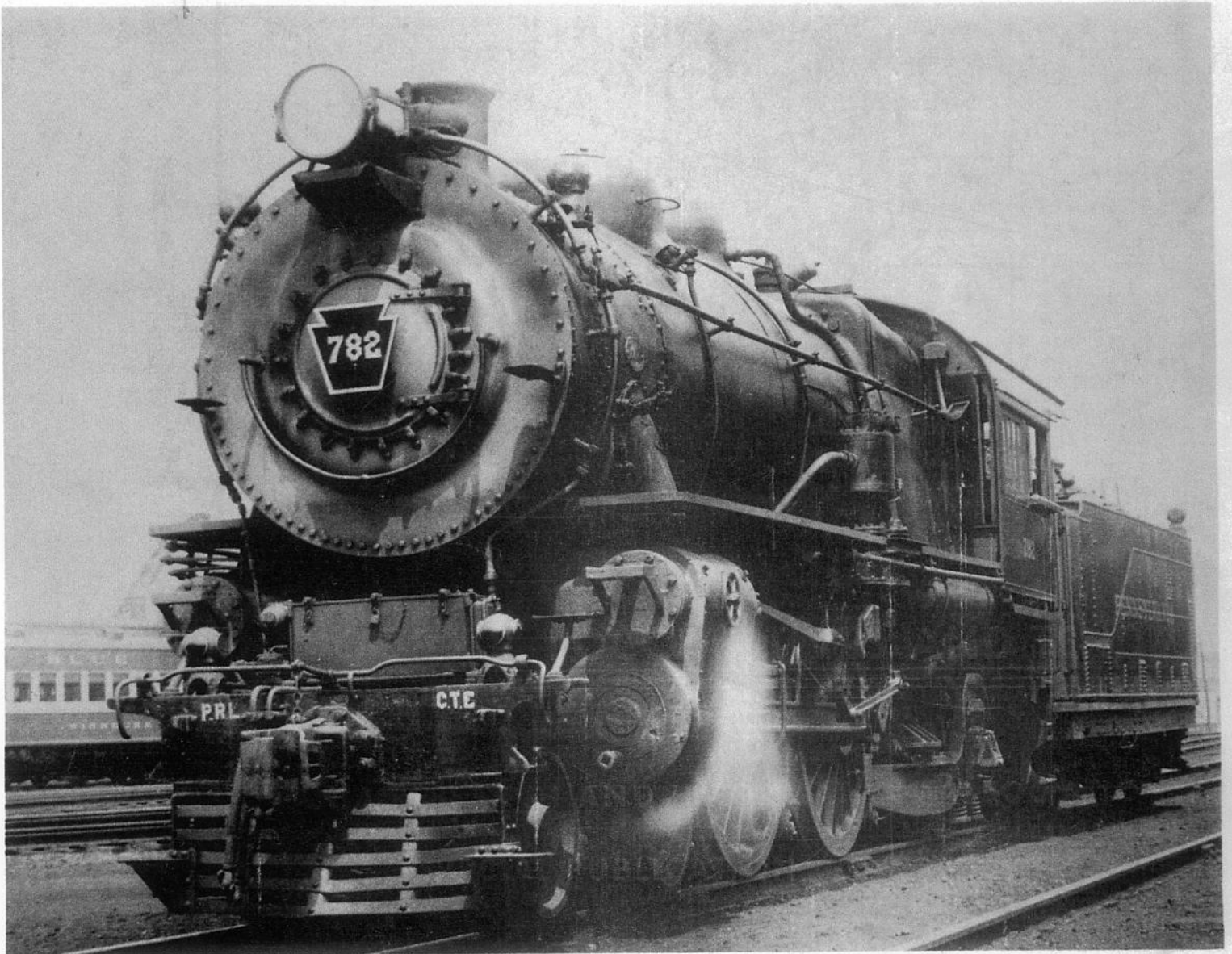


# THE PAINTING OF P.R.R. LOCOMOTIVES AND TENDERS

THE PENNSYLVANIA RESEARCH AND INFORMATION ASSOCIATION

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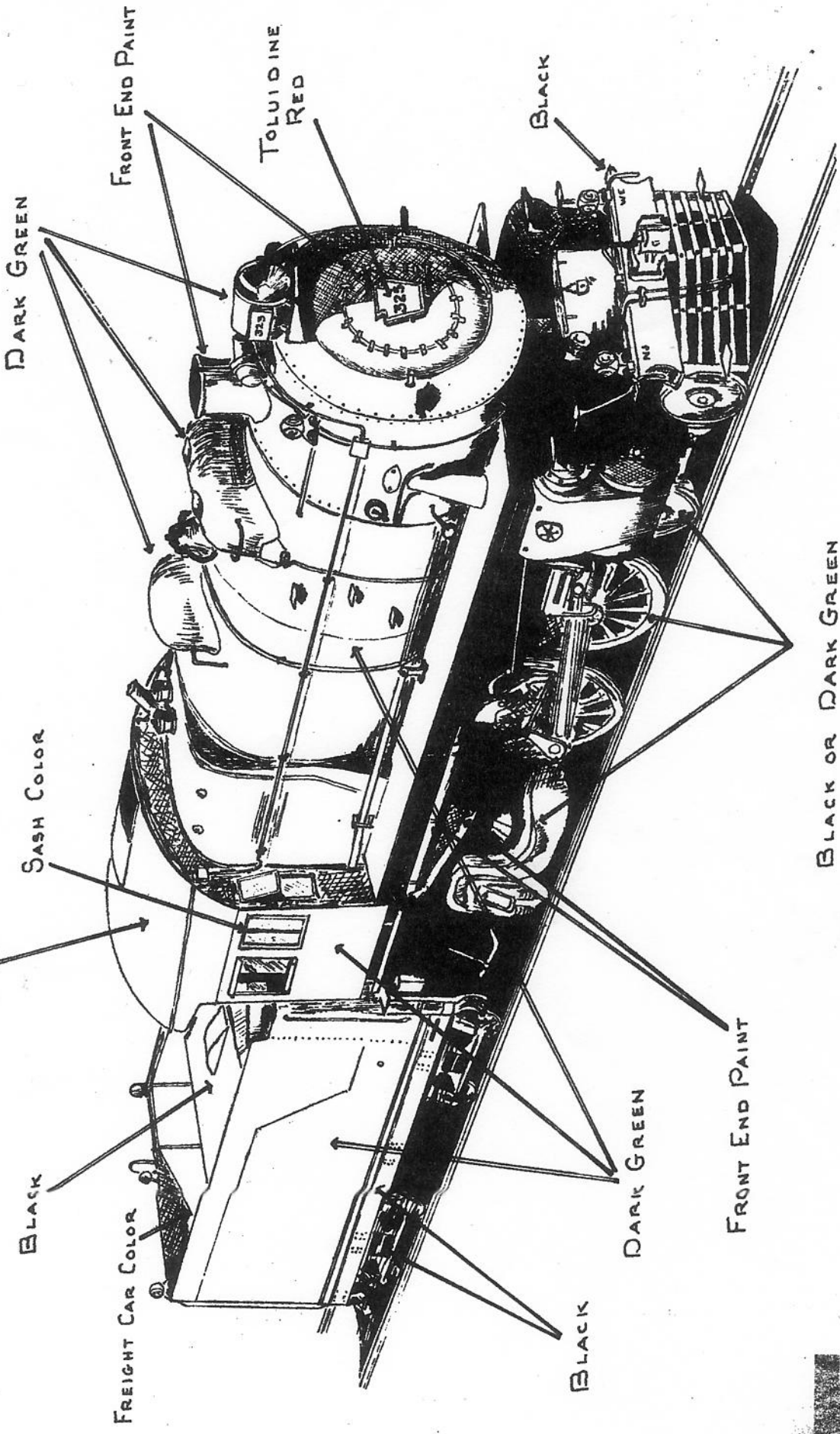


**PAINT COLORS FOR P.R.R. LOCOMOTIVES AND TENDERS**

As of October 8, 1929

<p align="center"><b>DARK GREEN LOCOMOTIVE FINISH</b></p> <p>*All Locomotive Wheels                  *Trailer Truck Frame                  Pilot                  Wooden Pilot Beam                  Cylinder Head and Steam Chest Casings                  Cylinder Jackets                  Boiler Jacket, including inside cab                  Headlight                  Bell Frame, Sand Box, and Dome                  Air Reservoirs                  Running Board Facing Strips                  Cab Exterior, including doors                  Valve Motion, (Painted parts)                  Tender Cistern Exterior: Sides, Back, and Front End (except coal space), also Molding Strip between cistern and frame                  Tender Frame (wood)</p>	<p align="center"><b>FRONT END PAINT</b></p> <p>Smokebox                  Stack                  Firebox (exposed portion)                  Ash Pan</p>
<p align="center"><b>BLACK</b></p> <p>*All Locomotive Wheels                  *Trailer Truck Frame                  Steel Pilot Beam                  Pilot Beam Braces                  Round Number Plate: Background                  Engine Truck (except wheels)                  Frames and Braces                  Hand Rails                  Running Boards and Brackets (except facing)                  Steps                  Pipes and Fixtures                  Brake Rigging                  Deck Plate                  Tender Frame (steel)                  Tender Steps                  Tender Trucks and Wheels                  Tender Coal Space</p>	<p align="center"><b>FREIGHT CAR COLOR</b></p> <p>Wood Cab: Roof above rain gutters (repainting when only one coat is applied)                  Tender: Top of Cistern, including rear of coal space</p>
<p>*Dark Green and Black were optional for locomotive wheels and trailer truck frame.</p>	<p align="center"><b>MIXTURE of THREE Parts FREIGHT CAR COLOR and ONE Part BLACK</b></p> <p>Wood Cab: Roof above rain gutters (repainting when two coats are applied)                  Steel Cab: Roof above rain gutters (repainting when only one coat is applied)</p>
	<p align="center"><b>MIXTURE of EQUAL Parts FREIGHT CAR COLOR and BLACK</b></p> <p>Wood Cab: Roof above rain gutters (new cabs)                  Steel Cab: Roof above rain gutters (new cabs and repainting when two or three coats are applied)</p>
	<p align="center"><b>SASH COLOR</b></p> <p>Cab Window Sash (side and rear)</p>
	<p align="center"><b>INTERIOR CAB GREEN</b></p> <p>Cab Interior, including doors and seat boxes</p>

EQUAL PARTS OF FREIGHT CAR COLOR AND BLACK



DARK GREEN

FRONT END PAINT

TOLUIDINE  
RED

BLACK

SASH COLOR

BLACK OR DARK GREEN

BLACK

FREIGHT CAR COLOR

DARK GREEN

FRONT END PAINT

BLACK

<p style="text-align: center;">BUFF LETTERING COLOR</p> <p>Freight &amp; Switching Locomotives:</p> <p style="padding-left: 40px;">All Lettering on locomotive and tender Round Number Plate: Numerals and Border</p>	<p style="text-align: center;">WHITE</p> <p>Passenger Locomotives:</p> <p style="padding-left: 40px;">Striping on locomotive wheels, cab, and tender</p>
<p style="text-align: center;">GOLD LEAF</p> <p>Passenger Locomotives:</p> <p style="padding-left: 40px;">All Lettering on locomotive and tender Striping on locomotive wheels, cab, and tender Round Number Plate: Numerals and Border Keystone Number Plate: Numerals and Border</p>	<p style="text-align: center;">CHOCOLATE STRIPING COLOR</p> <p>Passenger Locomotives:</p> <p style="padding-left: 40px;">Striping on tender</p> <hr/> <p style="text-align: center;">TOLUIDINE RED</p> <p>Keystone Number Plate: Background</p>
<p>Gold leaf was used on all keystone number plates, including those on M-1 and M-1a locomotives in freight service.</p>	

#### DESCRIPTION OF COLORS

**DARK GREEN LOCOMOTIVE FINISH** was a mixture of green and black which was so dark that it usually appeared black.

**FRONT END PAINT** was a heat-resistant black graphite paint to which some aluminum powder was added. The shade of this "silvery-black" color varied at different shops and enginehouses.

**FREIGHT CAR COLOR** was the standard P.R.R. freight car red as used on all freight cars.

**SASH COLOR** was a brilliant orange-red which was called "Dark Orange" on passenger car window sash. It was a mixture of "Venetian Red", chrome yellow, and white.

**INTERIOR CAB GREEN** was an ordinary medium green.

**BUFF LETTERING COLOR** was a very light yellow. It was a mixture of chrome yellow, white, and a small amount of "Indian red".

**GOLD LEAF** was genuine gold leaf made of real gold.

**CHOCOLATE STRIPING COLOR** was a light brown. It was a mixture of "Indian red", chrome yellow, and black.

**TOLUIDINE RED** was a bright scarlet red.

## COMMENTS BY THE PR&IA RESEARCH STAFF

The preceding list of paint colors was compiled from information in PRR booklet No. 199-C, "Instructions to be Followed in Painting the Different Parts of New and Repaired Locomotives and Tenders", dated October 8, 1929. For simplification and clarity, it has been arranged according to colors and shows only the final coat, or finishing color, of the various parts.

For parts which are not specified, such as turbo-generator and air compressor, it can be assumed that they are included in a category such as "Pipes and Fixtures", for example. Whether they are painted black or dark green makes very little difference, as these two "colors" are so similar. Certain brass parts were left unpainted, such as: bell, whistle, safety valves, locomotive badge plates, snifting valves, and air pump governor cap. Bells, badge plates, and passenger whistles were usually polished, while safety valves and freight whistles were almost always permitted to oxidize black. Injectors were also brass and were generally left unpainted and allowed to blacken naturally.

The color names in this list are the same as used in the 1929 PRR booklet. However, some of these names were changed over a period of time. For example: Dark Green Locomotive Finish was called "Dark Green PRR Shade" in the 1940's and 1950's; Front End Paint was "Smoke Box Paint" in 1938; and Sash Color was "Exterior Sash Enamel" in 1938. Also, some colors were eliminated at various times. The Sash Enamel was discontinued around 1938, and cab window sash was then painted Dark Green on the outside and Interior Cab Green on the inside. The gold, white, and "chocolate" striping on passenger locomotives and tenders was dropped in July 1918, restored in April 1920, and dropped again in June 1932.

It should be mentioned that these 1929 painting instructions are for new and repaired locomotives in the shops. The cleaning and maintenance instructions for enginehouses specified different paint colors for certain parts when painting was required. For example: Locomotive Maintenance Instructions No. L-54, February 23, 1938, specifies that during the monthly cleaning at boilerwash period, the cab roof above rain gutters must be given one coat of Freight Car Paint if necessary in order to turn the engine out in first class condition. There is no mention of mixing black paint with the red and no mention of wood cabs and steel cabs.

This explains the frequent sightings of cab roofs which had been painted standard freight car red at various enginehouses, while, at the same time, freshly-repaired engines just out of the Altoona Shops were observed with the cab roofs painted a red so dark that it was nearly black. Apparently, the cab roof painting instructions of 1929 for repaired locomotives remained in effect with little or no change for a number of years after 1929.

CAB ROOF COLORS AS OF OCT. 8, 1929

TYPE OF WORK	WOOD CABS FINISH COLOR	STEEL CABS FINISH COLOR
New Cabs	Cab Roof THIRD Coat	Cab Roof THIRD Coat
Old Paint Removed to Wood or Metal	Cab Roof SECOND Coat	Cab Roof THIRD Coat
Scale & Rough Surface Only Removed	Cab Roof SECOND Coat	Cab Roof THIRD Coat
Cleaning and Repainting Only	Cab Roof PRIMER	Cab Roof THIRD Coat
Cleaning & Blemishes Only Touched UP	Cab Roof PRIMER	Cab Roof SECOND Coat
<u>FINISH COLOR</u>	<u>DESCRIPTION</u>	
Cab Roof PRIMER -----	*Freight Car Color (Red)	
Cab Roof SECOND Coat -	THREE parts Freight Car Color & ONE of Black	
Cab Roof THIRD Coat --	EQUAL parts Freight Car Color & Black	

\*It should be remembered that "Freight Car Color" refers to the old light freight car red in use during the 1920's, '30's, and '40's, which was a much lighter shade than that used in more recent years.

Tender tank top and rear of coal space were straight Freight Car Color, with no black added, for all types of repairs and repainting. However, the interior of the coal space was specified Black in 1929. This part was painted red later in the 1930's and also as recently as 1956.

It is interesting to note that three different colors were used on cab roofs, with none solid black. Wood cabs were treated differently from steel cabs, and the colors varied to some extent with different types of repairs. According to these 1929 instructions, steel cab roofs never used straight freight car red as the finish coat, whereas wood cabs used it when undergoing cleaning and repainting only, or for touch-up repairs. The lightest color on steel cab roofs at that time was a mixture of three parts red and one of black, and this accounts for the somewhat dark red so frequently observed on steel cab roofs all over the PRR. Painting the roof was classed as "touch-up" work when the entire cab did not require repainting. In all other types of repairs, steel cab roofs were painted with a mixture of equal parts of red and black, and this was so dark that it usually appeared black to an observer on the ground.