Electrify Your Scenery With Static Grass

Presented by Rick Luther - Northern Utah Division, Rocky Mountain Region, NMRA - 4/18/15

Why Use Static Grass?

Static grass is an easy and effective way to imitate the natural grasses seen in real life. It can also add to the "texture" of your scenery.

What is Static Grass?

Static grass is made from plastic fibers, such as acrylic or polyester that easily accepts and reacts to a static charge.

Static Grass Sizes – Ranges from 1.5 mm to 12 mm. Compared to a 6ft tall HO figure at 20mm or 6ft N scale figure at 11.5 mm. You can buy grass from companies such as: Scenic Express, Heki, Noch, Silfor, Woodland Scenics, Faller, The Army Painter and Gale Force Nine.

What is Needed to Apply Static Grass?

Commercial Applicators:
- Noch puffer bottle: Non-Electric/Hand Operated : $5.49
- Fly-Swatter Applicator: 2 D-Size Batteries : Numerous sellers on eBay : $24.99
- Grass Tech Fly-Swatter Applicator: 2 D-Size Batteries : $54.99
- Noch Grass Master : 9 Volt Battery : $189.99
- Heki Flockstar : 120 Volt Converter : $189.99
- Faller Gras Fix : 9 Volt Battery : $249.99
- DIY Applicators: 2 D-Size Batteries, 9 Volt Battery, 120 Volt Converters using negative Ion Generators : $?

Building Your Own DIY Static Grass Applicator

- Materials List:
- Electronic Fly Swatter : *Harbor Freight, eBay, Amazon*
- Small Metal Kitchen Strainer : *Dollar Tree, Family Dollar, Big Lots, Deseret Industries*
- (2) D Cell Batteries : *Anywhere*
- Insulated Alligator Clip : *Radio Shack, Home Improvement Stores, Ace Hardware*
- 18-20 Ga. Stranded Wire : *Radio Shack, Home Improvement Stores, Ace Hardware*
- (2) 3/4" #6 Round Head Screws & Nuts – (4) Washers : *Home Improvement Stores, Ace Hardware*
- Small Ring Connector : *Radio Shack, Home Improvement Stores, Ace Hardware*
- 1/4" #4 Round Head Screw & Nut : *Home Improvement Stores, Ace Hardware*

- Tool List:
- 20 - 40 Watt Soldering Iron
- Soldering Flux
- Rosin Core Solder
- Wire Cutters
- Wire Strippers
- Crimpers
- (2) Needle Nose Plyers
- Phillips Screwdriver

- **Tool List:** *(Continued)*
  - Straight Screwdriver
  - Hobby Razor Saw
  - 3/32" & 1/8" Drill Bit

- **Disassembly**
  - Remove the screws holding handle together and separate top half of handle, leaving head and lower half of handle together.
  - Gently pull the head loose from lower handle. Note the color of the wires coming off the PC board. Remember "Green for Screen" and "Red for Lead"
  - Trim the two wires close to the PC board. The location of the wires will be used to connect the new leads to later.
  - Prepare the head by separating it and removing the screens. Throw out the inner plastic spacers and screens (these will not be needed).

- **Modifications**
  - Re-assemble the head and measure 2" using the small pin on the inside as the center point.
  - Trim the head down by sawing at a slight angle outward. You may need to use a small clamp to hold the head in place while sawing.
  - Using wire cutters, cut the handle of the strainer in half. Bend each side of the handle with two right angles that will fit inside the modified head. You will need to trim the ends of the wire handle to fit.
  - Sandwich the strainer between top and bottom of the head so that the edge of the strainer fits inside and the center pins touch the screen.
  - Drill a hole (1/8") on both sides of the head all the way through. Insert screws, washers (top and bottom) and tighten down with the nuts. Be careful not to over-tighten. These will act as a clamp to hold the strainer.

- **Wiring**
  - Drill two 3/32" holes in the bottom of the handle with the PC board. Locate the holes just in front of the board.
  - Unsolder the "Green" wire from the board. Feed some wire through the hole on the same side as the "Green" wire. Tie a simple knot in the wire to act as a strain relief. Cut the wire to length needed to reach the PC board. Strip and tin the wire then solder it to the board.
  - Place the head back on the bottom half of the handle. Turn the handle over and figure out the length of wire needed to reach the strainer. Strip the wire and crimp the ring connector to the wire and attach to the strainer with a short screw and nut.
  - Cut a length of wire (25" to 30") to use as the lead to the scenery. Remove the cover from the alligator clip and feed it down the wire. Solder one end of the wire to the alligator clip. Push the cover back over the clip.
  - Unsolder the "Red" wire from the board. Feed the wire through the hole on the same side as the "Red" wire. Tie a simple knot in the wire to act as a strain relief. Cut the wire to length needed to reach the PC board. Strip and tin the wire then solder it to the board.

- **Assembly**
  - Place the head assembly back on the pins in the handle. Check that all wires are inside the handle and

place the top half of the handle on the bottom. Once everything is back in place, replace the screws and add two "D" size batteries. Replace the battery cover and **You're Done!**

CAUTION - SAFETY FIRST !

When these units are on they can generate from **500 to 3500 Volts!** Never touch the screen while using the applicator. When you have finished, always touch the scenery lead to the screen to discharge the capacitor.

If you have children in the house, remove a battery or store the applicator in a safe place.

The applicator won't kill you, but it will give you a shock that may cause other accidents!

What is Needed to Apply Static Grass?
- **Basic Tools**
  - Glue : Elmer's Glue All, Matte Medium, Aleene's Original Tacky Glue
  - Water : Perrier, Evian, Dasani (Just kidding – plain old H2O works fine!)
  - A set of brushes from 1/4" to 1"
  - Mixing Vessel

- **Optional Tools**
  - Separating Mini-Vacuum or Cordless Vacuum
  - Vacuum Attachment
  - Tweezers : Preferably the angled head type

Tips For Applying Static Grass
- **White Glue Recipe**
  - Elmer's or other White Glue : 2/3 glue and1/3 water
  - Aleene's Tacky Glue : 1/2 glue and1/2 water *(Not recommended for large areas)*

- **Preparing the scenery base**
  - Apply the glue mix and static grass in areas no larger than 12 square inches. Any larger and the glue mix may soak into your scenery base.
  - When applying the glue mix, do not create straight edges in the area your working in. Seams will show and may give you a checkerboard look.
  - Apply the glue mix with rough, un-even edges. Seams are less likely to show and will give you a more natural look to your static grass areas.

- **Making the Connection**
  - You will need a way to make an electrical connection to the glue mix. A "T-Pin" is a great way for scenery created on foam or plaster shell. Bend the end of the "T-Pin" at about a 45 degree angle.
  - Use a small brad or finishing nail for scenery base created directly on wood. Drill a small hole and insert the nail in the hole. Make sure the glue mix is touching the nail. Bend the end of the nail at about a 45 degree angle.

- **Applying the Grass**
  - Hold the applicator no more than 3/4" to 1" above the scenery base.
  - Using a quick side to side motion, move over the entire area. Continue moving until the area is completely covered with an even layer of grass.

- If you're having trouble getting the grass out of the screen, use a pencil, dowel, paint brush handle or other non-conductive object to tap the side of the screen as you move.
- I usually wait 24 hours for the glue mix to completely dry. Take the vacuum and staying 1" - 2" above the scenery, vacuum up the excess fibers.

- **Keeping the Grass Off!**
  - Mask areas like roads and track where you don't want any static grass. Use a slightly moist paper towel to cover the area. Apply the grass and remove the paper towel after a few minutes.

- **Making Changes to Applied Grass**
  - If needed, you can make changes to the grass you have just applied by following these simple steps.
    1. Apply the grass as you normally would.
    2. Using tweezers remove grass from the areas where you don't what it.
    3. Grab just the grass and not the scenery base. Pull the grass up as needed.
    4. Make any repairs to the scenery base.

  - To remove grass from larger areas, use a pipette and a mixture of "wet water". Apply the "wet water" to area to be removed and wait 10 to 20 minutes for the mixture to soak in.
  - Using a small paint scraper or putty knife, remove the grass and scenery base from the area. Add your building or other scenery element and make repairs to the scenery base as needed.

Additional Information
- **Google is your friend!**   Go to www.google.com
  - Use search terms such as
    - "Homemade static grass applicator"
    - "Applying Static Grass"
    - "DIY Static Grass Applicator"

- **Youtube is another friend!**   Go to www.youtube.com
  - Use search terms such as
    - "Homemade static grass applicator"
    - "Applying Static Grass"
    - "DIY Static Grass Applicator"

- **Manufacturer Sites**
  - **Scenic Express :** www. sceneryexpress.com
  - **Woodland Scenics :** woodlandscenics.woodlandscenics.com
  - **Grass Tech :** www.grasstechusa.com (Includes Videos)
  - **Noch :** www.noch.com
  - **Heki :** www.heki-kittler.de (German)
  - **Busch :** www.busch-model.com/englisch/e-moba.htm (German)
  - **Gale Force Nine :** www.gf9.com
  - **The Army Painter :** www.thearmypainter.com

- **Email me with any questions :** luther7664@comcast.net
- **Check out my website :** northmontanaline.blogspot.com