

the rail shall be 3 inches and the maximum clearance shall be 6 inches measured on tangent level track.

§ 230.111 Spring rigging.

(a) *Arrangement of springs and equalizers.* Springs and equalizers shall be arranged to ensure the proper distribution of weight to the various wheels of the steam locomotive, maintained approximately level and in a safe and suitable condition for service. Adjusting weights by shifting weights from one pair of wheels to another is permissible.

(b) *Spring or spring rigging condemning defects.* Springs or spring rigging with any of the following defects shall be removed from service immediately and renewed or properly repaired:

- (1) Top leaf broken or two leaves in top half or any three leaves in spring broken. (The long side of a spring to be considered the top.) Broken springs not exceeding these requirements may be repaired by applying clips providing the clips can be made to remain in place;
- (2) Any spring with leaves excessively shifting in the band;
- (3) Broken coil springs; or
- (4) Broken driving box saddle, equalizer, hanger, bolt, or pin.

WHEELS AND TIRES

§ 230.112 Wheels and tires.

(a) *Mounting.* Wheels shall be securely mounted on axles. Prick punch-

ing or shimming the wheel fit will not be permitted. The diameter of wheels on the same axle shall not vary more than 3/32 inch.

(b) *Gage.* Wheels used on standard gage track will be out of gage if the inside gage of flanges, measured on base line is less than 53 inches or more than 53 3/8 inches. Wheels used on less than standard gage track will be out of gage if the inside gage of flanges, measured on base line, is less than the relevant track gage less 3 1/2 inches or more than the relevant track gage less 3 1/8 inches.

(c) *Flange distance variance.* The distance back to back of flanges of wheels mounted on the same axle shall not vary more than 1/4 inch.

(d) *Tire thickness.* Wheels may not have tires with a minimum thickness less than that indicated in the table in this paragraph (d). When retaining rings are used, measurements of tires to be taken from the outside circumference of the ring, and the minimum thickness of tires may be as much below the limits specified earlier in this paragraph (d) as the tires extend between the retaining rings, provided it does not reduce the thickness of the tire to less than 1 1/8 inches from the throat of flange to the counterbore for the retaining rings. The required minimum thickness for tires, by wheel center diameter and weight per axle, is as follows:

Weight per axle (weight on drivers divided by number of pairs of driving wheels)	Diameter of wheel center (inches)	Minimum thickness (inches)
30,000 pounds and under	44 and under	1/4
	Over 44 to 50	1 5/16
	Over 50 to 56	1 3/8
	Over 56 to 62	1 7/16
	Over 62 to 68	1 1/2
	Over 68 to 74	1 9/16
	Over 74	1 5/8
Over 30,000 to 35,000 pounds	44 and under	1 5/16
	Over 44 to 50	1 3/8
	Over 50 to 56	1 7/16
	Over 56 to 62	1 1/2
	Over 62 to 68	1 9/16
	Over 68 to 74	1 5/8
	Over 74	1 11/16
Over 35,000 to 40,000 pounds	44 and under	1 3/8
	Over 44 to 50	1 7/16
	Over 50 to 56	1 1/2
	Over 56 to 62	1 9/16
	Over 62 to 68	1 5/8
	Over 68 to 74	1 11/16
	Over 74	1 3/4
Over 40,000 to 45,000 pounds	44 and under	1 7/16