efficiency, intermodal, and grain. Coal is a question mark. We're changing the way we do business. Taking trucks off the highway is truly the new frontier. I believe that's because trucking is already turning to railroads for this help. Movers of goods want to see railroads pick up their business so they don't have to rely on a shortage of drivers and can save on fuel costs.



Wes Moss, "Apocalypse? Not Now: 5 Investment Keys to Protect Your Retirement"

The bear market cycle should end in 2015, meaning the stock market will be favored again. There's never a perfect solution for retirement. The consensus is that we'll have moderate to slow growth. My advice is to focus on the investments that pay you interest. Bonds have had their heyday, so reduce your expectations for capital gains and keep maturities short to intermediate. There is no crystal ball in this world, so focus on maintaining an investment strategy that is balanced and meets your needs and the needs of your family.



THE HARDWOOD MARKETPLACE

Steve Jarvis, "Hardwood Market Trends: Now & in the Future"

There are several threats to our industry, including lots of competition around the world. Forest certification threatens our markets. EPA's proposed greenhouse gas emissions restrictions threaten to boost energy costs and even threaten to restrict the use of wood for energy production.

It'll cause our industry to be even less competitive than it is now. And, just the ongoing urbanization of rural areas will decrease supply.



Bill Luppold, "Changes in Hardwood Lumber Production & Other Trends"

While there has been some improvement in the hardwood lumber market in the last 12 months, the market remains horrible. In the last 24 months, I estimate we've lost 25 to 30 percent of production capacity—I mean liquidated. There are also mills in place that are not operating. The industry's only savior has been crossties, but a lot of sawmills were not designed to be cutting industrial timbers. This is a problem for these guys. And pricing has never been this bad except maybe during the Great Depression.



David Branch, "Timberland Investments & Hardwood Timber Supplies"

What does the future look like? My crystal ball says there are still a lot of buyers trying to get into timberland, and there's a lot of money still sitting in funds and liquid investments they want to put to work. From a lending side, our notion of being able to make a loan of 60 to 75 percent of the value is gone. We have to focus on the cash value of the land versus just what its market value is. The forest products industry is cyclical and demand-driven. We do have these new drivers to value, including biomass, depending on how subsidies work and stay in place. This is all driven not by economics but by legislation, and the question is how long that will last. Our biggest threat to wood supply is the legislative activity that we see coming now. Simple changes in the Clean Water Act and the EPA ruling on logging roads could have a significant impact on forest landowners' ability to get wood out of the forest and to those who need it.



Chris Zinkhan,
**“Timberland Investments
 & Hardwood Timber
 Supplies”**

From 1997 to 2009, given the gloomy economic talk, there’s been a pretty big drop off in buying tract acres. Our projection for 2010 is that less than a million acres will trade hands next year. This is due to a number of factors, including buyers’ lack of liquidity, owners of timberland who made it through 2008-2009 and fended off the banks not wanting to sell when they view the price as in the trough. We’ve had a lot of failed sales. We will see a wave of timberland coming back into the market as the housing sector improves and the economy improves, meaning that timberland prices will pick up over time. A lot of our purchases over the last three years have been from family sawmill operations. They wanted to sell their timberland only to save the mills in some cases. We’d buy the timberland and then enter into a long-term supply agreement with them. It gets banks off their backs and then they can survive.



BUSINESS LUNCHEON
Gail Hinshaw

There are several strategies for increasing employee commitment: increasing employee involvement, letting employees share in company profits, making employees directly responsible for whole units of output, and coaching and developing a culture that builds and rewards. Commitment requires proficiency. People develop a commitment toward what they believe they can do well. People do not like to fail. Managers must ensure that their employees have the knowledge, skills, experience, tools and confidence to perform their tasks. Proficiency can be built through training, opportunities and culture, which is the most important.



THE LEGISLATION
**Chuck Baker, National
 Railroad Construction &
 Maintenance Association**

Climate change/energy legislation is a huge threat to coal, which is by far the biggest commodity moved by the railroads. Cap and trade has no future in this Congress, so we can claim some sort of victory there. But it’s fair to

say that this issue is not going to go away. And, most folks believe that eventually we’ll have some sort of climate change legislation out of Congress but most folks also believe any form that climate change takes won’t be good for coal. Regarding high-speed rail, there are definite pros and cons as it affects freight rail. The good news is that, in spirit, rail is viewed as the solution. The bad news lies in the realities of how freight rail and passenger rail interact.



**ENGINEERING
 SESSION**
**John Unsworth, AREMA
 & Canadian Pacific**

At AREMA, we’re always alert to new opportunities to remain relevant to the needs of the industry. A recent initiative is the promotion and development of a new committee on Positive Train Control. In 2011, we’ll be in Minneapolis with REMSA, RSI and RSSI for the largest-ever multi-organizational conference and show—Railway Interchange 2011—that will be a world-class, major industry initiative. Please hold the dates, which are Sept. 18-21, 2011.



John Bosshart,
**Burlington Northern
 Santa Fe**

BNSF is making a large investment annually in crossties and will continue to do so. Thanks to RTA and Norfolk Southern, who put time into developing and testing borate pre-treatment as well as creosote treatment processes in Cordele, Ga., it brought to light that BNSF was going to have to recalculate its investment. The return on investment is considerably different when you’re talking about the addition of borate. It reshuffled the deck for us and, as a result, we’re not going to be investing in synthetic or plastic ties in 2011.



Todd Wimmer,
Union Pacific

Since 2006, we’ve had a much healthier capital tie allocation and surfacing program, so our track surface is improving. In 2007, we started a tie-cycle logic, a specific tie replacement strategy. We anticipate that by the end of this year we’ll have around 500 miles of slow orders across our system, which is about 2

percent of our entire railroad. That means that we’ll be about 98 percent slow order free. About 36 percent of our \$1.65 billion engineering capital plan went toward ties this year. You will see a slight movement from a percentage standpoint in 2011 from the tie category to the rail category. With 93 percent on cycle with our ties, we have a risk out there with our rail component, so we anticipate migrating some of the tie money to the rail component. In 2009, we had a very successful year with our tie gangs installing ties, one of the heaviest years any of us at UP could remember.



**Dale Ophardt, CSX
 Transportation**

With regard to our National Gateway, we’re working hard to get that going. A lot of it is tied up in funding. A major aspect of it is moving increasingly toward intermodal, getting into the double-stack network on the entire system with no gap. The reality is that the funding has been moving forward on phase one. The \$183 million for phase one has been partially funded by the states of Pennsylvania and Ohio, and we’ve begun construction in Ohio. Part of the gateway was the terminal in northwest Ohio, and it’s about to be ready to open the first of the year. Next year, we’ll be using a lot more borate ties. We’ve been working on that for a while, and here we are buying hundreds of thousands of them. This is a testament to what the mission is all about.



**Jeff McCracken, Norfolk
 Southern Corp.**

We’re partnering with Pan Am Southern from Massachusetts going out of New York. Through a partnership, we are now actively in New England. We’ve got more than 550 short lines we deal with, which accounts for about 50,000 miles of capacity. They are very valuable to the rail industry, as they are serving 13,000 customers that otherwise might be forced to trucks. About 25 percent of our carloads are coming from short lines, and it’s a good mix of commodities. Our Marcellus Shore Project is under way. We’re hauling pipe and sand up there as fast as we can. That project will add capacity. The Beeline Project has been upgraded with new junctions, sidings and second ▶

main so you can get across the mountain there. This is part of our Crescent Port project, a huge capacity improvement project. Our Heartland Project is finished; we had our opening ceremony the other day.



**Dave Ferryman,
Canadian National**

Our wood crosstie program for 2010 is fairly evenly distributed between the Eastern, Western and

Southern regions—just more than 600,000 ties in each of those. We're up around 2.1 million ties this year if you include all the different expansion projects we've added. Next year, we're going to be up around 2 million ties, which is up from our 1.8 million before. A lot of ties are going to branch lines out west to get them in a little better shape. Our project in Chicago is ongoing. We're looking at doing considerable work at Kirkwood Yard, which will become our main switching yard for the Chicago yard. We've made a good capital investment in rail and ties. We're a borate railroad. We installed 200,000 borate ties south of Memphis, and we've had good success so far.



THE RESEARCH

Rich Reiff, "Update on Wood Tie & Fastener Tests Under Heavy Axle Load Traffic"

At last year's RTA meeting, observations after 112 MGT showed little difference between various direct fixation (DF) plate systems on wood or concrete ties, with both tie types performing about the same. This year, after a total of 255 MGT, differences between fastening systems are starting to show. This is seen in the form of screw/drive spikes lifting on selected DF systems, broken screw spikes on one system, and, as expected, accelerated gage widening on the softwood ties when compared to hardwood ties. Also, on concrete ties equipped with conventional insulators, these insulators exhibited cracking and had to be replaced. As expected, cut spikes used for plate hold down produced lower strength track. On the holdover timber and plastic ties with 600 to 1200 MGT gage restraint continues to show two to three times that of newer ties. Only minor tie plate cutting was observed on these "high mileage" ties, with much of the

gage widening attributed to wear on cut spike necks, and in some cases, softer plastic ties. Most degradation was noted in the tie/fastener interface area, not differences between hardwood and concrete ties. This suggests hardwood ties that are performing well, and effort needs to be made to increase severity of screening tests to cull out poor performing components prior to in-track placement.



**Dr. Allan Zarembski,
"Assessment of Concrete Tie Life: U.S. Railway Experience"**

A study that ZETA-TECH did for RTA looked at the question of what the North American experience is on concrete tie life. Concrete tie life has been a big question mark in North America. This particular study tried to make use of what is now a rather extensive experience on concrete ties in North America primarily on freight railroads in the United States and Canada. The focus was on actual railroad data, and we got excellent cooperation from all Class 1 railroads. We wanted an estimate of concrete tie life in actual freight environments. We examined about 29 million ties installed since the 1970s, of which about 25 million were on five major Class 1 railroads, with another 3 million on Amtrak and the rest on smaller properties. This experience is very heavily weighted toward freight. 2.7 million ties failed. There are very large batches of ties the railroads know they need to replace. We're looking at an 8 to 9 percent failure rate for concrete ties, and the average age of the 29 million ties is about 13 years. We're saying that a reasonable estimate in the North American railroad operating condition is within about 40 to 45 years.



Steve Smith, "Life Cycle Assessment of Creosote-Treated Ties"

Creosote-treated ties using our baseline set of assumptions are really very favorable for all the indicators except for utrification compared to plastic, which is a little bit better. Creosote-treated wood looks better than concrete in all indicators. The post-use fate of ties matters very much in the overall life cycle impacts as well. It looks like borate use that extends the life of ties is very much justified by the reduction of

impact indicators. In work we've been doing both with Creosote Council and Treated Wood Council, we've been able to use this data in arguing that treated wood should be considered a biomass fuel, a renewable fuel, in legislation by EPA.



**Terry Amburgey,
"MSU/RTA Alternative Preservative Study: Second Annual Inspection"**

It was our job at MSU to develop a procedure and a study plan where anybody who submitted a proposal to the RTA that they wanted their material in this test, we would put them in a replicated field test where they'd be exposed to two different sites in Mississippi. One of the sites is in South Mississippi, where we know the Formosan termite exists. The other site is in central Mississippi, where we know it's a really hot decay site based on about 50 years worth of field tests. What we're trying to do is give everybody a fair shot and take everything anybody out there has they think will work for crossties and have their material tested fairly against their competitor. Our two primary goals were to have the systems, including ones presently used, tested side by side and to test against native subterranean termites and Formosan introduced species. Some people wanted to have their non-indigenous species tested as well. After two years, on untreated controls, we're getting some decay, a little termite activity, and weathering of ties.



Stacey McKinney, "New Information from 50-Year Creosote Study"

Creosote F and G have given excellent performance throughout the service test, which was predicted back in 1958 on the soil block test. So, I think we can safely say that short-term soil blocked assays are predictive of long-term preservative performance, and less volatile components of creosote remain present in wood long term to continue to provide some pesticide protection. I'd like to thank RTA and Dave Webb for seeing this project through. After 43 years, this test almost didn't continue due to lack of funds, but because of Jim and Dave's persistence, we were able to continue and get the data after 50 years.



Dave Webb, The Creosote Council

Creosote pressure-treated wood continues to be used as a result of the fifth EPA re-registration last year.

The agency says they're going to re-register pesticides every five years. The previous time creosote was re-registered last was 22 years ago, so we do expect another re-registration process for all major preservatives sometime within next five to six years. Essentially, after a comprehensive review, EPA determined that creosote was eligible for re-registration provided the wood treatment plant risk mitigation measures are adopted and labels are amended accordingly. The second phase we've been involved in is putting together a label that reflects the decisions that were made between the registrants for creosote as well as EPA. There are no restrictions on aquatic uses of creosote-treated wood. Creosote-treated wood is allowed for outdoor use only. All major uses are allowed, according to AWPA use category systems.



Dr. Gordon Murray with research from Dr. Ben Dawson-Andoh and Jeffrey Slahor, "An Operational Enhancement from Two-

Step Borate to One-Step Borate for Treated Wood"

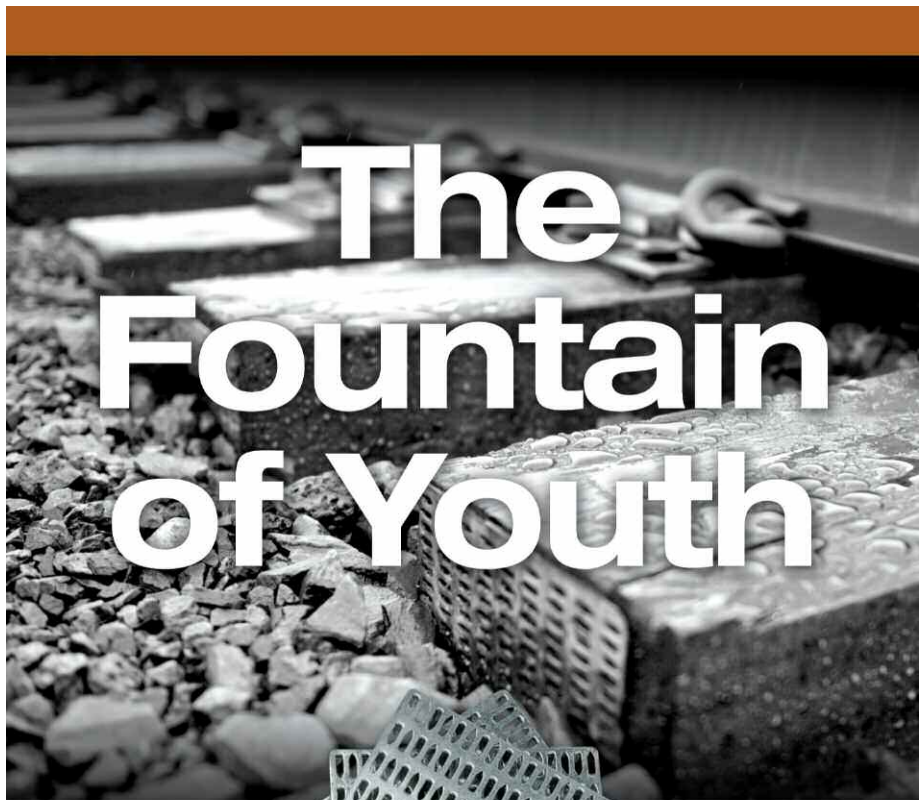
Borates handle the internal attack issues such as spike kill and foraging tunnels. Creosote prevents leaching of the borate by creating a hydrophobic barrier and deals with soft rot fungi. Both are required to give maximum protection in high rainfall, high termite zones. The single-step process is simply a cost control for both producer and customer. The advantages of a one-step vs. a two-step process are purely operational in nature. The single-step process at this point is not a replacement for two-step but an economical option to allow more boron ties to be replaced in service. Stella-Jones Corporation will continue to offer two-step ties.



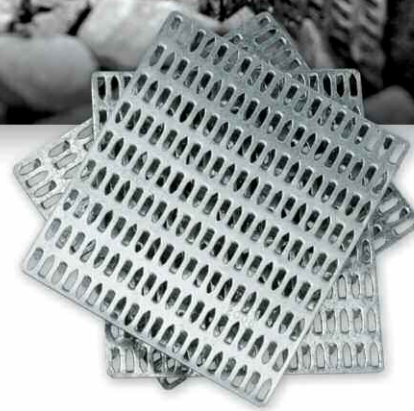
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Doug Clary, Norfolk Southern Corp.

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a wood tie railroad. For the last few years we've been at about 2.6 million, 140,000 switch ties and 26,000 bridge ties. Our total hardwood demand is about 125 million board feet. All of our ties plants are doing an excellent job getting ties to us. The only trouble we've had is getting the cars to load them in. Regarding our treatment distribution, the pre-treating is 13 percent; the creosote only is 87 percent. And, from what I've seen here at this convention, borate pre-treating will probably increase next year. Our goal is to sustain the hardwood crosstie as the tie of choice, and we need you to manage your costs, resourcefulness and give me any ideas you have. We will continue to pursue alternative tie treatments: the one-step borate process, increased borate with reduced creosote over-treatment, borate over-treatment with copper naphthenate, copper naphthenate and polymer borate. Our future is that we plan to have a financially sound railroad moving our freight on a solid bed of hardwood ties.



Chad Rolstad, Burlington Northern Santa Fe

Regarding the future of hardwood lumber production, there are some pretty scary statistics. This industry has proved itself very resilient in light of the economic hardships. Part of that is due to all the people in the room here. What we need to ask ourselves is whether we're going to be passive players in this industry and just rely on the contracting market to be there year after year to deliver these 20 million, 22 million, 23 million ties like some of these projections show. That's an ongoing concern because we're really hitching our wagon long-term to the wood

tie and looking at things to enhance the life of the wood tie such as the borate. And, as we turn our back on some of those other alternative types of supply, we must be certain our raw material is going to be stable as well as our creosote supply and any regulation that happens with that over the next years. We're going to be ramping up to several hundred thousand borate ties this year and perhaps over a million next year. We're going to be more aggressive on that in future years.



Gary Hunter, Union Pacific Railroad

The estimate for 2011 will be right at \$3 billion for capital investment. A large part of that capital program is black crossties. Our program year starts in November of the previous year, so our 2010 program started last November and goes through end of October this year. We're currently at 3.83 million ties, and we'll be knocking at 4 million ties by the end of this program year. What's important is to make sure you have dry ties throughout your system that are consistently delivered to the treating plants for stacking so that when you do have demand, those ties are ready to treat and you can meet the demands that our customers place on us. Looking into the future, it looks like wood ties will gradually decline over the next couple of years in terms of number of ties being used. Our concrete use will increase due to high-speed rail projects. Steel, we really don't know right now. And composite tie usage will go down.

Lisa Pleasants, CSX Transportation

Our tie program next year will be similar in number to what we've had in the past five



years. We did find out recently it's going to be a little higher; we're taking some money from the rail guys. And our goal is to have half of our ties, the

southern half we supply to, to be the one-step borated-treated ties. We always believed borates worked fine; we just could never make the financial case for it, so we really appreciate our suppliers who have gone out there and worked to meet the needs of the customer.



Bruce Emberly, Canadian National

CN is recognized as the most efficient railroad in North America. We burn 1.3 gallons of fuel per

1,000 gross ton-miles. If you go to our website, our customers can compute savings by using a greenhouse calculator that's set up. You can calculate how much you will save using railroad vs. truck.

Delivering for green industries—since 2004, we've moved 1 billion tons of bio-diesel; 2005—2,100 carloads of wind turbine components; 2006—6 million tons of ethanol; and every year, we're shipping 800,000 tons of wood pellets. In 2011, we're going to need another 2 million ties, which include capital, special projects, siding extensions and yard bypasses with the exception of say 60,000 softwoods, which we use for industrial programs as well as siding extensions. No composites and very few concrete. All our ties for 2011 will be single-stage treated borate and P2 creosote.



Rob Churma, Canadian Pacific

In 2010, we used 96 percent new, 3 percent second hand, 1 percent relay, 99 percent wood, very little

steel and I think we bought 80 new concrete ties. We don't use any plastic or composite. In 2010, we used approximately 14 percent softwood, mostly 7x9. Total ties this year were 934,000. We use 100 percent North American, no offshore. For 2011, we'll use just over 900,000 for all of our requirements. We'll purchase more steel ties and use 5,400 concrete ties from our inventory. Going forward, 920,000 wood ties next year and for 2012 and 2013, I put an even million. §



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