Opening Statement of Greg Fox

Executive Vice President, Operations

BNSF Railway Company

Before the United States Senate Committee on Commerce, Science and Transportation's Surface Transportation and Merchant Marine Infrastructure, Safety and Security Subcommittee

For a Hearing entitled "Technologies Transforming Transportation: Is the Government Keeping Up?"

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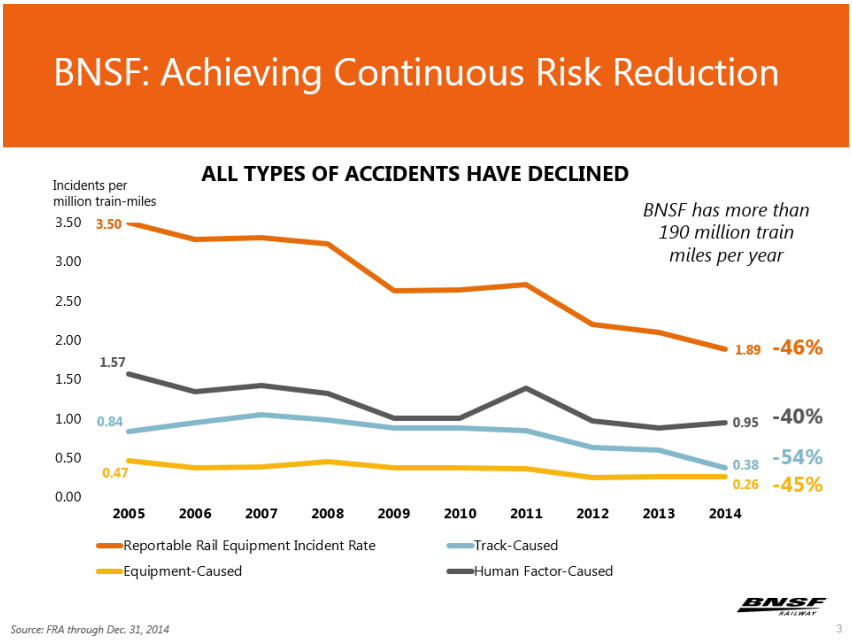
(Slide 2 – BNSF: An Industry Leader)

Good Morning Chairwoman Fischer, Ranking Member Booker and members of the Subcommittee. My name is Greg Fox and I am the Executive Vice President of Operations for BNSF Railway Company (BNSF). Thank you for inviting me today to share how BNSF uses technology to help drive risk reduction and continuous safety improvement on the railroad. As you can see from this slide, BNSF is a large Western Railroad with over 32,000 route miles operated and employing 47,000 employees.

My team at BNSF, runs the railroad, and of all the things that go into running the railroad on a daily basis, safety is the most important thing we do. In my 31 years at BNSF, I have seen the safety of our operations improve significantly.

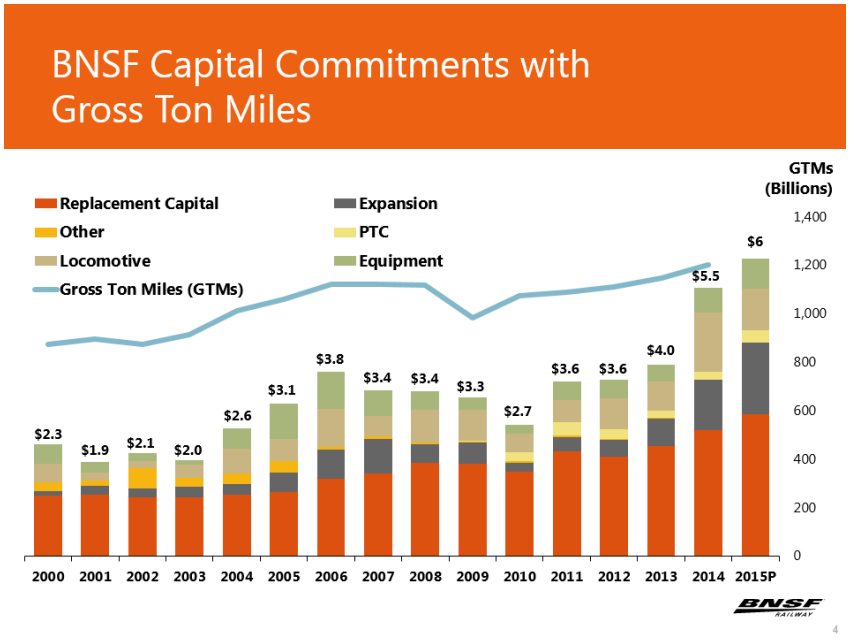
(Slide 3 – Achieving Continuous Risk Reduction)



In 2014, BNSF and the rail industry achieved the best-ever safety results and has shown continuous improvement in safety over the past decade. Technology has played a significant role in this success.

While technology is the focus of today's hearing, investment in rail infrastructure and development of a Safety Culture of Commitment by all BNSF employees, are all critical elements of our approach to overall risk reduction.

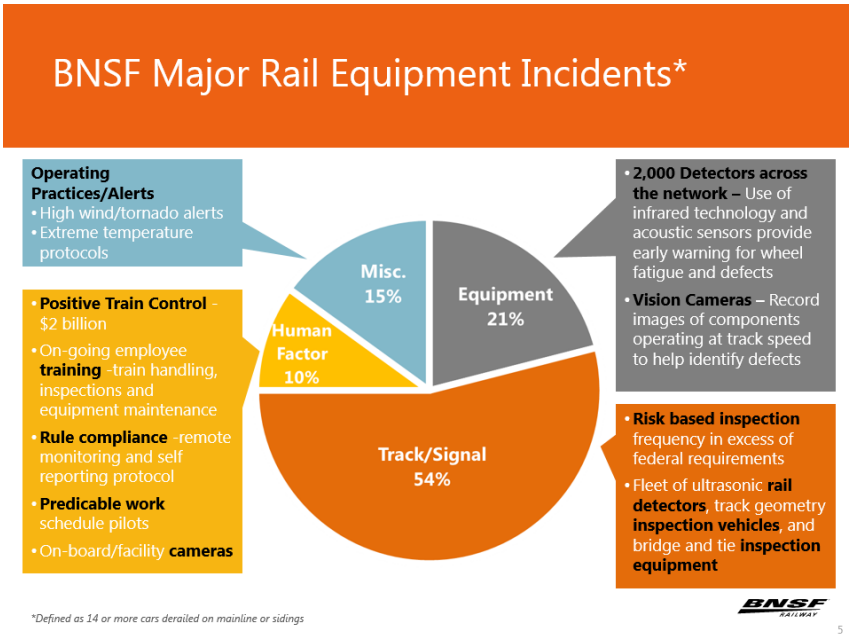
(Slide 4 – BNSF Capital Commitments)



With respect to investment, BNSF is investing record amounts of capital that contributes directly to operating a safe and efficient railroad, as well as ensuring that we're positioned for growth with our customers.

In 2015, BNSF announced a $6 billion capital investment plan, with the largest component allocated to renewal and maintenance of our network infrastructure and assets. This marks the third year in a row that BNSF has invested a record amount of capital back into our Network.

(Slide 5 – Major Rail Equipment Incidents)



The scope and complexity of the nation's rail operations — basically, operation of a 140,000 mile outdoor "production line", means that infrastructure and equipment sometimes fail, or that human error can occur.

Because of this, BNSF has a broad-based risk-reduction framework that we utilize to reduce risk in all aspects of our operations. This slide shows categories of incident causes and examples of the kinds of countermeasures we have in place. These countermeasures include a combination of both critical safety processes as well as technology.

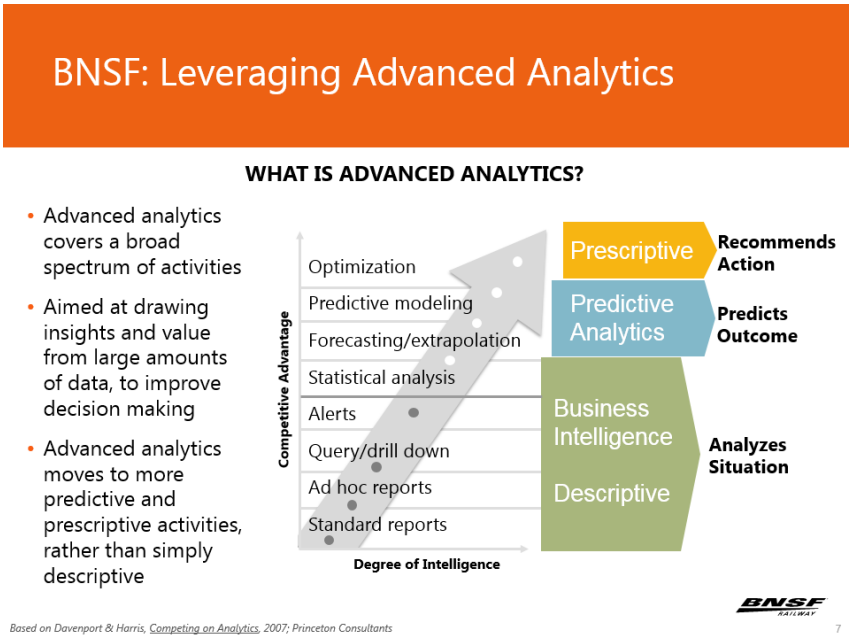
(Slide 6 – BNSF Video)

While the members of this subcommittee are familiar with the enormous industry undertaking to implement Positive Train Control technology, I would like now to share a brief video that illustrates the numerous other technologies deployed on the railroad to reduce risk and drive continuous safety improvement. You have heard less about these technologies, but each produces significant safety benefits. These technologies include:

- Track geometry vehicles that utilize sophisticated electronic and optical measuring devices to monitor all aspects of our track infrastructure
- Rail defect detection systems that utilize ultrasonic technology to detect internal rail defects
- Wheel temperature detectors, using infrared technology, to identify wheel bearing fatigue
- And, Machine Visioning systems to inspect freight cars in passing trains for defects

BNSF is also now preparing to deploy Unmanned Aircraft Systems (UAS)—drones—for supplemental visual track & bridge inspections in a variety of conditions. Also, earlier this year, we were one of three companies awarded Pathfinder Program status by the FAA for extended track integrity flights. The FAA has been a valuable partner who has worked well with us to advance this game-changing UAS technology.

(Slide 7 – Leveraging Advanced Analytics)

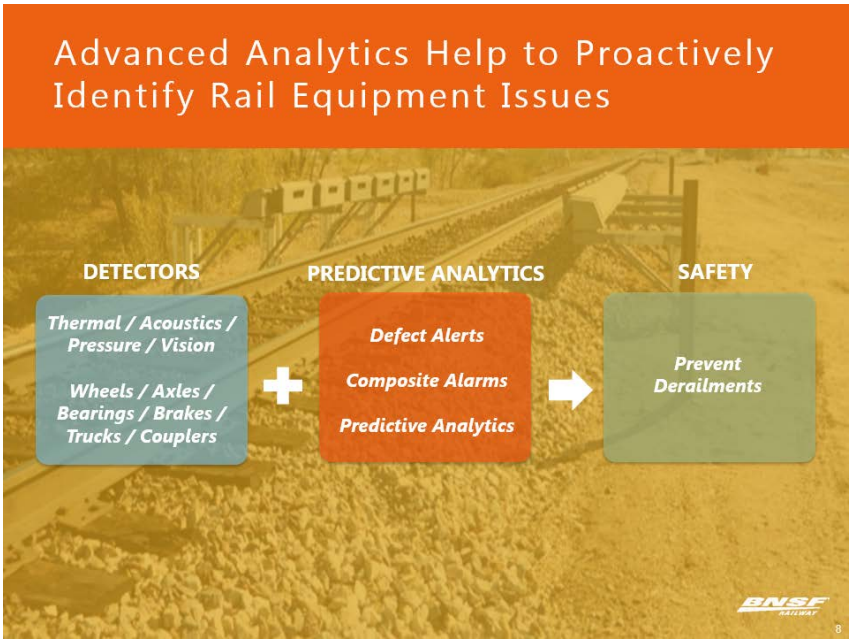


Leveraging the tremendous amount of data generated by all these technologies is where we are headed next. Advanced Analytics covers a broad spectrum of activities, but is aimed at drawing insights and value from large amounts of data, with the ultimate goal to improve decision making.

BNSF is currently working with IBM on a “Big Data” Advanced Analytics initiative to take the information that we already use to detect deviations from safety standards to ultimately using this same data to drive further understanding of the factors that cause these deviations in the first place.

Our goal is to drive proactive maintenance practices that ultimately prevent incidents from occurring in the first place.

(Slide 8 – Advanced Analytics Help to Proactively Identify Rail Equipment Issues)



Let me quickly walk you through one example of how BNSF is utilizing advanced analytics to improve safety.

BNSF currently has over 2,000 equipment detectors located track side along our 32,000 mile network. These equipment detectors continually monitor the overall equipment health of passing trains, utilizing a combination of Thermal, Acoustic, Vision Systems, and other technologies.

Today, these systems identify defective equipment and action is then taken to address these defects as they are identified. In order to move from today's reactionary-type of environment to more of a proactive and preventative response, our Advanced Analytics initiative is combining all this equipment health information into a single source and we're then utilizing it to predict future component and equipment fatigue and failures. Our ultimate goal is to improve railroad safety by leveraging this data to reduce service interruptions and derailments.

(Conclusion)

As you can see, the current breadth of technology and its potential going forward is tremendous as long as we have a regulatory environment that encourages innovation. I would respectfully suggest that safety outcomes should be the focus when government regulation is necessary, not the technologies and the analytics themselves, because those are complex and evolving at a very fast pace.

Ultimately, the rail industry will continue to deploy technology in support of risk reduction, and ensuring railroads can continue to earn the revenues necessary to invest adequately in infrastructure, maintenance and technology will be one of the most significant things that Congress can do. Thank you for the opportunity for BNSF to testify today and I look forward to responding to your questions.