TULLIS RUSSELL COATERS

Glenn H Morgan FRPSL

Aside from a few notable exceptions, postage stamps have always been printed on a paper substrate, either with water-activated gum (WAG), or utilising pressure-sensitive adhesive (PSA), more commonly referred to by philatelists as self-adhesive gum. Unless you are a specialist collector, there is a good chance that you will never have given much thought to the considerable technology that goes into the production of modern stamp papers.

WAG stamps for Royal Mail, whether printed at Walsall, Cartor or De La Rue are on paper that bears sophisticated coatings and gum that has been applied by Tullis Russell Coaters Ltd on to the finest base papers that they purchase from trusted partners. This British company with full ISO-9001 accreditation has a long history, is profit making and is the world leader in this specialised field.

THE COMPANY

This year, the Tullis Russell Group is celebrating its two-hundredth anniversary and the opportunity to visit them at this special time could not be passed by. My hosts for the visit were Michaela Quinn, Product and Sales Manager, and Frances Darbyshire, Marketing Manager, who first provided background information about the company.

A management led employee buyout took place in 1994 with the support of shareholders which means that all TRC staff own shares in the company, in much the same way as the John Lewis Partnership operates. There is a loyal workforce of around 115, who are all totally committed to giving the best quality product, performance and service to its customers in 120 countries worldwide. The Bollington site has received over £1 million of investment in the past 18 months to ensure that the company stays at the forefront of the industry.

TRC is the only manufacturer of WAG stamp papers that specialises in this product – for other companies, stamp papers only account for a tiny part of their total paper output. A look through the new issues section of stamp publications will reveal just how often Tullis Russell Coaters papers are used.

TIMELINE

1809 – Robert Tullis founds R Tullis & Co.
1865 – Mr Leigh Slater founds a paper coating business.
1875 – Mr Slater moves to Bollington site.
1896 – Henry & Leigh Slater (HLS) formed.
1906 – David and Robert Russell become MDs and
company name becomes Tullis Russell & Co Ltd (TR).
1980 – TR buys Brittains Decalcomania Papers at Hanley.
1982 – Coated Papers Ltd (CPL) founded in Cheddleton.
1984 – CPL taken over by TR.
1989 – HLS closes and CPL takes over Bollington site.
1994 – Management-led employee buyout at TR.
1999 – Kwang Duck Korean facility purchased.
2002 – Hanley and Bollington sites amalgamate under
the name Tullis Russell Coaters (TRC).
2006 – Hanley site closes and moves to Korea facility.
2009 – TRG celebrates 200 years in business.

PRODUCT RANGE

Last year, a new range of umbrella product names was introduced, each with a prefix of '**tru**' (from the English word True). t**ru**cal® products are created at its wholly-owned South Korean plant, where waterslide papers for the pottery industry and other products, such as designer coverings for bike helmets, are made. t**ru**textile® products, also made in Korea, include textile transfer papers, as used on fashion clothing and bags, etc.

Postage stamp and all other security printing papers – such as those used for tax stamps, passport visas, phonecards, tickets, vouchers and security labels – all come under the **tru**security® banner. The Bollington site has made stamp papers for over 35 years for over 120 security printers and postal authorities, who can be confident that anyone who tries to counterfeit their stamps will be detected. Stamp papers are manufactured in a totally secure environment and are functional enough to withstand the world's postal systems and are continuously evolving.

This evolution has seen the recent introduction by TRC of its environmentally-friendly and bio-degradable ECO range of stamp papers, which is sourced both from sustainable forests under Forest Stewardship Council (FSC) control, or is recycled. These papers also give the customer the option of specifying an environmentally-responsible adhesive.

COMPONENTS AND SECURITY FEATURES

Production of WAG stamp papers starts with the base paper, typically 60-75gsm and OBA free, UV dull, wood free and chlorine free. It also possesses excellent lay-flat qualities, bears gum that is suitable for all climates and is dust-free when perforating.

Some readers may be surprised to learn that it is not possible to produce just one paper type for all stamps, as each printing process requires a different recipe to the coating to enable the best possible result to be achieved from the printing presses.

The paper can be coated to an in-house formula, or be left uncoated to a smoothness and absorbency to meet customer's requirements. The paper can even have 'frangibility' built-in, which is to say it will break as soon as removal is attempted - not such a good feature for collectors of used stamps, but crucial for preventing potential reuse of uncancelled stamps.

The clay coating is the foundation on which layers of additional security features can be added. These features can include ultra-violet inks, phosphorescent, fluorescent or infra red tagging to enable machine reading, and even the addition of materials that can cause a chemical reaction, thus making the stamp tamper evident by changing its colour, primarily to make the removal of postmarks (the so-called 'stamp washing' scams) impossible.

There are a host of other covert and overt features that can be incorporated, including the placement of translucent images (watermarks) into the paper, the inclusion of randomly distributed planchettes (small plastic disks), or use of fine polymer fibres integrated into the PVA gum.

Encrypted, micro-embossed images that can be verified by a decoding lens, security inks and holograms are among the features that the printer can add to the paper supplied from Bollington, but only because the coating is applied to such a high standard. A lesser quality coated paper would present many difficulties to the printer and would result in a visibly poorer finished stamp.

THE COATING AND GUMMING PROCESS

The following description of how TRC produces its WAG and PSA stamp papers does not remotely convey the technical complexity of the true process that I witnessed, but in today's aggressive economic environment, it is not desirable to reveal too much of the precise procedure, for fear that a competitor might benefit.

WAG Papers Converting a reel of base paper for WAG stamps involves the application of specified coatings, security features and gum. The reel then passes through drying units, similar to when stamp printing is undertaken, and finishes-up on a spool at the other end of the machine. The paper is then either sheeted or left in reels for use by the customer, or the reels are further converted for use as the top sheet of self-adhesive stamp paper.

PSA Papers These papers go through a different production process, as it involves the marriage of two separate sheets of paper. A reel of release liner paper is given a non-stick surface to ensure that the finished stamp is able to be peeled off without difficulty. Then the reel of pre-produced top layer paper, as later used to print the stamp design onto, is adhered to the liner, with the self-adhesive gum between the two sheets. Drying, spooling and sheeting (if required) complete the operation.

THE LABORATORIES

I have visited dozens of printers and paper mills down the years, but never have I seen so much emphasis and commitment placed on the testing of materials than at TRC. Hazel Westwood, Senior Technical Manager, showed how everything is quality checked throughout the entire production process, from the coatings to the finishing and from the security additives to the adhesives.

A vast array of technical paper testing and verification equipment is at Hazel's disposal to ensure that nothing but a top quality product ever leaves the plant, be it in reels or sheets, WAG or PSA.

Once the paper has been produced and checked, it is packed and shipped to its destination to be converted by the printer into postage stamps that are later used on mail, or are added to our stamp collections.

I will never look at a postage stamp or sheet of paper in the same light again and I thank TRC for permitting the visit and for giving collectors a small taste of what is involved.

(1400 words)