SYMPOSIUM RECAP:

Presenters' Remarks Focus On R&D, 2010 Expectations & More

Packed with information, RTA's 2009 Symposium & Technical Conference held in Baltimore was very well attended. This year, topics ranged from recent research and development, to hardwood industry issues, to creosote supply, and Class I engineering and purchasing plans. If you were unable to attend the symposium, presenters' remarks are excerpted below.

TRACK RESEARCH SESSION

Dr. Allan Zarembski, ZETA-TECH, Comparison of Aurora Tie Inspection System With Visual Tie Marking Method

We looked at about 100 ties' worth of data using both TieInspect and Aurora. We developed a map of the tie conditions using both methodologies, using the visual tie inspect and Aurora, and we ran it through four sets of analyses and evaluations. We found that the Aurora system was pretty close on the number of failed ties, consistently graded less ties in the "bad" condition and consistently graded more ties in the "good" condition and in marginal condition. When we analyzed the replacement requirements in all four segments, Aurora's inspection called for fewer ties to be replaced between segments one and two. We're looking at roughly 300 ties per mile less to be replaced using the exact same logic. Overall, the Aurora shows moderate agreement with the tie inspect results, but identifies fewer ties to be replaced.

Joe Palese, Vice President Engineering Analysis Wood vs. Steel Tie Engineering & Cost Analysis

At 25 miles per hour we calculated the dynamic wheel load. We looked at track modulus variations between 1,000 to 8,000 pounds per inch, and we looked at tie spacings between 19 1/2 and 24 inches. We looked at the 6-by-8 wood ties and 7-by-9 wood ties. The 7-by-9s work well for all modulus and spacing conditions for bending stress, bearing stress and tie ballast stress.

If you were in a location where you want a 19½-inch tie spacing and track modulus is at a stiffness that is acceptable from an engineering analysis, 6-by-8 ties are also going to perform adequately and give you a cost benefit over the steel ties.

Richard Reiff, Manager, Transportation Technology Center FAST/HAL Fastener/Tie Study Report

In the first 100 million gross tons there is no difference in the concrete tie performance than the wood tie performance with the fastening systems in test. In fact, if you actually take a numerical average, the concrete ties are showing slightly higher deflection than the wood ties, and we think that is because of the pad and the insulators on the concrete ties are allowing a little more flex than the wood tie direct fixation systems, which are metal to metal. Now, whether that continues over time…that's what we'll be monitoring over the next year or two.

Our preliminary observation after 112 million gross tons of traffic is that we don't see any performance difference between the different direct fixation fastening systems being tested on wood.

Jack Minneci Engineered Wood for Railroad Applications Revisited

Some of the questions that come up on long-term durability can be addressed from two different perspectives. One is the initial certification of the adhesive. Any wet-use adhesive used for the industry for glulam today must conform to ASTM 2959, which requires a lot of vigorous up-front testing, cyclic loading, exposure to different bacterial decay, bending strength, etc. And, recently, we added another test requirement—a durability test. There were some problems that showed up in high temperature exposure with certain adhesive formulations, so we also added a heat durability test to screen those out as well.

What we noticed in the FAST test results that were completed in 2004, glulam didn't look as good when we got to the cut spike application or cut spike's smaller base plate. We did look good or comparable in the elastic fasteners with larger plates. So, you could use a glulam tie right away or today in applications where you have the larger plate and an elastic fastener.

HARDWOOD INDUSTRY SESSION

Brian Brookshire, Missouri Forest Products Association State Snapshot - Hardwood Industry Issues

Prior to the recession, Missouri's forest products industry was about a $4.3 billion industry, which, today, is down considerably. The production capacity at the mills is down 30 percent across the board in our state. In Missouri, it seems like this may be a better number than other places in the country when I've talked to my counterparts.

The only positives I see right now in regard to the impact to our industry is that there is a lot of work out there now with regard to renewable energies and mandates that are going to come to wood, particularly in our state.

Linda Jovanovich, Hardwood Manufacturers Association, Hardwood Sawmill & HMA Update

Our industry employs approximately 1 million people, which accounts for 6 percent of the total U.S. manufacturing GDP equivalent to $200 billion a year in sales. During this unprecedented economic downward spiral, the hardwood industry has certainly not been immune. In the past two years, domestic hardwood lumber production has dropped 30 percent and hardwood exports have declined 35 percent. And furniture in the past 10 years has seen more than 300 plants closed, resulting in the termination

of more than 90,000 employees. And while palette and railroad crosstie prices have remained relatively stable since 2006, hardwood prices have fallen between 30 and 35 percent. Recent industry reports predict many sawmills to close by year-end 2009, and already this year a billion board feet of production have been removed from the marketplace. Lean manufacturing is a necessity for survival.

Art Raymond, A.G. Raymond & Co., Other Hardwood Products: Marketplace Conditions & Outlook

Now that the furniture business has moved to China, the main demand driver for hardwoods is the construction industry. The hardwood industry is relying on construction-related markets for demand for grade lumber. Housing starts peaked in January 2006 and finished that year at roughly 2 million starts after a steady 14 years of growth. Last year, we started only 906,000 homes, single-family and multi-family in the United States. That is the first time since 1959 when we started collecting that data that we built less than 1 million houses in the United States. And, currently, we're running at a rate of only 598,000 housing starts on an annual basis, which is way below anything we've ever seen in the history of residential construction in the United States.

RTA GENERAL BUSINESS SESSION LUNCHEON

Dennis Avery, The Heartland Institute, Predicting the Climate for Railroads and Trees in the 21st Century

Where's the warming? Sun spots started predicting a global cooling in 2000; it arrived in 2007, so roughly 10 years lag time. Correlation is not causation, but lack of correlation is grounds for dismissing carbon dioxide (CO2) as a climate-forcing agent.

CO2 can't explain the warming from 1976 to 1998, and CO2 doesn't explain the cooling from 1940 to 1975 when the first big flush of CO2 was being emitted and the temperatures should've been soaring but went down. And from 1915 to 1940 another big surge in temperature came too early to be blamed on smoke stacks. What that tells you is that CO2 can't explain much.

Basically, it's the sun. The linkage is cosmic rays. When the sun is very strong it sends out a huge magnetic wind that blocks the cosmic rays. When the sun is weak that magnetic wind recedes and more cosmic rays get through. When they hit our atmosphere they shatter water molecules in the air into tiny globules with an electric charge, and those become the seeds for the low wet clouds that dominate the tropic skies much of the time. More cosmic rays, more clouds, cooler earth.

LEGISLATIVE SESSION

Neil Moyer, Northeast Corridor Infrastructure Project, High-Speed Passenger Rail Program

The interest has been very significant in federal funds for high-speed rail projects. In the pre-applications, we got $102 billion in interest expressed for the $8 billion that we have available. It is going to take time, and the $8 billion isn't going to do the whole job. For one thing, there is little federal interest or funding in developing high-speed rail outside the Northeast Corridor, and few of the states have put their own money in. It's not like the highway program, which has been in existence for 50 years and they all have an infrastructure of planners and engineers and the whole apparatus to fund an ongoing program that effectively funds itself. Nothing could be farther from the case in our case. So, not a whole lot of states were ready to do this. A lot of planning and environmental work needs to be done.

Chuck Baker, President, National Railroad Construction & Maintenance Association

There are two tax credits out there that this group should be aware of. One is the short line railroad tax credit. It's been around since 2005 and provides $3,500 of tax credit incentive per track-mile owned by the short line railroads. Given that the short lines own about 50,000 miles of track, that's about $175 million a year in credits. It has been a great success story. It is set to expire Dec. 31 of this year. There have been bills introduced in both the House and the Senate to extend them. They've gotten huge support, but there needs to be a legislative vehicle that this can be attached to in order for it to be extended.

Keith Hartwell, Chambers, Conlon & Hartwell

Today, President Obama's approval rating is at 51 percent—a much higher number than Clinton's approval rating was at this time during his presidency. Who knows what it will be right before the election in 2010. However, I would say that if it stays at this 51 percent number that the chances of the Republicans overtaking the Democrats in the House or the Senate is probably pretty slim. So, that's probably the number you should look at if you are interested in this topic when you get close to the election in 2010 and are trying to decide if it's a possibility if the Democrats could lose control of the House. I'd say that number has to be a lot lower than 51 percent before that becomes a possibility.

John Wetzel, AAR

Preserving balanced regulation is sometimes referred to as "re-regulation," and for the last two decades in Washington we have also referred to it as "re-regulation." The Class I railroads are no less committed to avoiding a bad regulatory outcome than we have ever been, but Sen. Jay Rockefeller (D-WV) is the chairman of the Committee on Commerce, Science and Transportation. Congressman Jim Oberstar (D-MN) is the chairman of the House Committee on Transportation and Infrastructure. Both of them are long-time advocates of increasing economic regulation of the rail industry. Given the fact that our two chairmen are advocates for doing this, we've decided not refer to this as "re-regulation," and instead are calling it "preserving balanced regulation." We're hoping that we can all rally around the idea that nobody wants unbalanced economic regulation.

CLASS I ENGINEERING SESSION

Bill Van Trump, AREMA President, Union Pacific Railroad

We are always alert to new opportunities to remain relevant to the needs of the

industry. One of my personal initiatives is the promotion and development of new committees and program involvement for the information technology professionals that are becoming more and more involved in the railway engineering aspects of our industry. We also have a new committee, Committee 39, which is devoted to positive train control (PTC), which is the industry buzz of the year. We had a good panel discussion featuring PTC experts at our 2009 conference in Chicago.

In 2006, AREMA launched the Meet The Next Generation Program to welcome the new generation of railroaders at the annual conference. We had a very successful meeting of this event in Chicago this year with several dozen young people involved. So, this is one of the types of things we're promoting that is really starting to build.

John Bosshart, BNSF
At the Burlington Bridge Crossing in Mississippi, the last major bridgework was done in 1891. So here's what the bridge order pays: the cost of any betterment, plus the original cost of the portion replaced, plus its cost of removal, times the percent of service-life remaining divided by 100. The federal government controls this through the U.S. Coast Guard, and the U.S. government pays the remainder. So, in this case, the U.S. government would pay the majority. The 2009 Stimulus Funding Act had stated that there is $142 million appropriated for shovel-ready Truman-Hobbs projects. The bridge was built in 1868 and the truss bands were replaced in 1891.

David Connell, Union Pacific
Total Productivity Culture (TPC) is something we've really rolled out with our wood tie gangs in the middle of this year. We've got about 15 tie gangs at Union Pacific, and we decided to pilot this process with two major gangs—one on the north and one on the south side of the railroad. TPC is designed to increase productivity, which is controlled by two major factors: how much time we get to do the work and how productive our gangs are once they get on the track. What you look at is better gang planning—maximizing peak production time. In other words, essentially the hours on the track, on-track productivity and once we get there what we do with it. We are really setting a higher expectation. When it all came down to it, what really was the secret—is that we have a very competitive set of folks that do our heavy lifting for us everyday and they really want to be the best at what they do. And, just by setting a higher expectation and giving them a way to measure it has really been impressive. Before we went into this we were doing about 1,640 ties a day with about a 50-man tie gang. With better planning and better on-track time we got another 264 ties a day, and then once we got on the track just setting that higher expectation those guys gave us another 213 ties a day. So, our average production back in the summer with one of these pilot gangs is close to 2,100 ties.

Ray Zenisek, CSX Transportation
In Central Florida, we were going to make a deal with Florida Sun Rail to let them purchase 61 miles of our A-line track for a commuter service and, in turn, we will be funded on the S-line to divert all that freight traffic and have the capacity to run all the freight in that area and let them run a separate operation on the A-line. That will mean about 50 miles of double track and numerous crossovers and switches. When this was getting to a start, the legislature in Florida kind of choked on it, and it still has a liability issue with it. But, we feel confident it will pass in the next state legislative session.

Jeff McCracken, Norfolk Southern
One of the ways to improve upon the tie condition on the railroad is to make them last longer. At last year's conference, I discussed the coatings we spray on our ties. We installed a coating on a bridge deck in New Orleans, and it's still in place and is still looking very good. The ties are not deteriorating at all. So we sprayed it on ties installed from the Chattahoochee River Bridge in Atlanta and immediately we found out that creosote started bleeding through because it had wet creosote when we put it on the deck. And it starts peeling up. That stuff is as hard as a brick and won't peel off, but it started getting blisters that became pretty significant. We found the lesson is that sealant and creosote do not mix. We started looking at other alternatives. We want something that is sealant compatible because we can make these bridge decks last until they mechanically wear out if we seal them up.

THURSDAY, OCT. 15, RTA WOOD PRESERVATIVE RESEARCH

Steve Smith, AquAeTer Inc., Life Cycle Analysis for Treated Wood Crossties
Average life for creosote-treated ties is around 35 years, and has been assumed to be 45 years for concrete, and for plastic/composite 40 years. But, the current alternative material designs really haven't been around that long. So, whether they really last that long or not we don't know.

An RTA survey found that most of the wood was going to cogeneration, some to landscape and the rest going to landfill. We made pretty rough assumptions about the after-use phase of other materials, particularly since most of them haven't gone through their life cycles anyway.

An important conclusion is that recycling ties for energy recovery does have an impact on the overall lifecycle analysis of wood ties.

Dave Webb, Webb Consultants, 1958 Creosote Cooperative Final Report
Predominately, there were a fewer number of posts that failed when you worked at the retention levels of the AWPA standards. The conclusion of this study, which is extremely important, is that we can rely quite well on the fact that a short-term soil block test is going to give a prediction of what's going to occur after 50 years in service. A high degree of confidence can be in the predicting of the long-term performance in the service life that has thus far not been demonstrated with other types of wood preservative systems.

Ultimately, creosote was reregistered in 1986. If EPA felt creosote was such a toxic material they wouldn't have registered it. So, the re-registration is being wrapped up, and the RED (Registration Eligibility

Document) has been published by the EPA. We are developing new labels for creosote. It will be re-registered. It's going to be a viable product that is going to be used by the industry now and well into the future.

Terry Amburgey, TaskPro, Borate/ Copper Naphthenate Dual Treatment Study

One thing we found at the initial walk-through with all the leaf litter on top was that we did have a lot of soft rot on the surface on some of the ties, and in a general statement you could say the creosote seemed to protect the ties from soft rot fungi a little better than the copper naphthenate. We also had evidence that termites were on the site. We then did an internal evaluation. We cut roughly at the inner spike holes of the tie plates and at the center of the ties because that's were we inoculated the ones that received the test fungi. We evaluated the decay and amount of borate.

When we started this, everyone was saying we were dealing with a diffusible system now and what diffuses then will diffuse out—and that is true. But you will see that its rate of exit from ties that have something over the top of them, like creosote or copper naphthenate, is greatly exaggerated.

We used a 10-point as "pristine" and a zero as "failure." In general, when we use this scale, a seven or below is considered problematic. Creosote-only treated gum, red oak and white oak ties did well after 20 years with roughly an 8 1/2 rating. With copper naphthenate-only treated ties, gum, red oak and white oak, we had some issues, but they were all serviceable. With Timbor only (no secondary treatment applied), the ties had distinct problems, and most of them were in very bad condition. Spikes were loose and not serviceable. But if you dual treat with creosote over the Timbor, you get great performance. If you dual treat with copper naphthenate, they also performed very well. The creosote (dual-treated ties) did better (exterior ratings) than the copper naphthenate (dual-treated ties) in general (Editors note: The copper naphthenate dual-treated ties had virtually identical interior decay ratings as compared to the creosote dual-treated ties. See full paper, page 20).

Michael Sanders, MSU, RTA-AWPRP 1st Year Report

The first year included a visual inspection on all ties and was done by a walk-through inspection. Random ties were chosen. We would roll the tie and look at all four faces. We took photo documentation of all the problems we saw. The first thing we noticed, as expected, was that there was overall weathering of all the ties on the site. We had one tie that was not end-plated, and we had several splitting. It was only one tie that had those problems. We saw more decay than we expected on a first-year inspection on such large samples. Red oak, we had decay and decay (was also present) in the white oak. We had one untreated control that had termites in it. We're happy that everything is working as we planned. In the coming years, we should have some very meaningful information.

Mike Juba, Koppers Inc. Creosote Regulatory Issues - U.S. and Around the World

First of all, creosote has been re-registered. It has been approved for the continued use for pressure applications including crossties. We have a meeting with EPA on Nov. 9 to approve changes on the labels.

There are detailed changes that have come out of the re-registration eligibility process, in terms of work practices and some treating process changes, including a few engineering controls. Creosote Council is about 50 percent completed on a DVD training program as well as a Powerpoint and script presentation that the creosote council will be rolling out to all of the treaters detailing the requirements in advance of the cut-over to the new for label.

Tom Mitchell, KMG Bernuth, Creosote Market Issues: Short- & Long-Term Outlook

In 2008-2009, there was ample creosote to meet demand. In 2009, all or virtually all creosote orders were filled on a timely basis. Creosote imports to the United States are up 35 percent in 2009 versus 2008, and projected 2010 availability and commitments that are now in place are now up another 25 percent versus 2009. Plus, there's virtually unlimited creosote availability from around the globe.

Ed Smith, SP Newsprint, Used Crossties as a "Green" Energy Source

To make used crossties into a green material, we need to verify the percentage of creosote in a crosstie. We need to verify that creosote does not contain these compounds: halogens, chlorines and other compounds that are banned. This is something that still needs to be done, I believe. Also, out of this work that we've been doing it dawned on me that there's a big push for lowering your carbon footprint. Railroad crossties can do that for a lot of facilities that burn coal and other fossil fuels. You need to establish the emission factors for a railroad tie and determine how it compares to coal. Then, once this is done, we need to apply and receive a Green-e approval.

CLASS I PURCHASING SESSION

Chad Rolstad, BNSF

In 2008, it was a big year on the install side. We installed 3.1 million ties. It was a difficult procurement year, as everybody knows, so we dropped a little bit of inventory last year and made a little bit of ground this year. We're expecting next year to be about 2.8 million ties and projecting to purchase what we install to maintain our inventory levels.

Gary Hunter, Union Pacific

Green crosstie inbound for calendar year 2009: we're staying about 3.3 million through September, and the large recipients are Alexandria (La.), Denver and Little Rock (Ark.).

The key to all of this, of course, if you want to keep your Boultinizing rates low, which our rates have been below 5 percent for the past three years, is having air-drying ties in the stacks and making sure you have air-drying ties available every month. Our preference is to use an air-dried tie, although we do use approximately between 400,000 and 700,000 (Boultonized) ties a year. That number will be at about 335,000 for 2010. Going forward, we're projecting somewhere between 4.3 to 4.4 million total crossties (all materials) per year.

Lisa Benz, CSX Transportation

Most of our crossties are bought green and taken into inventory and treated. We bought 100,000 borate dual-treated ties this year and put those in place. We had to buy some extra six-inch ties this year. We've had some challenges. Obviously, the folks in our finance department like cash flow, which means lower inventories. In 2010, we're going to need the same amount of ties, which is going to be a little hard because we have a lot fewer in inventory. So, we're really hoping our suppliers can help us out come the beginning of the year when its time to get those shipped out, and we may have to do some more black tie purchases. We definitely expect more 6-inch black tie purchases in 2010.

Bill Rousis, Norfolk Southern

It looks like we are going to stay at about 2.7 million crossties in 2010. Switch ties will be at about 144,000, and our bridge tie program is now up at 26,000, which is up from about 18,000 five years ago.

We run about 60 percent air-dry now, 40 percent Boulton. That's been our philosophy for some time. We see that Boultonizing provides the advantage of sustaining a lower inventory, but it gives us the flexibility to react to high demand and peak demand.

Our purchase philosophy is that 53 percent of our current ties are purchased as finished products as black material, 47 percent TSO (treating services only). We feel that purchasing green, particularly when we purchase directly from the producers, gives us the advantage of staying tuned into the green tie market and to the supply keeping up with the hardwood pricing.

Rob Churma, Union Pacific, Canada

In 2009, we're 97 percent new ties, 3 percent second-hand our own ties, 96 percent wood, 4 percent steel, and no concrete, composite or plastic ties. We're 90 percent hardwood and 10 percent softwood in 2009. Ninety-one percent 7-by-9s. In total, we had mid-year reductions and we're only doing about 760,000 ties for Canadian Pacific, but for the DM&E there was an additional 135,000 ties. We're 100 percent North American, and our treatment is seven pounds per cubic foot and 50-50 preservative with no borates, which suits our needs in the Northern climate. Projected for 2010, it looks like we're the least recession proof of all the Class 1s up here. We're going to do approximately 750,000 ties on the Canadian Pacific. Of that, 82 percent will be hardwood, 18 percent softwood, and no new concrete. §