

# EMD<sup>®</sup> Energy Management – More than Just Saving Fuel

Achieve Improved Functionality with LEADER<sup>®</sup>, AutoControl<sup>®</sup>, SmartConsist<sup>™</sup> and AESS<sup>™</sup>

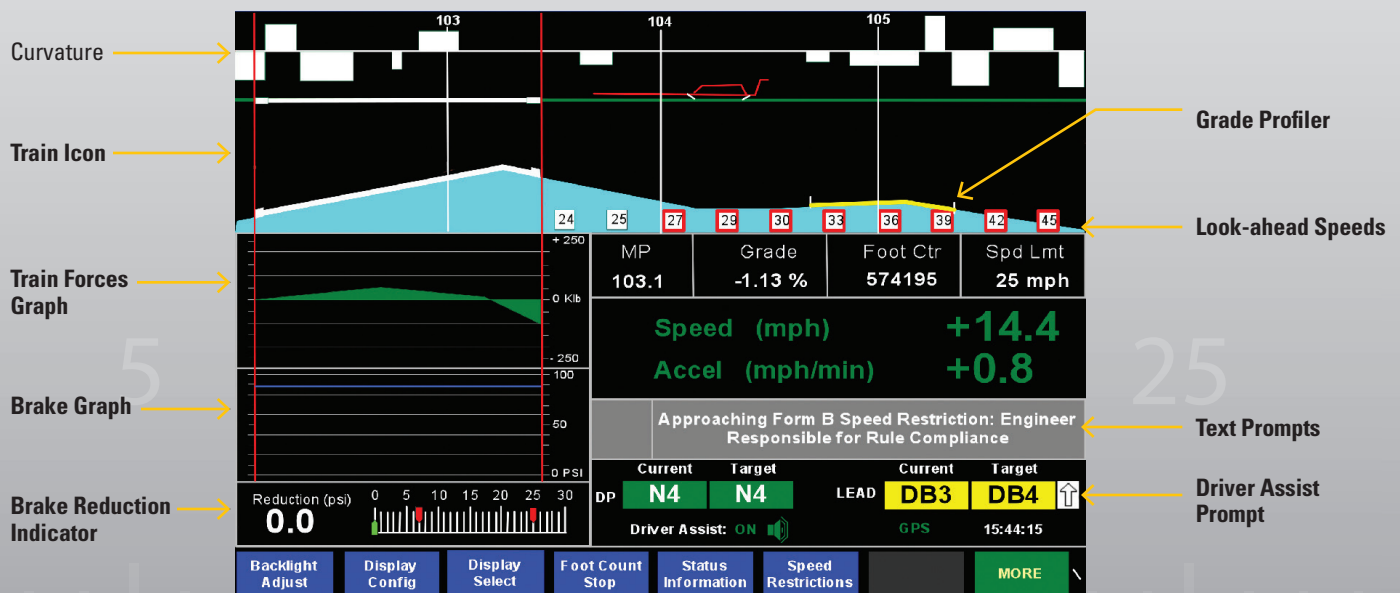
When it comes to energy management solutions that work seamlessly together, look no further than Progress Rail and New York Air Brake (NYAB). We deliver the most comprehensive fuel savings suite of products available on the market today for locomotives, with the highest rate of return on investment.

Available for all locomotive makes and models, New York Air Brake's LEADER<sup>®</sup> Standard Assist train handling and energy management system taps into the train's current state, including geography, operating constraints and goals. The system helps train operators to run in the most energy and fuel efficient manner over a given route. LEADER<sup>®</sup> adjusts to changes in train behavior, and offers:

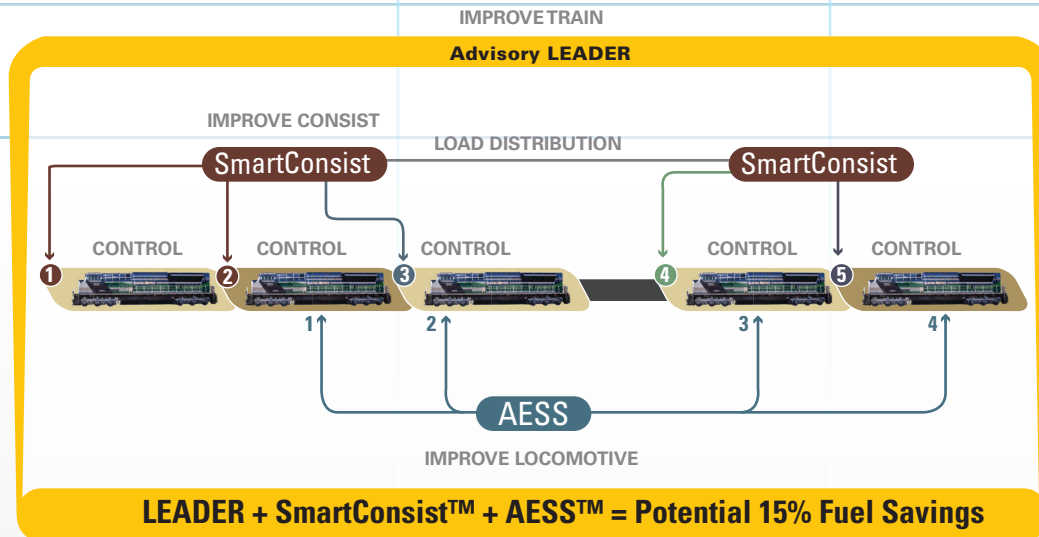
- Higher overall fuel savings of up to 7 percent
- Reduction in emissions by 10 percent
- Improved train handling to reduce risk of derailments and separations
- A highly integrated Positive Train Control (PTC) solution



## LEADER<sup>®</sup> Screen



## FUEL SAVINGS LANDSCAPE



Through its efforts with NYAB, Progress Rail has taken customer fuel savings one step further by integrating LEADER AutoControl®, a software solution that puts LEADER® in control of throttle and dynamic braking, directly interfacing with the EMD® EM2000 locomotive control system. This semi-autonomous solution ensures safe and optimal train handling by using the same precise system that not only sets the throttle for improved fuel efficiency, but also controls the distributed power system and dynamic braking. This results in an additional 1 to 3 percent fuel efficiency, improved time management and increased in-train force control.

On top of the LEADER AutoControl® enhancements, Progress Rail developed SmartConsist™ to provide an additional 1 to 3 percent fuel savings, for total reductions of 12 percent. SmartConsist™ sets each locomotive within the consist to its individual, prime throttle position, working in concert to improve overall fuel economy and reduce emissions, while also achieving the required power and tractive effort.

Available for in-service EMD® locomotives, or as an option on all new EMD® locomotives, SmartConsist™ operates as a fully integrated platform within EMD®'s EM2000™ locomotive control system.

In addition to Progress Rail's Energy Management product suite, the company's Automatic Engine Start/Stop solution – or AESS™ – for EM2000 controlled locomotives monitors critical operating parameters during locomotive idle operation, safely and effectively shutting down the engine once all factors are satisfied. EMD® AESS™ provides superior fuel and lube oil savings, reducing emissions and wayside noise, while ensuring the locomotive remains ready for use. It complies with the latest AAR S-5502 standard and allows individual customization to meet railroad operating and safety requirements. EMD® AESS™ reduces unnecessary idle time by more than 50 percent and improves locomotive fuel efficiency up to 29 gallons per day for switcher use and 18 gallons per day for line haul operation.

