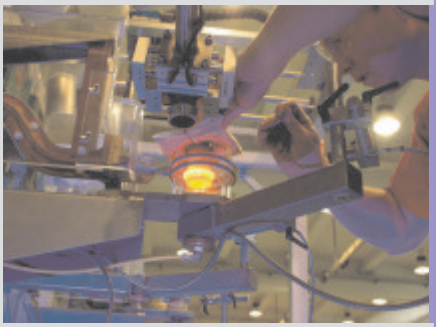
THE AVIATION SECTOR IN POLAND



PAI Polish Information and Foreign Investment Agency
www.paiz.gov.pl

1. Characteristics of the aviation sector in Poland

- The Polish aviation industry has a long tradition going back to the beginning of the 20th century. After a few years of decline, the sector once again started to grow, which is a result of a successful restructuring process in the Polish aviation sector and cooperation with international aviation companies. Moreover, thanks to the growth in aircraft and helicopter sales, the financial standing of companies on the aviation market has improved.
- Poland is famous for the production and maintenance of airplanes of all types. Manufacturing companies in Poland produce light sports, passenger, agricultural and training airplanes, as well as helicopters, gliders, and aircraft parts and accessories.
- Approximately 55 companies operate on the Polish aviation market. A significant share of their output is exported, mainly to such countries as the USA, Venezuela, Italy, Greece, Canada, Spain, Germany, South Korea, Indonesia, Vietnam and Iraq.
- Total employment in the aviation sector is 16,000.
- After Poland's accession to the EU, there was increased competition in the civil aviation sector in Poland caused by liberalization of the air transportation industry and implementation of the "open skies" agreement. Positive changes may be observed on the civil aviation market, which is reflected by the 26% growth in the number of passengers at Polish airports in 2005 compared to 2004. The number of connections offered by new budget carriers and traditional carriers is growing rapidly. There is also a trend toward lower ticket prices.

2. Most important companies in the Polish aviation industry

- There are many companies operating in the Polish aviation industry. The table below presents some of them.

3. Cooperation connections in the aviation sector in Poland

- The main Polish cooperation within the aviation sector is the participation of LOT Polish Airlines in Star Alliance. Launched in May 1997, Star Alliance is now the largest airline alliance in the world, with 18 members: Air Canada, Air New Zealand, ANA, Asiana Airlines, Austrian, bmi, LOT, Lufthansa, SAS, Singapore Airlines, South African Airways, Spanair, Swiss, Thai Airways International, United, US Airways, Varig and TAP. Under the terms of cooperation among the partner airlines:
  - frequent flyer programme integration allows airline miles to be earned and redeemed on all members of the alliance at the same level,
  - premium customers of the alliance have access to all members' airport lounges,
  - flight schedules are coordinated to permit almost seamless travel, which may include several different carriers within the alliance on a single ticket,
  - special fares for round-the-world and similar travel on alliance members offer discounts over booking individual itineraries,
  - customer service processes are harmonized in an effort to promote a consistent experience,
  - cooperation in development of a common information technology platform.
- The creation of Star Alliance was a milestone in airline history due to its size. It sparked the formation of rivals, notably Oneworld and SkyTeam.
- The membership of LOT Polish Airlines in the coalition of Star Alliance strengthened the position of LOT on the Canadian and American markets, thanks among other things to the cooperation with Air Canada (AC) and United Airlines (UA). The carriers cooperate with each other not only in terms of direct connections to Toronto, Chicago and New York, but also through selected European ports, e.g. in Frankfurt, Munich and Zurich. The code share contract with UA was concluded in October 2003, and at the beginning covered inter-American flights through US transit points in New York and Chicago. In the near future the list of ports included in code share flights of LOT/UA will include Paris, Brussels, Amsterdam and London. This will improve LOT's offer on the Polish and American markets.
  (*Source: www.lot.com, www.staralliance.com*)

4. Regional, local and international airports in Poland

- Types, number of airports and number of air connections

The system of public airports in Poland used for passenger transportation includes 11 regional airports and one dominant capital airport (Frederic Chopin Airport, Warsaw), which handles most passengers using air transport.
The classification of the airports in Poland complies with the criteria of TEN (Transport European Network) as defined in the Decisions of the European Union Council (1692/96 and 1346/01). According to the statistical data there are the following types of airports in Poland:

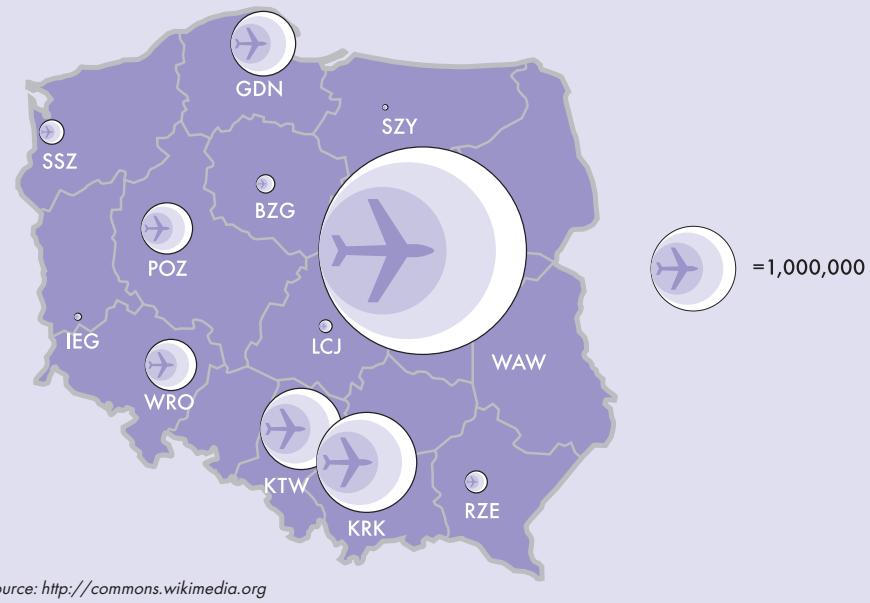
- international connecting point
  - Warsaw-Okęcie (*www.lot.com*)
    Warsaw Frederic Chopin Airport remains the market leader among Polish airports. It is operated by Polish Airports State Enterprise (PPL). LOT Polish Airlines, the largest air carrier in Poland, has been present on the market for more than 77 years. The company services one of the largest and fastest developing European markets, offering its clients a convenient network of air links as well as knowledge of the region, its needs and the speed of change. LOT is a medium-sized European airline, but its fleet is one of the youngest and most technologically advanced. In 2005, 7,071,667 passengers and 48,535 tonnes of cargo were handled at Warsaw Frederic Chopin Airport, which accounted for 61% and 74% of overall passengers and cargo volume, respectively, handled at the main Polish airports in 2005.

Company	Business profile
Institute of Aviation	engineering and design, construction, installation, testing and commissioning of turbine and piston engine parts and assemblies; engineering and design of aircrafts (for example: I – 22 Iryda); research and development work in the field of aviation
PZL Świdnik S.A.	production of helicopters (PZL-SOKÓŁ, PZL-KANIA, PZL SW-4, Mi-2, PZL Mi-2plus) and gliders (PW-5, PW-6); cooperation products and services (for example central wing box assembly for ATR-72 airplane – Aerospatiale Matra, design and manufacture of fuselage for new AB-139 helicopter – Agusta – Bell)
WSK PZL-Krosno S.A.	production of landing gears for aeroplanes and helicopters; production of undercarriage for aircrafts and other equipment for aviation
PZL Rzeszów S.A.	production of components for turbine engines
PZL Kalisz S.A.	production of aircraft piston (radial) engines and hardware (components, subassemblies, assemblies) for engines of this type
EADS PZL Warszawa-Okęcie S.A.	production of a range of single engine aircraft including: PZL-104 MA WILGA 2000, PZL-106 BTU-34 or BT-601 TURBO KRUK, PZL-130 TC-II ORLIK
PZL Mielec	production of aircraft (M28 SKYTRUCK Passenger/Cargo Transport, M28B BRYZA Maritime Reconnaissance & Patrol, M18 DROMADER Agricultural & Fire-Fighting, M26 ISKIERKA Air Sports & Trainer, M93M) and aircraft components
Goodrich Krosno Sp. z o.o.	production of landing gear components for commercial and military aircraft

Source: data from company websites

- community connecting point
  - Cracow-Balice (*www.lotnisko-balice.pl*)
    Cracow-Balice Airport is a facility used jointly by military and civil aircraft. John Paul II Cracow-Balice International Airport Ltd manages the civil part of the airport. The total area of the airport is 426 ha, including approximately 24 ha managed by John Paul II Cracow-Balice International Airport Ltd. 1,586,130 passengers and 1,568.7 tonnes of cargo were serviced at the John Paul II Cracow-Balice International Airport in 2005.
- regional and accessibility point
  - Gdańsk-Rębiechowo (*www.airport. gdansk.pl*)
    Lech Wałęsa Airport in Gdańsk-Rębiechowo is one of the three main international Polish airports. Its position is associated with a well-developed network of domestic and international transport connections provided in response to the growing demand for business and tourist travel. It services mainly the agglomeration of Gdańsk, Gdynia and Sopot and the whole Pomeranian Province. Gdańsk Lech Wałęsa Airport serviced 677,946 passengers and 3,433.24 tonnes of cargo in 2005, which represented 46.16% growth in the number of passengers handled and 10.73% growth in the volume of cargo handled.
  - Katowice-Pyrzowice (*www.gtl.com.pl*)
    Katowice International Airport in Pyrzowice has an important influence on the province of Silesia and to some extent Opole and Małopolska provinces. The total cargo transport serviced at the airport in 2005 was 5,636 tonnes and the number of passengers was 1,092,385.
  - Poznań-Ławica (*www.airport-poznan. com.pl*)
    Poznań-Ławica Airport is one of the oldest regional airports in Poland. It has been in regular operation since 1913, originally as a German military facility. Today Poznań-Ławica Airport is a dynamically expanding business. There are several factors in its attractiveness: a favourable geographical position and the highly developed economy of the Wielkopolska region. The Poznań International Fair and many joint ventures contribute to the growth of air traffic.
  - Wrocław-Starachowice (*www.airport. wroclaw.pl*)
    The history of Copernicus Airport in Wrocław goes back to the 1930's, when Starachowice Airfield was built for the needs of the German air force. In June 1945 civil aviation activities were started with a circular airlink, Warsaw-Łódź-Poznań-Wrocław-Katowice-Łódź-Warsaw. The joint-stock company Port Lotniczy Wrocław S.A. was established in January 1992.
    In 2005, 20,560 air operations took place at Copernicus Airport Wrocław.
  - Szczecin-Goleniów (*www.airport.com.pl*)
    Szczecin-Goleniów Airport was built in 1956 as a military airport. The civil airport in Szczecin-Goleniów was established in 1967 and is still being developed. In 2001 a new passenger terminal was built, and in 2005 its development began. Since April 2006 the new modern passenger terminal has been in use, which increased departure efficiency to a million passengers yearly. In 2005, 100,847 passengers were serviced at Szczecin-Goleniów Airport, representing an increase of 11.05% over 2004. The growth rate in cargo transport was 12.63%.
  - Rzeszów-Jasionka (*www.lotnisko-rzeszow.pl*)
    Rzeszów-Jasionka Airport, with an area of over 560 ha, operates within the organizational structure of Polish Airports State Enterprise (PPL) as a regional port handling international air passenger and cargo traffic operations. Rzeszów Airport accommodates the newest runway in Poland. Its length of 3,200 metres makes it one of the two longest runways in Poland. The runway navigational aids enable approach and landing operations by all types of aircraft flying from all over the world in any conditions and at any time. 91,499 passengers and 487.80 tonnes of freight were handled at Rzeszów-Jasionka Airport in 2005.
  - Bydgoszcz-Szwederowo (*www.plb.pl*)
    The beginning of Bydgoszcz Aviation dates back to World War I, when it was founded by German aviation authorities. Activities aimed at restarting the civil Bydgoszcz Airport were undertaken in 1992 due to economic changes taking place in the country. In order to open the airport, Bydgoszcz Aviation Association Sp. z o.o. was founded, which operated until June 1995 and then was transformed into the joint-stock company Bydgoszcz Airport SA. The company continues to manage the airport and has transformed the regional airport into an international one. Bydgoszcz I.J. Paderewski Airport operates regular connections with Warsaw, charter flights and general aviation. Since 30 October 2005, I.J. Paderewski International Airport has been operating daily flights between Bydgoszcz and London. In 2005 it handled 38,682 passengers (52.57% more than in the previous year) and 338.94 tonnes of cargo (26.47% growth in comparison with 2004).
  - Łódź-Lublinek (*www.airport.lodz.pl*)
    Łódź-Lublinek Airport was opened in September 1925. In 1996, after modernizing the airport building and restructuring the air strip, the runway and the parking apron, as well as installing new navigation lights and power supply facilities, it was awarded the status of an international airport. Now, Władysław Reymont Łódź Airport is in a phase of intensive development. The enlargement of the airstrip, parking apron and runway is coming to an end. The main target of the implemented investment is to adapt the airport to service Boeing 737 aircraft and create an attractive connection network. In 2005, 18,063 passengers were serviced at Łódź-Lublinek Airport.
  - Zielona Góra-Babimost (*www.lotnisko.zielonagora.pl*)
    Zielona Góra-Babimost Airport is an international airport located in the western part of Poland, 34 km northeast of Zielona Góra, the capital of Lubuskie province. It occupies a total area of 450 ha and contains cargo and passenger terminals, technical support buildings, safety installations and equipment for passenger and cargo services. There are also 16 former military hangars available, which can easily be modified for cargo storage. The airport is located at the crossroads of two major European transportation corridors, North-South (connecting Scandinavia and Southern Europe) and West-East (connecting Western and Eastern Europe).
    Zielona Góra-Babimost Airport does not play an important role in the Polish aviation market, as it handled only 427 passengers and no cargo in 2005.

AIRPORTS IN POLAND (PASSENGERS IN 2005)



Source: http://commons.wikimedia.org

TRANSPORT OF CARGO AND PASSENGER TRANSPORT IN 2005

City	Year founded	Passengers	Transport of cargo (tonnes)	Owner	Shares held by PPL
Warsaw	1920/1934	7,071,667	48,535.00	Polish Airports State Enterprise (PPL)	100.00%
Cracow	1964	1,564,338	3,254.68	Port Lotniczy Kraków-Balice Sp. z o.o.	85.04%
Katowice	–	1,083,517	5,618.50	Górnośląskie Towarzystwo Lotnicze S.A.	20.07%
Gdańsk	1919/1974	677,946	3,433.24	Port Lotniczy Gdańsk Sp. z o.o.	37.61%
Wrocław	1945	454,047	1,377.80	Port Lotniczy Wrocław S.A.	47.62%
Poznań	1921	399,255	2,165.99	Port Lotniczy Poznań-Ławica Sp. z o.o.	63.64%
Szczecin	1967	100,847	655.89	Port Lotniczy Szczecin-Goleniów Sp. z o.o.	59.23%
Rzeszów	1959	91,499	487.80	Polish Airports State Enterprise (PPL)	100.00%
Bydgoszcz	1929	38,682	338.94	Port Lotniczy Bydgoszcz S.A.	27.94%
Łódź	1925	18,063	0	Port Lotniczy Łódź Lublinek Sp. z o.o.	0.00%
Zielona Góra	1977	427	0	Polish Airports State Enterprise (PPL)	100.00%
Szczytno	1996	0	0	Porty Lotnicze Mazury-Szczytno Sp. z o.o.	32.52%
Total		**11,501,242**	**65,867.84**		

Source: Civil Aviation Office (ULC)

  - Szczytno-Szymany (*www.airport.szczytno. pl*)
    Szczytno-Szymany International Airport is the only airport designed for domestic and international air traffic service in Warmia-Mazury province. But it does not use its potential and is temporary closed for air traffic. In 2005 no transport activity was undertaken by Szczytno-Szymany International Airport.
- local airports
  According to the Ministry of Infrastructure there are 42 local airports in Poland. The majority of them, like Kielce-Masłów Airport and Zielona Góra-Przylep Airport, are managed by Polish Aeroclub. Others are administered by the Ministry of Defence (e.g. Radom-Sadków Airport), the Military Property Agency (e.g. Modlin Airport) or military aviation plants (e.g. airport in the area of PZL Świdnik and PZL Mielec).
  After liberalization of the air transport market in 2004 most of the regional airports (chiefly those located in major cities) have developed their own international connections, particularly with the support of cheap airlines like easyJet, Germanwings, Ryanair, SkyEurope and Wizz Air.
- Plans for airport infrastructure development
  According to a strategic document prepared by the Ministry of Infrastructure in 2003,[1] the plan for airport infrastructure development includes the following schemes:
  - further development and modernization of Warsaw Frederic Chopin Airport,
  - building a new airport in Warsaw,
  - development of John Paul II Main Regional Airport in Cracow-Balice as a supporting airport for Warsaw servicing international short- and medium-distance flights,
  - development of regional airports to service international short- and medium-distance flights and domestic flights,
  - development and modernization of local airports' infrastructure.
- Profile of transport, forecasts

[1] "Informacja o kierunkach rozwoju lotnictwa cywilnego do roku 2010"

Air passenger transport in 2005					
	passengers		passenger-kilometres		
	absolute numbers	2004=100	Million	2004=100	
Total	4,637,098	114.7	8,503.7	120.3	1,834
National transport	849,566	97.7	248.3	97.3	292
International transport	3,787,532	119.3	8,255.4	121.1	2,180

Source: GUS, Transport - Activity results in 2005

Air freight transport in 2005					
	tonnes		tonne-kilometres		Average distance (km)
	absolute numbers	2004=100	Thousand	2004=100	
Total	33,899	117.5	106,502	114.0	3,142
National transport	5,784	129.0	1,922	96.5	332
International transport	28,115	115.4	104,580	114.3	3,720

Source: GUS, Transport - Activity results in 2005

Forecasts of air passenger transport in Polish regional airports (thousands)				
	2005	2010	2015	2020
John Paul II International Airport, Cracow-Balice	1,096.47	1,847.62	2,948.44	4,641.55
Lech Wałęsa Airport, Gdańsk	727.00	1,531.00	2,026.00	2,236.87
Katowice International Airport, Pyrzowice	722.00	1,294.47	2,110.56	3,165.19
Poznań-Ławica Airport	570.00	1,539.00	1,964.20	2,412.73
Copernicus Airport, Wrocław	536.00	1,042.80	1,308.00	1,465.00
Szczecin-Goleniów Airport	260.00	807.00	1,450.00	2,180.00
Rzeszów-Jasionka Airport	160.00	450.00	570.00	700.00
I.J. Paderewski Airport, Bydgoszcz	30.91	115.95	200.00	350.00
Zielona Góra-Babimost Airport	20.17	50.50	73.50	100.00
Łódź Airport	n/a	400.00	500.00	700.00
Szczytno-Szymany International Airport	7.80	86.10	200.00	360.00
Frederic Chopin Airport, Warsaw	6,259.25	7,450.78	9,658.28	12,304.32

Source: E. Marciszewska, D. Kaliński, "Transport lotniczy (Ekspertyza)", Warszawa, 2004

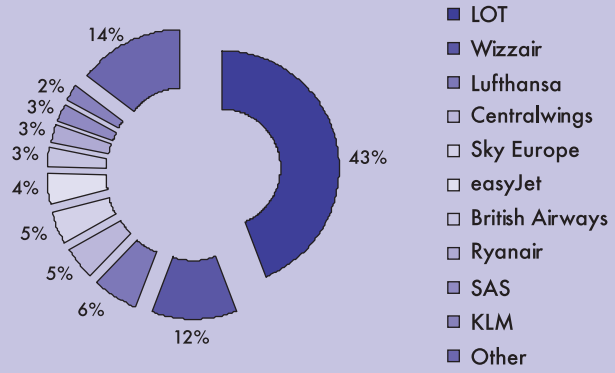
Forecasts of air cargo transport in Polish regional airports (in tonnes)				
	2005	2010	2015	2020
Frederic Chopin Airport, Warsaw	40,764	55,423	84,095	140,312
John Paul II International Airport, Cracow-Balice	3,733	5,738	8,384	12,277
Lech Wałęsa Airport, Gdańsk	3,105	7,606	10,075	11,123
Katowice International Airport, Pyrzowice	3,500	6,900	10,800	15,300
Poznań-Ławica Airport	5,016	11,370	19,492	33,127
Copernicus Airport, Wrocław	2,001	5,666	7,797	9,319
Szczecin-Goleniów Airport	680	2,469	4,654	6,420
Rzeszów-Jasionka Airport	5,000	32,000	43,000	50,000
I.J. Paderewski Airport, Bydgoszcz	264	741	n/a	3,000
Zielona Góra-Babimost Airport	600	2,000	2,800	3,700
Łódź Airport	n/a	10,000	50,000	150,000
Szczytno-Szymany International Airport	n/a	1,000	2,500	10,000

Source: E. Marciszewska, D. Kaliński, "Transport lotniczy (Ekspertyza)", Warszawa, 2004

5. Low-cost airlines transport services and their growth forecasts

- According to the Civil Aviation Office, there were nine low-cost airlines operating on the Polish market in the first half of 2006. The leader among them, as far as the number of passengers is concerned, remains WizzAir. Ryanair is ranked second. They are followed by Centralwings, Sky Europe, easyJet, Germanwings and Norwegian Air Shuttle. These airlines are among the 10 largest carriers in Poland.
- Budget carriers transported almost 3 million people in the first half of 2006. That represented a spectacular historical record, as the number of the passengers transported in the first half of 2005 was 1.24 million. Centralwings generated a growth rate exceeding 100%. Germanwings and Sky Europe have a growth rate of almost 15%.
- Low-cost carriers were responsible for 95.56% of the total market growth on regular routes in the first quarter of 2006. At the same time, their market share rose by 18 percentage points compared to the same period in 2005.
- The rate of market growth is expected to slow, but according to some carriers the Polish market may still grow 20-30 percent annually in the coming years, especially given that new air connections are to be introduced. On the other hand, market analysts stress that air transport development requires significant investment in infrastructure, for example in Polish regional airports.

LEADING AIRLINES IN POLAND IN 2005 (MARKET SHARE BY PASSENGER TRANSPORT)



Source: WYG International, elaboration on the basis of GUS data

Centre	Location	Activities and employment
Avio Polska Sp. z o.o.	Bielsko-Biała	Engineering Centre, for design and analysis of selected high-tech aeronautical engine components: • turbine disks, blades, vanes, structures; • gearboxes; • space propulsion parts; Avio Polska Sp. z o.o. has also established a Product Unit for manufacturing high-tech turbine blades for aeronautical engines. Avio Polska Sp. z o.o. employs about 170 engineers.
GE Engineering Design Centre – EDC	Warsaw	The centre designs jet engines, including disks, turbine blades, airfoils and combustors. It employs 150 engineers.
Pratt & Whitney Material Research Centre	Warsaw	• analytical research; • testing of aircraft engine materials and structures; The centre employs no engineers.
Pratt & Whitney Design Unit	Rzeszów	Design Unit provides services involving aviation gearboxes as well as parts and assembly for turbine engines.

6. Aviation engineering centres in Poland

- There are four engineering design centres for aviation in Poland:
- Research and development work in the field of aviation is also conducted by companies operating on the aviation market, such as PZL Świdnik, PZL Mielec, and PZL Rzeszów.
- Companies often cooperate with each other. An example of successful cooperation is the Polish aerospace industrial cluster, "Aviation Valley," which also cooperates with Rzeszów University of Technology.
- Rzeszów University of Technology is also a coordinator of the Centre of Advanced Technology "AERONET – Aviation Valley," which was established in order to conduct interdisciplinary, collective and long-term research and training programmes and effective implementation and commercialization of new technologies aimed at the aerospace industry. The AERONET partners are Lublin University of Technology, Łódź University of Technology, Silesian University of Technology, University of Rzeszów, Institute of Fundamental Technological Research (Polish Academy of Sciences) and the Aviation Valley Association. *(www.aeronet.pl)*
- As far as research and development in the field of aviation is concerned, among 25 Polish Technological Platforms, there is also a Polish Technological Platform of Aviation. Its activity is very important for absorption of financial resources from the 6th Framework Programme (and 7th Framework Programme which will begin to operate in 2007).

7. Potential of Polish service market – repair and maintenance of aircrafts

There is great potential for the aircraft repair and maintenance services market in Poland as more and more airlines, often suffering from financial problems, decide to outsource such services to reduce their operating costs. There is a new trend that may be observed to outsource aircraft repair and maintenance services to foreign companies (business process offshoring, or BPO) which offer lower operating costs but at the same time provide high-quality service. The opportunities for Poland in this respect are tied to the long tradition of the aviation industry in Poland, the developed airport network and growing market for air transport.
Existing investments and declarations of future investments in this sector in Poland are linked to offset programmes of individual foreign companies (e.g. Embraer, Bombardier, ATC).[2]
LOT Polish Airlines S.A., the biggest air carrier on the Polish market, which holds a Part-145 Certificate, has its own department that provides LOT with some maintenance and repair (MOR) services. The rest of the services are supplied by the many subcontractors who cooperate with LOT. In June 1999, LOT and GE Engine Services signed a transaction agreement for the formation of an engine maintenance venture. The company, called Central European Engine Services Sp. z o.o., was established in 2000. It services LOT engines in cooperation with GE Engine Services.

[2] Source: McKinsey & Company, "Polska – centrum usług dla Europy?", Warsaw 2003

8. Characteristics of the aviation industry cluster in Podkarpackie Province

Aviation Valley, located in south-eastern Poland, is famous for its aerospace industry and pilot training centres. This region has a heavy

Source: www.dolinalotnicza.pl

concentration of aerospace industry, scientific research centres, as well as educational and training facilities. Among the main objectives of this organization are:

- organization and development of a low cost supply chain;
- creation of favourable conditions to enhance the development of aerospace industry enterprises in the region;
- further development of aerospace research, aptitude and skill;
- cooperation with universities of technology, which would promote new ideas and scientific research within the aerospace industry;
- promotion of the Polish aerospace industry;
- protection of enterprises and businesses in the aerospace industry;
- influence on the Polish government's economic policy towards the aerospace industry and its domain.

The Aviation Valley Association currently represents 50 companies within the region, with several others in the process of applying for membership. The structure of their cooperation is presented in the accompanying diagram.

The latest actions of the association concern the P-4 sub-project, a Polish part of INTERREG III C ADEP. The project has been targeted at the development and promotion of an innovation cluster for companies in the aviation sector within Podkarpackie Province. Its main tasks concern:

- developing a specialized portal containing, among other items, a database of offers of enterprises related to aviation, and a database of research and personnel needs,
- cooperation with SMEs,
- intensive promotional activities such as conferences and participation in international venues,

Source: www.dolinalotnicza.pl

- implementing best practices from the partners' region in various fields of the cluster development, and
- closer cooperation between R&D units and the SME sector.

9. Educational institutions in Poland with aviation-related programmes

The quality of education in the field of aviation is very high in Poland. Polish graduates offer access to a well-educated workforce. The table below includes selected universities and high schools with an aviation learning profile:

10. Part-145 Certificate

A Part-145 Certificate issued by the European Aviation Safety Agency confirms that a company meets rules and standards required in the European Union in the field of technical services of aircrafts.

- **Certification procedure**

Phase 1 – Pre-application

An applicant should conduct a thorough review of the appropriate regulations and advisory material to provide guidance for personnel, facility,

Universities		
Name	**Website**	**Profile**
Warsaw University of Technology	www.pw.edu.pl	faculty of power and aeronautical engineering branches offering full-time studies: aerospace (automatic and On-Board-Systems, space technology, propulsion systems, aircraft structures), automatics and robotics, mechanics and machine design, power engineering
Rzeszów University of Technology	www.prz.rzeszow.pl	Centre for Air Education: the only university that educates civil pilots
Wrocław University of Technology	www.pwr.wroc.pl	mechanical faculty
Lublin University of Technology	www.pollub.pl	specialization: construction and operation of helicopters
Advanced Vocational School (WSKZ), Chełm	n/a	faculty: piloting
Air Force Officers' Academy, Dęblin	www.wsosp.deblin.pl	faculty: aviation
Military University of Technology	www.wat.edu.pl	faculty: aviation engineering specializations: avionics, fixed and rotary wing aircraft, aviation armament
High Schools		
Name	**Website**	**Profile**
European Air Technical College, Powodowo	www.technikumlotnicze.pl	avionics
Air Technical College, Zamość	www.sop.roztocze.pl	faculty: avionics, aviation mechanics
District Centre for Vocational Education (PCEZ), Świdnik	www.zst.swidnik.pl	specializations: aviation equipment, fuselage construction
Kazimierz Wielki Secondary School, Poznań	www.czternastelo.i5.pl	class with gliding specialization
Świdnik Secondary School	n/a	class with aviation profile

equipment, and documentation requirements. Following this review, the applicant must address in Pre-application Statement of Intent (PASI) how these requirements will be met.

Phase 2 - Formal Application

To begin the Formal Application Phase the team will receive the application and attachments. As a rule, the team will meet with the applicant after receiving the formal application package. All questions about the proposed operation, the formal application, and attachments should be resolved at this time. The meeting should consist of the certification team members and all key management personnel from the applicant's organization.

Phase 3 - Document Compliance

In this phase, the application is thoroughly reviewed for approval or disapproval, and the manual and related attachments are reviewed for acceptance or rejection. This review ensures both conformity to the applicable regulations and safe operating practices. This phase is done in the district office by the certification team.

Phase 4 - Demonstration and Inspection

In this phase the certification team ensures that the applicant's proposed procedures are effective and that facilities and equipment meet regulatory requirements. The Certification Project Manager must decide if demonstrations are required.

Phase 5 - Certification

Once the applicant meets the regulatory requirements of CFR Part 145, the certification team will issue the repair station certificate and operations specifications with the appropriate ratings.

- **Entities holding a Part-145 certificate, as of 31 May 2006**

	Name of the organization	Website
1.	Wytwórnia Sprzętu Komunikacyjnego PZL- Rzeszów S.A.	www.wskrz.com
2.	Lotnicze Przedsiębiorstwo Usługowe Heliseco Sp. z o.o.	www.heliseco.pl
3.	LOT Polish Airlines S.A. Technical Division	www.lot.com
4.	Wytwórnia Sprzętu Komunikacyjnego PZL- Kalisz S.A.	www.wsk.kalisz.pl
5.	Central European Engine Services Sp. z o.o.	n/a
6.	Wytwórnia Sprzętu Komunikacyjnego PZL-Świdnik S.A.	www.pzl.swidnik.pl
7.	Kombinat PZL-Hydral S.A.	www.hydral.com.pl
8.	ATM Przedsiębiorstwo Produkcyjne Sp. z o.o.	www.atmavio.pl
9.	GDN Airport Services Sp. z o.o.	n/a
10.	KRK Airport Services	www.lhc.pl
11.	Military Aircraft Works No. 2, Bydgoszcz	www.wzl2.mil.pl
12.	Unimor-Radiocom Sp.z o.o.	www.radiocom.pl
13.	WZL-4 Engine Testing Station	www.wzl4.mil.pl
14.	EXIN	www.exin.pl
15.	SKY Express Sp. z o.o.	skyexpress.pl
16.	WEA Cargo Sp. z o.o.	www.wea.com.pl
17.	Samodzielny Publiczny ZOZ Lotnicze Pogotowie Ratunkowe	www.lpr.com.pl
18.	GTL-LOT Usługi Lotniskowe	www.gtllot.com.pl
19.	PZL Mielec	www.pzlmielec.splot.org.pl
20.	SKY TAXI	www.skytaxi.aero
21.	GB AeroCharter Sp. z o. o.	www.airtaxi.com.pl
22.	NORMAL Piotr Jafernik	www.normal-jafernik.com.pl
23.	General Aviation	www.gaservingamerica.com
24.	Heli Invest	www.heliinvest.com
25.	Franklin	www.franklin-engines.com
26.	Columbus	n/a
27.	Jet Service	www.jetservice.pl
28.	Aviation Service	www.aviationservice.com

Source: www.ulc.gov.pl

11. Military Aircraft Works (WZL)

I Military Aircraft Works No. 1

founded in 1944

Location: Łódź

Main activities:

- elaboration of airborne equipment and flight security radio engineering equipment overhaul technology;
- overhaul of aircrafts and flight security radio equipment;
- routine and periodic maintenance of aircrafts;
- modification of aircraft interiors;

(*Source: www.wzl1.mil.pl*)

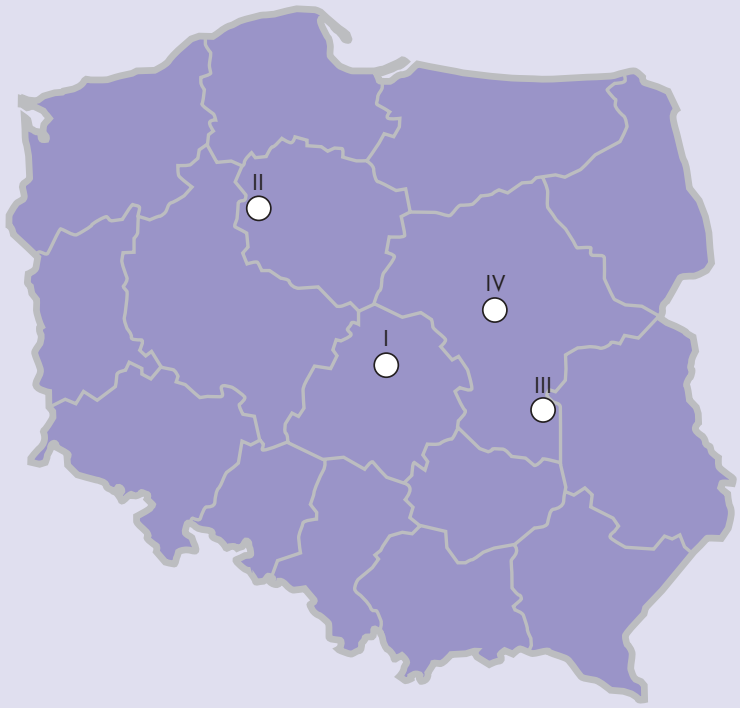
II Military Aircraft Works No. 2

founded in 1946

Location: Bydgoszcz

Main activities:

- comprehensive refurbishment of aircraft: MiG-29, Su-22, TS-11 Iskra;
- repair of aircraft: PZL-101 Gawron, PZL-110 Koliber, PZL-104 Wilga;
- modernization of SAR special purpose aircraft;
- modernization and installation of additional instruments in aircraft: GPS, VOR, ILS, DME, IFF, TACAN;
- repair and maintenance of hydraulic, pneumatic and other flight systems;
- repair of industry automatic devices;



- installation of flight decoders based on ATM-QAR-type devices.
  (*Source: www.wzl2.mil.pl*)

III Military Aircraft Works No. 3
founded in 1945
Location: Dęblin
Main activities:
Overhaul services involving
- preventive and emergency repair of both military and civil airplanes and equipment;
- repair of air engines and technical units used in operation of airplanes and helicopters;
- modernization, up-grade, maintenance and servicing of airplanes, engines and a broad range of ground equipment.
  (*Source: www.wzl3.mil.pl*)

IV Military Aircraft Works No. 4
founded in 1951
Location: Warsaw
Main activities (depending on partnership type):

Partnership Type	Partnership Subject
Second-level technical service (repair-renovation) and third-level technical service (workshop service)	• military and civilian turbine jet engines • military and civilian helicopter turbine engines
Units (modules) re-assembly and final re-assembly	• turbine jet engines • turbine helicopter engines • auxiliary turbine engines
Stand acceptance tests	• turbine jet engines • turbine helicopter engines • auxiliary turbine engines
Units re-assembly and stand tests	• fuel units • oil units • electric units
Production and repairs of	• airfield equipment for aircraft and aircraft engines, technical service equipment
Sales	• engines • engine equipment • engine modules • spare parts and miscellaneous items • aircraft and aircraft engines service equipment and tools
Extra-aviation partnership in production and repairs	• machine industry products
Space to let	• office space • industrial and/or warehouse space

Source: www.wzl4.mil.pl

12. Characteristics of fleet and technical base of the national carrier, LOT Polish Airlines

The strong point of LOT is its modern fleet and its comprehensive network of air connections covering the major cities around Western and Central-Eastern Europe as well as the USA and Canada. Year after year the overall number of passengers using Polish Airlines LOT is increasing.
LOT is the largest Polish airline, with 53 modern airplanes:
According to the past annual reports, forecasts for the future development of LOT Polish Airlines are optimistic. Thanks to the membership in Star Alliance, the Polish national airline has become a part of a global network with broad access to multiple destination points. This provides additional ground for optimism in the airline's future outlook. The number of passengers as well as revenues are definitely expected to grow, thanks both to the number of flight connections offered and the growing confidence based on the stable image of the company on domestic and foreign markets.

13. Most important foreign investors in the aviation sector in Poland in 2006

14. Prospects for the aviation sector in Poland

- Poland may become the world's leading producer of light aircraft, because of its tradition, human resources (experienced staff) and the necessary infrastructure.
- Significant opportunities for the aviation sector involve:
  - development of design activities at engineering design centres,
  - development of maintenance activities at aircraft maintenance centres.
- As far as passenger air transport is concerned, growth depends on government policy and the policy of agencies responsible for the aviation sector. To stimulate market growth, Polish

- Five Boeing 767-300 ER airplanes

SEATING LAYOUT	BUSINESS CLASS	ECONOMY CLASS
Number of seats	18 in 3 rows	225 in 33 rows
• Two Boeing 767-200 ER airplanes		
Number of seats	12 in 2 rows	190 in 28 rows
• Two Boeing 737-400 airplanes		
Number of seats	48 in 8 rows	99 in 17 rows
• Six Boeing 737-500 airplanes		
Number of seats	36 in 6 rows	72 in 12 rows

and smaller planes offering both business and economy class seats:

- Four Embraer-175 airplanes
- Ten Embraer-170 airplanes
- Eleven Embraer ERJ-145 airplanes
- Eight ATR-72 airplanes
- Five ATR-42-500 airplanes

Annual reports			
	2004	2003	2002
Revenue from core activity (mln PLN)	2914.2	2857.0	2718.8
Number of total passengers carried, including:	4,022,542	3,742,075	3,431,595
– scheduled flights	3,601,995	3,372,298	3,059,098
– international flights	2,733,788	2,553,134	2,344,463
– domestic flights	868,207	819,164	714,635
– charter flights	420,547	369,777	372,497
Cargo carried (thou. Tons)	21.8	21.5	20.5

Source: www.lot.com

Investor	Country of rigin	Activities (NACE)	Activities (class)
United Technologies Holding S.A.	USA	Manufacture of transport equipment	Manufacture of aircraft and spacecraft
Pratt & Whitney Canada	Canada	Manufacture of transport equipment	Manufacture of aircraft and spacecraft
Goodrich Aerospace Canada LTD	USA	Manufacture of transport equipment	Manufacture of aircraft and spacecraft
Valin Participations	France	Manufacture of transport equipment	Manufacture of aircraft and spacecraft
Smiths Group Aerospace	United Kingdom	Manufacture of transport equipment	Manufacture of aircraft and spacecraft
AS Propulsion International B.V.	The Netherlands	Manufacture of transport equipment	Manufacture of aircraft and spacecraft

Source: Polish Information and Foreign Investment Agency (PAIiIZ)

government and local governments should support an increase in domestic traffic and agree to lower aircraft fees.

- Great advantages for both cargo and passenger air transport are connected with the development of regional airports in Poland. Local authorities, with the help of EU funds, may develop existing airports (such as military airports and airports owned by aeroclubs) as well as build new ones. Such initiatives may be taken in the form of public-private partnerships (PPP).
- There is a threat, however, that the government will protect the interests of the national carrier LOT, which has a 51% share of the market. Such a policy would hamper the increase of domestic traffic.
- Experts say that the main disadvantage for the Polish aviation sector results from the fact that there is no clear strategy for its development.

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