

THE PENNSYLVANIA RAILROAD

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Instructions for Painting Freight Equipment Cars  
(Superseding Instructions Dated October 1, 1955)

Proper surface preparation is the foundation of successful painting. Paint materials must be applied in accordance with these instructions. Consequently, it is of the utmost importance that all surfaces be thoroughly cleaned of rust, scale, dirt, grease, oil, deposited chemicals, loose and badly checked paints previously applied, etc.; otherwise the applied paint will fail quickly and prematurely. Water in any form which remains behind any paint film will also quickly destroy the paint. Mill scale, resulting after mill production of new steel, which is adhering tightly is often considered a good medium for applying paint, but paint applied over scale formed by weathering action may experience early failure. Consequently, either abrasive blasting or wire brushing and scraping procedures shall be used to prepare the metal surfaces, and such exposed surfaces must be covered solid as soon as possible with approved paint materials as hereinafter specified.

I. GENERAL INSTRUCTIONS

All metal parts of cars must be free from rust, thoroughly cleaned and properly prepared before any paint is applied.

1. Metal on Metal - Riveted Construction:

All surfaces where metal is placed on similar metal must be painted with an approved Freight Car Paste, Acct. 47, Ref. 2393, before assembling.

Where dissimilar metals, such as aluminum and iron, join each other or are lapped over one another, Synthetic Freight Car Primer, Acct. 47, Ref. 3270, shall be used to separate the two metals.

2. Parts Inaccessible:

All steel and wood surfaces which are not accessible after assembling, except the back of wood linings and surfaces to be welded, must be painted before assembling with one coat of Synthetic Freight Car Primer, Acct. 47, Ref. 3270.

3. Superstructure:

A. Box Cars - Over bare metal, whether new or where all old paint has been removed, and unless otherwise specified, the exterior surfaces of sides and ends of the superstructure must be painted with one coat of a freight car primer and two coats of a freight car Enamel. The interior metal superstructure surfaces of all new box cars must be painted with one coat of a freight car primer and one coat of a freight car enamel. The enamel is not applied to the 24-inch area above the butt, which is coated with car cement.

In cases where the old paint has not been removed from the exterior surfaces of box cars receiving heavy repairs, prime any bare spots, and apply two coats of

freight car enamel. On repaired cars only the under side of the roofs shall be painted with one coat of synthetic freight car primer.

Car roofs, except covered hopper cars and cars with galvanized roofs, must be painted on both sides with one coat of synthetic freight car primer and one coat of a synthetic freight car enamel. In the case of a new galvanized roof, the underside of the roof is not painted, but the top side shall be painted with a coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 555. After the new galvanized roof sheets have been painted with the car cement, any future painting of them shall be done with a specified freight car paint.

New galvanized roofs on covered hopper cars shall be given a 1/8 to 1/4 inch coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 555, directly to the metal surface. Steel roof sheets not galvanized and old galvanized sheets shall have any rust removed and the bare metal surfaces primed with Synthetic Freight Car Primer, Acct. 47, Ref. 3270, and the primer allowed to dry for two hours before applying the finish coat of Asphaltum Compound (Car Cement), Acct. 47, Ref. 555.

B. Open Top Cars - The superstructure of new cars must receive two coats of Ready-Mixed Freight Car Paint on the exterior and one coat on the interior. Cars receiving heavy or running repairs must receive two coats of Ready-Mixed Freight Car Paint on the exterior and one coat on the interior where new steel has been applied or where the corners and crevices are not properly protected.

C. Covered Hopper Cars - Covered hopper cars are not painted on the interior. The interior is painted with alkali-resisting paints as required under Section IV of these instructions.

#### 4. Underframes:

A. Side sills and side posts on new box cars and box cars undergoing extensive repairs, where either the flooring and the siding, or both, are removed, shall have all rust removed and the bare metal surfaces primed with a coat of Synthetic Freight Car Primer, Acct. 47, Ref. 3270. After two hours apply by brush or spray a coat of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531, or Acct. 47, Ref. 555, depending on spray equipment available, to the side sills, the top and the bottom of the side posts and side sheets for a distance of approximately 24 inches upwards from the butt.

B. The top surface of all underframe details of new cars which are to have wood floors applied shall have all rust removed and bare metal surfaces painted with Synthetic Freight Car Primer, Acct. 47, Ref. 3270. After two hours apply a coat of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531, or Acct. 47, Ref. 555, depending on spray equipment available.

#### 5. Flooring:

The flooring joints on box cars must be painted with one coat of Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386, except when treated lumber is used. Edges of the floor boards, in addition to the tongues and grooves, should be given one thin coat of the paint, in order to protect the wood. If careful application is made, there should not be any paint appearing on the floor after the boards are fitted together.

6. Stenciling:

All Stenciling must be done by spraying with an approved stenciling paint or enamel unless otherwise authorized. The following stenciling paint materials are made standard in these instructions:

White Stenciling Paint, Acct. 47, Ref. 2347, for brushing  
White Synthetic Stenciling Enamel, Acct. 47, Ref. 3271, for brushing  
White Synthetic Stenciling Enamel, Acct. 47, Ref. 3146, for spraying  
White Stenciling Enamel, Oil Base, Acct. 47, Ref. 3147, for spraying  
Black Stenciling Paste Paint, Acct. 47, Ref. 3267, for brushing  
Black Stenciling Paint (Freight cars exclusive of covered hopper cars) Acct. 47, Ref. 2536, for spraying  
Black Stenciling Paint (Covered Hopper Cars), Acct. 47, Ref. 2551, for spraying  
Red Freight Car Stenciling Paste, Acct. 47, Ref. 3150, for brushing  
Red Freight Car Stenciling Paste, Acct. 47, Ref. 3150, thinned with Spray Thinner, Acct. 47, Ref. 2489, for spraying

7. Assembled Underframes, Sides, Ends and Doors:

Before shipping new sub-assemblies such as underframes, car sides, ends, doors, etc., to another point, they must be painted at the point of manufacture with one coat of Synthetic Freight Car Primer, Acct. 47, Ref. 3270. All other painting must be done at the shops where the car bodies are assembled.

8. Trucks:

On new cars the assembled trucks, new or reconditioned, except wheels, are to be painted with one coat of Hard Drying Black Enamel, Acct. 47, Ref. 2016. In the painting procedures that follow for painting repaired cars, the trucks are not painted, except the truck sides of M.E. and M.W. cars, which receive a coat of Quick Drying Black Enamel, Acct. 47, Ref. 2218.

9. Paint Identification:

The identity of the finish coat or coats of paint used (not primers) and number of coats applied must be stenciled in code on the cars in accordance with tracing E-446477, "Code Letters for Identification of Paint Manufacturers", and according to the latest lettering arrangement for the class of car painted. This requirement does not apply for finish coats applied to cabin cars since the same type of paint is applied to freight cars. The identification of the Camp Car yellow finish coat, as specified in Section VIII for Maintenance of Way cars, shall be stenciled only on the camp cars.

10. Lettering:

All lettering shall be in accordance with latest lettering arrangements specified on drawings applicable to the class of freight car being painted.

11. Priming:

All priming work must be one within eight hours after the metal surfaces have been abrasive-blasted when the cars are not kept under cover and within 24 hours when the cars are kept under cover. Cars shall not be abrasive-blasted until these

conditions can be met. In no case shall the cars be permitted to become wet between the abrasive blasting and priming operations.

12. Coating - Film Thickness:

The thickness of the paint coatings must be uniform and within definite limits. The wet film thickness for Synthetic Freight Car Primer shall be 1-1/2 to 2-1/4 mils. The wet film thickness of the undercoats and finish coats on freight equipment cars shall be 2-1/4 to 2-3/4 mils per coat.

The wet film measurement shall be made as soon as possible after application of the paint coating but before the paint has set up.

The ultimate aim for the final dry film thickness is to provide an overall dry film thickness of not less than 2 mils for a two-coat system of painting and not less than 3 mils for a three-coat system of painting.

The wet film measurement shall be made with a suitable measuring gage such as "Interchemical Direct Reading Wet Film Thickness Gage, range 0-4 mils," which can be purchased from the Gardner Laboratory, Inc., Bethesda, Maryland. The gage is rolled over the wet film and a reading then made of the wet film thickness directly on the side of the gage. Accuracy is up to 0.01 mils.

When it is desired to determine the overall film thickness of dry paint coatings, a dry film measurement gage should be used, such as the "New Gardner Film Thickness Gage", obtainable from Gardner Laboratory, Inc. Readings obtained with this gage are independent of the composition or thickness of the base metal on which the coating is being measured, the only requirement being that the base metal on which the coating is applied must be electrically conductive.

No other measuring gages shall be used unless approved by the Engineer of Tests.

The above gages are not suitable to measure the coating thickness of car cements. This measurement can be easily made with a steel rule inserted into the coating to the base surface.

13. Drying:

In the following procedures the drying times between paint coats are given for favorable drying conditions. When unfavorable drying conditions exist, additional time should elapse for drying between coats so that the paint film will be in the same condition as specified under favorable drying conditions.

14. Thinning:

All paint materials are to be used, as far as possible, in the as-received condition. If, at any time, it is found necessary to add thinners to a material to make it work properly, the following instructions apply:

Ready-Mixed paints and paste paints, etc., when used as prime coats and finish coats, shall be thinned with Petroleum Spirits, Acct. 47, Ref. 2486.

Synthetic enamels and synthetic primers are to be thinned with Spraying Thinner, Acct. 47, Ref. 2489.

Asphaltum Compounds (Car Cements), Acct. 47, Ref. Nos. 531, 555 and 556, are not to be thinned. The 47-555 Car Cement may be heated in conjunction with the pressure pump spray equipment, if reduction in viscosity is required for satisfactory spraying. This condition may exist during cold weather.

15. Car Cements:

Asphaltum Compounds (Car Cements) come in three consistencies, based on specific work application with specific equipment for applying the cements. Compound, Asphaltum-Asbestos, Light Consistency, Approved Brand (Air gun or brush), Acct. 47, Ref. 531, is applied to metal surfaces, except car roofs, by spray or brush and may be used for sealing small cracks in box cars. Compound, Asphaltum-Asbestos, Medium Consistency, Approved Brand (one coat operation using pressure pump spray equipment), Acct. 47, Ref. 555, is primarily approved for application only to car roofs but it may be used for other purposes as specified in these instructions. Compound, Asphaltum-Asbestos, Heavy Consistency, Approved Brand (For large cracks in box cars by troweling or knifing), Acct. 47, Ref. 556, is a heavy duty material. This compound shall not be thinned for the purpose of spraying.

16. Keystone Shadows:

On standard box and open top cars apply Black Stenciling Paint, Acct. 47, Ref. 2536, brush or spray. On covered hopper cars apply Black Stenciling Paste Paint, Acct. 47, Ref. 3267, for brushing, and Alkali-Resisting Black Stenciling Paint, Acct. 47, Ref. 2551, for spraying.

In addition to the foregoing General Instructions, the following detailed painting procedures are applicable to the various types of freight equipment cars:

II. STANDARD HOPPER, GONDOLA, FLAT AND WELL CARS

A. Standard Hopper and Gondola Cars - New, Heavy and Running, Repairs:

1. When wood siding of composite gondola cars is removed, the exposed interior metal surfaces of side stakes, diagonal braces, corner posts, etc., shall be painted with one coat of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531. The coating shall not be less than 1/8 inch thick.

2. Remove rust, loose scale and loose paint with abrasive blasting, if available; otherwise use scrapers and wire brushes. Remove oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486.

3. Cars must be spray-painted all over, inside and outside, with Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386, immediately after preparing the surface for painting. However, when repainting hopper cars which have had no new steel applied, the inside painting is to be omitted if the corners and crevices are still properly protected.

4. Spray all over the exterior of hopper and gondola cars a second coat of Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386. Under favorable drying conditions, this second coat of paint can usually be applied in the open after eight hours.

5. Stencil with White Stenciling Paint, Acct. 47, Ref. 2347, for brushing, and White Stenciling Enamel, Oil Base, Acct. 47, Ref. 3147, for spraying. Black Stenciling Paint, Acct. 47, Ref. 2536, shall be used for both brushing and spraying the keystone shadows. Stenciling shall be done any time after the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

B. Flat and Well Cars - New, Heavy and Running Repairs:

1. Prepare and clean the metal surface as specified under Standard Hopper and Gondola Cars. Paint all metal parts with two coats of Ready-Mixed Red Freight

Car Paint, Acct. 47, Ref. 2386. Under favorable drying conditions the second coat of paint can usually be applied in the open after eight hours.

2. Stencil with White Stenciling Paint, Acct. 47, Ref. 2347, for brushing, and White Stenciling Enamel, Oil Base, Acct. 47, Ref. 3147, for spraying. Stenciling shall be done any time after the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

### III. MERCHANDISE SERVICE CARS AND STANDARD BOX CARS ABRASIVE BLASTED

All Merchandise Service Cars and Standard Box Cars shall be painted with an approved synthetic primer and synthetic enamel in order to give better appearance and durability of the protective coatings. To obtain these results, the metal surfaces must be thoroughly cleaned and the priming coat applied immediately after the cleaning operation.

#### A. Merchandise Cars - New and Heavy Repairs:

1. Clean all exterior surfaces by abrasive blasting unless otherwise specified. On new cars only, remove any oil and grease from the interior metal surfaces with Petroleum Spirits, Acct, 47, Ref. 2486, and blow with clean, dry compressed air to remove any adhering dust particles.

2. While the cars are indoors and under cover, prime all exterior surfaces by spraying with Synthetic Freight Car Primer, Acct. 47, Ref. 3270, immediately after cleaning.

3. Prime the interior metal surfaces, including doors, of all new cars, except the under side of galvanized roof sheets, with Synthetic Freight Car Primer, Acct. 47, Ref. 3270, immediately after cleaning the surfaces. When the primer is dry, apply a 1/8 to 1/4 inch coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531, or Acct. 47, Ref. 555, depending on spray equipment available, to the side sills, side posts and side and end sheets to a distance of 24 inches from the butt. Above this 24 inch distance apply over the synthetic primer one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The coat of enamel can usually be applied over the primer after two hours. When new cars are assembled with steel roofs (not galvanized), the under side of the steel roofs shall receive one coat of Synthetic Freight Car Primer, Acct. 47, Ref. 3270, and one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The coat of Enamel can usually be applied over the primer after two hours.

4. When Merchandise Service Cars are undergoing heavy repairs no painting with primer and enamel shall be done on the interior of the cars to any side sills, side posts, side and end sheets. However, the under side of the roofs shall be scraped clean of rust, scale and dirt, and then be painted with one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. Apply 1/8 to 1/4 inch coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531, or Acct. 47, Ref. 555, depending on spray equipment available, to the side sills, side posts and side and end sheets to a distance of 24 inches from the butt.

5. Spray the exterior sides, ends, roof and underframe with one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The first coat of enamel can usually be applied over the primer after two hours.

6. New galvanized roofs (exterior surface) shall be spray painted with Asphaltum Compound (Car Cement), Acct. 47, Ref. 555. This compound should be used

with pressure pump spray equipment. The coating shall be from 1/8 to 1/4 inch thick. It may be possible to obtain this thickness with one spray application.

7. When cars with galvanized roofs, which have previously been painted with Asphaltum Compound (Car Cement), Acct. 47, Ref. 555, undergo heavy repairs, the exterior of the roofs shall be painted with one coat of Synthetic Freight Car Enamel, Acct. 47, Ref. 3185.

8. Spray the exterior sides and ends with a second coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The second coat of enamel may be applied over the first coat of enamel after two hours.

9. Spray the exterior white band with White Enamel, Acct. 47, Ref. 3151. This white band can be applied over the synthetic enamel after four hours.

10. Apply letters, numbers and decorations with White Synthetic Stenciling Enamel, Acct. 47, Ref. 3271, over the red freight car enamel, and over the white band use Red Stencil Paste, Acct. 47, Ref. 3150, for brush application. For spray application use White Synthetic Stenciling Enamel, Acct. 47, Ref. 3146, and Red Stencil Paste, Acct. 47, Ref. 3150, thinned with Spray Thinner, Acct. 47, Ref. 2489. All stenciling can be applied after six hours.

11. Spray the interior wood sides, ends, racks, metal doors and ceiling, if the roof sheets are not of galvanized construction, with one coat of Ready-Mixed Aluminum Paint, Acct. 47, Ref. 3261.

B. Merchandise Service Cars - Running Repairs:

Only touch-up painting is to be done unless the paint has failed and it is necessary to restencil and redecorate. If the paint has failed, the car must be painted as under New and Heavy Repairs, except that it may not be necessary to abrasive-blast the car.

C. Standard Box Cars - New and Heavy Repairs:

1. Clean all exterior metal surfaces by abrasive-blasting unless otherwise specified. On new cars only, remove any oil and grease from interior metal surfaces with Petroleum Spirits, Acct. 47, Ref. 2486, and blow with clean, dry compressed air to remove any adhering dust particles.

2. Prime all exterior surfaces by spraying with Synthetic Freight Car Primer, Acct. 47, Ref. 3270, immediately after cleaning. For galvanized roofs, see section 3-A of the General Instructions.

3. Prime the interior metal surfaces, including the doors, of all new cars, except the underside of galvanized roof sheets, with Synthetic Freight Car Primer, Acct. 47, Ref. 3270, immediately after cleaning the surfaces. When the primer is dry, apply 1/8 to 1/4 inch coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531, or Acct. 47, Ref. 555, depending on spray equipment available, to the side sills, side posts and side and end sheets to a distance of 24 inches from the butt. Above this 24 inch distance apply over the synthetic primer one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The coat of enamel can usually be applied over the Primer after two hours. When new cars are assembled with steel roofs (not galvanized), the underside of the steel roofs shall receive one coat of Synthetic Freight Car Primer, Acct. 47, Ref. 3270, and one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The coat of enamel can usually be applied over the primer after two hours.

4. When box cars are undergoing heavy repairs no painting with primer and enamel shall be done on the interior of the cars to any side sills, side posts, side

and end sheets. However, the underside of the roofs shall be scraped clean of rust, scale and dirt and then be painted with one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. Apply 1/8 to 1/4 inch coating of Asphaltum Compound (Car Cement) Acct.47, Ref.531, or Acct.47, Ref.555, depending on spray equipment available to the side sills, side posts and side and end sheets to a distance of 24 inches from the butt.

5. Spray the exterior sides, ends, roof and underframe with one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The first coat of enamel can usually be applied over the primer after two hours.

6. New galvanized roofs (exterior surface) shall be spray-painted with Asphaltum Compound (Car Cement), Acct. 47, Ref. 555. This compound should be used with a pressure pump spray equipment. The coating shall be from 1/8 to 1/4 inch thick. It may be possible to obtain this thickness with one spray application.

7. When cars with galvanized roofs, which have previously been painted with Asphaltum Compound (Car Cement), Acct. 47, Ref. 555, undergo heavy repairs, the exterior of the roofs shall be painted with one coat of Synthetic Freight Car Enamel, Acct. 47, Ref. 3185.

8. Spray the exterior sides and ends with a second coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. The second coat of enamel may be applied over the first coat of enamel after two hours.

9. Stencil with White Synthetic Stenciling Enamel, Acct. 47, Ref. 3271, and Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; and for spray application use White Synthetic Stenciling Enamel, Acct. 47, Ref. 3146, and Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling can be applied after six hours.

D. Standard Box Cars - Running Repairs (Exterior Only):

If the paint has failed, proceed to prepare the surface as called for under Standard Box Cars - New and Heavy Repairs. If the paint has not failed, prepare the surface and do the painting in the following manner:

1. Remove any rust and loose paint with scrapers and wire brushes. Remove any oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486.

2. Prime all bare spots with Synthetic Freight Car Primer, Acct. 47, Ref. 3270.

3. Spray the sides, ends, roof and underframe with one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. This coat of enamel can usually be applied over the primer after two hours.

4. Stencil with White Synthetic Stenciling Enamel, Acct. 47, Ref. 3271, and Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use White Synthetic Stenciling Enamel, Acct. 47, Ref. 3146, and Black Stenciling Paint, Acct. 47, Ref, 2536. Stenciling can be done after six hours.

IV. COVERED HOPPER CARS

Unless otherwise specified, the following instructions are to be used when painting all covered hopper cars and any steel box cars which are assigned to the alkali trade. Such cars are painted on the exterior only.

A. New Cars, Heavy and Running Repairs:

1. Remove all rust, loose scale and loose paint by abrasive-blasting. Blow the surfaces with clean, dry compressed air.

2. As soon as possible, paint the bare, dry metal with Synthetic Freight Car Primer, Acct. 47, Ref. 3270. New galvanized roofs should not be primed.

3. Spray-paint all roofs with Asphaltum-Asbestos Compound, Medium Consistency, Acct. 47, Ref. 555. This Asphaltum-Asbestos Compound should be used with pressure pump spray equipment. The coating shall be from 1/8 to 1/4 inch thick. It may be possible to obtain this thickness in one spray application.

4. Spray-paint the sides, ends and underframe with one coat of Ready-Mixed Alkali-Resisting Light Gray Freight Car Paint, Acct. 47, Ref. 3266. This coat of paint can be applied over the primer after two hours.

5. Spray-paint the sides and ends with a second coat of Ready-Mixed Alkali-Resisting Light Gray Freight Car Paint, Acct. 47, Ref. 3266. Under favorable conditions the second coat of paint can be applied over the first coat of paint after six hours drying.

6. Stencil with Black Stenciling Paint, Acct. 47, Ref. 3267, when brushing, and use Black Stenciling Paint, Acct. 47, Ref. 2551, for spraying covered hopper cars. Stenciling may be applied after six hours.

#### V. STOCK CARS

##### A. New Cars and Heavy Repairs - Exterior:

1. Remove rust, loose scale and any loose paint with scrapers and wire brushes.

2. Spray-paint the sides, ends and roof with one coat of Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386.

3. Spray-paint the sides, ends and roof with a second coat of Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386. Under favorable drying conditions, this second coat can usually be applied over the first coat after eight hours.

4. Stencil with White Stenciling Paint, Acct. 47, Ref. 2347, and Black Stenciling Paint, Acct. 47, Ref. 3267, for brushing; White Stenciling Enamel (Oil Base), Acct. 47, Ref. 3147, and Black Stenciling Paint, Acct. 47, Ref. 2536, for spraying. Stenciling shall be done any time after the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

5. Spray the underframe and attached parts with two coats of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531. The coating shall not be less than 1/8 inch thick. The trucks must be protected during this painting operation to avoid depositing any car cement on the trucks.

##### B. New Cars and Heavy Repairs - Interior:

1. Remove rust, loose scale and any loose paint with scrapers and wire brushes.

2. Spray-paint the sides, ends and underside of roof with one coat of Asphaltum Compound (Car Cement), Acct. 47, Ref. 531. The coating shall not be less than 1/8 inch thick.

## VI. CABIN CARS

### A. New Cars and Heavy Repairs - Exterior (Painted Under Cover):

1. Remove rust, loose scale and any loose paint by abrasive blasting. Wooden cabin cars are to be cleaned by wire brushing. Blow the surfaces dry, using clean, dry compressed air. After the surfaces have been properly prepared, all of the following painting procedures must be done under cover.

2. To the dry surface and with as little delay as possible spray all bare metal with Synthetic Freight Car Primer, Acct. 47, Ref. 3270. Wooden surfaces are not primed.

3. Spray-paint the sides, ends and underframe with one coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. Under favorable drying conditions, the first coat of enamel can usually be applied over the primer after two hours.

4. Spray-paint the sides and ends with a second coat of Synthetic Red Freight Car Enamel, Acct. 47, Ref. 3185. Under favorable drying conditions, the second coat of enamel may be applied after two hours.

5. Stencil with White Synthetic Stenciling Enamel, Acct. 47, Ref. 3271, and Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use White Synthetic Stenciling Enamel, Acct. 47, Ref. 3146, and Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling can be applied after six hours.

6. Apply Asphaltum Compound (Car Cement), Acct. 47, Ref. 555, to the roof, regardless of its composition, including the sides, ends and roof of the cupola. The coating shall not be less than 1/8 inch thick. It may be possible to obtain this thickness in one spray application.

7. Apply two coats of Full Gloss Yellow Enamel, Acct. 47, Ref. 2617, to the vertical handholds on the corners and to the curved handholds on the car body at the four corners of the cabin car, in accordance with latest tracing. The second coat of enamel can usually be applied over the first coat of enamel after four hours of drying.

### B. Running Repairs - Exterior (Not Painted Under Cover):

1. Remove rust, loose scale and any loose paint with scrapers and wire brushes. Remove any oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486.

2. With as little delay as possible, prime all bare spots with Synthetic Freight Car Primer, Acct. 47, Ref. 3270.

3. After priming, spray the sides, ends and underframe with one coat of Ready-Mixed Red Freight Car Enamel, Acct. 47, Ref. 3185. Under favorable drying conditions this coat of paint can usually be applied over the primer after two hours.

4. Stencil with White Synthetic Stenciling Enamel, Acct. 47, Ref. 3271, and Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use White Synthetic Stenciling Enamel, Acct. 47, Ref. 3146, and Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling shall be done any time after the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

5. Apply Asphaltum Compound (Car Cement), Acct. 47, Ref. 555, to the roof, regardless of composition, including the sides, ends and roof of the cupola. The coating shall not be less than 1/8 inch thick. It may be possible to obtain this thickness in one spray application.

6. Apply two coats of Full Gloss Yellow Enamel, Acct. 47, Ref. 2617, to the vertical handholds on the corners and to the curved handholds on the car body at the four corners of the cabin car, in accordance with latest tracing. The second coat of enamel can usually be applied over the first coat of enamel after four hours of drying.

C. New Cars, Heavy and Running Repairs - Interior:

1. Remove rust, loose scale and any loose paint with scrapers and wire brushes. Remove any oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486.

2. Prime the bare wood trim and unpainted Masonite lining with one coat of Shellac, Acct. 47, Ref. 2440.

3. After one hour, apply two coats of P. O. Green Enamel, Acct. 47, Ref. 3119, to the walls, from floor to and including window sills; the lockers, interior and exterior; seat frames; lower bunks; table and sink, except tops; end doors and frames; bulkhead corner posts to the ceiling; and the cupola seats, including arm-rests and sides, to and including cupola side window sills and safety rail. The second coat of enamel can usually be applied over the first coat of enamel after six hours of drying.

4. After one hour, apply two coats of Cream Enamel, Acct. 47, Ref. 3047, to the remainder of the interior above window sills, including the bottoms of upper bunks and the ceilings. The second coat of enamel can usually be applied over the first coat of enamel after six hours of drying.

5. Clean the floor of any loose paint and foreign matter with scrapers and remove any oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486. Blow the floor with clean, dry air and apply two coats of Quick Drying Floor Enamel, P.R.R. Shade, Acct. 47, Ref. 2334, to the floors. The second coat of enamel can usually be applied over the first coat of enamel after four hours of drying.

6. No paint is to be applied to any stainless steel parts or aluminum window sashes.

VII. MAINTENANCE OF EQUIPMENT CARS

Wheel Carrying Cars, Sponging Cars, Ice Cars, Rubbish Cars, M. of E. Material Cars, Interplant Cars and any other cars used solely for M. of E. purposes.

A. Steel Cars - Heavy and Light Repairs (Exterior Only):

1. Remove rust, loose scale and any loose paint by abrasive-blasting, if available; otherwise clean with scrapers and wire brushes. Remove any oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486. Blow the surfaces dry, using clean, dry compressed air.

2. Paint the dry surfaces and, with as little delay as possible, spray the

bare, dry metal of the sides, ends, roof, underframe, including the equipment under the body of the car, and safety equipment, as shown on latest tracings, with one coat of Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386.

3. Spray-paint the sides, ends and roof with one coat of Structural Gray Paint, Acct. 47, Ref. 2236. This coat of paint can be applied over the Ready-Mixed Red Freight Car Paint after eight hours of drying.

4. Spray-paint the sides and ends with a second coat of Structural Gray Paint, Acct. 47, Ref. 2236. The second coat shall not be applied until assured that the first coat is thoroughly dry. Under favorable drying conditions, this will require approximately eight hours of drying.

5. Stencil the car with Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling can usually be done after ten hours of drying time, but, in any case, not before the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

6. The underframe, including the equipment under the body of the car, truck sides and safety equipment, as shown on latest tracings, shall be given a finishing coat of Quick Drying Black Enamel, Acct. 47, Ref. 2218. This coat of enamel can be applied after eight hours of drying time of the freight car paint applied as per item A-2 of this section.

B. Wooden Cars - Heavy and Light Repairs:

1. Remove, rust, loose scale and loose paint with scrapers and wire brushes.

2. Prime bare wood with Aluminum Paint, Acct. 47, Ref. 2313, and the bare, dry metal with Ready-Mixed Red Freight Car Paint, Acct. 47, Ref. 2386.

3. Spray-paint the sides, ends and roof with one coat of Structural Gray Paint, Acct. 47, Ref. 2236. This coat of paint can be applied over the primer coats after eight hours of drying.

4. Spray-paint the sides and ends with a second coat of Structural Gray Paint, Acct. 47, Ref. 2236. The second coat shall not be applied until assured that the first coat is thoroughly dry. Under favorable drying conditions this will require approximately eight hours of drying.

5. Stencil the car with Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling can usually be done after ten hours of drying time, but, in any case, not before the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

6. The underframe, including the equipment under the body of the car, truck sides and safety equipment, as shown in the latest tracings, shall be given a finishing coat of Quick Drying Black Enamel, Acct. 47, Ref. 2218. This coat of enamel can be applied after eight hours of drying time of the freight car paint applied as per item B-2 of this section.

## VIII. MAINTENANCE OF WAY CARS

Camp Cars, Wreck Train Cars, Crane Carrier Cars, M. of W. Supply Cars, M. of W. Water Tenders with Camp Trains, Foamite Cars, Diesel-Electric Wire Train Cars, Wire Train Tower Cars, Wire Train Tool and Material Cars, Wire Train Gondola Reel Cars and any other cars used solely for M. of W. purposes, including all wreck train cars whether manned by M. of E. or M. of W. employes.

### A. Steel Cars - Heavy and Light Repairs (Exterior Only):

1. Remove rust, loose scale and any loose paint by abrasive-blasting, if available; otherwise clean with scraper, and wire brushes. Remove any oil and grease with Petroleum Spirits, Acct. 47, Ref. 2486. Blow the surfaces dry, using clean, dry compressed air.

2. Paint the dry surfaces and, with as little delay as possible, spray the bare, dry metal of the sides, ends, roof, underframe, including the equipment under the body of the car and safety equipment, as shown on latest tracings, with one coat of Synthetic Freight Car Primer, Acct. 47, Ref. 3270.

3. Spray-paint the sides and ends with one coat of Camp Car Yellow Paint, Acct. 47, Ref. 3153. This coat of paint can be applied over the primer after two hours of drying.

4. Spray-paint the sides and ends with a second coat of Camp Car Yellow Paint, Acct. 47, Ref. 3153. The second coat shall not be applied until assured that the first coat is thoroughly dry. Under favorable drying conditions, this will require approximately four hours of drying.

5. Apply to the roof a coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 555. The coating shall not be less than 1/8 inch thick. It may be possible to obtain this thickness in one spray application.

6. Stencil the car with Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling can usually be done after six hours of drying time, but, in any case, not before the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

7. The underframe, including the equipment under the body of the car, truck sides and safety equipment, as shown on latest tracings, shall be given a finishing coat of Quick-Drying Black Enamel, Acct. 47, Ref. 2218. This coat of enamel can be applied after two hours of drying of the Synthetic Freight Car Primer applied as per item A-2 of this section. Sill steps and end sill hand holds are to be given a finish coat of Yellow Enamel, Acct. 47, Ref. 2617, to make them more distinguishable.

### B. Wooden Cars - Heavy and Light Repairs:

1. Remove rust, loose scale and loose paint with scrapers and wire brushes.

2. Prime bare wood with Aluminum Paint, Acct. 47, Ref. 2313, and the bare, dry metal with Synthetic Freight Car Primer, Acct. 47, Ref. 3270.

3. Spray-paint the sides and ends with one coat of Camp Car Yellow Paint, Acct. 47, Ref. 3153. This coat of paint can be applied over the primer coats after four hours of drying.

4. Spray-paint the sides and ends with a second coat of Camp Car Yellow Paint, Acct. 47, Ref. 3153. Under favorable drying conditions this second coat can be applied after four hours of drying time. The roof shall also be given a second coat of Camp Car Yellow Paint, Acct. 47, Ref. 3153, if necessary to cover solid.

5. Apply to the roof a coating of Asphaltum Compound (Car Cement), Acct. 47, Ref. 555. The coating shall not be less than 1/8 inch thick. It may be possible to obtain this thickness in one spray application.

6. Stencil the car with Black Stenciling Paste Paint, Acct. 47, Ref. 3267, when brushing; for spray application use Black Stenciling Paint, Acct. 47, Ref. 2536. Stenciling can usually be done after six hours of drying time, but, in any case, not before the paint has dried sufficiently hard so that the paint film is not marred during the stenciling operation.

7. The underframe, including the equipment under the body of the car, truck sides and safety equipment, as shown on latest tracings, shall be given a finishing coat of Quick Drying Black Enamel, Acct. 47, Ref. 2218. This coat of enamel can be applied after two hours of drying time of the Synthetic Freight Car Primer as per item B-2 of this section. Sill steps and end sill handholds are to be given a finish coat of Yellow Enamel, Acct. 47, Ref. 2617, to make them more distinguishable.

C. Interior Painting:

Due to the multiplicity and arrangement of the interiors of Maintenance of Way cars, no attempt has been made to include their interior painting, and these cars shall be painted in accordance with separate instructions.

The following table lists, under their Account and Reference numbers, the description of approved materials covered by these instructions:

<u>Account &amp; Reference Number</u>	<u>Standard Catalog Description of Approved Materials</u>
47-531	Compound, Asphaltum-Asbestos, Light Consistency
47-555	Compound, Asphaltum-Asbestos, Medium Consistency
47-556	Compound, Asphaltum-Asbestos, Heavy Consistency
47-2016	Black, Locomotive, Hard Drying
47-2218	Enamel, Black, Quick Drying, P.R.R. No. 100
47-2236	Paint, Structural, Gray, Mixed, finishing coat
47-2313	Paint, Aluminum, exterior exposure
47-2334	Floor Enamel, Quick Drying, P.R.R. Shade
47-2347	Paint, White, Stenciling
47-2386	Ready-Mixed Red Freight Car Paint
47-2393	Red, Standard Freight Car, in paste,
47-2440	Shellac, Orange
47-2486	Turpentine Substitute (Petroleum Spirits)
47-2489	Thinner, Spray Application
47-2536	Black Stenciling Paint, for spraying on freight cars exclusive of covered hopper cars
47-2551	Black Stenciling Paint, for spraying covered hopper cars
47-2617	Enamel, Yellow, water and steam line
47-3047	Enamel, Cream
47-3119	Enamel, P. O. Green

Account  
Reference  
Number

Standard Catalog Description of Approved Materials

47-3146	White Synthetic Stenciling Enamel, for spraying
47-3147	White Synthetic Enamel, Oil Base, for spraying
47-3150	Red, Freight Car, Stenciling, in paste
47-3151	Enamel, White, Exterior
47-3153	Camp Car Yellow Faint
47-3185	Synthetic Rod Freight Car Enamel
47-3261	Paint, Aluminum, Ready-Mixed
47-3266	Light Gray Alkali-Resisting Paint
47-3267	Black Stenciling Paste Paint, Alkali-Resisting
47-3270	Primer, Freight Car, Synthetic
47-3271	Enamel, Stenciling, White, Synthetic

H. T. COVER,  
Asst. Vice-President - Operation  
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