

GENERAL TECHNICAL SPECIFICATIONS

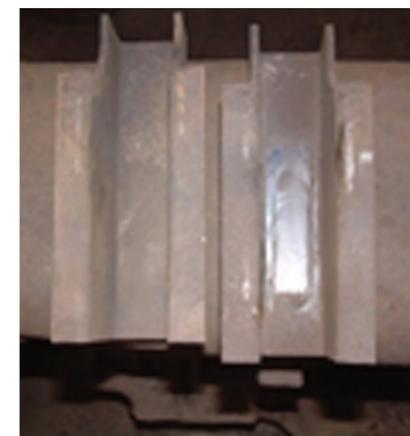
- Stucki long lasting urethane material designed for ultimate BB control
- Approved by the AAR Brake Systems Committee for use in interchange service
- All metallic interface maintains brake shoe vertical angle correction longer
- Designed to work with any brake beam size, AAR #18 or #24
- Accommodates any manufacture of brake beam
- Can be applied to any truck having excessive brake beam lateral freedom

CENTERING BRAKE BEAMS ON HIGH MILEAGE FREIGHT CARS

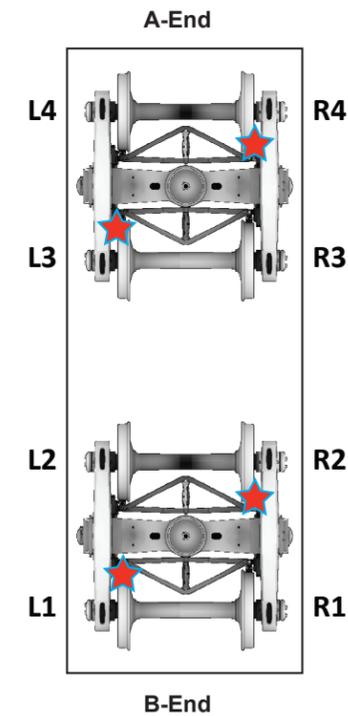
What is the Problem? Expensive wheel replacement!

Through extensive observation and track testing, there is a natural brake beam shift that occurs on freight car trucks that causes premature wheel wear. Excessive lateral play between side frames can be compensated with Stucki's brake beam centering wear liner (BBCWL).

One sided tread/flange wear ultimately creates an asymmetrically worn wheelset resulting in high cost AAR wheel defects, thin flange code 60, and high flange code 64 where wheel areas L1, R2, L3, and R4 are typically effected.



Biased contact due to lateral brake beam shift.



Sure, don't mind if you have a dirty application – dirt can be your friend during field inspection to determine where parts are operating and developing travel patterns.



L1

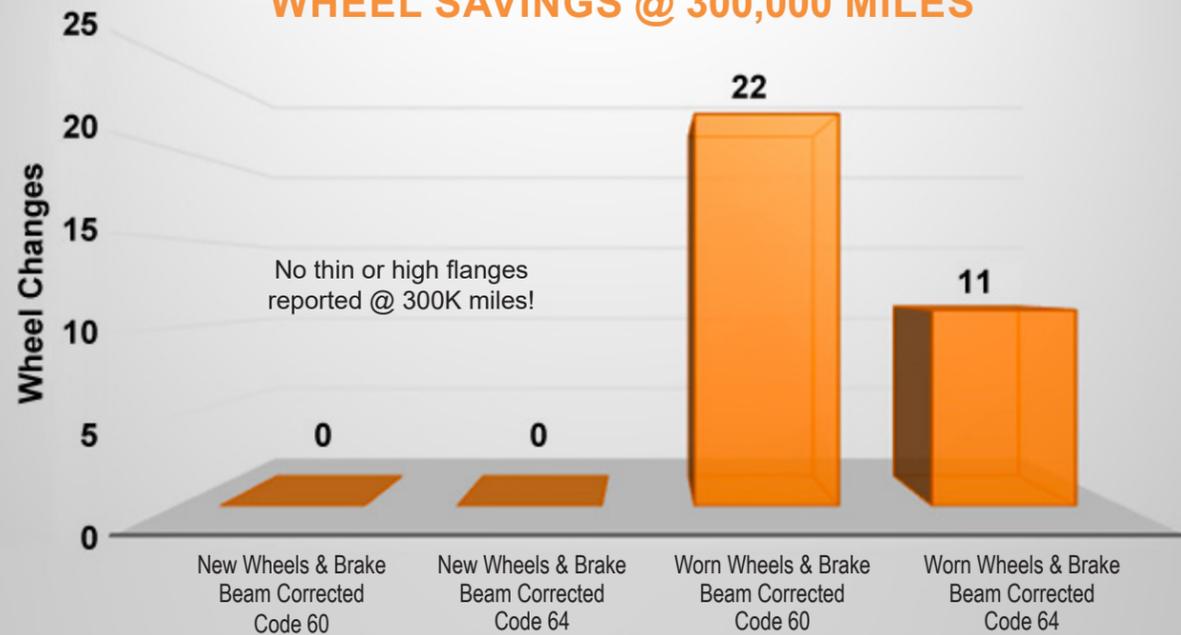
Biased brake beam position and resulting tread/flange wear.



R1

Are trucks becoming damaged with consistent bias toward diagonally opposite corners?

HIGH MILEAGE COAL GONDOLA WHEEL SAVINGS @ 300,000 MILES



THIN FLANGED DEVELOPMENT THEORY

So, why does this occur? Let's take this 1 step at a time.

Step 1: Unmatched Brake Beam Rigging to Truck System.

Freedom of the brake beam between the side frames allows the beam to shift as the biased lateral forces are applied during braking. Lateral force during braking is coupled with the dynamic movement of the car and leads to brake beam shifting off center of the wheel tread. Note that the brake head material is very soft as compared to the wheel itself.



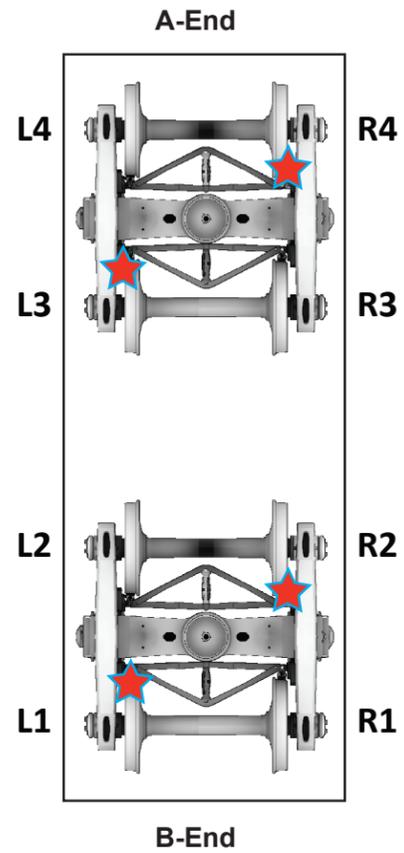
L1 Brake head contact



L2 Shoe Overhang



R2 Break Beam Contact



Step 2: Prolonged bias to the wheel tread varies wheel wear patterns on the same axle.

Step 3: Changes to the rolling radii effect wheelset steering. The FLAT no longer centers the wheel and creates an opportunity for flange/rail contact and appears in opposite corners of the same truck.

Step 4: Flange wear. Inside tread wear results in a loss of the original tread taper and flattens out creating a "flat tire syndrome" resulting in asymmetric wheel wear. The wheel set rides off center of the track.

Step 5: AAR Code 60 or 64 typical to the L1, R2, L3, and R4 wheel locations.

HOW TO CORRECT THE BRAKE BEAM POSITION?

A problem we can address. Using the Brake Beam Centering Wear Liner (BBCWL), the issue can be corrected. It is easiest to consume excessive space between side frames with a BBCWL spacer, an engineered design. The BBCWL centers the brake beam with springing specifically tailored to keep the beam in place under all braking conditions while protecting against truck warp conditions. Spring loaded with Stucki's unique urethane, brake beams can be placed on an adjusted pathway keeping the brake head/shoe off of the wheel flange, prevent brake head/shoe overhang on the opposite side, and allow for even wheelset wear.

Bottom line is to position the brake head well away from the flange throat and correct the placement of the shoe on the wheel tread for the long haul. Correct placement of the brake shoe on the wheel tread allows for longer wheel life, and prevents premature one sided asymmetric thin and high flange wheelsets.



All metallic brake beam interface maintains brake head vertical angle correction longer.



Stucki urethane spring support for long life.

Brake Beam Centering Wear Liner with a hybrid solution. These liners are designed with a thickened unit guide with urethane for brake beam centering and cushioning. All metal brake beam interface for durability maintains vertical brake beam angle correction standards.