

# Issues, Trends & More: What They Said At The Symposium

Packed with information and activities, RTA's 2007 Symposium & Technical Conference has been highly regarded as a success. This year, topics addressed everything from research and development initiatives to supply issues to purchasing and engineering plans. Presenters' comments are excerpted below.

## TIES & TRACK RESEARCH



### **Carmen Trevizo, AAR Track Research & Crossties & FAST/HAL Update**

The objective of our mission out at TTC is to help improve and demonstrate the performance of tie and fastener systems under heavy axle load traffic. One of the things we're doing in 2007 is looking at and developing performance and design requirements for composite ties. We're also looking at evaluating other systems—tie and fastener systems—to address rail seat abrasion, and we continue to monitor different types of ties and fastener systems at our facility and also in revenue service. In helping to develop the performance requirements and the design guidelines for the plastic ties, we're taking into consideration the performance of these ties in revenue service. We're looking at the dynamic loading that these ties are exposed to, the foundation or the support conditions that the ties may have, and how this may influence their performance. [There is] also the variability. The ties are of recycled plastic; the batch we get today maybe be different tomorrow, because of the input of the material used in the manufacture of this ties.



### **Michael Sanders, Mississippi State University, Alternative Preservative Treatment for Crossties— A Long Term Field Test Between MSU & RTA**

The primary goals of this research are to evaluate the performance of new or experimental preservatives when compared to Creosote or Borate/Creosote systems already used in both refractory and non-refractory species. We want to duplicate the research in areas we know are colonized or are infested with both Formosan termites and our native termite species. We'll evaluate the corrosion of both the tie plates and the spikes.

And then we'll evaluate the dimensional stability of the ties as well. Each year we'll inspect for signs of biological degradation, which means decay and/or termite damage. We'll also inspect for signs of iron degradation or corrosion of spikes or iron sickness. And we'll photographically document these inspections each year and records will be provided to RTA. We will be conducting bi-annual evaluations, and every other year, bi-annually, we will take one tie per treatment group, remove it, section it in half and look for internal problems. So this not a small-scale study; we're talking several hundred ties exposed at both test sites and several hundred real crossties treated commercially and exposed to harsh elements.



### **Dr. Allan Zaremski, Zeta-Tech Associates, Modern Crosstie Inspection & Planning Tools**

Crossties generally represent the second largest maintenance-of-way cost area in the track structure—between 20 to 40 percent of track maintenance costs. In rough terms, you're talking about \$2 billion cost for materials and installation and ongoing maintenance. Inspection tools have been moving over the last several decades away from just the old reliable track inspector into the new generation high-speed inspection technologies and new tools to supplement the inspector. New systems allow you to record detailed and accurate information about tie condition, where they are and how they're located. This, in turn, allows you to start collecting data you can use for more accurate planning of maintenance and replacement activity. You don't have to go in and arbitrarily replace 800 ties per mile, but you can instead go into each mile and ask yourself what you really need. Now with a typical couple \$100 million tie budget for a class 1 railroad, savings of 1 or 2 percent can turn into real money.



### **Jim Gauntt for Shane Kitchens, TASKPro, Update on Electrical Impedance Measurements for Borate-Treated Ties**

The first thing that anyone should understand when it comes to any properties of wood, but particularly electrical impedance, is that wood is a non-homogenous, organic material and it is extremely challenging to measure electrical properties. The history of wood ties is long and the use of treated wood crossties has occurred more than 100 years. Literally millions of them are in use today. Since 2004, more than a million ties pretreated with borates have been installed by the Norfolk Southern, CN and several other short line railroads in interspersed applications throughout Decay Hazard Zones 4 and 5. We also know that BNSF this year installed 1,000 ties again experiencing no signaling issues in that part of the track, and we understand now that we're probably somewhere in the neighborhood of 50,000 to 100,000 additional ties sometime over the next year or year and a half for BNSF and a couple of their subdivisions.

The statistical analysis of our test revealed that the moisture content of the tie is the primary driver for the electrical impedance of wood ties, and that in the commercial loadings now borate pretreatments in the amounts tested have no discernable impact on the impedance of wood ties where moisture content is in the range of 25 to 29 percent. We also learned in a comparative test like this that looking at one or two ties simply isn't enough. You must have a minimum of at least 25 control ties to compare to a minimum of 25 treated ties to have enough data points.

Also, there were some additional observations. We did confirm that the relationship between moisture content and electrical impedance is non linear and that this requires measurements for each individual tie when you're testing

for impedance; you cannot do simply average moisture contents. If you're going to have a data set you're going to have to have a large data set to begin with, and you're going to have to measure not only impedance, but also the moisture content of each single tie when you actually do it in order to draw valid conclusions.

## HARDWOOD INDUSTRY SESSION



### **Bill Luppold,** **U.S. Department** **of Agriculture,** **Structural Changes** **in Hardwood Markets**

The hardwood industry—what's happening now? After seeing stabilization in 2004-2005, we're now seeing a decline. Large companies are up for sale, but there are few takers. Intermediate-sized mills that survived 1999-2003 are closing. We see Pennsylvania, which had a very strong base in these mid-sized mills, just being devastated. But some guys have figured out that you could take a Wood-Mizer (portable sawmill) and square up the log and throw it down on a little resaw. It'll cost you about a million dollars. You can put 4 million board feet a year through this. But your kerf loss is under .01. You compare that to a .16 for a thin kerf traditional band mill, and it's under a million dollars to produce this. If you want to produce 12 million board feet per year, you just buy three of these things. I'm seeing big guys now setting up these rigs in there. That's in contrast to the "let's see if I can outdo my neighbor who put \$15 million into his mill last year, so I'm going to put \$17 million into my mill." Well, you can imagine where those guys are now. Bleeding.



### **Tom Walthousen, NHLA,** **Changes in the Hardwood** **Lumber Industry**

What can the railroad industry do to help sawmills get through this slump in the hardwood market? Guys who make ties aren't really sawing a lot of grade lumber. Grade lumber can be a by-product of sawing ties and help them be better users of their raw material. The best thing guys can learn is simple accounting. Know how much you

paid for logs and know what your yield is from those logs. Overall, the hardwood industry is going to continue to be challenging.

Production is down, and prices are down because demand is down. But we will see more orders going to Asia and Europe. I'd like to say hardwood markets are going to get better and there are a lot of people out there who are positive and seeing orders coming back. I'd like to see us sawing logs because we have a market for them, not just sawing because we have a saw.



### **Dr. Jeff Howe, Dovetail** **Partners, Reinventing the** **Hardwood Industry**

If you're a senior executive for a firm that has more than 20 people, 75 percent of your time should be spent facilitating, coordinating, organizing and communicating with people. That's the job. There's a lot of research that says no company should have more than seven levels of management in it—from the shop floor to the CEO. And in most companies it should be less. Within that, a shop floor worker should spend 90 percent of his time doing his job and 10 percent planning his job. For a CEO, it's the reverse. Everybody in the middle proportions themselves out. If you're a senior leader, what you should be doing is coordinating, leading and facilitating people to be successful.

## LUNCHEON



### **Dr. Allan Houston,** **Research Professor,** **UT Dept. of Forestry,** **Wildlife & Fisheries**

Is there any way to educate a significant group of people about our industry, bring them together and tell them about the timber industry how it affects them and how it affects their lives? What's the truth? We targeted teachers and we have had more than 1,200 teachers come through our educational program. They come for a weeklong session called the Tennessee Conservation Workshop, where we really educate them about what forests, timber and what the whole industry is all about. It was interesting to me because almost 100 percent of the time we had people

come in with one mindset and they left with another. The mindset is "Hey, are you really telling me we can cut timber and we won't destroy the world?" The idea is for these teachers to learn something that they'll go right back into the classroom and tell their students and interpret things they see. We also take them to the pulpwood yards, let them see how paper is made, let them go to a timber sale, and talk to the logger as a businessman. We take a log all the way to the mill and let them see it made into lumber. We look at the environmental issues and learn what water quality is.

## LEGISLATIVE UPDATE



### **Keith Hartwell,** **Chambers, Conlon** **and Hartwell**

The primary legislative goal of the ASLRRA is to try to get an extension of the short line rehabilitation tax credit. The credit expires at the end of 2007. It was a three-year credit, and we are attempting to have it extended for another three years. This extension is a little bit different from the previous tax credit, which was capped at \$3,500 per mile; we propose to raise that to \$4,500 per mile. Previously, it only applied to short lines and Class 2s and 3s in service as of Jan. 1, 2005, and we want to change that to those in service as of Jan. 1, 2007. We think it will add another 1,000 miles to the railroads eligible for the credit. Currently, we have 192 House co-sponsors and 36 Senate co-sponsors. We have a process for people who want to help us, and we love to have people come to Washington and meet with their Congressman. We have found these meetings to be very successful, and almost two-thirds of the time we get them to sign on.



### **Peggy Wilhide,** **Association of** **American Railroads**

We've had more congressional hearings in the first half of the year than we had in the past three years combined. We have a new Democratic Congress; they are more activist, tend to look at corporations as evil and bad, and want us to go to a government solution to ►

any problem. We're not the only industry—every industry is under the gun right now. Railroads have some key issue this year including rain safety, rail security, re-regulation and the infrastructure tax credit incentive. What that would do is provide a 25 percent tax credit to any industry that invests in rail infrastructure, and it's designed to stimulate growth. The message we are trying to get across is that railroads are the safest mode of transportation, and we're getting safer. We can report that 2006 was the safest year, and 2007 is shaping up to be just as safe.

Railroad re-regulation is what we are most concerned about. If we do get re-regulated by Congress, we're not going to be able to expand, we're not going to be able to have the capacity we need, and that will have a ripple effect with all industries that deal with the railroads. We are doing things to counter the message from Capitol Hill with an advertising campaign, which communicates that freight rail works very effectively and can go 428 miles on one gallon of gas.



**Chuck Baker, NRC**  
Congress' favorite thing to do is nothing, and in the railroad industry, their favorite excuse for doing nothing is because we disagree with each other and have different groups come up to the Hill at cross purposes. We've learned at Chambers Conlon & Hartwell and at NRC that the best thing to do is to create effective coalitions where you come to the Hill with the same message over and over again, and send letters and e-mails and hold conferences. The partnership with NRC and short lines is extremely effective, and our partnership with RTA is great, too, and we'd like to ramp that up.



**Ray Chambers, NRC**  
Right now, we are confronting a nation with congestion and energy challenges, which cries out for much greater investment in railroads. The country desperately needs rail to take more of this traffic, but Association of American Railroads statistics show they are not generating

enough capital internally to make the kinds of investments they need in order to hold onto existing traffic. So, if nothing changes, it's going to go down. What that means is that we need more public-private partnerships for a lot more funding into the rail system so it can pick up the increase in traffic. The goal is to bring building trades together in order to have a shot at a huge breakthrough for transit and increase capacity for freight railroads, which will be good for RTA.



**Chris Daloisio, Railroad Construction Co. of South Jersey and Railroad Constructors Inc.**  
We joined Railroad Transportation and

Operating Agreement (RTOA) and believe the agreement provides us with the best way to give our employees a fair rate, good health coverage and a pension plan. The RTOA is a union agreement that covers 38 states, and we are trying to make it 50. The union provides contractors with experienced laborers and operators, and helps with railroad-specific training. We feel being union has given us the ability to retain more employees, which has made us more productive, has cut our costs on training, and has given us the ability to be more competitive with our non-union competition.

**ENGINEERING FORUM**



**Larry Etherton, AREMA president, Norfolk Southern Corp.**  
The mission for AREMA is development and advancement of both

technical and practical knowledge and recommended practices related to the design, construction and maintenance-of-railway infrastructure. We accomplish our mission through the operation of conferences, numerous seminars, development and sale of our publications, and the development of standards and recommended practices for railway and transit engineering by our 28 technical committees.

In 2008, the annual conference with the REMSA trade show will be held Sept. 21-24 in Salt Lake City, Utah, and the REMSA trade show will be Sept. 21-

23. During even years, Chicago Palmer House Hilton had been site, but renovations and current and future space needs will take us to Chicago Hilton and Towers Sept. 20-23 with the REMSA trade show.



**Walt Smith, BNSF**  
In 2007, we installed more than 450,000 concrete ties, 325 turnouts with wood ties, 70,000 wood ties, and this is in addition to our maintenance program. We installed about 2.4 million wood ties in maintenance in 2007, and we're looking at about 2.9 million in 2008. As far as capital construction, it will probably be in the range of 100 miles of new construction, 60 to 90 miles of mainline and 10 to 20 miles of back track. In dense urban areas we are moving to use wood tie structures because of the special track work—crosses, switches and turnouts.



**Craig Domski, Union Pacific**  
Over the last 11 years, UP has invested more than \$29 billion in capital investments, not daily operating expenses, with 33 percent of UP's capital expenditures on the engineering side going into ties. Over the last five years, we installed 4 million wood ties per year. We had a capital budget meeting today, and we expect 2007 to be right at that total of 4 million wood ties by the end of the year. The total of other types of ties we are installing are 500,000-600,000 concrete ties and about 200,000 composite ties. Tie expenditures on UP will be \$505 million, with 33 percent of UP's capital expenditures on the engineering side going into ties.



**Dale Ophardt, CSX Transportation**  
The Florida Initiative that CSX and the Florida Department of Transportation are working on is a major project for us. Central Florida wants commuter service, so the state is looking to make rail investments to handle congestion and truck traffic and not have to spend as much money building more highway or extra inter- ▶

state lanes. We have a dual route through the northern part of Florida, the A (Atlantic) Line and the S (Seaboard) Line. The A Line now supports 17 trains and runs through some urban areas, while the S Line supports about 20 trains, including our phosphate and juice trains. What we're looking to do is to finish this deal with Florida that would dedicate the S Line to freight and move quite a bit of freight off the A Line to accommodate commuter service. We'll have about 16 projects up and down the S Line in preparation—new sidings, new sections of double track, new control points. In new construction, we're looking at about 60 miles, a lot of which will be associated with this project. Negotiations for this project are ongoing, so the project will probably be started later in the year. We will be using a combination of dual-treated and concrete ties on this project.



**Jeff McCracken,**  
**Norfolk Southern Corp.**

Our Heartland Corridor Project is a public-private partnership to build a high-capacity route through the heart of southern West Virginia, where we're constricted by height requirements in tunnels and bridges. It will cut a day off transit time and reduce our expenses greatly by reducing the number of train crews, the amount of fuel we use, and the number of trains used. It will give us next day service to Columbus, Ohio, which is very important. Columbus is going to be a big intermodal terminal for us. It's about a \$150 million project.

Federal funding is about \$95 million, and Ohio, Virginia and West Virginia are kicking in some money. We've got 30 tunnels to be worked. We've got to clear 5.4 miles of track and modify eight bridges, and we've got slide fences to take care of at eight locations. We have 23 concrete, six masonry and one unlined tunnel to deal with. We will start shipping out of the intermodal terminal near Columbus this year. It will not be completed, but we will ship.

We also have a new construction project in North Georgia, where we're trying to increase capacity between Atlanta and Chattanooga, Tenn., and Atlanta and Birmingham, Ala. For all of our double track and high-speed track and signalized track, we're using wood crossties. We haven't bought into the concrete crosstie philosophy yet. As far as we've found, they're just expensive riprap. At the end of the day, we're running trains safely on smooth track, and we're big believers in a wood tie railroad.



**Dave Ferryman,**  
**Canadian National Railway**

We are wrapping up a large siding extension program through western Canada, even onto a portion of our southern region. It was our vision to have 12,000-foot sidings spaced every 15 miles across our core route, and we've pretty much achieved that from Chicago all the way to Prince Rupert and Vancouver. A big area of expansion for us is in the Prince Rupert area, which we believe will become a viable port for North America since it is the

closest port to Asia. We've just begun some intermodal service out of that area. We also are looking ahead toward the acquisition of the Elgin, Joliet and Eastern Railway; the GO project in Toronto, a transit expansion project; and a new class yard in Memphis, Tenn.



**Tom Price,**  
**Canadian Pacific Railway**

As a railroad, we want more species to choose from rather than less. Variety will help us stay away from the bugs and disease that are having such a huge impact on the industry. We also want consistency and density in grain structures. If ties perform reasonably in a similar manner, then our production cycles and our changeout cycles with our gangs becomes more accurate because the ties we put in in 2007 and will take out in 2020 will largely perform the same way. Also, the type of preservative and how much you're putting into it is important to us. We need full dimensions for the tie plating area. We want nice square areas so we can maximize the contact between the rail anchors and the tie. We want a reliable supply over a period of years. We want a good balance between quality and cost. We are prepared to pay premium dollar for a premium product and we want premium products backed up by facts and proof. Even though we understand that wood ties have a lot of challenges, we are still a wood tie railway and are going to stay that way.

**CLASS 1 PURCHASING STAFF**



**Chad Rolstad, BNSF**

Our 2006 revenue was \$14.5 billion, up 15 percent from 2005. We are expecting more revenue growth this year but not nearly as much due in part to price increases. We will see an increase in coal and agricultural products and probably decreases from intermodal.

Looking at our crosstie program in 2007 versus our tie program in 2006, we're projecting to buy about 2.8 million this year and we are going to ship about 2.8 million. Last year, we bought a little bit more than we shipped and had a little bit of inventory growth. We are

**P.T. O'Malley  
Lumber Co., Inc.**

Blocks • Wedges • Car Flooring  
Bridge & Switch Ties • Tie Plugs  
Any Type Wood Fabrication

6242 North Point Road, Baltimore, Maryland 21222 • PHONE: 410.477.0500 • FAX: 410.477.2439

relatively stable on the switch ties and are using quite a few unit trains; 60 unit trains shipped this year. We will probably see the same pattern for that next year. A 100 percent air-dried inventory is a strategy we are moving forward with and hope to be able to maintain in the future. We are expecting about a 5 percent annualized wood tie installation growth for 2008 and 2009.



**Garry Hunter,**  
**Union Pacific Railroad**

Our capital allocation for 2007 is \$3.2 billion. For 2007 so far, we have shipped out 3.755 million

ties. For the month of October, we will add about 150,000, so the numbers are getting close to 4 million. Our green tie inbound for the year is a little bit lower than our outbound. We have reduced our inventory some by design or orders. Moving forward, we think our wood tie program will stay somewhere between 3.8 and 4 million, concrete will be somewhere around 750,000, and steel will be minimal—about 5,000 ties this year. Composite will see an increase going into next year, and then we will probably hold right around 200,000.



**Fritz Horn, CSX**  
**Transportation**

We aim at a crosstie inventory of 60 to 70 percent of our total program needs.

We are within that range now, which probably explains why the finance people are not bugging me a whole bunch. We attempt to match treatment schedules with shipping schedules, which is a fairly easy thing for us to do right now since our tie gangs are running almost year round.



**Walt King,**  
**Norfolk Southern**

For 2008, the request has been around 2.8 million ties. Where that number is going to fall out, I don't

know. But for the last six years, we have purchased and installed anywhere from 2.6 to 2.7 million ties. Along with those, we have also purchased this year 125,000 switch ties and 22,000 bridge ties. And we expect those numbers not

really to fall off in the 2008 program. About 80 percent of what we purchase comes from about four of seven treating plants. Of these seven plants, two are a mix of air dry and Bolton treatments and the other five process essentially 100 percent air-dried material. Of what we purchase, 64 percent is air dry and 36 percent is Bolton treatments. The main thing we express to our suppliers every year is that we have a partnership and that in order for wood to maintain its preeminence, we have to work together and keep things consistent and prices in line where we can all succeed.



**Rob Churma,**  
**Canadian Pacific Railway**

In 2007, we installed 97 percent new ties with some relay ties included. We are primarily a wood tie railroad at 98 percent and 2 percent concrete—and some steel, no plastic and no composite. The cost has to come down quite a bit before we can consider those products. Total wood ties in 2007 was almost 1.2 million. We are looking at just more than 1.2 million ties for next year with an additional possible 230,000 wood ties in there as well. Since 2004, our procurement strategy has been 100 percent black tie. Our inventory levels are zero. That has worked well for us, but we are always looking for possible alternatives going forward.

## WOOD PRESERVING RESEARCH PART ONE: CREOSOTE ISSUES



**Ted Bart, Carbon**  
**Management Inc., “World**  
**Coal Tar Distillation:**  
**2007 & Beyond”**

Some of the issues for coal tar distillers have been coke oven closures. We have had a lot of them here in the United States and expect that we will continue to see some over the next three, four and five years—not to the degree that we have seen in the past, but we will see closures. We have also seen closures in Western Europe. Growth has been primarily in China. The new steel production process practices include pulverized coal injection, which is not good news for a tar distiller because metallurgical coke is replaced with pulverized coal and injected into an

operation for an energy source. Non-recovery ovens, which are ovens that have been built here in the United States that basically consist of ovens that burn off all of the byproducts for energy value—that's not good news for tar distillers either.



**Martin Rollins,**  
**HM Rollins Inc.,**  
**“New Creosote Treating**  
**Industry Guidance**  
**For SARA 313 Form**  
**R Reporting”**

If we have to compute all of the emissions from storage, then the possibility—well the certainty—is that large creosote treatment plants will become sources of PAHs. And when that happens and you have Title 5 reporting requirements, then it could lead the Environmental Protection Agency (EPA) to focus on the industry and say this is a major source industry and that we are going to issue a standard for the industry that could include controls. If you recall in the mid 90s, we convinced the agency that we were not a major source of hazardous air pollutants, but if that ball rolls again I think we are going to be in trouble.

A group of us had a meeting with EPA in July and entered our case and told them what we thought. They took it under advisement but responded that EPA disagreed with us straight down the line. I expected them to come down on our side, which tells me that it never got that look from management. But what it says is that, yes, you would have to report that storage yard emissions from your drip pad. In essence, they said that treated wood had lost its article exemption.



**Mike Juba, Koppers Inc.,**  
**“The New York Academy**  
**of Sciences & The**  
**Naphthalene Coalition”**

I've always believed in facts, science—who could argue with that? Science will carry the day, right? But in recent years, it's become very clear to me that it's not about science. In fact, science plays a relatively small role in the decision-making process, which is unfortunate. But that's the world we live in. We ►

have learned the hard way that you have to engage in the political process and get involved in lobbying and in outreach campaigns. That's where Creosote Council is shifting a lot of its focus now—into product advocacy and product stewardship—so that we can be a player in that political arena. You have to come in with a consolidated approach—one voice. If the agency smells some sort of infighting among the different organizations, it's like throwing blood in the water. Local voices are essential. You must get involved at the local level, and that goes back to you folks—the people who treat, the people who use the treated articles. You've got to speak up and voice your opinions with your representatives.



**Dave Webb,**  
**Creosote Council III,**  
**“New York/New**  
**Jersey Legislative**  
**Issues Regarding**  
**Treated Wood”**

Something that is of significance is a statement that came from Beyond Pesticides: “This is a great first step, the ban on treated wood. What we are looking at is for railroad worker unions and telecommunications workers unions to put the same thing into effect for their workers.” That's a big flag that Beyond Pesticides is going to be talking to unions to move this ban into other creosote-treated products. There was no demonstrated basis for carpenters' union to have concerns. We have two Democratic governors who pushed these bills through. They have a track record of never voting against a union, and the unions have spent well over \$1 million to have these two bills put in place in the two states. It's public perception, a precautionary principle, and we need to do a better job educating the public—be proactive telling people at the grass-roots level about the importance of creosote-treated wood and what conservationists we are. We need to work together and become more politically active because what is taking place at the state and federal level is a threat. The New York/New Jersey ban on creosote-treated products is the tip of the iceberg; there will be continued attacks on treated wood products.

## WOOD PRESERVING RESEARCH PART 2: ALTERNATIVE WOOD PRESERVATIVES



**Gene Mall of BioPreserve**  
**for Poo Chow, University**  
**of Illinois, Accelerated**  
**Weathering Tests of 10**  
**Treated Oak Crossties**  
**from BioPreserve LLC**

The objective of the test was to determine the durability of 10 treated oak crossties, including four pairs of BioPreserve treated specimens and one pair of creosote-treated specimen. All were exposed to the six cycles of laboratory accelerated weathering testing equivalent to 20 years of natural aging in the Midwest.

In a number of areas tested, the BioPreserve ties exceeded the creosote tie in MOE changes, MOR Changes and three spike-resistant properties in reacting to the six cycles of artificial aging exposure tests.

Dr. Poo Chow developed this test around 1975. I think you can see that this is a very severe test.



**Dr. Lou Honary,**  
**University of Northern**  
**Iowa, Current Status**  
**of Soybean Oil-Based**  
**Wood Preservatives**

Our approach to commercialization is to start with known users and expand testing into other areas. This technology has the potential to be combined with some of the existing and known preservatives. We have not explored the possibility of mixing together creosote and soybean oil yet.

Our country seems to be ready for renewable products. Now, the investors and petroleum lubricant companies are coming to us because they see the market is ready for renewable products. Technology development requires patience and perseverance, so we have learned—in the case of some of these wood preservatives—to be patient. Bio-based products are receiving a lot of government attention not only because they will ultimately replace imported petroleum but also because they will help revitalize the rural economy and diversify and decentralize our petroleum—or basically—our energy use.



**Jeff Morrell, Oregon State**  
**University, AWP**  
**President, Treatments**  
**for Limiting the Risk**  
**of Pest Introduction in**  
**Untreated Wood Ties**

### Moving Across State Lines

How do we make it possible to bring ties into Oregon from any region of the country where the Asian Ambrosia Beetle is found? Well, one is to get into the tie yards and clean them up. If you can reduce the beetle pressure you can reduce the infestation. Get standing water out of the way. You've got to get vegetation back and away from stacks. We think the requirements are going to be that all ties are dipped and treated with a fungicide/insecticide, that stack covers are used and that a minimum storage time on site will be required before they can be shipped west. It would also be prudent to spray bundles before they are shipped, so there is extra protection. In order to work with regulators, we're probably also going to see some third party oversight.



**Bob Wombles,**  
**Koppers Inc.**

The good news is that there's plenty of coal tar in the world. The bad news is that most of it is in China. Going forward, an ever-increasing percentage of coal tar is going to be in China. However, chances are that the preservative qualities of the coal tar in China are going to be different than the creosote we're used to seeing because Chinese coke ovens run at a lower temperature than North American or European coke ovens. We're dealing with a different material.

Koppers is going to branch out its R&D efforts into is what I'm calling “inorganic preservatives,” which are not just totally hydrocarbon based. Usually, some type of metal would be involved. And the material can be water and oil soluble, which there are issues with both.

Koppers has traditionally been a coal tar wood preservative producing company. But the drivers for considering alternative preservatives are indeed supply and cost. \$

**For copies of speakers' PowerPoint presentations, a CD is available for \$20 by calling RTA offices at (770) 460-5553.**