

Dynamic Braking and locked wheels. Theory vs. Practice

Theoretical Statement;

"...dynamic braking current is generated by the drive motors being turned by the wheels. Wheels not turning - no dynamic braking current. Great system - gives you braking, but will never slide your wheels giving you flat spots."

In practice;

"I don't intend to be argumentative, but that's not entirely correct. On a standard gauge diesel-electric, the dynamic quits being "made" when the wheels quit turning, true, but the "resistance" doesn't just "go away" until a few seconds later. The old motors, SD-40's and C-30's for instance, would "taper off" the braking force as they slowed, but the new ones have "extended range" Dynamic, which holds on longer. We have lots of the "big", new motors, running around out here on the BN with flat wheels. After the EMD rep told me that I was lying when I told him that the MAC's would slide the wheels, he'd gone down to another train, and I "slid 'em in" right in front of him a couple miles down the track. He'd said to me; "they can't do that" and "how would you know that the wheels were sliding?", I said that "when the speedometer drops to zero, and I'm still moving, the wheels are sliding." , besides which, if you run with the cab windows open like I do, you can hear 'em grinding.

The "new" motors (MAC's/ACE's/Evolution's) aren't heavy enough for the power they produce, that's why they have several computers in there, trying to convince Mother Nature that they weigh more. When you hear a heavy train pulling hard, and the locomotive wheels are "screaming", that's the "creep control" controlling the wheelslip so you don't lose it all together. Inside the cab, you are bouncing up and down, as the 'pooters shift power from one truck to the other, and back, trying to maintain traction. *BNSF Correspondent*