



Shapes of liquids on solids at various degrees of wetting. The degree of wetting is measured by the contact angle of the liquid to the solid

For example, are we likely to see the development of inks which improve the quality of printing, and even prevent pick-up in the non-image areas of the plate?

**Banks** Ink formulation is important in lithography, and while it is unlikely that we shall see dramatic changes, there is a steady build-up of knowledge relating to the properties required of inks in the lithographic process. For example, in a previous article in this series, Colin Mill outlined the physical properties of printing inks, their yield value, viscosity, and tack, and while one cannot completely predict the behaviour of ink and consequently the requirements, the background information is accumulating and we are likely to see a steady improvement in inks, such as has occurred in the past decade.

**BB** Anodised aluminium is probably the most common plate material in use at present. Are we likely to see any new materials introduced in the near future?

**Banks** Anodised aluminium is an efficient material for lithographic plates, and we should remember that it was not produced accidentally but was the logical outcome of a better understanding of the lithographic process. As it is a satisfactory material and has achieved wide acceptance, I think it is unlikely that we shall see any great changes in plate materials in the near future.

**BB** Do you think it is ever likely that we shall have lithography without water? In other words a planographic process where, say, the image area has been treated so that it will under no circumstances accept printing ink.

**Banks** If you mean litho without any form of dampening fluid, then the answer is categorically no. It is one of those nice things to talk about but in practice is out of the question as far as the behaviour of materials is concerned.

**BB** It is sometimes said that the development of lithography as a major printing process is surprising, because on the face of it, it is a complex process and a more difficult process to control than letterpress. Do you think lithography is likely to go on expanding as a printing process, or is it possible that gravure or letterpress may develop to the extent where lithography tends no longer to be the expansion area in printing?

**Banks** One must be careful when talking about the complexities of printing processes and remember that a process may be complex to unravel in the sense of explaining precisely how it works, but once having done this, it may be easier to develop and control a complex process than an apparently simple one. This is really what has happened in relation to letterpress and lithography. It is relatively easy to define the physics of letterpress printing, but having understood, for example, the complex pressure distribution across the forme in letterpress, it is a very difficult problem indeed to find a satisfactory solution which completely eliminates makeready. One also has other factors, such as the printing characteristics of the process. It may be difficult to improve letterpress in certain spheres because of its inherent characteristics, whereas litho may be capable of considerable development. So in discussing printing processes and the apparent illogicality of their development, one must see the complete picture. I think litho in the immediate future will go on expanding, but the process which has always held the potential is gravure, although the problem remains of producing cylinders at speed at low-cost coupled with duplication. If the cylinder production in gravure can be made cheaper, and still be fast, then of course it would represent a considerable threat to any developments in the lithographic field. There does seem to be currently a lot of interest in the development of gravure and is something which should be watched carefully over the next few years.  $\diamond$