How The Belt Railway gets over the hump

For The Belt Railway of Chicago, getting the maximum freight tonnage through the Chicago metropolitan area in the most efficient manner is mission critical. The Belt is the largest intermediate switching terminal railroad in the United States, handling thousands of carloads annually. Very few railcars travel across the continent without coming through Chicago and having The Belt touch them. For its owner railroads, The Belt is the hub providing effective separation, classification, and reblocking for timely cross-country movement.

Locomotives in hump service are a key part of switching yard effectiveness. Hump service can be one of the most difficult, requiring a locomotive that can move thousands of tons from a dead stop to the top of the yard hump, with frequent stops along the way. In addition, the locomotive must carefully control the speed between 2.0 and 2.2 mph, resulting in the right car speed when coupling with cars on the classification tracks.

The Belt Railway was looking for a way to increase tractive effort on several hump service locomotives. The goal was to eliminate rail burning and increase the tonnage these locomotives could push over the hump to 14,000 tons. The Belt turned to ZTR Control Systems™ and the NEXSYS II™ locomotive control system to increase tractive effort. ZTR Control Systems Marketing Manager Len Auer says ZTR's "depth of experience with real-world locomotive applications allowed The Belt to beat its original performance goal by over 10%."

The challenge was complicated because the equipment consists of "mother-daughter" sets of locomotives with an EMD SD40 mother and a six-axle daughter, making precision control a fine balance between the characteristics of each locomotive and track conditions. ZTR worked closely with The Belt to tailor NEXSYS II to the application, making on-site adjustments to get maximum performance out of The Belt's investment.

"It's a remote control application, so we have only 20 seconds to get the locomotives moving," according to Todd Ruddy, diesel shop foreman at The Belt Railway. "The ZTR system is working really well, and we've hit 16,000 tons."

"Increasing all-weather tractive effort on a locomotive can significantly improve the productivity of that locomotive, with a relatively modest investment in a modern microprocessor based control system," ZTR's Auer says. "Tailoring that control system to the specific service for a locomotive results in an even shorter payback period. During these economic times, ypu can make the most of your current locomotive assets by improving tractive effort and assuring that your railroad is in a stronger position as the economy recovers."