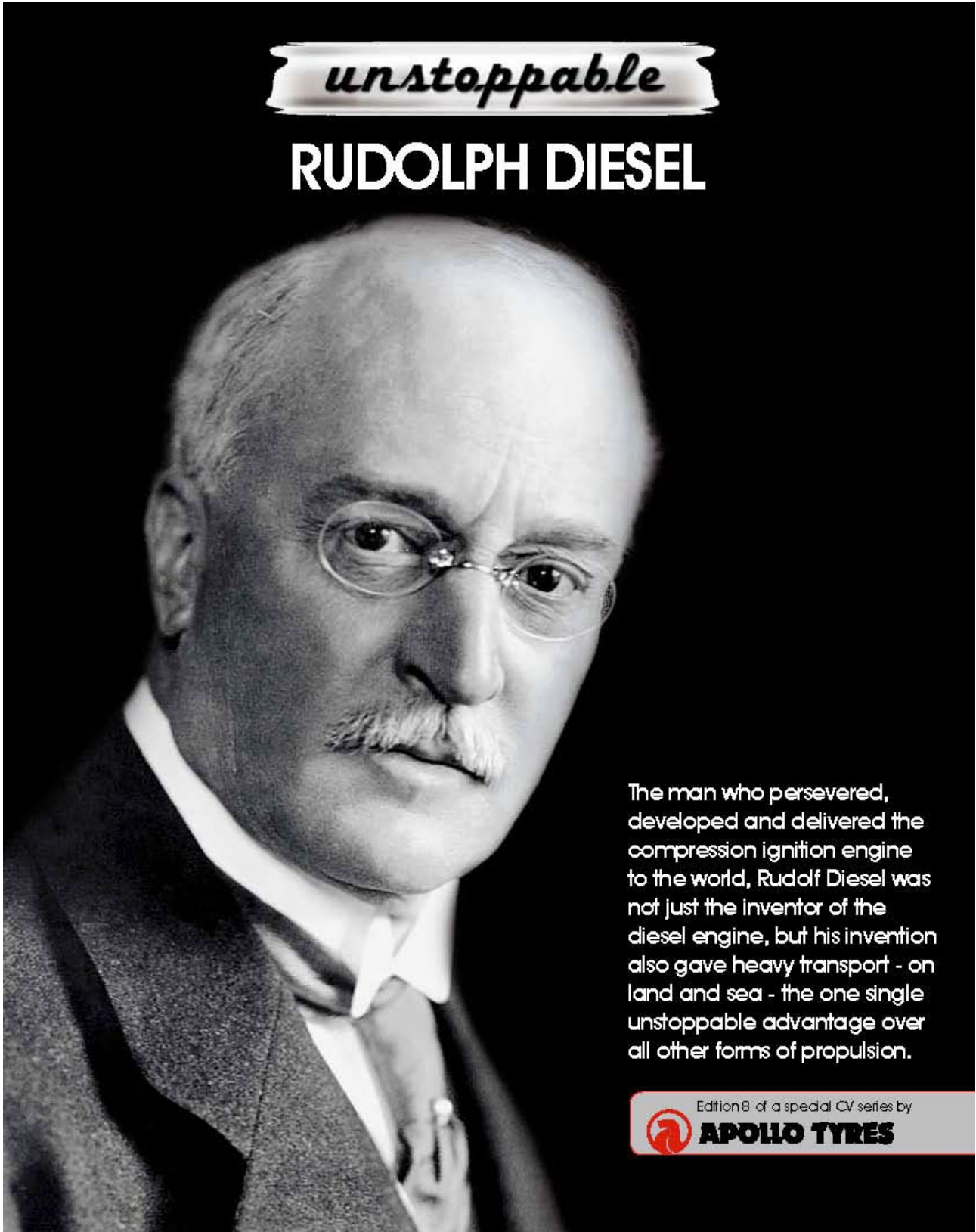


unstoppable

RUDOLPH DIESEL



The man who persevered, developed and delivered the compression ignition engine to the world, Rudolf Diesel was not just the inventor of the diesel engine, but his invention also gave heavy transport - on land and sea - the one single unstoppable advantage over all other forms of propulsion.

Edition 8 of a special CV series by



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Today, in the goods haulage industry, whether on road, rail or water, we just can't imagine life without diesel power. Given the romance behind the evolution of the internal combustion engine, come as it did powering a three-wheeler for personal use, the diesel engine didn't emerge as an automotive powerplant at all. In fact it came about as a means to empower industry and machine tools and it was just the perseverance and the dogged determination of its maker and his backers which made the compression ignition motor see the light of day.

As one can see from the images of the engines depicted on this page, the earliest diesel engines were built massive and strong, almost like cannons, to withstand the internal explosions given that it worked on compressing the air and fuel (by a piston in an enclosed cylinder) to such an extent that the resultant temperature was way above the ignition temperature of the fuel used. Rudolf Diesel, the young inventor and scientist who had cut his teeth in the refrigeration world with Linde wanted to go against the grain, especially with regard to Otto's internal combustion engine. He was seeking to make his rational heat engine to pack in even more efficiency than the prevailing steam engines which powered much of machine shops and industry then.

While working at Linde, he developed an engine which ran using ammonia as fuel and then later charcoal dust as the propellant of choice. Sadly, these were doomed to failure even though quite a few big bang explosions did take place as these mighty contraptions worked just once and then fell apart at the first power stroke.

Around the early 1890s, Diesel applied for a patent for what he termed was his "New, Rational Heat Engine" which used not just fuels like petrol and kerosene but also a new type of hydrocarbon which, as it transpired, would be



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Never wary of progress, never skeptical about success, never scared of challenges, never tired of trying, every step of the way we travel with our customers, on the 'unstoppable' journey to success.

invention did evince major interest, there weren't many backers to see his ideas put into actual practice.

In stepped the forerunner of the firm which we know today as MAN (same as in Force MAN trucks). On February 21, 1893, Diesel and Maschinenfabrik Augsburg signed a deal wherein the latter was to construct and sell engines on the Diesel patent. Another license was granted to Friedl Krupp, the noted German arms and steel maker. Both firms jointly set up a research lab which as it transpired did enough to see the fledgling technology through its tough early days.

These license deals made Rudolf Diesel a rich man but he never gave up trying to perfect his motor. The very first successful bench test of his engine took place on February 17, 1897 and while the motor was huge and gargantuan, it ran perfectly and immediately two things stood out for all to understand: its specific fuel consumption was lower than any other form of engine in that period and its overall efficiency - 26 per cent - exceeded that of the best steam engine - rated at 12 per cent - of that time.

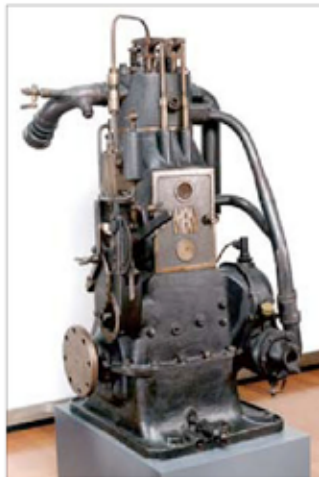
This led to another license being granted, to a Danish company by the name of Burmeister & Wain, today better known as B&W. This firm wanted to use diesel tech for stationary pumps but a stroke of genius resulted in one of their engineers deciding to put it into a ship with such a motor and from then on the diesel never looked back.

Both Daimler and Benz as well as MAN and Bosch began to look at diesel once the engineers solved their packaging requirements. At one go the world began to see diesel engines employed in big power generation units as well as in small trucks and this trend has remained constant to this day. In fact the unstoppable nature of this efficient engine technology has completely held sway in the goods haulage world for over a century and today seems to hold the promise of even bettering the petrol fuelled IC engine.



named after him. Exactly a year after filing his patent in Berlin, Rudolf was granted German patent no. 67,207 for the "working process and design for an internal combustion engine."

On receipt of this patent, Rudolf Diesel went ahead and patented his engine all over Europe and also in the US, Russia and Japan. While his



Pioneering diesels
(from far left): This heavy and rugged single cylinder diesel was one of the very first industrial powerhouses built by Rudolf Diesel. It yet exists in running order at the MAN Museum at Augsburg. This is another MAN diesel, from 1923, at Augsburg and it is significant in that it was used to perfect direct fuel injection by Bosch. The very first successful diesel engine is this experimental unit from 1896-97. It is in running order to this day and is housed in the German Technical Museum in Munich.

