

Biography of Rudolph Diesel

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Rudolph Christian Carl Diesel

Born March 18, 1858, Paris

Died September 29, 1913, in the English Channel

Rudolph Diesel was born to Theodor and Elise Diesel in their small Paris apartment at 38 rue de Notre Dame. Theodore, in his late twenties, met Elise in Paris in 1855, they were married shortly after. Theodore was a leather worker, making small consumer goods, he had immigrated from Augsburg in Bavaria, in 1848. Elise was also from Augsburg, she was the daughter of a prosperous merchant.

Rudolph had an older sister, Louise, born in 1856, as well as a younger one. The younger sister, Emma, was born in 1859. At that time Theodore was having some business success, and moved the family into a new apartment on "rue de la Fontaine au Roi", where Theodore establish his small business downstairs. Theodore worked his shop from dawn to dusk, six days a week. He was a strong disciplinarian, but unfortunately, a poor manager of funds.

Rudolph was not allowed to bring friends over, and grew into a shy, but curious youngster. He spent most of time drawing and his curious nature almost got him killed when he tinkered with their apartment's gas distribution. Small lies and screw up were not tolerated by Rudolph's father, standard punishment was swift and hard.



Rudolph's artistic side was match with excellent academic performance, he spoke three languages. German was spoken at home, French at school, and English which was taught by his mom, a one time governess in London. Rudolph sought refuge and solace spending his free time at the 'Conservatoire des Art Metiers'. A repository for odd and ends of inventions. Rudolph finished elementary school, and was awarded a scholarship for excellence.

Meanwhile, France under the Emperor Napoleon III, was sliding into difficult times. A convenient target of this hardship was the growing confederation known as German, and it's dominant Prussian influence. The Diesel considered themselves Bavarian, with more of a French influence than Prussian, but unfortunately France declared war on Prussia on July 19, 1869. The French army was losing ground and displaced persons quickly engulfed Paris seeking refuge. Being of German descent, the Diesels were ordered out of the country. On September 6, the Diesels boarded a steamer from Rouen to New haven, England.

With little comforts, the Diesels manage to get by, Louise, the eldest daughter began to work in a private school. Rudolph was enrolled in a London school to continue his education. He was most impressed by the British Museum and the South Kensington Museum's exhibits of science and engineering. Theodore's cousin, Betty Barnickel, heard of their misfortune and offered to take in Rudolph into their home in Augsburg. So once again Rudolph boarded a steamer across the channel to Rotterdam.

Betty Barnickle was married to Cristoph Barnickel, he was a professor at the Augsburg's Royal District Trade School and they lived in a modest, warm home. They quickly fell in love with Rudolph, after all he was handsome, modest and intelligent. He was enrolled in a three year program at Koniglichen Kreis-Gewerbsschule, which offered outlets for all his deepest passion. Chemistry lab, art gallery, machine shop and forge provided fertile ground for a young imaginative mind.

On his fourteen birthday, Rudolph announced he was to become an engineer. He wrote to his parents in July, 1871, to let them know his intentions to excel in his choice of career. With



the war ending six month earlier, Rudolph's parents had move back to Paris.

Theodore was anxious for his son to start earning some money, and soon after finishing industrial school, and placing first in his class, Rudolph returned to Paris. Then tragedy struck, Rudolph's sister, Louise, died of heart failure. With the Diesel Family grief-stricken, the Barnickel renewed their offer to have Rudolph come live with them back in Augsburg, Theodore accepted.

In 1883 Rudolph was enrolled in the mechanical engineering program, and as usual he excelled, graduating the youngest student with the highest marks ever. He was awarded a scholarship to Munchen Polytechnic. In Munchen, his interest broaden. He made several friendships during this time. Theodore and Elise then move to Munchen to find their towering son, 185 cm, now a German citizen and granted a scholarship and a deferment from the required three years of military service.

He found his parents a little strange, his father had turn to spirituality soon after his daughters death, he soon set himself up as a faith healer. In July 1879, Rudolph grew sicker as final examinations approached. He was soon diagnosed as having typhus, and spent a miserable, bedridden summer. He survived, but many Germans did not; Betty Barnickel did not.

In January 1880, Rudolph joined the Sulzer Engine Works in Winterthur Switzerland to begin his apprenticeship building refrigeration and steam engines. Although "just" an apprentice, a "bleu monteur" he grew more confident in his convictions and began his harden belief that there must be a better way. A better way to use the energy from the fuel that the most efficient steam plant used. At the time, 90% of the fuel was wasted, a blasphemy to Rudolph, who was raised to loathe waste from his strict father.



Then Rudolph read a book. A book by Sadi Carnot a gifted engineer with a specialization of thermodynamics. ***Reflexion sur la puissance motrice de feu*** was published in 1824 and cut right to the heart of the heat engine, and gave us the "First Law of Thermodynamics"; which is "heat and mechanical energy are convertible to each other, but are never created or destroyed, only changed in form". Along with the other two "laws" Rudolph found the ideals he wanted to achieve.

As usual, Rudolph made quite an impression with his peers and supervisors, he was soon sent to Paris to oversee the building of a refrigeration plant. Although a jump in statute to white collar, he still earn blue collar wages. A much too usual meager existence void of comforts.

But all that would change in the following year, 1881, Rudolph would finally see some payoff. He would see his salary double, his first patent (production of table ice in glass containers) and a love interest in the form of a mistress,

Martha Flasche from the United States. She was the Governess of a well to do German family, the Brandes. The Brandes approved of Rudolph; his smarts, talents and growing salary were hard to ignore.

With the patent secured, Rudolph began to search for a manufacturer to build it. He then kindles a friendship with the Augsburg Machine Works in the town where he had studied. Carl Buz, and Carl Augustus Reichenbach, once managers, were now owners of the Machine Works. Soon they were making parts for Diesel's refrigeration machine. In late 1883, the ice machine worked and in November he and Martha were married. A whirlwind year ensued. Income was coming in from the refrigeration machine, good thing too, he and Martha give birth to their first child, Rudolph Jr.



In October 1885, Heddy, a baby girl is born, Martha and Rudolph second child, amidst economic troubles. France sentiment against the German and even Swiss made the ice machines a hard sell. As a result, Rudolph's income suffered. Violent headaches forgotten since his childhood, came back. On May 3, 1889, their third child is born, Eugen arrives into the world.

Amidst strong anti German sentiment in 1889 Rudolph, is the only German engineer invited to give a his paper, "**Revue Technique de l'Exposition Universelle**" at the International Engineering Congress. Although he was warmly accepted as a Frenchman, he traded away his French refrigeration franchise, for the sales rights in Germany and some money. The new job was headquartered in Berlin, and Rudolph moved his family there in 1890. Martha loved it, but Rudolph had a hard time adjusting to the Prussian military social atmosphere.



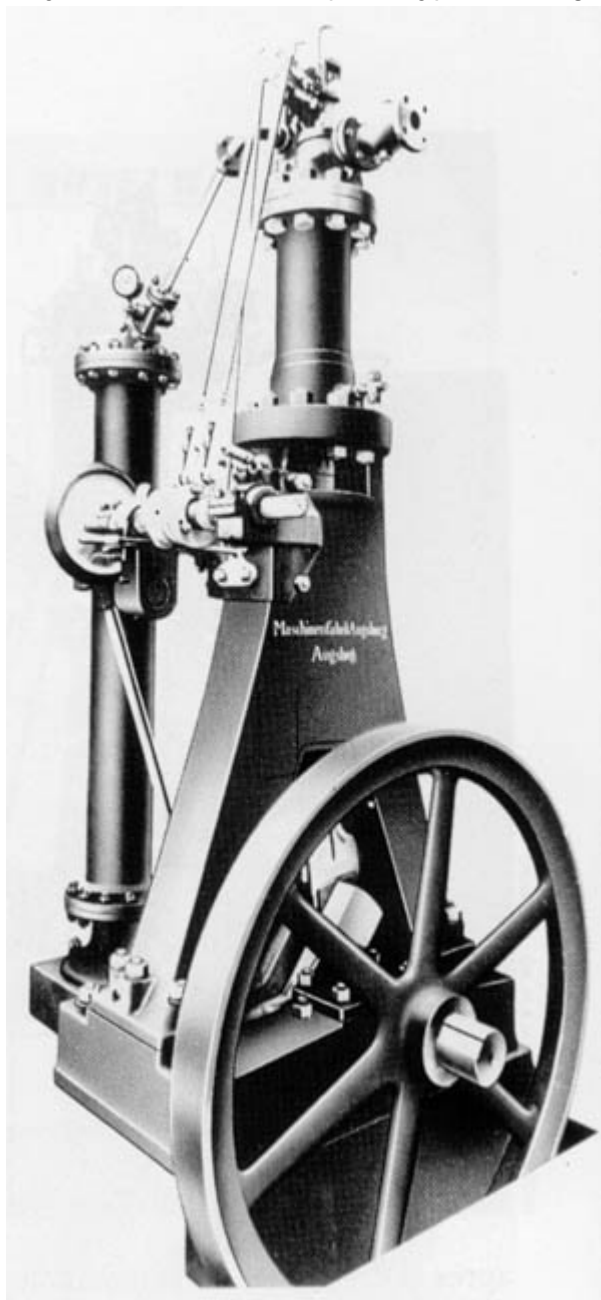
But a chance encounter with an school mate rekindles his competitive spirit. He began to work his theories into a design, at first, it is decline a patent. On appeal his "not original" idea is patented on February 28, 1892. He now had 15 years of protection and a need to find a builder for it. Remembering his friends at Augsburg, Rudolph approached Buz.

Buz, being the methodical, and accomplished engineer, turned him down. The design was based on "***The theory and construction of a rational heat engine to replace steam engine and contemporary combustion engine***" a title that didn't exactly warm Buz's heart, or make his factory's chief engineer - a staunch supporter of steam engines, enthusiastic about the new idea. He rewrote the manuscript, and Buz accepted to build a prototype. Patent were further sought in Germany, USA and England with a more confine description of the operation.



Rudolph ideas results in a steady paycheck for his work on the development of the new prime mover, and even better payoff if it becomes all that it is suppose to be. He goes on a frenzy of contract signing and names like Krupp and Sulzer lines up to sign deals to be part of the action. When the test began in July, and finally the first run, Rudolph realized it was not going to be easy, so much so, he moved the family into a more modest apartment. The engine showed promised, but it needed far reaching re-engineering.

Meanwhile, Cristoph Barnickel, in his fifties and widowed three years earlier, was dating Emma, Rudolph's youngest sister. They built a house after their marriage in September, and invite Rudolph to stay in Augsburg while he worked on the new engine. The new engine, redesigned ran for 88 revolutions - one minute, on February 17, 1894. Shortly after, Maschinentabrik Augsburg's stock rose by 30%. On January 17, 1895 Rudolph's patent was almost up, and they hurried to have a prototype running in order to maintain the patent. In



between deal signing and brainstorming episodes they succeeded. The engine ran; all 16.93kW with an efficiency of 16.6%, and was given the patent.

The first engine ready for testing was built on December 31, 1896; a much different engine than the one they had started with.

In 1897, Rudolph was busy, finally some financial success was coming to him. Companies were approaching him for the rights to build his new efficient engine. At home, Martha and the kids were moved into a new, luxurious apartment, complete with a staff. Rudolph also had a desire to build a mansion, and he bought a lot in Munchen for that purpose. He was gifted in many different fields, "including" personal finances, his gift was that no matter how much came in, more went out. All was not doom and gloom, as he took advantage of his windfall, taking up hobbies like photography, and enjoying the theater and opera.

Making new friends was also in the cards. Graf Ferdinand von Zeppelin, Aldolphus Busch, a German immigrant who made it big brewing beer in the United States. The

Busch were very wealthy and had the means to build Diesel's engine in the US. Upon advise from his adviser, Busch himself went to Germany, he then proceeded to buy the rights by nonchalantly writing a check for 1,000,000 marks. It was only the beginning. Newly formed companies line up for the opportunity to build the new engine.

On his fortieth birthday, Rudolph was riding high. A millionaire, on paper, five times over, a wife traveling the elite social crowds, three beautiful, smart children; along with his personal health and demeanor being radiant. This was

thanks to his idea of a better world, and his hard work to put it together. Indeed a wonderful time for him.

In order to manage the explosive growth of the Diesel engine. Rudolph establishes a company to manage the licensing. It buys all patent, and is tasked with the further developments and management of the new engine. It is called the General Diesel Corporation, and is founded on September 17, 1898. Rudolph is paid a sum of 3.5 million German marks. Shortly after, he is diagnosed with nervous exhaustion and enters a private sanitarium in Munchen.

After leaving the sanitarium, not feeling any better, he was further agonized by the fantastic fortune beginning to roll in and the problems associated with it. The violent headaches were becoming more prevalent. The doctors decide that a "rest castle" in the Alps might be better for him, then the sanitarium close to home in April of 1898. While there, Rudolph invested heavily into an oil development in the Balkans, it went sour. He had lost 300,000 marks, at a time when his "dream" mansion, Maria - Theresia _ Strasse 32, was taking shape.

The mansion was magnificent. It had all the "modern luxury", as well as kids amenities. Plumbing and wired to the highest standards, marble fireplaces in every room. Even the windows were custom made. The decoration was luxurious. Painted, vaulted ceiling, French furniture, Italian wardrobes etc. All, for a staggering sum of money. The Diesel's financial situation was hinging precariously close to disaster.

But all was not doomed. Rudolph was invited witness the first flight of the 128 meter Luftshiff Zeppelin 1 airship. In 1900, the grandest event ever, the Diesel engine takes the Grand Prix, the highest prize, at the 1900 Paris Exposition. The exposition was attended by 50 million people. In 1904 Rudolph attended a car race in Germany, he came back excited with one, a machine, which could go so fast, a gas powered Mercedes. But he overestimated his ability to drive it, mainly his vision and gouty right foot, so he hired a driver.

Later in that year Rudolph decided to travel to the United States. After spending some time in New York City, he traveled to St Louis where he was a guest of Adolphus Busch who was having a tough time selling the engine in the United State. He traveled far and wide, and took all the sight in. Amazingly the trip rejuvenated him, and as soon as he came back to Germany, he designed and built a four cylinder "petite" version of his engine. That engine later wins the Grand Prix in Paris in 1910, once again.



In 1907 his daughter Heddy marries Arnold von Schmidt, an engineer. It's the social event of the year in Munchen. Amidst the wedding joy, the headaches came back, with an astonishing loss of 3.5 millions marks, it was no wonder. Additionally the patent ran out on the Diesel engine; indeed a tumultuous year for the Diesels.

In 1911, Rudolph is invited to co-guest of honor with Sir Charles Parsons at the World Congress of Mechanical Engineers in London. Sir Parsons was the inventor of the compound steam turbine. Continuing in his travels, he and Martha go to the US once again to help Mr. Busch sell the floundering diesel engine in America. But America the land of plenty, the country has too many resources to really care about an efficient engine.

They return to the Germany and a lawsuit from a real estate company, he is forced to pay 600,000 marks. The headaches grow in severity. The latest financial woes brings up the total losses of the Diesel's up to nearly ten million marks. In 1913, he published a book about the origins of the Diesel engine. It makes a small dent into the his debt.

Along with war brewing in the Balkans and being a pacifist, times are hard. He takes life a bit slower, taking time to enjoy simpler things, like hiking. He sold the car to help pay some of his debts, and his friends commented on a "less proud man" Mr. Diesel had become. His son, Rudolph, left school to become a clerk, much to the disappointment of Rudolph the senior. He soon married and had a son. Eugen, the Diesel's youngest son, had an intense desire to follow in his dad's footsteps. Like his father, he apprentices as a "bleu monteur" at Sulzer.

With a mortgage on the new mansion, and war breaking out in the Balkans, the future seem quite bleak for Rudolph. He had been invited to England to dine with Sir Parsons. Martha had left to visit her mother in Remscheid. Before meeting up with Martha, he summoned his eldest son for a short visit. Rudolph Jr. later states that their time together was "bizarre", his father had taken him around the house and showed him the keys for the rooms. Eugen had left

for Sulzer in Switzerland.

Rudolph on his way to England spends two weeks in Frankfurt with Heddy, Martha, and his grandchildren. Before leaving, he leaves with Martha a leather case, with instruction that it be well looked after, and not opened. On September 26, 1913, he boarded a slow train to Belgium, first class. In Gent, he checked in to the Hotel de la Poste, where 31 years earlier he had met Martha. He wrote her a loving, but confused letter; he misaddressed it. The letter did not reach her until a lengthy detour. On the 28, he wrote to his son mentioning his headaches and insomnia troubles.

The next afternoon he boarded the steamer Dresden at Antwerp with the line's owner and its chief engineer, George Carels and Alfred Laukman, they had a pleasant dinner and Rudolph was said to be in good spirits. When Rudolph did not meet Mr Carels and Mr Laukman for breakfast, the ship was searched. Mr Diesel's cabin was empty, the bed had not been slept in and the luggage had not been opened. His coat and hat was found neatly folded under the stern railing. Capt H Hubert ordered the ship to search but to no avail, he was reported missing. The inventor's notebook had a small cross under the 29 of September, nothing else.

On October 10, a Belgian steamer Coertsen spotted a body in the water, it was left at sea. The effect taken from the body were later identified by Eugen Diesel in the Dutch port of Vlissingen as his father's articles. When Martha opened the bag Rudolph had left for her, she found twenty thousand marks, and financial statements showing all bank accounts were empty. It was evident Rudolph had taken his life.



I am by no means a scholar on Dr. Diesel, but I was fascinated by his invention and wanted to know its roots, the result is the above piece. The book I obtained most of my information is "Diesel: the man and the engine" - Morton Grosser, McClelland & Stewart 1978, along with a French historical magazine called "Cahier de Science & Vie" - Feb 1996. The "MAN Forum" Issue 1, 2003, also has a brief write up.

For further information you might want to try "Die Entstehung des Dieselmotors" by Rudolf Diesel, Berlin 1913 about the engine itself, and "Diesel. Der Mensch - Das Werk - Das Schicksal" Hamburg 1937/41 - Rudolph Diesel's biography by his son, Eugen Diesel.

Comments, corrections and suggestions are [always welcomed](#). - Martin Leduc

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