

THE BIG ISSUE

Spot on

USERS' VIEWS

JIM DITCH
Production manager
Capital Group
London

Uses TransCal's HiLine screening software with QuarkXPress, and outputs on a Hyphen SpectraSet 2200. Though this is not actually a 'stochastic' product, it is described as 'a high frequency screening technology - no more visible rosettes or moires'.

'We've been using HiLine for a couple of years now - it's the bee's knees and we use it for everything. The beauty of it is that it's a software driver independent of the rip. Hyphen got really upset about us using it, but the benefits to us are enormous. Because it takes the spot and splits it, we can put jobs through at lower imagesetter resolutions. We have halved our screening times by using it. Because our presses have water dampening we could only do a 75lpi screen conventionally. Now we can effectively run a 300lpi screen without problem, and most of the time we do 200lpi. This gives us the advantages of stochastic screening without the hassle. It's transformed my life because we can get work through twice as quickly. We are high end people in terms of colour integrity and we can discern no ill effects from using this system.'

DAVID HOLMES
Colour Manager
Winnetts Graphics
Manchester

Specialises in repro for the packaging industry, for flexo, litho and gravure. Uses Barco's Monet stochastic screening.

'We've been using Monet for one specific customer producing cartons. We've used a large spot size for an effect with special colours and it's worked very well. But within the general market nobody's using stochastic all the time. I think geometric line screens work very well and that's the screening that will really take off in flexo. Stochastic hasn't really found its place in the flexo market, although there was such a massive hype about it. Possibly it has too much graininess, and if people have to change their anilox rollers than that's a barrier. With geometric they can use the existing rollers.'

TABLE 2 FM spot size represented as an equivalent tone value in AM screening (assuming the spot size is the diameter of a round dot.

FM spot size	Tone percentage		
	60 l/cm	100 l/cm	120 l/cm
10µm	<1%	<1%	1%
14µm	0.5%	1.5%	2%
20µm	1%	3%	4.5%
30µm	2.5%	7%	10%

with conventional screening in Table 2. Those used to working with fine conventional halftone screens should encounter little difficulty, but equipment and practices which might have been acceptable when working with 60 lines/cm conventional halftones may prove to be unacceptable when working with 20µm spot size FM screening.

FILM CONTACTING

It is impractical to consider film contacting for any FM screened films with a spot size less than 20µm. Even with 20µm spots, conditions and controls have to give good even vacuum and illumination, accurate exposure control, clean dust free conditions and only emulsion-to-emulsion contacts should be considered.

PLATEMAKING

A resolution exposure is required to retain the small spots when using 20µm FM screened images on positive working plates. This requires really clean conditions and good housekeeping to avoid dirt marks being reproduced on the plate. We have also experienced some problems with poor uniformity in tones, caused by Newton's Rings between the glass and the film. Exactly the same problems were experienced when printing down plates for Screenless Lithography. In that case it was overcome by using a diffusion foil between the plate glass and film. This is not possible with FM screened films as there would be unacceptable levels of undercutting.

PHOTOMECHANICAL PROOFING

DuPont Cromalin Sprint has been found to be unsuitable for use with 20µm FM screen films which we suspect is due to the way the colorant is applied to the proof. We have produced acceptable proofs on 3M Match-print proof and reports suggest that Fuji ColorArt and Agfa Proof produce acceptable results.

FM SCREENING FOR OTHER PROCESSES

Stochastic screening is of particular interest for flexographic and screen printing because of the geometric pattern that is an inherent part of both processes. However, the lower resolution of these processes means that 40µm spots need to be used. This still provides the benefit of greater detail rendition, but the results are very grainy in flat tonal areas. Image area dependent FM screening is possible with some implementations which allow this. In this case, areas of detail have FM screening and flat tonal areas AM screening. This approach should enable both processes to significantly enhance the quality of their photographic reproductions.

It is perhaps surprising that FM screening has been used with some success in newspaper production, considering the comments concerning the control required in platemaking. But newspapers use negative working plates, so image transfer variability in platemaking predominantly affects the shadow tones. These tones normally fill-in anyway and the increased sensitivity of platemaking is almost certainly concealed by this.

CONCLUSIONS

There is no doubt that stochastic screening provides the means of creating lithographic printed reproductions that, in most respects, equal the quality of the original photographic print. But the results can be inconsistent if sufficient attention is paid to the control of all photomechanical stages in pre-press, so we would not suggest that stochastic screening should be the order of the day for the bulk of printed work. But, when all images go directly to the printing plate it will be a different story.

● Kelvin Tritton is Pira International's principle consultant of printing technology. His findings form part of his new book *Stochastic screening* to be published by Pira International next spring for £75. □

Stochastic Contacts

Agfa	0181 560 2131
Barco	01734 664611
Crosfield	01442 230000
Harlequin	01223 873800
Linotype-Hell	01242 285000
Purup	0181 568 1333
Scitex	0181 208 0977
Service Offset Supplies	(TransCal): 0181 502 4291