The Art of Decor & Fine-Art Reproduction

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Who are We?

What about you?

- What do you do?
- Do you print now?
- What's your experience level?

Basic Seminar Outline

- Background of the Giclée & Reproduction Process
- Business side of Printing, Opportunities, ROI
- Basic Workflow Demo
- Color Management Overview
- Digital Capture Overview
- File Prep Overview
- Printing Overview
- Finishing Overview

Background of Giclee

- *Very early 90's*
- *First Giclee Printers were Iris Printers*
  - *Very Expensive $100,000 plus, slow, great quality*
- *“Digitized” original art with film/scanners*
  - *Professional photographers shot 4x5 or 8x10 film, then used drum scanners to digitize.*
- *Process was long, difficult, and expensive*

Business of Giclee

- What are the components of the process?
- What do I need to invest in?
  - *Minimum requirements*
  - *Ideal, best solution*
- What services can I offer?
- What products can I offer?

Core components of Art Reproduction

- Input
  - *Camera, Scanner, Customer File*
- File-Prep
  - *Mac or PC, Photoshop, Calibrated Monitor*
- Output
  - *Printer – Canon, Epson, HP, etc.*
- Finishing
  - *Laminator, HVLP Spray Booth, Roll-on*

What do I need – *Bare Minimum*?

- An appropriate printer
- A computer with Adobe Photoshop
- Basic Printing and Color Knowledge

What do I need – *End to End Solution*?

- Digital Capture System (camera), Scanner or both
- Mac or PC with Adobe Photoshop & ICC Profiles
- Calibrated Monitor
- Viewing Booth or Station
- Appropriate Printer
- RIP Software
- Trimmer/Cutter/Stretcher
- Liquid Laminator

Business Side of Printing

What services can you offer?

- Digital Capture
- Scanning
- Retouching
- Printing
- Embellishment
- Finishing

Business Side of Printing

"How to Print Money!!!"

- Canvas, Fine Art Media
- Wall Murals and Graphics
- Floor Graphics
- Films
- Metallic Media
- Textiles

Input Options

- Flatbed Scanner
- WideFormat Scanner
- Digital Cameras – more later
- Let's not forget, Cell Phones?

Cutting Edge Technology

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Digital Camera-Capture
Components

- Good Digital Camera & Lens
- Good Tripod or Camera Stand
- Studio Lights - w/reflectors
- Light Meter - *optional*
- ColorChecker Passport
- Polarizing Gels
- Polarizing Filter for Camera

Digital Cameras

Which type do I really need or should I buy?

- Consider your customer – Mainstream or Critical Quality?
- What type of capture...archive, small prints?
- Who is your competition in the area?
- What size are your originals, prints?
- What's your budget?

Digital Cameras

Which type do I really need or should I buy?

Let's See Some Files!

What kind of Printer?

- Aqueous
- Solvent
- Latex
- UV

Giclee Printers
Choosing? Consider this...

- Quality – Who's my customer?
- Size – How large will I want to print?
- Cost of Hardware – How much do I want to invest?
- Cost of Ink and Media – Large volumes?
- Production – How fast do I need to output?
- Flexibility – What kind of media to print on?

RIPs
to RIP, or not to RIP?

- What is a RIP?
- Do I have to have one?
- Why would I want one?
- How much do they cost?

RIPs
Which one?

- Colorbyte (ImagePrint)
- Colorburst
- Onyx
- EFI
- Mirage
- Many, Many, More....

Reproduction Workflow

“Lollipop Color”
vs
“Critical Color”?

Who's the customer?

Reproduction Workflow

Demo "Lollipop" Workflow

“Critical” Reproduction Workflow

But first, lets talk color management fundamentals

Color Correction & Management Essentials

- The Right People
  - www.xrite.com/hue-test
- The Right Body Chemistry?
- The Right Knowledge
- The Right Environment

Light Booths

- X-Rite QC Light Booth - $1895
  - 5 different light sources
  - 25”x19”x15”
  - 3min warm up time

Solux Lights (Tailored Lighting)

- Inexpensive compared to light booths
- Flexible
- May work in existing fixtures or purchase together

Color Management

- ICC Compliance & Color Management is the most important part of the reproduction process. WHY?
  - Saves Time
  - Saves Money
  - Produces Best/Most Accurate Results
  - Allows Repeatability/Consistency

Color Management
Key Terms, Components, & Definitions

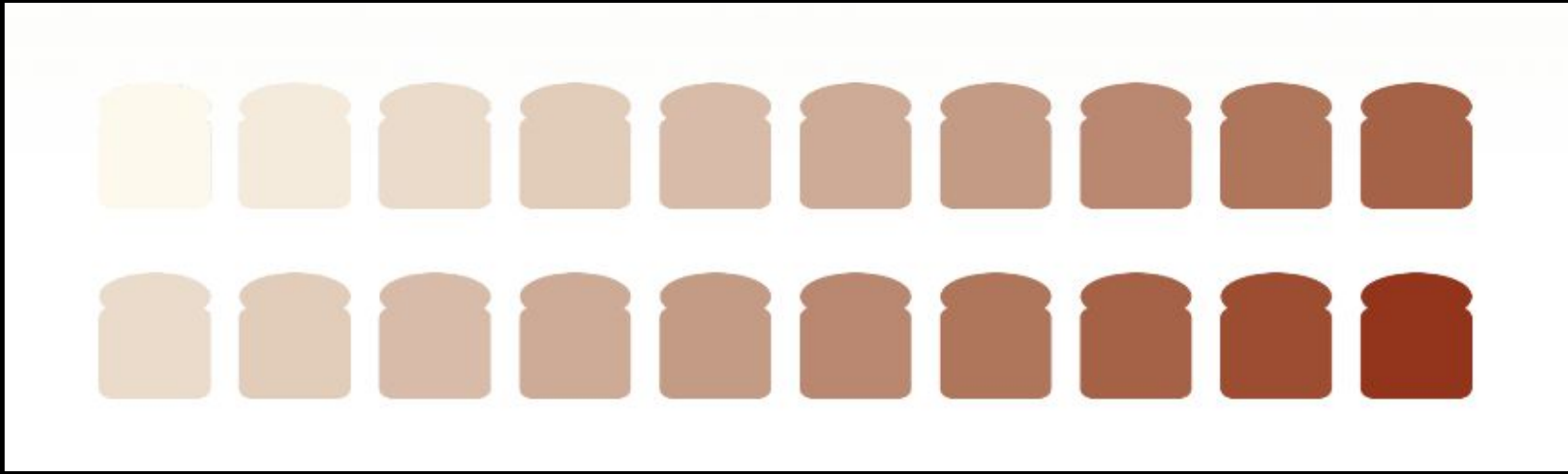
- Color Models – RGB, CMYK, LAB, etc.
- Color Spaces – sRGB, AdobeRGB, SWOP, etc.
- Color Engines – Adobe ACE, Apple, RIPs, etc.
- Color Profiles (ICC Profiles) – Infinite number!
- Color Profiling Systems – Hardware & Software

Color Management
Why do we need ICC Profiles?

- Cameras & Scanners – See color uniquely & differently
- Monitors – Display color uniquely & differently
- Printers (combined with ink & paper) – Print (reflect) color uniquely & differently
- Toasters toast differently…huh?

Color Management

…is like making toast!



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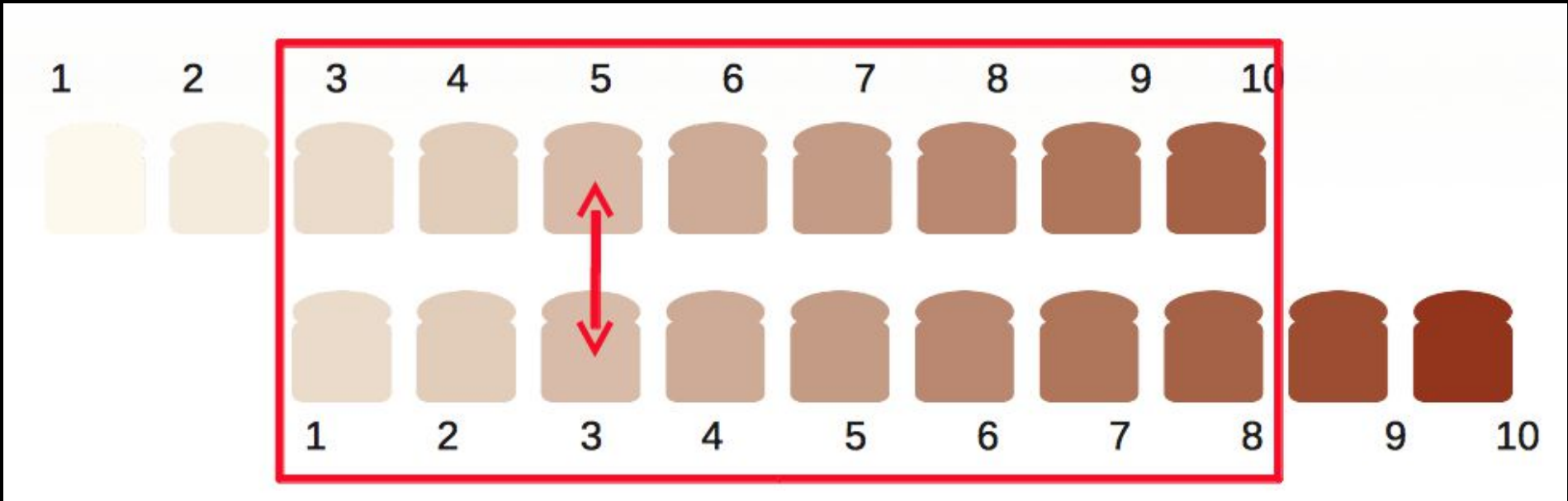

Color Management
Types of ICC Profiles

- Input Profiles: Scanner & Camera
- Working Space Profiles: sRGB, AdobeRGB 1998, ProPhoto RGB
- Output Profiles: Printer–Ink—Paper Combinations
- Monitor Profiles: CRT & LCD (LED)

Color Management
Types of ICC Profiles

Let's Look at some different ICC Profiles!

Color Management
How does it work?

- For Color Management to work, 2 things must be known: source and destination
- Once these 2 things are known, a translation takes place by the color engine.
  - Camera to Working Space
  - Working to Monitor Space
  - Working to Printer Space

Color Management
Should I *buy a Profiling System?*

- Monitor Calibrators - *Yes*
- Scanner Profilers - *Maybe*
- Digital Camera Profilers - *Maybe*
- Printer/Media Profilers - *Maybe*

Color Management
Monitor Calibration Choices

- Bad - *Laptop, TV, or cheap monitor*
- Good - *iMac (or store bought PC monitor) with 3rd party calibrator*
- *Very Good – Very good LCD Monitor with 3rd party calibrator*
- *Best - Professional Graphics Monitors*

Color Management

Demo Monitor Calibration

Color Management
Monitor Calibrator Options

- Pantone Huey
- X-Rite ColorMunki Display
- X-Rite i1 Display Pro 2
- Datacolor Spyder

Color Management
Monitor Calibrator Essentials

- Choose High Quality Monitor
- Choose Correct Color Temperature
- Choose Correct Luminance/Brightness
- Choose Appropriate Gamma
- Calibrate Regularly and be Consistent!

Capture to Finish
Step by Step Overview

- **Capture with Digital Camera or Scanner**
  - *Apply white/gray balance, apply camera profile, input sharpen raw data.*
- **Open in Photoshop**
  - *Immediately soft proof, then "save as" for applicable media type*
- **Size for Output**
  - *If you need to enlarge, use step interpolation in Photoshop Resample*
- **Color Correct**
  - *Follow correct color correction procedure/order using adjustment layers*
- **Output Sharpen**
  - *Use Unsharp Mask or Smart Sharpen to sharpen for output size*
- **Print**
  - *Use RIP or Photoshop print and apply output/media profile*

Digital Capture Setup / Options

Questions?

Color Management
Before we start working on file
-Setting up Applications

Adobe Photoshop CS5,CS6, or CC

Reproduction Workflow

"Critical" Workflow

File Prep, step 1

Open file in Photoshop - *Soft Proof*

- Soft Proofing is using Photoshop, a calibrated monitor, and an ICC profile for your printer/media to “preview” how the color will look on your final print.
- Not perfect, but helps tremendously.

Let's see how!

File Prep, step 2 – Size for Output

First what is DPI, PPI, LPI?

- DPI is used in desktop printing.
- PPI is the data in actual files from cameras or scanners.
- LPI is used in commercial printing presses.

  - These Resolution Descriptions are “related” to each other but are NOT equal!!!

File Prep, step 2 – Size for Output
Background - Resolution for Printing

- Epson
  - Best for fine art - 240PPI at Size (vectors 360ppi)
  - Acceptable 180PPI at Size
  - Anything over 240 is overkill (except for text, fonts, vectors), anything under 180 will sacrifice quality
- Canon
  - Best 300PPI at Size
  - Acceptable 200PPI at Size
  - Anything over 300 is overkill, anything under 200 will sacrifice quality

File Prep, step 2 – Size for Output

How to Resize

- Use Photoshop's Image Size Menu
- “Interpolate” by checking Resample Box
- Quick method - Type in desired output size and resolution
- Better method – Step Interpolate
- 3rd Party Resizers?

Let's see how!

File Prep, step 3 – Color Correct
Background - Color Fundamentals

Red – Cyan

Green – Magenta

Blue – Yellow

File Prep, step 3 – Color Correct

Color Correct in this order!

- End Points – White Point, Black Point
- Density – Brightness, Contrast, Tonality
- Color Cast – Neutrality or Color Cast
- Color Families – Specify Primary Corrections (All Reds, All Yellows, etc.)
- Color Specifics – Specific Color Corrections (Light Reds, Dark Reds, Etc.)

File Prep, step 3 – Color Correct

Color Correction – Use these Tools & Use Adjustment Layers in Photoshop!

- End Points – Levels or Curves
- Density – Curves
- Color Cast – Curves
- Color Families – Selective Color, Hue-Saturation
- Color Specifics – Replace Color

Let's see how!

File Prep, step 4
Sharpening Images

- Input Sharpening Raw Data
- Output Sharpening in Photoshop

Let's see how!

File Prep, step 5

Saving Files - File Types

- RAW or DNG
- JPEG
- TIFF
- PSD
- PostScript – EPS - PDF

File Prep, step 5

Saving Files – embed ICC profiles

- Always embed your working space ICC profiles when you save you working files.

Why? Let's See

Customer files

Murphy's Law is highly prevalent here...

“...whatever can go wrong, will go wrong”

Customer files

Pitfalls -

- Dark files (lollipop or Critical)?
- Low Resolution
- No embedded source profile

How do we address these?

Print Finishing

Gary Barker

Print Finishing – Why?

- Protection (cleaning, scratching, etc.)
- Enhancement (finish look and feel)
- Presentation (mounting, framing)
- Profitability

Finishing Options

- Over Laminating Films
- Aqueous Based Liquid Coatings
- Embellishments and Enhancements
- Stretch or Stretch and Frame
- Mounting

Pressure Sensitive Laminating Films

- Typically a vinyl film with a permanent adhesive on the back wound on a silicone release liner.

- Adhesive is pressure sensitive (cold) applied via a cold roller laminator.

- Application equipment is low cost, and available in a number of sizes.

- Available in many finishes (gloss, matte luster etc.).

- Can be used indoor or outdoor, depending on type.

Pressure Sensitive Mounting Adhesives

-Typically a double-sided adhesive (Similar a wide roll of double sided tape), wound on a silicone release liner.

-Used to apply a printed graphic to a variety of rigid substrates.

-Usually a pressure sensitive (cold) adhesive.

-Can be applied with a cold roll laminator.

-Applications include mounting to Foam Core, Gator Board or Acrylic (Face Mounting).

Laminators

- Pressure sensitive materials are applied via the nip between two silicone rubber rollers.

- The rollers mate the materials evenly, applying the required pressure in a wrinkle and bubble free manner.

- Laminators vary in cost and features. They type used depends on budget, volume of work, and type of application.

- Larger machines have automated take up, and feed features.

Aqueous Liquid Coatings

-Aqueous coatings (like film laminates) protect, enhance and or alter a printed graphic.

-An acrylic aqueous coating that is applied to a printed image.

-Water based, it cures through drying.

-A good solution for images that are textured (Ink jet canvas) or images that a less visible finish is desired (as the finished coating is much thinner).

Aqueous Coating Equipment

-Coating equipment is superior to hand applying (rolling or spraying) for several reasons.

-Mechanically applying the coating can save coating waste up to 50%, applying the coating in a neater, uniform pattern and save on labor costs.

-Mechanical Coaters come in smaller, low volume machines as well as larger high volume equipment.

-Mechanical Coaters are designed work on inkjet canvas, fine art papers, vinyl and other wet strength substrates.

Profitable Finishing

The ability to finish properly allows you to create a valuable revenue stream. Proper techniques, materials, and equipment will push your brand out in front of others in the marketplace, and help make your company more profitable.

Expand your Product Offerings

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Dye Sublimation – What???

- Multi-step process
  - Print
  - Press

Dye Sublimation - Products

- Photos/Art on Metal
- Photos/Art on Wood
- Photos/Art on Fabric
- Photos/Art on Mugs, Hats, Mouse Pads
- Photos/Art on Hundreds Gifts & Promotional Items

Dye Sublimation – What do I need?

- Dye Sublimation Printer (compatible)
- Dye Sublimation Inks (for specific printer)
- Dye Sublimation Paper
- Heat Press – desired size
- Compatible Blanks – metal, wood, fabric, etc

Dye Sublimation – Systems

- Basic 8.5x14 System - $949
- Tabloid 11x17 System - $2,999
- Medium format 24” System - $6,500
- Large format 44” System (no press) - $7495
- Large format 64” System (no press) - $13995