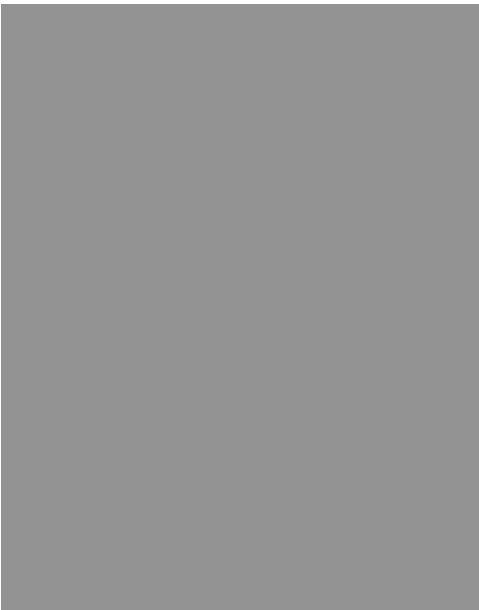# FLAAR Reports

How to SUCCESSFULLY
Print Directly onto a Door
With a Wide-Format Inkjet Printer

CONTENTS

Caption for cover page: Printed wooden doors with Durst Rho 160 at SFC Graphics, Toledo, Ohio

Introduction

At Photokina trade show in Germany, one of the exhibitors had printed a mahogany tropical wood grain pattern on a door, with a UV curable ink printer. This image of the mahogany turned an ordinary $30 Home Depot masonite door into a $3,000 custom-made door.

Leggett & Platt, manufacturers of half-million dollar UV-curable ink printers, routinely exhibit window shutters, venetian blinds, and a diverse variety of other kinds of architectural and interior decoration items: all run through an inkjet printer. Indeed by the time of the ISA 2005 trade show there will probably be a dozen printers that can easily print on doors, windows, even onto bricks and stones, as well as wall panels, ceiling tiles, and floor carpeting.

Since FLAAR has a heritage in architectural photography, especially related to architectural history, we are interested in any technology that can decorate, or reproduce, architectural elements. We even have premium publications in our UV series that list all the applications of UV-curable ink flatbed printers for architects and interior decorators.

Quick Lesson in Reality

You cannot print any image that has any white in it.

I repeat, with UV curable ink, you cannot print any image which has any white. This includes any photograph with highlights or light areas.

The reason is that "white" normally comes from your inkjet paper, which in 99% of the cases is white or off-white, or at least light colored (some artist's canvas is slightly yellowish).

If you are printing on
- aluminum,
- marble,
- or any substance that has its own natural surface color,

this surface color will produce an undertone that is visible through the ink. So a yellow image on top of a wooden door will look dirty pale yellow. Besides, you don't get the pop of colors you expect because there is no inkjet receptor coating (nor would UV-curable ink interact with such a layer even if there was one).
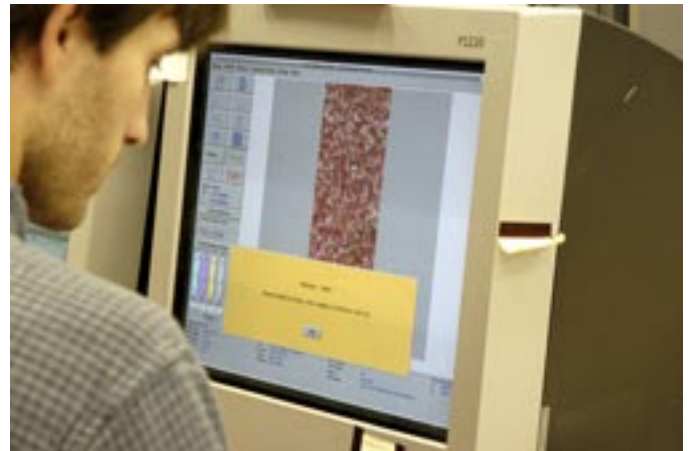
The reason a normal Epson or HP looks so colorful is because the chemicals in the ink interact with the chemicals spread on the surface of the paper by the company that manufacturers the media. But a wooden door from Home Depot has no inkjet receptor coating.

How many times have you printed directly onto a wooden door with your inkjet printer? Since this was the first time I had ever printed on a door it was a useful experience. You know the truism, "you learn from your mistakes." Nonetheless, UV-curable ink printers are growing in popularity and FLAAR intends to acquire one during 2005. We have not yet decided which brand we will feature, but we have definitely learned which brands we will not feature.

We taught ourselves about UV-curable ink printers by immersing ourselves in learning by spending 10 days at DRUPA printer trade show in Dusseldorf, Germany, in May 2004. We then attended every major trade show in the US and Germany, such as 6 days at Photokina in Cologne. As a result we have prepared a total of 22 new reports this autumn to add to those already finished over the summer (see the final page of the present report that pictures all the FLAAR Reports on UV-printers).

Alternatives

How could we have printed on this door otherwise? And achieved a brighter image?

- First, we could have tweaked the image, such as boosting the saturation.
- Second, we could have spray-treated the surface of the wood and then run it through an Encad NovaJet 850.
- Third, we could have painted the entire surface of the door white.
- Fourth, we could have printed on glossy paper and applied the glossy paper to the door.

But I was determined to "print directly onto a Home Depot door" and that is precisely what I did.

If you had selected option 3, painting the door white, be careful not to get brush strokes or any marks that show a human did the painting or coloration. You need a white surface to print on, because the natural color of wood is dark, and the ink is not opaque enough to cover the dark wood totally. So even the grain of the wood shows through to some degree. If you paint the door, your brush strokes will also show through.
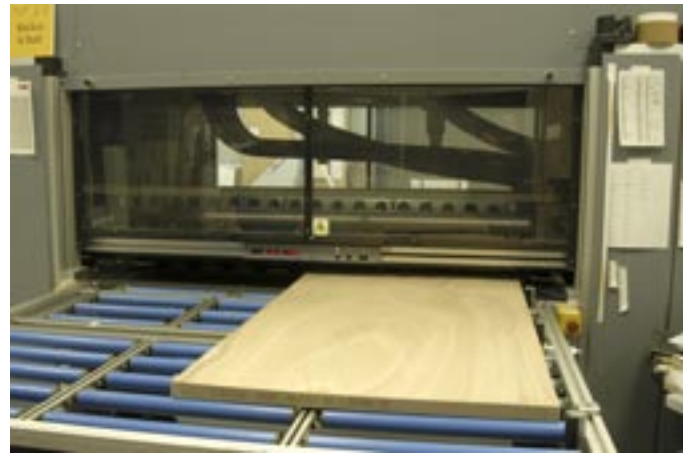
Durst Rho 160 at SFC Graphics, Toledo, Ohio. If you need any material, thick or thin, printed upon, SFC can handle it with this sophisticated UV-curable ink flatbed printer.

The ink is not opaque enough to cover over the wood grain pattern nor the overall brownish color of the wood. So, unless you painted the door white, there was no way to achieve a bright result. But we went ahead and did the print directly on the natural wood surface, to see what it looked like.

Once we realized that to print on the wood surface (color) that you had to have dark colors, we decided to experiment with a light colored image, in this case yellow. We knew it would be "discolored" due to the wood coloration and grain pattern, so we wanted to show the before and after. Thus we printed on only half the door.

Here is the set-up in the FLAAR facility with the Cruse reprographic digital camera system doing the photography of autumn leaves. This was a separate project of Nicholas Hellmuth, to experiment with photography of textures and 3-dimensional surfaces. Since these files were about 390 MB at 36 x 48 inches, they had enough dpi to be re-sized to print at the 80 inch length of a standard interior door from Home Depot.

CLICK HERE TO ACQUIRE FLAAR REPORTS

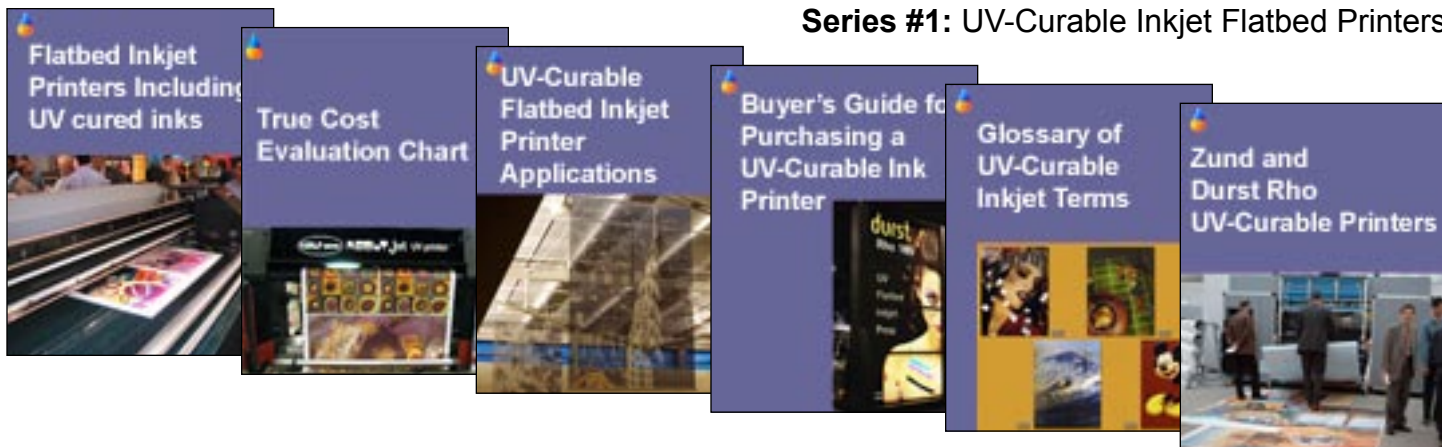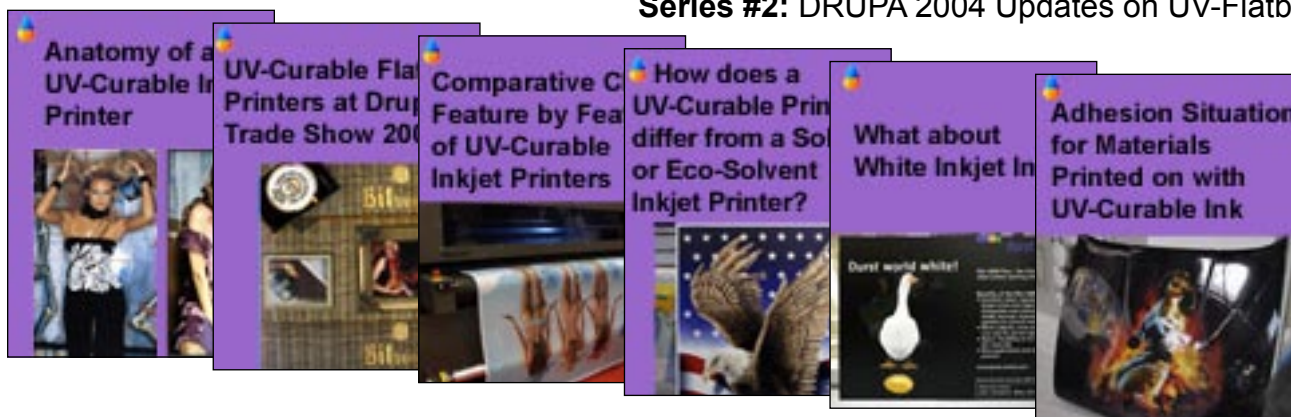Digitizing   Scanning   Color Managing   RIPing   Printing   Laminating & Trimming

FLAAR Reports of UV Curable Series

Series #1: UV-Curable Inkjet Flatbed Printers

Flatbed Inkjet Printers Including UV cured inks

True Cost Evaluation Chart

UV-Curable Flatbed Inkjet Printer Applications

Buyer's Guide for Purchasing a UV-Curable Ink Printer

Glossary of UV-Curable Inkjet Terms

Zund and Durst Rho UV-Curable Printers

Series #2: DRUPA 2004 Updates on UV-Flatbed Printers

Anatomy of a UV-Curable Inkjet Printer

UV-Curable Flatbed Printers at Drupa Trade Show 2004

Comparative Feature by Feature of UV-Curable Inkjet Printers

How does a UV-Curable Printer differ from a Solvent or Eco-Solvent Inkjet Printer?

What about White Inkjet Ink

Adhesion Situation for Materials Printed on with UV-Curable Ink

Series #3: New UV-Flatbeds, Photokina-SGIA-GraphExpo

ColorSpan

D.G.I. UV-1600 UV-1604 Dilli Neo

DuPont

Durst Rho

Eastech UV 872

Gandinnovations JETi 3150 UV Flatbed

Gerber

Sericol Inca Columbia Inca Columbia Inca Columbia

Inca Spyder

Leggett Virtu

Mimaki UJF-605C White Ink UV-Flatbed Printer

Mimaki The One 1200 x UV Print

NeoltJet 1800 2500 3200

Nur Expedio UV Cured Roll-to

Nur Tempo UV Flatbed

Oce Arizona Sign Printer

Oce Arizona

Raster RP-720

What about and Mutoh Why no Ink Flatbed

Teck U (Shanghai) Develop Co.Ltd

Vutek UV 200 With c the Vu UV 180

Zünd 215-Plus

Zünd 250-Combi

DP 101 : Achieving Quality in Digital Photography

SLR 35mm Digital Cameras	Aperture and Shutter Speed	Nikon D100 Digital Camera
Evaluation & Review of the Canon Digital Rebel	Sigma SD9 Foveon	Lens Reduction Factors: Chart
Hybrid Digital Cameras to hold Medium Format Digital Backs	Lenses and Filters	Professional Results from Budget-Priced Cameras
Practice & Critique	Pros and Cons of Digital and Film Photography	CCD and CMOS Image Sensors
History and Timeline of Digital Photography	Composition The Key to Prizewinning Photography	Nature Photography
Portrait Photography with 35mm SLR Digital Cameras	Architectural Photography with digital cameras	Lighting Digital Photography
Quicktime Virtual Object Movies	Shooting on Location with Digital Camera Equipment	How to Organize an Exhibit of Your Own Photographs
Computer Equipment for Digital Imaging	Camera and Computer Memory Storing Digital Files	Adobe Photoshop for Photographers
Additional Software for Digital Imaging	File Formats for Digital Images	Worthwhile Tradeshows for Digital Photographers
Digital Cameras at the Photokina Tradeshow in Germany, 2004	New Photography Equipment at the PhotoPlus Tradeshow in New York, 2004	FLAAR Reviews: Photo & Camera Magazines

For additional information on any FLAAR course you can write Nicholas Hellmuth and/or the course assistant Sebastion Dion directly at digitalphoto@FLAAR.org or fax 419 372 8283.

DP 201 : Taking Digital Photography to the Next Level

Digital Image Resolution

Pros and Cons of Digital vs Film Photography (Medium and Large Format)

Digital Backs for Medium Format Cameras

Cameras to hold Medium Format Digital Backs

Recommended Equipment for Creating a Digital Studio

Lighting Modifiers for Portrait Photography

Lighting for Profitable Portrait Photography

Nature Photography with Medium and Large Format Cameras

Landscape Photography with Medium and Large Format Cameras

Panoramic Photography for Digital Cameras

Digital Panoramic Cameras

Architectural Photography with Medium and Large Format Cameras

Product Photography with Professional Digital Cameras

Computer Workstations for Digital Photography

Color Management for Digital Photography

Bit Depth and Dynamic Range

Workflow Summary for Medium and Large Format Digital Photography

Glossary of Digital Photography Terms

History of Panorama Photography: Circa 1840-1980

Photography of Art: Sculptures, Artifacts & other 3-Dimensional Works of Art

Taking Photographs with a Reprographic Copy Stand

History of Rollout Photography

Lighting for Product Photography

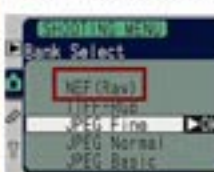**Gray Balance for Professional Digital Photography**

Shooting On-location with Medium and Large Format Cameras

Portability: Which Digital Camera is best for Out on Location?

Professional Software for Working with RAW File Formats

FLAAR Book Reviews: Adobe Photoshop

FLAAR Book Reviews: Medium and Large Format Cameras

Trade Shows for New Camera and Printing Technologies

For additional information on any FLAAR course you can write Nicholas Hellmuth and/or the course assistant Sebastion Dion directly at digitalphoto@FLAAR.org or fax 419 372 8283.