

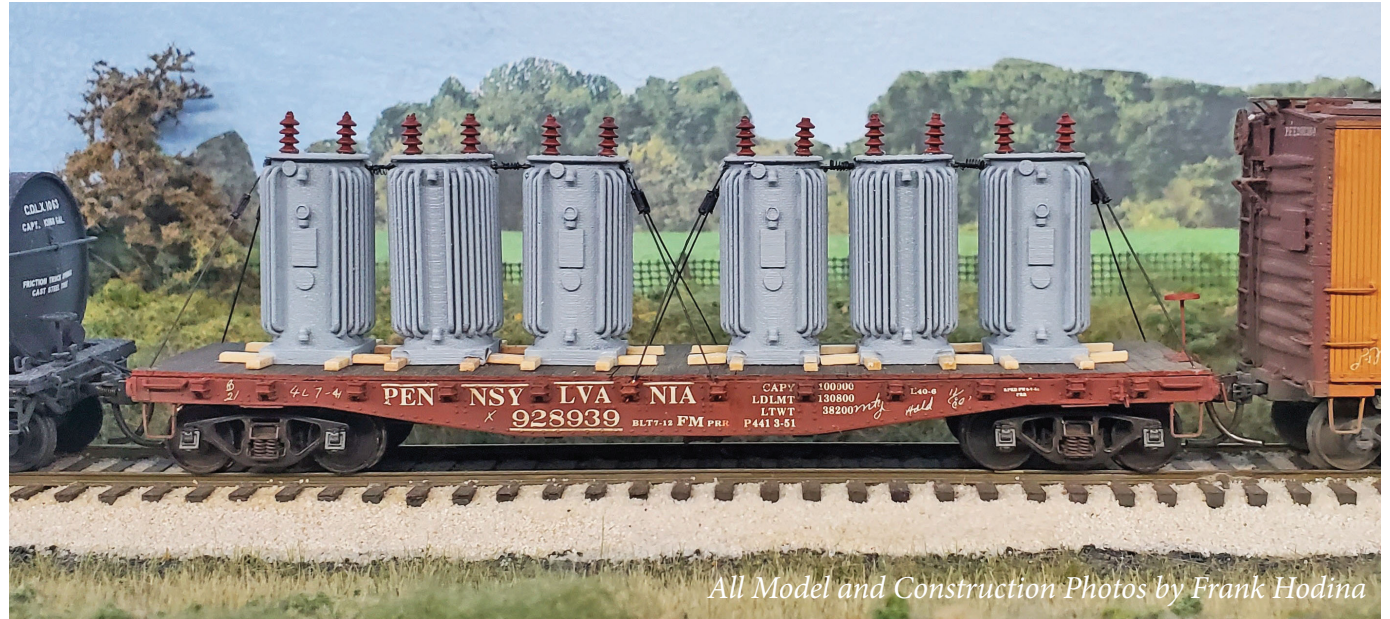
RESIN CAR WORKS
RCW

P.O. BOX 42
BYRON, IL 61010

Freight Cars of Every Description

Kit No. LT-2

Transformer Load



All Model and Construction Photos by Frank Hodina

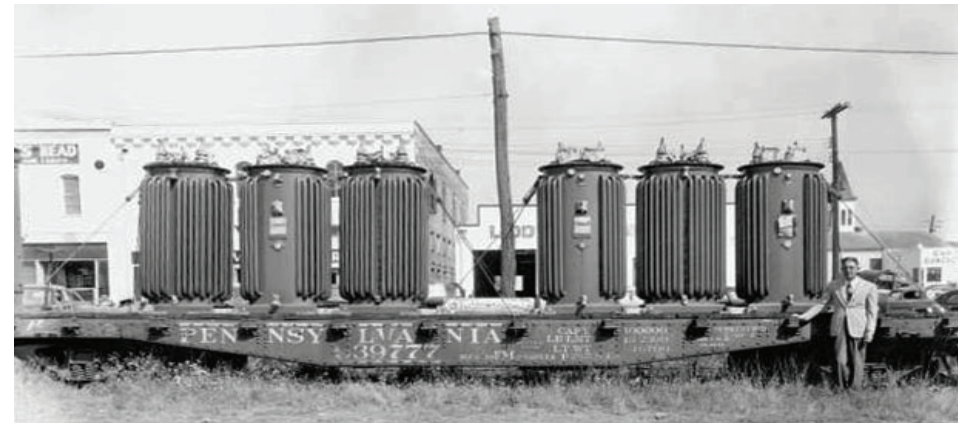
Note: This transformer load kit is only available directly from the Shapeways store (See information below).

Introduction

Thank you for your interest in Resin Car Works and this offering. Resin Car Works is not a business in the traditional sense. Its purpose is to share in the fun of prototype railroad freight car modeling and their operations with others to provide unique and different equipment that isn't readily available. Several friends assisted with various production phases, so it's not quite a one-man project. To list a few who helped with production, I would like to thank: Patrick Hodina for creating the 3D model and setting up the Shapeways store; Ken Soroos for formatting the instructions; and Eric Hansmann, the keeper of the website and blog.

The Kit

As my friends will tell you, I'm easily distracted when it comes to modeling projects. One photo sometimes is all it takes—such as this one of PRR 939777, a class FM flat, with two sets of transformers as a load. A trans-



former load like this could appear about anywhere on the American landscape, either going to somewhere on a layout, or going somewhere beyond the layout.

The reason there are three transformers in a set is that the electrical system is 3-phase, and one transformer is required for each phase. So they are built, shipped, and received in threes. The original idea was to print the transformers and then cast them. The cooling veins are too close together though, which tears the rubber of the mold, making the part impossible to cast. Filling between the veins for casting would have eliminated the

appearance of separate veins. So, we've created a **Shapeways store** to offer these transformers as a direct printing: <https://www.shapeways.com/product/VBWFMVEN9/transformer-load?optionId=159826531&li=shops>. Two printing materials are available, Versatile Plastic at \$22.50 for six and Smoothest Fine Detail Plastic at \$32.00. The transformers on my PRR flat are printed in Smoothest Fine Detail Plastic. Besides the transformers, you'll also need a package of Tichy #8158 Insulators, Tichy #8021 Turnbuckles, brass wire or heavy fishing line, wood blocking, some Kadee coupler springs, and a flat car to load.

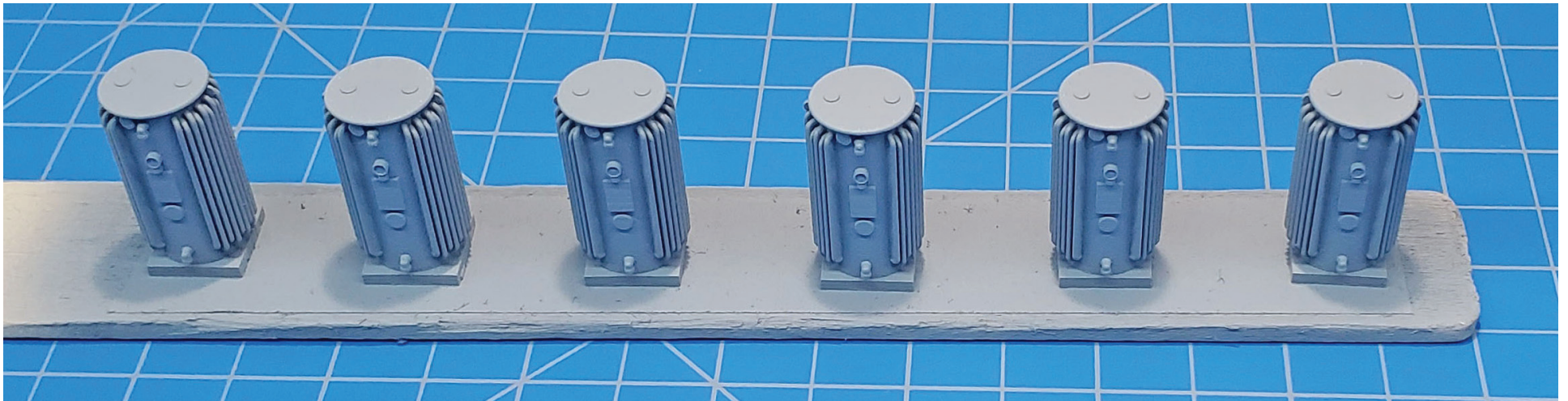
Instructions

These instructions and related materials are available in PDF form on the

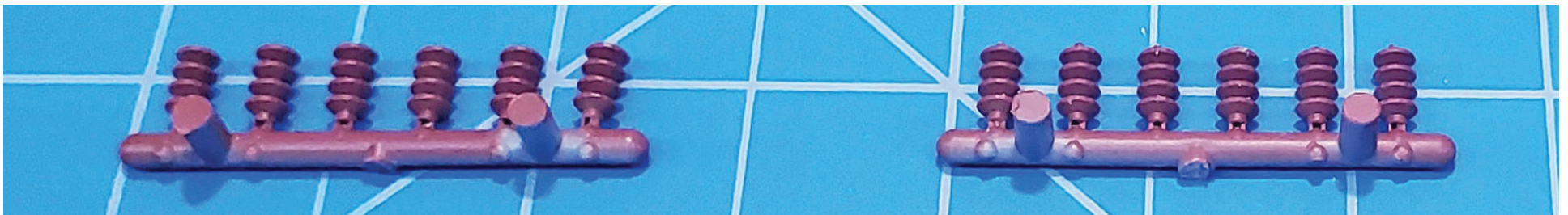
RCW website, www.resincarworks.com. Please locate and download this material from the RCW website as soon as possible after purchasing this kit. As with all web information, there is no guarantee that it will be available indefinitely.

Construction

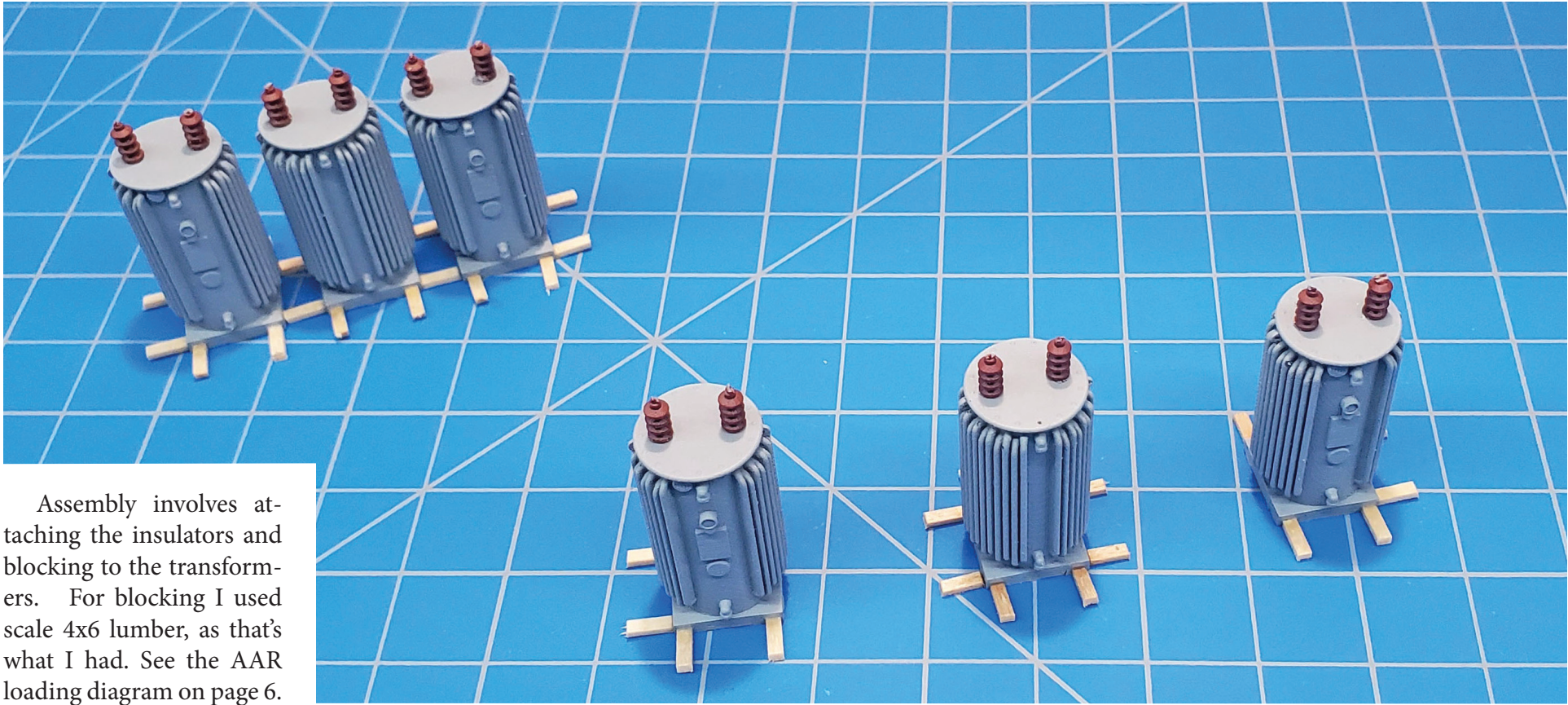
Always, as a first step, it's recommended that the parts be washed in warm water with Dawn dish soap. A better way, if you have one, is to clean the parts for several minutes in an ultrasonic cleaner. Most new transformers I've seen are a medium gray color. I used Testor's Model Master Enamel, medium gray, FS 35237 (#1721), but your paint of preference will work just as well.



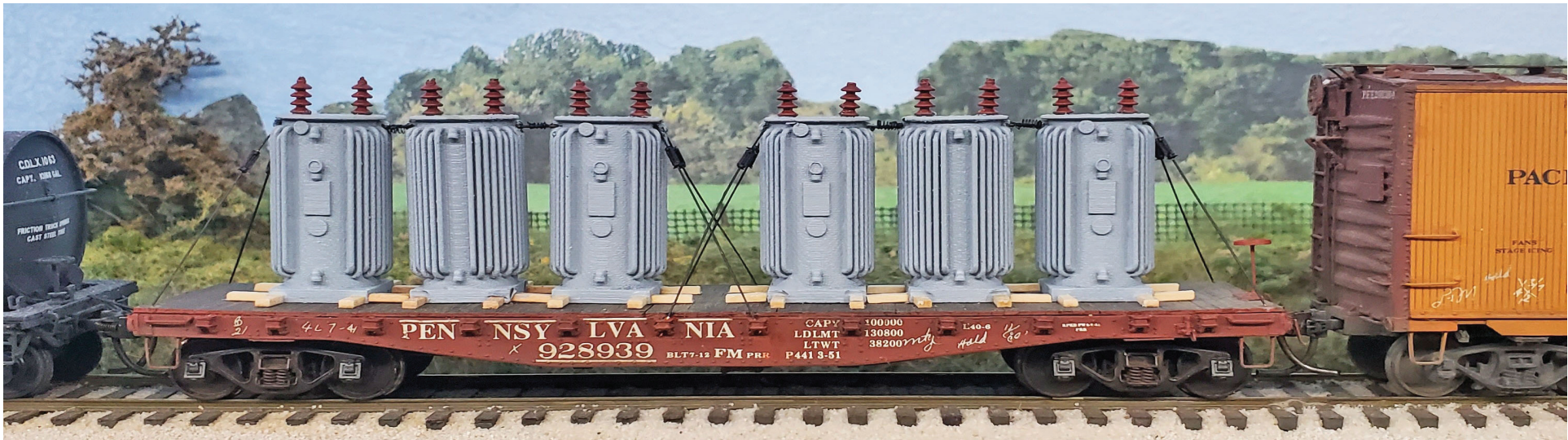
An easy way to paint the transformers is on a paint stick with some double-sided tape to hold them.

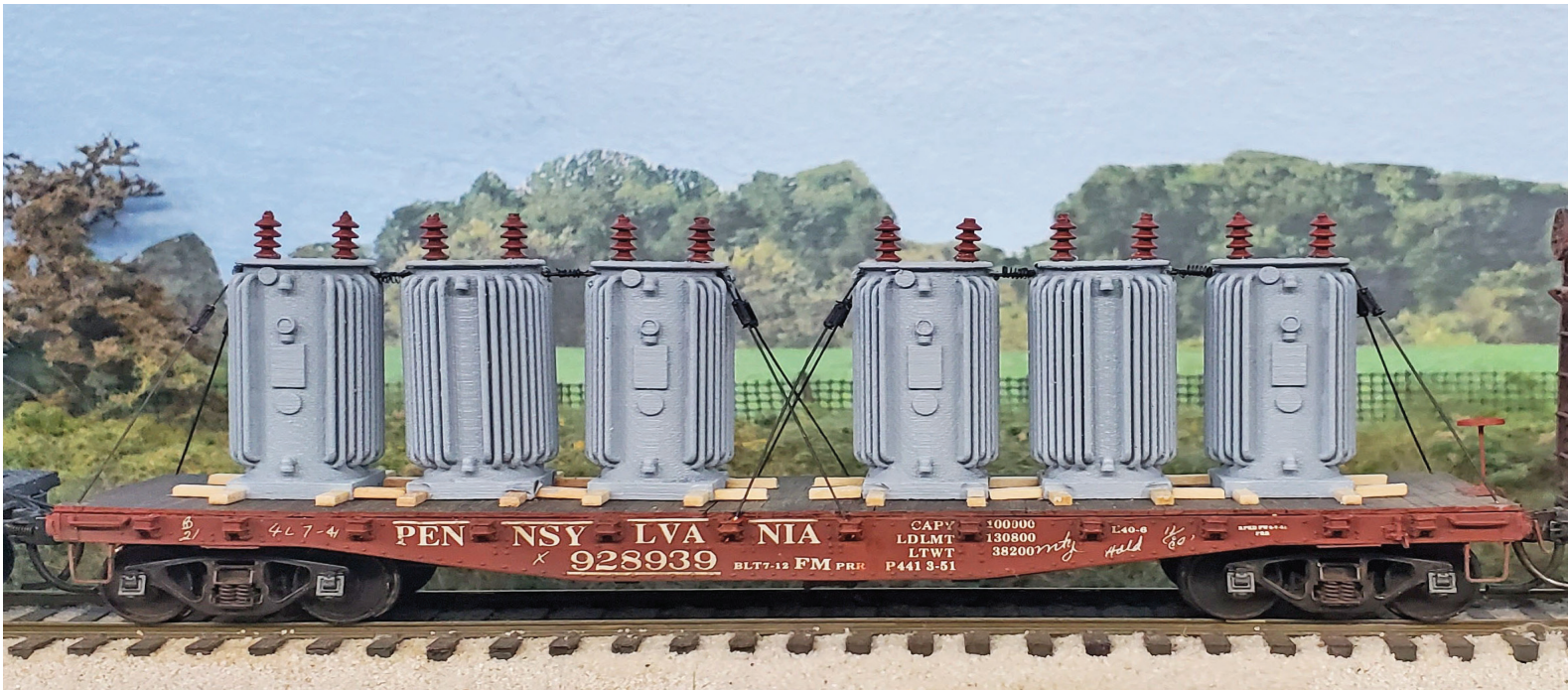
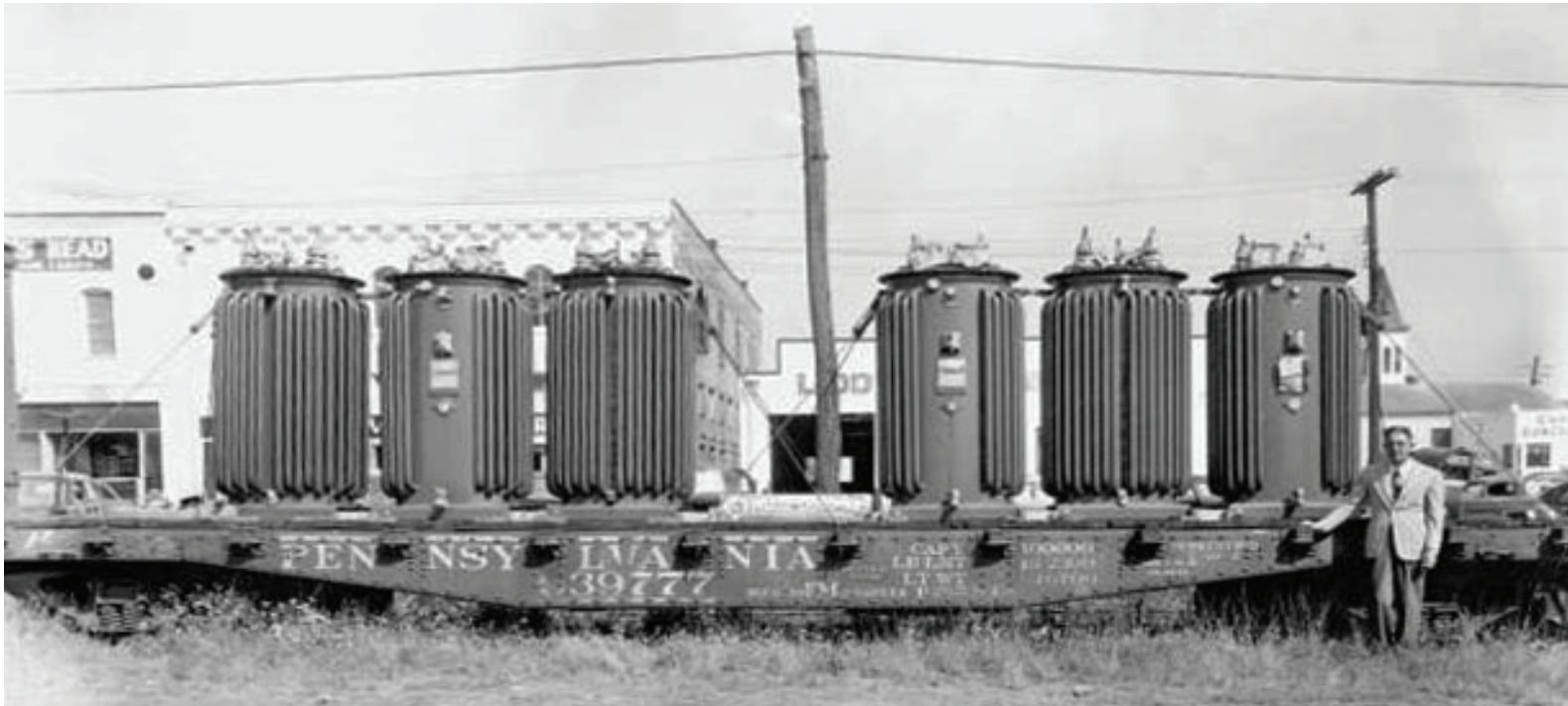


I also air brushed the insulators with an oxide red before cementing them to the transformers.



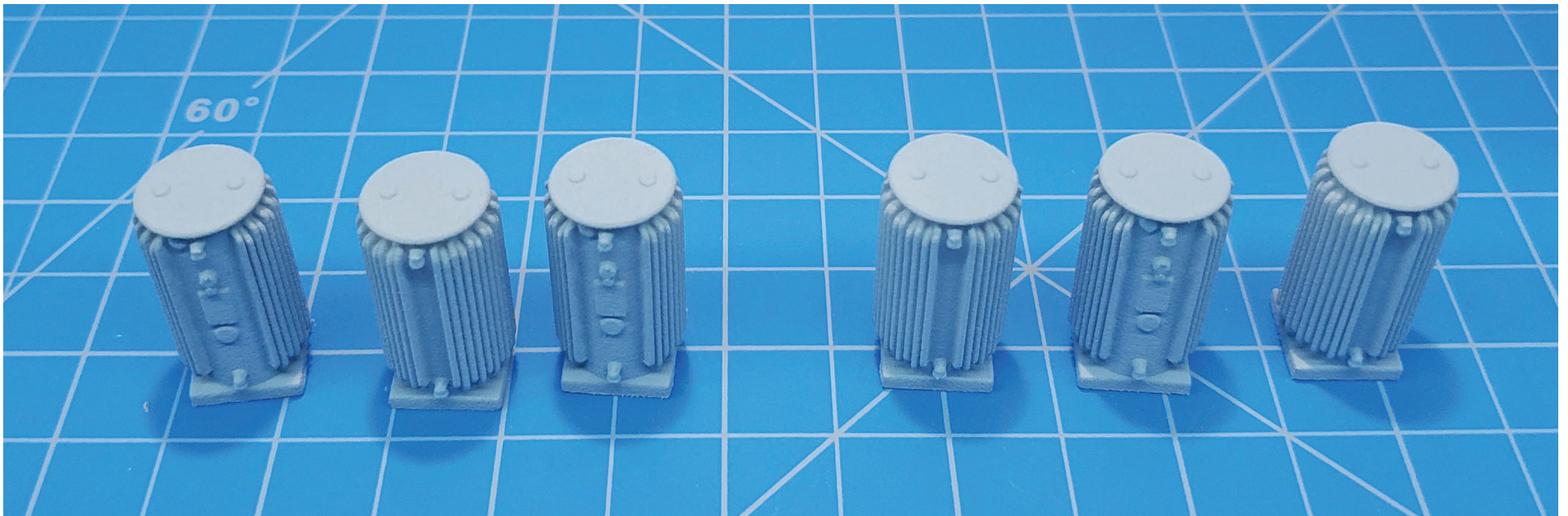
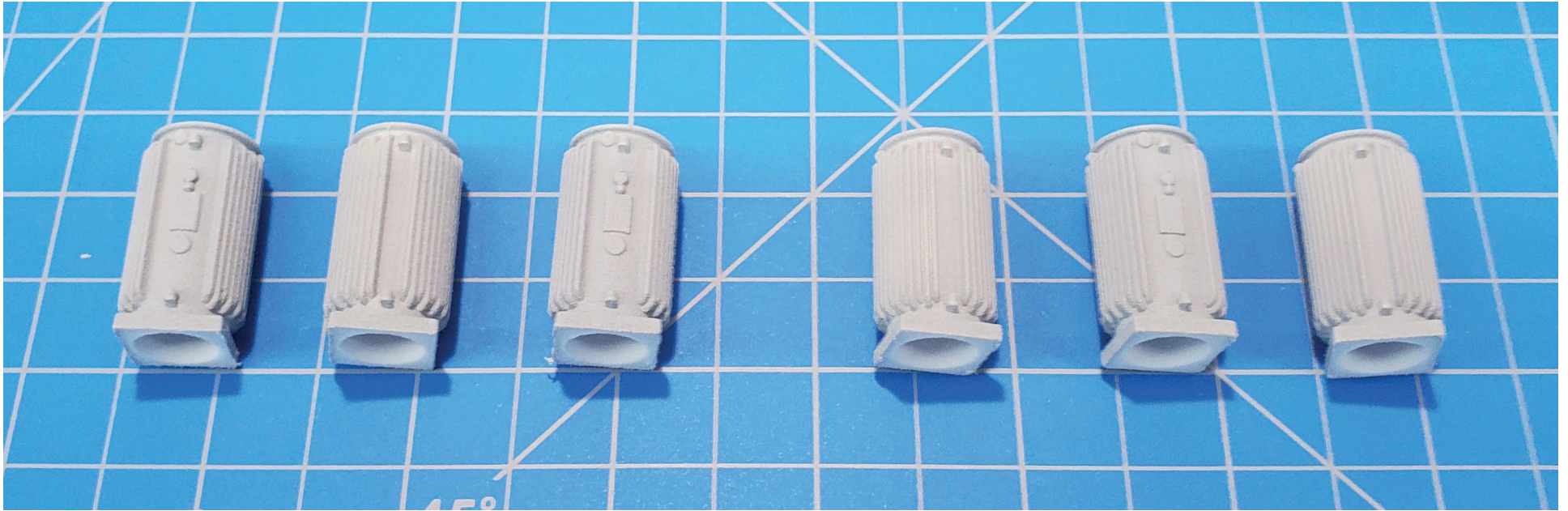
Assembly involves attaching the insulators and blocking to the transformers. For blocking I used scale 4x6 lumber, as that's what I had. See the AAR loading diagram on page 6.





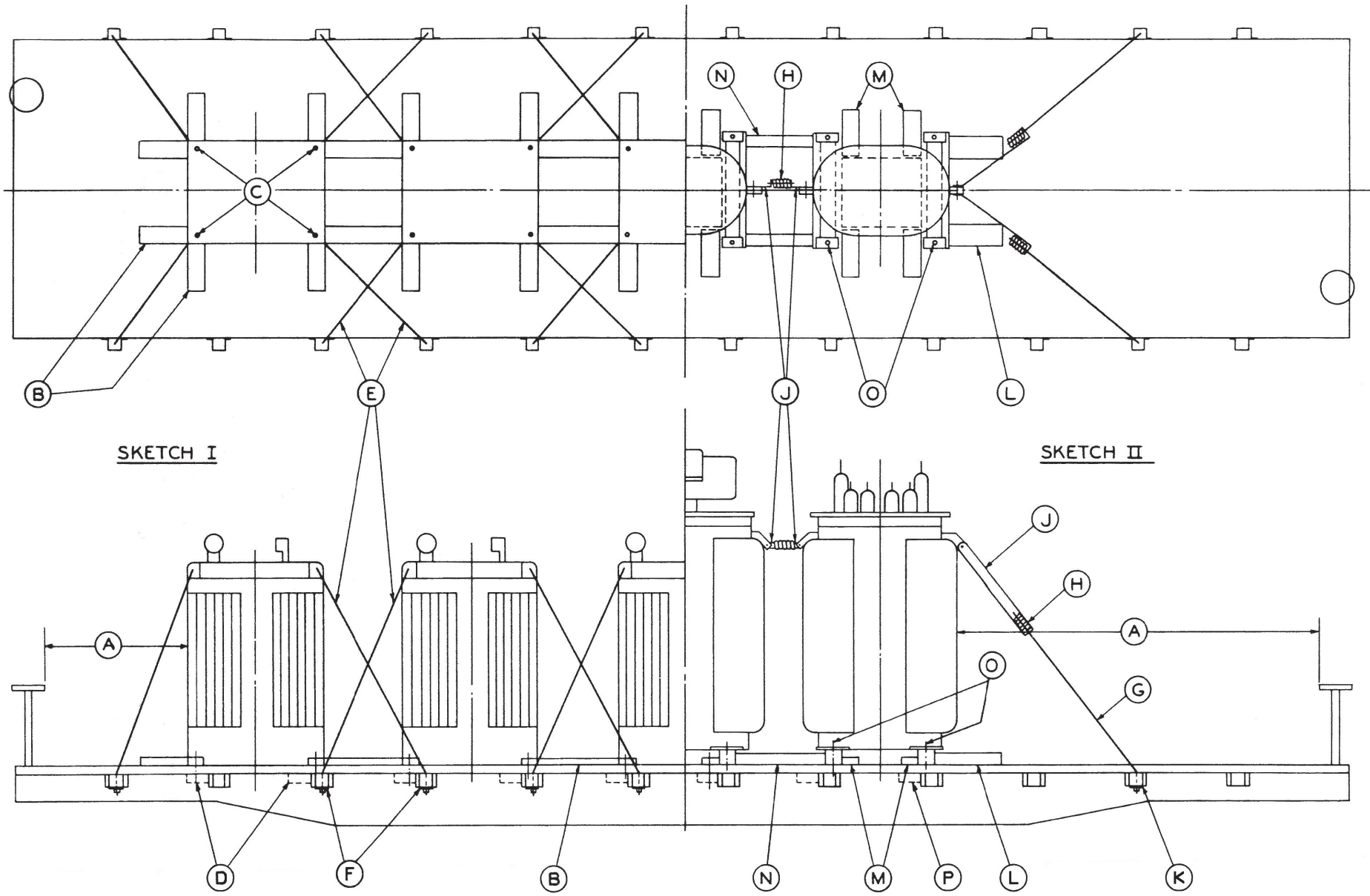
As there are rod/cable tie downs, I elected to permanently mount the transformers on the flat car. From the photo it appears that the transformers have coil spring brackets as per the AAR loading diagram. These were created with a small piece of 0.015" brass wire, bent to fit between the lift rings. The coil springs are Kadee coupler springs slipped on the wires. The tie downs are either 3/4" diameter threaded rod or 5/8" diameter steel cable. I used 0.010" brass wire as that's again what I had, with the turnbuckles placed near the top. A heavy fishing line could also be used for the tie downs.

The flat is a built-up Sunshine kit. After building the model though, I think it would fit better on a longer flat like Jerry Hamsmith's CB&Q 45-foot FM-11 kit (<http://blog.resincarworks.com/helpful-links/>)



Note that the transformers shown in the construction and loaded flat car photos on previous pages were printed in Smoothest Fine Detail Plastic. These two photos show the parts printed with Versatile Plastic.

Fig. 6



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Fig. 6

TRANSFORMERS—FLAT CARS

Item	No. of Pcs.	Description
A		Brake wheel clearance. See Fig. 2. Sketch 1. For transformers up to and including 35,000 lbs.
B	As required.	Each to consist of two pieces 2 in. x 6 in. hardwood, length to suit at ends, and 18 in. at sides of units. Nail lower piece to floor with four 30-D nails and top piece to one below with four 40-D nails.
C	4 ea. unit.	$\frac{3}{4}$ in. dia. bolts through bolting lugs, floor and Items "D".
D	4 ea. unit.	4 in. x 4 in. x 18 in. hardwood, or $\frac{1}{2}$ in. x 4 in. x 12 in. plates.
E	4 ea. unit.	$\frac{3}{4}$ in. dia. rods. Secure to lifting lugs and pass through stake pockets and Items "F". Substitute, if desired, $\frac{5}{8}$ in. dia. steel cable. Use thimbles to protect cables at sharp turns and secure with two 2-bolt cable clamps at each end.
F	1 ea. Item "E".	$\frac{1}{2}$ in. x 4 in. x 10 in. plate. Not required when steel cable is used. Sketch 2. For transformers 7 ft. high or less, weighing 8,000 lbs. or less
G	2 ea. end unit.	$\frac{1}{2}$ in. dia. rod. Secure to lifting lugs or Items "H" when used and pass through stake pockets and Items "K".
H	1 ea. Item "G" and 1 between each two units.	Coil springs 2,300 lbs. at 1 in. compression, maximum compression $1\frac{1}{2}$ in. Use optional.
J	3 ea. end unit and 2 ea. intermediate unit.	Coil spring brackets $\frac{3}{8}$ in. x 2 in., design and length to suit, secured to lifting lugs with suitable bolts.
K	1 ea. Item "G".	$\frac{1}{2}$ in. x 4 in. x 10 in. plate.
L	2 ea. end unit.	Each to consist of two pieces 2 in. x 6 in. x 18 in. hardwood, cut to fit channel flange. Nail lower piece to floor with four 30-D nails and top piece to one below with four 40-D nails.
M	4 ea. unit.	2 in. x 6 in. x 18 in. hardwood. Secure to floor with four 30-D nails.

Fig. 6 (Concluded)

TRANSFORMERS—FLAT CARS

Item	No. of Pcs.	Description
N	As required.	Each to consist of two pieces of 2 in. x 4 in. hardwood, length to suit, ends cut to fit channel flange. Nail lower piece to floor with four 30-D nails and top piece to one below with four 40-D nails.
O	4 ea. unit.	$\frac{3}{4}$ in. dia. bolts through bolting lugs, floor and Items "P."
P	4 ea. unit.	4 in. x 4 in. x 18 in. hardwood, or $\frac{1}{2}$ in. x 4 in. x 12 in. plate.

When weight exceeds 35,000 lbs., per Sketch 1, increase dimensions and strength of Items "B", "C" and "E" proportionately.

Items "B" to "F" inclusive not required on units per Sketch 2. Items "G" to "P" inclusive not required on units per Sketch 1.

See General Rules 4, 5, 7, 9, 14 and 15 for further details.