

## Security Features

On an excluding paper<sup>†</sup> basis Security Features revenue grew by 38% year on year, with volumes growing 24% to 4.7m m<sup>2</sup> this year. We have seen early traction with Ignite<sup>®</sup> and PureImage<sup>™</sup>, the banknote features launched in May 2018, with our first customer for PureImage secured in September 2018. As typical for banknote products, security features have a long sales cycle which could take up to 24 months. Therefore, the early adoption is particularly encouraging.

## Banknote Print

Banknote Print volumes increased by 3% to 7.5bn notes (FY18: 7.3bn), and revenue was up 12%. The higher volumes were supported by higher overspill demand, in particular from Venezuela.

As previously announced, the formation of the joint venture between De La Rue with the Government of Kenya was completed on 18 April 2019. De La Rue retains a 60% stake of the joint venture and will continue to manage and control the day to day operations. The move has further strengthened our ties with the country and secured our position as a regional supply hub for security printing.

## Polymer

Total Polymer volumes increased in the year by 23% to 998 tonnes, 667 tonnes of which related to direct sales of polymer substrate. Including the notes on order, our Safeguard<sup>®</sup> substrate is currently, or will be, adopted by 26 note issuing authorities across 61 denominations (FY18: 24 note issuing authorities and 50 denominations).

We continue to differentiate and we have been investing in developing special materials that can be embedded into the polymer substrate, as well as design and security features that make our polymer note stand out. Illuminate<sup>™</sup>, a new design feature launched in December 2018 in the Mauritius 200 Rupee, is one of the latest innovations designed to complement our Safeguard substrate.



## Transforming Debden

Debden was one of our first factories to be able to print polymer banknotes. From 2014 to 2018, the factory went through a transformation programme that included installing two new print lines and launching the Bank of England's £5 and £10 polymer banknotes.

The transformation itself was based on a culture of problem solving, with Toyota Kata – a continual improvement process – being the primary problem solving tool. Innovations at the site included the world's first single pass tactile emboss machine, as well as a laser guided device to measure tactile feature height, and an unblocking machine invented by a De La Rue engineer, that won a UK Works Management Employee Innovation award. During this period, productivity for printing on polymer increased by over 50%.

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We have a culture of innovation and problem solving that enables us to implement new products and technology.

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**Barry McDonnell,**  
Manufacturing Director, UK



## Digitalising holography

Holograms are a key security feature, but most hologram forgeries are based on simulating the effect rather than re-constructing the holographic image. To address this, we can develop more complex structures, or create brighter holograms. Using digital holography, we can create multicolour and multiplexed holographic images, but this technique is widely used in the low security commercial market. There are, however, only a handful of companies expert in making 'classical' holography or advanced 'rainbow' holography, and we are the world leader in this field.

Given our expertise, we apply an advanced form of digital holography to augment our classical method, and it's the combination of these two different methods that gives us a near unique holographic origination capability and versatility.

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The majority of hologram counterfeits are based on mimicking the effect rather than re-originating the holographic image. One approach to addressing this is to develop more complex structures and to create brighter holograms.

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**Brian Holmes,**  
Chief Scientist