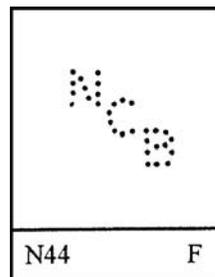
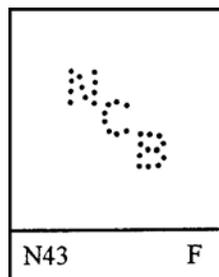

Procedure to Electronically Compare Perfin with Catalog Image (using Photoshop Elements software) (Ken Masters)

I. Copy Image from Catalog into Photoshop:

1. With your scanner, scan the Catalog page that has the particular pattern you wish to compare to the unknown to your computer. Save the file, usually as a .JPG file, to where wish on your hard drive. Scan in the color (RGB) mode - not black & white or grayscale. I prefer at least 300 ppi resolution on the scan. Lower resolutions may not work as easily or give the desired results.
2. Open Photoshop Elements (Photoshop) in the Edit mode.
3. With the "Crop" tool in Photoshop, crop the pattern or patterns you want to use for the comparison. This crop does not have to be precise, just outside the border of the pattern. We are going to clean it up in step #5 below. "File, Save As" each of the patterns in an individual .JPG file. For example, patterns **N43** and **N44** as shown below.
4. Photoshop will place these images in the Photoshop Bin (at the bottom of the screen) for future use as long as you do not "File, Close" or "File, Close All" in Photoshop. It may save a step or two to leave them in the Photoshop Bin.
5. To get a consistent border around the image, use this procedure:
 - Crop just inside the border of the Catalog pattern. Then go to "Image, Resize" and select "Canvas Size."
 - In the "New Size" boxes, make sure "Relative" is checked. Now type in the size of the border you wish to add - one number for width, and the second number for height. For Catalog images, I usually use 0.035 inches in these boxes.
 - Now select the "canvas extension color" - the pull-down menu says "white," "black," "gray," and "other." For a black border, select "black."
 - Select "OK," and the image is expanded the amount you entered as a black border.
 - Now, "save" your work; either over the top of what you saved in step #3 above or as a new file.
6. To get a "pure" black & white image of the pattern while in the color (RGB) mode and eliminate any of the gray spots that sometimes show up around the letters in the perfin use the following procedure:
 - Open the .JPG file of the image or select the image from the Photoshop Bin at the bottom of the screen.
 - Select "Enhance, Convert to Black and White."
 - There will be a "before and after screen." Select the "style" desired - I usually use "Newspaper" for this one. After you get the style you desire, close the screen with "OK" and you will have the image in black & white in the color mode.
 - Now, open "Enhance, Adjust Lighting" and then select "Levels."
 - You will see a small screen with a graph of the 256 color inputs along with some selections at the right. First select "auto," then select the left eyedropper (this one adjusts black). Carefully go to one of the black holes and click on it with this eyedropper. This will adjust everything in the image with that "color" to black. You can also adjust the "white" by selecting the right eyedropper and clicking anyplace with white. If this still does not get rid of all of the gray spots, you can carefully adjust the slider below the small screen to intensify the black or the white as desired. If everything looks like you want it, close the small screen by selecting "OK. If you do not like what you have, "cancel."
 - Now, "save" your work; either over the top of what you saved in step #5 above or as a new file.



Procedure to Electronically Compare Perfin with Catalog Image (cont.)

II. Prepare Unknown Perfin for Comparison - from perfin on a cover:

7. Scan the cover at 300 ppi resolution in the color (RGB) mode (or the same resolution as you scanned Catalog image as you used in step #1 in previous section).
8. Save the scan as a .JPG file in the folder with the Catalog images.
9. Open the .JPG file of the cover in Photoshop.
10. Roughly "Crop" around the stamp with the perfin. Using "save as," save the cropped image to file with the stamp only. This prevents you from writing over the scan of the cover.
11. Straighten, "flip," or otherwise adjust the orientation of the cropped stamp to match the basic vertical and horizontal orientation of the Catalog image of the perfin using this procedure: (It is not necessary to match the exact orientation of the Catalog image, just get close.)
 - Go to "Image, Rotate."
 - If you want to adjust the orientation any way except 90° Right or Left, etc., select "Custom."
 - Enter a number (can be decimal less than one) in the "angle" and then "right" or "left." Then select "OK." Keep doing this as a trial and error procedure until you get the orientation you want.
 - Save the image - either as a new file or over the top of the cropped image in step #10 above.
12. Crop this stamp with the unknown image to just outside the perforations of the stamp and save. (This step is optional, but handy if you want to include the stamp in your presentation.)
13. Convert this image of the stamp to black & white in the color mode. Use the procedure outlined under step #6 on the previous page, except you may want to select something other than the "newspaper" style. The "newspaper" style tends to wash out the perfin holes to where they are difficult to see. Also, do not complete the last steps starting with "Enhance, Adjust Lighting" as there is no need to enhance this black & white image.
14. Now, using the black & white image, convert the perfin holes to a color by:
 - Expand the size of the image on the screen to where the perfin holes are large. I have my copy of Photoshop Elements set to use CNTL+ to expand and CNTL- to shrink.
 - Select the "paintbrush" tool. Under this select a "basic" brush style - gives you a round brush.
 - Enter a size of the paintbrush to use in the "size" box. With the cursor, move the paintbrush over a perfin hole. The paintbrush should be an open circle at this point. If the size is not correct, go back and adjust it in the "size" box until you get what you want.
 - At the lower left of the screen, you will have a "foreground" and "background" selection overlapping squares. Select the "foreground" square and a color pallet opens. Select the color you want to paint the holes - I usually use the deepest red. Select "OK" and the "foreground" square will be the color you selected.
 - To the right of the "size" box, is a "mode" box. Open this and select the mode you wish to paint. If the holes in the stamp being worked on are dark, select "Lighten." If they are light, select "Darken."
 - To the right of the "mode" box is an "opacity" box. For this exercise, select 100%.
 - Now, with your mouse carefully move the paintbrush over one hole and click the left mouse button. (Sometimes, it is necessary to click the left button two or three times to get what you want.) The selected hole should turn the color selected. If nothing happened, check to make sure the "Lighten" or "Darken" are correct. If the holes turn the "background" color, hit "undo" and change the "background" color to the desired color using the steps above. Now, carefully paint each hole with the desired color.
 - Save your work, probably as another file with the perfin as colored holes.

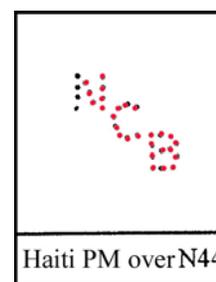
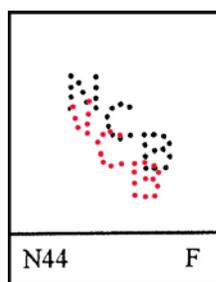
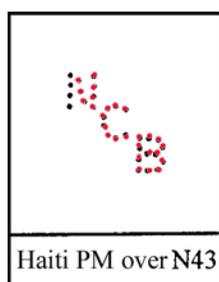
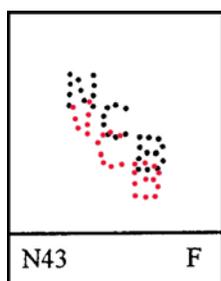


Images at left shows progression
of stamps discussed above.

Procedure to Electronically Compare Perfin with Catalog Image (cont.)

III. Compare Unknown with Pattern(s):

15. With the “Magic Wand” tool, select one of the holes in the image from step #14. That hole will be surrounded by “marching ants.” (In this step, it is especially important to expand the image on the screen to improve the selection of only the colored hole.)
16. Go to “Select, Similar” and all of the colored holes should be surrounded by “marching ants.” If other parts of the image have “marching ants” only, hit “undo” twice, select another hole with the “Magic Wand” and then do “Select, Similar” again.
17. Go to “Edit, Copy.” This copies the colored holes only to the clipboard.
18. Double click on Catalog pattern in Photoshop Bin (or open the pattern from the working file) that you want to compare with the unknown.
19. Go to “Edit, Paste” and the copied unknown that was on the clipboard is pasted over the known pattern. This will not be lined up, just pasted over the known pattern. This will be in “Layer 1” and the known will be in the “Background” layer in Photoshop. See below.
20. Select the “Move” tool in Photoshop and click over the image. There will be a dashed line around the unknown that you just pasted in.
21. With the keyboard “arrow” keys, move the pasted image over the known. You may need to use the “curved double headed arrow” at one corner of the pasted image to rotate the unknown for a better possible fit. See below.
22. To save the completed comparison, go to “Layer, Flatten Image.” This flattens the two layers into one. Now “Save As” the flattened image as a .jpg file in your working folder. If you do not “flatten” the image, it is saved as a multi-layered .PSD file which is not compatible with most other software.
23. Note when comparing the two overlays, there is very little, if any, black from the known pattern showing on pattern **N44**. Conclusion, the unknown is pattern **N44**.



IV. Other points and comments:

1. This procedure uses Photoshop Elements software. There may be other software packages that this procedure could be adapted to, but that is not known. A similar technique using Corel PaintShop Pro software was published on pages 562-565 of the June 2012 issue of *The American Philatelist*.
2. If unknown is a loose perfin and not on a cover, scan the perfin over a colored (red) background so the color shows through the holes. This eliminates “painting” the holes and saves some time.
3. This procedure is based on the article published on pages 26-27 of March 2002 *Bulletin*. HOWEVER, do not complete the last step of the procedure in the article where one turns the dots (holes) to black. You want the holes in some color for the comparison to a Catalog pattern.
4. Both the Catalog pattern and scan of the unknown MUST be in the same resolution. I find that 300 ppi is usually OK. Occasionally, I will go to 600 ppi where the holes in the stamp are particularly hard to see of if there are a lot of partial holes and dimples. Less than 300 ppi is usually difficult - eBay images are usually a problem in this regard.
5. As was mentioned several times above, it is usually very helpful to expand the image of the item on the screen as much as practical. This is particularly true when working with single stamps and perfins.