

Boeing in Germany

From Böing to Boeing

Boeing has been a dedicated partner of the German aerospace industry for many decades. In fact, Boeing's history with Germany dates right back to Wilhelm Böing, the father of the founder of The Boeing Company, who immigrated to the United States from Hohenlimburg, Germany in 1868. Wilhelm Böing became successful in the timber business and later married Marie Ortmann, who was originally from Vienna, Austria.

Wilhelm and Marie Böing's son William E. Boeing spent a year in boarding school in Vevey, Switzerland, and continued his education in the U.S. Like his father, he also started his career in the timber business. As a young man, however, he developed a passion for aviation, and, in 1916, built his first airplane and established a company that today is the world's leading aviation and aerospace enterprise.

Today, Boeing is a strong contributor to the German economy with more than 1000 direct employees based at Boeing sites and subsidiaries from Hamburg to Munich. Boeing supports more than 23,000* jobs through its supply chain and other activities in Germany. With two research sites in Germany, Boeing also invests in a growing portfolio of research and technology partnerships with German industry, universities and research organizations.

Michael Haidinger, based in the **Boeing Germany office in Berlin**, was named managing director of Boeing Germany and Central & Eastern Europe in July 2017. The Boeing team in Berlin helps the businesses build their strength and develop strategies to create greater value and opportunities for Boeing and its partners in Germany.

Sites and Subsidiaries

Boeing Distribution Services, a global provider of aerospace parts and services, has two major sites in Northern Germany (**Hamburg** and **Kaltenkirchen**) with approximately 380 employees. Both Germany locations are growing — in terms of customers served, product lines and employee base. Germany also serves as BDSI's Europe, Middle East, Africa and India (EMEA) service and distribution hub.

To support the growing need globally for qualified pilots and aviation personnel, Boeing offers a comprehensive portfolio of pilot, crew and maintenance training products and services for commercial, business and general aviation markets. **Boeing Services Deutschland GmbH, based in Cologne**, plays an important role in these efforts as a leading provider of European Aviation Safety Agency (EASA) based training systems and content for early stage ("ab-initio") pilot training. The team in Cologne specializes in curriculum and materials for commercial and private pilots and technicians operating in rapidly growing markets aligned with EASA or FAA. Software developed by the team in

Cologne is also beneficial to creating a customized, integrated software system for managing cadet learning and training.

Adient Aerospace, a joint venture of Boeing and Adient, the world's leading automotive seating and interiors supplier, became operational in October 2018 to develop seats for Boeing's commercial products and other commercial airplane manufacturers. Adient Aerospace has product development and production facilities in **Kaiserslautern**, Germany.

Boeing subsidiary **Tapestry Solutions** provides training to the Joint Multinational Simulation Center in **Grafenwöhr** and its satellite in **Kaiserslautern**. Tapestry also supports the Joint Multinational Readiness Center in **Hohenfels** as that center prepares U.S. and multinational brigade combat teams for missions under the U.S. Army's Combat Training Center program.

A team of approx 450 employees at **Boeing Global Services' Jeppesen** site in Neu-Isenburg, near **Frankfurt**, offer innovative digital solutions, informational products, services and software to air transport partners. Jeppesen has been helping aviation professionals worldwide reach their destinations safely and efficiently for more than 80 years. Captain E. B. Jeppesen, who started to design and produce the first instrument flying charts back in 1934, opened the first Germany-based office in 1957. Today, the Jeppesen Germany base plays a key role in Jeppesen's expansion into new markets and services.

Under the leadership of the Neu-Isenburg Research and Development team, industry-leading products like Electronic Flight Bag, Airport Moving Map and multiple mobile flight deck applications have been developed and brought to market. In 2017 Boeing opened the **Digital Solutions & Analytics Lab Frankfurt**, an innovation center for digital aviation research. Engineers, computer scientists, user interface designers and others scientists in the innovation lab work in self-directed teams focusing on research and development projects such as integrated digital airlines, unmanned aerial systems or connected cabin.

The Boeing **Research & Technology Office Munich** was established in 2016 and is part of the Boeing European Research and Technology Center (BR&TE) Madrid, Spain. The Munich office actively partners with German and European industry and universities in the fields of Air Traffic Management, Applied Machine Learning for Airline Operations, improved methods of manufacturing and Model Based Engineering. The team in Munich focuses on thermoplastic composite materials & processes, automated production systems, fabrication and manufacturing technology integration for the supply chain, and aeromechanics technologies such as advanced calculation methods.

Boeing is a co-founder of the **Direct Manufacturing Research Center (DMRC)**, which was established at the University of **Paderborn** in 2008, together with four Germany-based companies. The objective is to help mature direct manufacturing technology (3D printing) into production-capable systems. The DMRC is also a platform for exchanging best practices and provides students at the University of Paderborn with opportunities to

contribute to and be trained in the newest generation of direct manufacturing technology.

Network of Suppliers and Partners

Boeing and its supply-chain partners spend almost \$1.3 billion a year with suppliers located across Germany. Boeing works together with many more German-owned suppliers worldwide. German suppliers produce a wide range of products from cabin lighting to highly complex precision tools and automation for Boeing production processes to technologies for Boeing space products.

German technology is an integral part of every Boeing commercial airplane program. German industry also contributes to key Boeing space programs including commercial satellites, the Space Launch System and the International Space Station and to defense platforms including the KC-46A Tanker, the CH-47 Chinook and the AH-64 Apache helicopter.

German aerospace companies are well known for their technological innovations and the quality of their products and several German suppliers have received a Boeing Supplier award. In 2019 Liebherr-Aerospace received a supplier of the year award.

Boeing Commercial Airplanes

Germany is home to key Boeing airline customers operating a broad range of Boeing passenger and cargo airplane models. German airlines have played a major role in helping to develop and launch new Boeing aircraft families.

Boeing and Lufthansa share a successful history of partnership. In 1960, Boeing delivered the first jet airplane to Lufthansa, a Boeing 707. Together, with Lufthansa, Boeing launched the 737 program, the most successful airplane program to date. Lufthansa, a 747 operator for almost 50 years, was also a launch customer for the fuel-efficient 747-8 Intercontinental. The airline provided valuable input that helped to make the new airplane a leader in its class in terms of both fuel efficiency and passenger comfort. Lufthansa is once again a launch customer — this time for the fuel-efficient 777X.

TUI Group's subsidiary TUIfly operates a large fleet of Boeing 737 airplanes. TUIfly and the former airline Airberlin were instrumental in the launch of the Next-Generation 737 program, with orders for the 737-800. They also pioneered the fuel-saving blended winglets. Condor Flugdienst GmbH, a Boeing customer for many years, has 757 and 767 airplanes in its fleet. In fact, in 1996, Condor was the launch customer for the 757-300.

German cargo airlines operate a variety of Boeing freighter models. Leipzig-based AeroLogic, a joint venture airline of Lufthansa Cargo and DHL Express, was the first cargo airline in Germany to operate 777 Freighters. Lufthansa Cargo's fleet includes

new Boeing 777 Freighters in addition to its fleet of MD-11s. DHL Express in 2018 announced orders and commitments for Boeing 777 Freighters that they are adding to their fleet.

Boeing Defense, Space & Security

For more than 60 years, Boeing and its legacy companies have been a reliable industry partner to the Bundeswehr (the armed forces of Germany). Great examples are the Piasecki-designed H-21, which was the standard large helicopter for the German Army into the early 1970s, and the McDonnell Douglas F-4 Phantom jets, which served the German Air Force for many years.

The North Atlantic Treaty Organization (NATO) has a fleet of Boeing E-3 707 Airborne Warning and Control System (AWACS) aircraft. The fleet is the alliance's first integrated, multinational flying unit and provides rapid deployment, airborne surveillance and communication for NATO operations. The NATO E-3A aircraft are based at the air base in Geilenkirchen, Germany.

Boeing's H-47 Chinook is a contender in Germany's Schwerer Transport Hubschrauber (STH) heavy-lift helicopter competition. The Chinook is a modern, highly capable, multi-mission helicopter, offering low operating and acquisition costs. The proven platform can meet the needs of the German Air Force, from troop transport, search and rescue, humanitarian and disaster relief to special operations. The Chinook is in production, ready for delivery and has a mature sustainment infrastructure. Twenty countries around the globe already operate more than 900 Chinooks, including several NATO partner countries. The U.S. Army has Chinook aircraft based in Ansbach, Germany, which would enable instant interoperability for the Bundeswehr. Boeing's technology roadmap will keep the Chinook relevant beyond 2060.

Boeing has a strong portfolio of products and services that can be suitable to the German Bundeswehr, and Boeing stands ready to support their needs.

Corporate Responsibility

Boeing is committed to supporting the industry in Germany and worldwide to make aviation growth sustainable through developing and implementing advanced technology that reduces the environmental impact and increases efficiency of Boeing airplane programs. Boeing also works on the forefront of advancing research on sustainable alternative fuels for aviation.

Boeing works in partnership with non-profit organizations in Germany to positively impact the local communities where the company operates or has historic ties. The focus lies on developing 21st century skills and inspiring children and students to engage in science, technology, engineering and mathematics (STEM).

The "Learning to Fly" program of the German Children and Youth Foundation supports the establishment of science learning labs in schools and kindergartens. To honor

Boeing's centennial in 2016 and its early history in Germany, the company established another school science learning lab dedicated to students in Hagen-Hohenlimburg, North Rhine-Westphalia, where William Boeing's father Wilhelm Böing was born.

Projects, such as "Magical Physics" of the Bürgerstiftung Berlin, encourages students to explore the world around them with hands-on experiments. In March, Boeing and its partner First Scandinavia will open the first Mobile Newton Room in Germany. The Newton Room Concept aims to provide students with the opportunity to explore, collaborate, discuss, and have fun with science, technology, engineering, and mathematics.

These partnerships have enabled many thousands of students across Germany to engage with STEM education outside of their usual classroom environment. Many teachers gained valuable experience in the field of STEM education.

Boeing collaborates with several universities in Germany to advance technologies that have future applications in the aerospace industry and to inspire young aerospace talent. The Reinhardt Abraham Memorial Foundation, created by Boeing and Lufthansa in 1996, offers training and exchange programs to supplement aviation-related studies at the TU Berlin (Berlin University of Technology) and the University of Washington in Seattle.

Boeing and Germany share a partnership that is deeply rooted in the pioneering and entrepreneurial spirit of Wilhelm Böing and company founder William Boeing. It's a partnership that is rich in innovation and sets a clear path for the future. With a dynamic base of commercial customers, an established supplier network, growing technology partnerships and opportunities for defense sector collaboration, Boeing's ties with Germany are stronger than ever.

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