

MAXIMIZING PRESS OUTPUT WITHOUT LOSING QUALITY

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There comes a time for every printer when they receive an order bigger than anything they have ever done. It may be an order for 10,000 pieces to be printed by hand, or 10,000 dozen to be printed on the automatic press. These are exciting times, although they may be somewhat scary as well. After the initial rush wears off, the reality of how to produce this large order, and how to work around your other customers, begins to set in.

Almost all large orders have thin margins. It is getting more and more competitive in the marketplace, and there is almost always some degree of price competition for bigger jobs. If you do not plan your work properly, it is very easy to work long hard hours for many days, and end up with nothing to show for your efforts. This is a hard reality to face, but it is common. This month we will look closely at some methods and techniques that will allow you to increase your volume while still maintaining excellent quality.

Some things to consider before starting the run

In all the excitement of doing a large order there are some things that are very important for you to remember. The first one is that in all probability, when this order is finished, you won't see the client for some time. When the job is finished, you still have to deal with your regular customers. Be very careful not to upset or put off your regular clients during production of the large order. I have seen many companies do serious damage to their customer base with one big order. Remember who got you where you are, and who helped you gain the experience you needed to get "The Big One" in the first place. Most customers are glad that you are doing well, and they like to be part of your success. Call them ahead of time and let them know that your time is going to be booked pretty heavily with this big job. Try to arrange to get their production done ahead of the large order. In short, take care of them so they'll be there when you are finished producing the large order.

Secondly, large orders often start off somewhat slow. Production workers may be somewhat intimidated by the size of the job and the expectations of management. They do not want to make a mistake, and often the production numbers will be down in the beginning. Do not let this upset you. It is natural. As your printers settle in, and begin to get into a groove, the numbers will increase. Allow some latitude for the first few days. My experience has been that the first two or three days will be somewhat rocky. By the

end of the first week, production will meet expectations. By the end of the second week you should see production exceeding historical averages.

What should you expect? This is a very subjective topic. I know shops where 400 dozen per day off an automatic is below par. I also know shops that have never printed more than 200 dozen per eight-hour shift on an automatic. Obviously the more that you can print, the more money you will make. That does not mean that you should turn the press up to full speed and hope for the best.

Like the "Tortoise and the Hare," the best approach is to pick a speed where the press is constantly running at a steady pace. It is the stop-and-go, stop-and-go production that results in low numbers. It is very deceiving just how many prints are lost when the press is down. This stop-and-go production also keeps the printers from achieving a "printing rhythm." This is absolutely necessary in order to maximize output.

Most automatic presses today will cycle between 12 prints per minute (600/hour) and 18 prints per minute (1080/hour). Pick a speed where the press will be printing constantly for 55 minutes per hour. Some delay will always happen due to material handling, lint, tacking, inking, etc. When the press is down, you are losing between 1 and 1-1/2 dozen garments per hour from your theoretical yield. With just 5 minutes per hour you are losing between 40 and 60 dozen per day from top speed. Factor in your two 10-minute breaks (20-30 dozen), lunch (40-60 dozen), start-up (20-30 dozen), and end of day (20-30 dozen), and that yield can drop another 100-150 dozen!

Planning for maximum production

Before you get started on the run, do some advance planning. Time invested at this stage will yield tremendous gains during the course of a run. Begin by carefully producing the job mentally. This is akin to the race driver who walks the course before a race. Try to anticipate all of the things that you will need and events that will happen during the course of production. Our objective is to keep the press running for sustained periods of time. In order to do this, we must concentrate and identify all of the factors that can keep a press from running. Let's start at the beginning and work our way through.

Step one is to make sure that all material for the run is available. Have all the garments arrived? Has the ink been estimated and ordered? If you have to mix colors, are the formulas written down and readily available? Verifying all independent ingredients is critical. Something as simple as running out of table adhesive or spray tack can stop a run dead in its tracks. Write down a checklist in order to make sure that you have covered everything. Even if you are very careful, and other shop personnel have checked the list, there will be items that you will have missed. Hopefully you will find these missed items early in the run and correct them.

Check the inbound raw materials to make sure they are what you ordered. This includes verifying the sizes and counts on garments and making sure that ink colors are correct.

When preparing garments, make sure that they are shaken thoroughly to break free any loose lint. Stopping on press to remove lint is one of the biggest time wasters. Different garments have different lint characteristics. Hopefully the brand that you are using will be relatively lint

free. Shaking the garments also helps to remove wrinkles that may be in the printer bundles. This can aid the loader in positioning shirts on the press. It is very slow and interruptive to have to stop to straighten a wrinkle on the garment. It destroys the rhythm that the loader has developed, and it takes a couple of minutes to re-establish it.

Clean as you go. This means that you wipe up spilled ink, smears, drips, and blobs. In the heat of high production it is amazing how fast you can track spilled ink. When you combine the ink with extra lint, adhesive overspray, and general shop dirt, the press and production areas quickly deteriorate. A clean working area is one of the key components to efficient production.

One of the most annoying things that can happen is to run out of ink during a run. It is always the color that is most difficult to match. Make sure that you have plenty of the necessary base colors, extenders, modifiers, etc. to make the colors you need. During the first two days of the run, pay particular attention to how fast you are using color. It is usually a pretty stable and predictable consumption. Be careful to note if you have different types of garments in the run. Sweatshirts absorb much more ink than jersey T-shirts.

All special colors should have their formulas readily available so that they can be matched quickly. On long runs it is crucial to match from a formula. If you try to do it by eye, the color tends to shift ever so slightly from batch to batch. By the 20th mixing, the color will be considerably different than what was approved by the customer. You may not notice this difference until samples from the beginning of the run are laid out next to samples from the end. To combat this problem, always include two samples in plastic bags, one at the off load station of the press and one at

the end of the dryer in the packing area. This allows two different sets of eyes to look at each shirt.

Anticipate your needs during the run. This means having a set of back-up screens in the event a screen fails. Keep track of the stencil breakdown. Is it happening after 1000, 5000, or 50,000 pieces? Properly made screens for plastisol should last for thousands of dozens. If you are using waterbased inks, doing heavy flash drying, or have garments with pockets, plackets, or buttons, the failure rate will be much quicker. Having back-up screens burned in the proper positions will minimize your down time here.

If your run will last more than one week, I strongly recommend that you add a third person to the press. This person is called a press tender and it is their responsibility to keep the press running. It is their job to get the pieces of lint, keep the screens inked, maintain adequate ink supplies at press, aid in tacking platens, and rotate in and out as necessary. The extra cost of the individual will easily be covered by the increased production that results if the loader and unloader do not have to move away from their positions to correct minor problems on press.

While we are on this subject, make sure that all of your personnel know what they are supposed to be doing if the press goes down. Have one person check all of the screens and refill them with ink. This is like automatically changing the tires on a race car at every pit stop. Do this if you are down for more than one minute.

If garments start lifting up, tack all of the platens at the same time, if they need it or not. This keeps you from constantly having to tack on a random basis. The press tender is useful here. He can tack in the unload position after the garment is lifted off, and before the loader puts the next garment on.

If you are down for more than a couple of minutes, wipe down the screens. The challenge here is not necessarily ink build-up, but the lint that is lifted from the garments. By wiping down on a regular basis, you minimize the lint adhesion and the likelihood that lint will fall off onto the print and require touch-up later.

The way you staff the press and packing area is critical to high production. Depending on how large your shop is, you may be able to take advantage of some of these techniques. The first one is to make sure that someone comes in half an hour before production and turns the dryers and flash units on, loosens the ink, and preps the presses. You want the presses running one minute after the start of the day. It is crucial that everyone is at work, punched in, and ready to run at the very beginning of the day. The first hour usually is one of the slowest of the day as people start moving and working the kinks out from the night before. Having everything ready to go will increase your daily output significantly.

When it comes to breaks, have the tender and a supervisor rotate into the order and let one or two people onto their break at a time. If you can keep the press running through breaks, you can add 40 to 60 dozen more garments to the daily yield. This technique also works with lunches. That adds half an hour to an hour (depending on the shop) of additional production time.

At the end of the day, work right up to the stopping point. Don't start slowing down half an hour in advance. Run right up to the end. After the regular production people leave, have a small crew available that does a light clean-up, refills all of the supplies, and makes sure that everything is ready for the morning crew.

Included in this would be sweeping the press area, stripping the platens, wiping the press of adhesive, lint, and ink, pulling the ink out of the screens (so it doesn't set up overnight), refilling solvent cans, replenishing rags or wipers, replacing spent adhesive cans, and the like. This should only take half an hour or less. It is worth paying some overtime if necessary.

During the course of very long runs it makes a great deal of sense to rotate your personnel so they don't become "print zombies." This is a situation where your people become semi-hypnotized by the image. They see it over and over, to the point where subtle changes (like running out of ink, or lint build-up) go unnoticed for several dozen. By rotating your printers, unloaders, catchers, etc., they stay fresh and can easily spot problems. It also makes for a more interesting day with less boredom and fatigue.

Lastly, make the long runs fun by playing some simple games. Try setting a daily goal at the very start of the day, down to the nearest piece. Have each person in the shop put their guess into the "pool." At the end of the day announce the production and who the winner is for the day. At the end of the week give a prize to the person who has gotten closest to the weekly total. It can be something simple like lunch at a local restaurant, or you can use your imagination! Make it fun and motivating. The key is to reward often and in small amounts to keep the interest up. At the end of the run, schedule something special for everyone. Order pizzas, or have a dessert bar at lunchtime. Events like this build morale, give employees a sense of worth and appreciation, and makes long runs something to look forward to.

After the run is finished, and the dust has settled, do a post mortem. This is an analysis of how production ran, the spoilage rates, and suggestions for the next

long run. Be sure to include all of the people who worked on the job. They are the ones most familiar with it, what went right, and what went wrong. The important thing is to learn from your efforts, good or bad. Document the process and

record the results so that you have some way of referencing your performance. The idea is to maximize your efforts so that the next long run runs smoother and is more profitable.