



Last month having written about “Skills for Life” (Numeracy and literacy) it is clear that assuming people are getting the message is a perilous policy. Increasingly now we are contacted by long established companies with an ageing workforce who are nearing retirement. The management of these companies are often younger and they rely on the inherent skills of their team to run production. This is an untenable position for when those key people retire so does their expertise. One protection is to adopt robust Standard Operating Procedures that capture the data and can be the basis of process improvement. Often the response of management is to move onto technologies that don't need the skill levels previously required these new skills are generally IT based. This has to make the company vulnerable to the competition that can be in Ipswich, India or Istanbul.

The current mantra is “We must be a knowledge based economy”. If we want to be a knowledge based economy why are we short of plumbers, toolmakers, nurses, doctors, and stencil makers. “Stencil makers?” You say; “Anybody can make a stencil!” Oh no they can't! Or if they can it is unlikely they know the parameters to which they work or the effect of changing those parameters. Screen printing is a holistic process. It is very challenging and interdependent. Digital printing is much less problematic. Fewer staff, smaller footprint and far easier to sort out cock ups, but the wall of competition is getting higher. Very soon the major clients will be practicing DIY with in house equipment. What is a real pain in the backside is that their quality will not be up to the same standard as you fought to achieve for them as a supplier. I am convinced they have two sets of glasses, one set to look at your work and the other to view their own efforts. The first clearly has a 10x magnifier attached. The second pair should come with a white stick. Gosh I hope the print buyers aren't reading this. Many years of sub-contract printing have proved the rule.

The way to protect against these challenges is to become so proficient as to make the removal of work untenable for the client. It is also very easy to overlook that our customer is not aware of all the services you can offer. “You mean you can print photoluminescent inks! I thought you had to be a specialist to do that.” “We are.”

Continuous improvement is not something to be aimed for it has to be one of the fundamental principles of business. Those of us who work for the motor industry know their need for us to reduce prices by 5% on an annual basis really focuses the mind particularly when material costs, wages and the legislative burden are constantly going the other way. The two areas you have to look at first are machine utilisation and rejects. By machine utilisation I don't mean how long is occupied but how long is it producing quality product. Even if you have an IT based Management Information System it is unlikely that the information it provides is accurate. Somebody has to hit a key when set up starts and finishes or when the print run starts and finishes. Not wishing to cast aspersions on operators but there are forms of digital inexactitudes that can mask the real timings.

Remember the po-faced faced Time and Motion Study Practitioners of old. Clipboard with attached stopwatch in one hand and pen poised in the other. Facing a shrewd

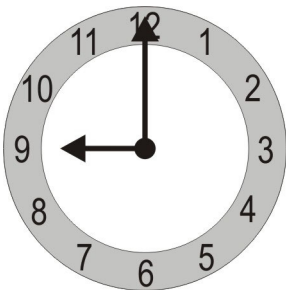


# PRINT FOR PROFIT #24

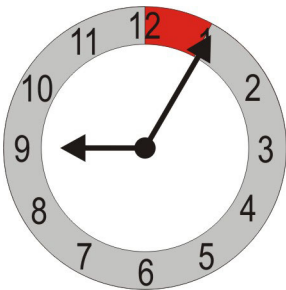
## TIME AND MOTION

operator and glowering FOC (Father of Chapel.) Slow deliberate movements, great care in checking squeegee, stencil, ink condition, feeder, machine interlocks all extended the unit times to the maximum. The players in the game knowing that the T and M department would cut the unit times by 20% still leaving an additional 20% that a nimble operator could incise from the time. Of course there was also the obligatory 10% overs.

Flatter company structures have meant that the Time and Motion Department is no more. It also means that management is much more likely to work with the direct workforce. That stopwatch should still be there maybe not so overtly as before but used to audit the timings of jobs. The watch starts as soon as one job finishes. That is when the final sheet leaves the print line. The watch stops when the first print of acceptable quality for the next job is printed.

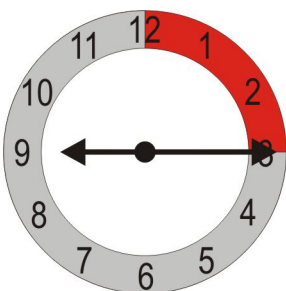


You will be amazed where time can leak away.



“Where is the job card?”

Work instructions should often be renamed. “Disinformation Sheets.” It is almost as if one of the company’s major competitors had been in overnight and changed job details deliberately to confuse the staff. Print order incorrect, wrong ink, wrong substrate, wrong size, wrong machine are the obvious failings of the system. It is things like incorrect dryer settings that are often the viruses that really screw the system. Oh its OK Harry knows what it should be. “Where’s Harry?” “He’s on holiday.”



Where is the substrate?

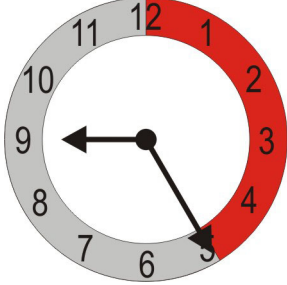
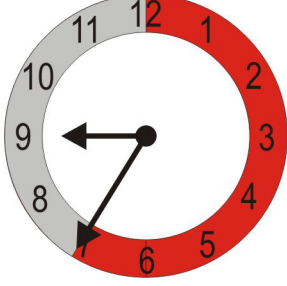
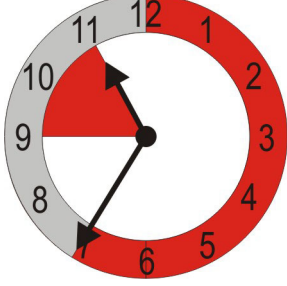
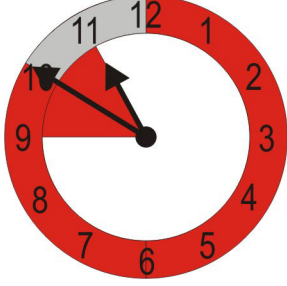
The substrate has to be close at hand and ready to be printed. It may have to be conditioned which is also down time. For those who don’t work with certain forms of sheet material “Conditioning” is when the substrate is passed down the drier prior to printing to pre-shrink it or bring it up to temperature.

If the substrate is kept at the print shop temperature for 24 hours prior to printing it may not be necessary to condition it. The other nightmare with substrate is that it can be dirty and will cause all sorts of problems on the press.



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**TIME AND MOTION**

	<p>“Whose got my frigging Allen key?” “Where is my squeegee holder?” “Somebody has nicked my flood coater!” These are common calls of the greater ink spotted printer. Your expert printer knows where his/her tools are and keeps a set of squeegee holders in good condition by his machine and protects the edge of the flood coater with a plastic cover. It can be done we see it all the time but unfortunately not in every instance.</p>
	<p>The stencil! Oh no! Sometimes printers spend more time painting than printing. “Is this a stencil or a colander?” “There are so many pinholes it looks like a flippin’ half tone print.” Out comes the blue filler and the cursing printer picks his way across the milky way of pinholes. Dirt is one cause of pinholes but when there is a galaxy of small holes it is likely to be the lack of effective drying after coating. In addition the emulsion will be under-cured and break up during the print run.</p>
	<p>Then of course there are times when the stencils have to be remade. I have known some instances when at least 20% of all stencils have to be remade because of faults discovered prior to print or after the first pass. Sheer madness!</p>
	<p>In concert with the above are non-existent standard operating procedures. Unless all the printers set and operate the machines in the same fashion you will have varying results from the same machine. From a simple set up point of view one printer will alter the machine to suit his own preference that in turn causes time to be lost and quality variation.</p>

The lost time shown above is typical of what actually occurs in many print shops. Yours may be better or worse or it doesn't happen on every job. Just consider the sales value of one minute of production time, count up the number of jobs per year, do the sums and then have a stiff drink. Not wishing to concern you but I haven't mentioned losses in the stencil room, ink wastage, waste disposal, the cost of rejects etc. etc.

These timings are conservative and flexible I know of many instances where more than a day of production time has been lost by any one of these individual problems.



Ink is probably the largest variable in the process. Automatic ink dispensing is an absolute boon. Measured amounts of ink and solvent are consistently produced. Even without these systems electronic scales can be used to produce accurate mixes. There are still people who insist on using the Squirt, Dollop or Glug as their units of measurement and fine tune by seeing how the ink runs off the spatula. Being taken outside and shot demonstrates a certain lack of political correctness. This form of punishment is not recommended by the author or the journal but may be a surgical removal of reproductive glands as a means of admonition could be considered.

Buying the cheapest badly finished substrate is a false economy. One dirty sheet that is missed can cause 15 minutes down time. If dirty substrate is a regular problem change your supplier.

It may be a case of static electricity attracting contamination and slowing the press. Static eliminators and other tactics can reduce the problem.

Tacky rollers, automatic or manual also go a long way to reducing contamination as an issue. When a press is stopped because a piece of detritus is in the stencil, the stencil has to be cleaned which in turn damages the emulsion.

There you go a treble whammy, down time, stencil damage and rejects. The simple rule is keep it clean, during manufacture, in transit, in storage and on the press. A study on the effect of contaminated substrate could produce some really interesting figures, that is if you have got the courage to face up to them.

Before you go down and kick the stuffing out of the printers remember the times when the printer has been told to "make it work" with the dodgy stencil, the dirty substrate or the knackered machine. Or when it is too expensive to replace the failing UV lamp. Make do and mend is OK for the cowboy printer but not the screen printing professional.

There is a very good living to be made out of screen printing; it is controllable, measurable, predictable and PROFITABLE. If you allow it to be so.