

# 125 Years Motorenfabrik Oberursel 1892 - 2017





# Historical Society Motorenfabrik Oberursel –

**A Registered Association.**

(Geschichtskreis Motorenfabrik Oberursel e. V.)

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Translated from the original in German by Trevor Warren

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Dear Readers,

„Improved power plants for a changing world“. This is Rolls-Royce’s motto today. This motto was unknown to the young engineer and tinkerer Willi Seck, but his actions taken then were in the same sense of the phrase. He developed at the beginning of the 1890s a simple yet robust internal combustion engine, the GNOM, and in doing so laid the foundations for the Motorenfabrik Oberursel, still known affectionately amongst the locals as the “MO”.

2017 marks the 125th anniversary of the foundation of the Motorenfabrik Oberursel and with it a fitting time to pause and reflect. A lot has changed in the world in Europe and in Germany in the past 125 years and during this time the MO has experienced a lot of highs and lows but has remained resilient and the factory is still in existence today. The site is currently owned by Rolls-Royce Deutschland after changing hands many times during its history. High tech jet engine parts and components are manufactured here and for over 50 years aircraft systems repaired, overhauled and supported.

In the past 125 years of the industrial history of the Motorenfabrik numerous people, many of them today unknown, and not only for their own income, have contributed also to the wellbeing and growth of the company. They all have shared and guided the destiny of the factory, and many have been faced with a perceived demise of the site. The phoenix rose from the ashes and therefore the site can celebrate in 2017 knowing it is in good shape under the auspices of the “parent”, Rolls-Royce.

125 years - scarcely any other company in Oberursel or in the surrounding region can look back on such a long history. The Motorenfabrik as a name cannot celebrate its anniversary, but the people connected to the company, including today's staff and management, who appreciate and cherish its history can. In the year 2000, when Rolls-Royce took over the company as sole owner, Michael Kern, who was the site manager for many years, provided the impetus to create a company museum. This led to the formation of the Historical Circle Motorenfabrik e.V.

This brochure takes you on a foray through the history of the world's oldest aircraft engine factory still in existence.

We wish you a great journey.

Dr. Holger Carlsburg

Managing Director  
Rolls-Royce Deutschland and  
Director of Operations Oberursel

Helmut Hujer

Company History

Erich Auersch

Company Museum

Günter Hujer

Chairman of the Historical  
Society Motorenfabrik  
Oberursel e. V.

Document signed on the original in German.

## 125 Years at a glance

It is not every day that a company or a factory can look back on such a long history as the Motorenfabrik Oberursel. Ten years before the actual foundation of the “W.Seck & Co” in 1892 there was already an engineering factory working to an industrial and organisational form in Oberursel. This paved the way for Oberursel to become an industrial location for medium-sized engineering manufacturing. For well over a hundred years the Motorenfab-

the Motorenfabrik to enter at the end of 1921 into a syndicate with the much more powerful Motorenfabrik Deutz, thereby eliminating Deutz’s most serious competitor. Thus began an era of the development and production of tens of thousands of engines almost forgotten of the Deutz design.

In 1930 the Motorenfabrik Oberursel merged completely into the newly founded Humboldt



Sammlung GKMO / Farbliche Gestaltung Günter Hujer (C) 2016

### 1892 – View of the Motorenfabrik in Oberursel

rik Oberursel is one of the town’s largest business enterprises and thus also one of the largest employers in Oberursel. The company’s history is characterised by the positive and difficult phases and unlike other factories has survived these times, founded in the wake of industrialization.

For about one hundred years the site presents itself also through its impressive buildings, lining the Hohemarkstrasse and built during the First World War and.

During this period, the Motorenfabrik Oberusel, with its rotary engines, was one of the most important aircraft engine manufacturers in Germany.

After 30 years of growth and success in every respect the Motorenfabrik was transformed in 1898 into a public limited company, but the effects of the war compelled

Deutz Engines Co.Ltd. and belonged to this company for sixty years. The company fused into the Klöckner-Humboldt-Deutz Co. Ltd in 1938.

The Second World War, during which aircraft engines were developed in Oberursel, ended in 1945 for the Motorenfabrik as a caesura. The site was occupied by the US army. The inventory of newly purchased machinery was removed having become victim of the reparations.

The buildings were used by the US Army for 11 years as barracks and a repair shop. The new beginning had already kicked off in 1948 with the production of engine parts for the parent company, KHD in the tower test house, converted into workshops.

At the end of 1958, following a period of repairs to the factory lasting 2 years, the

turbine development group, founded only a few years earlier at the main KHD factory in Cologne, was transferred to Oberursel. Thus began a 40-year period of the development of aircraft turbines and accessories “Made in Oberursel”, including the T117, developed in Oberursel and the first jet engine to be built in series production in the Federal Republic of Germany after the second world war.

The company changed into a modern aerospace production factory at the beginning of 1960 with the preparation in 1959 to produce the Orpheus jet engine under licence. Thus began a long-standing partnership with the Bundeswehr and other public customers.

The KHD Luftfahrttechnik GmbH, founded in 1980, succeeded in entering in 1986 into the civil aerospace industry with its participation on the CFM jet engine programme. The certifications gained proved to be the entry ticket into a new era when BMW took over the site at Oberursel in 1990 from the ailing KHD Plc.

The newly founded company, BMW Rolls-Royce Aero Engines GmbH, was a joint venture between BMW and the British aero engine manufacturer, Rolls-Royce. This joint venture commenced the development of a new generation of turbofan engines for business and commercial aircraft. The Oberursel factory flourished under this ambitious project.

The site was reshaped step-by-step, completely modernised and expanded. The site of the newly built development and assembly site in Dahlewitz in Brandenburg, building

commenced there in 1993, became the new home of the development departments, which relocated there in 1998, and later

joined by the company management. This reorganisation resulted in Oberursel becoming purely a production site for the manufacture of aircraft components as well as for the assembly and maintenance of small military engines and aircraft systems. The reorganization of the company ownership resulted in the creation in January 2000 of the current company, Rolls-Royce Deutschland Ltd & Co KG. Since then, the Oberursel site, equipped with the most modern manufacturing technology, has become the centre of competency for the manufacture of rotary aircraft engine components. Particularly, compressor rotors of the

Blisk construction installed in many types of aircraft engines produced by Rolls-Royce, are manufactured here.

Alongside production, the support and maintenance of aircraft engines for national and international users continues, as it has done for the past five decades.

The Motorenfabrik Oberursel is the oldest still active aircraft engine manufacturer worldwide and at the same time is the oldest factory within the Rolls-Royce group.

With that, we now come to a more detailed account of this long history.



The names of the company from 1892 to today

# 125 Years Motorenfabrik Oberursel

## 1882: Industrial engineering comes to Oberursel

The story of the Motorenfabrik Oberursel is attributed to Wilhelm Seck, who together with his wife, Adelgunde, purchased in March 1882 the site of the former Wiemers mill with the Urselbach stream providing the hydro power and erected here a subsidiary of his Bockenheim Windmill manufacturing company, Seck Brothers and Co.

Seck manufactured above all mechanical grain mills to replace the centuries-old method of grinding grain. This production required skilled labour, which was different to the textile mills in Oberursel, which relied predominantly on semi-skilled labour. Wilhelm Seck took skilled workers with him from Bockenheim but resorted also to using local craftsmen from Oberursel. He hired the first trainee mechanics two months after acquiring the site. His was the first engineering factory in Oberursel with an industrialised production and organisation form and through training established a skilled workforce. This advancement of the industry coupled with the improved traffic and information links lead also to the establishment of technical and commercial management, important for the sustainment of factories, which had settled in the emerging town of Oberursel thus improving the town's desirability.

When Wilhelm Seck moved his factory in 1886 to Darmstadt the factory in Oberursel fell into a deep sleep.

Willy Seck, the Secks' oldest son woke it up again in 1890.

## 1892: The foundation of the Motorenfabrik Oberursel

After completion of his studies in engineering, Willy Seck continued to develop a single cylinder stationary engine in his father's factory. This engine was christened the "GNOM" due to its very stable and compact design. This engine, driven on solar oil (a fuel made from brown coal), gas or petroleum was presented to the public at the end of 1891. Willy Seck founded the Motorenfabrik Oberursel under the name of "W. Seck & Co." for the build and development of the engine. The royal county court

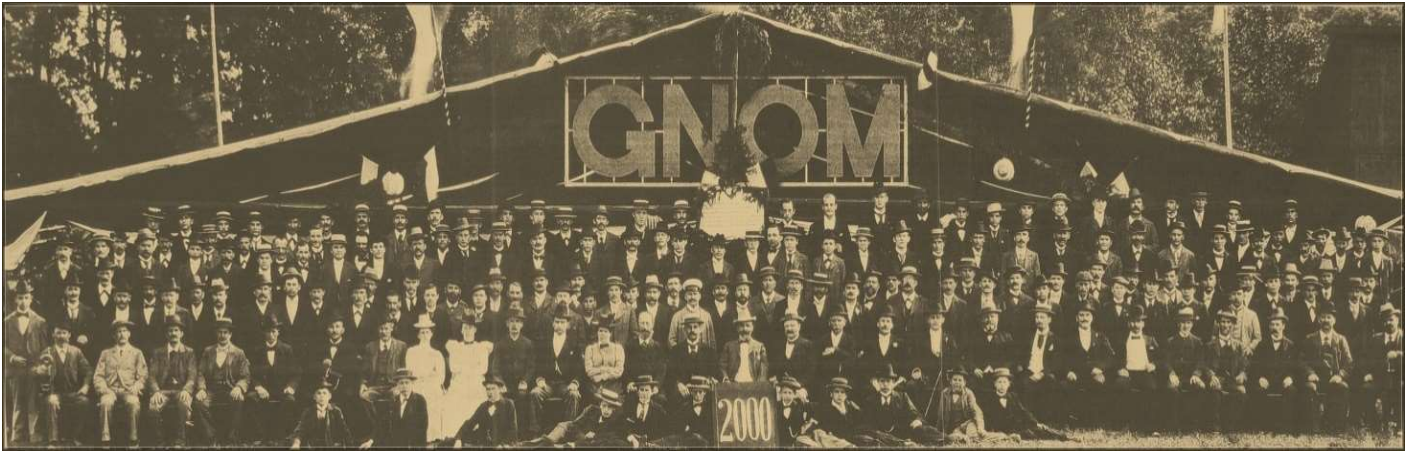


## 1896 – Advertising the GNOM engine

in Homburg fixed the date for the start of the company and thereby its formation for the 15 January 1892. The engine found a ready market, particularly with the agricultural industry and with small businesses, where it was met with great interest and won numerous prizes and medals at the exhibitions of its time.

The company was restructured and converted in January 1896 into a GmbH (Private Limited Company) after the death of its founder, Wilhelm Seck.

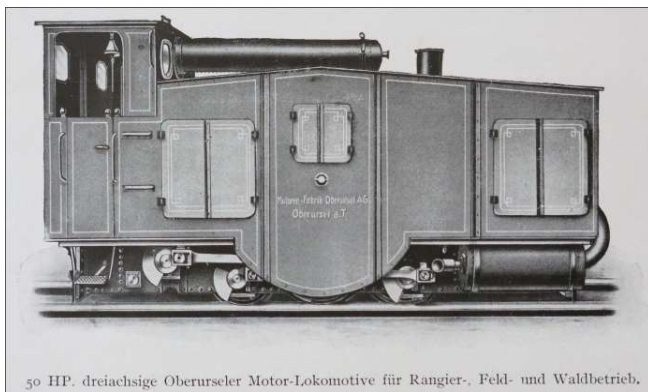
At the time the company had already produced one thousand Gnom engines, as well as the first „Locomobile“. The Frenchman, Louis Seguin, had by that time acquired the licence to produce and market the engine in France. During this period, the development of ships winches took pace. These winches were used in their heyday by large sailing



**1900 – The workforce of the MO with the 2,000th GNOM engine**

ships and brought engines made in Oberursel to the world. The tireless Willy Seck wanted also to develop a motor vehicle, but his fellow partners blocked this venture and Willy Seck left the company and Oberursel in the spring of 1898. He continued his career as a chartered engineer with the development of various short-lived types of automobiles. He turned his attention to new challenges, particularly in the field of engine ignition and fuel mixture. Willy Seck died in modest circumstances in Berlin-Wilmersdorf in

first world war alone around seven hundred locomotives were produced. Having built around two thousand engines by 1922, the Motorenfabrik advanced to become the second largest manufacturer in Germany after the Gas Motorenfabrik Deutz. Many of these locomotives were equipped initially with engines driven by ethyl alcohol and the Motorenfabrik Oberursel had achieved a leading role in Germany at the introduction of this engine from 1899 on. The use of ethyl alcohol was at that time promoted by the state, looking to stem the consumption of spirits.



50 HP. dreiachsige Oberurseler Motor-Lokomotive für Rangier-, Feld- und Waldbetrieb.

**Engine Locomotive with 50 hp**

1955. Willy Seck's departure as shareholder from the Motorenfabrik was one of the reasons for the transformation of the company into a Plc.

The Motorenfabrik commenced in 1900 with the construction of engine locomotives and very soon this engine made a significant name for itself in tunnel construction projects in the Alps. The locomotives were also used widely in pits, for shunting, in factories and as narrow-gauge locomotives. During the

**1912: A new factory is created**

The edifices of the factory from 1882 were expanded many times due of the growth in business. However, in 1911 the possibilities to expand the site were exhausted and so the foundation stone was laid to build a new factory complex under the existing buildings. In 1913, an extension for aircraft engines was added to the diesel engine building, erected in 1912. Further extensions and the impressive new administration building were added by 1918. These collections of buildings, which even today pervade an impressive image of the Motorenfabrik, were declared a cultural monument in 1980.





**1917 – The impressive administration building**

### **The aircraft engines in the First World War: Rise and fall of the Motorenfabrik**

In April of 1913 the Motorenfabrik Oberursel acquired the license to manufacture and to market the successful French Gnome rotary engine from the Société des Moteurs Gnome of the Seguin Brothers. One of the Seguin brothers owed the upturn of his company, founded in 1895, to the manufacture of the licensed Gnom engines by Seck.



### **Oberursel rotary engines for aircraft**

Soon after the start of World War One the rapid development of military aviation resulted in a profound change in the Motorenfabrik Oberursel. By the end of 1918, the factory had produced around three thousand Oberursel rotary engines. These engines were a further development of the French Gnome.

The most well-known of these engines is the 9-cylinder engine UR-II, installed in the Fokker triplane, Dr1. Manfred Freiherr von Richthofen (The Red Baron), the most successful German air ace, achieved 19 of his 80 aerial victories in this aircraft before he was shot down on 21 April 1918 over the Somme.

Not much fewer than the approximately three



**Advertising poster of the Motorenfabrik Oberursel**

thousand engines were overhauled in the factory. Almost five thousand soldiers visited the engine school at the factory where they were instructed during a four-week course in the repair of the Oberursel aircraft engines.

During the difficult times after the First World War, the Motorenfabrik Oberursel was not able to pick up on the earlier successes in the sale of its engines and machines for civilian use. The smaller integrated "Oberursel Gnom" engine for bicycles could not stop the demise. The legendary Motorcycle brand HOREX emerged from this engine.

As a result of its economic problems the Motorenfabrik Oberursel was forced in 1921 to enter into a syndicate with the older and much larger Gasmotorenfabrik Deutz.



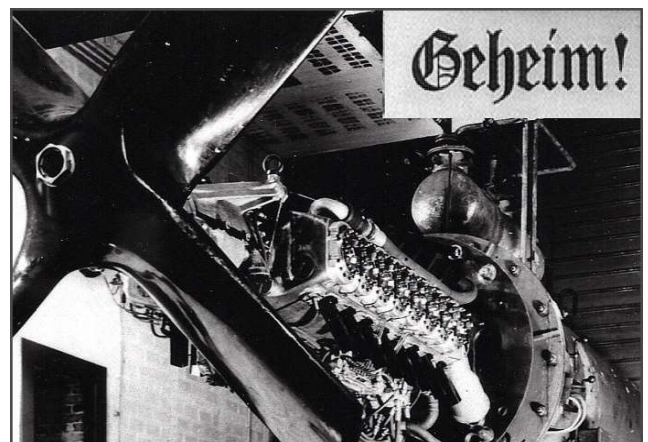
**1923 – Advertising the engine model 35**

### The era 1922 to 1945: The engines almost forgotten.

Meanwhile, Oberursel produced engines from the Deutz programme almost exclusively, and although only a few types were produced these were in large numbers. The exception being the engine Modell 35 for lorries from which would emerge the successful family of Deutz power units and transport engines. The mass production line introduced in the middle of the 1920s at Oberursel made the factory the most profitable in the new group of companies. In 1930 the Motorenfabrik Oberursel, officially still in existence, desisted and was completely absorbed into the new Humboldt-Dieselmotoren AG. Two years later after almost twenty thousand engines were produced in one decade the lights literally went out, not only in the factory.

The factory closed as a result of the world-wide depression. The loss of the corporate tax revenue forced the town council, amongst others, to switch off the street lighting in Oberursel and to the closure of the town lyceum in the Oberhöchstädter Road into which the town council moved a year later. The entire production inventory of the Motorenfabrik and only a few employees were transferred to Cologne. It was not until May 1934 that operations were resumed at Oberursel and by the end of 1944 the facility produced around sixty thousand power units and transport engines, which had their technical origin in Oberursel.

The smallest of these engines were installed in the famous tractors, the legendary “11 Deutz” or the “Deutz farm tractor” and in corresponding tractor types from other manufacturers. These tractors promoted the mechanisation of German agriculture during the 1930s.



**1944 – Development engine Dz 710 on the test bed**

Among the engines almost forgotten is the Dz 710 aircraft engine, developed in the Motorenfabrik from 1941. The factory underwent a complete modernisation to facilitate this development programme and expanded for example by the tower house test facility.

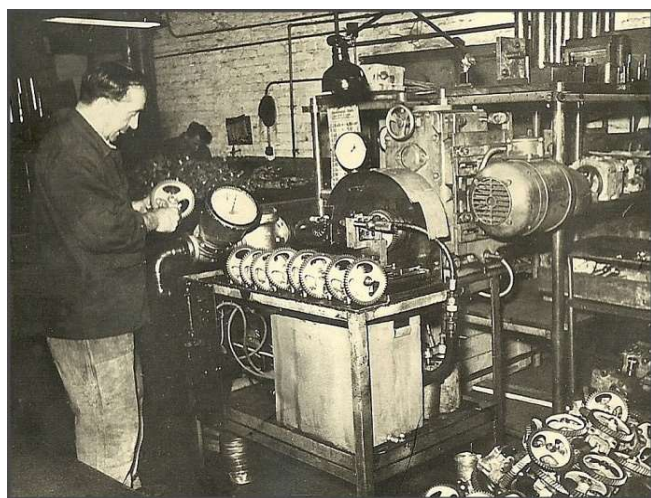
The first run of the ca. 2700 hp, 6-cylinder engine took place at the beginning of October 1943. Only two engines of this type were

built. These were confiscated by the American army after the war and sent to the US where all trace of their whereabouts was lost.

### **The era 1945 and 1958: A difficult restart.**

On the 30 March 1945 US troops occupied the town of Oberursel and the Motorenfabrik and withdrew in the middle of 1956.

The army used the site as a barracks and as a vehicle maintenance depot as well as a motor pool for the US military intelligence corps, based in nearby Camp King.



**Circa 1951 – Engine components manufacturing in the tower building**

The allied control council stipulated that all modern machinery and equipment of the factory to be dismantled for reparation purposes. These were duly loaded onto over two hundred rail waggons and shipped chiefly to Belgium and France, but also to India.

A modest component manufacture had already begun in the spring of 1948 in a small area of the site “wrestled” away from the Americans and the year after were able to move into the Tower building test facility, which was saved from destruction. The plant grew to three hundred employees with the production of components for the Cologne and Ulm engines in increasingly cramped conditions up until the release of the factory



**Exhaust gas turbo charger assembly**

in the middle of 1956. It would take a further two years for the run-down buildings to be renovated and operations there to start.

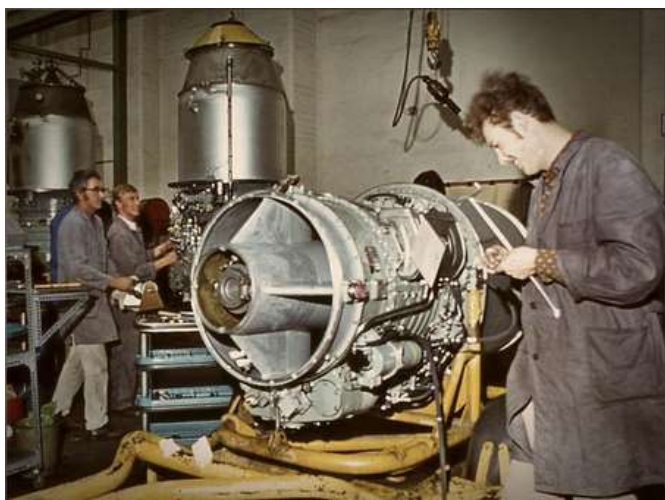
### **The period from 1958 to 1990 – four decades of small turbo engines and aviation equipment.**

In November 1958 the development and production of exhaust gas turbochargers, set up 5 years previously, moved from Cologne to the now spacious factory in Oberursel. The development of the auxiliary power unit T112 for the German vertical take-off aircraft VAK 191 followed the 80 hp industrial gas turbine. This took place in the beginning in co-operation with Bristol Siddeley, later with Rolls-Royce. Thereon the air supply turbine T212 for a surveillance & reconnaissance platform.

The development of the auxiliary power unit T312 and the gearboxes for the secondary power system (SPS) of the Tornado fighter and reconnaissance aircraft commenced at the beginning of the 1970s. This aircraft formed the backbone of the air forces of Great Britain, Italy and Germany and later of the Royal Saudi Air Force. Oberursel continues to this day, four decades after the maiden flight of a Tornado aircraft, to repair,

provide technical and logistical support and manufacture spare parts for the SPS.

The entry into the production under license of turbo engines in 1959 followed the beginning of the development of turbines. At the outset orders were placed for the production and support of the Bristol Siddeley Orpheus engine for the German Armed Forces.



**1962 – Orpheus jet engine assembly**

Bristol Siddeley was purchased some years later by the Rolls-Royce Group, the group to which the Oberursel site has belonged since 1990. Further aircraft engines, produced supported and repaired under license or in co-operation, followed. These included the power plant T53 for the UH-1D helicopter, the jet engine Larzac 04 for the Franco-German Alpha Jet reconnaissance and trainer aircraft as well as the repair of a helicopter engine with the well-known name in Oberursel, the Gnome. Oberursel supported this



**1969 – T53 turbo shaft engine on the test bed**

Rolls-Royce engine for the German navy and for other customers for four decades. When KHD, the world's oldest combustion engine manufacturer, began to deal with the possibilities of the gas turbine as an alternative drive unit for heavy trucks and other heavy vehicles in the early 1970s, engineers from the gas turbine plant in Oberursel were at the forefront. The first road trials with a modified aircraft engine followed the entry and co-operation in the development of the 550 hp GT601 vehicle gas turbine in a consortium of four gas turbines and truck manufacturers. The development took place predominantly in the USA.

In the mid-1970s a new chapter was opened in Oberursel: The development of a jet engine with a 1,000 Newton thrust for the Franco-German reconnaissance drone CL289. The small jet engine designated

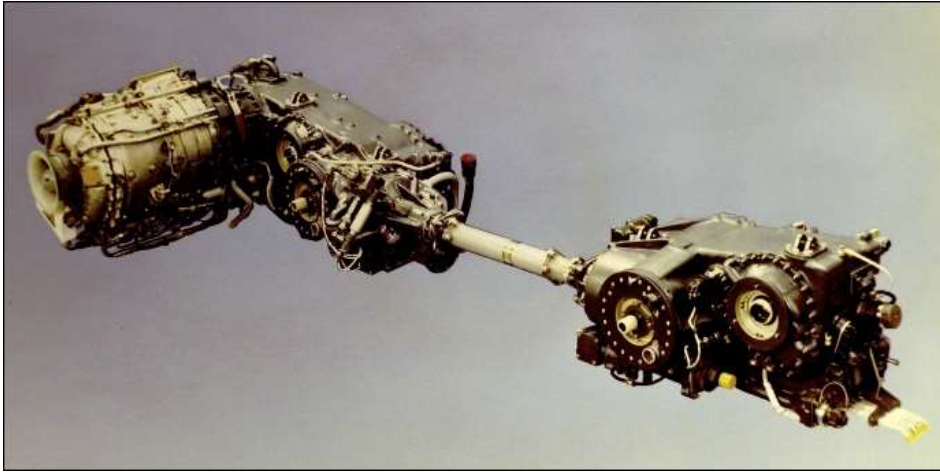


**1980 – Mack Superliner truck with a GT601 vehicle gas turbine drive unit**

T117 was the first to be developed and used in series in Germany after 1945.

At the end of the 1970s, the KHD AG the gas turbine division was formed within the drives business area, from which the KHD Luftfahrttechnik GmbH emerged in 1980.

The very industrious 1980s were determined by the production and servicing of the Larzac engines in Franco-German co-operation. Furthermore, the serial production and support of the auxiliary power unit and the gearboxes for the multi-role Tornado jet fighter



**Secondary Power System for the Multi Roll Combat Aircraft (MRCA) Tornado**

aircraft, as well as the business and production participation for the engines of CFM International. The CFM is a joint venture between the engine manufacturers General Electric and Snecma. History came full circle, for Snecma was the successor company of the Société des Moteurs Gnome of the Seguin brothers, which had its foundation with the license production of the Oberursel Gnom engines, commenced in 1895.

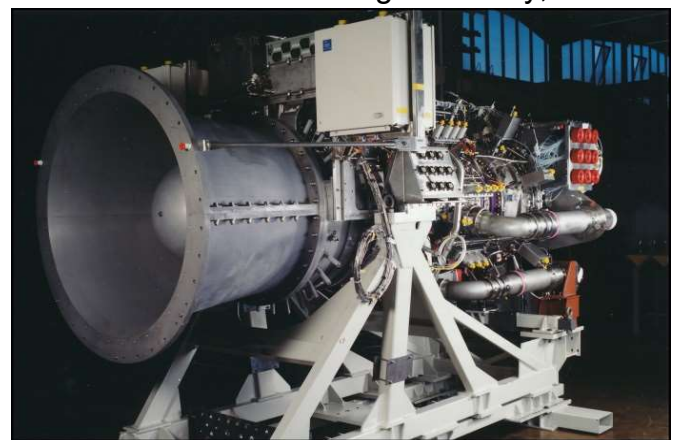
Snecma, with its CFM programme, had now become a stirrup holder for the future of the Oberursel engine factory. KHD Luftfahrttechnik GmbH, with its qualifications and the certification approvals of the civil aviation authorities, met the conditions of the BMW AG required for its planned re-entry into the aircraft engine business at the end of the 1980s.

**1990: With BMW and Rolls-Royce into a new future**

In 1990, the BMW AG, established in 1916 as an engine manufacturer, took over the business of the former KHD Luftfahrttechnik GmbH from KHD, which had experienced difficulties. At the same time, BMW and the British engine manufacturer Rolls-Royce founded the new joint-venture BMW-Rolls-Royce Aero Engines, based at the Motorenfabrik Oberursel.

Immediately after its foundation, BMW-Rolls-Royce Aero Engines began the development of the core engine for the new engine family BR700, which was continued in the newly built development and assembly centre in 1993 in Brandenburg Dahlewitz.

The turbofan engine with the designation type BR710 achieved its international approval in 1996, the first German jet engine to be used in civil use. Parallel to the development of the BR700 engine family, BMW



**1993 - BR700 Core Engine**

Rolls-Royce participated in the autumn of 1993 in the development of an auxiliary gas turbine for regional aircraft under the leadership of Allied Signal in Phoenix. This APU was urgently needed for the business jets equipped with BR710 engines. Oberursel was responsible for the development of the compressor section of the APU RE220, in which the excellent Oberursel radial compressor technology was used for the last time.

The first Boeing 717 passenger aircraft, powered by the higher thrust BR715 engine, were flown from 1999 onwards. At the end of 1998, the management of BMW Rolls-Royce moved from Oberursel to Dahlewitz at the southern end of the Berlin Ring followed in July 2000 by the company's headquarters.



### **August 1996 – The BR710 is approved!**

As a centre of competence for two-shaft engines within the Rolls-Royce Group, the Dahlewitz site is responsible for the BR700, Tay, Spey and Dart series engines. The IAE V2500 two-shaft engine, used in short and medium-range airliners of the types Airbus A319, A320 and A321, as well as in A319 corporate jets, is also assembled and tested in Dahlewitz, over two thousand one hundred engines in all by the beginning of 2017. Around 7,000 engines were produced by the beginning of 2017, almost half of which are part of the BR710 series, with more than 1,600 long-haul equipped Gulfstream and Bombardier aircraft equipped with this engine.

In addition, around ninety thousand engines in use around the world are supported by Dahlewitz.

The new owners thoroughly modernized and expanded the plant in Oberursel during the 1990s and orientated the site towards the production of complex engine components in its production facilities.

The production of variable camshaft control systems (VANOS) for BMW vehicles made use of the production capacity and Oberursel gained also practical experience with the production in manufacturing cells.

A further boost came when Rolls-Royce took over the company entirely at the beginning of 2000.



### **A partly manufactured BLISK from Oberursel.**

The Oberursel site of the newly founded Rolls-Royce Deutschland Ltd & Co KG has since been consistently expanded into a modern centre of excellence for the production of rotating engine components and is part of the globally operating Rolls-Royce Group as a competitive and competent production site.

### **2013 – Component survey.**

High-tech components are manufactured using state-of-the-art production technologies for numerous Rolls-Royce engine programmes as well as the assembly of engine modules. The site is also a service and maintenance centre for small gas turbine engines for various applications.

# Engine components manufacturing - thinking ahead

## What could the future of production in Oberursel look like?

By Dr. Gregor Kappmeyer – Rolls-Royce Associate Fellow Machining



### Digitalisation – Industry 4.0

The top position acquired during the last decades in the production of complex and critical engine components is a guarantor for the Oberursel production location of Rolls-Royce Deutschland Ltd & Co KG. This will continue to evolve and change continuously in the future in order to maintain and expand its position in the company's global production network. In the not-too-distant future, such production should look something like this:

In addition to the digital transformation of production by Industry 4.0, materials and planning methods, as well as a largely data-oriented assessment of processes and an increasingly augmented level of automation, determine the picture of production in Oberursel.

Components with different characteristics can be manufactured on multifunctional machine platforms in the future. Standardisation and direct data connections to machine and tool manufacturers will enable the early

detection of defects as well as the choice of optimized process parameters so as to limit the stress on critical machine elements, such as the spindles, and to protect them from overloading.

A multitude of measurement data from the processes and from the production environment are used to detect deviations from the normal state and the initiation of measures even before damage to the workpiece, the tool or the machine tool can occur. There will be robots in the workshops in the future that support people in handling, loading, measuring and logistical tasks. They are more space-saving, more flexible and more economical than fixed installations.

New organizational structures will be devel-



### Additively manufactured bearing housing (diameter 1,5m) with generatively manufactured blades

oped to manage internal systems, communication and data exchange within the site, on the one hand with the suppliers and on the other hand with Rolls-Royce's internal customers at other locations of the company around the world. New service providers will develop the necessary technologies, drive

the systems and adapt them flexibly according to the needs of the site.

Tests on workpieces will largely be performed automatically and digitally supported, allowing the workshop staff to focus on potential defects on the component and on its assessment and resolution. Employees will increasingly be assigned tasks to process monitoring, planning and coordination in order to ensure the trouble-free operation of the production process and in order to adapt flexibly the production equipment to the currently required requirements. They will also be more involved in the development of scenarios for future changes in the production programme, the development of suppliers' performance and new technical solutions for the production of components for the next engine generations.

In addition to established machining processes, joining and special processes, as well as test methods, generative methods will be used - generally referred to as 3D

printing - in the manufacture of components and parts thereof, but also of devices and production aids, as well as spare parts for machines.

Additively manufactured bearing housing (diameter 1,5m) with generatively manufactured blades.

This description of a future scenario is based on aspects that are already recognisable and implementable at the outset. In addition, the fantasy of course still allows for far-reaching ideas and scenarios. Essential for the existence of the production site Oberursel and the employees here remains that they and the management of the company continuously develop their performance by means of permanent improvement and innovation so that they can maintain their leading position in national and international competition. Then one day the history of the Oberursel engine factory will be added to by further large chapters.



# Chronology

- 1882** Wilhelm Seck acquires the Wiemersmühle (Water mill) and erects a branch office of its Bockenheimer Mühlenbauanstalt for the manufacture of grain mills - the first machine manufacturing plant operating on an industrial production basis in Oberursel. Start of apprenticeship.
- 1890** Willy Seck commences the development of the stationary engine „GNOM“.
- 1892** Wilhelm Seck establishes the engine factory Oberursel "W. Seck & Co "for the production and distribution of the GNOM engine developed by his son.
- 1895** Locomobiles, wood crushing machines as well as generators and winch drives complement the product range. The Frenchman Louis Seguin attains the licence for the construction of the GNOM engines. From his company emerges after 1945 the company Snecma.
- 1896** After the death of the company founder Wilhelm Seck the company is transformed into a GmbH. (Comp.Ltd.)
- 1897** First mention of a workers' council, the forerunner of today's works councils.
- 1898** Willy Seck leaves the company. The capital requirement for the further development of the company leads to the conversion to a public company - the "Motorenfabrik Oberursel AG".
- 1900** A renewed growth spurt with the construction of engine locomotives begins, and by the end of 1921 nearly 2,000 units are produced.
- 1911** Start of construction of a new factory complex, which by 1918 had grown to become an aircraft engine factory with the impressive administrative building.
- 1913** Acquisition of the license for the production of the Gnome by the "Société des Moteurs Gnome", founded in 1905, by the Seguin brothers.
- 1917** Construction of an own training workshop, the first in Oberursel.
- 1918** After the manufacture of some three thousand rotary engines, the end of the First World War ushers in the decline of the company.
- 1921** The joint venture with the Gasmotorenfabrik Deutz AG leads to a loss of independence.  
Conversion of the production programme to engines of the Deutz design.  
The exception is the 35-liter truck engine, which is the result of the successful family of Deutz engine and vehicle engines A / FM.
- 1930** The engine factory is absorbed into the Humboldt Deutz Motoren AG and becomes "The Oberursel Plant".
- 1932** The production of the Deutz-design engine is relocated to Cologne in the wake of the economic crisis. Approximately 20,000 engines of this type were built in Oberursel since 1922.
- 1934** The plant is re-commissioned and diesel engines once again are produced, until the end of 1944 around 60,000 engines. The 11 hp "Deutz tractors" as

well as tractors from several other manufacturers lead to mechanization in German agriculture.

- 1938** Renaming of the Humboldt Deutz Motoren AG to Klöckner Humboldt Deutz(KHD) AG.
- 1941** Expansion of the Motorenfabrik factory for the aircraft engine development, transferred from Cologne, of the KHD AG. The plant is modernized and equipped with the latest development and production facilities.
- 1943** First run of a 16-cylinder flight engine Dz 710 with 2,700 hp.
- 1945** The US Army occupies the factory and uses it until mid-1956. Both the Dz 710 aircraft engines are shipped for comparative tests to the USA, where all trace of their whereabouts is lost. The Allies determine that the plant is for reparation dismantlement.
- 1947** The factory is emptied, all production facilities transported away as reparation goods. The US Army expands the repair of military vehicles, which had begun in 1945.
- 1948** Production of component parts for the main plant in a small designated area of the factory.
- 1949** Relocation into the released tower building.
- 1950** Commissioning of the new administrative building "Weißes Haus - White House".  
After 15 years of forced interruption, a works council was set up.
- 1956** The last US units leave the factory, followed by two years of repairs to the ruined buildings and facilities.
- 1958** The staff consisting of approximately 300 moves into the main factory. The Cologne gas turbine development of KHD moves in, Oberursel thus becomes the gas turbine plant of the KHD AG.
- 1959** Beginning of the development of aircraft engines with the licensing and support of the Orpheus jet engine for the G-91 of the Bundeswehr. Further licensing or co-operation programmes, as well as the development, production and support of various aircraft turbines and equipment follow. Re-establishment of a factory fire brigade.
- 1961** Establishment of the company sports association.
- 1963** The proprietary developed 100 hp industry Gasturbine T216 goes into series production.
- 1964** Entry into the assembly and support of industrial gas turbine systems, such as the pipeline pump station in Lingen with two 4,200 hp Proteus gas turbines.  
Start of development of the APU T112, the auxiliary gas turbine for the German vertical take-off aircraft VAK 191.
- 1965** Projects to drive locomotives with gas turbines.
- 1967** Projects for mobile and stationary electricity generation plants.

- 1966** Start of the license production and the technical logistical support of the T53 engine for the UH1D helicopters of the Bundeswehr and border control.
- 1969** Development of the variant T212 as an air supplier for the blade tip drive of an experimental reconnaissance drone. Start of development of the auxiliary power turbine T312 as well as the gearboxes for the secondary power system of the multinational combat and reconnaissance aircraft Tornado.
- 1971** Start-up of the production of parts sets for the T 64 helicopter. Introduction of the NC technology with the first numerically controlled machine and the machining of titanium.
- 1972** Trials with industrial gas turbines to drive IC locomotives of the Federal Railway.
- 1973** Entry into the development programme of the GT 601 410 kW gas turbine in the USA.  
Acquisition of the support of the Gnome H 1400 engine for the marine helicopter Sea King. Commissioning of the new training centre with a modern apprentice training workshop.
- 1975** Start of development of the turbojet engine T117 for a reconnaissance drone, the first jet engine developed after 1945 in Germany and used in series production from 1990 onwards.
- 1977** Start-up of the serial production for the turbo-fan engine Larzac 04 in Franco-German co-operation, as well as for the APU and gearboxes of the secondary power system (SPS) for the Tornado.  
Equipping the hovercraft ferry EDAM Naviplan 500 with industrial gas turbines.
- 1980** KHD establishes KHD Luftfahrttechnik GmbH. The fast-growing serial production of the Larzac and Tornado programmes leads to a spurt in growth.  
The ensemble of buildings of the Motorenfabrik is declared a cultural asset.
- 1985** Development of the auxiliary gas turbine T118 for the Hunter 90, test run of the prototype.  
Start of development of the T128 missile engine.
- 1986** Start of the production of components for the CFM 56 turbofan engines as partner of the French company Snecma and thus entry into the civil aviation business.  
The industrial gas turbine activities are handed over to MWM Diesel- und Gas-technik GmbH in Mannheim, which is part of the KHD Group.
- 1990** BMW acquires the plant and the business of KHD Luftfahrttechnik and, together with Rolls-Royce, founded the company BMW Rolls-Royce AeroEngines. The purpose of the company is the development and construction of a series of turbofan jet engines, with the family name BR700.

- 1991** Start of development of the BR700 core engine. Start of the restructuring of production with the establishment of a separate engine assembly segregated from the production of new components.
- Construction of a production cell for variable camshaft controls "VANOS" for BMW vehicles.
- Establishment of the club "Kreis der Jubilare", a club for long-serving employees of the Motorenfabrik Oberursel.
- 1992** First customer, Gulfstream, ordered the first 200 BR710 engines for the new Gulfstream V.
- 1993** Commissioning of the development and assembly plant, newly built in Dahlewitz, south of Berlin. Complete modernization of the Oberursel plant and its production facilities.
- Change from the workshop principle to self-sufficient manufacturing cells.
- Participation in the development of the auxiliary gas turbine RE220 at Allied Signal. BMW Rolls-Royce is responsible for the development of the compressor section.
- 1994** First run of the engine BR710. Start of development of the engine BR715 for the MD 95 commercial aircraft of McDonnell Douglas, later the Boeing 717.
- 1995** Maiden flight of a Gulfstream V with BR710 engines.
- 1996** The BR710 engine is awarded its international certification, the first German jet engine to be used for civilian application.
- 1998** The administration relocates from Oberursel to Dahlewitz.
- 2000** Foundation of Rolls-Royce Deutschland Ltd & Co KG as a wholly owned subsidiary of the British Rolls-Royce Plc. Transfer of the company's headquarters from Oberursel to Dahlewitz.
- 2002** The company museum is opened on the occasion of the 110th anniversary of the Motorenfabrik Oberursel.
- 2004** Delivery of the first Oberursel RTM 322 engine for the NH 90 helicopter.
- 2007** Start of the technical & logistical support of the T56 propulsion system installed in the P3C Orion marine reconnaissance aircraft of the German Navy.
- 2008** A G-91 aircraft with the Orpheus engine, which had begun the revival of the manufacture of aircraft engines in the Motorenfabrik in 1959, became part of the Oberursel company museum.
- 2009** Beginning of the restructuring of the factory as a competence centre for rotating engine components, especially for "blisks" - blade integrated discs - and for compressor rotors in accordance with "lean manufacturing" principles.
- 2010** Establishment of the "History Circle of the Motorenfabrik Oberursel". With the decommissioning of the CL-289 drone, support for the T117 jet engine ends.
- 2012** The last of the more than 2,400 T53 helicopter engines repaired and overhauled in Oberursel is handed over to the Bundeswehr.

Purchase of a UH-1D helicopter of the Bundeswehr for the company museum.

**2012** A friction welding system, with which compressor discs are conjoined, is put into operation in Oberursel.

The company museum acquires a historic GNOM stationary engine. This type of engine had led to the foundation of the engine factory Oberursel in 1892.

**2013** On the occasion of the 100th anniversary of engines at the Motorenfabrik Oberursel, a first run of the restored U-0 rotary engine took place.

First flight of the A350 with the Rolls-Royce engine Trent XWB, at whose heart is the high-pressure compressor manufactured in Oberursel.

**2015** Start of the repair of GEM engines for the Sea Lynx helicopter in the converted historical jet engine test stand A2.

**2017** The Oberursel Motorenfabrik celebrates its 125th birthday under the motto „Towards the future with tradition.“



**Oberursel trainees present Warren East, CEO of Rolls-Royce Holdings, with a souvenir of the 125th anniversary of the Oberursel Motorenfabrik**

# Rolls-Royce in Germany

Rolls-Royce is a worldwide leading manufacturer of drive systems and is represented in Germany with its Civil and Defence Aerospace, Power Systems and Marine Technology divisions. Germany has the second-largest workforce after the United Kingdom within the Group with around 11,000 employees at 14 locations. Since 2014, Rolls-Royce Power Systems has been part of Rolls-Royce. The German traditional company - emanating from Maybach-Motorenbau GmbH (until 1918 Luftfahrzeug-Motorenbau GmbH) - headquartered in Friedrichshafen, Germany, supplies large engines, propulsion systems and decentralized energy systems. Rolls-Royce Germany is active in the aviation industry and is the only German manufacturer of aircraft engines with certification for the development, production and maintenance of civil and military jet engines.

Rolls-Royce Germany currently has a total of around 3,600 employees at its Dahlewitz and A new development test bench for main reduction gearboxes was put into operation in 2017. Main reduction gearboxes will be used in future Rolls-Royce engines with ultrahigh secondary-flow ratio.

Oberursel locations, of which approximately 1,100 are based in Oberursel.

The Oberursel site is a production site acknowledged by the Rolls-Royce Group. With state-of-the-art production technology, high-tech components for Rolls-Royce engines are manufactured here. The site is also a maintenance and repair centre for small and medium-sized gas turbine engines for military and civilian applications.

The development and final assembly of all BR700 engines is at the Dahlewitz site. As a centre of competence for two-shaft engines, Dahlewitz is also responsible for the engines Tay, Spey and Dart. In total, Rolls-Royce Germany supports more than 9,000 engines in service world-wide. Rolls-Royce also operates a test bench for civilian large-scale engines in Dahlewitz as well as a test centre for testing the mechanical behaviour of gas turbine components.



**Oberursel (Hesse)**



**Dahlewitz (Brandenburg)**

# Historical Society Motorenfabrik Oberursel

With its predecessor, the branch of Wilhelm Secks Bockenheimer Mühlenbauanstalt (mill production institute), the Oberursel engine factory was already the first industrial operation in the mechanical engineering sector in Oberursel in 1882. Today, the location of Rolls-Royce Deutschland is the last major industrial operation of this kind in Oberursel. This of course leads to the obligation to capture, preserve and present the history of this engine factory as an essential component of the town of Oberursel. The Historical Society e.V., Oberursel, founded in 2010, is committed to this task. The factory museum, opened in 2002 and situated on the company site, is run by the Historical Circle and Rolls-Royce Deutschland performs a valuable contribution to the museum.

**125 Jahre Motorenfabrik Oberursel 1892 -2017** **Mit Tradition in die Zukunft**

**Happy Birthday**

**OBERURSEL** **Motoren-Fabrik Oberursel** **KHD** **BMW** **Rolls-Royce**



## WERKSMUSEUM MOTORENFABRIK OBERURSEL

### Museum Motorenfabrik Oberursel

Prof. Günter Kappler Haus  
c/o Rolls-Royce Deutschland Ltd & Co KG  
Willy-Seck-Straße 1  
61440 Oberursel

Open from January to November on the last Friday of each month  
from 15.00 to 18.00 hours

Special tours or groups require reservation

Entry fee: 2,50 €

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