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Smart Trains Cut Fuel Use

Researchers are spending millions of dollars and countless hours trying to develop smart highways that smooth traffic flow to reduce time stuck in traffic and therefore cut fuel consumption. A noble but challenging (requiring adding communications technology to all vehicles and traffic signals) goal, but another industry would be much easier to streamline to clear the highways and cut emissions: rail lines.

Freight trains work on managed lines that have routine schedules and controlled volume. By optimizing their speeds for fuel economy, trains can greatly reduce their use of diesel fuel, which would save money and reduce emissions.

Robin Chapman, the PR Manager of rail operator Norfolk Southern told me his company is developing technology that calculates the optimal speeds based on the incline and curvature of the track as well as the schedules of trains.

The LEADER (Locomotive Engineer Assist Display and Event Recorder) system takes data from actual train runs to determine an optimal or "golden run. It was developed in partnership with New York Air Brake as part of a system that automatically directs and schedules trains that share lines.

This is similar to the computing technology that keeps subway trains from interfering with one another, but with the added aspect of fuel efficiency. The system is being tested on several lines today and will be rolled out to more areas after more Norfolk Southern has determined the fuel savings.

Why should we care? The savings of moving goods around should ultimately result in lower prices, and reducing fuel consumption and the emissions from diesel locomotives has benefits for all. Also, moving goods from trucks to trains eases traffic congestion and reduce commute times. Hopefully we'll be investing more in optimizing rail lines as part of the overall plan to reduce fuel dependency. So far it hasn't been a big part of the agenda.

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TEAM

CONTRIBUTOR: John Gartner | [email](#)

CONTRIBUTOR: Joe Brown

CONTRIBUTOR: Bruce Gain | [email](#)

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