

# Aerospace Industry

“The long and successful tradition of the aviation industry in the Czech Republic has formed an outstanding and experienced workforce with an intense passion for everything related to flying. This combined with capital, extensive industrial and engineering expertise, technology and the leadership of GE, is a great formula for growth. The certification in 2010 of the new H80 engine developed and built here is perfect evidence of this. The H80 is the first GE engine designed, built and certified outside of the United States ... all under one roof in the Czech Republic”

*Milan Slapak, Commercial Director, GE Aviation Czech*



## REASONS TO INVEST IN THE CZECH REPUBLIC

- Quality standard based on the "best practices" and long experience
- Highly skilled people who are "as thorough as Germans and as innovative as Italians"
- Strong integration capabilities based on in-depth knowledge of individual components and a high rate of effectiveness in final assemblies

## BASIC FACTS

### PROFILE

- The Czech aerospace industry is based on tradition, continuity and a culture enabling the passing down and broadening of experience from generation to generation.
- In comparison with other countries, the Czech Republic has progressively advanced from lower categories of aerospace production to more sophisticated products such as commercial aircraft and military jets over more than 90 years.

### EXPERIENCE

- 32,000 aircraft, 37,000 aero engines delivered
- 11,000 hydraulic components, 10,000 landing gears, 8,000 on-board instruments delivered
- 7,000 air-conditioning systems and 5,000 APUs delivered
- Aerostructure programs with global market leaders
- Partnership with major European Tier 1 suppliers
- Cooperation with US and Russian aircraft/engine manufacturers
- More than 10 manufacturers have successfully certified according to AS9100 and EASA Part 145.

## PRODUCTION

- More than ninety years of experience with development and production of aerostructures have brought forth various well-proven manufacturing processes, identification of the most effective ones and their progressive improvement. As a result, the Czech aerospace industry maintains a high standard of quality and reliability in all of its products.
- The greatest benefit for the production of final assemblies is the integration abilities of the Czech firms and the aviation professionals and their extensive know-how in the aerospace sector.
- Established in 2009 in the South Moravia region, the Moravian Aerospace Cluster is the newest player on the market of integrators. This cluster represents a network of 23 companies that develop and share unique know-how primarily among members as well as with global partners.

## CAPABILITIES

- **Utility Aircraft**
  - STOL aircraft (up to 7,000 kg MTOW)
  - Surveillance / reconnaissance aircraft
  - Training LSA, UAVs
- **Aero Engines / Accessories**
  - Turboprops (up to 880 SHP)
  - Jets (up to 2.0 kN)
  - APU/ECS, GPU
  - ECU/FADEC, EMM
  - Variable pitch propeller, composite blades
- **Aerostructures**
  - Assemblies (airframes, airframe sections, wings, central wingbox, tails)
  - Subassemblies, metal and composite parts
- **Avionics / Power Electronics**
  - Multifunctional systems / Integra EFIS/EMS
  - Multifunctional aviation displays / modules
  - Flight controls, monitoring (structural life monitoring units)
  - Interfaces, ground testing bays
- **Aircraft System**
  - Electro-hydraulics, fuel, air conditioning
- **Others**
  - Precision machining (all material processed, aluminium, stainless, titanium)
  - Casting capabilities (minimum wall thickness up to 0.6 mm, dimensional accuracy:  $\pm 0.1$  mm)



1919

Major aircraft and engine manufacturers established



1938

Avia B-35 achieves similar flying characteristics as the famous Spitfire



1956

Czechoslovak airlines is the first carrier to establish successful operation with jet aircraft



1976

Czech-made Zlin 50 aerobatic aircraft achieves numerous successes in world championships

## RESEARCH AND DEVELOPMENT

- Three aeronautical research and test facilities (VZLU – Aeronautical Research and Test Institute, HTS – Honeywell Technology Solutions, VUT – Brno University of Technology Aerospace Research Centre)
- More than five technical universities involved in designing of aerospace applications

## LATEST ACHIEVEMENTS

- GE Aviation H-80 engine
- PBS TJ100 engine family (weighing 20 kg)
- UNIS FADEC control for TJ100/TP100
- Autonomous Parachute Air Supply System
- Glass cockpit – TL-Elektronik Integra
- Structural Life Monitoring Units
- Agentfly (a multi-agent system enabling large-scale simulation of civilian and unmanned air traffic – Czech Technical University in Prague)
- VUT Marabu (unique surveillance, reconnaissance aircraft – Brno University of Technology)
- Nanocoating (Technical University of Liberec)

## CASE STUDY – GE AVIATION CZECH

- Local development and certification of the new H80 engine leveraging GE's global infrastructure and resources
- Self-contained business including R&D, assembly, testing, production and service
- Massive investment in plant and equipment
- Continuous implementation of GE standards such as Six Sigma and lean manufacturing
- 400 employees comprising an operation with global responsibility

## CASE STUDY – HONEYWELL TECHNOLOGY SOLUTIONS – HTS BRNO

- Working on cutting edge technology, the HTS Brno Aerospace team adheres to stringent aeronautical standards and meets the high expectations of regulatory authorities.
- Active in communication, navigation, surveillance and guidance systems, cabin products, electronic hardware, flight control systems, digital controllers, development support and engineering test services in Brno in the Czech Republic, the Honeywell Aerospace team has found perfectly suited environment for making flying much safer.

## CZECHINVEST'S SERVICES

- Full information assistance
- Tailor-made visits
- Maximisation of networking capacity
- Handling of investment incentives
- Access to EU structural funds
- Business properties identification
- Business infrastructure development
- Supplier /JV/ acquisition partner identification
- Comprehensive aerospace database

## EDUCATION SYSTEM

The Czech education system meets the needs of a competitive economy. According to a 2008 OECD study, the Czech Republic has one of the strongest positions regarding the percentage of students graduating in engineering and manufacturing fields. For generations the Czech educational system has generated high-level, technical problem-solving skills in environments where standard solutions are inadequate. An abundant supply of graduates ensures continuous enrichment of the country's available labor pool.



1988

Introduction of the LET L610 40-seat commuter aircraft with pressurized cabin and exceptional design



1997

Aero270 single-engine business aircraft designed by Aero Vodochody



2010

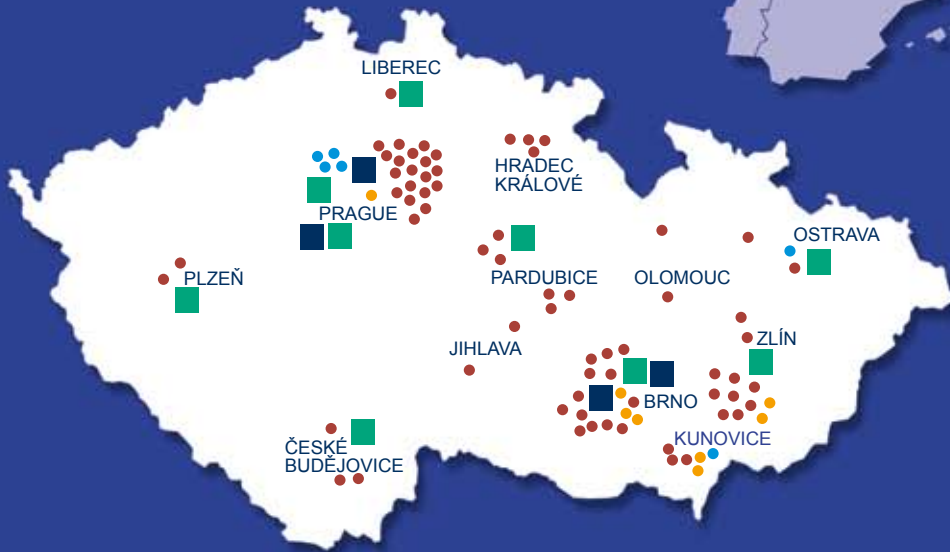
Evektor EV-55 successfully rolled out



2010

New H80 engine certification and entry into service by GE Aviation Czech"

-  Aerospace R&D Centre
-  Aerospace Institute/Technical University
-  Aerospace Manufacturer
-  MRO Centre of Excellence
-  Aerospace Secondary Professional School



“The sky is our sea”

**OUTSTANDING QUALITY OF LIFE**

The Czech Republic boasts extraordinary quality of life.

The IMD World Competitiveness Yearbook’s Quality of Life Index ranks the country twentieth in the world and first in the CEE region. But one must experience the local cultural heritage, sport facilities and natural beauty to fully grasp the joys of living in the Czech Republic.

The country offers a full range of services that are required by expatriates and their families, including multilingual international schools covering all levels from kindergarten to MBA studies, attractive housing, shopping malls and first-class recreational facilities including over 80 golf courses and 12 UNESCO heritage sites.



**CZECHINVEST’S HEADQUARTERS**

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