Lenticular prints back in action

From the Cracker Jack box to mainstay advertising and marketing, lenticular graphics have breathed a new life. Continuing development has lead to innovations and applications that previously would have been too difficult or expensive. Today the magic of 3-D effect is not just restricted to attract children's attention, but is designed for corporate promotions too. Marketers have found lenticular as a fantastic medium for communication. To know more about the lenticular graphics and their eye-catching effects read on…

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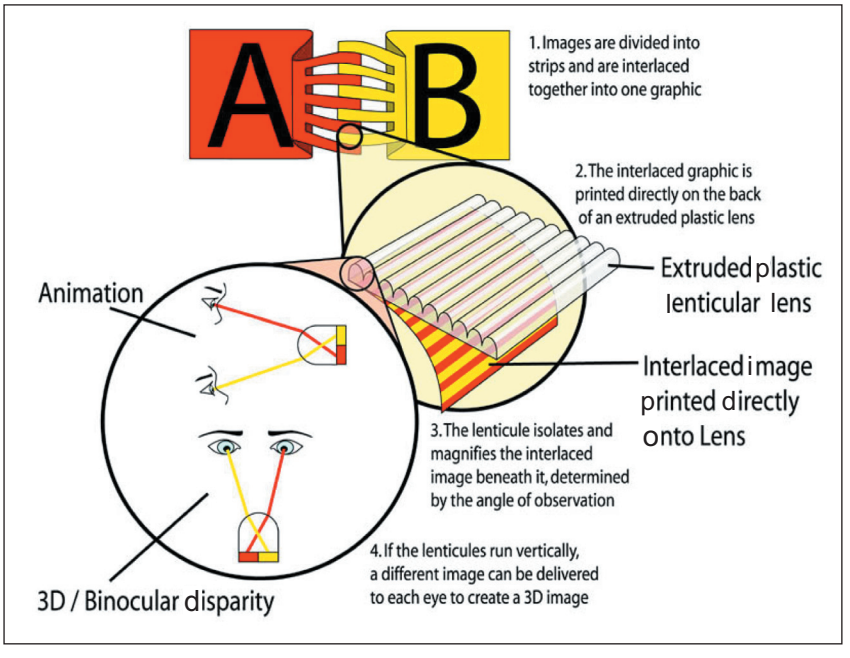
Remember reaching for the prize in your box of Cracker Jacks and unwrapping that fun card with the image that changed as you moved the card from side to side? In the 1950s, lenticular images were crude and simple but were starting to make their entry into marketing with gumball rings, political buttons, and other small trinkets. However, the process of first printing on paper and then laminating the printed image to a plastic sheet was not only laborious and time consuming but made large production runs of lenticular graphics cost prohibitive.



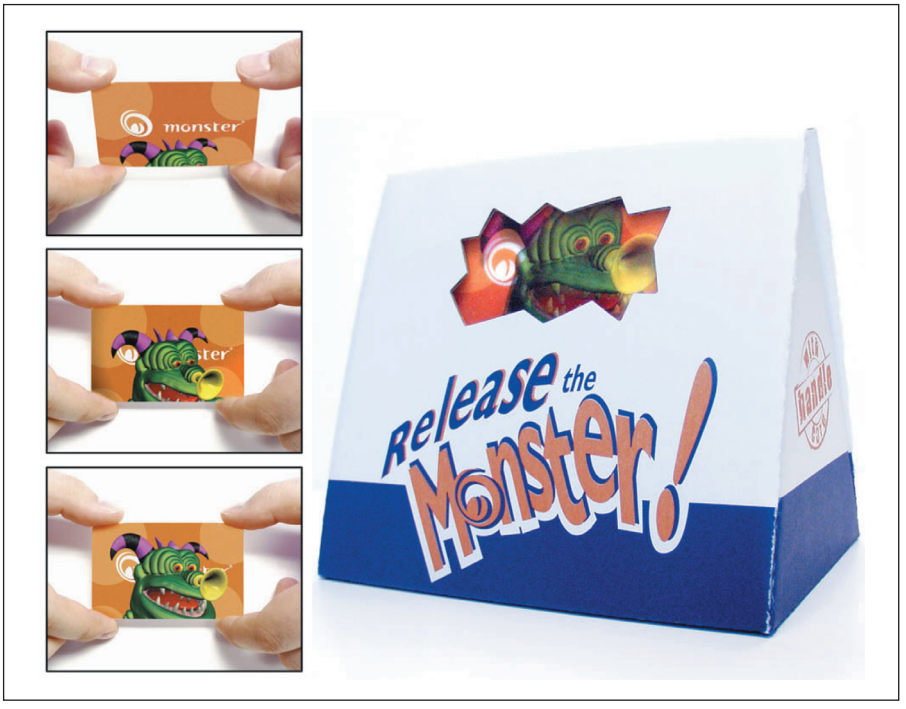
Today, thanks to recent developments in lens materials and advances in printing technologies, printers are now able to print directly on the back of the lens, speeding up the process and improving the image quality. The net result is a product that causes people to stop and look, something that is very difficult to achieve in this day and age.

What is lenticular?

Simply stated, lenticular prints are specially prepared graphics that, when viewed through a lens, allows the viewer to see different images depending on the angle at the image is viewed. The magic behind lenticular prints is the lens - an extruded plastic sheet that has optical-grade cylindrical lenses (lenticules) running parallel to each other on the front face.

The process starts with the images. Two or more images are spliced together, or interlaced, in very narrow strips. The strips are spaced in such a way so that a small part of each image fits under one lenticule. Each individual lenticule magnifies a portion of the images underneath it. However, as one look at a lenticule from any given angle, it reveals a strip from only one image at a time. Since a lenticular print is many lenticules working together in harmony, the end result is a complete image that changes as the viewing angle changes.

There are an infinite number of effects that can be achieved with lenticular graphics, but



they basically fall into two categories: animation and 3-D.

Animation can encompass many different effects, such as morphing one object into another, zooming in on an object, spinning a logo, or making a character walk. Just flipping from one image to another is actually a simple two-frame animation.

Lenticular graphics can also be three-dimensional. That is because each of your eyes sees the world from its own point of view. Your brain combines the images to give you a sense of depth and distance. This is called binocular disparity. By designing a lenticular print so that the lenticules run vertically, each eye will view a distinct image and the brain will combine them to create a sense of depth and distance in a flat print.

Designing for lenticular

Traditionally, lenticular graphics were printed on paper and then laminated to the lens. However, large production runs were very expensive, and if the image was not perfectly laminated to the lens, introduced errors ruined the intended effect. Today printers are able to print directly on the back side of the lens, which is smooth, creating spectacular image clarity and making large print runs of lenticular much more affordable.

Great lenticular starts with a great design concept, so it is important that lenticular designers be familiar with the boundaries and limitations of the medium. Techniques such as using coloured or textured backgrounds to prevent ghosting and choosing fonts that will be easily read on the final piece help ensure a successful project. Complex lenticular designs that incorporate many images or frames require very high resolutions and can generate enormous file sizes, depending on the final size of the printed piece. Before tackling a complex lenticular project, prepress and plating equipment should be tested for its ability to handle large file sizes and a process flow should be developed.

The lens material will establish how the art is interlaced, so this must be determined first. The two main criteria when choosing a lens are viewing distance and the desired effect. Viewing distance is simply the distance between the viewer and the image. Are you designing a postcard to be held at arm's length or a poster that will be viewed from across the room? The image effect is important because some lenses are designed specifically for 3-D and some are designed for animation; there are even some universal lenses that can support both effects. There are also lenses designed specifically for large-format signage.

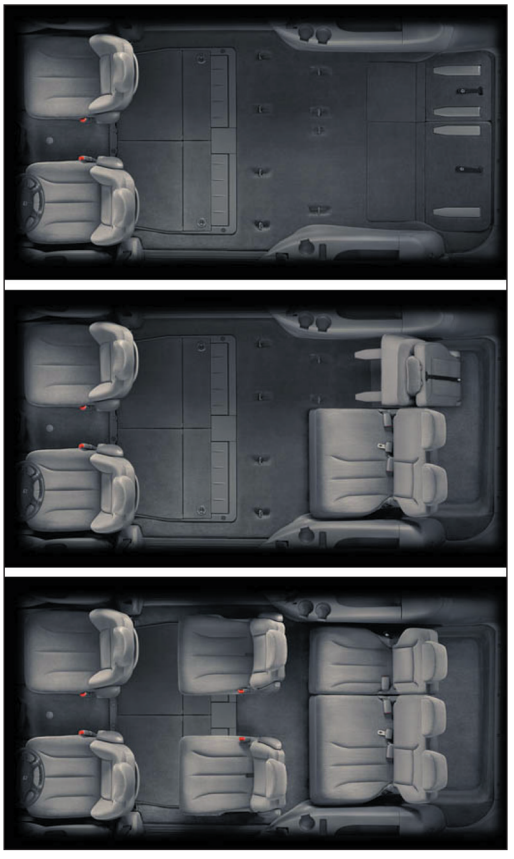
Once the concept is developed, lens material is determined and art files are created, one is ready to interlace the images. Interlacing is a critical step in preparing the art, so it is important to be fully trained and experienced in graphic manipulation and interlacing - or hire someone who is. Although it is possible to interlace images in a standard graphics application like Photoshop, there are specialised software applications for interlacing that make the experience much more efficient and user-friendly.

Printing lenticular

What about the actual printing of lenticular? "It is an art form," says Bob Guidry, director of production and prepress at Cenveo Anderson Lithograph. "Once you get into lenticular you become an illusionist. You are creating something. It is not just ink on paper. It turns a printing project into a work of art."

In the prepress arena, up-to-date workflows and direct-to-plate capabilities are essential. Lenticular imagery will typically challenge any workflow, as the file sizes are very large and the resolution requirements are very high.

Because of the unique demands of



lenticular, the printer should allow time for print tests and training with the processes necessary for preparing and printing lenticular plastic. Since the lens is a plastic material, the printer should be experienced with plastic substrates. Plastics present a variety of challenges to a printer, including drying issues and print registration. Lenticular is typically printed on UV presses, but printers with conventional presses have also successfully printed lenticular.

The use of newer presses or very well maintained presses is critical for good lenticular results. Achieving the desired animation or 3-D effect relies on exact alignment between the image and the lens, which calls for exceptional colour registration and sheet control on press.

A wide variety of finishes can be used on printed sheets of lenticular. Many lenticular projects benefit from adding 1-colour text and even 4-colour process artwork that can be viewed on the back of the lenticular piece. However, before any additional text or imagery is printed, opaque whites, silk screening or a variety of barrier films must first be applied. The printed lenticular can also be die cut, round-cornered, or drilled. One can make posters out of it and cartons for expensive perfumes. The possibilities are unlimited. It is just the imagination.

Emerging markets for lenticular

Marketers are discovering new applications for lenticular every day. From attention-grabbing poster-sized displays to collectible hand-held pieces, lenticular has proven to be a fantastic medium for communication. Continuing development has lead to innovations and applications that previously would have been too difficult or expensive. "There are new lenses for large-format lenticular, digital printing to enable short-run capabilities, and lenses specifically designed for flexible packaging. The recent development of new direct-to-lens printing materials has increased lenticular quality and allows larger print quantities to be more cost-effective," states Bruce Hammerbeck, director of marketing with PACUR, a custom extruder of lenticular plastic. These improvements are paying off for marketers because the nature of lenticular images gets people to stop and take another look. The longer a consumer interacts with the image, the more brand awareness is developed.

Monster case study

Monster, an online job search site, was promoting its 'Release the Monster' campaign. They wanted to enhance the brand messaging of their direct mail package and add value to a prepaid calling card. The lenticular card showcased the MONSTER® brand icon, Trump, in a lenticular animation effect that created the illusion that Trump was peeking out of the box. The plan was to capture the attention of the recipient with a unique packaging style that revealed the fun, animated lenticular card in a play on the 'Release the Monster' theme.

The lenticular card made a bold first impression! It strengthened the brand message of 'Release the Monster' when the package was delivered and continued to support the brand message as the phone card was carried around and used by the recipient.

Chrysler case study

Chrysler wanted to position the 2005 Grand Caravan as the must-have minivan by building target audience awareness of exclusive features including Stow 'n Go™ seating and split-bench third-row seats. They wanted to contribute to a successful product launch by enticing car buyers with families into dealerships. They developed a three-phase lenticular image to convey the versatility and convenience of fold-flat seating, extra storage, and split-bench third-row seats. The lenticular was designed to show how the seats fold flat into the vehicle floors - an industry first and the key feature differentiating the 2005 Grand Caravan from minivans with seats that must be removed.

A 4 × 6 inch magazine tip-in was created, and 18,350,000 two-page inserts were delivered in 10 US parenting, family, and home magazines. The headline for the insert was "Why store your seats in the garage when you can hide them in the floor?" The removable lenticular piece let the viewer explore the benefits of the vehicle interior, showing the seats in upright, folded, and stored positions. Extra lenticular pieces were distributed to dealers for use as customer take-away. For the first time, the lenticular process made it possible to demonstrate in print the "perfect choreography between people and technology" that defines the new Dodge Grand Caravan.

The lenticulars were so popular that dealers snapped them up within hours. And while the Dodge brand as a whole experienced flat or slightly decreased sales, the 2005 Grand Caravan with Stow 'n Go™ seating posted a strong 12 per cent increase in sales in the months following the ads. ■

Images courtesy: Lenstar.org and Cenveo Anderson Lithograph

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