**Modifying a Color Map**

If you don't like the color maps that I've provided (as may well be the case in this version), you can try your own hand at making one.

The color map used by the driver consists of a 9X9X9 array mapping RGB space to corrected RGB space. The color modification screen displays only 5X5X5 colors. The other colors in the map are filled in by interpolation in this version. The driver does a trilinear approximation to map an arbitrary color thru the correction matrix.

The central part of the display contains the 125 colors you can modify. Each color is represented by 2 semicircles. The top semicircle is the color before mapping, and the bottom color is the color after mapping. You can select any individual color and modify it using the standard color panel. Remember, what you see on the screen is not what you will get on the printer!

There are also several operations you can perform on the entire color map. Keep in mind that some of these operations are not reversible. If you increase the brightness then decrease it, you will NOT have the same color map as you started with due to clipping of colors >1.0 or <0. Brightness and contrast produce roughly a 5% shift, but are otherwise pretty self-explanatory.

Smooth will cause the each color to be mixed a little with its nearest

neighbors in colorspace.

Reset all will return the color map to the uncorrected state. Revert will revert to the last saved version of this color map. Default will revert to the color map that came with the program. Use will cause the printer to use the current color map, but will not save the color map in a permanent file.

Gamma is a nonlinear correction term. If 0<Gamma<1 the color map will become brighter and if Gamma>1 the color map will become darker. The formula used is $f(c)=c^{\gamma}$.

The corrected color map included with the program was brightened by ~10% then gamma corrected with gamma=.3333 (the recommended value for this printer). After this various colors were hand-tuned (by eye).

For those who are interested, the default color maps are stored in the application in files map?.hpcmap, where ? is a number. Each user's modified versions of the color maps are stored in ~/Library/HPColorCorrect/map?.hpcmap. The file is a binary dump of a 9X9X9X3 array of floats (in intel byte order).