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Rolling Stock

ZF Friedrichshafen AG

ZF Celebrates ‘A Century on Track’

100 years on track: ever since it entered the railway technology business in 1924, ZF has supported the industry in its trajectory towards the future – with better, safer and more reliable products

In the early summer of 2024, ZF celebrated its 100th anniversary in the rail vehicle market. From its ‘humble beginnings’ in 1924 – with a drive system for railcars adapted from a passenger car transmission – ZF has continuously expanded its portfolio of driveline, chassis and safety technology.

Today, the company is positioned as a leading supplier for the industry, with customers all around the world.

Comfort. Speed. Reliability. Efficiency. Ever since the invention of the locomotive, manufacturers and operators have striven to improve this vital mode of transportation. In 1924, a then-new German engineering company did just that. Because that year, as evidenced by a sketchbook entry, saw ZF enter the railway business. The TS18.5 Soden transmission had been adapted by ZF engineers for rail vehicles, after already proving itself in its primary application in passenger cars.

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Impressive Innovations, Extensive Portfolio

This origin story also connects to a strength that still differentiates ZF from its competitors: The company’s ability to innovate through the smart transfer of technology within its different divisions. *“We have always been able to capitalise on driveline and damper*

From trams and metros in almost every major city across the world to high-speed trains that connect Britain to mainland Europe – chances are, if it's running on tracks, it does so with the help of ZF technology

developments from other applications – especially commercial vehicles," explains Markus Groß, Product Line Manager for railway technology at ZF. This means that from the very start, ZF was able to bring new technology to the market in ways that paid off – both for the company and its railway customers. In the same manner, ZF would later modify multi-ratio and automated CV transmissions for rail vehicles (like the Ecomat Rail or EcoLife Rail). But the Group also broke new ground, for instance by supplying mechanical drive components for electrified trains.

Additionally, over the course of the decades, ZF bolstered its portfolio by strategic acquisitions. As a result, the rail technology segment of the ZF Group grew into an overall supplier of driveline, chassis and safety technology for a wide range of rail vehicles. Whether you are looking at metros, trams, electric multiple units, high-speed trains, diesel multiple units, locomotives or special vehicles – chances are, if it's running on tracks, it does so with the help of ZF components.

From A to B (to C, to D, to...)

This kind of engineering trailblazing, as well as a reputation for reliability and efficiency, has led to ZF becoming a leading supplier and technology partner for vehicle manufacturers and transport associations in all corners of the world. Rapid transit trains in almost every major city – from Istanbul to Shanghai to Los Angeles to Lima – rely on ZF technology. ZF yaw dampers stabilise the swift and comfortable travel of high-speed trains operating in China or connecting mainland Europe with Great Britain via the Channel Tunnel.

Further strengthening this international presence is the ZF Aftermarket Division, which does not only provide fast spare parts, technical information and flexible service offerings around the globe. *"Through our Aftermarket colleagues, we can also offer to repower rail vehicles,"* explains Groß. Outfitting existing vehicles with new drive units helps to keep them reliable, stretch their service life and bring down total lifecycle costs. *"This is a more sustainable and economical approach to keep trams, metros and trains on the track. Plus, it often means fewer interruptions to our customers' operations. That's why this option is something we always keep in mind when developing new drive components."*

Next Stop: The Future

Another key part in the company's strategy to support the rail industry? Digitalisation. Case in point? ZF's condition monitoring system 'connect@rail'. Through the smart use of sensor technology, telematics and cloud computing, connect@rail can identify potential faults on the vehicle's wheels, and furthermore, the track itself. *"We are also currently exploring ways to expand connect@rail to cover more of the driveline and the infrastructure,"* says Groß. This helps to make the operation and maintenance work more predictable, to avoid failures and downtime and facilitate better planning for repairs. Because, as pointed out by Groß: *"Sustainable mobility of the future requires reliable rail vehicles. And with our 100-year commitment to this segment, we are happy to provide the rail industry with the technology to achieve this vision."* Now, tomorrow and in the coming century as well.

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A Century on Track

ZF Rail Technology | 1924 – 2024

Based on 100 years of experience in the rail industry, manufacturers and operators of rail vehicles can profit from innovative and sustainable ZF solutions for the mobility of today and tomorrow. Learn more about us and our products and **visit ZF.com/rail**

Visit ZF at **InnoTrans Berlin**, 24–27 Sept 2024, Booth 180, Hall 20

100 YEARS