



INSPECTING TIES BEYOND THE SURFACE

AURORA Xi[®]

INTERNAL TIE INSPECTION SERVICES

Meet the rail industry's first internal tie inspection system. Traditional track inspection methods spot problems at the surface, but it's usually flaws that start deep within components that cause the biggest problems. **Loram Aurora Xi[®]** allows you to see exactly what's happening inside your wood ties.

Developed in partnership with the University of Florida Nuclear Engineering Department, Aurora Xi harnesses patented backscatter X-ray technology to see inside individual ties, safely bouncing X-rays off of each tie in a segment. By measuring how those X-rays reflect back, the system can produce an image of the internal structure of each wood tie that reveals flaws other inspection methods might miss – everything from hollow sections caused by decay to the depth and size of cracks. It then assigns a grade to each tie based on its condition.

Tie grade reports make it easy to forecast the life of your ties and plan replacement programs accordingly. **Detailed compliance reports** allow you to confirm that you have at least the minimum number of effective wood ties in a segment, and uncover rail joints with defective crossties. With this information, you can create accurate, efficient and cost-effective maintenance programs to replace damaged components as needed. It helps you stay safe and compliant today while allowing you to conserve capital for tomorrow.

FEATURES AT A GLANCE

- **Backscatter X-ray and 3D surface** scanning technologies for complete subsurface and surface inspection.
- **Assigns one of five grades** to every wood tie based on the severity of decay and deterioration.
- **Creates customized tie models** for your railroad, prioritizing ties for replacement and planing maintenance with precision.
- **Detailed compliance reports** ensure adherence with federal requirements.
- **Tie grade reports** make it easy to forecast the life of your ties and plan replacement programs accordingly.

For more information on this machine, or on developing a tailored maintenance program for your railroad, contact Loram at **1-800-328-1466** or visit **LORAM.COM**



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FEATURES

AURORA Xi TIE INSPECTION & SERVICES

	AURORA Xi TIE INSPECTION
Platform	Hi-rail truck-mounted imaging & geolocation system
Inspection Speed	20 mph (32 km/hr)
Imaging Technologies	Backscatter X-ray and 3D surface scanner provide high-resolution defect inspection of both the subsurface and surface of each wood tie
Location Tracking	Corresponding milepost and GPS coordinates for every tie
Inspection, Assessment & Grading Capabilities	– Wood Tie internal and external flaw detection, including decay, split depths, low density and voids/hollow spots – Assigns one of five grades to every wood tie based on severity of decay and deterioration – Creates customized tie grade reports and tie models for replacement planning and lifecycle forecasting
Service Features	– Detailed Reporting for industry compliance, including tie cluster analysis and minimum effective wood ties per segment. – GPS/GIS Data Management collects precise locations of each crosstie for validation of GIS network maps – Aurora Data Viewer providing web-based access to images, locations and grades of each crosstie inspected

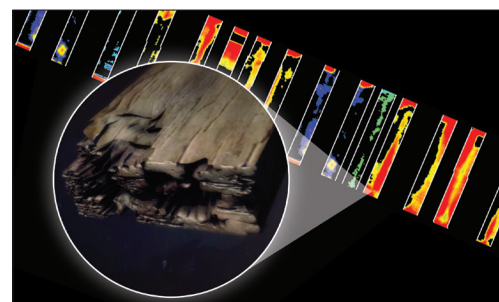
US Patents: #7616329, #8081320, #8209145, #8405837, #8711222, #8958079, #9031188, #10151716, #10416098, #10436725, #11433929

Aurora Xi Additional Features & Benefits:

- More reliable than manual inspections
- Works in tandem with Loram's proven Aurora® track inspection system to simultaneously scan the surface of track components to assess wood ties on 20 additional variables
- Custom reports tailored to your inspection requirements are available from Loram, including identification of flawed fasteners, rail seat deterioration in concrete ties, analysis of rail base corrosion, inspection for other damaged components, or to determine the severity of corrosion at the rail base
- Hyrail truck is efficiently transported to anywhere inspections are needed

Trusted Technology That Delivers

Railroads around the world have trusted Aurora's proven inspection technology to scan more than 30,000 miles of tracks annually. That's 100 million ties annually that have been inspected and assigned mile post coordinates, GPS coordinates and tie grade information. All of the information Aurora gathers gets simplified down into easy-to-understand tie grade and compliance reports customized to the specific requirements of your railroad.



SERVICE & SUPPORT

With a 70-year-plus legacy of serving the railroad industry with the most advanced technologies, the most reliable and productive maintenance of way equipment and world-class contract service work, Loram brings its partnership approach to every customer relationship. This includes an extensive training and technical support program with every machine. Whether for a heavy haul, high-speed, underground or metro-rail system, Loram has the equipment and services you need.

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