CREATING BACKDROPS

Presented by BOB VAN CLEEF
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North River Railway
“ROOFTOP” SCENES

All sorts of backdrops can be economically created using your printer and a few pictures of your own railroad. Several separate images were combined here to form instant city. Take a look at the factory to the left in the back row.
A QUICK OVERVIEW

• First, think about what we want to do.
• Then take a whole lot of pictures.
• Next selected images are photo-shopped for best appearance.
• Images are merged into backdrop components.
• Merge components into finished backdrops.

AND / OR

• Create cutouts:
  – As components for backdrops
  – As complete photographic backdrops
  – For individual or group use as 3D backdrop
THE DESIGN

• The design will deal mostly with the position of the supposed viewer, the horizon and perspective.

• This will help determine how the pictures are taken.

• The object is to keep the individual parts of a backdrop even and consistent.
TAKE PLENTY OF PICTURES

• Take pictures of Buildings around the layout.

• Take pictures of Horizons of your scenery.

• Outside or even the web is probably the place to get pictures of the sky and Clouds.
Now we can take a look at each picture and decide which to use. Then we can:

- Adjust brightness and contrast.
- Change size and resolution as required.
- Convert to GIF images with transparent layers.
- Make any of a multitude of changes to make each image look its best.
MERGE IMAGES INTO BACKDROP

• Once we have our images we can continue our photo-shopping to merge them into single image.

OR ...
OR WE CAN MAKE CUTOUTS

- Images can be used individually as cutouts and glued to a wall or some location within the layout.

- A holder also can be made as yet another alternative and also used as a photographic background.

*All right now, LET'S DO IT!*
DESIGNING THE BACKDROP

Consider this scene through the lens of a camera.

- It is easy to see where the horizon and vanishing point are in relation to the viewer.
- We can assume the viewer is looking out a 2\textsuperscript{nd} story window and down a street.
- The idea of a backdrop is to try to depict part of a three-dimensional layout scene like this in two dimensions.
A ONE-LINE PERSPECTIVE

A simple perspective

• Let’s begin by considering this basic illustration of perspectives.
• The green line represents the horizon or eye level of view.
• Assuming three subjects are of the same size.
• The larger looks closer to the viewer than the smaller.
• This idea is used extensively in the design of a backdrop.
A TWO-LINE PERSPECTIVE

• The position of the horizon in relation to the subject(s) will determine the apparent viewpoint.
• Note in the top drawing how a high horizon seems to look down on the subject.
• Below, a low horizon puts the viewer at a more natural “ground” level.
• This is the better level for viewing model trains.
We will put this principle to use by using a different scale for images in each of several rows to force the illusion of perspective.
TWO USEFUL IMAGES

• Two special images will be extremely useful in creating your backdrop so create these first.

• The ‘sky’ image represents the color to be used throughout the creation of the backdrops and cutouts. The RGB color in this presentation is:
  – R=186, G=246, B=189.
  – This color will be used wherever the sky is involved.

• The second is a ‘blank’ image large enough to assemble the backdrop somewhere the range of 24” x 10”. This size will vary.
The next step to making a rooftop scene is to take pictures of various structures around the layout. This warehouse is located at the back where it had little visibility.
PHOTOGRAPHIC STAGE

• Make a simple staging area that is of even light color, preferably white or light blue.

• The white “Elmer’s Foam Board shown here is a type available in craft stores.

• Place a white box in front of the foam board that will serve as a platform.

Simple photographic staging
THE PHOTOGRAPHIC SHOOT

• Remove each building from layout and photograph it in an isolated area.
• Lighting need not be bright. It can in fact be surprisingly low as long as it is even.
• Keep a constant distance between camera and subject to maintain scale size.
• The key is to take ALL pictures in a consistent environment.
Focus, resolution and detail

THESE ARE NOT CRITICAL

• Backgrounds are just that; they are meant to go BEHIND the main subject
• They will not be close up nor the point of focus so much detail is lost in resolution anyway.
• Consider that a 1028 x 720 pixel image or 300 dpi printer image is far more than the average eye can take in at casual glance.
HORIZON PICTURES

- Take plenty of pictures around your layout at horizon level.
- Forget the foreground as it won’t be seen.
- Concentrate only on the horizon.
- Use as high a resolution as possible as the image must span the entire backdrop.
VISUALIZE PUTING THINGS TOGETHER

- Print and cut a few pictures out to help visualize which horizons may be most suitable.
- Plan where you want to place structures in relation to the horizon.
- Use focal length to scale picture.

SECTION OF ACTUAL LAYOUT with pictures used to plan perspective
TAKING PICTURES OF CLOUDS

• Take pictures towards the horizon, not straight up.
• There is no scale to clouds.
• You can stretch most cloud pitchers horizontally or vertically without any harmful distortion.
• You do want as high a resolution as possible but it is not critical.
CLOUDS ON THE WEB

• Several excellent views of clouds are also available on the web.
• This image could also be used for the horizon
PHOTO-SHOP pictures

- Adjust each picture to increase brightness (and contrast) to make the structure look more distinct.
- Crop images as close as possible on the sides.
- Resize image based on the apparent distance desired.
- This, for cutouts, will be based on which row the building will be placed.
SETTING THE TRANSPARENCY

• Now, set the background to a single (blue) color. This may take some doing to be rid of shadows.

• Don’t forget the cut-out areas such as the space between bracing and ladder runs.

• Convert to a .GIF format.

• Set transparency to the background color.
WORKING WITH GIFs

• Sometimes changing the transparent color to a dark color will help reveal imperfections.
• Also, use a high magnification and work with small areas where areas are small.
• Notice several areas that have NOT been included in the transparent layer.
• You should now have a gif image like this.
• Note that the checkerboard does not print but is displayed to show which areas of the image are transparent.
• This allows one image to be stacked over another without the bottom image being blocked by the sky by one on the top.
RESIZE IMAGES FOR PLACEMENT

- Pictures to be used nearest view (front row) can be to actual HO scale or slightly smaller.
- Pictures further back can range down to N and TT scales or even smaller.
- Smallest images will show roof line only.
- If further depth is required then roof details like water tanks, chimneys and signs can be cut and pasted on finished backdrop.
HORIZON AND CLOUD SIZES

• Rotate all cloud and horizon images to LANDSCAPE view.
• Adjust the dimension size (in pixels) to uniform width.
• Now adjust the PRINT size. You may have to re-set the dimension size to maintain the same pixel size.
• Be careful to maintain the original uniform width which in this example is for a 24” backdrop.
CREATE HORIZON GIF

• Select and change the area above the horizon to a single color.
• Keep the roof level and horizon in mind
• Convert the JPG image to a GIF format.
• Select and set the sky to the transparent color.
CLOUDS, METHOD (1) of (2)

- Select a narrow band of the original image
- Convert this to a GIF format. The dark blue here represents the transparent color.
- This last image shows the actual layer as it will overlay the bottom-most blue sky or horizons layer.
CLOUDS METHOD 2

- Make sure the width in both pixels and print size match.
- Adjust the contrast and brightness.
- Adjust the color of the bottom edge of clouds to match the color used to represent the sky.
- There is no need to create a GIF image.
CREATING BACKDROP IMAGE

• A sky backdrop can be combined with a horizon or the two can be used separately.
• Again, use high resolution images as pictures are much larger than individual buildings.
• Again, focus is not critical.
A GENERAL BACKDROP TECHNIQUE

- Start by inserting filling the upper portion of a blank image with the sky color.
- Paste a few GIF images into the same image.
- Change the ‘order’ of the images to the front or back as required and note that these will form a background.
ANOTHER LAYER IS ADDED

- This shows a foreground layer overlaying the background.
- This can only be done with .GIF images.
A BIT OF SKY AND GROUND

- Now we can add a horizon image shown in brown here, and the cloud layer for the sky.
- This in general is how all backgrounds will be built.
<table>
<thead>
<tr>
<th>FLAT OR SINGLE LAYER</th>
<th>3D or MULTIPLE LAYER</th>
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</thead>
<tbody>
<tr>
<td>• Multiple Images are photo-shopped into a single larger image and glued to backing.</td>
<td>• Multiple images are glued to plywood or some other backing individually.</td>
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<tr>
<td>• The result is a single layer useful for photographic backgrounds or extremely tight scenic situations.</td>
<td>• The plywood is then cut to separate the images.</td>
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<tr>
<td>• This method can be a bit more time-consuming and relies more heavily in computer manipulation.</td>
<td>• The images are then “stacked” to give a more 3D effect when viewed from different angles.</td>
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Creating a Flat Backdrop

- We will use this 8” x 24” panel to create a photographic backdrop horizon with the sky portion removed.
- Notice that the building in the right corner is an actual part of the layout.
MERGE CLOUDS and HORIZON

• Use the blank image we created earlier in this clinic
• Select, copy and past cloud layer into template.
• Select, copy and Past the horizon into the template paying attention to how the clouds meet the horizon. Remember that cut paper sheets are 8-1/2” wide.
• Save the result as a JPG image.
ADD FRONT ROW BUILDINGS

• Begin to add buildings. Note how the HO sized buildings blend in with the scenery.

• The absence of a road will be disguised later with a fence, hedges or some other barrier.
More Layers.

- The actual sizes of these back rows buildings are much larger than the front but are scaled down to N or TT to add perspective.
- Simple keep adding and moving buildings until the desired effect is achieved.
FINISHING THE BACKDROP

• Slice the backdrop image in half into panels to about 12.5” long.
• This should include enough image to account for overlap and trim.
• Use a paper that will not bleed through.
• Consider using legal size paper (8-1/2 x 14” to reduce the number of panels required.
• WARNING, THIS USES INK!
• Glue finished panels to backing.
This shows how a backdrop can make a narrow shelf look like a whole railroad by using buildings located elsewhere on the layout. This also works for modular layouts too.
PLYWOOD FOR BACKING

• Almost any light cardboard can be used to stiffen paper images.
• I like 1/16 inch thick aircraft birch or spruce plywood which is relatively inexpensive and easy to handle.
• Order 12” x 24” sheets or the shipping costs will be prohibitive.
GLUE PICTURES TO BACKING

- 3M super 77 from Home Depot works quite well but there are many others that will work just as well.
- Simply coat the backing thoroughly, wait a minute, then apply picture.
- Be careful not to smudge any excess glue.
CREATE A 3D BACKDROP

• Everyone is familiar with scenic backgrounds

• This shows how to create a more personalized touch using your own models.
MAKING CUTOUTS

• Continue to run the images you have created through your photo editor and trim the images to their desired size.
• Print images on plain paper or cardstock with a matt finish.
• DO NOT USE PHOTO PAPER!
• Final image should be smaller and lighter to enhance perspective
BUILDING CUTOUTS

• Cut the buildings apart and sand as close to edges as possible.
• Leave a tab at the bottom of each image. It will be used later to position them in a holder as you will see later on.
FINISHING CUTOUTS

- Bevel edges to reduce visibility.
- Do **NOT** paint edges black but instead use earth-tone colors suggestive of the front.
PHOTOGRAPHIC CUTOUTS

- Cutouts can be used to make a 3D photographic backdrop.
- This shows a single layer backdrop in back of a few buildings.
- This can be expanded to include several rows of cutouts.
• Clouds, Horizon and various building cutouts can be organized in a holder.
• Use risers or spacers to shim rooflines as required.
• Arrange larger building in front and smaller buildings further back to maintain perspective.
• Front edge of holder will be at or slightly below table level. Camouflage with fence or bushes as required.
END VIEW OF ACTUAL HOLDER

- This holder was built wide enough to accommodate seven layers of cutouts.
- Note the fence attached to the front.
- This will hide the absence of street or ground level detail.
- It will also make the height adjustment of the holder less critical.
A FRONT VIEW

The holder can be placed on the table top but will more often be used resting against the front of the table with only the top of the fence shown in the picture.
HOLDER IN USE WITH MIRROR

• See the holder with backdrop is positioned in front of table.
• A train rests in front of the backdrop.
• A mirror reflects from the rear of the layout. This makes it easier to position the camera directly over the backdrop.
Alternately, if you want to use the backdrop as a temporary prop for photography, you can build a holder to hold the cutouts in different positions.
A PROPOSAL

- Some people trade passes. Others trade stock certificates, cars or any number of railroading items.
- I would like to propose the exchange of pictures for use in creating backdrops.
- Please visit my website for more information.
- http://www.northriverrailway.net/BkDropIntchng.htm
RESOURCES

• **Micro-Mark** – Full line of kits, refills and supplies for laser and inkjet decals. Designed for the do-it-yourself modeler who wants to make his own decals. Kits available for both inkjet and laser printers.

• **Utrecht Art Supplies** [http://www.utrecht.com](http://www.utrecht.com) - Full line of art supplies including thin plywood for backing cutouts.
This presentation has been brought to you by the North River Railway

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THE END