EIGHTEEN MONTHS ON AND SEYFERT GMBH CONTINUES TO CONTRIBUTE TO BAHMULLER'S EVOLUTION OF THE TURBOX SPECIALITY FOLDER GLUER.

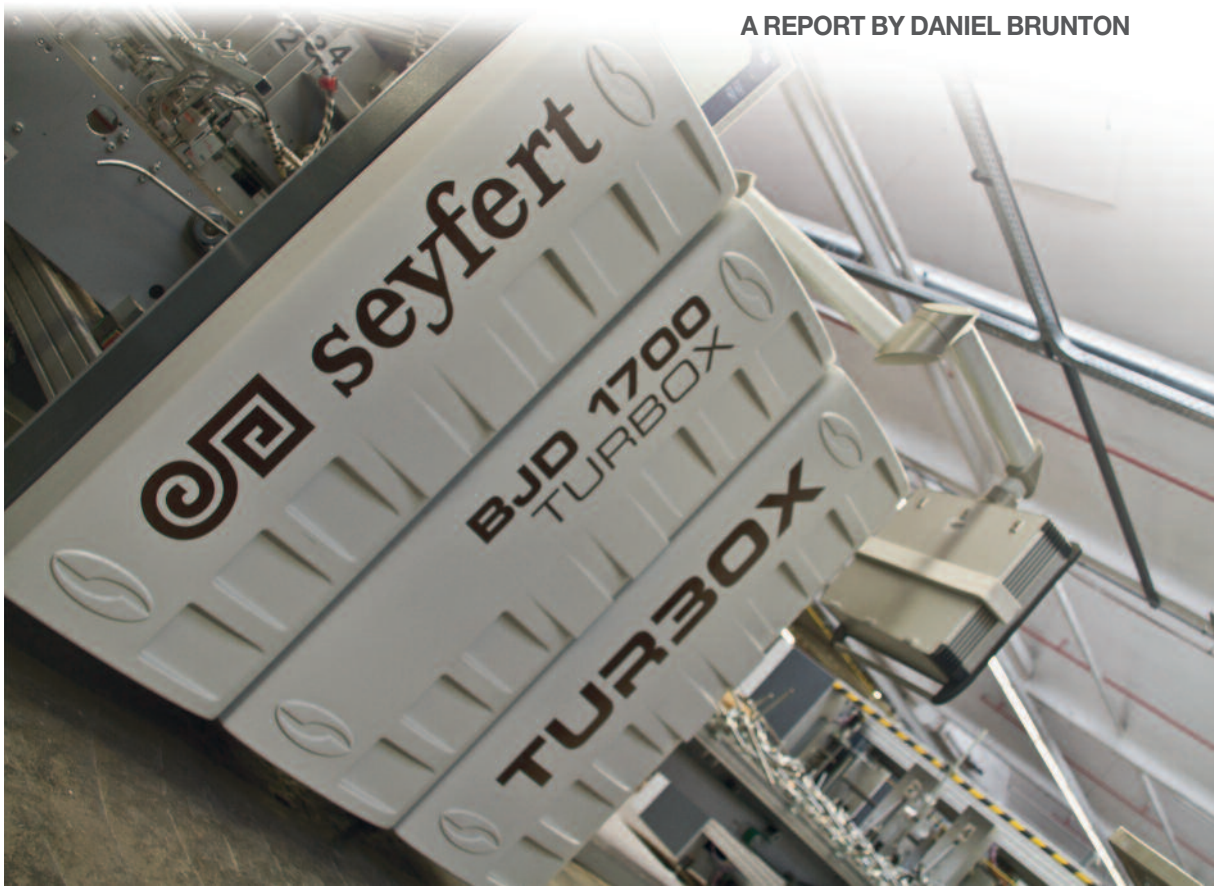
A HAPPY PARTNERSHIP

A REPORT BY DANIEL BRUNTON

Established in 1912 by Werner Seyfert, Seyfert GmbH was founded under the name of 'South German Werner Seyfert Corrugated Cardboard Factory' in Göppingen, Germany — the first corrugated board factory in the south-western region. In 1932 the company moved to Reichenbach/Fils, site of the current headquarters. Some 17 years later, in 1949, the management of the company was taken over by Werner Seyfert Jnr. As the company continued to grow, they set-up a second site in Salzgitter in 1957 and in 1970, Frank Seyfert joined the company.

In early 1979, the company looked to expand again and in April that year, acquired the Monheim plant of Vereinigte Verpackungsgesellschaft (VVG). Moving outside of Germany for the first time, the company then acquired a paper mill — Descartes — and two corrugated factories (Reims and Feurs) from Weyerhaeuser in France during 1981. Four years later, the Provence (Avignon) corrugated plant was acquired from La Rochette.

Continuing its development in the domestic market, 2003 saw the establishment of Seyfert Service GmbH in Monheim and four years later in 2007, the company acquired 10 per cent of the shares in Tri-Wall KK of Japan. Most recently, in 2008, two sheet plants — Libercourt and Décines — were acquired from Mondi Packaging in France. Seyfert celebrated its 100th anniversary in



Michael Barron, Andreas Bruntner and Stefan Beckers with Ulrich Wolz and Oliver Weinmann of Bahmuller GmbH.

2012, now being managed by the third generation of the family and remaining as one of the top five privately owned corrugated groups in Germany. The group employs over 1,250 people across its various sites.

Experts in gluing

Much has been said about quality inspection on high-speed production equipment, such as specialty folder gluers. It could be argued that producing quality in the first place is the best insurance to avoid quality issues prior to shipment, or even worse, at the customer's plant! With continuing pressure on boxmakers to reduce costs and offer ever shortening run lengths, pressure on accurate, high-speed production has never been more apparent.

"At Bahmüller, we have made great progress to eliminate classic sources of trouble for gluer operators," states Ulrich Wolz, Managing Director. "At the heart of our effort is the 100 per cent servo-drive of the Turbox and Topmatcher. Each belt, each machine section, is perfectly synchronised with the entire drive system to ensure that blanks are fed consistently and straight, transferred from one section of the machine to the next, without any skew. Clearly, this is the basis for any kind of quality production. Moreover, from a maintenance point of view, this will never change. Unlike gears, transmissions and other forms of power-transfer devices, servo drives do not wear over time. We believe that our gluers will produce as accurately in the future as it did the day it was delivered — never mind the maintenance cost savings over that time period." These are bold statements indeed, but the sentiment is shared by Seyfert and many other boxmakers who between them have over 45 gluers in daily operation in the US and Europe — with some companies running two or even three Turbox gluers.

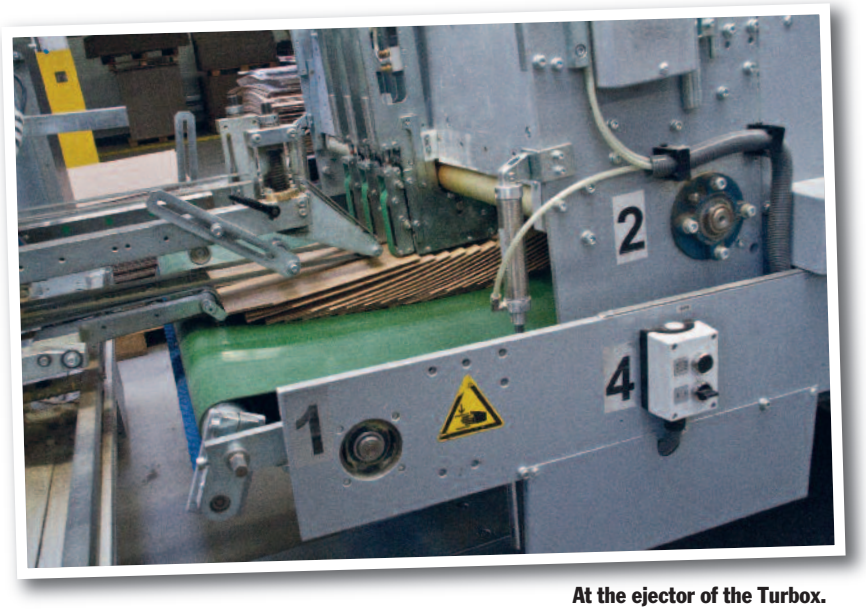
The Turbox for Seyfert Reichenbach/Fils was installed within a week, the operators were trained in a week, after which the machine was running a double shift pattern. Michael Barron, Shift Supervisor, recalls, "At first we ran small jobs so that the operators could get used to setting it up. At the end of August 2012, the plant manager's wish was that the Turbox go onto three shift operation, which we successfully achieved. All our operators were experienced gluer people and what they noticed was there were certain familiar elements to the Turbox, because Bahmüller had studied hard and listened to our advice during the various workshops they held at Pluderhausen."

"Our relationship with Bahmüller goes back many years, around the time that they won the agency for Tanabe," explains Andreas Bruntner, Seyfert's Reichenbach/Fils Plant Manager. "We have been particularly active in

their gluer Workshops and we feel that quite a lot of our technical input over the years has resulted in the third generation of their Turbox II BTX gluer. After taking delivery of the our gluer, one of the great things right from the start was that everything worked exactly the way Bahmüller told us it would. The machine reacted to our demands and we had no mechanical or software failures, which is quite unusual for a new machine."

One of the first projects Bahmüller started with Seyfert was the installation of the Powerpacker, fitted behind an older gluer. "We were intrigued by what they were offering, a system to allow us to improve the handling off the back of the machine," continues Mr Bruntner. "In 2004, we took delivery of the Powerpacker and it has been a great addition to our gluing department. Thanks to this efficient handling system, we achieved the full potential of our Tanabe and continue to run it consistently at high speeds."

The ongoing input from Seyfert, (amongst others), resulted in Bahmüller's second generation of automatic bundle forming and strapping machines, which addresses the high-speed output performance of a specialty folder gluer — in particular when it comes to crash-lock box styles and shelf-ready packaging where manual packing can limit the output potential of the gluer. The Powerpacker II has addressed this problem with a non-robotic solution. The latest generation of machine allows reversing of hand-fulls of even, or uneven counts. In terms of output, this roughly doubles the manual handling capacity of a crew on most box styles.



At the ejector of the Turbox.

ONE OF THE FIRST PROJECTS BAHMULLER STARTED WITH SEYFERT WAS THE INSTALLATION OF THE POWERPACKER, FITTED BEHIND AN OLDER GLUER

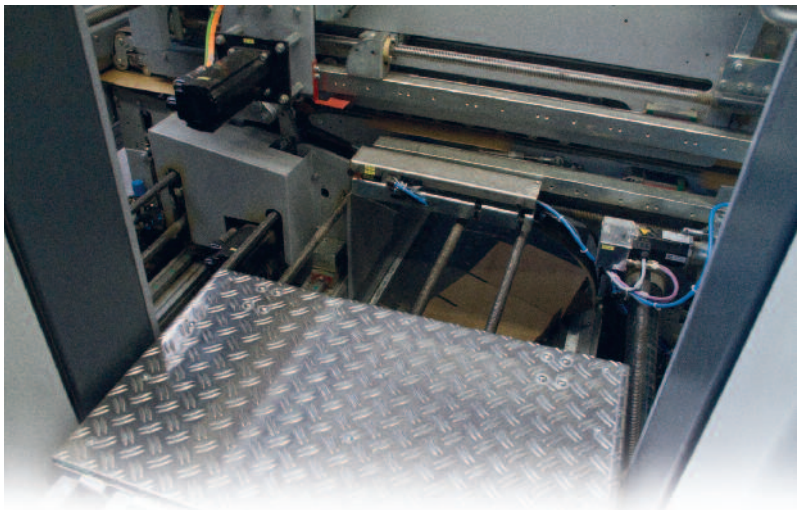
Feeding straight

"The Turbox Feeder, is through its variability, depending upon the shape of the box is both accurate and precise," explains Mr Barron. "This section, as with all types of gluers, is very important and a vital factor, especially when running at such high speeds. It is significant that the set-up which the operator has done on the Feeder remains stable during the complete job, and in our experience, the Turbox Feeder has done this."

Mr Barron continues, "The Unique-fold is reliable, even at high speeds, thanks to its servo-driven rotation. It's this high degree of exactness which allows us to achieve the high performances we have reached in the last one and half years. Our other two gluers both have good folding units as well, but do not rotate as fast and it is this lack of speed which makes them fall behind in performance values." He continues, "The squaring section where the final folding of boxes takes place is dependable and accurate, even at high speeds. The three squaring units reassure us that the boxes are truly squared. They also withstand the full demands of our range of boxes running in sequence in the same consistent, trustworthy and accurate method as the rest of the machine."

"On the list for quality production is the need to remove of cross folding devices required for crash-lock and 4- and 6-corner work," explains Mr Wolz. "In the process of developing the Turbox system, we decided early on to eliminate any kind of cross-folding device that would work against the running direction of the blank. Opposing forces create the opportunity for damage of the blank, significantly impact the speed of the machine and as a design consequence, introduce a high chance of failure rates in performing the folding task. Of course, we are talking about folding hooks. On the Turbox these hooks are a thing of the past and were successfully replaced with the 'Unique-fold' system — a servo controlled front-fold system

A six colour Gopfert Ovation, equipped with JB dryers, feeds a Bobst Mastercut die-cutter.
Below: The Uniqueject ejects defective boxes onto a lower out-feed conveyor.



QUALITY CONTROL DURING THE FOLDING AND GLUING PROCESS ON A SPECIALTY FOLDER GLUER HAS ALWAYS BEEN A PROBLEMATIC SUBJECT TO MANAGE IN THE PRODUCTION ENVIRONMENT OF A BOX PLANT

operating at synchronised speed with the blank during the folding process. The advantages are clear — no more missed folds as servo drives do not bounce, there's minimal spacing between blanks with the ability to run 35,000 kicks on B-flute 4-corner in-fold boxes."

Detecting defects

Quality control during the folding and gluing process on a specialty folder gluer has always been a problematic subject to manage in the production environment of a box plant. One hundred percent manual inspection is essentially impossible at normal production speeds, which leads to the risk of sub-quality boxes being introduced to shipping. Electronic inspection devices are available but a signal triggering a failure leads to discarding many boxes, including good ones, as it's impossible to manually select the non-conforming blank. But mistakes happen, even on the most sophisticated equipment. Mr Wolz explains, "Having done away with the need for human labour at the end of the machine also means one is eliminating the opportunity to do final quality inspection. There are different kinds of monitoring systems available in the market for quality inspection. If the system identifies a fault, the individual box gets ejected with the 'Unique Eject' system. This unit will eject a faulty blank at production speed and deduct it from the total count."

"Our Box ejector is the dustiest part of this machine," jokes Mr Barron. "Thanks to the excellent set-up, accurate folding and high speed glue application from the Baumer hhs glue system, the defect level is almost non-existent."

Ongoing partnership

"Pretty much from the start, we all realised that the Turbox was living up to its name," says Mr Bruntner. "Large job orders which, over the years were normally split in to two or possibly three parts, are now running in one hit and delivered on time. The people on the machine took so much pleasure in running such high order quantities that the performance of the machine rose considerably. One of the original goals we asked of Bahmüller was to achieve 30 per cent more productivity on one machine — we have achieved that productivity goal practically overnight. We still speak today of an order for 110,000 boxes that we glued in 10 hours!

"The Turbox is built for high running jobs and with its accuracy and precision runs like clockwork. But it is not just about building a fast machine. We have had the need to change or improve several items, the kind of things which only operators see. Bahmüller reviewed them and immediately developed upgrade solutions. It's this prompt reaction to a particular wish which makes Bahmüller a great partner for us," concludes Mr Bruntner. ■