

SOUTHERN PACIFIC COMPANY  
(Pacific Lines)

INSTRUCTIONS FOR PACKING CELLARS AND JOURNAL BOXES

MECHANICAL CIRCULAR NO. 3

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7 Pages.

1. The following instructions must be complied with when cleaning, assembling and packing cellars and journal boxes on trucks of engines, tenders and cars.

2. PERIODIC REPACKING. - FREIGHT CARS.

(a) All freight cars in revenue service, including cabooses, regardless of ownership, shall have journal bearings and wedges removed, examined and renewed when not in accordance with A.A.R. Interchange Rule No. 66 and boxes repacked as specified by this rule. Periodic repacking of journal boxes on freight cars in revenue service required after the expiration of fifteen (15) months as indicated by stenciling on car.

(b) When making repairs to FOREIGN freight cars, all journal bearings and wedges must be renewed in accordance with A.A.R. Interchange Rule No. 19.

(c) Under no circumstances shall reclaimed oil be used in the journal boxes of freight cars.

3. PERIODIC REPACKING - PASSENGER CARS.

(a) All passenger cars in revenue service except those equipped with roller bearings, regardless of ownership, including business cars, electric suburban cars and gas-electric cars, shall have journal bearings and wedges removed, examined and renewed when not in accordance with A.A.R. Interchange Rule No. 66 and boxes repacked as specified by this rule. Periodic repacking of journal boxes on passenger cars in revenue service required after the expiration of six (6) months as specified by A.A.R. Interchange Rule PC-7, Paragraph (1). Stenciling of date of repacking to conform with owner's standard.

(b) When making repairs to FOREIGN passenger cars all journal bearings and wedges must be renewed in accordance with A.A.R. Interchange Rule No. 19.

(c) Under no circumstances shall reclaimed oil be used in the journal boxes of passenger cars.

#### 4. PERIODIC REPACKING - CARS IN MAINTENANCE OF WAY SERVICE.

(a) All freight and passenger cars in Maintenance of Way service shall have journal bearings and wedges removed, examined and renewed when not in accordance with A.A.R. Interchange Rule No. 66 and boxes repacked in accordance with this rule whenever considered necessary.

(b) Under no circumstances shall reclaimed oil be used in the journal boxes of passenger or freight cars used in Maintenance of Way service.

#### 5. PERIODIC REPACKING - TENDER, ENGINE AND TRAILING TRUCKS.

(a) Journal bearings and wedges on tender trucks shall be removed and examined as follows:

For locomotives in passenger service on long through runs: - at each quarterly inspection.

For locomotives in freight service and local or short run passenger service: - at each annual inspection.

For locomotives in switch service: - at each classified repair.

(b) Journal bearings and cellars on engine and trailing trucks shall be examined after each trip and repacked when necessary.

(c) Under no circumstances shall reclaimed oil be used in the journal boxes of tenders, engine trucks or trailing trucks of locomotives in passenger or freight service. Reclaimed oil may be used only in the journal boxes of tenders, engine trucks or trailing trucks of locomotives in switch service.

#### 6. PACKING - KINDS OF AND PREPARATION.

(a) Wool waste packing or mixed wool and cotton packing or reclamation of either must be used for locomotives, tenders and passenger train cars, and cotton waste or reclaimed cotton packing for freight cars, cabooses and freight or passenger cars in Maintenance of Way service.

(b) Preparation of New Packing. Waste must be prepared at designated points by Store Department in accordance with A.A.R. Interchange Rule No. 66.

(c) Preparation of Renovated Packing. Renovated packing shall be prepared in accordance with A.A.R. Interchange Rule No. 66, Sections 4 to 8, inclusive. The actual reclamation by Store Department shall follow, in general, A.A.R. Rule 66, as detailed in latest revision of Stores Department Reclamation Practice No. 2501.

(d) Preparation of Back Rolls. Back Rolls, as shown in Figure 1, shall be prepared at designated points by Stores Department in accordance with A.A.R. Interchange Rule 66, Section 10, Paragraph (a). A stock of prepared rolls, properly soaked and drained, should be kept at oil houses and issued to packers as needed.

## 7. JOURNAL BOXES.

Journal boxes shall be inspected, cleaned, and have dust guards applied in accordance with A.A.R. Interchange Rule No. 66, Section 9. Before reapplying journal boxes, examine under surface of top of box for excessive wear at wedge fit.

## 8. WEDGES.

Wedges shall be in accordance with A.A.R. Interchange Rule No. 66, Section 12. Journal bearing wedges found condemnable under A.A.R. Interchange Rule 66, Paragraph (k) shall be removed and replaced with solid back wedges of A.A.R. design. All cast iron and malleable iron skeleton or hollow back wedges found in SYSTEM freight or passenger cars, tenders and in freight and passenger cars in maintenance of way service shall be removed and scrapped and replaced with solid back wedges of A.A.R. design.

## 9. BEARINGS.

Bearings shall be applied in accordance with A.A.R. Interchange Rule No. 66, Section 11. Under no circumstances shall a bearing be re-lined, as all tender and car journal bearing backs are cast new. When journal bearings are removed for examination, a new bearing should be applied in event the removed bearing is condemnable as specified in A.A.R. Interchange Rule No. 66, Paragraph (j), otherwise the removed bearing should be re-applied. New journal bearings shall be applied when new wheels are applied. Under no circumstances are second-hand bearings to be used when new wheels are applied.

## 10. INSIDE BEARING ENGINE TRUCK CELLARS AND INSIDE BEARING TRAILING TRUCK CELLARS.

Cellars shall be thoroughly cleaned of all dirt, sand, scale or grit, and if water is present it must be removed.

(a) Bottom Rolls. First, apply a loose roll of packing lengthwise in each lower corner of cellar, as shown at "A", and a smaller roll lengthwise along center of cellar if necessary, as shown at "B", in Figures 2 and 3.

(b) Packing Rolls. Next, apply several loosely twisted rolls of packing, of sufficient diameter to bear firmly against lower part of journal when cellar is applied as shown at "C". Length of roll must be made to suit diameter of journal and such that ends shall be 1 inch below center line of journal, along sides, to insure against waste rolling under the bearing. No loose ends or threads should protrude at the sides or ends, such ends being carefully tucked under sides of packing; nor should any pieces of packing be laid along the sides of journal, as such pieces may become caught under bearing and cause a hot box. If in the judgment of the packer the packing is too dry, sufficient oil shall be added to insure proper lubrication. When reapplying cellar care must be taken to see that packing is not displaced.

## 11. RET TRAP OILERS APPLIED TO ENGINE TRUCK CELLARS.

Cellars shall be thoroughly cleaned of all dirt, sand, scale or grit, and if water is present it must be removed.

Frame of ret trap oiler must be made and maintained strictly in accordance with standard drawing.

Packing must be of new wool waste prepared at designated points by Store Department in accordance with A.A.R. Interchange Rule No. 66. Cotton waste or reclaimed waste must not be used.

Packing shall be formed into rolls that, when loose, are approximately 2" in diameter and as long as perforated plate. Rolls shall then be worked by hand to equal density throughout their length and then be slightly twisted to form a fairly smooth roll about 1" in diameter after being tied in position.

These rolls are then placed lengthwise on perforated plate and securely tied into position with cotton strands made up of 2 to 3 plies of fine cotton strings, divided and knotted, as shown at "1" and "2" in Figure 7.

Cotton wicking, hemp strands, or other material must not be used for this purpose.

After perforated plate has been completely covered with rolls prepared and secured as described above, all loose strands or waste must be trimmed off, to prevent them pulling out and getting under journal bearing and causing a hot box. Ends of rolls should then be trimmed off smooth and flush with ends of perforated plate.

Ends of cotton strands hanging from perforated plate should be trimmed off forming a flat surface and leaving the shortest strands, along center of perforated plate, at least 3-1/4" long.

The entire pad should then be submerged in journal box oil until thoroughly saturated, then placed on rack to drain off all surplus oil.

When placing lubricator in service, at least one pint of free oil should be poured into cellar.

In servicing lubricators of this type sufficient free oil should be added to provide about 1/2" of oil in bottom of cellar. This is equivalent to about one pint.

## 12. OUTSIDE TRAILING TRUCK JOURNAL BOXES.

Boxes shall be thoroughly cleaned of all dirt, sand, scale and grit, and if water is present it must be removed.

(a) Back Roll. First, wipe off front of box. Next, insert back roll, working it under journal to extreme back part of box as shown at "A" in Figure 4. Make sure that roll is well up against journal at fillet to insure lubrication and exclude dust. Length of roll must be made to suit diameter of journal and such that ends shall not extend within less than 1/2 inch or more than 1 inch of center line of journal.

(b) Packing Rolls. Apply several loosely twisted rolls of packing, of sufficient diameter to bear firmly against lower part of journal, as shown at "B" in Figure 4. Care must be taken to see that each section of packing, as it is applied, is worked back into contact with preceding section of packing and under side of journal. Last section applied must be of sufficient diameter to make contact with journal to its extreme outside end. Length of rolls must be made to suit diameter of journal and such that ends shall be 1 inch below center line of journal, along sides, to insure against waste rolling under the bearing. No loose ends or threads should protrude at the sides or ends, such ends being carefully tucked under sides of packing; nor should any pieces of packing be laid along the sides of journal, as such pieces may become caught under bearing and cause a hot box. If in the judgment of the packer the packing is too dry, sufficient oil shall be added to insure proper lubrication.

(c) Front Plug. Apply a small, tightly twisted, front plug as shown at "C" in Figures 4 and 6, and pack tightly in order to prevent displacement of main packing. If in the judgment of the packer the packing is too dry, sufficient oil shall be added to insure proper lubrication.

## 13. APPLICATION OF PACKING - TENDER AND OUTSIDE BEARING ENGINE TRUCK JOURNAL BOXES.

(a) Back Roll. First, wipe off front of box; next, insert back roll, working it under journal to extreme back part of box as shown at "A" in Figure 5. Make sure that roll is well up against journal to insure proper lubrication at fillet and to exclude dust. Length of roll must be made to suit diameter of journal and such that ends shall not extend within less than 1/2 inch or more than 1 inch of center line of journal, as shown at "A" in Figure 5.

(b) Body of Packing. Loosen packing thoroughly to eliminate matter portions and apply sufficient packing, preferably in one piece, to firmly fill space at "B" in Figure 5 under journal, so as to prevent settling away, care being taken to have packing bear evenly along full length of lower part of journal. This is best accomplished by placing the packing across the full width of the mouth of journal box and allowing the strands to hang down outside, always adding more packing before placing the hanging strands inside the box. This has the effect of binding all the packing in one mass. The top of the packing shall be 1 inch below center line of journal, along the sides, to insure against waste rolling under the bearing. By placing the packing under the journal until the front or outer edge of collar is reached, the front end of the packing then presents an inclined surface toward the front of the box. No loose ends or threads should protrude at the sides or ends, such ends being carefully tucked under sides of packing; nor should any pieces of packing be laid along the sides of journal, as such pieces may become caught under bearing and cause a hot box.

13. APPLICATION OF PACKING - INNER AND OUTSIDE BEARING  
ENGINE CRACK JOURNAL BOXES - (Continued)

(c) Front Plug. Apply a short, tightly twisted, front plug under collar, at end of journal, as shown at "C" in Figures c and d, and pack tightly in order to prevent displacement of main packing. If in the judgment of the packer the packing is too dry, sufficient oil shall be added to insure proper lubrication.

14. CONTAINERS FOR PACKING.

All containers used for storing and handling packing shall be kept perfectly clean and shall be provided with suitable covers to exclude dirt, sand, grit, etc.

15. PACKING IRONS.

Southern Pacific standard packing irons should be used for inserting rolls and packing. Care must be taken to see that packing irons are kept perfectly clean and not permitted to touch dirt or sand while journal box or cellar is being packed.

*Geo. H. ...*

General Superintendent Motive Power.



Figure 1

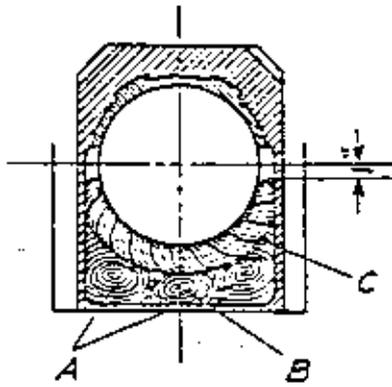


Figure 2

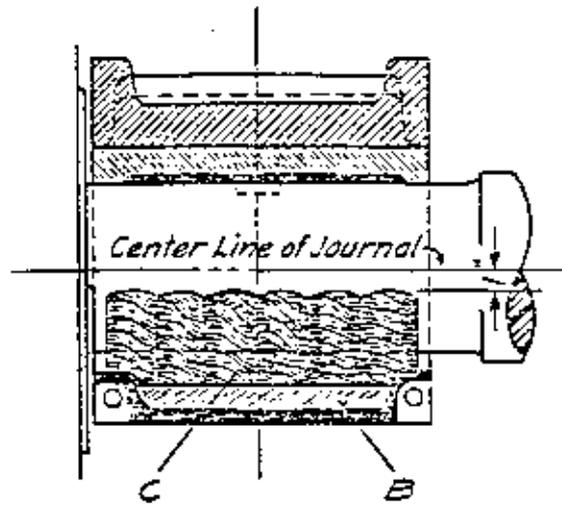


Figure 3

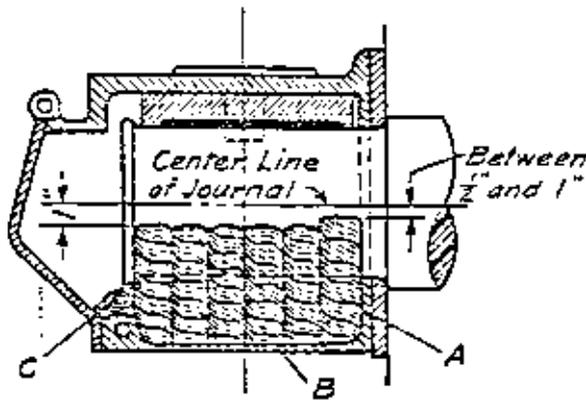
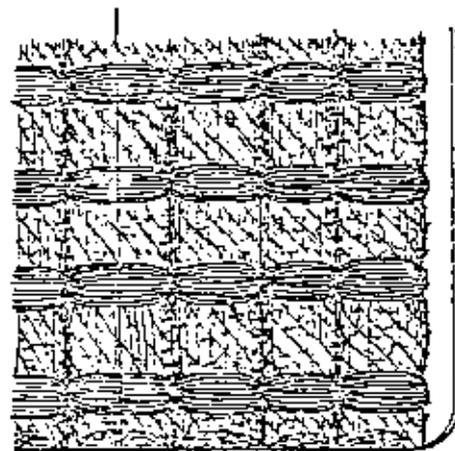


Figure 4



Ends of Rolls to be trimmed off smooth

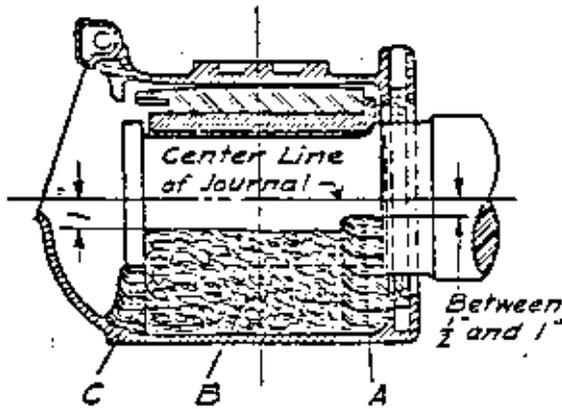
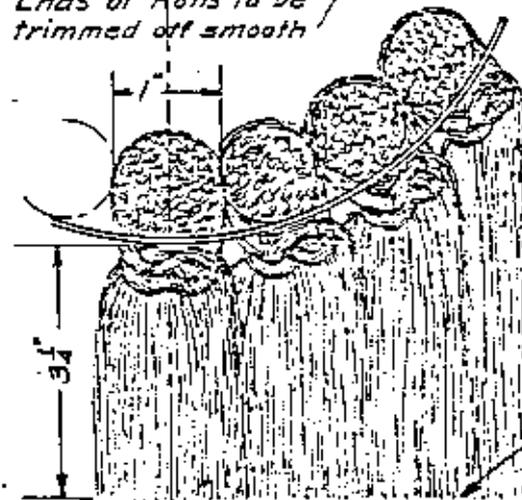


Figure 5



Trimmed to form a flat surface.

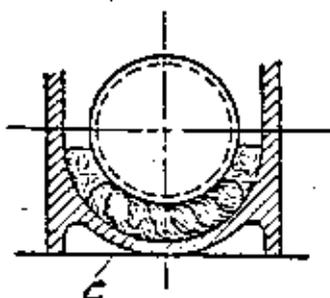


Figure 6

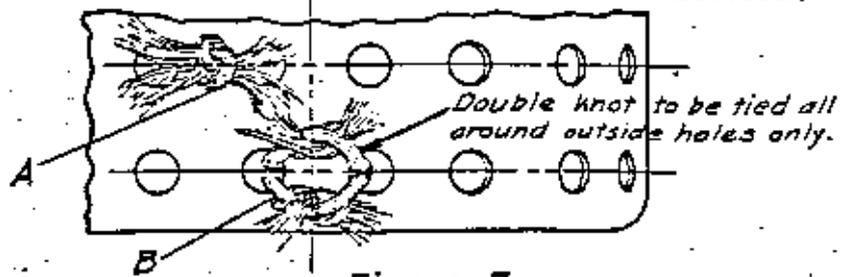


Figure 7