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QUALITY, CONSISTENCY AND THE EXPANSION
OF FLEXO CAPABILITY By Art Fields

I remember my first taste of technology like it was yesterday. It was the first time that I was personally able to see a direct impact on myself and the way I did things. You see, I was taught my skill in a family-owned shop where quality was all that mattered. This being the case, we never hesitated to try new things.

At the time, all our artwork and graphics were done with typesetters, glue guns and a lot of camera and film work. All our plates were molded rubber that you sanded down to the proper thickness. Most of the time you had to hand step the plates when mounting them. If you needed a circle or more trap you just stretch it in place. We ran only alcohol inks and our average run length was about 4,000 feet, so you can see that we did a lot of clean-ups. Anilox rolls were all chrome 200 line and meter roll. (The hardest thing to do was get a good meter roll that did not have a spot on it that would show up on your print.) We always ran our stock whatever the carrier width was and slit every thing on press while we ran. It still amazes me today what high quality we could produce under those conditions.

And then came a period of eight weeks that changed everything, not only the way I did my job, but also the way I saw life in general. We had been hearing for a while about water based inks, so we decided to have an ink salesman come in to see us. That had to be the most useful meeting I have ever attended. The next thing I know we had all kinds of neat new stuff coming in.

Over the next several weeks we left the past behind, switching to photopolymer plates, computer graphics, water based inks, and a selection of new chrome anilox rolls up to 600 line (That was the limit at the time.). We got doctor blades. This would later prove to create some issues with wear on the chrome rolls, but they were still nice. We also acquired our first set of underscore blades. It happened so fast I felt as though I was in another time.

But the biggest impact on me came from understanding how the whole change was

made. The experts who helped us through this transition did their homework, and some research and development, then in one swift sweep it was all changed for the better.

My production, profitability, and salary all went up and my job was fun. It could not have been more than a couple of weeks into the good times when we were doing something new, and it hit me this is what R&D and technology was all about. I have always had a work ethic, and before we made the changes I worked harder and longer than ever. A few simple changes with new products and the latest technology and we were able to cut our work load tremendously. I knew then and there that my search for the better product would be a never-ending one.

The satisfaction of research

When I opened the Flexographic Trade School in Charlotte, NC, one of the things that I wanted to do was offer my vendor sponsors free R&D. It's great for the students to get the chance to be involved in research, and it's easy to schedule time. We also have very skilled impartial instructors to operate the equipment. I can honestly say I had no idea how much R&D was going to take place, not to mention the amount the vendors perform on their own. I feel strongly about the different programs the school provides, but none provides me with the personal satisfaction that this does.

At every step of my career I have turned to my vendors to provide me with a product that looks better, sticks longer and fades less. I would always make sure I was learning all I could, and I really enjoyed it. Many of you have similar stories to tell. Now imagine all of our stories being told at one time. That's a lot of R&D being done for the industry by the industry.

A head of steam

Right now the flexographic industry is building up a head of steam, and it is going to be unstoppable in the printing and packaging industry, as well as in many other industries. Flexography has always been the less expensive choice, and we can print as good if not better quality than any other source. And talk about turn-around time, I have customers that can beat your local quick print shop.

The one stumbling block, as I have said many times, is inconsistency. The industry as a whole has gotten better, but we still have a way to go. Most of the improvements have been made through process control systems that make it easier to repeat a run. The truth is that most of the consistency issues come from personnel.

I have been fortunate in my career to be involved in many types of printing and converting, from offset to screen printing, and trust me when I say that there are a lot more variables for a flexo operator to deal with. This opens the door for almost anything to happen, and there are those of us who can make it look fairly easy. But that type of experience is not always available. So the next step to be taken is making products that are even more operator-friendly, so that an operator with two years of experience can do the same work that a 10-year operator can do. If the products we use get better and more versatile, the choices we have to make are fewer, and that makes consistency so much more achievable. It also cuts down on the amount of time spent on learning about the different products that an operator uses, and allows a rookie to focus on operating a profitable press.

The R&D we have been doing at the school in the past nine months deals with just this issue. I have also seen some of the R&D that my sponsors have been doing outside, and I have to tell you that the progress being made in this area could have as big an effect on flexography as my first taste of technology did on me. I know that some of the things I am going to tell you will be hard to believe, but they are true and they are coming.

Graphics

Let's start with graphics. This is a place where change is a daily event. From new computer technology to digital plate making, everywhere you look you will find some type of change. I am no expert in graphics, but I have to ask myself, "Do we need it better? Can it even get better?" We have done a great deal of R&D with Trinity Graphics USA, one of our vendor sponsors. We print 200 line screen process daily, and dots of 1 and 2 percent are common. The products we print come off the press and match the proof, and I just don't know how much better you can get than that. You might make things easier for the operators who run the programs, but I don't know if you can make a better product. Rest assured that if you can, someone will. We'll let you know.

Anilox Rolls

Good things are happening in anilox technology, and they promise an immediate positive effect. The newest is an anilox roll that is designed to print about 85 percent of your work in your shop. Just think how that would reduce downtime and make it a lot easier to be consistent. I can hear you saying, "No way."

Here are some of the things we have been able to do. We can print solids on the same plate we used to print up to 200 line screen, and we pulled strong ink densities and the screens ran clean. We have also set and run many four-color process jobs that turned out great. One of the biggest benefits of these anilox rolls is that they print cleanly, meaning less waste and more profit. The bigger issue is this: It doesn't take 10 years' experience to do the job. Don't get me wrong Ñ it's nice to have experience in the plant, but it is a necessity that all of your operators, regardless of their years on the job, can run most of your work profitably.

For the other 15 percent of your work, you can bet that there is a product out there that will work for you. I think we will see even better things from this part of the industry. I say this because of the amount of R&D that Harper has going on at the school.

Doctor Blades

The most surprising R&D we do is on doctor blades. We have been testing them for about two to three months now and the results are delightful. What we should be seeing in the industry is a set of guidelines about blade life. If you are using more blades than what is needed, it would be nice to know. It may be a press issue or a training issue, but either way it is an issue that should be addressed.

At the school we get about 30 hours of run time on a blade, and that seems to be in the ball park according to the results we are seeing in our tests. This is important research because it deals with one of those little issues that tend to go unchecked. Having a benchmark to follow for doctor blade life will be a useful tool, and will bring everyone closer to that all-important consistency.

Tooling

The right tools are important, and I don't mean just screwdrivers and wrenches. Anything I can use to help me do a job correctly and profitably I consider to be a tool. Yet in too many cases we still are trying to do the job without the right tools. Or with the wrong ones.

Consider the operator who chooses not to keep a clean organized work area (Trust me: An organized workbench is a tool), or the owner who won't put in an "accountable" production system. Tools are important. I think the scariest thing in the world would be going into surgery and overhearing the doctor say he sure wished that he had his "clamping apparatus" for this one. I would not have to think twice about walking out of the operating room.

Some new products on the market deal with tooling. From harder steel to lighter steel or maybe just plain space-age aluminum, you can bet that their manufacturers are staying up with the newest technology available. We have been working at the school

with Rotometrics and Trinity Graphic USA on embossing with photopolymer plates. A few companies have been doing this for a while, but to the rest of us this is new technology. I am here to say it works great.

We have been successful at embossing 60/40 pressure sensitive stocks up to 14-pt. C1S card stock, and it is easy to do. It can be done on any press that runs conventional dies. The best part is that the embossing plates cost about the same as printing plates. If you have not done this in your plant yet, I would highly recommend that you do so.

Inks

Ink manufacturers are by far the most active in R&D. We want inks that work on everything, print perfectly, dry at 500 feet a minute, are totally fade resistant, withstand 400° temperatures, and have a lifetime durability guarantee. Half the time we want the inks to out-perform the products that they are being printed on. Unfortunately for the ink companies, I don't see this ever changing. We, the printers, will continue to find new stocks to print on, and the next thing you know we will have space travel guidelines to conform to.

Inks are slowly getting away from natural clay pigments and are relying on artificial pigments, and this provides a lot more control over the raw products during manufacturing. If I could choose only one vendor to ask how to do a particular project, it would be my ink vendor.

A great many improvements are being made to UV inks, and for me the biggest is that they are getting very operator friendly. I will be writing extensively about this in the future, once we have finished our own R&D at the school.

Cold Foil Stamping

Everyone wants to know about cold foil stamping. This, too, has been around for a while, but it still seems to give some people a problem. We have done our own R&D with API Foils and have always had great results.

The only two negatives I have ever heard about cold foil transfer are directly operator-related. First, it won't lay down clean; second, it won't do fine type. These are just not true. Your foil will reflect the impression that the operator sets. If the impression is heavy, then your foil will look dirty, just like your inks when you print heavy. The same goes for fine print.

The one thing to remember about cold foil stamping is this: The foil will look only as good as the adhesive that holds it.

Presses

The most impressive R&D taking place today is with printing presses. There is no doubt that presses have improved at a fast rate over the years. They get bigger and better all the time, with the focus on quality and operator friendliness. The focus now is on what we can do to improve our capabilities and take on new markets.

The flexo industry has been in the packaging industry for a while now. Up to this point a company would pick a specific product to manufacture: board, folding carton or film, to name a few. With the new servo driven presses, such as the Mark Andy 7000 and those being manufactured by other companies, the door to the future is wide open. Such a press can print a 1-mil film and then turn around and print 20-pt. board, and that's using 325 line-screen process. Amazing.

If you're not aware of what's going on in this area of the industry, I highly recommend that you start investigating it. I do believe that this is going to be the next real big boom for our industry.

Here's one reason: If you're currently looking for a niche, I would recommend the folding carton industry. It is just a matter of time before all folding cartons are done flexo. The packaging industry has turned to plastic and film packages for their products at a record pace. As long as there is a need for a product, someone will find a way to fill that need, and that alone is what drives the majority of the R&D that takes place in the industry today.

A thousand questions

It is safe to say that change is the one constant in our lives. It's up to individuals to keep pace with the changes that go on around us, and if you want to know what's going on you have to get involved and ask a thousand questions all the time. If you don't, you won't be able to compete. It still surprises me how many shops don't realize how much more easily someone else is doing the same thing they're doing. And they want to know why they can't compete any more.

I personally have not reached the point in my career where I've found that it's easy to get complacent once you have made it. Sometimes I see owners who let other people take over the company, and most of them don't have the desire or drive it took to get the company to that point. It takes a lot of energy to start a company, and believe me when I say that it's wearing me out. It takes every bit as much energy, if not more, to run a company that has plans to be profitable and competitive long into the future.

With technology where it is today, it still amazes me that the No. 1 issue that causes problems is communication. I know that everyone loves e-mail and the computer, but I feel that it's foolish to depend on e-mail for your communications. Talk to your people about e-mail and make sure they understand that it is just a tool, and that is all.

Art's tip

My tip for everyone who reads this article is to start asking questions. Find out what technology is out there that could benefit your company. I can guarantee that if you ask, you will get more answers than you ever dreamed possible.

Till next time, this is Art Fields saying, "Don't forget to stop and take a reality check."

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