

Large Format Printing Seminar

Rob Dublin & Marty Markoe, DigitalPrintMagic, Inc., 2006, V2

Who we are?

- Marty Markoe and Rob Dublin
- Photographers with years of experience
- Two years with a large format printer

Why print large?

- Large prints take are impressive, distinct from common 8X10, 11X14
- Good images look exceptional
- Not all prints should be large
 - Intimate images, those you want to view up close
 - Snapshots

Image considerations

- Resolution (at least 200 ppi; we usually print between 240-300ppi.
- Exposure and focus should be spot on (e.g., under exposure=noise)
- Small noise grains, especially color noise, become large noise blotches.
 - o Noise reduction is very important. Many programs do it well.
 - o Underexposure=noise
- Any small defect becomes a large defect.
- Quality is subjective (we have printed 20X30 images from 2-10 MP camera images)

Preparing the image, i.e., workflow

- Before you re-size
 - o Get best quality sources as possible
 - 16 bit raw or scans
 - Tiffs
 - High quality jpegs
 - o Noise reduction
 - o Defect removal
 - o Tonal correction (Shadow/Highlight)
 - o Color and hue correction (levels, hue/saturation)
 - o Contrast (levels, curves)
 - o Local tone and color correction
- Determining image size as related to final display size
 - o Think of frame dimensions; large images usually look better with larger matte borders: 4-5 inches

- Our printer prints max 24 in. wide but not full bleed; largest image we recommend is 22 in. wide
- Upsizing and sharpening, a balance between improving image and introducing artifacts
 - We use Photoshop Bicubic Smoother or Genuine Fractals to enlarge
 - Sharpen after upsizing to prevent nasty sharpening artifacts. Hi res and larger images generally need more sharpening (tend to use a higher amount and/or higher radius). Always difficult with large images from small cameras.

Making a print

- Prints depend on printer, paper, and ink
- Color management, matching your display image to your output image
 - Goal is what you see on screen is what you print.
 - We use Colorvision Spyder Pro 2 for monitor. We still have image brightness problems with our LCD monitor. Most prints need a final brightening of 10-15 in mid point of curves.
 - Higher end printers are calibrated to ensure uniformity of ink distribution from printer to printer. HP has built in spectrophotometer that calibrates the printer for a paper and ink combination (Epson large format printers are linearized, calibrated, at the factory). Must be done when replacing print heads and on a periodic basis.
 - Profiling is different than calibration, it determines how all colors are rendered, and for a particular ink and paper ensures more accurate color output. Use icc profiles, either manufacturer supplied or custom. Need to actually test to see what works. Print a standard test print (HP provides one) and gray-scale wedge.
 - Our experience is that Custom profiles were not better than standard profiles. Better in some areas, worse in others, on the whole worse.
- Adjusting viewed image to match print
 - Use soft proofing:
 - Choose View->Proof Setup -> Custom. Select profile you will use for printing and intent. Check black point compensation.
 - Click on View->Proof to see how it will print.
 - Click on Gamut Warning to see out of gamut colors indicated by gray patches.
 - Each printer has idiosyncrasies with out of gamut colors, e.g., HP has problems with bright blues making them purple; Epson 2200 has problems with bright red making those areas pink.
- Choosing paper (HP 130 only has 2 papers that can be considered archival)

- Paper must be suited for ink.
- Luster paper is our main paper; good balance between traditional photo look and great color.
- Printer setup, paper size, profile for paper and ink;
 - RIP (Raster Image Processor, developed for postscript printing) or no RIP. For volume printing and on some printers for more accurate B&W, RIP is helpful. Newer printers have reduced the need for RIP. For multiple copies we use Qimage, low-cost printing program.
 - For our highest quality images, we print from Photoshop, let it do printer color management and turn printer color management off in the print driver.
 - Make small proof and or small section of final size output.
 - HP is very frugal with ink and can change cartridge in middle of print
 - Print heads on HP are replaceable and must do on regular basis. We have lost prints when print head goes bad in middle of print. Sometimes there is no warning.
- Handling roll and large sheets
 - Prevent creasing
 - Drying
 - De-curling

Display considerations

- Protective coating (Premier Art's Print Shield is typical), especially for canvas that will not be under glass.
- Mounting
 - Over-matting (cutting mats to exact size) is a challenge on large prints. A 1/16" error caused a customer to complain.
 - Other options like Plak It for laminating and applying directly to pressed board.
- Framing (must support heavy work)
 - Glass handling must be careful to avoid bending and breaking large sheets.
 - Frame types – we use domes for large output because they are more rigid and prevent glass from flexing – very important.
 - Transport.
 - Hanging with heavy toggle bolts. And double wire.

Note: keep a first aide kit