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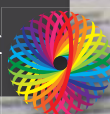
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COLOR IN FOCUS

The Cover, The Fall Conference, The Industry Consensus





Monitoring the job on press.

Cover on press.

Excellence & Innovation

Award-Winning Printer, Press & Prepress System Put to the Test

By Robert Moran

SPECTACULAR RESULTS IN A SINGLE SHIFT

- **FLE XO's** cover project amounts to a demonstration of award-winning technologies and award-winning execution on the production floor.
- It showcases capabilities of the 2011 Narrow Web Best of Show printer, as well as the two Flexographic Technical Association 2011 Technical Innovation Award winners.
- The theme for the job, "Color in Focus," is shared by FTA's 2011 Fall Conference.
- Special effects on the 17,000 sheeted pieces—embossing, cold foiling, tactile varnishing.
- Our industry's expectation: quality, consistent, print; plus minimal waste, quick setup and state-of-the-art operating efficiencies.

Job # 100114. The ticket reads 1108 **FLE XO** Cover. Parameters state, "4/4 with cold foil adhesive and tactile varnish."

At Publishers Printing Co., Shepherdsville, KY, the work order does not scream out, "This is no ordinary flexo job!" Instead, it specifies arrival on Sept. 16 and sets Tuesday, Sept. 20, 2011 as the run date. Quantity is 17,000 sheeted pieces. Dimension for each sheet: 19-in. long X 12.5-in. wide.

Details of the complexity of the work at hand, laid out far earlier, are now clearly understood by all. Given the activity in the pressroom, even before 8:00 am—specifically the number of visitors turning out—it is apparent that the whole industry is watching, and with good reason too.

This relatively new flexo establishment, with just under one year's label and packaging printing experience, faces the charge of orchestrating a live demonstration of cutting-edge flexo technology. The expectation: quality, consistent, repeat-



Lifting embossing cassette into the press.



Thornberry positions anilox roll on press.



Thornberry removes lint/dust from plate.



The cover project print team, from front right: Tony Thornberry, press operator; Dwight Thurman, press operator; Brian McNay, press assistant; Steve Holzknacht, production manager; Brad Norris, press assistant. Back row, L-R: Dan Fry, MacDermid Printing Solutions; Pam Dorrrough, 3M; Mark Coffman, Dixie Graphics.

able print results that of course, must be achieved with minimal waste, quick setup and state-of-the-art operating efficiencies.

FLEVO's October cover project amounts to a demonstration of award-winning technologies and award-winning execution on the production floor. It showcases capabilities of the 2011 Narrow Web Best of Show printer, as well as the two Flexographic Technical Association 2011 Technical Innovation Award winners:

- MacDermid Printing Solution's LUX platemaking system.
- Mark Andy's Performance Series P7 press.

With debut set to coincide with FTA's Fall Conference, Oct. 10-12 in St. Louis, the prevailing theme for the job is set as well, "Color in Focus."

PLAY-BY-PLAY

Step # 1: Secure the buy-in of the three award winners. The deal was sealed immediately after the May 2011 awards presentations. In fact, it was being talked about by all major players even before FFTA's 2011 Annual Forum and INFO*FLEX Exhibition concluded.

Step # 2: Confab and coordination begins with selection of impactful images, design and approval of the Fall Conference logo and assembly of the individual elements into a single piece.

The art file is carefully constructed by FTA's and **FLEVO's** Graphic Designer Katie Dubois and it triggers a meeting of the minds between all players. Discussion hones in on how to accentuate color through meticulous incorporation of special effects. Participants list out as follows:

From Publishers Printing: Dan Weber, vice president sales; Chris Calhoun, flexo prepress; Steve Holzknacht, production manager; Cortney Etherton, flexo sales manager, Brett Gentry, label packaging division estimator; and Cassy Luckett, customer service.

Representing Mark Andy: Mary Sullivan, director global marketing; Bill Enright, print services.

At MacDermid Printing Solutions: Heather Barrett, director of marketing; Dan Fry, director of product management.

Dixie Graphics contingent: Mark Coffman, sales; Lynn Jernigan, customer service manager.

A follow-up call involves the Publishers Printing, Dixie Graphics and **FLEVO** teams and the initial and final artwork

files go off to all for review and comment. Notes, or more accurately, the concise instructions on the job ticket reflect the collective solution.

Joining the list of partner suppliers as the design plan becomes final are API Foils, Environmental Inks and Coatings division of Siegwark, 3M and Rotometrics. All furnish materials specifically for use on demo day. Familiar products made by Harper Corporation of America—XLT anilox rolls—and Max Daetwyler—standard lamella-tipped (MDCDB) doctor blades—play critical roles as well.

PRINT LIKE NEVER BEFORE

LUX platemaking technology allows platemakers and printers to achieve higher quality, consistency, and versatility in their operations, while enhancing the value of their existing investment in digital flexo hardware and software. According to its developer, MacDermid Printing Solutions, it amounts to controlled engineering of dot shapes and capitalizes on coverage afforded by flat-top dots.

The technology entails lamination of a membrane over the top of an already image-ablated digital flexo plate, followed by standard UV exposure of the photopolymer through the membrane, and subsequent removal of the membrane prior to processing.

The LUX Platemaking process offers unique benefits to both printers and plate makers. For printers, credits to its use include:

- **Better Highlight Detail:** LUX highlight dots print much smaller than those of standard digital plates.
- **Smoother vignettes:** Smaller dots result in reduced hard edges
- **Accommodation of higher line screens:** No additional investment in current print environment needed.
- **Reduced Dot Gain:** LUX reduces dot gain caused by plate wear due to unique shape of flat-top dot.

For platemakers, the benefits are as follows:

- **Greater consistency:** 1:1 mask:plate imaging eliminates the traditional digital bump curve, which is a 'fix' for the oxygen inhibition inherent in the standard digital plate workflow.
- **Format versatility:** LUX can be used with plates from .045-in./1.14-mm to .250-in./6.35-mm thickness and any plate size up to 52-in. x 80-in.
- **Wide plate compatibility:** LUX can be used with any digital plate from MacDermid. Publishers Printing used DMAX plates for the **FLEXO** cover job.

MacDermid says the LUX platemaking process offers printers the opportunity to print like never before. It produces digital plates with expanded print capabilities and can be used with all flexo lasers. It does not require modification to existing exposure equipment. By adding this quick step, printers produce an enhanced dot profile, resulting in cleaner, sharper print.



Mounting the embossing plate.

Step #3: Customize files in prepress before proceeding to platemaking. With Publishers handling the ordering of the embossing cylinders from Rotometrics and the tactile varnish sleeve from Stork Prints, the cold foil application was done with a MacDermid DMAX .045-in. plate with an adhesive for applying the cold foil in the outline of the word **FLEXO**. 3M comes on board here, contributing a special tape for the embossing plate station—3M 2205—and a second special tape for cold foil—3M 1515. The responsibility for art file adjustments for special effects; namely embossing, cold foiling and tactile varnishing, come with formal hand-off to Dixie Graphics. The trade shop has been handling prepress and platemaking for Publishers since installation of its first flexo press in November 2010.

Coffman reports, "Repeat for this job is 19-in. Plates are mounted one around/one across. Plate thickness is .045-in. Screen is 161 lpi. Adhesive material is 3M E 1315 tape. The embossing plate is a Miraclon, measuring .037-in. thick."

Talking to the rotary screen application, Coffman says, "Mesh is 0.75 and the open area is 40 percent." He notes, "Stork Prints, Charlotte, NC is furnishing the tactile varnish sleeve. Plate material is MacDermid DMAX with LUX technology. Esko's HD flexo screening is in use. GMG certified proofs are output using specific color profiles for the press, substrate, plate, and dot gain curves, and the Delta E value averages 0.7."

FLEXO MEETS FLEXO

Dispatched to the plant to witness the proceedings, as **FLEXO**, the magazine, meets flexo, the process it reports on:

PRINTER ON PERFORMANCE

Publishers Printing Co., Shepherdsville, KY, a traditional offset publications printer and one of FTA's newest members, has now turned to flexo—and the Performance Series P7 press. "In 2009, Publishers Printing began a strategic initiative to diversify its business by entering into new, previously uncharted markets," says Mike Simon, vice president. "After much research, we discovered growth opportunities in the label and packaging industry and began the search for our first flexo press."

According to Simon, the P7's allure is its versatility. "It was important for us to invest in the latest technology to drive productivity, flexibility and quality. The P7's smart print deck design, coupled with sophisticated registration control and web management allows us to maximize its performance," he says. "The simplicity of the print station components, open architecture and automated features have allowed our pressmen—offset operators—to easily adapt to a whole new print workflow. Since installation, we have tested the P7's abilities and continue to find it quite impressive in all aspects."

Steve Holzknacht, production manager oversees the flexo operation—one shift (7:00 am-3:30 pm) and prints between two and four jobs daily. They range from labels to, flexible packaging. Label runs are 5,000 pieces or larger, with flexible packaging jobs often starting at 10,000 pieces. The crew can and has handled 180,000 piece runs.

Cortney Etherton, sales manager, says the division is winning new business on a daily basis. He and Dan Weber, vice president of sales, are forecasting growth.

All, including Pressman Tony Thornberry, agree that the piece of equipment at the heart of their flexo pressroom is smart, simple and effective. Workflow is smooth and predictable.

At press time, Publishers is pondering its next moves in the flexo arena. Entry into the wide web market is being considered and room is available for expansion in the label and narrow web pressroom.

Publishers Printing is a fifth-generation family owned company dedicated to providing exceptional service. It opened for business in Louisville, KY, in 1866 and moved to nearby Shepherdsville in 1958. Today, at 145-years old, Publishers has grown to become the largest employer in Bullitt County, serving printing needs nationwide. It has just under 1 million sq. ft. of space dedicated to commercial printing work, offering a variety of prepress, press, binding, and finishing options.

The Label & Packaging division houses a 10-color Mark Andy P7 flexographic press, which enables it to offer high-quality pressure sensitive labels, foil stamping, embossing, rotary screen and lamination capabilities—the vast majority of which were applied to the production of **FLEXO**'s October 2011 front cover.

Note: Contact Cortney Etherton at 502-925-6526 X 7135 / 1-800-214-1073 X 7135 or crethe@pubpress.com



Jerry Henson, sales manager, Mark Andy; Pam Dorrrough, 3M, Coffman, Fry and myself.

Running the job: Tony Thornberry, press operator; Dwight Thurman, press operator; Holzknacht, Brian McNay, press assistant; Brad Norris, press assistant and James Mann, plate moulder.

Holzknacht spells out the mission in printer's terms. He begins as Rotometrics hard case plate tooling cylinders stand at the ready at each print station. Nearby lay Harper's anilox roll crates, some with their contents already sitting atop setup carts. Ink pans are clean and ready for pouring to begin. The media: Envirocure inks, specifically the Ultra Flex line.

"Our press is 10 stations and the web is 17-in wide. The threaded web path encompasses some 80 feet. The job passes through UV inking stations, a delam unit, relam unit, turn bar, rotary screen unit, cold foil unit and three individual die stations."

He explains, "Today, we are printing the bottom pass first—the backside or inside covers containing the Dixie Graphics and MacDermid advertisements, then we turn the web, if necessary print primer, and pick up the other side—the front and back cover. CMYK goes down in that order on the first four stations, then primer for foil, then CMYK on the second four stations. This stock, 100 # Pub Gloss 88, made by Sappi,

tends to be coarser. We run the press at 200 fpm. Rotary screen application limits the speed just a bit."

Holzknacht adds, "This is not a typical job. It's a magazine cover. It might be typical in our offset operation, but not on the flexo side." He admits, "We have experience with similar work." Publishers printed the *Alpinist Magazine* cover that took a gold medal and best of show in its class in the 2011 FTA Excellence in Flexography Awards. "That job also used MacDermid DMAX plates. This one adds LUX technology to the equation."

Elaborating on that note, Holzknacht says, "We have experimented with LUX, but it's not run every day. We wanted to learn flexo on conventional digital first. For our now cross trained operators from offset, flexo is a different process that requires a new mindset. We're working on abiding by *Flexographic Image Reproduction Specifications and Tolerances (FIRST)*. In fact, our prepress team is becoming *FIRST* certified."

Turning back to the job on press, he states, "This one's not easy. Printing both sides of the web makes it challenging. We have a lot going on. We're running almost every aspect of the press, except for lamination."

Reviewing the day's setup, he mentions, "We had to get a handle on impression. Once we did, things got easier. With LUX, everything came into impression sooner. The job gets up to image faster with the flat-top dot. We also get up to color faster. Looking



Holz knecht, Coffman and Fry study printed piece.

at the result, we see sharper, crisper dots and overall better print."

Bob Witte, vice president, sales and marketing for API Foils offers this comment. "The bright silver foil used on the **FLEXO** cover to provide a metallic look results from cost effective COLD transfer technology that runs in-line and eliminates the need for expensive hot rotary dies.

"The process begins with the copy printed with a flexo UV adhesive. The web then runs through a nip roller where it marries up to the film-based foil. The adhesive becomes activated by UV light passing through the foil (API 'thru-cure' technology), transferring the metallic layer onto the cover.

"The outcome is a high shine, over-printable foil surface that adds visual luster and shelf appeal," Witte observes. "This exceptional brilliance is unsurpassed by any printed process." His comment speaks to the results every flexographer always hopes for. It reinforces the mission of the day and attests to the fact that, **FLEXO's** cover stands out as an example of what is possible with careful attention to detail, embracement of technical advancements and pride in the printing craft. It's bright, bold, colorful and carries a good degree of difficulty that is matched by its expert level of execution. ■

ON-PRESS WORKFLOW REDEFINED

Mark Andy maintains that it analyzed every step and component in existing in-line technology and ignored all preconceived flexo workflow assumptions in devising the award-winning Performance Series Press. Print stations and print decks that have been redesigned from the ground up are helping to propel the future of in-line flexo technology.

Features include minimal frame design, short web paths, intuitive servo-drive technology, simplified plate cylinder and ink loading and locking systems and hands-free automatic impression-setting.

Mary Sullivan, director global marketing, says, "The Performance Series by Mark Andy is a proven flexographic print technology that has redefined the entire on-press workflow. Performance Series technology drives extreme productivity, reduces waste and directly supports green sustainability."

The machine can print with just 6 oz. of ink, requires less than 20 seconds to set and generates no more than 20 feet of waste in job setups and changeovers. Return on investment is forecast at less than 24 months.



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