

Acc. No.: 1977-45
Cat. No.: 22.1-138
Owner: Shelburne Museum
Title: Wooden Model Train
Structure: Painted wood, painted metal, metal, glass, textile, printed paper
Artist/Country: Francis Herbert Chapman/Canada
Signature/Date: 1875?
Accessories:
Labels/Legends: See catalog page and **Examination** below

Conservation No.: 08-05-2513
Date Examined: December 3, 2008
Date Completed: December 5, 2008
Conservator: Nancie Ravenel

Digital Photographic Documentation:

File Name	Description of Image
CO2008052513A1	Before Treatment, engine, proper left side
CO2008052513A2	Before Treatment, engine rear, showing a bit of the cab interior
CO2008052513A3	Before Treatment, engine from the front
CO2008052513A4	Before Treatment, tender, proper right side
CO2008052513A5	Before Treatment, passenger car, proper left side
CO2008052513B1	During Treatment, upper portion of passenger car roof removed
CO2008052513B2annotated	During Treatment, cleaning tests on engine roof
CO2008052513D1	After Treatment, engine, proper left side
CO2008052513D2	After Treatment, engine, three-quarters view from back
CO2008052513D3	After Treatment, tender, proper right side
CO2008052513D4	After Treatment, passenger car, proper left side

Reason for Treatment: Clean, consolidate paint, reattach loose element for installation in Stagecoach Inn

EXAMINATION:

The train consists of an engine, a coal tender, and a passenger car. The train exterior is well described in the catalog, including the exterior markings (see attached). A painted galvanized metal arch is noted over the engine lamp which has a painted metal frame around the domed lens on the lamp. An earlier flat lens appears behind the domed lens surrounded by an unpainted wood frame. Painted lead wire fittings are noted on the engine's smoke box door.

The engine cab interior contains a driver's seat upholstered with black velveteen secured with dome headed brass tacks and an un-upholstered fireman's seat. Wood chips are noted on the floor of the cab at the bottom of the driver's seat. Its not clear whether these chips were intended by the maker to be in that location or not. The cab interior also features a firebox with a door, a pressure gage face, and a reverser handle.

The tender attached to the engine by means of a pair of pegged tenons which fit into a single mortise on the engine. The pegs (presently not extant) would pass through holes in the engine cab floor. The tender features a pair of hinged doors and a stoppered tank opening.

A single pegged tenon on the rear of the tender fits into a mortise on the front of the passenger car. The interior of the passenger car is outfitted with upholstered benches, with a red-purple plain weave wool (est.) show cover over a wool batting fill secured to the benches with brass and iron dome headed nails. These covers have raw edges and are rather crude in comparison to the cover on the driver's seat. The passenger seats have legs on one side and are nailed into the wall of the car on the opposite side. The windows on the long sides of the car are glazed with two panes of blown glass, one on each side which run the length of the car. Crown molding above the windows and doors are embellished with printed paper lettering cut out to spell the following:

Over proper right windows, "Willow Brook Lodge Feb. the Fifth 1875"

Rear over-door, "No 50"

Over proper left windows, "Miss Lottie Fleming"

Front over-door, "The Willow Brook Railroad Company"

The upper level of the roof lifts off to provide access to the interior of the car (this was noted in the course of treatment).

Catalog numbers are applied to the underside of each piece in white paint on isolating layers.

CONDITION

The engine's rear foot plate, formerly attached with two nails, is detached. The rear axel on the engine has been dislodged so that the rear wheels are loose. Paint is flaking on the arch above the engine lamp.

The back of the engine's cab is partly varnished leading to an uneven chalky appearance to this surface while other vertical surfaces on the engine, tender and passenger car are glossy in appearance. Horizontal surfaces on engine, tender and passenger car are dirty. There is a layer of loose dust present on the engine and tender.

Insect damage is noted to the wool show covers on the benches in the passenger car, revealing the wool padding. Three benches on the proper right side have come unmoored from their positions within the car.

TREATMENT PROPOSAL

1. Clean painted surfaces and glass.
2. Consolidate flaking paint.
3. Secure rear engine axel.
4. Reposition benches.
5. Reattach detached foot plate.

TREATMENT

1. All three cars were vacuumed using a HEPA vacuum cleaner, micro tools and an artist's brush. The roofs of all three cars had a matte grey appearance after vacuuming which remains a contrast to the glossy surfaces elsewhere on the train. After testing petroleum distillates on cotton swabs and a 2% solution of ammonium citrate in deionized water¹, the roofs and flat horizontal surfaces were cleaned using an emulsion of water and petroleum distillates applied with a brush.² The emulsion was wiped from the surface using cotton wool or cotton swabs and then the surface was cleared with deionized water on cotton swabs. The painted surfaces were then dried with cotton wool. This process restored the gloss to the surfaces.

¹ Dirt was removed with petroleum benzine, but the surface remained grey and matte after cleaning. Ammonium citrate tended to bead up on the painted surface and did not remove grime. A two step method was also tested: following petroleum benzine on cotton swabs with 2% ammonium citrate on cotton swabs. While this appeared to removed more grime, there did not appear to be any change in the appearance of the painted surface.

² A gel of 1 g. Pemulen® TR2, 7.5 mL. 2%TRIS in deionized water, 2.5 mL. triethanolamine, and 100mL. deionized water was shaken with 10mL. petroleum benzine.

2. Flaking paint on the sheet metal arch over the lamp was consolidated with a dilute solution of Acryloid B72 in acetone applied with a small brush.
3. Using a plastic-headed mallet, the rear wheels were tapped back on to the axel. A key in the hub has broken. If the friction fit is not found to be sufficient to keep the wheels on the axel, filling the loss between the axel and the wheel hub should be considered.
4. The top of the passenger car was lifted from the lid and the benches were repositioned. The show covers on the benches were not stabilized or compensated at this time.
5. The detached foot plate was reattached using existing nails into the existing nail holes.

MATERIALS

Acryloid B-72: Conservation Materials, 240 Freeport Blvd., Box 2884 Sparks, NV 89431

Pemulen®TR 2: Protameen Chemicals, Totowa, NJ 07511

Triethanolamine: Fisher Scientific, Fairlawn, NJ

Tris(hydroxymethyl)amino methane: Sigma-Aldrich, St. Louis, MO 63103

Ammonium Citrate: Aldrich Chemical, Milwaukee, WI

RESULT OF TREATMENT

The painted surfaces are secure and clean and consistent in appearance. Detached elements are secure.

Due to the fact that the top of the passenger car can be removed by simply lifting up, the train should be displayed under a vitrine.

Conservator's Signature: _____ Date: _____

Approved by:
Director, Preservation & Conservation: _____ Date: _____

Curator: _____ Date: _____