1. Sector Overview

The German Aerospace industry is divided into the three sectors civil aerospace, military aerospace and space. Overall, the segments achieved a turnover of Euro 24.7 billion in 2010, which is an increase of 4.5% to the previous year. The German aerospace industry is one of the nation’s largest employers, employing a total of 95,438 workers in 2010. Germany considers its aerospace and defence industry to be of strategic importance for its economy, foreign policy and security. It values aerospace and defence as a key driver of technological development and innovation.

The German Aerospace Industries Association (BDLI) is the equivalent of the Aerospace Industries Association of Canada (AIAC). It is a private organization representing the economic and technical interests of the German aerospace industry. Its more than 190 members are active in aerospace systems, aero engines, equipment and material technologies and components.

After the industry’s immense growth in 2007/08, the economic crisis was responsible for more negative expectations for 2010. However, as a consequence of the aerospace market’s recovery, the industry has achieved positive growth in all three sectors. Although the segments military aerospace and space have had the highest growth percentage, the market for civil aerospace still demonstrates the market’s main source of income, making up 65% of the industry’s turnover and employing a staff of 62,200. The defence sector has to deal with a number of challenges related to the German military’s financial austerity plans. The military is in high need of a long-term strategy of overcoming these obstacles in order to keep up its high technological competence and to retain a high-skilled workforce.

The industry contributes between 15% and 17% of its total turnover to research and development (R&D). The 2007-2013 Aeronautics Research Program of the German Federal Ministry of Economics and Technology (LuFo IV) focuses on customer satisfaction and safety, air transport greening, increased time efficiency, increased cost efficiency, protection of aircraft and passengers, and on the pioneering of the air transport of the future. Cross-cutting activities are reinforced as well, such as the support to SMEs and stimulation of international cooperation. The program has a budget of Euro 430 million.

Import duties for non-EU countries including Canada are moderate. The majority of raw materials enter duty-free or at low rates, while the majority of manufactured goods are subject to rates ranging from 3% to 17%. Concerning international trade, Canada’s Export and Import Controls Bureau in Ottawa can provide additional information and can advise exporters on product classification, customs duties, taxes and customs procedures for Germany.

Exporters should ensure that their requirements meet FAA/EASA and ISO certification (international requirements for quality management systems) as well as AQAP 11 (NATO’s quality assurance requirement for design, development and production) for products and services, which are the industry standards recognized in Germany. Germany’s national inquiry point for information related to standards and certification in all industrial and commercial sectors is “Deutsches Institut für Normung”. 
According to the BDLI, Germany’s largest aerospace companies include:

- **Airbus Deutschland GmbH**
  Hamburg, headquarters of Airbus Deutschland and the largest site in Germany plays a decisive role in the development and engineering of all Airbus aircraft. Final assembly takes place here for three of the four members of the A320 Family. Airbus Deutschland employs 16,315 and turnover for 2007 was valued at approximately Euro 6.3 billion (worldwide turnover: Euro 27.6 billion in 2010).

- **MTU Aero Engines GmbH**
  MTU is Germany’s largest aero engine company and one of the world’s leading independent aero engine MRO service providers. MTU’s core business activities are the development, manufacturing, sales and support of turbofan and turboshaft aero engines for military and civil aircraft and helicopters; modules and components; and gas turbines for industrial application. MTU employed 7,910 people in 2010 and generated Euro 2.7 billion in turnover.

- **Eurocopter Deutschland GmbH**
  The Eurocopter group was born in 1992 from the merger between the helicopter divisions of Aerospatiale-matra (France) and DaimlerChrysler Aerospace (Germany). The group is now a subsidiary owned 100% by EADS (European Aeronautic, Defence and Space Company), one of the three largest aerospace groups in the world. Eurocopter employs approximately 4,995 and its turnover for 2010 was valued at Euro 1.5 billion (worldwide turnover: Euro 4.8 billion in 2010).

- **Rolls-Royce Deutschland LTD & Co. KG**
  Rolls-Royce Deutschland (RRD) operates as a German subsidiary of the UK aero engine firm Rolls-Royce. RRD develops, manufactures and supports gas turbine aero engines and related equipment and conducts repair and overhaul services. RRD produces turbofan engines in the 14-22 pound thrust range, auxiliary power units, and the BR700 family of turbofans. RRD has 3,000 employees in 2011 and generated Euro 1.1 billion in turnover (2010).

- **Liebherr-Aerospace Lindenberg GmbH**
  Liebherr-Aerospace Lindenberg GmbH employs currently 1,650 people and achieved a turnover of Euro 500 million in 2011. Its core business activities are development, production and support of operating systems for flight controls; electro-hydraulic primary flight control actuators; redundant fly-by-wire actuators; hydraulic, mechanical and electromechanical slat and flap operating systems; and associated analog and digital electronic control systems. Liebherr GmbH offers aircraft air management, flight control and actuation systems, hydraulic and landing gears systems.

- **Diehl Aerospace GmbH**
  Diehl Aerospace GmbH (Diehl) is a joint venture of Diehl and Thales. It develops, manufactures, and supports Cab and utility systems, cockpit and display systems, flight control systems, cabin lighting and security, cabin management systems, energy conversion and distribution; and aero engine regulation solutions. Diehl employs more than 1,250 people and achieved annual sales of Euro 207 million in 2009 (worldwide turnover: Euro 7.6 billion in 2010).

- **Kaefer Aerospace GmbH**
  Kaefer Aerospace is a producer of interior cabin designs for both aircraft and railways. They seek to design cabins for the future, incorporating new materials and innovative processes. Kaefer Aerospace GmbH was sold to the Hutchinson Group in April 2011 and 500 employees have taken on their work for the new company owner. The Kaefer group is still active in 50 countries and generated a worldwide turnover of Euro 1.2 billion in 2010.
• **Lufthansa Technik Logistik GmbH**

Lufthansa Technik is the MRO facility of Lufthansa German Airlines and is the largest MRO provider worldwide with sales of nearly Euro 4.0 billion and 20,297 employees in 2010. It provides maintenance and overhaul services on all main Airbus and Boeing aircraft types.

• **Premium Aerotec GmbH**

Premium is headquartered in Augsburg and focuses on the manufacturing of light materials and composites. The company employs a staff of 7,400 and has reported a turnover of Euro 1.3 billion in 2010. Construction of four new A350 hangars has started in Augsburg and at the Nordenham site, where big fuselage parts for the A 350 will be manufactured. Premium is also one of the primary suppliers for aircraft construction structures which are crucial for the development of new concepts, for example in the area of fibre-composite technologies.

2. Market and Sector Challenges (Strengths and Weaknesses)

The German domestic aerospace market is large, diversified and competitive. Germany’s equipment manufacturers and service providers are capable of supplying a large part of the domestic market. They also have considerable expertise in developing multi-use (civil and military) products, manufacturing sub-systems for aircraft, and integrating complete aircraft platforms, as well as possessing sophisticated and secure industry communication networks.

The German aerospace industry is also heavily integrated with the aerospace industries of its European partners, particularly France, Italy, Spain and the UK. Joint industrial collaboration on A&D projects is common - examples include Airbus, Eurofighter and Eurocopter.

Canadian exports of A&D equipment to Germany have been recognized for their high quality and innovation. However, Canadian firms may find it difficult to compete against those from EU countries, given the trade advantages of the common market and the close proximity of EU countries. Moreover, German manufacturers of equipment and component parts have a very strong presence in the European market and are closely linked to French and Spanish manufacturers through EADS and have close ties with the United Kingdom.

Highly recommended strategies to enter the German aerospace and defence market include developing licensed production options and joint ventures, hiring a local agent and most importantly, demonstrating a long-term commitment to the market. Export-ready Canadian companies seeking to become suppliers to German public- and private-sector A&D customers may wish to contact the Canadian Embassy in Berlin for further advice.

Despite promising perspectives, each of the three sectors has to deal with some challenges. First of all, the aerospace segment’s immense growth evokes increased airplane production. This implies more extensive coordination requirements along the supply chain, as producers demand for higher delivery quantities. However, this movement demands not only reaction from Airbus and Boeing, which have had a duopoly in the aircraft production industry so far, but also from firms that have recently come into the market. International competition is constantly increasing as companies from mostly emerging markets have successfully started entering the segment. The Chinese operation Avic has gained a considerable turnover within their home market, showing the high importance for Airbus’ firm establishment in that country. In addition to Avic, there are a number of further competitors threatening the dwindling duopoly, such as Embraer, Bombardier, Comac and Sukhoi.

Remaining competitive in this fast changing environment implies that product design, development and manufacturing techniques must continually be adapted to meet new requirements. Innovation goes hand in hand with new technology, which will have the highest impact on the future concepts,
such as non-conventional models, novel drive concepts, intelligent structures or completely virtual airplanes. In order to keep up with the changing trends, one of the specific challenges is the necessity of a considerable number of extra employees. Especially the highly understaffed “composites” segment is reliant on the 700 contract workers that have been hired for the provision of support services.

An increasing number of first- and second-tier prime companies are outsourcing more components and systems to lower-tier suppliers. The relatively high production costs in Germany push companies to move part of their business to other countries. Another possible explanation is the global integration of aerospace and defence firms, in which outsourcing is a way to deepen presence and understanding of foreign markets.

The defence sector has to deal with certain issues as well, such as the Ministry of defence’s savings plan, which is pushed to reduce its annual budget to Euro 30.4 billion by 2015. This measurement has immense impacts on the German military, as a comprehensive restructuring phase is unavoidable. First of all, the service personnel will be reduced from 220,000 to about 185,000. In addition, despite a growing demand, the budget cuts imply a reduction in the number of new aircrafts. Another potential problem to mention is the lack of new programs and projects as a consequence of lower budgets. Many of these projects are of high importance, not only to the German military itself, but also to the suppliers in the industry undertaking the projects. All in all, these aspects imply that the military has no other choice than fulfilling the saving objectives, but on the other hand has to accept potential competency losses.

Concerning the space sector, it is important that the Government gives direction to the kinds of programs to be implemented. The Government’s space strategy needs to be consistent and well-coordinated with concrete projects in order to ensure long-term efficiency.

Canadian exporters are recommended to conduct additional market research to see whether a market for their products exists, either by visiting Germany or attending major trade events. Trade shows and related events such as ILA 2012 in Berlin are important to the German aerospace industry as they offer a considerable amount of exposure to the international A&D community.

3. Sub-Sector Identification

3.1 EADS / Airbus

Presently Airbus, EADS’ largest subsidiary, belongs to the most successful companies worldwide. 1419 new orders have been requested in 2011, which equals three times the firm’s supply capacity. The number of total orders is 4437 and has a value of Dollar 560 billion. For that reason, Airbus plans immense production increases and the creation of another 4000 employment positions.

The company currently manufactures 40 single aisle A320 family aircraft per month, which is an increase from 38 in August 2011 and from 36 in January 2011. Until the fourth quarter of 2012, the company even plans to raise the monthly production to 42 airplanes. The organisation’s A330/A340 family aircraft currently produces 9 new exemplars every month and plans to extend the amount to 10 in the second quarter of 2013. The production rate of the A380 was at 45 aircraft in the year 2010. Total deliveries during the same year for all types of aircraft delivered by Airbus were at 510 planes.

The new A320neo was launched in December 2010 and is an enhanced version of the A320 family. As
the abbreviation neo (“new engine option”) reveals, two new engine options – the PW1100G PurePower from Pratt & Whitney and CFM International’s LEAP-X – are major changes to other models. This new technique, in combination with Airbus’ Sharklets large wing tip devices, results in an immense efficiency increase. Fuel usage is reduced by 15%, enabling 500 extra nautical miles of flight distance (950 kilometres) or an additional payload of two tonnes. Thus, the aircraft is also responsive to rising environmental demands and standards, as each aircraft’s fuel savings translate into 3,600 tonnes less CO2 per year. The Sharklets bring more than 3.5% savings in overall fuel consumption on long route sectors to A320 aircraft, while also improving takeoff performance and increasing payload by 500 kg – allowing for additional range or more passengers to be carried. Furthermore, the enhancements allow for less thrust to be used during takeoff, which reduces airport noises. Additional advantages of the new Sharklets for operators include rate-of-climb, higher optimum altitude, reduced engine maintenance costs and higher residual aircraft value. Despite the A320’s efficiency enhancing changes, the total difference to the existing models is not more than 5%. This is a great advantage to Airbus operators and customers because it matches well the existing A320 family fleets.

A main topic for Airbus is currently the redistribution of the company shares. The automotive company Daimler and the French firm Lagardère own 15% of EADS’ shares each. Daimler has yet the intention to sell its 15% stake in EADS, planning to concentrate its business exclusively on the car market. The problem is that the company has experienced difficulties finding a buyer in Germany who is interested in purchasing the shares. From a German perspective, the company shares need to be sold to a German buyer in order to keep up the currently existing equilibrium of ownership between the two countries. Therefore, after the “Christian Democratic Union” (CDU) and the initially opposing “Free Democratic Party” (FDP) have achieved the agreement to state buy part of EADS, the German government began to arrange the acquisition of 7.5% of Daimler’s shares. The stake will be bought via the state-controlled development bank KfW, while the other half of the shares will be kept in Daimler’s possession. However, price negotiations are still to take place and, due to the Dutch takeover law, the final contract will not be signed before July 2012. Although details about the acquisition of Daimler’s shares still need to be clarified, EADS has solved the issue of leadership. On 26th January, the Board of Administration appointed current Airbus CEO Tom Enders to replace Louis Gallois, as CEO of the EADS holding company in June 2012.

3.2 Defence

With a yearly turnover of Euro 17 billion (app. 0.7% of GDP) and an employment number of 80,000 people (including military, tanks and weapons manufacturers), the German defence industry is relatively small as compared to international standards. Nevertheless, the German defence industry has high technological standards and is a successful partner in several international cooperation agreements. Germany considers its defence industry to be of strategic importance for its economy, foreign policy and security. It values defence as a driver of key technologies and innovation.

The German government’s 2011 Defence Policy Guidelines claim to restructure the procurement system with regard to increased efficiency and short-term responses to urgent operational requirements. Commercial off-the-shelf solutions enjoy high priority, as well as C3 capabilities (command, control and communication), reconnaissance, intelligence-gathering capabilities, equipment to enhance mobility, logistic support, and advanced weapon systems. Additionally, there are attempts to create a more open and more integrated European defence market.

With approximately 22,600 high tech jobs in 2010 (+ 6.3% to 2009) and a turnover of €6.5 billion (+
7.2%), the military aerospace industry contributes significantly to the German defence industry and to German security both domestically as well as internationally.

Canadian firms wishing to participate in German or European programs should ideally pursue a two-track strategy by contacting the requesting authority or user (German Armed Forces, European Deployment Forces) and the contracting or procurement agency or organization such as the Federal Office for Defence Technology and Procurement (BWB) on the national or OCCAR, a multilateral armament management organisation, on the European level. The embassy can assist in identifying and contacting the right persons in these organisations.

For more information on Germany’s defence sector, please refer to our market report, available on the Canadian Trade Commissioner Service website.

Canadian Government Contacts

**Canadian Embassy Berlin**
Email: hendrik.taulin@international.gc.ca
Website: [www.canada.de](http://www.canada.de)

**Regional Offices in Canada**
To locate the regional office in your province visit the [Our Trade Offices](http://Our Trade Offices) page on the Canadian Trade Commissioner Service website.

Federal and Regional Aerospace Groups and Associations

**ALROUND**
Email: info@alround.de
Website: [www.alround.de](http://www.alround.de) (German only)

**Bavaria (Bavarian Aerospace Group)**
Email: info@bavAIRia.net
Website: [www.bavAIRia.net](http://www.bavAIRia.net)

**Berlin Brandenburg Aerospace Alliance**
Email: office@bbaa.de
Website: [www.bbaa.de](http://www.bbaa.de) (German only)

**German Aerospace Industries Association**
Email: info@bdli.de
Website: [www.bdli.de](http://www.bdli.de)

**Hanse Aerospace**
Email: info@hanse-aerospace.net
Website: [www.hanse-aerospace.net](http://www.hanse-aerospace.net)

Ministries, Research and Transportation

**German Aerospace Research Establishment**
Email: pressestelle@dlr.de
Website: [www.dlr.de](http://www.dlr.de)
Aerospace/Defence

BMVG - Federal Ministry of Defence
Email: poststelle@bmvg.bund.de
Website: www.bmvg.de or www.bundeswehr.de (German only)

BWB - Federal Office for Defence Technology and Procurement
Email: bwb@bwb.org
Website: www.bwb.org

OCCAR - Organisation for Joint Armament Cooperation
Email: info-occar@occar-ea.org
Website: www.occar-ea.org

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