

TRAPPING AIR DECORATION IN BLOWN GLASS.

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There are many traditional methods for trapping and controlling air decoration in blown glass. Outcomes can vary widely from regular patterns of simple bubbles to complex air twists or drawn voids. A common misconception that all techniques are equally clever does not account for the varying levels of skills involved in each process.

For example, the popular '*bullicante*' method produces controlled patterns of simple bubbles by using dip moulds with specially contoured or spiked interiors. These protrusions create regular indentations in the blown glass surface which trap bubbles when the glass is gathered over. Essentially a mechanical process, there is little scope for individual expression within the air decoration.



Figure 1 Bullicante decoration. Simon Hopkinson D.M.U. 2010 (Photo. Hopkinson)

Alternatively, the Swedish *ariel* technique traps complex voids derived from drawn decoration. Originally developed by Edvin Ohrstrom (1906-

1994), Vicke Lindstrand (1904-1983) and the master blower Gustav Bergkvist at the Orrefors factory c.1936, it is a difficult process requiring hot and cold stages of production.

Initially, a glass embryo is blown and allowed to cool. After masking off, decoration is drawn and cut out. The image is then deeply sandblasted to create the air pockets. After cleaning, the embryo is carefully reheated for reattachment to a blowing iron. A difficult outside casing procedure is then applied to trap the air decoration.

If overworked or over heated, the complex voids become corrupted. Having so many intensive stages makes production risky, rare and expensive.



Figure 2 Ariel Decoration. Simon Hopkinson. D.M.U. 2011 (Photo. N. Essex)

Investigating traditional techniques inspired me to question if new methods of air decoration could be devised. Research in De Montfort University's glass workshop confirmed that the *gathering over* procedure was a fast and reliable way to trap bubbles. It catered for the natural tendency of air to form into simple spheres and contained labour costs by enabling one person production.

This prompted me to abandon alternative casing procedures. I also introduced a personal style of abstract decoration to the techniques. Although the research resulted in several successful outcomes, one method was particularly interesting.



Figure 3 Drawn decoration with bubbles. Simon Hopkinson. D.M.U. 2011 (Photo. Hopkinson)

A cooled embryo was masked off and decoration drawn and cut out. After sand blasting, the glass was slowly reheated for reattachment to a blowing iron. Bicarbonate of soda was applied to the sand blasted recesses and the embryo gathered over. This caused a chemical reaction between the bicarbonate of soda and molten glass which created thousands of bubbles within the drawn decoration.

The advantage of this technique was that it combined the expressive freedom of *ariel* with the simpler gathering over procedure of *bullicante*. It also created a form of glass decoration I had not seen before.

I hope the outcomes from this research are of interest to glass artists and inspire further innovations in creative glass.

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