



A New Year for Rail Operations and Infrastructure • Our 130th Year

New England Railroad Club
2013 Executive Night
Held at the Copley Fairmount Hotel, Boston
November 7, 2013

President Michael D. Thomas, Genesee Valley Transportation

Good evening. The New England Railroad Club would like to welcome the railroaders, suppliers, consultants, and guests for attending tonight's dinner. Your participation in the Club and at various Club events helps maintain the organization's strong and vibrant character and allows the planning of events like the one tonight.

This year the New England Railroad Club celebrates its 130th Anniversary, a milestone for any organization. As we know, the railroad business can be extremely dynamic, and it has charted the course of many of our careers. As the Club enters its 130th year, railroads are faced with many challenges, including a stagnant economy, continued regulation, declining traffic bases, and possible changes in the competitive environment. Things like truck size and weight come to mind. In light of these issues however, we are seeing continued strength and growth in our industry, and look forward to maintaining this growth for the future. In addition, public awareness of the nation's railroads has never been more pronounced. It is our duties as railroaders and also the charter of this organization to make sure the public understands the benefits of railroads, and railroad transportation, from both an environmental and safety perspective. Our Class One partners have done an excellent job raising awareness of both the fuel efficiency of equipment and the reliability of rail transportation in their effective media campaigns.



But the word doesn't stop there. It's up to the railroads and all of us to teach that railroads are more than an inconvenience at a grade crossing. They are vital link in this country's transportation network for both freight and passengers, and should be considered such. And so tonight we continue a 130-year old tradition of honoring the executive leadership of our industry. We welcome them and applaud their commitment to the world's finest private transportation infrastructure. And more importantly we look to them for their vision, their forward thought, and their ability to move railroads and transportation needs in the future.

Before we go any further, I'd like to take a moment to introduce myself. My name is Michael Thomas. I'm one of the founders and the director of the Genesee Valley Transportation Corporation, headquartered in Batavia, New York. Our company was founded in the late 80's as a Conrail legacy shortline partner. We operate a number of lines in New York and Pennsylvania, including the Delaware Lackawanna, Mohawk, Adirondack and Northern, Falls Road Railroad, and Depew, Lancaster and Western. We count the three eastern Class One railroads as our interchange providers and rely on Norfolk Southern, who is

our guest here tonight, as a key interchange partner on our Delaware Lackawanna Railroad in northeast Pennsylvania.

Through a series of events I have made my home in New Hampshire in the 1990's and hence my affiliation with New England and the New England Railroad Club. My nominating (as President) by the Executive Committee came as quite a shock. While I have been a member of the Club for many years, I have only recently been asked to join the Executive Committee. Through the efforts of another former President, I accepted the position and at this time I would also like to introduce Cynthia Scaranno, Executive Vice President of Pan Am Railways, who was elected as the New England Railroad Club Vice President as well. Cynthia are you here? Thank you. (Applause).

I thank the Executive Committee and the Club as a whole for putting their trust in Cynthia and myself and together we can further the cause of railroaders and railroads in New England. Now in keeping with the New England Railroad Club tradition I would like to ask the former Presidents of the Club to please stand and be recognized for their efforts, especially in this anniversary year. May I have all the Presidents please stand up? (Applause). Thank you very much.

I would now like to introduce you to our head table guests. They represent the executives and executive administrators who each day guide and lead their respective divisions. While they didn't arrive on duck boats, they are each in their own way vital to New England and the railroads in New England economy. To my far left is Mr. Scott Conti, President of the Providence and Worcester Railroad. (Applause). Next to him is Mr. David Fink, President of Pan Am Railways. (Applause). To my immediate right sits Dr. Beverly Scott, MBTA CEO (Applause), and next to her the MBTA's Director of Planning and Management Mr. Joe Cosgrove. And of course next to my seat and the podium our distinguished guest Mr. Jim Squires, President of the Norfolk Southern Railway (applause).

At this point I would like to recognize someone else. I would like Robert Bass to stand up. Bob retired from the Executive Committee in May of last year, and I want to thank him for his tireless work on behalf of the Executive Committee. The Club members thank you for all of your work, Bob. (Applause)

Finally we need to recognize Mr. Dennis Coffee (applause). Dennis retired from the Secretary position after 20 years of service to the New England Railroad Club and the rail industry in our area. He is going to continue as an ex-officio member of the Executive Committee. We also like to recognize Donna, his wife, for her unflinching support during Dennis' service. (Applause). Dennis you were able to say a few words at our last Executive Meeting, but as the Club enters its 130th year the Committee would like you to provide some perspective as an ex-officio member of the Board. Ladies and gentlemen, Mr. Dennis Coffee. (Applause)

Mr. Dennis Coffee

Thank you very much Michael. I would like to say it has been an honor to be the Secretary of the New England Railroad Club and to serve all of you, the members of the Club. I remember Orville Harold spoke to the Railroad Club twice as President of the P&W. The first time Alan Calbach and I wrote the speech and it kind of went over like a lead balloon. The second time Orville came back and spoke from the heart and it was one of the more memorable speeches this Club has heard. Many people continue to remember it. So I have taken his leadership and I'm going to speak from the heart. The Club and its members have weathered many storms throughout the region over 130 years that the Club has been in existence and the past 40 or 50 years that I have been involved one way or another in the railroad industry. From the days of standing derailments, to branch line and passenger line abandonments, to the federal



intervention of the USRA in the final system plan and the establishment of Conrail, and the kind of hard-nosed independence of the Boston & Maine Railroad, standing apart from the Conrail organization. Our region has witnessed so many changes that have resulted in the strong, national rail network that we are all a part of today. We have seen resurgence not only in the freight railroading, but also in the passenger side with Amtrak high-speed rail on the Northeast Corridor, and a number of projects throughout the country, and certainly the leadership of agencies like the MBTA, whose commuter rail continues to grow and serve communities throughout the region. The Club members - they are the ones who have participated and played an important role in the developments. The Club has provided a forum for the exchange of ideas and information. I hope that will continue. I think I leave you in good hands with the Executive Committee under the leadership of John Read as Secretary. I look forward to continuing to work with many of you. As Mike said I thank Donna. Donna has been putting up with this for so many years. Thank you very much. And one more thing: would you all please join me in wishing a Happy Birthday to Tom Eagan, whose birthday is tomorrow. (Applause)

President Thomas

And now I have some very good news. Tonight at the Executive Meeting there were 19 new members of the Railroad Club. That's a great number. We want the Railroad Club to grow and prosper so I would like to call on John Read, our new Secretary, to announce those new members of the Railroad Club. John.

Secretary John H. Read, TranSystems

If you would, if you're here, please stand. I would ask the audience to hold your applause until the end. Jack Norris of Alstom Signaling. Matthew Klemchuk, Railroad Construction, Inc. Dave Thompson, DJ Thompson. John Neugent, retired. Kelly Burke, Dennis K. Burke, Inc. Joseph Santerri, Amtrak. Willam Savage, Acorn Engineering, Inc. Jerry Rodgers, Dennison Lubricants. Ron Williams, HNTB. West Coates, Systra. Tim McLaughlin, SPF New England. John McDonald, Atlantic Track and Turnout. Jonathan Babbit, Mass Coastal Railroad, I believe. Chad Mowrey, Genessee & Wyoming Railroad. Pauline Fonchesca, RL Controls. The MBCR has a contingent in these three: John Hogan, Bonnie Murphy, and John Orison. And Joseph Ashley from RWI. And I apologize I did not have time to figure out what RWI meant. If everybody would welcome these new members. (Applause).



President Thomas

John, I just want to say one thing. I want to thank you for accepting the position as Club Secretary. You hit the ground running and I look forward to working with you and our new members. This concludes the pre-dinner formalities. Please enjoy the company here tonight and introduce yourselves to the people at your tables if you don't know them. (Applause)

(Dinner)

President Thomas

The New England Railroad Club has been honored to have many Class 1 railroad presidents with us. Tonight we continue that tradition. Our guest has been employed by Norfolk Southern since 1992, and predecessor lines, and served as Executive Vice President Finance and Chief Financial Officer from July 1, 2007 to 2012. In 2012 he became Executive Vice President and on June 1 of this year he was appointed President of the Norfolk Southern. He's earned degrees from both Amherst College and University of Chicago, and is a native of the town I call home, Hollis, New Hampshire. It is my privilege to introduce our guest speaker tonight, Mr. Jim Squires. (Applause)

Mr. James Squires, Norfolk Southern

Thank you Michael. It is a real treat for me to be here tonight and I want to thank you for inviting and for turning out tonight. I have lived in Virginia for twenty-one years, but I still feel a special connection to New England, especially the Granite State of New Hampshire where I was born and raised. (Applause)

My wife Karen urged me to try to re-connect with my New Hampshire root by bringing out my New Hampshire accent, but after living in the South for twenty years I was afraid it might be a sort of “New Hampshire drawl”, which wouldn’t be a very attractive accent. I’m also delighted that my father James W. Squires, a resident of Hollis, New Hampshire, is here with us tonight as is my lovely wife Karen. (Applause). And, if you indulge me for just a minute, I’d like to tell you a story from my father’s childhood that will have bearing on my speech, as you will see.

My grandfather Graham Squires was a history professor at Colby College in New London, New Hampshire and Graham Squires loved trains, as did his two sons. In fact, he wrote the treaties on the Northern Railroad, which was built in 1847 and ran from Concord to White River Junction. According to my extensive research Daniel Webster spoke at the Northern Railroad ribbon cutting, saying, “It is altogether new and the world has seen nothing like it before.”



The Boston and Maine acquired the Northern Railroad in 1887. And dad speaks fondly of visiting the former Northern station at Potter Place near New London, New Hampshire. So during the time when dad was a child Sunday afternoon entertainment consisted of arriving at Potter Place with father, mother, and brother Bert. And in those days Potter Place saw two trains a day, the northbound and the south. Dad remembers looking up at the engineers as the massive steam locomotives pulled into the station. These were god-like figures he recalls.

So in a few minutes I’d be happy to answer any questions you might have about the rail industry, NS’s connections to New England, or any other topic of interest. But I thought I would start by describing some things Norfolk Southern is doing to encourage technology adoption in rail operations.

So not surprisingly we found that computer-aided systems are better at many complex tasks performed by human beings in our business. For example locomotive throttle and brake applications and determining when to set priorities in a highly complex network environment. But, these systems are no good if people don’t use them. Getting people to use technology isn’t as easy as saying “you must use it or else” or “there’s a reward if you use it”. We needn’t fall to prey to the belief that technology is a silver bullet; a kind of productivity panacea, but the rate at which technology is adopted and diffused depends heavily on social processes. It depends on communication structures, norms, how companies adopt new ideas, and the consequences of adoption. So if you can handle these things your technology rollout has a much better chance of success, if you ignore them you are headed for trouble.

Not to long ago I was at a meeting in Norfolk, Virginia, and we were talking about new technology in our locomotives, an energy management system called LEADER, which stands for Locomotive Engineer Assist Display Event Recorder. No wonder why we use an acronym! But anyways, LEADER is a computer-aided system, a train handling system we developed with New York Air Brake. It is programmed with operating data like brakes, curvature, train consist, etc. And with this data LEADER is able to take into account all the forces that come into play as you operate a train over a stretch of track. In the cab of the lo-



comotive LEADER displays a series of visual prompts, instructing the engineer on the optimal throttle and position to optimize fuel efficiency. It is a great system, which can result in tens of millions of dollars in savings if it is employed. We found though that rather than logging on to the computer system, a lot of the engineers were bypassing and even disabling the technology, so they could operate the train as they always had. And this was puzzling because with LEADER the engineer has so much more information at his disposal. For example, he can see exactly how much momentum he has when going uphill, and he can see how exactly how much farther he can go before he has to apply the brakes, optimizing fuel consumption. Following LEADER'S queues he knows exactly when to back off the throttle so when he reaches the top of the hill how much momentum he has to carry him over. Then on the downward slope he may not even need to use the brake because the train is moving at a slower speed. The trouble is that's not the engineer's instinct. Instead he wants to power up the hill and then apply the brake after it moves over the crest. And that burns more fuel and it puts more wear and tear on the tracks. Which is exactly what LEADER was designed to correct.

So knowing as the Chief Financial Officer at the time that we should make a substantial investment in LEADER. My reaction at the time was why don't we just make them use the system. We know it saves a lot of money; it works, so why don't we turn it on and leave it on. At that point some of my colleagues in operations got sort of a pained look on their face. Like I just didn't get it, and it turns out I didn't.

Not too long thereafter I was out on the railroad visiting our Central Division in Knoxville, Tennessee. We were deploying another computer-aided system we developed in partnership with General Electric. It is called Precision Dispatch System, also known as Movement Planner. This one is a train-scheduling tool. With it we can compile near-term operating information from every division on our network, and then have it generate an optimized schedule and operating plan. Before Movement Planner our dispatchers were limited to local operating data in making scheduling decisions. Now we can plan and make the best decisions based on current and future decisions across the entire network. It has the potential to save hundreds of millions of dollars in capital and operating expenses.



The problem is Movement Planner's recommendations are often counterintuitive, or even flat out contrary to what a dispatcher would do. So, as an analogy, remember when in 1997 based on the popular account, the chess player Gary Kasparov was so flummoxed by a random move by Deep Blue, IBM's computer, that he supposedly concluded that play must be a sign of superior intelligence. And then he went on to lose the chess match. By the way Deep Blue's random move has recently been attributed not to superior intelligence but to a bug in IBM's software.

Anyways the day that I was on the Central Division in Knoxville a few of the dispatchers were very surly and behaving like Gary Kasparov. Movement Planner's recommendations just made no sense to them. To them the recommendations were not just counterintuitive, they were just flat out wrong. To make matter worse it felt like Movement Planner had usurped their role, taken away a piece of their identity, the most of which were their responsibility to get trains over the road. So for example Movement Planner's response to a train delay somewhere out on the network was would be to put a high-priority intermodal onto the siding. That is something that dispatchers are not comfortable with because before Movement Planner came along high-priority trains got high-priority. That is the easily applied rule to what psychologists call the heuristic. The problem with always giving intermodal trains priority is sometimes they cause all the other trains to run late. So we're giving the intermodal the whole railroad at certain locations even when you don't need to. Movement Planner can see the whole network and can

make recommendations that can appear sub-optimal at the local level, but actually optimize overall network efficiency.

So why won't engineers log on to LEADER, the system that will help them do their job more effectively? Why won't dispatchers use Movement Planner, a system that will help them get trains to move faster? We already mentioned the counter-intuitive aspects of these technologies. It's also important to recognize that employees look at this as the tools we use are for discipline. So when engineers log on to leader every aspect of what goes on in that cab is recorded. And let's be honest, how many of would want a system like that in our cars? And then there's the fact that these technologies are not surface problems, meaning they are not obviously preventing us from being successful. Train derailments, power outages are clear impediments to operations that must be addressed quickly to move ahead. Problems like fuel efficiency and train delays are not as obvious, so a link between corrective actions and benefits is not as easy to see. Lastly, it takes conscious efforts to adopt new technology. Until something becomes a habit or a natural activity our brains have to think harder to think through each step. A certain amount of time and frustration must be invested before a new way of doing things becomes routine. The more conscious effort required to change the more difficult the change is.

So how do we break through? How do we get people to understand the change we are trying to create is worth the risk? Todd Renolds, one of our senior transportation managers on Norfolk Southern recently shared a story on how we were able to dramatically improve LEADER use on our Georgia Division. A group of road foremen there, line manager who supervise train



operations, got together and decided their efforts to increase usage weren't working and needed a different approach. So they began running a report to actively identify the engineers who weren't running LEADER when they had the chance. But, instead of using the report to enforce compliance, they divided the list up and began personally reaching out to the engineers who weren't using the system. Each time they explained why they were trying to get people to use LEADER and the potential benefit to the company. And after the having these one-on-one conversations the road foremen continued to run usage reports on a regular basis, and whenever they noticed that the engineer started to use LEADER they sought him out a second time to thank him. And LEADER usage doubled in a matter of days. So I asked Todd, was

it really no incentives, or penalties, just personal engagement? And he said I could see it myself when I was down on the Georgia Division I would believe it. We are making progress just by talking to people and acknowledging their efforts. So that's the power of positive reinforcement

Giving people a role in proving technology also seems to help with adoption and diffusion. Everett Rodgers who studies how innovation spreads put it this way: "Adopting an innovation is not necessarily a passive role, just implementing a standard template of the new idea. Many adopters want to participate actively, customizing the innovation to fit their unique situation." So with this in mind we worked together with dispatchers interested in being on the inside with programmers making the program better reflect the local operating conditions of which they are so knowledgeable.

We've also recognized the importance of peer-to-peer communication in training dispatchers on the Pocahontas Division in Virginia/West Virginia and sending them out to help implement Movement Planner on different divisions. Again, as Rodgers put it, most people depend mainly on a subjective evaluation of innovation as it relates to them by others like themselves, who've already adopted the innovation. This dependence on the experience of their peers suggests the heart of the diffusion process consists of the modeling and imitation of the potential adopters of their network partners who have already adopted it. Diffusion is a very social process that involves interpersonal communication relationships.

Now there are a few things we could have done better to hasten diffusion of LEADER. For example, sociologists have found that an innovation immediately affects how willing a user is to adopt it. So if you are a craftsman and you are tasked with operating a locomotive, would you warm up to a locomotive operating system called LEADER? I think we could have picked a better name. Also, our early efforts to propagate the technology we may have succumbed to what sociologists have called the empty vessels fallacy. The empty vessel fallacy happens when change agents introduce an innovation by believing adopters are blank slates. Ignoring the fact that every innovation is assessed in light of the adopters past experience. And technocrats are particularly vulnerable to the empty vessel fallacy because they are so convinced of the superiority of the innovation that they assume that existing practices may simply be disregarded. And needless to say that is not how things work in the real world.

But probably the most powerful force slowing the diffusion of LEADER and Movement Planner is the concept of relative advantage, which is defined as the ratio of the expected benefits to the costs of the adoption of the innovation. Relative advantage is strongly correlated to the speed at which a new innovation will be taken up. Did LEADER and Movement Planner confer relative advantage? In one respect yes, in that they allowed adopters to perform their jobs with greater ease. But, in another, way basic sense the answer is “no”. We can’t sugar coat the fact that LEADER and Movement Planner are productivity tools and the resource in question is labor. And labor unions legitimately presumed that the diffusion of these technologies might lead to fewer jobs. To counteract this perception, we have to be willing to reassure the adopters that the skills they attain by mastering the new tools won’t be wasted – that an engineer using LEADER and a dispatcher using Movement Planner have bright futures at Norfolk Southern. Only that way will they trust that embracing new technologies confers relative advantage on them.

So in conclusion if the rail industry hopes to achieve a higher level of success through technology, we will need to focus not only on the technology itself, but on the social factors that influence technology adoption: communication structure, nuance, and consequences of adoption. Just ask the engineers and the dispatchers on the Georgia and Central Divisions of the Norfolk Southern.

Thank you for your time. (Applause)

President Thomas

I would like to thank you very much for coming up to see us this evening. It was a very, very insightful talk. Things that I would never equate to railroads, including the psychological issues that were discussed. I would like to present to you a token for coming to speak to us tonight at the New England Railroad Club. It is a plaque commemorating your visit here tonight, and we would like to welcome you back at any time. (Applause)



A few announcements concerning the Club: we are scheduling the Mechanical & Purchasing night dinner for January 30th, and we have the speaker for that night. It is Mr. Frank Lonergo who is Vice President Mechanical for CSX. So we were graced with Norfolk Southern here this evening and in January we will have CSX talking at our Mechanical Night. Also please remember that the Expo is coming up next year. A very important event for this organization and a lot of the suppliers and end users here in New England. It is going to be a one-day format. John Read can be contacted on that and you will be seeing information on the Club website concerning the event.

So that concludes tonight’s meeting. It was very successful. Safe travels and goodnight. Thank you very much (applause). The meeting was adjourned.