Textile Printing: Design and Process
Richard Malachowski
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Summary by Olivia Buonomo

Richard Malachowski has an eclectic background in textile science. He received both a Bachelor of Science in Chemistry and an MBA from Providence College, then worked as a plant chemist and director of research and engineering at Cranston Print Works. During this time, Richard traveled to China, Korea, and Mexico and worked at Duro Industries in Fall River.

Richard has experience with a multitude of different textile printing styles including but not limited to hand screen printing, automatic flat screen printing, rotary screen printing, and ink jet printing. Rotary screen printing is the most popular of the printing techniques and produces approximately 65% of all printed textiles. This printing is fast and good for printing long runs, as it can produce over one hundred yards per minute. Automatic flat screen printing is also popular, making up 30% of all printed textiles. It is faster than hand screen printing, although not as fast as rotary printing. Lastly, ink jet printing—also known as digital printing—requires no rollers or screens to make. Unlike the others, you can design on a screen and hit "print," causing the time from design to fabric to be very fast. This type of printing is good for short runs, as colors are expensive to print. Inkjet printing is slowly replacing hand screen printing, as it is much easier to mass-produce printed fabrics this way.

Richard presented a variety of different textiles he has had experience working with. First, he introduced a camouflage pattern. Richard emphasized the importance of pulling inspiration from wherever you can, and in this example, the pattern inspiration was inspired by nature. Different designs were invented for different settings using synergy in the colors, such as desert and nature patterns for different locations. This developed the concept of the "invisible soldier" as soldiers would blend in with their surroundings. This fabric has excellent technical performance due to the rip-stop nylon, which will resist tearing if a soldier were to be punctured.

The second print presented was the famous waving flag design. This fabric is rotary screen printed so it can have a clean, repetitive run and be cut into different-sized pieces at any spot. The inspiration for this pattern was patriotic, and the purpose was so people could show support by wearing the flag. This fabric has been made into many garments and accessories, such as shirts, ties, bandanas, hats, and more. Unfortunately, this pattern is no longer printed. The printer in the United States halted production, and it is only be printed here.

Lastly, the Garfield and Odie cartoon strip print shown was a 100% knit, fleece product. This design was printed using automatic flatbed printing using a 20-inch repeat, but the print size on automatic flatbed printing can print to a 108-inch repeat. This design idea evolved from a print into making products such as stadium blankets and accessories, taking ideas from inspirations and changing it into products that can sell.

Overall, the fabrics presented, despite what printing process were utilized, prove how an idea can be developed into a printed fabric, and in turn can produce a multitude of products. These developments for products could not be done without teamwork, as there are people from each sector of the design process that makes this development possible.