Heidelberg News

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UNBEATABLE TEAM
Bernd Payer and his dog Johann

SCOTTY IN THE CONTROL CONSOLE
Split second help with Remote Service

LATIN AMERICA'S GUTENBERGS
In the footsteps of print pioneers

HEIDELBERG

Dear Reader,
Across the world, thousands of researchers and printers refine all sorts of conceivable variables to create the best possible print outcomes for their customers' communications needs. Some printshops even mix colors themselves, in order to bring something exceptional to paper. In the very least, paper itself affects the outcome. This time, in the grupo Portucel Soporcel from Portugal, and Gmund in Germany, we introduce you to an industrial and a specialist paper manufacturer; we speak with the expert, Dr. Franz-Josef Vollherbst, about the demands made on paper from the perspective of a printshop, and we shed light on the global market. We make you familiar with 1a Druck Judenburg in Austria, where a predilection for unusual paper materials prevails, and explain to you, how you can dry your printed matter more quickly with DryStar solutions from Heidelberg.

Additionally, you will learn how we are able to send our service technicians to your printshop at nearly the speed of light, why the Canadian rock band "Rush" profits from the Speedmaster SM 102-12-P at Battlefield Graphics, and why the greatest strength of Artes Gráficas business director, Manuel Ribeiro, works peacefully. Finally, we transport you back to the beginnings of the Latin American printing industry. Surely, once again you will find something to fascinate you here!

I wish you a pleasant read,

Bernhard Schreier
CEO Heidelberger Druckmaschinen AG

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Nádia Ribeiro, the daughter of the company founder, works energetically in the business of her father, Manuel Ribeiro.

M.R. ARTES GRÁFICAS, PORTUGAL

Com calma!

Manuel Ribeiro grew up in an idyllic small village in the center of Portugal. As a young man he felt drawn to the capital; after Lisbon and during the colonial war he had to go to Africa as a soldier. As a young man, today aged 62, he experienced a lot, while also learning much that served him later in life. Undoubtedly the roots of his balanced style of work lie in this, com calma – calmness – as the Portuguese say. For more than 30 years, he has been successful as managing director of his own printshop, which he now runs together with his youngest daughter, Nádia Ribeiro.

In 1959, at the young age of 16, Manuel Ribeiro made his way to Lisbon to work in a printshop as a silk screen printer. He has hardly arrived, when the current offset printer hands in his notice, and so Ribeiro is abruptly retrained to work as an offset printer. Politically, the times at the beginning of the 1960's are also anything but secure: guerilla wars are being waged for independence in most Portuguese colonies, and have been continuing on for more than a decade. Portugal attempts to master the situation by successively sending more and more soldiers to its colonies – among them Manuel Ribeiro, who is drafted into military service. While he serves out his military term between 1963 and 1966 in Africa, among other places, the printshop where he had been employed is closed. "After that, I joined a printshop, where I ended up working until 1980 – that is for fourteen years," the entrepreneur relates, as he thinks back on the past.

During this period, however, Portugal's history draws him back in again: on April 25th, 1974, when he had already risen to the position of manager of the printshop, the military carries out a coup against the fascist leadership in Lisbon – and the so-called Carnation Revolution begins. Practically overnight, the colonies are given their independence, and over the next several months hundreds of thousands of people stream back into their home country, which the majority has never seen before, only a common language and religion links them to Portugal. Their integration presents the country with formidable problems.

In the shortest time, entire city neighborhoods must be raised out of the ground, so that people have some place to stay. At first, the economy threatens to collapse, unable to absorb this enormous quantity of unemployed labor. On top of everything else, following the coup, the new political leadership adopts a Communist program and nationalizes industry, making the situation even worse. In a word, in the 1970's, the country stands on the brink of total chaos: the zero hour. "And just in this moment, I decide to start my own business. However I do still supply my previous employer to this day," Ribeiro exclaims proudly. He has been running his printshop since 1978, though at first only during the after-work hours. During the day he continues to earn his daily bread as a salaried printer.

Period of Recovery. In the end, the circumstances in the country become more relaxed, and democracy is introduced toward the end of the 1970's – following more than forty years of dictatorship. Economically, there is a first period of recovery, thanks to a boom in construction and to high consumer demand among the new citizens. After two years, his own printshop is doing so

"The products should remain affordable, and the relationship between price and quality should make sense." Nádia Ribeiro

Printer Hugo Cortese with printed PVC sheet at M.R. Artes Gráficas in the pressroom.

well that Manuel Ribeiro finally resigns from his salaried job, in order to concentrate fully on his own printshop, which he is able to expand slowly, step by step. In 1986, the country joins the European Union, resulting in another economic upswing – this redounds to Manuel Ribeiro's benefit as well.

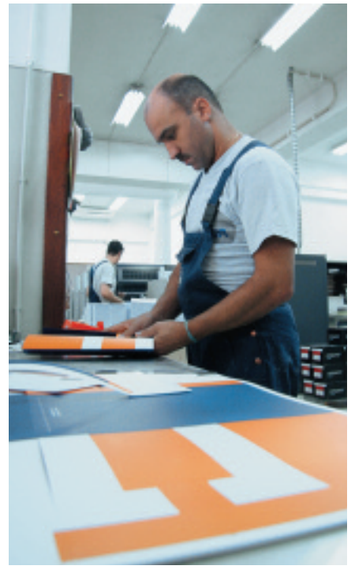
Today, Ribeiro looks out over a considerable enterprise that inhabits two stories of a building located near the Lisbon airport and the Lisbon–Porto Expressway, so the business is easily accessible. All orders are processed in a modern, clean, and well-organized environment. In recent months, Manuel Ribeiro designed successful labels for an excellent Portuguese red wine. He has quite a few "samples" of his wine labels on bottles standing around the office – and these are not only there to be appreciated visually.

The wide production spectrum of the company includes business cards, catalogues, books, financial reports, posters, and newspapers. However, like many of his colleagues, Ribeiro has been suffering the last few years from the general economic malaise in his country. Some printshops have already been forced to close up shop. The catch phrase of the day is "slimming down": the company once employed 28 workers, today there are only 18. All the same, with these resources the company still generates a turnover of more than two million euros (approx. 2.35 million U.S. dollars) annually. On average, print-runs range from 5,000 to 10,000 copies. The majority are four-color jobs with coating.

Good Customer Relations and Innovation are Key. From "his" history, Manuel Ribeiro has learned that he will get through setbacks. Despite economic circumstances, he relies on new machines "made by Heidelberg," for very good products, and on good customer service. His business model is clearly structured: many jobs with small print-runs determine the order of the day's business. He has a large, solid, and established clientele who ensure that the turnover is stable. In addition to small businesses, M.R. Artes Gráficas also counts large enterprises such as IBM, ALCATEL, Grupo PESTANA, Park Saatchi, Publicis, and JCDecaux among its clientele. Ninety percent of its customers are regulars. "We never lose a client," Ribeiro proudly explains.

Industrial orders are processed more than any other sort. "Nevertheless, we also work with advertising agencies that possess enormous creativity, and who challenge us almost daily to come up with new ideas by their demands. In such circumstances, we offer careful, considered advice, since the products should remain affordable after all, and the relationship between price and quality should make sense," explains Nádia Ribeiro. Good advice, she is convinced, is the key to success, as well to a productive cooperation with customers.

Manuel Ribeiro gazes contently into the future: thanks to Heidelberg technology, his businesses are doing well.



Joao Paulo Almeida works on a printing design of the Speedmaster SM 74-4 with coating unit.

So that he may offer his customers better advice, Manuel Ribeiro is also ready to innovate. Thus, he has already experimented with waterless offset printing – and these have also born visible fruit. "This manner of printing is environmentally friendly, since no alcohol is used. In my opinion, this offers a great advantage when trying to attract ecologically minded customers. However, the demand to fulfill my orders as rapidly as possible forced me, for the moment, to give up this approach: as always, most customers want their orders completed quickly. The time is not yet ripe in Portugal, although we did already have good experiences with our Speedmaster SM 74," says Manuel Ribeiro.

Living up to our Reputation. "Thanks to the Heidelberg technology that has been adopted, we can dare some unusual experiments, and literally fulfill our customers' every wish. Word gets around quickly, and it's better for us than competing for customers over price. We are definitely not one of the cheapest in Lisbon, though we always deliver punctually, and with the highest quality; this is our main sales argument, because we live by word of mouth," explains Manuel Ribeiro. So, for example, M.R. Artes Gráficas prints on PVC – without using UV technology. Excellent results in this field ensure that the company receives many orders. On the other hand, the 62 year old is not interested in going after large orders, preferring to leave these to large printshops, while he continues to expand in his niche. In all of this, he relies on his close ties with his customers.

His employees work two shifts on two printing presses, a Speedmaster SM 52-4 and a Speedmaster 74-4 with coating unit and dryer. "In the meantime, I have more orders once again, thanks in part to the high quality of my presses, especially in the area of catalogues. We also don't accept large orders, because otherwise our remaining regular customers would have to put up with longer waiting periods. That, again would be bad for our reputation," Manuel Ribeiro is convinced. He always stands by his word: a deadline is a deadline.

M.R. Artes Gráficas is also well equipped in the area of finishing, it owns a Stahlfolder TH/KH, as well as a Stitchmaster ST 100, even if they are not used to full capacity. "While they may not be used on a daily basis, still, I am not dependent on other book binders. We prefer not to let any work go to the outside, or we wouldn't always be able to guarantee our quality, moreover, we would lose a lot of time. I can also conduct myself with confidence, since we can offer the customer one-stop full service just like any large printshop," explains Ribeiro, visibly pleased. ■

Facts & Figures

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1A DRUCK JUDENBURG, AUSTRIA

The Man in the Mountains

You need a godly amount of courage to take over an ailing company that is deep in the red. Bernd Payer did and as one of the first in Austria, immediately introduced UV printing.

Is it in the genes? The healthy forest air? Is it the topography of the Steiermark, a region that prides itself as the green heart of Austria? Maybe its majestic mountain range, the crystal clear mountain lakes, the lush green alpine meadows, and blossoming apple orchards engender a sturdy and vigorous breed. Arnold Schwarzenegger, famous as the "Terminator," typifies Steiermark: by dint of ambition, discipline, and stamina he managed to go from being an actor to Governor of California. Bernd Payer, the 35-year old director of 1a Druck in Steiermark's Judenburg, shows similar qualities of character. Relaxed, the passionate mountain-biker sits in his office chair, occasionally patting his constant companion Johann, a mixed-breed dog, affectionately on the head, as he tells the story of how everything began in the spring of 1996. It was a leap in the dark: "I knew neither the city, nor the company, nor the employees. I also didn't know how many employees were working here, or under what circumstances."

Chance Offering. Actually, at the time, Payer – a typographer by profession – wanted to begin working for a paper manufacturer in global distribution. He had already accepted the position. But ultimately he could not resist an offer from his boss at the time, the director of a Graz publishing house, to take over the nearly bankrupt print shop in Judenburg: "the company either needed to be restructured or shut down." Today, roughly ten years later, with just under 5 million euro (approx. 5.9 million U.S. dollars) in sales, and 34 employees, 1a Druck is a flourishing enterprise that grows and grows.

Flight Forwards. When Payer takes over management of the print shop, he already knows that the business is in the red. It turns out that the situation is much more catastrophic than he had been told. Since the business was just one among many branches in a larger corporation, no one had seriously bothered themselves with the business locally for years. Not only are the buildings and machines antiquated – in spots it rains through the roof, customer acquisition, marketing, and sales are also in bad shape – are practically non-existent. There is no money for investments. Things really go downhill for the print shop when its main customer, a regional newspaper, drops out, and in one stroke nearly 50 percent of turnover is swept away.

In November 1996, Payer takes over the enterprise in the form of a management buy-out with 24 former employees at its nominal value and re-establishes the business as a limited company (i.e., GmbH). Payer, of all people, was a high school drop-out, who over five years had been employed in various completely different divisions in the

Hans Graimann die cutting at a Heidelberg platen. (photo left)

Uwe Ambrosch monitoring printed sheets on the Prinect CP2000 Center of the Speedmaster CD 74-6 equipped with UV. (photo right)

The six-color Speedmaster CD 74 equipped with UV in the pressroom of 1a Druck in Judenburg. (photo right, outside)

“We quickly reached our limits using the old machinery.” Bernd Payer

“We were in the black from day one.” Bernd Payer

Graz publishing house. A jack-of-all-trades with the technical know-how ranging from prepress to postpress, Payer at the same time, understood the business management principles underlying cost accounting and disposition, and lastly had traveled across nearly all of Austria in the field service. Most recently, he had been employed as assistant to the management board in the Graz publishing house. Perhaps it is precisely this mixture of the most diverse talents, and the lack of linearity in Payer’s biography that enable his success. “We were in the black from day one,” recounts Payer, adding “my excellent contacts with potential clients formed during my field service for the corporation proved to be a huge advantage.”

All the same, for the time being, the print shop is only able to offer its customers contracts, which can be fulfilled using the outdated machinery: “We very quickly reached our limits,” Payer relates. In 1998, he took his first step in a flight forwards by investing in machinery and a new building.

First, he acquired a Heidelberg Speedmaster SM 74 five-color, a folding machine, and a pile turner. This is the first time in his life that he buys something on credit: “At the time, I spent many sleepless nights, since the investment sum was rather breathtaking.” The machines had hardly been delivered, when distress calls are heard from other departments, in prepress for example, which is unable to keep pace with plate production. So, the company quickly shifts first to CtF, and eventually to CtP.

The Las Vegas Principle. As the old building is too small for the new machines and new orders, and the rent and renovation costs are too high, a new building is constructed. In order to keep costs as low as possible, the Las Vegas principle is applied: “All attention in the front, nothing but the cheapest in the back,” Payer explains. This shouldn’t be taken literally. In this vein, the store-front is not ostentatious, but is designed to be user friendly. Only the magnificent glass façade with its immense curtains, and the partition hung above, sparkling with a look reminiscent of the 70’s, scintillate with some showbiz flair. A mix of pragmatic and fashionable design also governs the pressroom. People and machines are reflected in gleaming raspberry-colored linoleum flooring. UV printing dominates, today accounting for 30 to 40 percent of sales. The inspiration to enter UV printing came to Payer and his partners during a trip to Germany. “I thought printing on synthetic materials was incredibly cool,” Payer admits. He also made inquiries at Heidelberg, and in January 2000 buys a Speedmaster SM 52 five-color equipped with coating and UV. At the time, this was only the fourth such UV press of its kind in Europe. To be sure, the printshop initially had difficulties acquiring the necessary know-how.

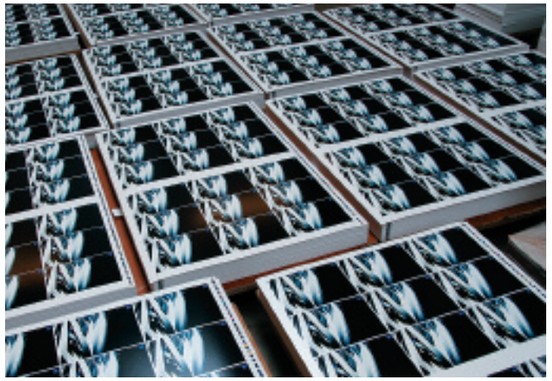
In the beginning, the degree of synthetic material used comes to roughly 20 percent, three years later it amounts to approximately 80 percent. UV printing plays an important role in the climb in annual sales from 1.7 million euro (2 million U.S. dollars) in 1996 to 4.5 million euro (5.3 million U.S. dollars) in 2005: “Print runs in the UV area average around 2,000 sheets, but thanks to the development and production of niche products, we earn substantially larger margins. And this, although the amount of time and labor costs, as well as acquisition costs for material such as synthetics, foil, and varnish are much more expensive than in conventional printing,” explains Payer.

Varnish and UV. Payer has an unerring feel for the market and invests accordingly. When he and his partners notice that the trend is leaning toward more than just two-color, and that the medium-format press is being used to full capacity, they fold up the five year old Speedmaster SM 74 and the SM 102 they had purchased used, and buy a five-color CD 102 equipped with chamber blade and coating unit. 1a Druck can now finish inline more flexibly using water–based varnishes, able to generate high-gloss finish, glossy, satin, or iridium effects, for instance. A few months later, the company acquires a new CD 74-5 equipped with coating unit and UV, as well as an SM 52-4 with coating unit. In exchange, the print shop gives up three presses. “Some in the industry thought that we had become megalomaniacal, but it paid off for us in the end. We were able to set our business on a course into the future with growth,” explains Payer.

For now, as a last investment, he exchanged a CD 74-5 UV this past spring for a CD 74-6 equipped with UV; a Stitchmaster ST 300 gatherer stitcher, and cutters from Polar round out the postpress facilities. Nowadays, no out-dated equipment is being employed, everything is modern and state-of-the-art. “If we hadn’t taken these steps, we would most likely be a small print shop today, or already out of the running. The flight forwards, although full of risks, paid off,” of this Payer is certain. The increase in the number of employees from 28 to the current 32 also confirms this. Nine of them work in prepress, which includes digital printing, an additional eight work on offset

Uwe Ambrosch inspecting a printed sheet of synthetic material and on a short break. (photos left)

New printjob of the six color Speedmaster CD 74. (photo right)



“I thought printing on synthetic materials was incredibly cool.” Bernd Payer

printing presses. Six are employed in bookbinding, two work in field service, and seven work in management. People in the UV area work for the main part in single shifts, and finishing is completed in two shifts using conventional presses.

High-end Products. 1a Druck serves customers from all over Austria; the majority come from the capital in Vienna. The company receives a portion of its orders from Liechtenstein, Switzerland, Romania, and Germany. Approximately half of the 2,500 customers are agencies, the rest are mid-size firms and large-scale industrial enterprises. “We are not among the least expensive print shops, although in exchange we offer above average service and quality,” is how Payer sketches the business model.

With its configuration of machines, the Judenburg company covers the whole breadth of commercial printing, from two-color fliers, to annual reports and post cards, to brochures with high-end finishing using metalFX, for instance. Mainly large-scale enterprises such as the crystal manufacturer Swarovski order high-end products. “The larger the enterprise, the more complex and demanding the order becomes. In the end, it also is a question of price, as lenticular printing shows. There is not much demand for this, and then only from companies like Coca-Cola,” says Payer. In his opinion, the trend, including in synthetics, is clearly toward enhancement. In the meantime, 50 to 60 percent of all jobs are coated, in UV printing the proportion has reached as high as 90 percent, since varnishing improves scratch and wear resistance, thereby increasing the durability of the product. 1a Druck processes PVC, adhesive plastic sheeting, PET, and polyester in strengths ranging from 0.04 to 0.08 mm used in mouse pads, stick-on labels, and displays, for example.

Simple and Comfortable Control. Paper consumption amounts to about 800 tons annually. Print runs range between 1,000 and 3,000 in UV printing, between 3,000 and 7,000 on the Speedmaster CD 102, and between 1,000 and 5,000 in the medium format (50×70 cm or 19.5×27.5 inches), and are consequently relatively modest. This is evident in the high use of printing plates during prepress, which amounts to 12,000 m² (14,350 yd²) annually, but also in the frequent job rotations. “Networking plays an important role in ensuring short

“We need to optimize the flow of material, and that requires ample space.” Bernd Payer

set-up times. That is why we immediately introduced CIP-3 color data transfer when adopting the new SM 74,” says Payer. Printers simply and comfortably control the press by means of the Prinect CP2000 Center, substantially reducing handling effort. To ensure quality control during the production run on both of the large Speedmaster CD 102-5 and CD 74-6 presses, the Austrians use Prinect Axis Control. The color measuring system reads the color measuring strips of the printing sheet spectrally, and in this way securely sets the correct coloration.

Growth and the Need for Space. The uninterrupted growth of 1a Druck does come with a price. But, by no means demanded by the employees – they feel fine. Not only because as partners, they participate in the success of the company, but also because of the excellent atmosphere. But space is becoming restricted. In the pressroom, palettes are stacked tightly together as there isn’t enough room to store all the palettes, both unprinted and printed. “In contrast to before, now we more often receive contracts with an order of magnitude of 10 to 20 palettes. As a result, we need to optimize the flow of material, and that requires ample space,” Payer explains the expansion strategy. At present, 1,680 m² (2,010 yd²) of usable space are available. An additional 1,200 m² (1,435 yd²) are supposed to be added. Payer has already acquired the neighboring property for this purpose. One may, in other words, count on a sequel to 1a Druck’s success story. Or as Arnold Schwarzenegger playing the ‘Terminator’ so aptly put it: “Hasta la vista, Baby.” ■

Facts & Figures

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BATTLEFIELD GRAPHICS, CANADA

Canada has space in abundance. And so, anything can easily come in a size larger – even printing presses. Particularly when quality and productivity increase as a result, something on which Paul and Jerry Theoret, the owners of Battlefield Graphics in Burlington, place great value. Adopting this approach has brought them success: among other things, they print the tour books for the "Rush," the Canadian rock band that enjoys world-wide cult following, on the first twelve-color Speedmaster SM 102 with perfecting device, to come to North America.

Tuques, is what Canadians call the knit caps that protect them against the icy winds that come down from the Arctic and largely empty the streets of life in winter. Seen from the air, Ontario also takes on the outline of a cap. Bounded by the Hudson Bay in the North and the Great Lakes in the South, the tail-end corner of the province inserts itself into the USA, as far down as the Niagara peninsula. Not only Toronto, Ontario's capital, lies in this corner, but Burlington as well – where Battlefield Graphics is located. "Ontario enjoys a milder climate than the rest of the country, which is why we only pull out our Tuques in November," observes Jerry Theoret mischievously. The 49-year old is a partner in Battlefield. Indeed, the half-hour drive by car from Toronto to Burlington takes you past small vineyards and fields of fruits and vegetables. Along the way, the view presents grasslands and forests. British soldiers defeated the advancing Americans here – more precisely at Stoney Creek – in 1813 during the British-American war, forcing them to flee. The defeat was so deeply felt that the American troops never again dared venture so far up on the Niagara peninsula. Today, a memorial, the so-called 'Monument,' commemorates the battle. As does the name: Battlefield. Together with his brother Paul, president of Battlefield, Jerry Theoret manages the second-generation printshop. The company has grown steadily since their father founded the company in 1964. From what was originally a five-person family enterprise, Battlefield has in the intervening years grown to employ 75 employees and generates annual sales of approximately 10 million euro (14 million Canadian dollars), reports Jerry, who received a university degree in economics. This growth is also noticeable in spatial terms: in the meantime, company grounds measure 8,200 m² (10,405 yd²). Confronted with the bustle and tumult in the immense production hall, one feels as if one were standing in a gigantic anthill. The printing-presses hum in time with each other, fork-lift trucks carve a path past computers, palettes, and outsize rolls of paper, which have been stacked one atop the other in fat columns. They are used to feed Battlefield's latest acquisition: a twelve-color Speedmaster SM 102 with perfecting unit, the first printing-press of this kind on the continent.

Paul and Jerry Theoret, the two brothers have large ambitions and therefore – the first in North America – they are betting on a twelve color Speedmaster SM 102 with perfecting device and CutStar (from left).

At the Top out of Principle. To be leader in innovation is not unusual for Jerry and Paul Theoret, it is their company strategy: "In order to be better than the competition, we always bet on the latest technologies, say on CoCure UV, for example. Customers are becoming ever more demanding. They want multi-colored, unconventional products; they want them quickly, and with exceptional quality. We are only able to meet such requirements by using larger machines."

The Speedmaster SM 102-12-P plays a central role in this concept. Depending on the order, Battlefield uses the sixth and twelfth printing units for coating (5/5 color with two-sided finishing) or for special house colors (6/6 color). Meanwhile, around 65 percent of the jobs are coated. "With the SM 102 we can print and finish more quickly and economically. The one large press is as productive as two small ones," Jerry emphasizes. Given price pressures, he and his brother Paul purchased the CutStar Plus sheeter at the same time as the SM 102. "We are able to adjust the cutting length precisely to the given printed product. In this way we save considerable amounts of material, and profit from lower paper costs, since reel stock is less expensive than sheet stock," Jerry explains. Since putting the SM 102 to work, jobs have grown bigger, which affects the volume of orders. This is also related to the customer structure: in the meantime, about fifteen large-scale enterprises such as Wella, General Motors, BMW, and Hewlett-Packard account for 80 percent of sales. Battlefield mainly finishes brochures, annual reports, advertisements, as well as window envelopes for these companies. The average order runs to 15,000 sheets. Between twelve and fifteen orders are processed daily. The company runs on three shifts, from Mondays through Wednesdays around the clock, and from Thursdays through Saturdays for twelve hours. On Sundays, the machines undergo maintenance.

Customers, who chiefly come from Ontario (with around 15 percent out of the USA) especially value the one-stop full-service, from prepress to press to postpress. The latter includes die-cutting, folding, cutting, stitching, and embossing. Thanks to the SM 102, Battlefield has been able to extend its customer relations, and increase its market share. "Without the large Speedmaster, we would not have received the new jobs – finishing an insert for Hewlett-Packard, for example. ▸

The Speedmaster SM 102-12 with perfecting device and CutStar in the pressroom of Battlefield Graphics.

“WITHOUT THE LARGE SPEEDMASTER, WE WOULD NOT HAVE RECEIVED THE NEW JOBS.”

JERRY THEORET

Only the twelve-color press and CutStar enabled us to raise quality and flexibility, and improve service and productivity,” Jerry stresses.

Enthusiastic Rock Stars. This assessment is shared by Patrick McLoughlin, merchandiser for the Canadian rock group Rush. He has just produced a book to mark the 30-year career of the Band, which brings together all the previously published tour books into one coffee table book. “It is an awesome book that we could only have accomplished with the help of the new SM 102, because with the press we were able to print both the front and rear side in one pass, as well as add coating to both sides. We produced considerably more quickly as a result,” says McLoughlin. When dealing with a normal tour book of 36 pages, long delays can be managed, but not with a 400 page volume. “A perfect project,” raves McLoughlin, who thanks to the twelve-color Speedmaster not only saved considerable time, but also around 15 percent in expenses – and the quality is impressive.

George Kiss on the SM 102-12 with perfecting device. In the background one can see the paper rolls for the CutStar. (photo above)

Good is often not good enough for the printers at Battlefield Graphics: intensive quality controls for the anniversary book of the rock band “Rush.” (photo above right)

Rush is quite demanding. The Canadian trio, which made rock history with hits such as “Closer to the Heart” and “Spirit of Radio,” sets itself apart from the majority of rock bands with its unconventional song arrangements and intellectual texts. “The three – singer and bassist Geddy Lee, drummer Neil Peart, and guitarist Alex Lifeson – notice within seconds whether the quality is right, or whether they will fire me. Thank God that hasn’t happened yet,” Patrick McLoughlin notes, laughing. He receives a number of offers from other print shops, including some outside Canada, occasionally also less costly. All the same, he can depend onehundred percent on Battlefield that the desired result will be produced: “I have never yet felt that the quality might have been better. And that is important in these kinds of costly projects.” ▸

Time for a short break: Wayne Gaumond is employed as a printer at Battlefield Graphics.

“THEY ARE REALLY GOOD AT MEETING THE SPECIFICATIONS PERFECTLY.”

PATRICK McLOUGHLIN

To date, the band has always been very satisfied. Patrick would like it to remain that way, and hopes that nothing changes in the well-rehearsed cycle. For more than 30 years, Hugh Syme has been designing the illustrations and layout for the albums, and preparing the designs for the tour books. Throughout the process, he works closely with the drummer Neil Peart, who is responsible for the tour book. “When Neil gives the green light, the project comes to Hugh and me. I take over coordination with Battlefield. Hugh receives the proofs for final approval, and after that only Battlefield and I are involved,” Patrick sketches out the process.

A page from the anniversary book of the Canadian rock band “Rush.”

No Compromises. Patrick is especially taken by Battlefield’s quality in the area of prepress, and with their consultation services. He trusts Battlefield and does not specify dictatorially what must be done. It has already happened more than once that around three in the morning a proof will need to be approved, and he himself can not tell the difference between the proof and the test-sheet, but the employees in prepress can. “They will then say which hue doesn’t yet sit right. They are really good at meeting the specifications perfectly, and at changing details for as long as it takes to get everything right, and I am satisfied,” says Patrick in praise, adding “the result was the best tour book that we had ever made.”

The co-operation with Battlefield began through his sisters, who sold the print shop advertising materials such as t-shirts. Additionally, Patrick knew Battlefield through his high-school, which printed calendars and year books there. When Rush needed to publish a new tour book in 2002, Patrick contacted Battlefield for the first time.

Every Detail Must be Right. Patrick may not be an expert in printing, but he regularly compares what other bands cast out onto the market, and in this regard Battlefield products clearly distinguish themselves. For example, this includes the quality of paper and the brilliancy of images. “The fans should feel that every single penny they spend on the book counts. In the case of a t-shirt or a CD it is not as important that the images come across crisply, it is different with a book. Here every detail must be right. It is the album’s calling card, exactly because CDs are so small, whereas books are 300×300 mm (12×12 inches),” Patrick notes.

He looks forward to the next joint project with Battlefield: in 2006, he wants to bring out a coffee table book with unpublished photographs of Rush’s 30-year band career – around 200 pages in the same format as the tour book. That it will be a success is not in question, neither Battlefield nor Patrick nor Rush make any compromise when it comes to quality. Very likely this is also the secret to why Battlefield for more than 40 years, and Rush for more than 30 years have been able to remain at the top in the “Great White North.” ■

Facts & Figures

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www.heidelberg.com/hd/CutStar

News & Reports

Prepress on Wheels: CtP Bus Tours through Holland

Tetterode visited countless customers in Holland with a "mobile prepress division."

Holland. What Hubert A. Sternberg, former chairman of Schnellpressenfabrik AG, started in the late Twenties, is evidently still cutting-edge today: 'bus tours' demonstrating solutions from Heidelberg. In the autumn of 2005, Heidelberg's business partner Tetterode Nederland BV adopted this practice when it sent a truck loaded with a computer-to-plate unit to cover the length and breadth of the Netherlands.

Countless customers were able to inform themselves in the 'mobile prepress division' about the advantages and disadvantages of using various printing plates for different applications. In connection with this, visitors were able to view a 'live' demonstration of workflow based on the modular RIP and workflow software Prinect MetaDimension including Prinect Signa Station, the imposition software. Tetterode is convinced that the most recent bus tour will prove as great a success as a Prosetter tour was three years ago.

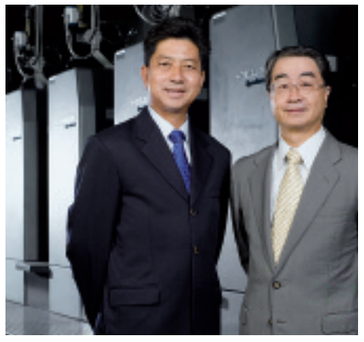
Idealists: Successful Partnership in Singapore

Singapore. Seventy years ago, Tien Wah Press (Tien Wah: "The Best of Heaven") was still a small family firm, which largely produced business cards – on a Platen. In the Sixties, the company specialized in package printing; in the Seventies, Tien Wah was the first business in Singapore to respond to wide-ranging market changes by turning to high-end printed material from the new Speedmaster 102-machinery, thereby opening up a broader customer base.

After producing exceptional pop-up and textbooks, as well as bound volumes, the company began producing magazines, operation manuals, and children's books. Meanwhile, the business was also growing internationally: in 1980, it opened its first agencies in the USA and England, in 1985 a second printshop was opened in Malaysia; in 1996, the original firm in Singapore moved into a larger building.

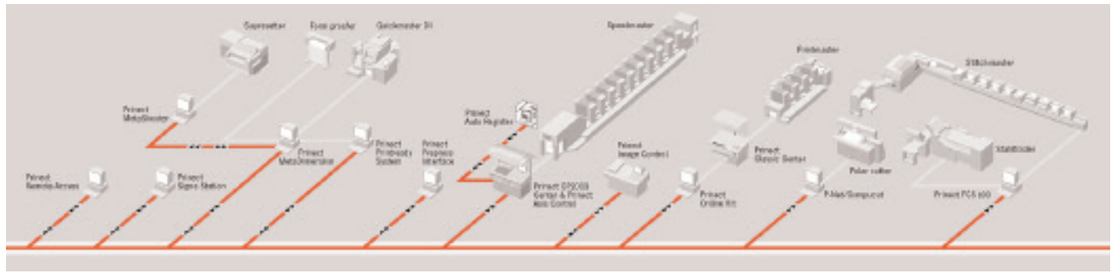
Today, as a part of the Dai Nippon Printing Group, Tien Wah has more than 2,000 employees, and countless customers in America, Europe, Australia, and Japan. "We have always oriented ourselves to the needs of our customers and convinced them with quality – exactly as Heidelberg, a company which has always provided us with first class, innovative solutions tailored to our needs," Tien Wah managing director Makoto Takakura praises the many years of cooperation. In the meantime, Takakura owns an entire fleet of modern Heidelberg machines, among them Singapore's first Speedmaster SM 102-8 with sheet reversal including Preset Plus feeder and delivery units. In the next 70 years, together with Heidelberg, Tien Wah now wants to work on winning over the rest of the world through its customer oriented services and well-polished logistics. "We distinguish ourselves, in that we define world-class quality, which makes a lasting impression," says Takakura self-confidently. Given their numerous prize-winning works, his company has already proven that he is not just making hollow claims when he promises his customers the "Best of Heaven."

For more information: www.twpsin.com



They have high hopes: Chua Lian Seng, director of Heidelberg Singapore, and Tien Wah managing director Makoto Takakura (from left).

Prinect Signa Station: Barcode as Postpress Guardian



Prinect Production Solutions collects data from prepress, pressroom, and postpress that have been already generated in the prepress areas to be used in preadjusting the printing press, quality measurement system, as well as cutters, folding machines, and gatherer-stitchers. This speeds up the entire job flow, thus noticeably increasing productivity.

Heidelberg. The new Prinect Signa Station version 1.5, software for impositioning and sheet paste up, allows an operator to create dynamic barcodes and then incorporate these – along with other printing tally marks – wherever he likes on the printing and folded sheet. Even automatic positioning on the plate template is possible. The barcodes are read-in with the scanning sensors of WST Systemtechnik GmbH, which can be easily mounted to every station of the collecting or folding machine. Thereafter, the scanning and testing of barcodes ensues in real time.

If some deviation registers during the process, an alarm is sounded: in this way the Heidelberg software, which is incorporated in the total Work-flow Management System Prinect, in conjunction with the WST scanner heads, recognizes defective sheets in time to avoid corresponding defects in the collection and folding of sheets during postpress. Prinect Signa Station creates barcodes automatically on the basis of guidelines input by the operator. Consequently, print order data including variables such as order number, customer number, or folding sheet number are passed into the barcodes. The operator can either enter this information manually into the Prinect Signa Station or transfer it via JDF from an MIS system over the Prinect Printready System. Should some default for a sheet change, the system automatically adjusts the barcode for this sheet.

For more information:
www.heidelberg.com/hd/SignaStation
or on the enclosed CD-ROM.

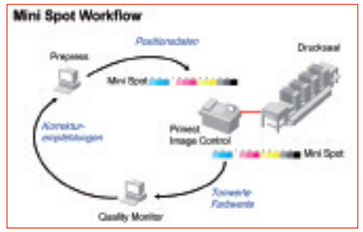
Print Media Academy: Per estro a Maestro in Mexico

Mexico. In cooperation with the printshop Grupo Gráfico Romo in Naucalpan, the Print Media Academy already began a program in 2003 designed to help optimize work efficiency and, therefore, the productivity of businesses in developing countries: estro. This training program, whose ancient Greek name translates roughly as "Inspiration and Passion for the Arts," has in the meantime become so popular in Mexico that 200 interested persons have already signed up for the next training course.

By way of example, over a period of five days participants learn print technology basics, such as how to recognize and solve color register problems; they are introduced to preventive maintenance techniques, and experience how an adequate work place organization can increase quality, while at the same time reducing spoiled paper. After this intensive training, a participant is given support in his business for four months, so that he might translate what he has learned into practice and improve his work even more. Certification is bestowed at the end, after a regular 'on site' audit. Given the huge success of estro in Mexico, the Print Media Academy is now working to set up a program in other countries through its international network. Similar initiatives, for example, are anticipated in the Middle-East and in the Asia-Pacific Rim.

For more information: Bernd Schopp, manager of the Print Media Academy Heidelberg, E-mail: bernd.schopp@heidelberg.com

Outstanding: Quality Control through Mini Spots



Based on Mini Spots, deviations can be discovered quickly, allowing corrections to be made.

Heidelberg. As of version 4.0, the Prinect Image Control colorimetry system from Heidelberg has been able to evaluate so-called 'mini-spots' during a production run. In this process, one is dealing with freely placeable color control elements, which provide information in real time that is much more relevant to the quality of the printed sheet than conventional color control bars. In this way, measurements taken from the mini spots spectrally and photometrically can be adjusted very rapidly to existing printing characteristic curves, while also using the ICC profiles on the altered printing circumstances. Thus, mini spots often render the printing of expensive test forms superfluous. The optimal use of this technology, which has been awarded the German Printing Industry's prize for innovation, results from its application in combination with Prinect Calibration Toolbox, the calibration software, and Prinect Profile Toolbox, the profiling software. Should the analyses software Quality Monitor establish that corrections are needed, then these corrections can be made directly onto the printing characteristics using the Calibration Toolbox during the creation of the plate, or using the Profile Toolbox on the installed ICC profile. The result: the next proof and the next group of plates are already adjusted to the new printing requirements.

The World's Longest Speedmaster 74

Long, longer, the longest: Heidelberg team around its more than 21 meter (69 ft) long Speedmaster CD 74.

France. At 21.25 meters (69.72 ft), the longest Speedmaster 50×70 (19,5×27,5 inches) yet delivered has been performing its duties since the summer of 2005 in France: at a luxury packaging manufacturer, the CD 74-2+LYP- 6+LYLX manufactures the most elegant packaging for perfumes and spirits. A special manufacturing process combines varnish over varnish, perfecting, double coating, duo (flexo before offset), and UV possibilities in one machine. Additionally, with respect to print quality, the press is so precise that it can produce a high-end 8/0 print without registry shift; this on printing materials 0.03 to 0.8 mm strong. So, the customer benefits from the incredible flexibility that extends from the one-quadrant drive with subsequent coating to the application of opaque white or pigment varnishes in the coating unit before perfecting with the subsequent six-color print and coating. "By the way," the one-of-a-kind unit nearly halves production times during a 2/4 color job, and lets itself – depending on the order – be set up in 45 to a maximum of 90 minutes (for eight offset and three coating units). At the same time, this giant among Speedmasters is exceedingly fast.

Prinect Center for MSUP

Bernhard Schreier (right) hands Alexander Zsyganenko, Rector of MSUP, the deed to the gift.

Russia. On the occasion of its 75th anniversary, the Moscow State University of the Printing Arts (MSUP), received a very special gift: during Polygraphinter, Heidelberg CEO Bernard Schreier presented a Prinect Center to MSUP Rector Alexander Zsyganenko. The Prinect Center will enable the university to undertake workflow training.

Heidelberg has been working together with the college for 10 years – whether on the training of printers or the establishment of a printing museum at the MSUP. The Russian pillars of Heidelberg and the Print Media Academy (PMA) are located on the premises of the university. Rounding out the equipment in the training facilities at MSUP and PMA are a Primesetter 74, a Printmaster PM 74-4, two Speedmaster SM 52-2s, and a Stahl folding machine, in addition to the Prinect Center.

Premiere in Eastern Europe

Poland. JDA Jankowski has invested in a Speedmaster CD 74 Duo, the first printshop in all of Eastern Europe to do so. The business, founded in 1986 in Poland's 'green lung,' will begin using a CD 74-2+LY-4+LX at the beginning of 2006. With the assistance of his new ornament, Jankowski wants to further expand his market share as one of Poland's largest beer label manufacturers.

"The press can be used flexibly, produces high quality, has a short throughput time, and can be changed over quickly. This naturally helps productivity enormously," the proprietor, Miroslav Jankowski (photo), praises the concept of 'flexo before offset' printing. This allows for printing the widest range of printing materials able to be refined in one run – such as paper, foil, and cardboard, for example (from 0.03 to 0.08 mm strong). So, in the future, the 80 man enterprise will first be able to apply two offset inks, a special varnish such as Iriodin, or a metallic varnish for special effects, and then overprint these with four additional offset inks, only to apply a final coating as a last step.

Miroslav Jankowski in front of his Speedmaster CD 74 Duo.

Heidelberg Optimizes Global Service Part Logistics

Heidelberg. After the World Logistics Center in Wiesloch (Germany) and America's Logistics Center in Indianapolis (USA), Heidelberg will now establish two service-part distribution centers in the Asia Pacific Rim: starting in the middle of 2006, a so-called 'hub' in Tokyo (Japan) will expand Heidelberg's service part network; in the following year another hub in Hong Kong will complete the service logistics infrastructure.

Setting up this 'spare parts turn table' within the so-called 'Service Parts Center' program, has the goal of increasing the over-all availability of parts across the entire spectrum of Heidelberg products, as well as of delivering them more rapidly, in first class condition. Heidelberg holds more than 100,000 different original Heidelberg service parts in reserve, which have been supplied to the logistics sites based on customer needs, which depend on the market characteristics of the respective regions. As a rule, a customer can expect delivery the day after placing an order – regardless if he is requesting parts for a Platen or a Speedmaster XL 105. At this rate, and with its provision of parts, Heidelberg offers its customers systemservice part logistics unparalleled by anyone else in the world.

WEB-BASED REMOTE SERVICE

Scotty in the Control Console

Heidelberg is light years ahead of the days when Captain Kirk had to 'beam' his chief engineer somewhere to perform technical services. Since April 2005, Heidelberg's Scotty has been practically placed within the control console itself – virtually, of course, not physically. The unending expanse of the Internet makes it possible for a service engineer to be on-site at nearly the speed of light.

What may sound like a dream of the future is in fact already reality: remote service over the internet ("Internet-based Remote Service"). The key advantage of this technology is that companies no longer have to wait on the physical arrival of the service engineer. The Heidelberg specialist is now able to gain access to equipment at lightning speed via an Internet connection. Where this service engineer is located at the time is completely irrelevant – and yet the operator can still experience 'live' and on-site, whatever work the engineer happens to be performing, almost as if he were looking directly over his shoulder. In addition to several thousand prepress solutions, Heidelberg already has 150 of these high-speed systems for press and postpress on the market.

Manifold Benefits. Higher speed is only one of the many benefits provided by the web-based Remote Service which has already been integrated into all new Prinect products. It enables not only remote diagnosis, but also detailed inspection or optimizations of the print process – such as fine adjustment of print settings, calibration, characteristic curves, etc. But that isn't all: the solution even makes it possible to provide remote advice (such as for special print jobs) or hold training courses online. All you need for this is a Prinect-enabled solution from Heidelberg such as a press with the Prinect CP2000 Center (software version V42 or later) or the new Stitchmaster ST 350 saddlestitcher and a local area network (LAN) with an Internet connection. A simple network cable then links the Prinect-compatible Heidelberg products and the LAN. The final step is for the customer to approve access for the 'remotely waiting' service engineer by pressing a button on the touchscreen monitor or with a click of the mouse on the relevant menu button.

"The new web-based technology is gradually replacing the modem-based remote diagnosis system introduced more than ten years ago," explains Michael Pfeffer, Head of Innovative Remote Services at Heidelberg. The reason? The modem (an abbreviation of modulator/demodulator), which only a few years ago was the centerpiece of remote data transfer, has now been consigned to the scrap heap. "The hardware itself is becoming rapidly outdated, the speed is limited, and data transfer is not even possible via normal telephone lines in some countries," adds Pfeffer. The functionality of modem solutions is also severely restricted as a result of the now obsolete technology. "Internet technology opens up a wide range of opportunities. The Internet is available all over the world, there is an ever increasing number of broadband lines, several people can work on the same project from different locations at the same time, and many printshops have an Internet connection in any case. We are therefore able to use this web-based service to surf on a wave that is in motion all over the world and offers us and the customer considerably improved speed."

Remote Support in China. Jingqin Huang has already witnessed the benefits of the innovative technology since receiving her new Speedmaster CD 102-4 with Prinect CP 2000 in April 2005. For the general manager of the Beijing Kaixin Printing Company in China, this machine was the first with the new CP2000 Center functions, and her operators were correspondingly unfamiliar with how to make the most of the new possibilities offered by the machine.

When the printers were unsure about the settings for specific print jobs, support could be provided via Remote Service. The service engineer Weiwei Wang from Heidelberg China logged onto the system and showed the stunned printers which steps to take to achieve the required objective – the necessary menu and list items appeared as if by a phantom hand on the touchscreen in the printshop. "This saved us all a lot of time," says Huang.

Remote Training in England. The experience at Barnwell's Print in the UK has been equally positive. The printshop had already begun a special print job on a new Speedmaster CD 74-5 which demanded particular settings for the process colors: It was a fine art print job to be made suggesting an artist's water-color palette. A simple call to the Heidelberg branch, a tap on the touchscreen of the Prinect CP2000 Center and within a few moments the service engineer Mick Simmonds logged onto the system and made the neces-

Julian and Lincoln Barnwell, the two owners of Barnwell's Print (from left).

Esa Heiskanen, DTP specialist at ESA Print Oy in Finland.

For Jingqin Huang from China, Remote Service is a very important advantage.

Sees in Remote Services the next generation of service provision: Michael Pfeffer.

Customer calls via Internet

Michael Pfeffer (36), Head of Innovative Remote Services at Heidelberger Druckmaschinen AG, has been active in the service area at Heidelberger Druckmaschinen AG since 1999. He studied electrical engineering, specializing in automatic control technology. At Heidelberg, Pfeffer is in charge of product management, marketing, and the global roll-out of intelligent support services such as Remote Services, for example. It is his task to see that intelligent, computer supported services are established within the company organization and among Heidelberg's customers. He is married with one child.

sary adjustments – while the press was running! "In the event, that was truly impressive," enthused joint owners Lincoln and Julian Barnwell, "and gave a significant boost to our productivity."

At ESA Print Oy in Finland, production had already come to a standstill. A sudden power outage in the printshop meant that a JDF production process was interrupted. The Prinect Printready System simply refused to start up again. The in-house DTP specialist Esa Heiskanen didn't know how to proceed. Therefore, Heidelberg service engineer Jarmo Kuntamo accessed the system online and had it up and running in no time. At the same time he "trained" his ESA colleague in the printshop who was subsequently able to stabilize the system.

No One There, but Always at Hand. The "help the helper" principle put into practice at ESA in Lahti is also applied within Heidelberg itself. Heidelberg has established a "global network of experts" for cases where a Heidelberg service engineer does not know the solution to a customer's particular problem. This network is available 24 hours a day, seven days a week. The service engineer from the Heidelberg branch in question can call on support from a specialist Heidelberg colleague within the expert network by simply logging on via the Internet. This means that both engineers can work simultaneously on the same problem even though they may be thousands of miles apart. Shoulder-by-shoulder, they check the information supplied by several thousand sensors in every press to the customer's Prinect CP2000 Center in order to find a solution. What the Remote Service Customer no doubt doesn't know: although not a single Heidelberg employee will drop by his printshop, he nevertheless has all Heidelberg's combined expert knowledge at his disposal "on-site."

Any customer who is worried he might be "spied upon" is mistaken. Firstly, the user must always first approve access to his equipment, and, secondly, Heidelberg's web-based Remote Service platform has been awarded the "Trusted Site Security" certificate by Germany's TÜV Informationstechnik GmbH following exhaustive testing. This certificate confirms that the Remote Service solution uses secure technologies and methods, particularly in terms of transferring data via the Internet. This means that Remote Service customers can be sure that no unauthorized third party can obtain access to their data.

Discover the Possibilities! "The wide range of possible features which the web-based Remote Service offers is unbelievable," says Michael Pfeffer. In the future, the web-based service platform could even support a 'virtual training course.' A 'remote consultant' would also be able to help the customer in each individual case to exploit the full potential of ever more complex presses. Remote Service experts at Heidelberg are already researching the option of enhancing the Internet tool with 'proactive capabilities' in order to use it for preventive services. For example, wearing parts themselves could 'remotely report' that they were coming to the end of their service life, so that the customer could be sure that there would be no waiting period, i.e., the part would be replaced at exactly the right time and the entire logistics process for service parts would be optimized since the part would be available as soon as the customer wanted to replace the worn component.

The first product of this type is already available, namely the Prinect Image Control quality measuring system. Image Control monitors the service life of the integrated xenon lamp and can, when desired, inform Heidelberg Service automatically via the Internet that the lamp will have to be replaced soon. "Remote Service opens up a rich variety of possibilities, which provide our customers with high-quality service wherever they are in the world," concludes Pfeffer. "Anyone interested should in any case get in touch with their local Heidelberg contact." ■

Facts & Figures

www.heidelberg.com/hd/RemoteService

THE NEWEST GENERATION OF DRYERS

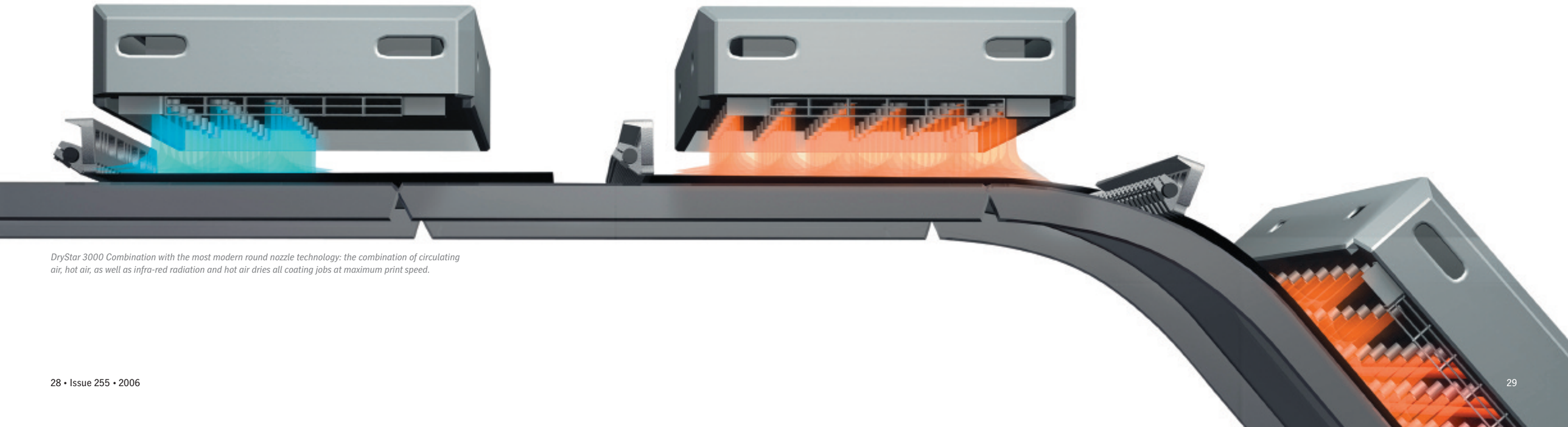
The Right Dryer for Every Print Job

A printshop can no longer afford long stand-by times during the production process. With the DryStar Concept, Heidelberg offers a suitable dryer for every application. It saves time and raises productivity – regardless of whether one is working with conventional, UV ink, or varnishes.

The scene is right out of a Mafia film: feverishly, 'family members' are hanging self-printed passports and 'funny money' on the line or drying them hectically with a hair blower. Such drying methods may well show creativity, although they do not really improve the quality of the printed matter. Among other things, too much or uneven drying power will damage the printing substrate and give the printed image an unbalanced appearance. "Cost-effective production is, with few exceptions, no longer conceivable without rapid drying. Drying systems considerably shorten the throughput time, while enhancing color brilliancy, the luster of the printed matter, and productivity during printing," explains Axel Becker, product manager for peripheral equipment at Heidelberg.

Shorter Throughput Times. Since 1995, Heidelberg has been developing and marketing its own dryer systems under the DryStar name; with more than 8,000 installed dryer systems, it is the market leader among printing press manufacturers. These ten years of experience are evident in the newest offspring of the DryStar family: features such as round nozzles and air permeable gripper bar profiles, or dryers tuned for optimum sheet guidance enable rapid drying without disturbing turbulence, for every conceivable application. When drying ink and varnishes, one needs to follow the most varying drying principles. Conventional coatings contain water as a solvent that must be 'actively' evaporated in order for the coating to dry. Oily offset inks, on the other hand, harden by reacting with atmospheric oxygen (oxidation) and penetrate when they are soaked up by the printing substrate. UV inks and varnishes, for their part, dry through polymerization.

Regardless of what kind of ink or coating a company uses, Heidelberg offers a suitable dryer for every application. The goal is to achieve the highest possible efficiency while printing all possible materials, and to avoid the bottle-neck in production that 'drying' represents. Of course, the maximum achievable printing rate always depends on the printing material, ink coverage, and coating volume. ▸



DryStar 3000 Combination with the most modern round nozzle technology: the combination of circulating air, hot air, as well as infra-red radiation and hot air dries all coating jobs at maximum print speed.

The ideal dryer for every machine

	Conventional Dryer	UV Dryer
GTO	•••	•••
SM 52	•	••
SM 74	•	••
CD 74	•	•
SM 102	•	••
CD 102	•	••
XL 105	•	delivery time on request •
all new developments	•	•

• *Heidelberg Dryer*
•• *Preferred Supplier (IST)*
••• *Third-party supplier (Kühnast/IVT)*

DryStar UV. True to the maxim "a regal package half makes the sale," the global trend is toward lavish, refined UV printed products – say, toward the high-end packaging (not only) of luxury items. "This development is also reflected in the increasing proportion of UV machines, which we are delivering annually around the globe," reports Jens Arne Knöbl, product manager for UV systems and peripherals at Heidelberg.

With "DryStar UV," UV inks harden within a fraction of a second. Patented reflectors discharge the excess heat from the UV radiators over water-cooled sections and housings. This prevents both the machine and the printing material from overheating. More than this, the combined water-cooling system and air supply guarantee an optimal radiator temperature for consistent drying and gloss outcomes. Heidelberg has developed an inerting technology – CoolCure UV – in cooperation with IST Metz, to be used with materials that are especially sensitive to temperatures, such as in-mould labels, for example.

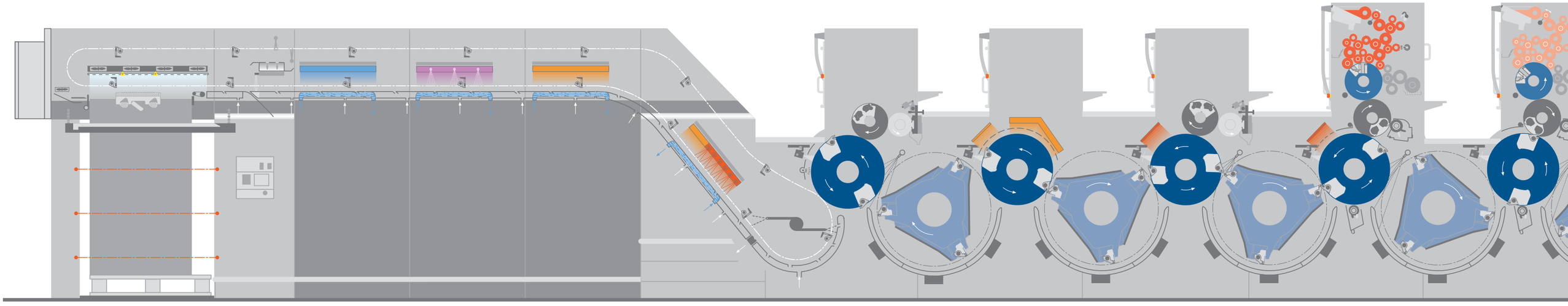
Heidelberg has also thought up something to speed up the washing of rubber blankets: where earlier production was slowed by the time consuming interruptions required to meet safety regulations, waiting times have now been reduced to a minimum. Thanks to "InstantStart UV," rather than switching off the radiator, it can now remain in standby mode ready to start up again immediately after the washing procedure has been completed. This allows for a time savings of eight minutes – during each washing procedure – and a productivity gain of up to 25 percent," Knöbl stresses.

The control center link (CANopen technology) and convenient operation through the Prinect CP2000 Center also increase productivity: peripherals are operated centrally using a touchscreen. Moreover, with the aid of "DryStar Advanced" dryer settings, output settings for infrared lamps, hot air, or sheet path temperatures, for example, can be saved along with print job data in the Prinect CP2000 center, and are ready to be called up for repeat orders. This reduces set-up times and guarantees replicable outputs.

Total Solution. Grinning, Knöbl remembers how, earlier, mechanics would arrive with jig saws and disc grinders to install dryers after the fact. Today, the perfectly fitted components take only a very short time to install, and meet a very high standard of quality because of the uniform development of the dryer, which already begins in the conception phase of the printing press. Experience shows that this is now the current state of the art if one wants to print productively and competitively, especially in the UV sector. "Since with UV and hybrid inks, dryers are a necessity, Heidelberg offers printing presses with built in dryers. This has the advantage that everything can be installed at once," explains Knöbl. Increasing demand has proven Heidelberg right: roughly 25 percent of Speedmaster CD 74 UVs are already shipped as complete packages, and twelve percent of Speedmaster CD 102s ship with UV preparation ready for rapid installation of IST dryers. ■

Facts & Figures

www.heidelberg.com/hd/DryStar



Heidelberg's dryer system in a snapshot: infra-red (red); hot air (orange); circulating air (light blue); cold air (blue); UV (magenta).

DRYSTAR

License to Dry

Many factors affect a clean printed image and cost-effective production. Depending on the ink, varnish, and printing material being used, a particular drying technology must be adopted, if one wants to produce rapidly and with assurance. Heidelberg News spoke with the two dryer experts, Jens Arne Knöbl and Axel Becker, about the state of the art, and the merits of the DryStar drying technology of Heidelberg Druckmaschinen AG.

HN: Why are sheetfed offset printing presses no longer able to perform without modern drying technology?

Jens Arne Knöbl: With the right dryer technology, printers gain an immense time advantage. On the one hand, in many areas this means an increase in the printing rate, on the other hand, more rapid finishing, and consequent production increases. Additionally, many complex applications can't even be produced in a cost-effectively way without a dryer.

HN: How do you distinguish between conventional and UV printing with respect to drying capabilities?

Axel Becker: By conventional drying capability, we understand the drying capability of mineral oil based inks with and without aqueous coating. In this case, conventional dryers using infrared and hot air technology are required. This is a combination of chemical drying under the influence of atmospheric oxygen with mechanical drying from penetration and evaporation of the solvent. In contrast, UV inks, varnishes, and hybrid inks only dry as the result of chemical reaction under the action of UV light– polymerization.

HN: What kind of drying is suited to which product or ink?

Jens Arne Knöbl: Heidelberg offers a suitable dryer configuration for each respective application. The ink-dryer "DryStar Ink" speeds up the drying of mineral oil based printer's inks without varnish. The varnish dryer "DryStar Coating" speeds up the production of conventional print jobs with coating. Both dryers are available for machines with short delivery.

The DryStar Combination in the extended delivery was developed for more demanding print jobs using conventional printer's inks and water-based coatings, for example in the area of commercial and packaging printing. DryStar LYL is ideal for use in double coating applications, for example in the area of primer UV, and primer Gold/Silver. The UV dryers as delivery and between deck dryers were developed especially for UV inks and varnishes. They are ideally suited to the production of non-absorbent printing substrates, for example on metallic surfaces, synthetic-lenticular, or in-mold foils. Although, naturally, also for products on paper and cardboard with matt or gloss effects in the field of commercial, packaging, and label printing, as well as for luxury cosmetic packaging. For each application there are different "assembly levels" of the DryStar dryer.

HN: How high is the cost of retrofitting?

Axel Becker: The cost and the feasibility of retrofitting must first be checked against the machine number in each individual case. A great deal is possible; one must, however, distinguish between retrofitting conventional and UV dryers. In the area of UV, for example, it isn't appropriate to install UV dryers, since the machine technology must also suit the dryer system.

Consequently, retrofitting a UV dryer on a conventionally constructed machine without at the same time retrofitting the UV equipment of the entire machine does not make sense.

HN: What advantages does the Heidelberg DryStar System offer to its customers?

Jens Arne Knöbl: DryStar dryers are optimally adjusted for application, machines, and sheet travel, since at Heidelberg, the development of the dryer already begins in the concept phase of the machine. From the very start, the technical procedural background, as well as safety regulations and manufacturer guidelines are taken into account in the development of the entire system. Here Heidelberg guarantees CE conformity, confirmed by the BG certificate, which stands for high safety standards throughout Europe.

HN: How does Heidelberg also solve the more unusual drying requirements of customers?

Jens Arne Knöbl: For exceptional uses, Heidelberg offers exceptional dryer solutions. Consultation is always provided individually, in other words it is tailored to the customer's needs. One example would be CoolCure UV, a special dryer system in the between deck area, ideally suited for temperature sensitive materials (see HN 251, p. 42 et sqq, or at www.heidelberg-news.com in the text archive, editorial comment). However, Heidelberg also offers blister varnish dryers for a high varnish application or opaque white dryers with special UV lamps in conjunction with special reflectors. Even foil dryer packages in conventional, as well as UV areas are possible.

HN: Does Heidelberg work with partners in the field of dryers?

Jens Arne Knöbl: All the dryers in the conventional area, and the CD 74 UV dryers – including all new future machine series – are pure Heidelberg products, and are available direct from the factory. In the area of UV, we mainly cooperate with the IST Metz Company. Thus, Heidelberg supplies the press models Speedmaster SM 52, SM 74, SM/CD 102 with UV preparation, while IST makes the suitable dryer available. The systems are in CE conformity and BG tested. Only in this way could we even carry out the development of products such as "Optimized UV print," "CANopen," InstantStart UV, and CoolCure UV and offer them to our customers. ■

Facts & Figures

Jens Arne Knöbl, born in 1971, has a graduate degree in process engineering, and has been employed at Heidelberg since 1994. Since 1998, as product manager for peripheral equipment, he has been responsible for drying and coating logistical system platforms for Heidelberg Speedmaster presses, and special projects at Heidelberg. (right photo)

Axel Becker, born in 1976, has a graduate degree in process engineering, and has been employed at Heidelberg since 2001. Since 2002, he is product manager for dryer and coating logistical systems of Heidelberg Speedmaster presses. (left photo)

GRUPO PORTUCEL SOPORCEL, PORTUGAL

Paper with Tasmanian Roots

How is paper actually made from wood? Heidelberg News presents “grupo Portucel Soporcel” from Portugal to stand in for many other paper manufacturers. The paper manufacturer has specialized in wood-free uncoated natural papers.

Green, as far and wide across the landscape as the eye can see, seedlings after seedlings are arrayed in nearly endless rows. Small, a mere 5 to 20 centimeters (2 to 8 inches) tall, they reach for the sky. Somewhere further in the back, the “true” forest begins. Each year, around 12,000,000 trees – or better said saplings – leave the “Herdade de Espirra” tree nursery near Setúbal, located roughly one hour south of Lisbon, the Portuguese capital. The nursery, which altogether covers 1700 hectares (4200 acres), belongs to the paper manufacturer Portucel Soporcel. The company is not content to simply buy up wood and process it into paper. In addition to the tree farm, the company also manages its own forest areas, in other words, it is active in the entire process chain of paper manufacture from seeding, to forest management, to finished paper; consequently, it counts as one of the few fully integrated paper manufacturers in its field.

“The young seedlings nurtured on the ‘Herdade de Espirra’ are not only transplanted in our own forest, but also made available to other forest owners,” explains Pedro Silva, product manager at Portucel Soporcel. A tree only costs a few cents – in this case, quantity generates the revenue. Grapes are also cultivated at “Herdade de Espirra”, on about 40 hectares (100 acres) – and converted into a full-bodied red wine. A good 200,000 bottles are filled annually. Pine trees, cork oaks, and diverse other trees, flowers, and bushes are cultivated as well. The main business, however, is cultivating trees, more precisely “eucalyptus globulus”. The tree arrived in Portugal some 120 years ago, and grows and thrives in some regions of the country as luxuriantly as in its native country Tasmania, an island on the southern coast of Australia. To this day, some scientists still bring up the fact that it is not actually a native European against it. Yet, the tree from a family of more than 30 different species of eucalyptus is as much at home in Europe as are potatoes, corn, and tomatoes. This list could be easily extended. Without potatoes, which came to Europe from South America, Europe would not have been able to feed its growing population. And it wouldn’t occur to anyone today to revoke an apricot’s “right of residence”, though it is in fact an “immigrant” fruit. To that extent, this discussion is slightly academic.

In addition to “Herdade de Espirra”, Portucel Soporcel maintains around 135,000 hectares (333,600 acres) of its own forests, spread out in many, small plots largely in the north of Portugal. Around 1.4 percent of Portugal’s entire surface area is consequently owned by the paper manufacturer. Around 100,000 hectares (248,000 acres) of ▸

Eukalyptus globulus in “Kindergarten” – only a few days old.

Artificial rain ensures optimal irrigation for the seedlings on the “Herdade de Espirra.”

"The higher concentration of fibers in the paper increases opacity." Pedro Silva

the 135,000 hectare forest are pure eucalyptus forest. And yet, the wood that it cultivates itself barely accounts for 15 percent of what grupo Portucel Soporcel needs. The remaining eucalyptus wood is supplied by roughly 400,000 private forest owners, who own approximately 87 percent of the total Portuguese forest.

The forest management and paper economy have had a positive effect on the country's natural environment: Portugal today has roughly 71 percent more forested land surface than it possessed around one hundred years ago. Only 19 percent of the entire forest stock in Portugal consists of eucalyptus globulus.

Economical Plants. The eucalyptus globulus loves a mild climate, rarely surviving more than six successive days of frost. This, however, is also one of its basic shortcomings, and presumably one reason why other paper manufacturers in northerly climates have not been able to rely on the tree. The economic advantages of eucalyptus globulus lie in its efficient growth: on relatively little water, it grows about three to four times as rapidly as a Nordic spruce in Finland, for example. While the eucalyptus can be "harvested" after approximately 10 to 12 years, the spruce in Finland takes up to 40 years to reach the same height of around 30 meters (100 ft). At this height, the eucalyptus trunk has achieved a decent 30 centimeter (12 inches) diameter.

An explanation for its rapid growth can be found, among other things, in the longer time the tree takes to photosynthesize: already early in the morning, the eucalyptus globulus begins to work diligently, while the other trees are still "sleeping" and continues working until late in the evening. It simply uses the day a little more effectively. Its foliage is always green, and it changes its leaves throughout the entire year. The decaying foliage generates new humus. Also, the ground need not be particularly superior for the tree to grow – and unlike its native European colleagues, it does not expend much energy on deep roots, bark, branches, and leaves. These are the reasons explaining its very rapid growth. However, the tree is also economical: following a fire or a clearing of the underbrush, it sprouts anew, so it does not require expensive reforesting. The roots put out new young shoots. One only needs to plant new trees after the third harvest – and they arrive from the tree nursery in Setúbal.

Why does it need so little rain water compared to other tree varieties? The leaves are relatively hard and capture dew on their broad surfaces better than a coniferous tree, for instance. Furthermore, water evaporation used in cooling on hot days is not as pronounced as with other deciduous trees, because a special wax film hinders dehydration in the eucalyptus globulus. This means that the tree is well served by the coastal regions of Tasmania and Portugal, because in these areas there is sufficient water evaporation from the ground and sea, although little rain.

The excellent fibrousness of its wood is an additional advantage eucalyptus globulus provides in the manufacture of paper. This is influenced through a strict selection process during the extraction of young seedlings. Either these are young shoots from ideal trees which are culled and newly planted – these then quickly put down roots, and are identical to their "mother" down to the tips of their leaves. Or one grows them from the seeds of carefully selected trees. The tree is a good 20 to 40 percent more efficient as a result of this selection process. A eucalyptus is ideal when it juts upright into the heavens, is as resistant as possible to diseases, and its fibers are uniform.

The result of this optimized "tree breed" are uniform, short, and thick-walled fibers. This again is important in the manufacture of high-end papers, since these fibers do not deform as much during printing in gigantic

Eukalyptus globulus as far as the eye can see. Right in the photo some one-year old trees can be seen, from which sprouts are regularly taken for the "breeding" of new seedlings.

Not only Eukalyptus globulus, but numerous other tree and shrub species are planted at the farm of the grupo Portucel Soporcel at Setúbal and sold throughout the country.

grupo Portucel Soporcel

Since 1957, the company has been producing cellulose out of eucalyptus globulus. In 1975, it began producing paper. The grupo Portucel Soporcel holds a share of about 12 percent of the total European market in uncoated wood-free paper, not including packaging. With this market share, the Portuguese manufacturer holds fifth place in a European comparison. In all, the company employs around 2,000 workers, and generates approximately 1 billion euro (1.2 billion US dollars) in annual sales. – of which 76 percent is in the paper business. Around 1,200,000 tons of pulp and approximately one million tons of paper are produced annually. In two, of a total of three locations, both cellulose and paper are manufactured, one site produces only cellulose. The paper mill in Figueira da Foz in the north of Portugal is, according to the company, one of the most modern and largest for graphic wood-free natural paper in Europe and has a total maximum capacity of roughly 750,000 tons of paper annually. According to the company, grupo Portucel Soporcel understands its strengths to lie in the area of formatted papers, premium offset, premium pre-print, and premium office papers. Pre-print papers are varieties of paper that are pre-printed during offset printing, and are then used in office printing or copying systems (printed forms). Because of this "doubled" printing, the paper must demonstrate particular qualities – a circumstance, which must naturally also be given attention during further processing. The company says it is the largest European producer in the area of pre-print papers. The company's best known offset paper is "SoporSet."

paper machines. "During the printing process, paper with short fibers also absorbs less water, swells less quickly, and remains stiffer. The shorter fibers result in a higher concentration of fibers in the paper, which also increases opacity, and dimensional stability," Pedro Silva reports. Moreover, more "pulp" – the wood mash and basic material in paper – can be won per cubic meter of eucalyptus wood than from other types of wood.

How is Luxury Paper Made from a Tree Trunk? "Imagine the process as if you were preparing noodles. Many ingredients are thrown together in a big pot, cooked, stirred, and then rolled out and dried," Pedro Silva explains with a broad grin, adding "even if the principle is similar, the process is naturally not really quite that simple." And the equipment used in a paper mill hardly has much in common with the cooking pot in the kitchen, if only based on their relative sizes.

All the ingredients that will be added to the paper pulp are strictly controlled in labs. Impurities are supposed to be avoided this way, and a quality maintained that is always consistent. This is what customers from all over the world expect of the Portuguese as a matter of course. Calcium carbonate manufactured in-house contributes to the consistent quality of the paper by binding the paper together, so to speak. It is also important, since it causes dust during printing. Here Soporcel has developed its own granularity that adheres very well between the paper fibers. As in cooking, here too, each ingredient is important in contributing to an acceptable final product. Pedro Silva does not want to describe all of the ingredients fully – an old family recipe, it goes without saying, and it should remain in the family.

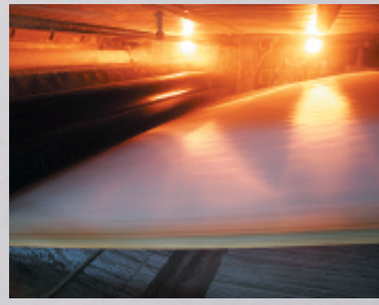
The selected ingredients mixed with the eucalyptus wood are worked into paper, which emerges without the "cosmetic" of coating, but still guarantees a high-value print. "With the correct printing adjustments and printing press settings, outstanding results can be achieved using natural papers. These papers are at an advantage above all, when value is also placed on the feel," says Catarina Novais, Brand Manager at Portucel Soporcel.

Catarina Novais and Pedro Silva inspecting paper in Figueira da Foz.

Change of Scene. The silence and shade of the forests give way to the ear-deafening noise and heat of a giant machine with an overall length of 182 meters (600 ft) that produces paper. A gigantic hall encloses this mighty colossus in Figueira da Foz, roughly two hours drive north of Lisbon. Here stands what is currently the most modern paper manufacturing facility in Europe – certified in accordance with environmental and quality management ISO 9001:2000, as well as ISO 14001:1999, employing more than 800 people. An additional, somewhat older machine of almost the same stature stands in a second hall next door.

An in-house power station delivers energy for running the factory – energy, of which up to nearly 64 percent is derived from biomass. ▸

After a few meters, a path of paper forms out of paper pulp…



…with a total weight of as much as 50 tons by the end of the path. The 182 meter (600 ft.) long machine produces up to 1500 meters (5000 ft) of paper per minute. It is one of the two modern paper machines in Figueira da Foz.

Modern control of the giant paper machine. Nothing is left to chance.

Fully automatic packaging: divided into "manageable" pieces, packaged and labeled, it is placed in high rack storage or shipped.

Before the wood finds its way to the machine, the wood trunks are first hacked into small "chips." Flung onto a gigantic mound, they are allowed to dry out for a few days in the sun. Then they are combined and heated up with water and with the aforementioned calcium carbonate, as well as other ingredients. The result is the so-called pulp, which has already been bleached free of chlorine and therefore is white. This pulp is finally conveyed via pumps into the core of paper production to one of two paper production machines on the site.

A machine from Voith Sulzer in Germany produces paper at 1,500 meters (5,000 ft) per minute. The daily output comes to 1,133 and the yearly output to nearly 400,000 tons. In several operational steps, water is drained away from the pulp: by spinning, by means of heat, and through pressure exerted by large rollers. By the end of the long machine, the mash, which consisted of 99 percent water, has been transformed into clean, white paper that (depending on the target quality) still contains around four to six percent water. The paper is then wound up into giant rolls 8.65 meters (28.4 ft) across and weighing more than 50 tons. The rolls are then sliced with tremendous knives until they have the right width, for example for a web printing press. Or, during further processing, they are trimmed to a suitable sheet format for various formats in offset printing, for instance, or for copiers etc.

After that, onwards to the packaging and wrapping of the quires and finally to the distribution center. "Portucel does market its own paper, but other famous brands of paper also have 'their' paper manufactured here, and then packaged under their own label," explains Catarina Novais.

Paper Test on a Speedmaster 52. Before they are released onto the market, all the papers are tested and analyzed in the company's own labs; finally, they are also extensively tested in the company's own test printshop with a standard printing sheet drawn up by FOGRA in Munich, Germany on a Heidelberg Speedmaster SM 52-4. "For the test prints, we wanted a printing press, which is widely distributed. That way we could be most certain that our papers were optimally adjusted to these machines. Consequently, it was logical to inquire at the largest printing press manufacturer, whose printing press is ideal for our purposes," reports Silva. ■

Facts & Figures

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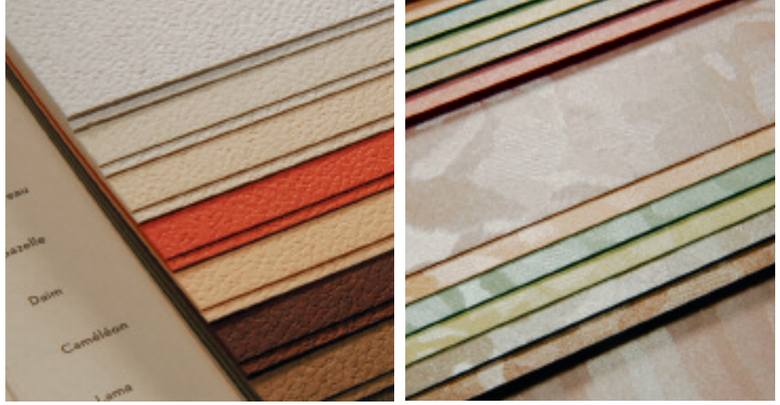
PAPER MANUFACTURER GMUND, GERMANY

Treasures from Tegernsee

In the 1950's, their father decided to go against the trend, emphasizing quality instead of quantity. His sons built the Gmund hand-made paper mill into an internationally recognized brand. The Bavarians have reached the summit of the global market with collections of the highest quality fine paper.

The head office of the company in Gmund.

Florian Kohler heads the fourth generation family enterprise in Gmund.



The selection of color nuances, grammages, and embossing is unique in the world.

Employee Annika Peters with products made of Gmund papers. Cautiously, Nikolaus Weber drains the paper pulp with a 120 year old Fourdrinier machine. (from left)

Whether Swarovski crystal, Armani perfume, or Lindt pralines, luxury brands wrap their products in paper or packaging from Gmund, a Bavarian community on the idyllic Tegernsee. For more than 175 years, an exquisite fine paper has been manufactured here, and exported throughout the entire world. Distribution of the 25 collections is organized in the Bavarian alpine uplands through a franchise system with 150 exclusive wholesalers in 70 countries.

The main customers for the noble cellulose product from Tegernsee are located in Western Europe, America and Asia. “Our export share lies at more than 70 percent,” says Florian Kohler, not without pride. He manages the family enterprise, now in its fourth generation. “Internationally, without doubt the Japanese, influenced by their culture and tradition, place the highest demands on paper quality. At the moment, however, especially beautiful and exclusive paper is also in high demand in Russia,” the business school graduate reports – he also manages the five man marketing team. With only 100 employees Gmund managed the leap from traditional fine paper manufacturer to international brand. If a grade of paper is not available through one of the wholesalers in some country of the world, the company sells it directly – even over the internet.

Traditionally Colorful and Three-dimensional. The small, fine paper mill looks back on a proud tradition. The mill was founded in 1820 by Johann Nepomuk Haas. In the pre-industrial era, the decisive criterion influencing site selection was water power. But the liquid raw material itself – pure, clear mountain waters – also drew him into the basin at the edge of the Alps, directly the Mangfall, a mountain river with abundant water. Haas received a license from the King of Bavaria to gather tattered cloth, since until 1850 paper was exclusively made from torn cloth, so-called “rags.” In what were called Hollander beaters, stone vats with just such mill wheels, rags were pulverized and blended with additives into a paper stock– pulp. Subsequently handmade, already in those days the qualitatively high-end paper made a name for itself. Even the Bavarian royal court and its administration were supplied with Gmund paper.

The Agony of Choice. Around 20 million tons of paper were produced in Germany last year alone, a modest 4,000 of this in Gmund. But that is still half of all German handmade paper manufactured. And the paper from Tegernsee is exceptionally varied. In Gmund, a customer may break out into a real sweat when faced with making a selection: 51 colors, 6 grammages, and 110 embossing patterns are available to choose from – unmatched anywhere in the world. By combining different variables, hundreds of thousands of different papers can be produced. Close to 30,000 already lie in prepared Gmund’s pattern archive – ready to be delivered at any time. The most recent product line is simply called “2/200” and at the same time represents a program. “Give us two weeks time, and order at least 200 kilograms, and you will receive your entirely personal, almost unique paper,” is how Florian Kohler explains the idea. The colors are mixed in Gmund by hand, just as they were 175 years ago, only many years of experience are able to attain such differentiated color-tones. “No one in the world except for us produces colors this deep and with this proficiency,” Kohler notes. “We work on nuances that others would have given up long ago.” Due to brand names ranging from Bulgari to Colgate, the smallest details are extremely important. ▸

Michael Weber on an embossing roller. This is used to achieve the high value embossing of the hand-made paper.

Print design variations from the House of Gmund.

Paper out of Beer, or like Cashmere and Leather. "Paper is an emotional product," Florian Kohler notes, as each one of his gestures gives voice to his love and passion for paper. After the complete Gmund collection was given a corporate design, the first label in the line was released into the market in 1991, 'Silencium' – the first fine paper in the world made of 100 percent recycled paper. The ecological conscience of the graphic designers and marketing specialists ensured 'Junior's' great success.

The new method for developing and distributing paper hit the bull's eye, and one after another the 25 collections of today were created. Their names typically mirror worlds of fantasy: 'Havana' with the structure and color of real Cuban tobacco, 'Vibe' glitters like a revival of the 1980's, inspired by the 'look and feel' of this brash time. Or 'Alezan,' a paper that not only has the look of textured leather, but also its feel. "For Christmas, 'Treasury' will be especially appropriate," says Kohler. Real flecks of gold glitter in eight different tints, from delicately transparent to a robust red-gold. When Arabian sheiks are looking for something exceptional, they like to reach for the deep red or royal blue "Kashmir." Its matchless surface is velvety soft and warm like a cashmere shawl. "On the other hand, a particularly hot-selling line in the USA is our beer-paper," according to the paper designer Kohler. The paper is produced using draff, a waste product from beer being produced in a brewery near Tegernsee. This typical Bavarian joke paper – Florian Kohler thought it up on a whim, while in a Japanese Karaoke bar – is only available in alcohol-free varieties of Weizen, Pils, Lager, Ale, and Bock.

"That some printer might think such an unusual paper can only be printed with great difficulty is understandable, but nonetheless wrong." Kohler heads off any anticipated prejudice against Gmund. "Although one certainly cannot process fine paper at the same tempo and using the same machine settings as with a coated or offset paper," Kohler bears in mind. And so, before he allows a new paper to go into production, he has it tested in several print shops. All the important technical advice of the specialists can then be found on the first page of the pattern books.

"No one Produces as Slowly as We." A warm and damp air hits the visitor of the Gmund production rooms. Here, chaos is a foreign word. Whereas in a modern paper mill the basic material, cellulose, is dissolved in seconds, here in Gmund it is slowly, very slowly blended with water, starch, and other additives in a so-called pulper, a giant bowl reminiscent of an over-sized food processor made of stainless steel. Hours pass before the mash meets the unforgiving quality standards maintained by the fine paper manufacturer. Even today, after the hand-mixed color is added to the large, stone tubs, the now colored pulp is carried via an in-house pipeline to what is actually a museum ready machine-monster dating to 1883. The German Fourdrinier paper machine, 1.6 meter wide and 40 meters long (5.25×131.25 ft), is an astonishing giant of steel and brass. At a speed of 12 to a maximum of 14 meters (40 to 45 ft) a minute, the paper pulp is gradually, carefully drained. In this way, the fibers join together and mat optimally. This snail's tempo gives the paper its special character, as if made by hand. The steel monster can produce 15 tons of paper or cardboard from 70 to a maximum of 500 g/m² a day (2.5 to 17.5 ounces/10.5 ft²).

Time-honored Handwork and the Most Modern Technology. While the people at Gmund love, tend to, and care for their old machines and production methods, the company is anything but antiquated – to the contrary. Unlike in the company's early history, their ecological production methods are beyond reproach. Four years ago, they installed the only ozone drain water purification facility in the world. As a result, the crystal clear water taken in rough quantities from the Mangfall flows nearly as limpid and uncontaminated into the purification plants of the community as when it was extracted. Moreover, today the hydropower of the mountain river is also used to recover energy. Sixty percent of power demands are met in this way, sparing the environment. The people at Gmund also lay great value on the environmental friendliness of their additives and dyes. The criteria applied are that they be non-toxic, free of heavy metals, and certified as food safe. And in the collections, the "natural" paper varieties made of hemp or cotton are embedded with straw, bark, peat, or feathers from lucky upper-Bavarian geese. But also – and here the circle between innovation and tradition closes for the Gmund hand-made paper mill – out of tattered rags. No doubt the secret of their world-wide success lies precisely in this link: "I try to keep the collection authentic," says the boss and designer. "For this reason, they may not per se be the most beautiful – but definitely always typical Gmund." ■

Facts & Figures

The hand-made paper mill employs around 100 workers. Gmund specializes in luxurious writing paper and packaging. The average price comes to a little under 5 Euro/kg (11.00 U.S. dollars per lb).

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Jake Fenenga of Paperlinx Europe, Netherlands.

PAPER MARKET

Global and Local Trading Floor

Around 140 million tons of graphic paper are traded annually. An utterly incalculable number of paper brands vie for the favor of printers. Of these, illustration printing paper is in the highest demand. Heidelberg News has scaled this mountain of paper, so that an overview may be more easily available in the future.

Exactly 338.7 million tons of paper, pasteboard, and cardboard were produced world-wide in 2003, according to the current numbers of the German Pulp and Paper Association [Verband der deutschen Papierfabriken (VDP)]. Well over half of this is packaging paper, sanitary and other papers, and pasteboard. Ignoring the third of graphic paper accounted for by newsprint, there are still more than 100 million tons of paper that must be disposed of in the printing and office sectors. With 35 million tons, Europe is the main manufacturer of this graphic paper, followed by Asia with 29, and North America with 28 million tons. A worldwide market that is immense and nearly impossible to survey.

Insight into the Rivers of Paper. If one compares the total production and consumption numbers of paper, pasteboard, and cardboard in the world, it emerges that on average the various continents produce about as much as they consume. Countries like Finland, Sweden, and Canada, for example, consume substantially less than is produced locally. The USA and China, on the other hand, consume much more than they produce. Perhaps this helps to explain the vigorous flow of imports and exports throughout the world. Distribution numbers for paper categorized according to type are not publicly available. Paper manufacturers and dealers are only organized cooperatively at continental levels, no global associations exist.

Nevertheless, were one to focus on one particular continent, some interesting and surprising information does come to light. In Europe, for instance, around thirteen million tons of paper are not purchased directly from manufacturers, but pass through intermediary trade – paper vendors – according to the European Paper Merchants Association [Verband der europäischen Papiergroßhändler (EUGROPA)]. In the three most important product groups – wood-free coated sheets (3.5 million tons), wood-free uncoated small-format (2 million tons), as well as wood-free uncoated sheets (1 million tons) – more than 70 percent of production is traded. Of this, around 50 percent is delivered from dealer warehouses, the other half are so-called transfer orders, meaning the delivery is made directly from the manufacturer.

Illustration Printing Paper – the Most Sought after Graphic Paper in the World. "In any event, in absolute numbers, wood-free, double-coated paper, so-called illustration printing paper, is also the paper posting the highest sales world-wide," of this, Jake Fenenga of Paperlinx Europe, Europe's largest paper merchant, is certain. "Whereas A1 and A2 are the most common formats." Fenenga has been active for more than 40 years in the international paper sector, and is a member of the seven person management team of Paperlinx Europe. The European headquarters of Paperlinx Limited, the globally active Australian corporate group of paper merchants, is located in an elegant glass skyscraper in the south-eastern part of the Dutch city of Amsterdam.

Paperlinx? Never heard of them before? No wonder, after all the paper trading company works out of Melbourne through a global network of 43 paper merchants with different names in 27 countries of the world. "We are no different in this respect from the majority of large European paper merchants," says Fenenga. "Only a few are active all over the world under their own group name, take

The Largest paper merchants in Europe. (see above)
Source: European Paper Merchants Association (EUGROPA).

Europe's top 16 sheetfed offset paper brands for 2005. Behind the trademark owners and in brackets the previous year's rankings. (see right)
Source: Opticom International Research AB, Stockholm, Sweden.

Antalis, for example. This doesn't exactly make the market in paper trading more transparent to customers," he admits ruefully. In the past few years, many of the large paper merchants bought up regional commercial firms, but these retained their local, familiar, and prestigious names. Paperlinx, too, only arrived at its leading position in 2003, after it was acquired by the Buhrmann Paper Merchanting Division (BPMD) from Holland, the largest European paper merchant at the time.

Globally, Paperlinx now occupies third place among companies involved in the paper trade. "In the graphic paper sector we are in fact the global market leader," Fenenga emphasizes. "Because the two leading global American wholesalers – Xpedx (International Paper) and Unisource – do their main business in packaging and sanitary papers."

In the fiscal year 2005, Paperlinx earned more than seven billion dollars with approximately 10,000 employees, which corresponds to a sales volume of just under four million tons. More than half of this – namely 2.5 million tons – are sold by the 30 vendors in Europe. "Down Under" Paperlinx is also one of the leading manufacturers of printing and writing paper, as well as high-end packaging papers. "However, we only sell the products of our own Australian mills locally in Australia and New Zealand," Fenenga explains. "The transport routes are simply too long, the logistical costs usually too high for us to be competitive in other regions of the world."

Global and Local Brands. The paper that the Australian concern trades in Europe, America, and Asia is consequently purchased from producers. And in Europe, Paperlinx is now not only the largest vendor, but also the largest buyer of paper. Paperlinx alone deals in more than 100 brands of paper. "However, around 70 percent of graphic paper traded world-wide is wood-free, coated offset and copy paper," explains Fenenga. So, the European management in Amsterdam devotes itself exclusively to the acquisition and distribution of five global brands of precisely this high-volume paper.

The lion's share of brands traded are accounted for by dealer brands in the global net. These have made their names largely in the local and regional markets. Exclusively, Paperlinx in addition distributes manufacturers' brands – so-called mill brands. "In England, for example, two of our distributor's brands are even competing with each other," explains Fenenga, who admits that he doesn't always have any easy time preserving an overview. "International brand marketing is just so expensive that it only re-pays high-volume papers," is how he explains the dilemma.

Consequently, today as before, and despite globalization, trade in graphic paper remains a local business. This reflects the customers, who are more likely to be local. Around 80 percent of printshops in Europe are small businesses with no more than 10 employees, cross-sectoral businesses remain the exception.

Raw Material for a Crafted Product. "When not dealing with standard paper, it is nearly impossible for a printshop to recognize and evaluate all the papers, even on the local market", according to expert's opinion. "A good paper vendor is all the more important for a printer, one who first of all should act more as a consultant than a seller. Secondly, he should also possess the relevant know-how related to printing technology," the paper vender stresses. He has himself completed several courses at the Heidelberger Print Media Academy. Indeed, by itself the copy paper that we sell to a printer is not a finished product, but rather only the raw material for his craftsmanship.

Thus, by way of example, roughly 30 percent of Paperlinx sales agents in Europe were previously active in the printing industry. Additionally, Paperlinx operates two paper laboratories in Holland and England, which are easily comparable in size and equipment to those run by large paper manufacturers. In this way the vendor is first of all able to check the quality of what he buys and trades. Secondly, customers can receive independent advice regarding concrete technical problems.

Besides this, the Dutch paper merchant recommends contacting several dealers whenever there is a special printing contract. "First, every vender will offer such papers as he or some manufacturer cooperating with him has available in stock," according to Fenenga. A large vendor may also have a more wide-ranging, but generally a more current direct delivery program. A smaller company, on the other hand, has often specialized and may exclusively occupy one product niche. "Only after the paper vendor notes that he isn't able to offer a suitable product from the warehouse program, will he pull out the patterns of those papers, whose manufacture takes more time – usually including the most beautiful papers," explains Fenenga.

However, purchasing this sort of paper doesn't only require that the contract also requires this lead time, but also a somewhat higher budget. In an optimal case, the necessary paper should also be on-site 24 hours before it will be used, so that it can acclimate to the location. When a two-sided color print does not need to be completed in a single day, then the one side of the paper that has been printed should be covered with a plastic sheet, in order to optimally preserve the moisture content. In the opinion of the paper merchant, "The art of printing consists precisely in not only the craftsmanship of the printer and the quality of the machine, but also in the quality of the raw material – the paper." ■

Quality Paper of the world

For an overview of all brands of paper sold in Europe and North America, we recommend the "Competitive Grade Finder" (CGF). 400 pages, it is published annually in English with a North American and European edition. The CGF contains all the important data related to printability, formats, weights, inks, etc. as well as reference addresses. Price: 150 US dollars.

Facts & Figures

www.gradefinders.com
www.paperlinx.com

VOLLHERBSTDRUCK + DESIGN, GERMANY

Paper is more than a printing stock

Currently, one reads and hears a good deal concerning new rastering procedures, printing technology, and inks. One could almost get the impression that paper no longer has any influence on the quality of the printed product. In a conversation with Heidelberg News, Dr. Franz-Josef Vollherbst, managing director of VollherbstDruck and a recognized expert in printing and product design from Endingen, Germany, the explains the roll of paper in a modern print shop.

HN: Has paper become nothing more than a cost factor for many printshops?

Dr. Vollherbst: Paper is certainly also a cost factor, at least when considering large production runs. But shouldn't the question also be, what role does paper play for the customer – for a brand generally? Paper is more for us than just stock. It is an important component of presentation that can give a brand's design its individual aura. At the same time, paper must always be ideally suited to the respective product. Our assignment as a "creative printshop" is to accomplish this. Then the customer is satisfied, and we can be too.

HN: What do you require of paper?

Dr. Vollherbst: As specialists in labels, we have repeatedly seen that the demands made on labels, and their technical qualities, and production specifications will differ depending on their intended use. A label's design should of course increase the incentive to make a purchase, and in any case be attractive. Additionally, during production the labels must take print and finishing well, and run extremely well during labeling.

HN: Doesn't it then make sense for a printshop and paper manufacturer to work together when very special papers are required?

Dr. Vollherbst: Certainly, depending on what is needed, it can be very useful. Already in the mid-eighties, we did what we could to encourage a new direction in German wine-labels. At the time, foreign wines were arriving in Germany, which were enticing people to buy them based on the eye-catching designs of their labels. In the end, labels and packaging also compete to make a sale. Papers with soft, beautiful surfaces that you wanted to grasp and touch with your fingers were specially introduced by Italian label designers and printers. We were completely dumbfounded to learn some 20 years ago that the paper came from Germany, namely from Gmund. We hadn't found this out from our own paper suppliers. As far as we are concerned, Gmund is the most creative paper manufacturer.

Ever since meeting with them back then, we have been cooperating intensively with the handmade paper mill and have won various prizes with Gmund paper labels. In turn, we inspired Gmund to create a paper label collection, which hadn't existed before. As a result, today we have at our disposal papers with a look and feel that are singular and enchanting: deeply colored, in rich tones, partially "bi-color" with reverse sides of a different color. The first printings were run with just these new labels and we were able to achieve wonderful results.

HN: What role do your customers play in the selection of paper for their products?

Dr. Vollherbst: The look, surface texture, color, and feel are important elements in label design. Hence, paper plays a very special role for our customers. This is much more important in the case of individual products such as in the field of wine than for mineral water or beer, where the technical claims of paper are placed in the foreground. Our customers are very open in this regard, but they expect professional advice from us. It is also important that one be well versed in paper, and already familiar with the properties and manufacture of paper. Because, if a luxury product sells badly owing to an unattractive label, or one that doesn't speak to its target audience, it is quickly yanked way from the shelves of the supermarket. A label, in other words, plays a decisive role in the success of the product.

HN: Would you – apart from labels – give a concrete example of the use of special papers?

Dr. Vollherbst: Some time ago, we produced stylish invitations for a bank on paper that contained shredded bank notes. That was a great success and was very well received. As a print shop – with ideas and creativity – we are able to offer our customers real assistance. We are at one and the same time both advisors and producers. Without good advice and consistently new ideas, we would in the long run have no success with our customers. When we have understood that, and act accordingly, we will also find lasting success. ■

"Paper plays a very important roll for our customers." Dr. Franz-Josef Vollherbst

Facts & Figures

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E-mail: info@vollherbstdruck.de
www.vollherbstdruck.de

The family enterprise steeped in tradition has spezialized for the last 50 years in the production of labels.

HOW PRINTING ARRIVED IN THE NEW WORLD

The Gutenbergs of Latin America

Printing proliferated in Latin America as if on a fast track. Just 50 years after the discovery of America a “printing boom”ocurred in the 16th century. The first printers initially found it anything but a lucrative business, as the examples of Mexico and Guatemala indicate.

Guillermo Contreras

Marta Julia González

Guillermo Contreras presses the handle of the cast-iron printing press steadily downward with his left hand, with his right, he sets the wedding card; the silver type is pressed with precision onto the handmade paper. The printing press has been family-owned for over 80 years, explains the 50 year-old, whose booth is located in the historical center of Mexico City at the Santo Domingo Square. Many of the printers based here are very small businesses that prepare greeting and business cards or leaflets in small runs on hand printing presses. Although he is unable to make any great strides in his trade, Contreras remains proud of the long tradition of the art of printing, that started in Mexico City and conquered all of Latin America. Then he gives a tip: the home of the first printing press in America is located on the Calle del Licenciado Verdad, right behind the National Palace – quite easy to find.

Departure to the New World. Maybe for a local, but for a tourist with a poorly developed sense of direction, it is a challenge not to get lost in the crowd of people and the maze of booths. Eventually, one recognizes the memorial plaque on the ocher colonial structure. The three-story building with its impressive wooden door and wrought-iron, head-level window gratings is reminiscent of a stately villa. The building in fact belonged to the first bishop of Mexico, Juan de Zumárraga. He left the premises to Juan Pablos, who set up the first printshop in the New World here in 1539. The inner courtyard of the building houses a relatively new, not particularly remarkable, replica of the printing press, with which Juan Pablos wrote history. The original press originated in the Spanish city of Seville roughly 470 years ago.

That's where Juan Pablos signs a contract in the spring of 1539: He is to found a print shop in the Viceroyalty of New Spain, today's Central America. The German-born Juan (Johann) Cromberger, who owns the most famous print shop in Seville, is the contractor. For Pablos, this is a unique opportunity to make his own way in the New World. Being far away from home is nothing new for the Italian, who is actually named Giovanni Paoli in his native Brescia. From the 520 ducats start-up capital that he obtains from Cromberger, he buys a book press, gothic typefaces, paper, and material for the manufacture of ink.

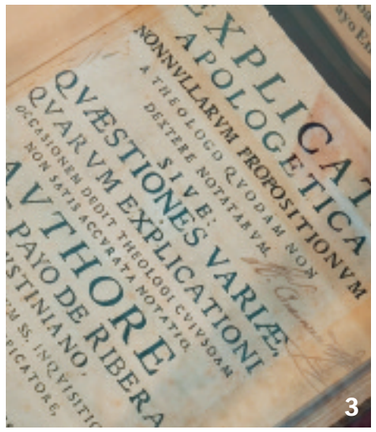
In the fall of the same year, Pablos sets off with his wife on the arduous crossing to Mexico City. The farewell is sweetened for him by the good business deals that beckon. He has no competition to fear, because Antonio de Mendoza, the Viceroy of New Spain, grants the "House of Juan Cromberger" exclusive rights to print in Mexico for 10 years. With such favors, he intends to make investing more attractive to Cromberger. Both Zumárraga and Mendoza wanted to promote the Christian, cultural, and scientific development of the country by printing. At the time Mexico City already had a prestigious university. Consequently, the demand for printed theses and works on music, literature, technology, and sciences was great.

Little Fame, Large Debts. Despite the privileges granted, the business deals do not yield the desired success. Cromberger dies in 1540. His descendants neglect the print shop. Pablos and his family have to struggle through on handouts. The dream of good fortune in the New World threatens to collapse. But Pablos does not give up: in 1548 he takes over the print shop from the Cromberger family. He is deeply in debt, but a loan of 500 ducats ensures his survival. In 1550, he hires the Spanish type-caster and press operator Antonio de Espinosa who breathes new life into the business; economically things look up. Espinosa is the first to design and use Romanic and cursive scripts, which in typography and style are superior to those formerly in use. In the Mexico of the 16th and the beginning of the 17th centuries, Gothic scripts and Tortis dominate printing, just as they had in the motherland of Spain. Tortis, a script named after the Venetian printer Bautista y Gregorio de Tortis is plainer and rounder than the Gothic scripts of the German stamp, that were unable to establish themselves in Spain.

Who Was First? To this very day, no one is sure what the first book printed in Mexico was. Much speaks for the Manual de adultos printed by Pablos in 1540. Three famous pages of the book are found in the National Library in Madrid. The first books were primarily Christian educational writings that served to convert the native Indians. The range of subjects at the turn of the century broadened to include medicine, ecclesiastical and civil law, natural sciences, navigation and natural history. In 1600, there are already nine printing presses in Mexico City. Among the printers are Espinosa, who founds a printshop in 1558 in today's Calle Republica de Uruguay in Mexico City, and Antonio Ricardo. Due to rising competition in 1580, Ricardo goes to Peru, where he sets up the publishing house of Ciudad de los Reyes in Lima. Another Mexican, Jose de Pinada Ibarra, emigrates to Guatemala in 1660.

From Mexico to Guatemala. "Ibarra introduced printing to Guatemala, as the fourth Spanish-held city," explains Marta Julia Gonzalez, Director of the Museum "Libro Antiguo" in La Antigua. The little colonial city that numbers 30,000 inhabitants, lying almost 50 kilometers (31 miles) west of Guatemala City at the foot of a volcano, was Guatemala's capital up until the devastating earthquake of 1773. Over 50 churches, chapels and ruins ▸

Tradition and modernity: on the Plaza Santo Domingo in Mexico City the penny-a-liners earn their living (photo above left). Policeman on horseback steer traffic (photo above right). Mirror sellers: small enterprise is an important source of livelihood for people in Mexico in addition to tourism (photo below left). The entrance to the "House of the First Printshop in America" in Mexico City (photo below right).



1. Women carry their wares to market in La Antigua.
2. Sacred figure on the façade of the baroque church La Merced.
3. Title page of "Explicatio Apologetica," a text composed by Bishop Payo Enriquez de Ribera in 1663.
4. Arcade in Guatemala City.
5. Bus stop in front of the monastery ruins in La Antigua.

of cloisters still bear witness to the cultural significance and the wealth of La Antigua in the 17th century. The Guatemalan Nobel Prize Laureate in Literature Miguel Angel Asturias wrote in his Legends from Guatemala that in the atmosphere of the time, "one feels a pressing need to sin."

Houses in Renaissance and Baroque style with artistically wrought iron gratings in front of the windows, cobblestone-covered streets, and Mayan women in their traditional dress make this time come to life. "Guatemala, then still a kingdom, was just experiencing its cultural heyday in the arts and sciences. For this reason, many people and institutions had an interest in manufacturing books to make knowledge more readily accessible," explains Gonzalez. One of them was Bishop Payo Enriquez de Ribera, who wanted to publish his own works.

Lyon Model. In 1660, Ribera commissioned a Franciscan friar, Francisco de Borja, who came from a well-known family of printers, to travel to Puebla – next to Mexico City the second most important Mexican center of the printing arts. There Borja acquired a press and contracted Ibarra. "The press was a Lyon model, used extensively in Europe at the time," says Gonzalez. As a rule, work was done from sun-up until sundown – that is between 12 and 16 hours per day. For the most part, five people worked in a printshop: one to two typesetters, two printers, and an apprentice. The owner or master of the print shop was responsible for proofreading.

As his first job in 1661, Ibarra printed a sermon by a monk, Francisco de Quiónez. In general, Ibarra owed the majority of his orders to the many religious orders in La Antigua. By the time of his death in the 1680, he had printed 69 works; the majority of which were elegies, sermons, rules, and books of hours. The Explicatio Apologetica from 1663 published by Bishop de Ribera, which contained 755 folios, represented the major work. Ibarra primarily used Renaissance and Roman types.

Financial Need and Illiteracy. Ibarra's works and a replica of his printing press can be viewed at the Museo del Libro Antiguo at the Central Park, in the center of La Antigua. The museum, housed in a colonial building with flower-covered terraces and arcade walkways, contains memorial plaques commemorating printing pioneers like Gutenberg, holds true treasures of the colonial printing arts, including the accounts of Cortes' Captain Bernal Diaz del Castillo "The True Story of the Discovery and Conquest of New Spain" from the year 1632.

With pride, the museum director Gonzalez acts as guide through the exhibition rooms. Wooden chests in front of the windows protect the exhibits from the glaring sunlight. In wooden showcases covered with a glass plate the hundred-year-old works may be marveled at: next to Ribera's Explicatio Apologetica, a page from the Gutenberg bible, diplomas of graduates of San Carlos University (founded in 1687), chronicles, grammar books, dictionaries, and natural science tracts. Most of the titles are decorated with woodcuts; the interior sides of the bindings are inlayed with marbled paper, so-called papel jaspeado.

Only a fraction of the roughly 2,500 historical books and documents the Museum owns are on exhibit. There is not enough space and certainly not enough money. The lack of adequate funding is evident in many exhibits; corrosion eats through the paper at the borders. "We cannot preserve the books as professionally as might be possible nowadays, we don't have the resources for that," says Gonzalez. The problem arises from basic economic and social conditions: With an illiteracy rate of about 50 percent, primarily foreign tourists and scientists visit the museum. School classes do come from Guatemala, but they get in free. Some 85 percent of the visitors pay nothing.

However, Gonzalez is pursuing ambitious goals. Because La Antigua was named world cultural treasure by UNESCO, the city intends to hearken back to its cultural heyday. The vision is to make La Antigua into a Mecca of culture. And in the process, the Museo del Libro Antiguo is to play a central role: "I would like to develop the Museum into the cultural and conference center – provided I find foreign sponsors," says Gonzalez. ■

Facts & Figures

Museo del Libro Antiguo
Portal del Ayuntamiento No 6
La Antigua
Guatemala
Tel.:/Fax: +5-02-78 32-55 11

Hours of operation:
Tuesday through Friday from 9:00 am through 4:00 pm
Saturday and Sunday from 9:00 am through 12:00 pm and from 2:00 pm through 4:00 pm

Tips & Tricks

Hue Variability from Sheet to Sheet

Error Definition and Effect

In the case of a paper delivery, one can as a rule assume that the same print result will be achieved across an entire print run. And yet, again and again we see variability in hue emerge in a production run of a single delivery. A printer has restricted opportunities to react to the differences in quality by means of the color control system. When the print quality shows constantly varying hues from sheet to sheet, the printer has no chance to provide uniform printing quality.

This error can reveal itself as a doubling of single colors and buildup of a line on the printing blanket. This error is distinctive in that the variations in hue manifest themselves according to a clear rhythm, i.e., on each 4th sheet or also on each 6th sheet.

Causes and Remedies

During paper manufacture, individual reels are cut lengthwise for web and sheet fed printing from a mother reel (drum). For sheetfed offset printing, the cutting occurs in the cross cutter. In this process, a mass per unit area of 480 g/m² is cut out of various locations on the drum and other drum reels. The sheets cut in the cross cutter may display variable quality. These can include differences in smoothness, the strength of elasticity, or in the tendency to build up the line.

It is very helpful when the printer recognizes the cross cutter rhythm early on, and then provides the paper supplier with relevant information in order to receive subsequent delivery as quickly as possible. During paper manufacture, the reels in the cross cutter are cut "chaotically." This means, that reels with differing suitability for printing are cut from different drums and even from different locations on the same drum at the same time. For logistical reasons, paper mills are unable to resort to a "system cut," wherein neighboring drum reels and reels laid down successively one behind the other that demonstrate similar characteristics, are combined.

Case History

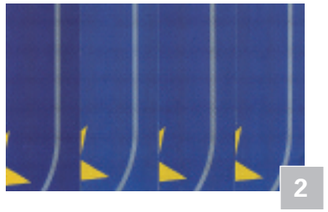
A brochure was printed in four-color on shiny coated paper employing a sheetfed offset printing process. During the print run, constantly varying reproduction manifested itself in a single series: one faultlessly reproduced sheet was followed by three sheets with visibly diminished ink density (illustration 1). The printer further reported that there was a build up of the line on the printing blanket.

1

Print quality in a series of 4 printed sheets.

Investigation

In order to establish the cause, pre-dampened test prints were processed from a series of the unprinted printing stock. The test probed the sensitivity of the line to the dampening solution.
At the same time, the paper strips to be tested were moistened with commercially available dampening solution in the dampening unit of the press. In the current example, a test print with faultless ink transfer was achieved, followed by three tests with poor ink transfer (illustration 2).



2

Proof copies in a series of 4 sheets.

Conclusion

The investigation demonstrated that the sheets were cut in a 4th cross cutting rhythm, wherein in each instance, one reel demonstrated faultless printability and three reels indicated a pronounced sensitivity to the dampening solution. In the case of sheets, which were sensitive to the dampening solution, owing to the pull of the printer's ink the particles of the line were torn out, leaving sediment on the printing blankets and resulting in an interrupted ink transfer, with the consequence that tonal value was lost. ■

Corners on Wall Calendars Upraised

Error Definition and Effect

One can observe a slight curvature on wall calendars in many cases. This condition is generally acceptable to clients and buyers, above all when the curvature occurs symmetrically to the longer or shorter side. However, in flagrant cases the calendar pages curve so strikingly that the appearance becomes unacceptable. The pages may curve symmetrically, either on the front or the flipside. This means that the curvature runs parallel to the grain. There is also a type of curvature with upraised corners, which looks similar to the "dog-eared" pages of a book. In these cases, the aesthetic appearance is affected particularly negatively.

Causes and Remedies

One-sided coated paper grades tend to curve, since the ability to swell and shrink of the front and reverse side may differ depending on climactic conditions. The effect of printer's ink and dampening solution in the case of the more common front-side printing may additionally reduce flatness. The effect can be counteracted with costly prestretching. As a rule, the upraised corners are related to diagonal bracing, which is caused by suboptimal fiber orientation. In one instance, a printer has no way of reducing this effect.

Case History

After finishing the calendars and hanging them out in different rooms, it was discovered that corners were visibly upraised. It was suspected that the source of the problem involved some defect in the paper. On the other hand, the paper manufacturer was of the opinion that the selection of an incorrect running direction or the printing process itself caused the problem.In order to establish the cause, the disputed calendars and unprinted dummies were placed at FOGRA's disposal. It emerged that the calendars showed normal flatness in rooms with high humidity, whereas when stored in a dry climate, it became evident that the corners were clearly upraised (illustration No. 1).

1. Test of Fiber Orientation

Since suspicion fell on diagonal bracing, measurements of tensile strength were made on samples from the calendar pages, which were cut out at an angle of +30° and −30°. In a paper with an ideal fiber orientation, no large differences in tensile strength between the left and the right angles should manifest themselves. However, in the current case, it emerged that strips with +30° generally showed lower values than samples with −30° angles. These measurements strengthened the suspicion of the unfavorable fiber orientation of the paper.

2. Investigation of Flatness on Unprinted Samples

Samples sized 10 cm×10 cm (4 in×4 in) were cut out from the same delivery of unprinted hand specimens and stored in a heating furnace for 5 minutes at 40 °C (104 °F) . The result, as had been the case in the disputed calendars, the corners became clearly upraised (illustration No. 2). This test demonstrated that the delivered paper showed diagonal spanning regardless of the printing process, and was consequently responsible for the problem. ■

1

Raised corners on a rejected calendar.

2

Raised corners on a paper test after storage in a warming cupboard.

Dates & Tradeshows

■ European Dates

Czech Republic: Polygraf
International professional tradeshow for advertising services, marketing and media as well as print, the graphic arts, paper, packaging, and packaging technology.
Venue: Prague, Czech Republic
Dates: 29.–31. March 2006
Contact: Romana Svátková
Phone: +4 20-2 22-2 40-7 11
E-mail: export@terminy.cz
Internet: www.sp.cz

England: Ipex 2006
Largest print and graphics tradeshow in the English speaking world. With around 1,200 exhibitors, around 74,000 visitors are expected.
Venue: Birmingham, England
Dates: 4.– 11. April 2006
Contact: Ipex 2006
Phone: +44-(0)-20-79 15-56 14/56 81
Fax: +44-(0)-20-79 15-50 21/50 96
Internet: www.ipex.org

France: Intergraphic
Tradeshow for professionals in the graphics industry, where 250 exhibitors will put their products and their know-how on display.
Venue: Paris, France
Dates: 10.–12. January
Contact: Alexandra Després
Phone: +33-(0)-1-41 40 41-40
Fax: +33-(0)-1-42 70 96-83
E-mail: a.despres@golding.fr
Internet: www.intergraphic.biz

Germany: Druckforum 2006
Lecture event und experience exchange for suppliers, decision-makers and users of the Association of Print and Media.
Venue: Stuttgart, Germany
Dates: 20. January to 10. February 2006
Contact: Brigitte Strobel
Phone: +49-(0)-7 11-4 50 44-50
Fax: +49-(0)-7 11-4 50 44-56
E-mail: b.strobel@verband-druck-bw.de
Internet: www.verband-druck-bw.de

Russia: Etiketka
International professional tradeshow in the area of label printing. New technologies and supplies for print and manufacture of labels. With 300 participants from 30 countries, more than 25,000 visitors from 35 countries are expected.
Venue: Moscow, Russia
Dates: 11.–14. April 2006
Contact: Ekaterina Vasilieva
Phone: +7-0 95-1 05-34 17
E-mail: info@labelshow.ru
Internet: www.labelshow.ru

Spain: Hispack 2006
International tradeshow in the area of packaging on a total surface area of 120,000 m^2 (144,000 y^2).
Venue: Barcelona, Spain
Dates: 27.–31. March 2006
Contact: Asociación Graphispack
Phone: +34-93-2 33-20 00
E-mail: hispack@firabcn.es
Internet: www.hispack.com

■ Dates Near East

Iran: 12th International Exhibition of Pack & Print Machinery
International professional tradeshow of packaging and print industry.
Venue: Teheran, Iran
Dates: 14.–17. February 2006
Contact: Iran International Exhibitions Co.
Phone: +98-21-2 19 11
E-mail: office@iranfair.com
Internet: www.iranfair.com

Winners of the Reader's Survey – HN 254

1st Prize: Trip to Heidelberg
Julián Morales Olmedo, Gráficas Tomelloso, S.L., Tomelloso, Spain

2nd to 5th Prize: iPod
Konstantin Haschke, Druckerei Haschke, Sontheim, Germany
Ralph Pfister, Pope Print Timaru, St. Timaru, New Zealand
Otto Pittner, Copy Express, Inc., Lexington, KY, USA
Alfonso Cibrián Vélez, SG Print, Jalisco, Mexico

6th to 10th Prize: XL 105 model
Nawazish Ali, Nisar Art Press Ltd., Lahore, Pakistan
Kenneth Asara, IKAM Ltd., Accra-North, Ghana
Stefan Haselsteiner, Pecho Druck GmbH, Linz, Austria
Ron Kondra, Campbell Printing Ltd., Saskatchewan, Canada
Ali Mohsin, Executive Printing Works, Nairobi, Kenya

HN Voices

Dominic Giesel, Hamburg, Germany: A very informative issue. Perhaps a report on water treatment and air humidification would prove interesting?

Parul Arya, Abu Dhabi, United Arab Emirates: This magazine is what is essential to the further development of the printing industry. In our restless times, subject to tight deadline pressures, we are provided information on the sector and its trends, which helps keep us up-to-date. Please keep up the good work.

Markus Egner, Munich, Germany: The question of how to arrange succession appropriately in a family enterprise can not be addressed often enough – this topic has as much value as questions related to taxation, and is likewise neglected. I enjoyed the article – we managed to pull it off in our company five years ago.

Bernadette Goriup, Graz, Austria: A very informative and beautiful magazine. Please include more reports and stories on other print shops!!

Helmut Schendzielorz, Bonn, Germany: Again and again, HN shows the great range of the graphics trade through its reports on special applications and exceptional customers. In this way, readers are able to better understand how everything comes together.

Antonio Lozano Brizzolis, Madrid, Spain: The magazine is very interesting. It keeps me informed on the latest technologies, analyzes the market and international companies. Many thanks – keep it up.

Robert Sackl-Kahr, Graz, Austria: A wonderful article – Graph Co. Ltd. from Japan.

Werner Schöffel, Hamburg, Germany: The magazine is good because it doesn't only revolve around machinery, but also takes up subjects like printers and their products.

Camilo Sanchez Collins, Columbia: A very good magazine, beautiful photos and excellent content.

Cesar Hernan Huiman Pino, Peru: Heidelberg News is quite beautiful; I would like to learn more about methods and process controls.

A word from the editor: In issue HN 254 we reported on the Graph printshop in Japan. Regrettably, the telephone number to the print shop given was inverted. The correct version: +81-(0)-7 90-45 08 00

IMPRINT

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