



GOODYEAR DUNLOP

Visionary concept tyre for a distant future

The tyre manufacturer Goodyear Dunlop entirely focused on concept tyres, which are to support future autonomous driving and to make it safer, at the Geneva Motor Show 2016. The Eagle-360 and the IntelliGrip represented technical solutions, which enabled a look at a distant future.

The concept tyres stress Goodyear's future vision and the innovative power, which have characterized the tyre manufacturer for more than 117 years. Thus, the responsible people at Goodyear are of the opinion that concerning future mobility features like reliability and safety will play a crucial role.

The tyre manufacturer offers with the Eagle-360 concept tyres a safe and sustainable solution for those who will use self-driving vehicles in the future. The spherical tyres for self-driving vehicles are produced with 3d printing procedures. The main focus was on increased connectivity, improved handling and above all safety during the development process. Due to the spherical form of the tyre the vehicle is manoeuvrable in all directions – for the benefit of driving safety. Furthermore, the tyre is able to adapt to difficult driving conditions like black ice or aquaplaning because of active technology. As a consequence, the tyre contributes to minimizing dangers resulting from sliding on the road or suddenly appearing obstacles and to remaining safe on the road.

Additionally, the spherical form of Goodyear's Eagle-360 offers convenient driving because of balanced lateral movements. This helps the car getting over barriers without changing the driving direction. Moreover, the Eagle-360 facilitates parking, as the spherical form also enables turning of 360°. Thus, the tyres enable particularly space-saving parking.

Borrowing from magnetic levitation technology

The Goodyear Eagle-360 concept tyres make use of magnetic levitation technology for the link between tyres and body. Magnetic fields, which are similar to magnetic levitation trains, separate the tyre from the vehicle. These improve comfort for other passengers and reduce noise development at the same time. Goodyear equips the Eagle-360 with further characteristics concerning connectivity. On the one hand, internal sensors of the Eagle-360 concept tyre register road conditions like weather conditions or surface

structure and pass on this information to the car and other vehicles as well. On the other hand, the improved monitoring technology provides comprehensive monitoring of tyre pressure and tread wear, which increases the mileage of the tyre. The tyre tread can individually be adapted to any region because of the production procedure.

IntelliGrip with sensor technology

The concept tyre IntelliGrip, which is meant for early generations of self-driving vehicles, was also presented. The concept tyre IntelliGrip is supposed to equip early generations of self-driving vehicles with the latest sensor technology in order to support monitoring systems of autonomous vehicles. As autonomous vehicles depend on data from other vehicles, drivers, pedestrians and smart cities, tyres like Goodyear's IntelliGrip will play a crucial role in data exchange. Thus, there was a focus on high connectivity of the tyre as well as good handling and increased safety for the driver when developing the tyre.

Thanks to the latest sensor technology and a specially designed tread, the Goodyear IntelliGrip is able to recognize different road



The Goodyear Eagle-360 concept tyre enables a look at a distant future of self-driving vehicles.

and weather conditions. Furthermore, the IntelliGrip makes use of Goodyear's current Active Wear Technology together with Tyre Pressure Monitoring Systems for monitoring the condition of the tyre and the vehicle. Goodyear developed specific algorithms for this use in order to integrate variables like air pressure and tyre temperature in the analysis of the tyre condition and to optimize the au-



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Apart from data about road and tyre conditions additional information is transferred to the central monitoring system, which is to improve driving performance and driving safety. The tyre sensors take care of a corresponding adaptation of the speed of the vehicle eg on wet and slippery roads. Additionally, braking distance is to be shortened, bending behaviour and driving stability to be improved and collision protection to be increased. As a consequence, safety systems like ESP, electronic braking control systems (BCS) or adaptive chassis control are to be better connected.

The microchip used in the IntelliGrip was developed together with Huf, a leading manufacturer of mechanical and electronic locking systems as well as systems for monitoring tyre pressure and telematics systems for the international automotive industry.

Current tyres

Goodyear' Eagle F1 Asymmetric 3 was developed as a new ultra high performance summer tyre for powerful vehicles of the medium and upper class. The tyre is characterized by outstanding braking distance and good handling qualities and thus, offers an optimum vehicle control on dry and wet roads. The tyre disposes of Active Braking Technology, which is responsible for an increase of the tyre to road contact during the braking process and a shorter braking distance as a consequence. The specific tread design provides an improved grip level in wet conditions.

The Goodyear Eagle F1 Asymmetric 3 is offered in width from 205 to 285 millimetres for rims from 17 to 20 inches with diameters from 55 to 30, among them there are also selected sizes as RunOnFlat version.

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The model shows different details of the concept tyre Eagle-360.



The new summer tyre Eagle F1 Asymmetric 3 is an ultra high performance (UHP) tyre, which was developed for powerful vehicles of the middle and upper class.



BRIDGESTONE PROFACTS MOBILITY STUDY 2015

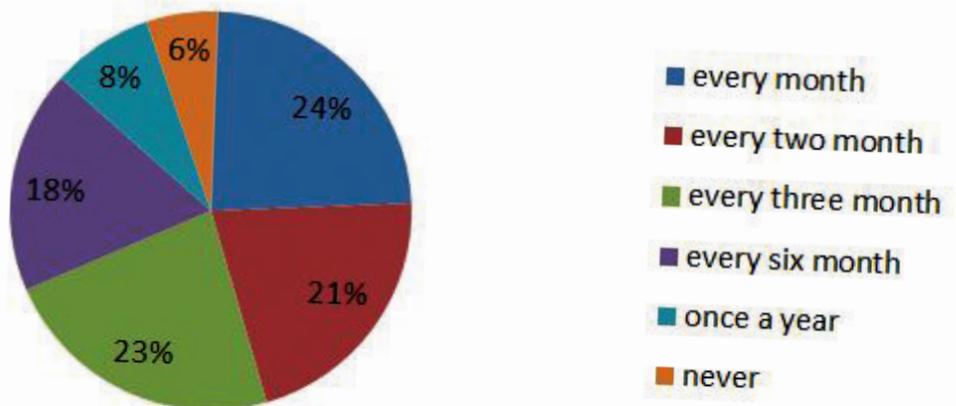
60 per cent do not know what TPMS means

All new passenger cars, which were registered after 2014, had to be equipped with a Tyre Pressure Monitoring Systems (TPMS). The law was introduced in order to provide more safety, as the TPMS warns the car driver in case of a possible loss of tyre pressure. Last year, Bridgestone carried out the so-called Profacts Mobility Study, which highlights when and where tyre punctures happen and how affected people react and feel in such a situation. The topic of TPMS is covered here too.

In the framework of the study, 1,376 car drivers in Germany, France and the UK were questioned. Among them 48 mentioned that they use run-flat tyres. About the same number of men and women were included, which means 685 men and 691 women. Mostly, punctures happen in very inconvenient areas and situations. The vehicle stops either at a very busy road, the weather conditions are uncomfortable, crying children are waiting in the car or there is a lot of time pressure. The Profacts Mobility Study 2015 carried out by Bridgestone illustrated that more than 50 per cent of tyre punctures happened in inconvenient areas and 23 per cent of tyre punctures after sunset. Thus, it is quite understandable that 74 per cent of the respondents were quite annoyed when having a tyre puncture. The study shows that car drivers have about six pierced tyres during their whole life. Some drivers have either a Tyre Mobility Kit or spare tyres with them, which could be very helpful in such a situation. According to the Bridgestone study, more than one third are not able to use the kit correctly. Furthermore, half of the respondents doubt the safety of space-saver tyres.

The introduction of TPMS was not only meant to make car driving safer, but Bridgestone would also like to give car drivers a bigger feeling of safety with its latest development called DriveGuard, a standard tyre with run-flat properties. Even in case of a puncture this tyre will be able to continue driving about 80 kilometres at a speed of 80 km/h as recommended by the manufacturer. This will be enough to get to the next workshop or specialized tyre trade. As a consequence, annoying tyre changes, in the worst case at a very busy road and under bad wea-

How often do you measure tyre pressure?



Bridgestone asked car drivers in the framework of a study whether they disposed of TPMS. Source: Profacts Mobility Study Bridgestone. Grafik: GB.

ther conditions could be avoided. Moreover, many car drivers face their first tyre change when having a puncture. According to the study, 72 per cent of women and 33 per cent of men do not change their tyres on their own. Concerning TPMS and corresponding valves, it would also be recommendable to ask an expert to carry out the tyre change.

Car drivers' ignorance

Although both media and specialized tyre trade informed car drivers about TPMS, the Bridgestone study indicated that many car drivers would still need further information. When asked whether they know whether their vehicles were equipped with TPMS, more than 60 per cent of the car drivers answered that they even did not know what it meant. Slightly more than 11 per cent did know what TPMS stood for, but did not know whether their vehicle disposed of the system. Only 7

per cent were able to confirm that they had TPMS and nearly 20 per cent knew that they did not have it. The answer to the question how often tyre pressure was checked, was very interesting too. Almost 24 per cent said to do it on a monthly basis, 21 per cent every two months, 23 per cent every three months, 18 per cent every six months, 8 per cent once a year and merely 6 per cent never. It is recommended to do it each time after refilling fuel. Additionally, the study showed interesting results concerning the frequency of measuring tread depth. About 46 per cent measure twice a year, 33 per cent once a year, 12 per cent less than once a year and about 8 per cent never. This would be a great opportunity for specialized tyre trade or workshops to measure tread depths whenever changing tyres, to take note of it in the customer database and to inform the customer when new tyres should be bought.

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PNEUHAGE AND WESTLAKE

Exclusive marketing as expansion instrument

“Meeting European requirements with Asian precision” – based on this guiding principle ZhongCe Rubber Group Co. Ltd., the biggest Chinese tyre manufacturer, developed a new truck tyre family together with the Interpneu/Pneuhage Group. Our editors visited the plant Chaoyang and talked about chances of the brand Westlake in the German market with representatives of both companies in Hangzhou.

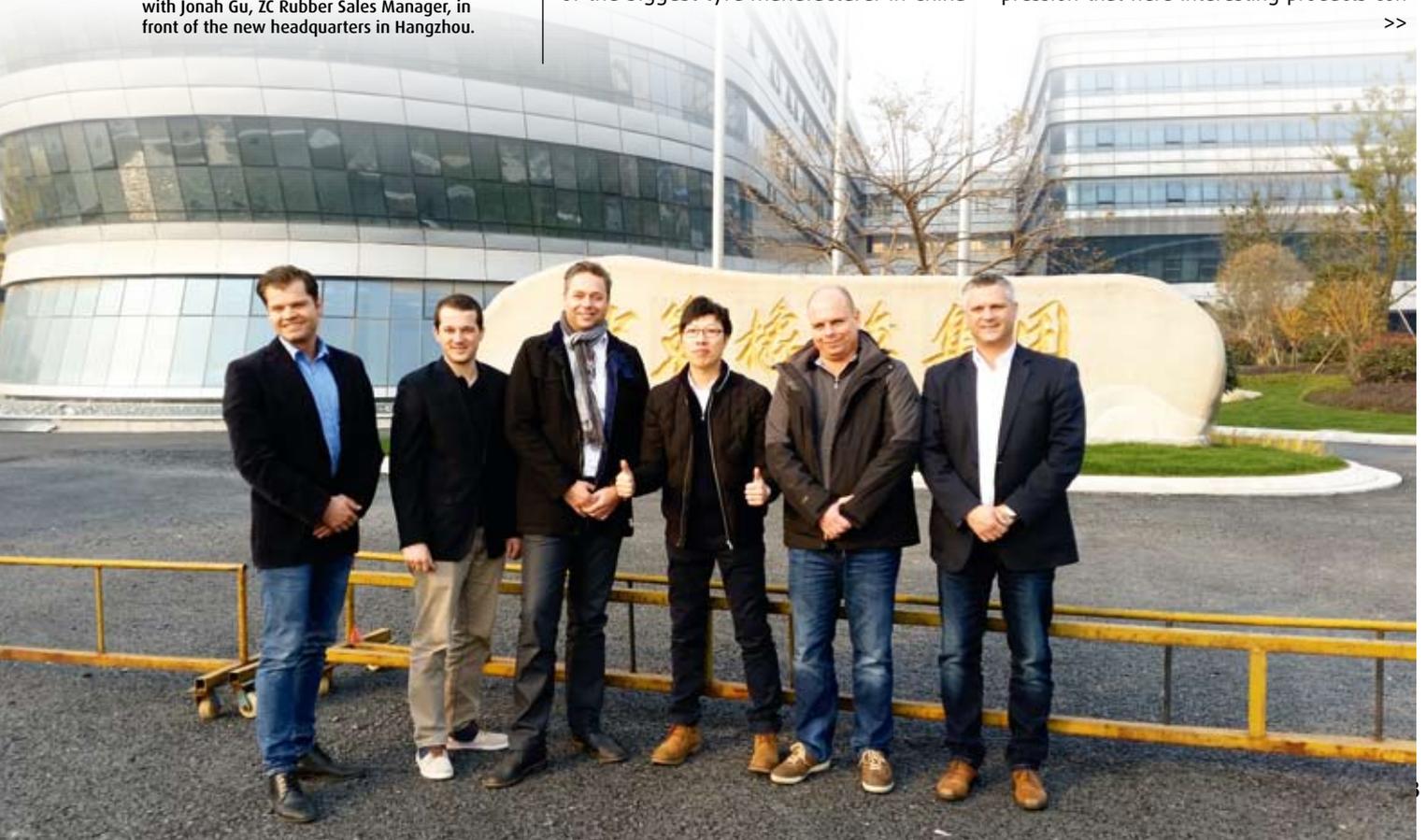
Receiving only recently the award “Deutscher Servicepreis (German Service Prize) 2016” by Deutsche Institut für Servicequalität (DISQ – German Institute for Service Quality) indicated that Pneuhage Reifendienste belongs to the most renowned participants of German specialized tyre trade. Pneuhage was able to win the category “Kundenteil Handel (customer rating trade)”. The trust it received from responsible people of the Chinese tyre giant ZhongCe Rubber Group Co. Ltd. concerning a co-operation is absolutely justified. ZC Rubber and the Interpneu/ Pneuhage Group developed a new tyre family together. The European market launch of “powerful and retreadable carcasses with modern treads” was announced at the IAA Commercial Vehicles in 2014. The development capacities of the biggest tyre manufacturer in China

as well as according to responsible people at Pneuhage the ultra modern technical standard of the production plant had convinced the Group of the chances of a strategic partnership with the ZhongCe Rubber Group in 2012. As a consequence, crucial criteria and the main focus were defined, which would be necessary for successful marketing of Westlake truck tyres in Europe. The experiences of the commercial vehicle experts originating from 80 Pneuhage Reifendienste branches and the resale business of the wholesale company Interpneu worked as foundation for this.

At the end of February, our editors visited the plant Chaoyang, which was announced as the worldwide biggest TBR factory based on its capacity in the run-up to the trip. The plant has indeed impressive dimensions and also the technical standards confirm this impression that here interesting products con-

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The Pneuhage travelling group posing together with Jonah Gu, ZC Rubber Sales Manager, in front of the new headquarters in Hangzhou.





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cerning a price-performance ratio are produced for the European commercial vehicle segment. "The completely newly developed range of products of radial truck tyres is to fulfil the same requirements of consumers and dealers which are normally expected from second and premium brands. Among others, this refers to mileage and label values like rolling resistance and also retreading capacity", explains Dirk Gleinser, Pneuhage-Sales Manager Key Account Management Commercial Vehicle Fleets. The German trade specialists are convinced of the market opportunities of the Westlake treads. The quality achieved during development had not only been defined together in the run-up with regard to carcass construction, tread design, label values and look, but was also checked in a testing laboratory by the Kraftfahrtbundesamt (German Federal Motor Transport Authority) on a regular basis before the certification. According to responsible people, Westlake truck tyres are not only meant to be used for retreading and to provide an adequate air volume, but are to offer overload protection in the future too.

When talking with AutoRäderReifen-Gummibereifung, responsible people at ZC Rubber mention extremely ambitious goals for the next two years. The company, in which the Chinese state holds a share of



Posing in front of Westlake tread (f.l.t.r.): Volker Mai (Sales Manager Trucks - Commercial Vehicles), Robin Brucke (Purchasing Sales Truck Tyres), Sebastian Warncke and Latif Toski (Branch Manager).

40%, intends to nearly double the production volume in the area of passenger cars and trucks until 2018. Currently, the tyre giant achieves the 10th position in the turnover ranking of international tyre manufacturers. The annual production volume is to rise to 18 million truck tyres (13m/2016). At the same time, ZC Rubber hopes to get better into OE business because of strategic partners like the Interpneu/Pneuhage Group. "We would like to turn from a Chinese play-

er into an international one", says Richard Li, Marketing Director. At the same time, Ge Guo Rong, Vice General Manager, explains that Germany and the United Kingdom will be the central markets for expansion. "It is planned to set up a nationwide distribution network in Europe, Rong adds. In the future, a plant in Eastern Europe might also be possible in order to increase market presence and to deliver European customers in a faster way.





This is where the fun begins: Volker Mai appreciates Chinese hospitality.

The know-how of commercial vehicle experts at Pneuhage will play a crucial role for the establishment of Westlake products as the big tyre dealer is planning an extension of the range of customers in other European

The plant Chaoyang has impressive dimensions and disposes of cutting-edge production units.



countries too. Thus, the situation could be an absolute win-win situation for both companies in the long run. A further development of Westlake treads and a reliable tyre service partner like Pneuhage Reifendienste offer good opportunities for a continuous increase of acceptance among fleet operators. Concerning tyres only the right use of appropriate tyres is really able to provide savings, as the responsible people at Pneuhage know. Pneuhage Reifendienste maintains excellent relations with all the renowned tyre manufacturers. Long-term customer satisfaction is of utmost importance. Thanks to yearlong experience it is well known which tyre lasts the longest on which truck type and saves the most fuel. The implementation of all the present fleet and kilometre contracts guarantees transparent billing.

Individual consultation and support are supposed to make a difference. Each fleet needs different products and services. Thus, Pneuhage works with a module system, from which fleet operators and commercial vehicle drivers are able to select according to their individual needs. Responsible people at Pneuhage expect Westlake treads to have good market opportunities. The tyre series, which was developed together, gives the impression of a premium product not only concerning its outward appearance, and is for different areas of use in regional and long-distance traffic or at the building site. According to information from Pneuhage re-



Ge Guo Rong, Vice General Manager at ZhongCe Rubber, stressed the importance of the German market during the conversation.

presentatives, there has always been a focus on those areas, which really make sense. Concerning tyres for long distances rolling resistance was improved and thus fuel consumption reduced. Construction tyres, however, focused on traction. The look played a crucial role too. In addition to broad treads an informative sidewall with the respective area of use was on the development list. There was a focus on an increase of value and an external representation of innovation too. Intensive talks with fleet operators confirmed the responsible people at the Pneuhage Group – exclusive marketing of Westlake truck tyres in Germany and neighbouring countries will move one's own market position and the image of ambitious manufacturers like ZC Rubber to a new level. (kle)