# St. Louis startup brings innovative technology to railway safety



In the wake of the devastating freight train derailment in East Palestine, Ohio, in February 2023, innovative technology from a growing St. Louis startup has come to the forefront of discussions surrounding railway safety. Hum Industrial Technology, founded by Byron Porter in 2019, has developed a groundbreaking approach to predicting necessary maintenance for railway wheels, significantly improving upon the industry’s current technology.

Operating from the Cortex Innovation Community in St. Louis, Hum combines machine learning with vibration sensors to foresee when railcars will require maintenance, thereby possibly averting incidents such as the one that occurred in East Palestine, which was primarily caused by a failing wheel bearing, as identified by the National Transportation Safety Board. Porter emphasised the shortcomings of existing systems, stating, "It's a flawed system. It relies on allowing the component to go to the point of basically falling apart at the seams." His technology aims to proactively address maintenance issues long before they lead to critical failure.

The company has recently gained recognition within the freight railroad industry, notably being included in a $9.6 million grant from the Federal Railroad Administration. This grant, received in collaboration with the Brotherhood of Railroad Signalmen and the University of Texas at Rio Grande Valley, is directed towards integrating Hum's railcar sensors along rail lines for real-time data transmission about wheel-bearing conditions to railway crews.

With a firm commitment to safety, Hum has begun to expand its operations internationally, with initial sales to rail freight operators in countries such as Australia and India. Porter describes Hum as a “young company that is scaling,” and he appreciates the vital niche it fills in the industry—one often overlooked by entrepreneurs lacking industrial experience. Drawing on his own engineering background with Archer Daniels Midland, Porter launched Hum with an eye toward practical applications in industrial technology.

Following initial funding challenges, Hum secured a substantial Arch Grant of $50,000 in 2020, and Porter has since attracted millions from angel investors, steering the company toward profitability by 2025. Hum's innovative product offerings include a vibration sensor named "Boomerang," a pneumatic sensor, a GPS tracker, and a subscription-based "pit crew" maintenance service, which allows customers to receive consistent data on their equipment’s condition.

Hum's primary clientele consists of railcar owners, who represent a significant segment of the railway industry alongside shippers and railroads. With a fleet of 1.6 million railcars operating in North America, many of which are controlled by numerous railcar owners, Porter acknowledges a substantial obstacle in convincing stakeholders to embrace new technology. His predictive maintenance system comes with a recurring cost of $40-$50 per railcar per month but offers the potential to detect bearing failures up to 100,000 miles in advance. This proactive approach can also yield significant savings for operators, potentially avoiding costly wheel bearing replacements that can exceed $500,000.

In the context of the East Palestine disaster, where Norfolk Southern has reportedly paid over $1 billion in settlements, Porter presents a compelling case for his technology. “One of the challenges is helping the industry see that that's a really stupid idea," he said about the reliance on outdated technology. As the railway sector continues to evolve, Hum Industrial Technology is positioned as a pivotal player in advancing safety measures through automation and predictive maintenance.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

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4. <https://theorg.com/org/hum-industrial-technology/org-chart/byron-porter-1> - Details Byron Porter's background, including his education and work experience, which is relevant to the founding and operations of Hum Industrial Technology.
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