

the  
**scenery**  
manual

Woodland Scenics®



the  
**scenery**manual

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## introduction

The purpose of this book is to help you add scenery to your model railroad layout. Your trains can run without it, your switches will work without it, but there is no realism without scenery. The setting and background that you create give your trains a geographic location, a seasonal orientation and a time era.

The principal idea we want to convey is that realistic scenery is within the ability of any model railroader, even those who do not consider themselves particularly talented in artistic fields.

No matter what stage your railroad is in, you will find this book helpful. We begin with a brief overview of our revolutionary SubTerrain System and some general ideas on layout building, go on to planning scenery and then move to specifics with the Woodland Scenics Terrain and Landscaping Systems. Not only are the systems easy to use, but the products were created to work together to produce realism without an artist doing the work.

We suggest that you read the entire book before you begin. The Scenery Manual will give you an overview of all of the ideas and products that make up the Woodland Scenics System and allow you to select those which will be most useful for your situation. Then experiment. Because of the way the products are formulated, it is impossible to make mistakes that are not easily corrected. We think you will be pleased with the results, as well as with your own creativity.

Even though the emphasis of this book is on model railroading, many other types of modelers will find the techniques and products described here very useful. Whether you are a military modeler, a diorama builder, an architectural model maker, a doll house builder, gamer, or have a project for school, this book can help you. The basic techniques of creating terrain, covering it with landscape materials and finishing it with details, can be used by all modelers. When you learn and practice these techniques, you can use them for any type of model you choose to build.

Pages 121 through 142 include information to help you further understand the products used, define terminology and help you locate specific subjects in the manual. The Product Listing provides a partial listing of the Woodland Scenics products mentioned in this manual. The listings provide more detailed product information, color samples and charts that determine actual scale representation for various tree heights.

The Glossary is a listing of the railroading and modeling terms indicated by *italicized* type throughout the manual, and the Index presents a quick and convenient way for you to find a specific modeling subject, technique or product in the manual.

Woodland Scenics products are available at your local hobby shop or through our Web site. Visit [woodlandscenics.com](http://woodlandscenics.com) to see the complete offering of Woodland Scenics products and view how-to videos.

# chapter 1

## Layout Basics

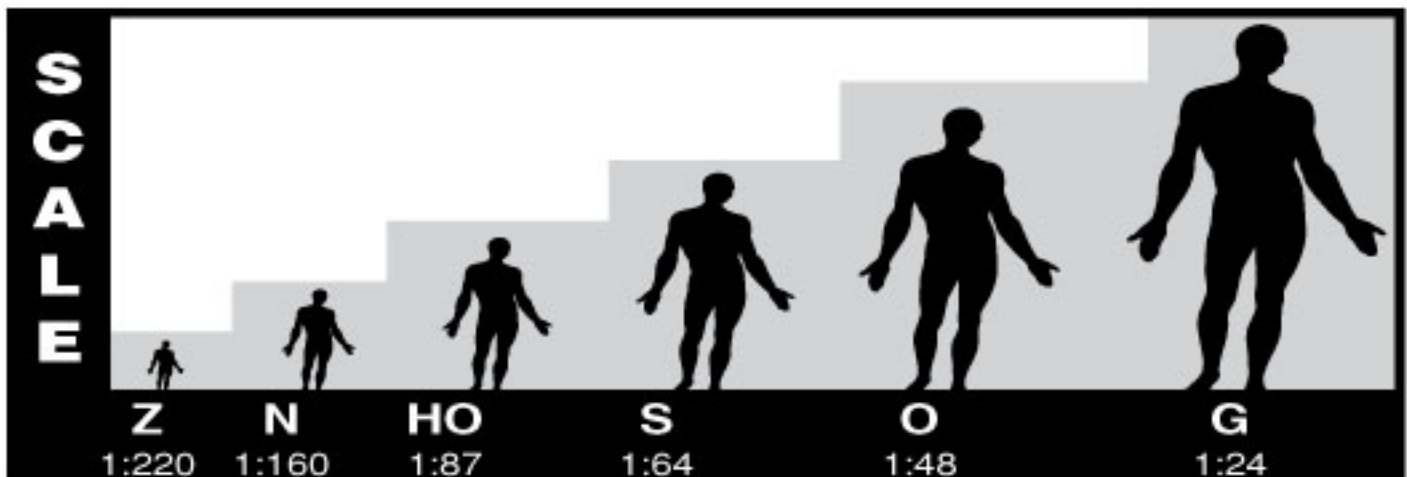
### Railroad Premise

When you build a model railroad, you create a miniature world of your own conception and design. Some of the excitement of model railroading is in building the towns and industries and then designing the transportation network to keep them running. In a world where we often have little control over our surroundings, model railroading offers the opportunity to be in charge of our world, even down to naming railroads, towns and businesses.

In general, there are two methods of modeling. One is to design a model railroad after some particular *prototype*\* (real railroad or location), and the second is to create an imaginary railroad. The choices you make constitute your *railroad premise*. Each method has its advantages and each offers a multitude of possibilities for scenery and *operation*. The methods can also be combined. For example, you can make a prototype railroad in a location that is imaginary, or a real location with a railroad of your own creation. Model a railroad in your local area, a railroad you or someone you know has worked for, or a railroad in part of the country that is interesting to you. The choice is yours.

### Scale

Model railroads are generally built as *scale* railroads: that is, everything on the layout is built to a specific percentage of what it is in the real world. "Scale" is the relationship between the size of two items and in model railroading is generally expressed as a ratio. For example, HO scale is 1:87: which means one inch on the model represents 87 inches in the real world. This illustration shows the height of an average man in some of the more common scales used in model railroading. In model railroading there are a number of common scales with trains ranging from small enough to hold in the palm of your hand up to



\*Words which appear in italicized type are defined in the Glossary at the back of the book.



remove a few wads of newspaper. Also notice the places where buildings are planned. Has enough open space been left for the size of building being planned? Although it is easy to remove some of the terrain material later on if needed, save some time by considering these items ahead of time and making allowances for them.



*Stack wadded newspapers on the terrain base to create rolling terrain, hills and mountains. Cover with strips of masking tape to hold in place. The newspaper wads can be rearranged, added to or removed in experimenting with different terrain before the final form is achieved.*

## **The Terrain Shell**

Plasters have generally been the material of choice to complete the terrain contours on a layout. They are used for creating the hard *terrain shell* on top of the terrain contours, for casting rocks and other items, for filling in holes and breaks in scenery and for detailing terrain areas. Because plasters are so important, we are going to consider the different kinds, their uses and properties before continuing to complete the terrain shell.



*Dip pieces of Plaster Cloth into water and lay on newspaper wads, bumpy-side-up. Smooth with fingers to spread plaster evenly. When the Plaster Cloth overlaps the edge of the layout, be sure to fold it back on itself for a smooth, even edge.*

Plaster Cloth is a plaster-coated cloth designed for terrain modeling. Use Plaster Cloth to form a hard shell that easily accepts coloring, rock castings and landscape material. It is also used to fill in gaps and re-sculpt terrain features. Because Plaster Cloth comes in a roll, it is easy to cut the amount needed to cover the work area. Dip the Cloth in water and place it, bumpy-side-up, where desired and then smooth the plaster bumps with wet fingers. Some modelers prefer to lay dry pieces of Plaster Cloth on the newspaper wads and spray them with water. Either way, there is little mess and no leftover plaster to harden before it can be used. Plaster Cloth hardens in 30 minutes or less.

For a tough, durable terrain let it harden overnight. Hydrocal® and molding plaster have been used by model railroaders for many years to cast rocks and complete the terrain contours. They are very heavy products, making them particularly difficult to use with a module or other layouts that will be moved around. When dry, Hydrocal is extremely hard and very difficult to carve. Molding plaster is somewhat easier to carve, but is still not desirable. If you plan to use either of these products to cast rocks, the **Woodland Scenics Rock Molds** can be used with them.

The older method of creating terrain contours included plywood profiles, screenwire and paper towels dipped into a plaster and water mix. If you choose to dip paper towels in a plaster and water mix, a lightweight, durable terrain shell can be created using our Lightweight Hydrocal and water mixture to coat the paper towels. This is a messier procedure than using Plaster Cloth and results in waste because the plaster usually hardens before it can all be used.

**Woodland Scenics Lightweight Hydrocal** is specially formulated for terrain modeling. It is used to cast rocks, to fill in open spaces around plaster castings and as an adhesive for joining plasters and castings. Lightweight Hydrocal is easily mixed

### TECH TIP

Plaster is a porous material which accepts color by absorbing it into the pores. Make sure the pores on the face of the plaster casting remain open or it will not accept a color wash. Do not sand or mar the face of a plaster casting that is to be colored. A marred area will appear much lighter when stain is applied. If this occurs, dab on more concentrated Earth Colors Liquid Pigment. It may help to use a hobby knife to rough up or chip away the lighter areas and then re-stain.

When installing rock castings using the *brick method* (page 38), some Lightweight Hydrocal® will ooze out around the rock. It can be removed by water carving: that is, spraying with a solid stream of water from the Scenic Sprayer until the Lightweight Hydrocal washes away (Tech Tip page 39). Or, leave the excess in place until it dries and use a hobby knife to chip it off. Do not use sandpaper.

Glue on the face of castings will prevent the casting from accepting stain in that area. You may want to stain sections of plaster castings before assembling them. If glue does get on a face, use a hobby knife to chip the glue away, or dab on undiluted Liquid Pigment. See Coloring Plaster Castings section for additional information.

Plan to pour only one or two Rock Molds at a time while shingling. When Lightweight Hydrocal is first poured in a mold, it looks shiny and wet; when dry, it appears dull. Look for the transition stage when the Lightweight Hydrocal is in a pasty state. At this point the shine will begin to skim over. To install the rock, first spray the terrain shell with water, then press the wet rock and its mold firmly against the terrain shell in the desired location. Hold in place until it sets sufficiently to attach. Leave the Rock Mold in place for at least 30 minutes and then pull it off carefully. If you experience flaking when pulling off the Rock Mold, allow a longer drying time. After drying, chip off any excess Lightweight Hydrocal from around the rock and blend the rock into the other castings by removing any edges that seem to stand out too far (see Tech Tip this page). The next rock mold can then be poured and attached with its edge slightly shingled over the neighboring rock. Use a hobby knife or dental pick to chip away any excess Lightweight Hydrocal.

If there are any remaining rough edges or breaks in the terrain around the areas where rocks have been installed, they can be repaired by covering with small pieces of Plaster Cloth or filling in with Lightweight Hydrocal. These products will also help provide any additional terrain blending that is needed.

### ***Make Your Own Molds***

Use **Woodland Scenics Latex Rubber** for making molds of your own. Be sure to keep scale in mind. Rocks in the real world come in many sizes. Note the layering and texture of the rocks when planning to make molds, as those found in the real world may look grossly out of scale on a model. If you prefer to make your own rock molds, it is possible to duplicate

### ***TECH TIP***

In some areas you may want rock castings to fit tightly together. There is an easy way to accomplish this when making castings from the Lightweight Hydrocal. First, cast several rocks. Place the edge of one over the edge of another, and trace the outline of the top rock onto the bottom one. Then, use a hobby knife to carve away this marked section on the bottom rock. Install the rocks with Lightweight Hydrocal as an adhesive. Because of the tight fit you have carved, there should be little space between the two rocks. Use water from a Scenic Sprayer, adjusted to a stream, rather than spray, to remove any excess Lightweight Hydrocal that oozes out between the rocks.



Different products like Lightweight Hydrocal, Mold-A-Scene Plaster, Plaster Cloth and other plasters will absorb color differently and may impart some color of their own.

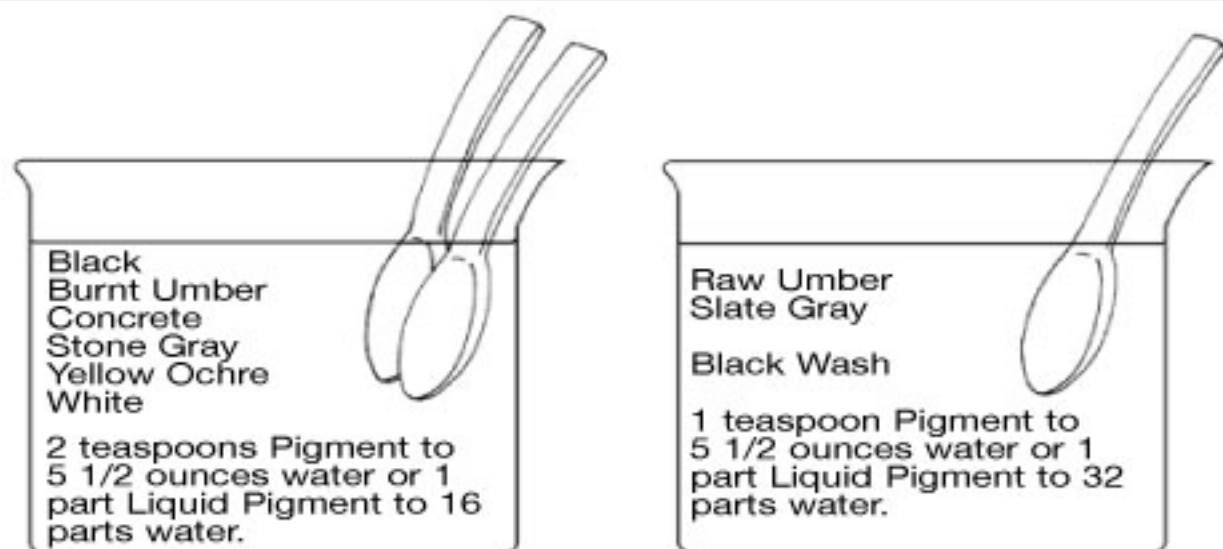
Plaster surfaces can vary from highly porous to non-porous. The more porous the surface, the more readily it will absorb color washes or stains. Non-porous surfaces may not absorb washes or stains at all. Marring, rubbing, smoothing or polishing can close the pores on the surface of a casting, making it less absorbent. Materials such as Scenic Cement, Flex Paste, Scenic Glue and super glue will seal plaster surfaces and require coloring with opaque painting techniques.

The Earth Colors Liquid Pigment can be diluted into thin washes, used undiluted, or mixed to any number of dilutions between these two extremes. Liquid Pigment colors can be pre-mixed before applying to create custom colors that match colors of rocks in a specific locale. Color can be combined on the mixing tray if a small amount is needed, or in a jar or Scenic Sprayer. The Scenic Sprayer is especially convenient because it has the ounce markings noted on it.

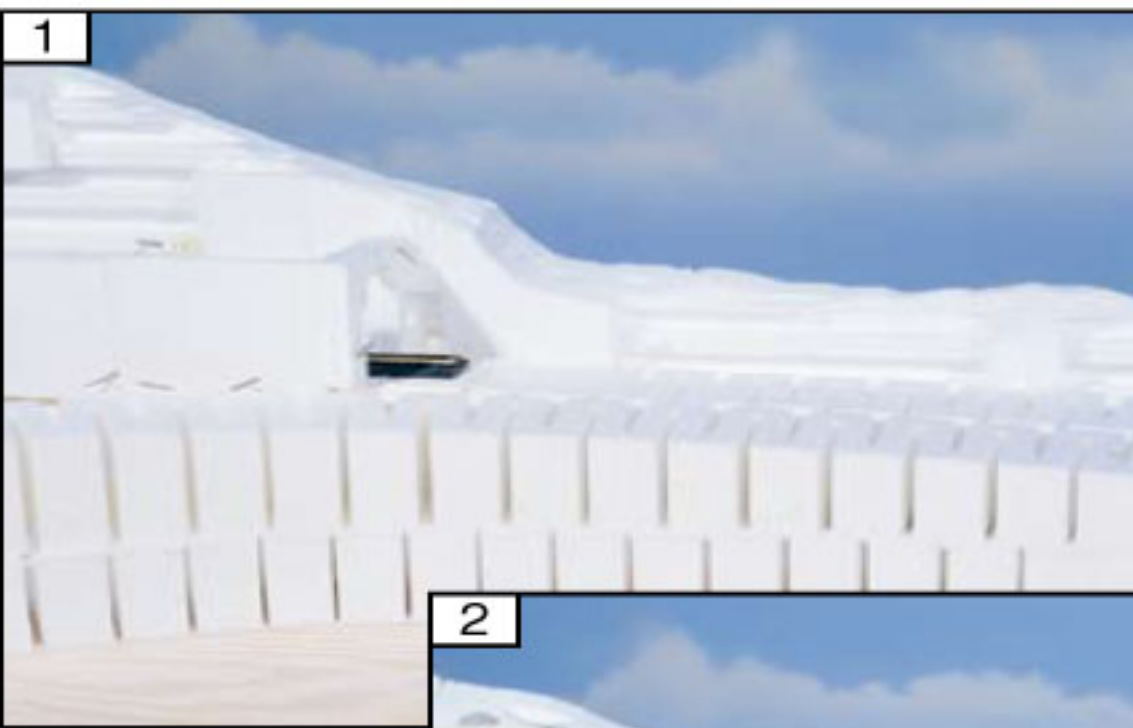
Staining With Washes: A wash is created by adding large amounts of water to Liquid Pigment. The more water, the lighter the wash. The more pigment, the stronger (more intense) the wash. Washes are intended to be transparent, so even light washes on plaster can be made to look darker by applying an additional wash to the plaster after the previous wash has dried. Several coats of one color of wash will provide different intensities of color. Several washes of two or three different colors will create new shades of color where the washes overlap. This wide range of intensities and shades of color is very natural and realistic looking.

If a wash is too dark to begin with, it will not be very transparent and the wide range of shades and intensities will not develop. Therefore, we recommend diluting the Liquid Pigments to a very light wash before beginning. More pigment can always be added if a stronger wash is desired later. Some colors are more intense and should be diluted with more water than other less intense colors.

## DILUTION FORMULAS



1



2



3



*This series of photos shows the progression of terrain building on a layout. 1.) Begin with the terrain base. 2.) This photo shows a number of steps. The newspaper wads are in place and Foam Sheets (to form the tunnel) have been cut and installed. The Tunnel Portal and Retaining Walls are trial-fitted. 3.) The entire contour area has now been covered with Plaster Cloth to form the hard terrain shell. 4, 5 and 6.) Rock castings and roadbed (Track-Bed) are in place. Tunnel Portals and Retaining Walls have been colored, assembled and installed. The rock castings have been attached using Lightweight Hydrocal. Mold-A-Scene Plaster has been used to fill in gaps around the castings. 7.) A picture of the finished product.*

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