

[Reprint
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UNITED STATES RAILROAD ADMINISTRATION
DIRECTOR GENERAL OF RAILROADS

PENNSYLVANIA RAILROAD, EASTERN LINES

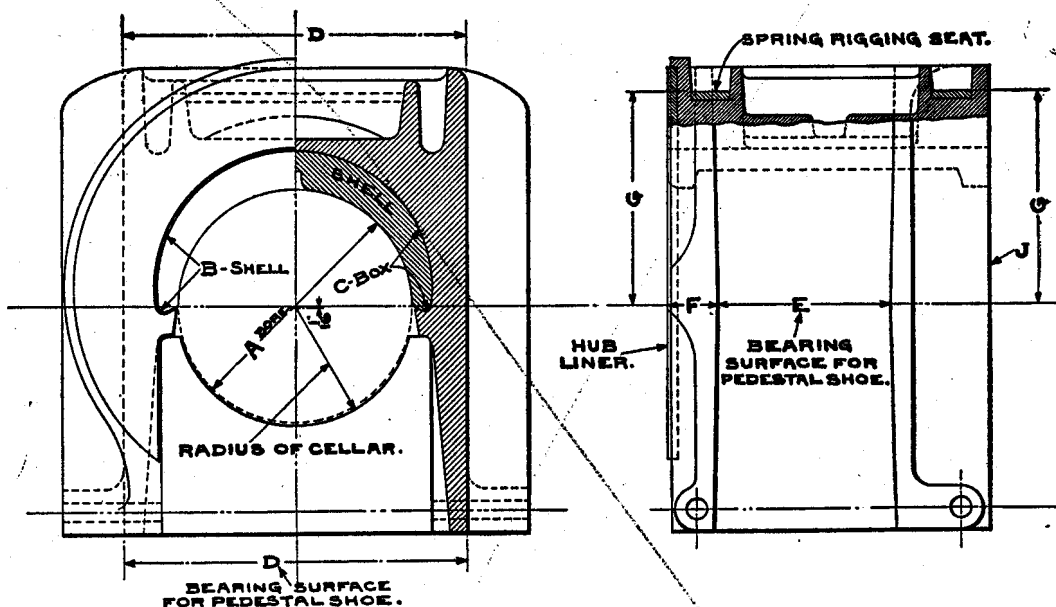
WEST JERSEY & SEASHORE RAILROAD
NEW YORK, PHILADELPHIA & NORFOLK RAILROAD
HUNTINGDON & BROAD TOP MOUNTAIN RAILROAD

Locomotive Maintenance Instructions No. L. 16-A

(SUPERSEDING LOCOMOTIVE MAINTENANCE INSTRUCTIONS L-16, DATED AUGUST 21, 1914.)

ISSUED ALTOONA, PA.
FEBRUARY 11, 1920.

DRIVER BOX LIMITS



SUBJECT			New Locomotives	Repaired or Manufactured Parts for Old Locomotives	When Box Is Removed	Driver Boxes Must be Machined Under	
						Classified Repairs	Running Repairs
SHELL	Bore	A	Journal Size Plus .020"—Limit, Plus or Minus .005"	Journal Size Plus .020"—Limit, Plus or Minus .005" See Note 1	See Notes 7, 9 and 12	See Notes 7, 9 and 12	See Notes 7, 9 and 12
	Outside Surface	B	Maximum Taper, Radius or Ends, .003"	Maximum Taper, Radius or Ends, .003"	See Note 11	See Note 11	See Note 11
BOX	Shell Bearing	C	Maximum Taper, Radius or Ends, .005"	Maximum Taper, Radius or Ends, .005"		When Tapered More Than .015"	
	Bearing Surface for Pedestal Shoe	D	Tracing Size—Limit Plus or Minus .005"	No Two Measurements to vary Over .010"	When Out of Parallel Over .030"	When Out of Parallel Over .030"	
		E	Tracing Size—Limit Plus or Minus .005"				
	Hub Liner	F	Tracing Size—Limit Plus or Minus .005"	See Notes 2 and 5	See Notes 4 and 5	See Notes 3 and 5	See Notes 4 and 5
	Spring Rigging Seat	G	Tracing Size—Limit Plus or Minus .030"	Tracing Size—Limit Plus or Minus .030" See Note 6		See Note 6	

(OVER)

No. L. 16-A

Note 1—JOURNAL TAPER. When journals are worn taper, the largest diameter should be used in determining box bore. Also see Locomotive Maintenance Instructions No. L-15-B.

Note 2—SIDE PLAY OF AXLES FOR NEW OR REPAIRED LOCOMOTIVES. Hub liners must be faced to allow the following total side play: $\frac{1}{4}$ " for K2 locomotives and $\frac{1}{8}$ " for all other classes—limit, plus $\frac{1}{8}$ ".

Note 3—SIDE PLAY OF AXLES FOR CLASSIFIED REPAIRS. Hub liners must be renewed when the total side play exceeds $\frac{3}{8}$ " for K2 locomotives, and $\frac{1}{8}$ " for all other classes.

Note 4—SIDE PLAY OF AXLES FOR ENGINEHOUSE REPAIRS. Hub liners must be renewed when the total side play exceeds $\frac{3}{8}$ " on more than one pair of drivers, except on D-16 locomotives where the lateral motion will have to be kept below this limit on account of interference with the side sheets.

Note 5—TOTAL SIDE PLAY. Notes 2, 3 and 4 may be exceeded or diminished for branch lines and in shifting service upon special permission obtained from the General Superintendent of Motive Power.

Note 6—SPRING RIGGING SEATS. Driver boxes having liners. Liners are to be added to or removed until dimension "G" is to tracing size. Limit—plus or minus $\frac{1}{8}$ ". Pockets must be lined square to surface "J", limit— $\frac{1}{8}$ ".

Note 7—RENEWAL OF SHELLS. Shells shall be renewed when the crown is worn as follows:

	Road Limit	Shop Limit
Locomotives in Road Service.....	$\frac{3}{4}$ "	1"
Locomotives in Shifting Service.....	$\frac{5}{8}$ "	$\frac{7}{8}$ "

Note 8—CELLAR BORE. Cellar is to be bored to same radius as shell, with radius set off center $\frac{1}{8}$ " so as to provide $\frac{1}{8}$ " clearance between cellar and axle.

Note 9—ROUGH OR CUT SHELLS AND HUB LINERS. Surfaces must be refinished, providing the finished size will come within the limits allowed.

Note 10—MOUNTING PRESSURE FOR SHELLS. Cast iron box—Minimum, 10 tons.
Maximum, 20 tons.

Cast steel box—Minimum, 15 tons.
Maximum, 30 tons.

Note 11—SHIMMING BETWEEN SHELL AND DRIVER BOX. Loose shells having thickness of crown not less than specified in Note 7, and otherwise satisfactory, may be repaired by applying a sheet steel shim, not less than $\frac{1}{8}$ " thick, flanged over at hub liner end. Shell must be applied in accordance with Note 10 and bored as per dimension "A."

Note 12—BORE OF DRIVING BOX SHELLS. Driving box shells shall be refitted when the bore of the shell exceeds the diameter of the journal $\frac{1}{8}$ " or more on locomotives in road service, or $\frac{1}{16}$ " or more on locomotives in shifting service. The shop limit of wear of driving box shells shall be $\frac{1}{8}$ " for all classes of locomotives.

J. T. WALLIS,

Gen'l Sup't Motive Power,

Penna. Railroad Lines East of Pittsburgh