How to Edit the NAA Dot Gain Control Targets in Adobe Photoshop

The purpose of this press test is to determine if the printing process is compliant with SNAP specifications. In order to achieve the SNAP certificate, the printer will need to have a good understanding of the process and hot to control the printing conditions. The goal from the SNAP committee is for all printers entering to achieve the SNAP Certificate. Dot gain control is a key element to control reproduction and image quality.

Step 1: Perform the Dot Gain Test and place the values in a chart. Create a chart for each individual color.

The dot gain control patch is a separate PDF called "dotgainsteps. pdf" and should be placed on page 1 in the box marked "place 4.5 X 4.5 dot gain palette file here". The dot gain palette has four patches of each color (cyan, magenta, yellow, and black) so that the resulting patches exhibit 25%, 50%, 75% and solid. The key here is to properly compensate in pre-press for dot gain on the press. The solid patch is provided to properly read dot gain.

Take the charts made by doing the Dot Gain Test and switch the input and output values. Set the original numbers aside for record keeping. The new output values are what the image needs to be adjusted to in curves to achieve a printed product without severe dot gain. Then graph the new values to see what the curve will look like before they are adjusted in Adobe Photoshop. The charts and graph will look similar to those below.

0

25

50

Input value



*Note: There will be a chart for each color (CMYK). The curves will need to be adjusted for each individual color.



63

75

100

Step 2: Open the Dot Gain Chart in Adobe Photoshop.

Check the file to make sure it is in CMYK mode.

Image
$$\rightarrow$$
 Mode \rightarrow CMYK Color

Step 3: Create a New Adjustment Layer for Curves.



A window will pop up stating that a new layer us being created with a few optional settings. Click "OK" to continue.

75C	75M	75Y		
	N	ew Layer		
Name: Curves	1			ОК
🗌 Use P	revious Layer to	Create Clipping	Mask	Cancel
Color: Non	e 🛟			
		0 1 100		

This will create a new layer in the file that will allow the image to be adjusted without completely altering it original data until all of the necessary changes have been made.

Step 4: In the Curves window, there is a drop-down box named "Channel." Click on the arrow. Shown is "CMYK" along with each individual color. This is where the color to be worked on can be selected. Highlight a color to work with first and click on it. The color chosen will appear in the channel box.





There are two ways the graph can be altered to create the curve needed. The first is to click on the line in the graph, and try to drag it to the correct input and output values. The second is to type in the correct input and output values.

To do this, use the mouse to make a dot on the line in the graph. Notice the boxes that appear next to "Input:" and Output:" underneath the graph. Look at the chart made for the color that is being worked on. In the "Input:" box type the number 25. In the "Output:" box type the measured number. **The typical input numbers are: mid-teens for 25%, mid-30s for 50%, mid-60s for 75%*.





That covers the middle values. For 0 and 100, the points are already created. Notice that both the bottom left corner and top right corner have points. To adjust these, use the mouse to click on each and make sure the input and output values match the chart.

Notice that the curve graphed with the chart looks very similar to the one on the screen.

Step 5: Repeat these steps for the other 3 colors.

When all of the colors have been adjusted, click on "OK" to go back to the dot gain control targets file.



Step 6: Now we need to "flatten" the layers. By correcting the Curves, a total of two layers were created. The first is the layer with the image on it also known as the "background." In this case, it is the Dot Gain Control Targets. The second layer is a layer created to adjust the colors without completely altering the original file information. This is useful in the event that there were mistakes made or to allow for adjustments that need to be made.

It may be useful to save a copy of the file at this point with both layers as an .eps file. Should any changes need to be made to the values, rather then starting over, all that needs to be done is double click the square with the graph in it located in the curves layer in the layer panel. The layer panel is located at the right towards the bottom.





To "flatten" the layers, select Layer in the top menu bar and then "flatten image."



Notice in the layer panel that now there is only one layer: Background.

Step 7: Now it's time to save. If using a .pdf workflow, save the file as a .pdf to be inserted into the layout.

