Federal Railroad Administration, DOT

§ 230.99 Tender truck axles.

The minimum diameters of axles for various axle loads shall be as follows:

<table>
<thead>
<tr>
<th>Axle load (in pounds)</th>
<th>Minimum diameter of journal (in inches)</th>
<th>Minimum diameter of wheel seat (in inches)</th>
<th>Minimum diameter of center (in inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50000</td>
<td>5½</td>
<td>7½</td>
<td>6½</td>
</tr>
<tr>
<td>38000</td>
<td>5</td>
<td>6</td>
<td>5½</td>
</tr>
<tr>
<td>31000</td>
<td>4¼</td>
<td>5</td>
<td>4¾</td>
</tr>
<tr>
<td>22000</td>
<td>3¾</td>
<td>4½</td>
<td>3¼</td>
</tr>
<tr>
<td>15000</td>
<td>3¾</td>
<td>4½</td>
<td>3¼</td>
</tr>
</tbody>
</table>

§ 230.100 Defects in tender truck axles and journals.

(a) Tender truck axle condemning defects. Tender truck axles with any of the following defects shall be removed from service immediately and repaired:

(1) Axles that are bent;
(2) Collars that are broken, cracked, or worn to ¼ inch or less in thickness;
(3) Truck axles that are unsafe on account of usage, accident, or derailment;
(4) A fillet in the back shoulder that is worn out; or
(5) A gouge between the wheel seats that is more than ¼ of an inch in depth.

(b) Tender truck journal condemning defects. Tender truck journals with any of the following defects shall be removed from service immediately and repaired:

(1) Cut journals that cannot be made to run cool without turning;
(2) Seams in axles causing journals to run hot;
(3) Overheating, as evidenced by pronounced blue black discoloration;
(4) Transverse seams in journals of iron or steel axles; or
(5) Journal surfaces having any of the following:
   (i) A circumferential score;
   (ii) Corrugation;
   (iii) Pitting;
   (iv) Rust;
   (v) Etching.

§ 230.102 Tender plain bearing journal boxes.

Plain bearing journal boxes with the following defects shall be removed from service immediately and repaired:

(a) A box that does not contain visible free oil;
(b) A box lid that is missing, broken, or open except to receive servicing;
(c) A box containing foreign matter, such as dirt, sand, or coal dust that can reasonably be expected to damage the bearing; or have a detrimental effect on the lubrication of the journal and bearing;
(d) A lubricating pad that:
   (1) Is missing;
   (2) Is not in contact with the journal;
   (3) Has a tear extending half the length or width of the pad, or more, except by design;
   (4) Shows evidence of having been scorched, burned, or glazed;
   (5) Contains decaying or deteriorated fabric that impairs proper lubrication of the pad;
   (6) Has an exposed center core (except by design); or
   (7) Has metal parts contacting the journal;
(e) A plain bearing that:
   (1) Is missing, cracked, broken;
   (2) Has a bearing liner loose;
   (3) Has a broken out piece; or
   (4) Has indications of having been overheated, as evidenced by:
      (i) Melted babbitt;
      (ii) Smoke from hot oil; or
      (iii) Journal surface damage; or
(f) A plain bearing wedge that:
   (1) Is missing, cracked or broken; or

§ 230.101 Steam locomotive driving journal boxes.

(a) Driving journal boxes. Driving journal boxes shall be maintained in a safe and suitable condition for service. Not more than one shim may be used between the box and bearing.

(b) Broken bearings. Broken bearings shall be renewed.

(c) Loose bearings. Loose bearings shall be repaired or renewed.

§ 230.103 Steam locomotive driving journal boxes.

Plain bearing journal boxes with the following defects shall be removed from service immediately and repaired:

(a) A box that does not contain visible free oil;
(b) A box lid that is missing, broken, or open except to receive servicing;
(c) A box containing foreign matter, such as dirt, sand, or coal dust that can reasonably be expected to damage the bearing; or have a detrimental effect on the lubrication of the journal and bearing;
(d) A lubricating pad that:
   (1) Is missing;
   (2) Is not in contact with the journal;
   (3) Has a tear extending half the length or width of the pad, or more, except by design;
   (4) Shows evidence of having been scorched, burned, or glazed;
   (5) Contains decaying or deteriorated fabric that impairs proper lubrication of the pad;
   (6) Has an exposed center core (except by design); or
   (7) Has metal parts contacting the journal;
(e) A plain bearing that:
   (1) Is missing, cracked, broken;
   (2) Has a bearing liner loose;
   (3) Has a broken out piece; or
   (4) Has indications of having been overheated, as evidenced by:
      (i) Melted babbitt;
      (ii) Smoke from hot oil; or
      (iii) Journal surface damage; or
(f) A plain bearing wedge that:
   (1) Is missing, cracked or broken; or