If you watched the 2002 Tour de France particularly closely last summer, you had to be aware of the fact that the colours for cycling gear have moved dramatically from neutral to the more flamboyant. Kay Turtle risks eye strain in coverage of the phenomena and reports on the …

Peacock Pedallers

Not only were the Tour teams rigged out from head to toe in shades of cyclamen pink, acid green, Pacific blue and a medley of other colourful hues, but the peloton, fanning out behind the leaders, resembled a peacock's brilliant tail. The canary-yellow shirt of Lance Armstrong (USA) led the field chased by the emerald green version worn by Robbie McEwan (Australia) - the sprint winner's colours - with red polka dots for the best mountain rider in 2002, Laurent Jalabert (France), adding to the eye-catching array.

Fabric versatility is responsible for this change, part of the process of evolution that has taken us from the inauspicious days when one cycled in all-purpose athletic kit (with a few comfort add-ons) to the high-tech functional textiles of the modern world - and these are not just for the top end of the range of elitist racers. Anyone who cycles today, whether it be racing, mountain biking, cross country riding, indoor spinning, or just a casual jaunt along a purpose-built track, demands top quality technology in bike and quality and function from bike wear. Cotton T's and baggy pants are out. Figure-hugging tricots with aerodynamic fabric surfaces and all measure of functional detail are in. Even a cardiac response or pulse measuring device attached to a garment or the handlebars is no longer just a gimmicky accessory.

Looking at the latest in gear, one is immediately made aware of the updating of the cycling image. Swiss company Odlo presents its new bike wear image with photos of sportsmen and women covered in mud splashes, faces showing no make-up but rather the stamina and toughness required of modern bikers. A team of top sports persons are behind each new technical development from this company, and only what they have found to perform is put into production.

Main image: Courtesy Odlo.

Aerodynamic ergonomics

This trend is extended throughout the industry and the latest results bring aerodynamics into the forefront. After four years of research, investigating over 50 textiles for their wind resistance, for their breathability and elasticity, Nike unveiled its 'Swift Spin' - a one-piece bike suit designed with Lance Armstrong and the US Postal team in mind, and worn successfully by them during the Tour de France 2002. This body suit, an aerodynamic speed suit in fact, is a further development of Nike's successful track and field - 'Swift Suit' debuted in Sydney 2000, and its speed skating 'Swift Skin'. The fit of the suit is trimmed down - body mapping being the key word in this part of its development.

Below: Nike's Swift Spin one-piece suit was developed with the Tour de France in mind. Six different fabrics are used, each with a specific function.



The use of wind tunnels illustrates just how much technology goes into new designs and demonstrates the importance of measuring airflow over a cyclist in different positions and speeds. Nike claims its suit 'showed a significant benefit' over any other suit it tested.

The six fabrics used in Swift Spin are generally lighter in weight than for the other Swift projects, and are scientifically placed on the cyclist's body to achieve maximum performance by counteracting the negative effects of friction, acting in similar manner to the dimples on a golf ball by speeding the air over the surface.

From a distance the suit much resembles any other one-piece cycling time-trial suit. The differences are apparent on closer inspection. Leg extensions are longer, and for aerodynamic reasons in a different fabric to the main body. Direction and placement of seams is also critical, and so placed to avoid creasing and thus achieving harmony with the airflow and a reduction in air drag. Gloves are incorporated into the suit design for Armstrong, and both gloves and shoe covers are of the silver aerodynamic textile already tried and tested in previous Swift speed suits.

Comfort in seam reduction

Bike tricots are designated as engineered knits where the knitting processes permit a reduction in the number of seams used, which in turn provides greater comfort to the wearer. Transition fabrics, which vary textures from solid jersey to mesh without seams, perform better ergonomically and provide superior transpiration. These may be found in bike wear from almost all companies, particularly the US-based Pearl Izumi, which is in the forefront of this trend with its EKG (engineered knit garment) technology. Its tango cycling 'skort' in a wrap-around design, is a fun alternative to the usual shorts for women that has a floating nylon/spandex liner containing a thin profile pad in chamois for comfort cycling. The 'skort' is worn with the same company's Pipeline range of cropped solid colour or printed tops which include a bra support line and all of which have polySENTRIC mesh back panels for increased ventilation. PolySENTRIC is a light-weight, quick drying hydrophobic, polyester yarn which is sanded on both sides for softness, has excellent drape and can be used in mesh or waffle construction.

Responsible companies such as Polartec use information gathered by cancer research programmes on the effects of UV rays in their development of fabrics for outdoor wear and use this in a campaign to raise consumer awareness of the dangers. In bike sports the challenges are obvious because the effects of wind, rain and sun all have to be counteracted. Polartec produces its Power Dry 100% polyester fabrics in three sun protective categories, good, very good and excellent and each garment carries a swing tag providing the customer with specific UV protection information. Its new 'Silk Weight - prepared for printing' version of Power Dry - was produced specifically for cyclists, and tried and tested in the 2002 Tour of Spain. The benefits were apparently proven when it took its place on the winner's podium.



Joseba Beloki of the ONCE Eroski Team dons the leader's Golden Jersey (in Polartec Power Dry) after winning a stage of La Veulte – unofficially known as the Tour de Spain.



Swiss manufacturer Odlo's development policy includes the use of professional activists to ensure wide product acceptability.

Ecologically biking

Bike wear from Austrian manufacturer Löffler puts its weight behind the Eco label Öko-Tex standard 100, producing sportswear which is kind to the skin, easy to wear and does not require any anti-microbial treatments. As this company is one of the few still manufacturing exclusively in middle Europe, it is able to oversee all elements of the production and to control working conditions. On this basis the company has a firm following for its colour-rich 2003

collection. Men and women's sports wear is handled separately in the colours to maximise their impact. Travel bike wear has polo shirts and shorts in more muted colours than the mountain and racing styles where red, yellow and blue dominate. Swooping lines of colour follow curved seam lines, or as decoration, it is suggested, project a speed image backed by the company's use of functional fabrics incorporating Gore-Tex membranes, Windstopper fleece, Malden Power Stretch, and polyester micro-fibres. Bike pants are in DuPont Lycra with appropriate seat padding.

Pearl Izumi and other manufacturers make use of fusion technology in the production of bike shorts, where padding is patched on in exact sizes and shapes without seams that could cause chafing or wear. Odlo, backing its new concept of using keen amateur sports people for its advertising campaigns, presents 'comfort during exercise' with its bike pants for the coming season. It's SIS (seamless insert system) signifies that the pad insert is bonded rather than stitched to the main garment - a new idea from Andre Stettler, product manager for Odlo, whose sporting career spans top racing, extreme mountain biking and Swiss national bike team training.

Gonso Bike and Activewear ranges use the Xstatic silver fibre seat pad from Swiss manufacturer Christian Eschler. Silver is anti-static as well as anti-bacterial and these threads can be seen in the zigzag construction of the warp-knitted fabric. As silver is a good conductor of heat it also provides thermal regulation in this important anatomical area.

Everything elastic

Cordura as elastic knit fabric is still something of a novelty, but its anti-chafe, abrasion resistance and low-pill physical characteristics persuaded Gonso to use it as the leading element in a range of strap pants for men. The fabric's suitability for hard wear usage is known, but this is the first time it has been incorporated in this way in bike wear.

For women with vein problems in the thighs Gonso have produced a special bike short 'Lisa' in Meryl-Elastic, a 90/10 mix of Meryl polyamide and DuPont Lycra. Together with the soft elastic cuff, the lengthened leg of the bike pants is complemented by a longer back, no inside leg seams and no central seam in the seat pad. In their very professional looking junior range Gonso have just added a strap pant style in own-brand Aerolastic – an 80/20 mix of polyamide and Lycra - with a high-cut back, a seat pad without a centre seam, and safety-driven reflecting elements.

What stands out in current bike wear ranges is the attention being given to women's wear. Italians are renowned for their eye for colour so it comes as no surprise to discover that Fila, typical of these companies, includes floral graphics and Scottish style checks in its colourful tricots for 2003. These come with all the latest functional properties and details demanded by this ever increasing group of athletes, in halter and sleeveless style tops and long pants which can be converted into knickers or boxer shorts through the adroit use of two zippers. Pink and royal blue stand out in its spin-bike range and unusual shoulder covers add to the femininity, while the increased interest from men for indoor biking has led the company to increase the attractiveness of this section for 2003 by including matching gloves, socks and hand towels.



Zyros Altura jacket. The functional aspects of Sympatex Phaseable fabrics give this garment temperature control qualities.

Spot the function

A leopard may not be able to change its spots, but Sympatex Technologies, in introducing its latest functional system called Phaseable, states that the system of triangular foam spots attached to a two-and-a-half layer membrane weighing just 120g per square metre can do just that. Its first project partner is the British bike wear specialist Zyro, which included the Altura functional bike jacket in Phaseable Sympatex in its winter 2002/3 collection.

This new fabric regulates itself according to the body temperature of the wearer, in two phases: where lower activity produces less heat the spots act as a comforter preventing the membrane from sitting on the skin while allowing a warming circulation of air to form an insulating layer. Increased activity permits body moisture to be absorbed by the membrane that expands to



Lisa long shorts from Gonso are designed to hide unsightly veins. Meryl polyamide and DuPont Lycra provide warmth and comfort.

decrease the insulating factor while increasing moisture transfer. This can be seen to happen as the foam triangles only become visible as transpiration takes place. The wind and water proofing properties of the membrane are also maintained.

Sympatex Technologies has also been working closely with Gonso, using a 3-layer laminate for an extremely lightweight bikers jacket weighing 250 grams and teamed with matching over trousers. Tested by the Hohenstein Institute, the product combines the best of breathing properties with waterproofing and an abrasion resistance to 40,000T/Martindale professional standard. Known as the Highlight the jacket is worn in combination with pant styles with adjustable and detachable braces, pre-formed knee inserts and a higher back - for both men and women. The jacket is slim fitting, has raglan sleeves, an extended back, reflective binding for safety and packs down to fit into a pocket, says Gonso.

Improving on past performance is the Paclite III fabric from W L Gore. Already taken up by some 30 manufacturers, the latest laminate has lost its polymer dots replacing them with a protective layer made of an oil resistant substance and carbon. This layer allows body moisture to evaporate through it while forming a physical barrier against oil, cosmetics and insect repellent, all of which could adversely affect the moisture transfer properties. Gore states that this new formula Paclite has roughly 40 per cent more breathability than the original product and a RET value of under 4 according to Hohenstein standards. It weighs less at 250 grams – a reduction of 15 per cent – and nylon fabric is used for the outer face because of its low weight and anti-abrasion properties. Gore says that the disappearance of the dots makes it more comfortable to wear.

'Night and Day' protection

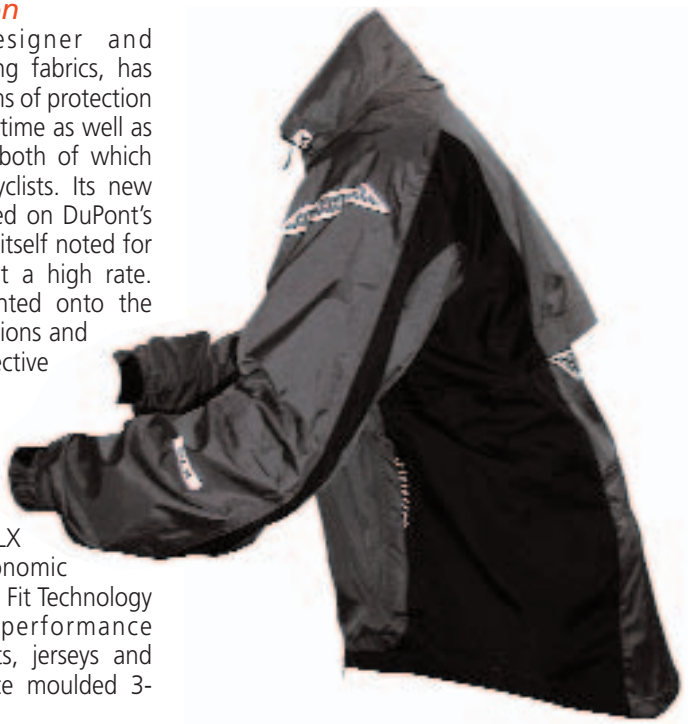
US company Reflec, designer and manufacturer of surface reflecting fabrics, has turned its attention to the problems of protection against ultra-violet rays in the daytime as well as visibility in low-light conditions, both of which are vital to the well-being of cyclists. Its new "Night and Day" fabrics are based on DuPont's polyester fibre CoolMax Extreme, itself noted for its ability to transfer moisture at a high rate. Reflec's Illuminite process is printed onto the fabric to deflect UVA and B emissions and at the same time provide an effective level of cooling.

If any further evidence of fashion in bike wear were necessary, the arrival on the scene of such designer labels as Ralph Lauren must surely be it. RLX is a functional range of ergonomic sportswear using proprietary Form Fit Technology and manufactured in high-performance Fieldsensor fabrics in bike tricots, jerseys and pants. In the last item a 4-piece moulded 3-dimensional chamois leather seat inlay promises maximum riding comfort. The unusual cape ventilation of the RLX Distance jackets boasts 2-way horizontal chest zippers and an adjustable plastic stay to maximise airflow. RLX's halter styles and Peloton jerseys for women are again both fashionable and functional enough to excite any peacock.



Gonso's appropriately named 'Skort' – part skirt/part short – add a degree of feminity to the practicality of women's cycling gear.

Hand and foot note: Safety is a factor that is becoming even more important as more children take to the roads on wheels. Combating the danger is a new glove from Germany called Blinky. As the name suggests, reflective patches on the backs of the fingers 'blink' to indicate a change in direction when the digits are flexed. The gloves are equally useful on dull days or dark nights, and are easily reflected in street and car lights. The children love to demonstrate their use and this encourages them to signal before turning.



Ralph Lauren's RLX Distance jacket with cape ventilation.