

No time to hit the repair shop?

A trained crew with the right tools replaces wheelsets in minutes — while the car is still coupled



1 The first steps to changing out a bad wheelset are to insert a jack between the cars, chain the bolsters to their frames, and attach the good wheelsets to the bolsters with nylon rope.



2 As the cars rise, a crewman attaches safety hooks to the wheelset to be changed out to ensure it doesn't roll away as it disengages from the truck's sideframes. Four photos, David Lustig



3 With the offending wheelset removed and out of the way, a crewman operating the Combilift plucks a new wheelset from a lineside flatbed truck and positions it near the car for insertion.



4 The new wheelset in position, workers lower the jack, guiding the car to line up the new axle with the sideframes. Total time to change the wheelset? Typically 12 to 15 minutes.

Benjamin Franklin once penned, "Time is money." When it comes to changing out bad freight car wheelsets, someone at Union Pacific Railroad must have been reading.

"Damaged wheels and axles, whether by impact or out of tolerances due to natural wear, are an intolerable situation that, when found, must be remedied immediately," says Brian Davis, Bailey Yard's director of mechanical maintenance. "Crews routinely look for a variety of things, including worn wheels, flat spots, a high flange, a thin flange, and shelling [when a wheel tread is starting to fatigue]."

Historically, the solution has been to pull the offending car out of the train or

yard track for a trip to a repair track. Prudent safety? Absolutely; but it's not necessarily expedient. Freight cars sidelined for repairs that require an overhead crane can sit for days waiting their turn.

When dealing with a commodity such as coal in unit trains, where a specified number of cars are required to be delivered on a specific date by contract, that type of delay is a real problem. Asking the public utility spokesman to explain they're running short on coal because a freight car had a bad wheel just isn't going to fly.

Enter the in-train wheelset replacement procedure, used at Bailey since mid-2006.

Once a car in an empty unit train is identified with a wheel problem, repair crews go right to the train in Bailey Yard's coal train run-through facility. Crews arrive with a specially fitted flatbed truck holding new wheelsets.

Two three-person car maintenance crews per shift work around the clock seven days a week. They repair an average of 35 cars in a 24-hour period. The only time they'll stop is if the weather gets so bad that it becomes impossible to work.

What makes empty coal trains a natural for the in-train repair procedure is that any car in the train weighs about the same as the next and the couplers and

Arclin offers coal dust solution

Ontario-based **Arclin** added **Dust-X 904** to its coal dust-suppression product line. The railcar topper is derived from renewable, organic materials.

Indiana-based **Steel Dynamics Inc.** has begun producing standard-strength rails that meet all American Railway Engineering and Maintenance-of-Way Association specifications.

wheelsets are usually the same.

The change-out process is relatively simple, but requires two important pieces of equipment. The first is a giant 50-ton hydraulically operated scissors jack that will elevate the end of the car nearest the wheelset to be changed out. The second is a Combilift C4000, an Irish-manufactured specialized rubber-tired forklift whose forks have been replaced with what might be described as a giant set of pincers to grab the wheelset and pull it clear.

Crew members chock the car with the bad wheelset and the one nearest to it to prevent anything from moving, Davis explains. Then, a crewman slips the jack under the couplers of the car and attaches chains and wheel hooks to the truck sideframe.

The operator slowly raises the jack about 30 inches, enabling the wheelset to separate from the truck sideframe. Some freight cars have retainers to keep the truck together, but in most cases, the weight of the car is sufficient to keep everything in place.

As soon as the wheelset drops out of the sideframes, a worker operating the Combilift grabs the bad wheelset, lifts it slightly, and removes it from under the car. Once clear, he places it off to the side. The operator then picks up a good wheelset off the flatbed truck and slips it into place under the car.

Once everyone involved in the process is satisfied that the new wheelset is correctly in position, the jack's operator lowers the car, while workers guide the sideframes until everything is properly reconnected. When finished, the team moves to the next car that has been tagged for wheel replacement.

If a car needs to get in and out urgently, Davis says his crew can safely swap out a wheelset in less than 10 minutes. The average time is between 15 and 20 minutes.

While neither Bailey Yard nor Union Pacific employees originated the process, (BNSF Railway performs similar work on empty coal trains at its Alliance, Neb., yard), Union Pacific has been the most aggressive of all Class I railroads in using in-train wheelset replacement.