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Supplement of Czech Business and Trade

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# Czech Transport Engineering

**Supplement of**
Czech Business and Trade 09-10/2009

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**MK ČR E 6379**
**This magazine is published as a supplement to the economic bi-monthly Czech Business and Trade.**

Managing Editor: Ivana Šmejdová
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Graphic Design: Art director: Nina Nováková
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Production: Anežka Zvěřinová

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www.ppagency.cz

Deadline: 23/6/2009



**COVER PICTURE:**
**MASS PRODUCTION OF ŠKODA YETI LAUNCHED**
In May 2009, the first mass-produced Škoda Yeti left the assembly line of Škoda Auto's plant in Kvasiny (Czech Republic). By starting the mass-production process, Škoda has completed the launch of its brand new model line (fifth in total) and entered the SUV segment.

**PRESENTATION OF FIRMS:** AGADOS, SPOL. S R.O.; ARAKO SPOL. S R.O.; ČD CARGO, A.S.; DYNASIG, SPOL.S R.O.; GEODIS BRNO, SPOL. S R.O.; INGETEAM A.S.; NOVO-CZ S.R.O.; PRACOVNÍ STROJE TEPLICE, SPOL. S R.O.; TOS VARNSDORF A.S.; UNEX A.S.; VELETRHY BRNO, A.S.

Cover photo: Škoda Auto archives, page 3 photo: EVEKTOR archives

Dear Reader,
Engineering is indisputably one of the pillars of the Czech economy. Transport engineering, which is the subject of this specialised supplement, participates significantly in the creation of the country's gross domestic product. This sector has won such a prestigious position for itself not only thanks to its long tradition, available labour force, and a large number of people with good education standards and skills, but also thanks to the steadily growing interest in Czech products at home and abroad.

As you will be able to see from the text of the Ministry of Industry and Trade, the Czech Republic is the target country for a large number of foreign investments. In the contribution supplied by the Czech Technical University, you will learn about the preparation of students in engineering sciences.

The Czech Top section will feature the Škoda Auto car maker, who, despite the world economic crises, can boast continuing exports and expansion to nearly the whole world. The aircraft manufacturer Evektor will acquaint the readers with its production programme, and Zetor will talk about its technological innovations that prompted massive interest in its farming machines.

I am confident that this specialised supplement will present a coherent picture of transport engineering, a sector of industry playing a substantial role in the country's economy.

**Ondřej Štrba**

# Transport Engineering – an Important Sector with a Future

**Eduard Muřický,** Ministry of Industry and Trade, mpo@mpo.cz, www.mpo.cz

The manufacturing programme of transport engineering covers the full range of the means of transport and transport equipment. According to the Classification of Economic Activities (NACE), it comprises the manufacture of motor vehicles, trailers and semi-trailers, and parts and accessories for motor vehicles (NACE 34) and the manufacture of other transport equipment, such as ships and boats, aircraft, and railway and tramway locomotives and the rolling stock (NACE 35). The tradition of manufacturing transport equipment in what is today the Czech Republic goes far into the past. From the historical point of view, transport engineering is one of the oldest sectors of industry on the territory of today's Bohemia, Moravia, and Silesia.

This year, Škoda Plzeň marks the 150th anniversary of its existence as a manufacturer. Aero Vodochody, the largest Czech aircraft manufacturer, this year celebrates the 90th anniversary of its founding – Aero Vodochody was registered as a company on 25 February 1919. During its existence, Aero has manufactured more than 11 000 aircraft. Avia was established as an aircraft manufacturer and repair company in 1919. Since 1936, its core programme has been car making. Škoda Auto will celebrate the 75th anniversary of starting production in Kvasiny. In 2006, it turned out the ten millionth motor car in the history of the trademark. This year, the seven millionth Škoda car rolled off the mill since Škoda's merger with Volkswagen in 1991.

## The Most Important Manufacturers of Transport Vehicles

Škoda Auto a.s. (the largest exporter and employer in the area of transport equipment) is part of Volkswagen, whose majority owner – with a stake of more than 50% - is now the car maker Porsche. Toyota Peugeot Citroën Automobile Czech, s.r.o. (TPCA) is a joint venture of Toyota Motor Corporation and PSA (Peugeot Citroën). Another large car manufacturer on the territory of the Czech Republic is Hyundai, which started production last year. Among car part manufacturers, the largest in terms of revenue and the number of employees are Bosch, Siemens, Continental, and Autopal Visteon.

The largest manufacturers of railway and tramway vehicles include ŠKODA HOLDING a.s. (making locomotives, motor units, tramcars, wagons for the underground and trolleybuses and overhauling locomotives) and Siemens kolejová vozidla s.r.o. (making rail vehicles for both municipal transport and passenger trains for suburban and medium- and long-distance lines), to be sold to a new owner this year.

The largest representative of aircraft manufacturers is AERO Vodochody a.s., the most important aircraft builder in the Czech Republic.

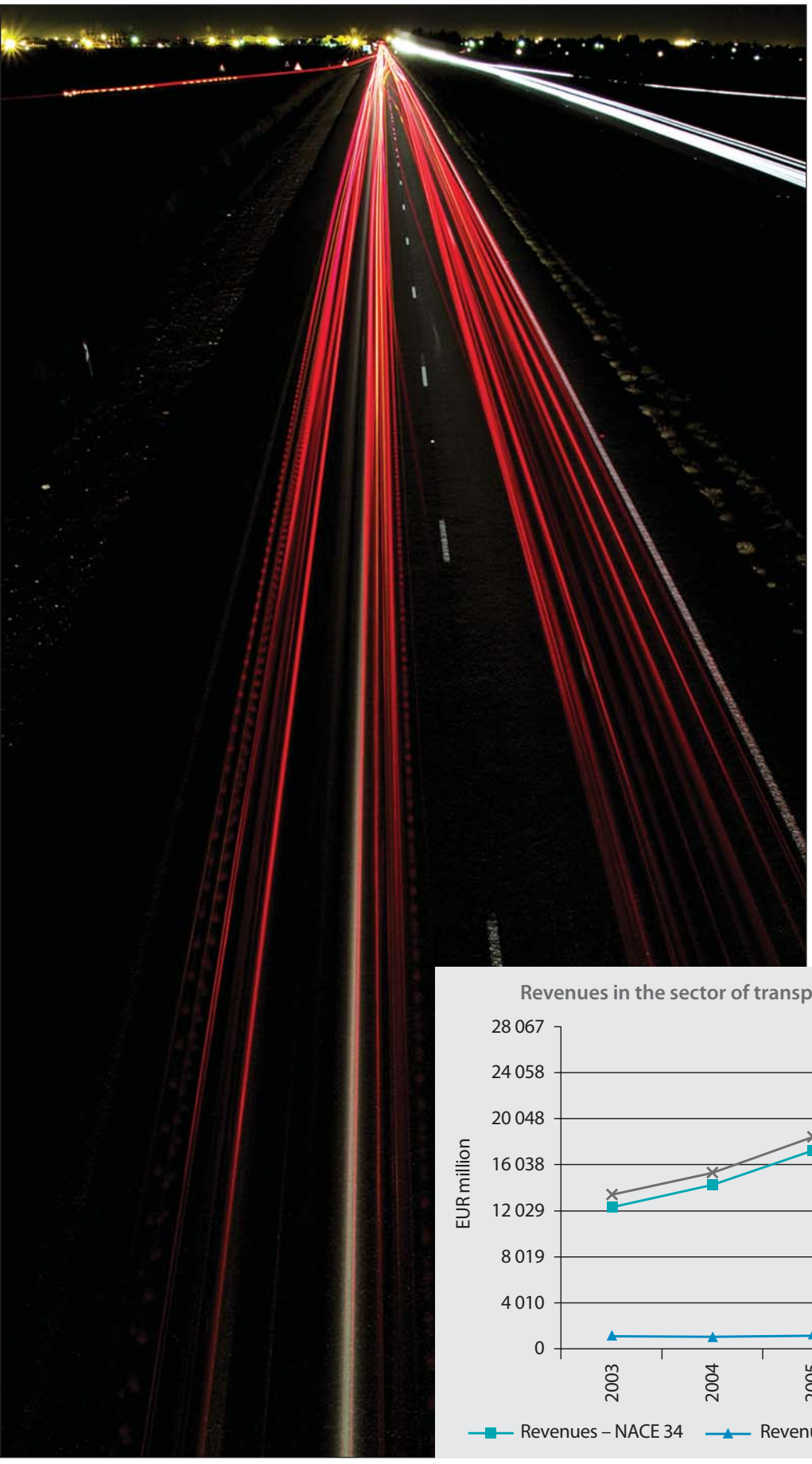
## Revenues Have Grown Dramatically in the Past Five Years

In the framework of the manufacturing industry, transport engineering is one of the most important sectors, whose share is growing each year (in 2008 it grew by 19.37%). During the past five years, the sector's revenues rose by nearly 71%, to CZK 575 billion (EUR 23 billion). In 2008, revenues dropped by 10% in connection with the decline in the CZK/EUR and CZK/USD exchange rates and the economic crisis, which manifested itself by a dramatic drop in production, especially in the last quarter. The greatest credit for the growth, until recently, of revenues goes to the automotive industry, both as regards car makers and car accessory manufacturers. The dominant position among car manufacturers is held by Škoda Auto, a.s. and TPCA Kolín, which last year turned out 603 000 and 324 000 cars, respectively. The third car maker, Hyundai, which started production six months ahead of schedule, made 12 000 cars (its production capacity is planned at 300 000 cars). In 2008, the Czech Republic rose to fifth position in the manufacture of motor cars in the EU, after Germany, France, Spain, and the United Kingdom.

## The Number of Orders Is Growing also in Other Sectors

After years of stagnation, the number of orders has been growing also in the area

Photo: PhotoCombo, SXC

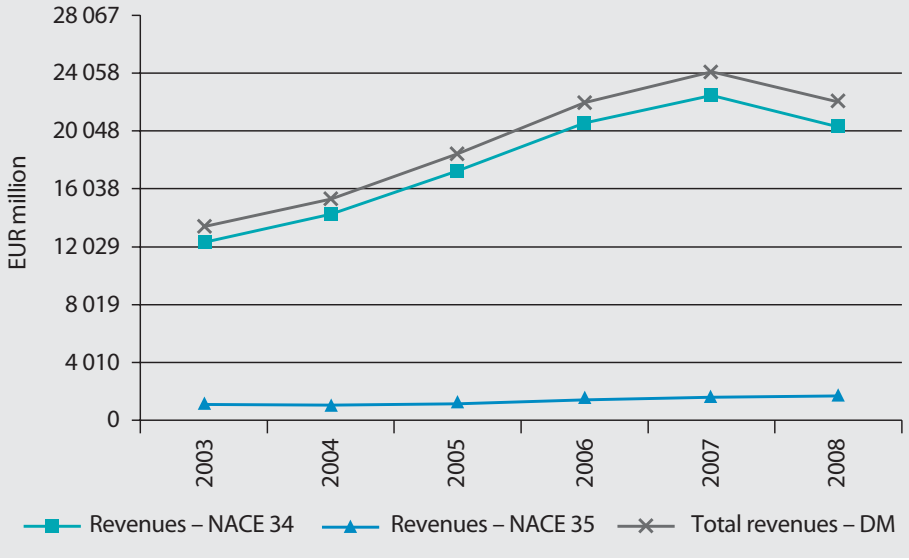


of other means of transport over the past two years. As regards rail vehicles, most responsible for higher revenues have been deliveries of a wide range of railway carriages – suburban electrical units 471, Diesel trains and passenger coaches and freight cars, modernisation of previously delivered tramcars for transport companies, and the manufacture of low-platform tramcars and underground railroad wagons.

## The Czech Republic Ranks Second in the Manufacture of Ultralight Planes

Aero Vodochody, the largest Czech aircraft manufacturer, has raised production in connection with the manufacture of S-76C helicopters and parts for the C-27J Spartan aircraft. On the other hand, Evektor-Aerotechnik, which makes ultralight and light sport aircraft, has witnessed a massive decline in demand. It exports approximately 95% of its output. The Czech Republic is at the top worldwide in the manufacture of ultralights and small sport planes, despite keen competition on the world market and the continuous modernisation of aircraft. It is the second largest European manufacturer in the branch, after Germany. There are about 15 other small companies in the CR making this type of plane. 450 such planes were exported the year before last. In addition, there are a number of companies manufacturing engines, special instruments, and other parts for planes.

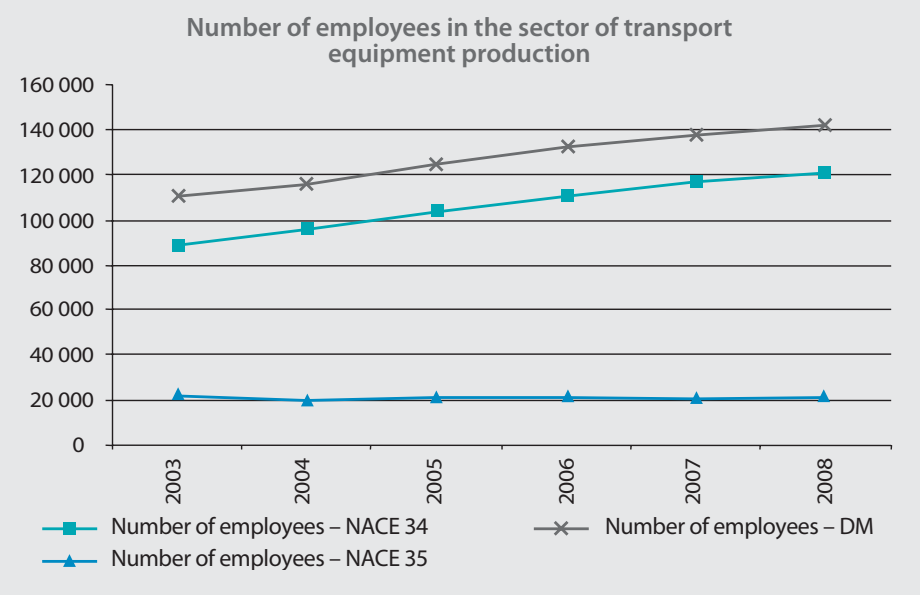
Revenues in the sector of transport equipment (DM) production

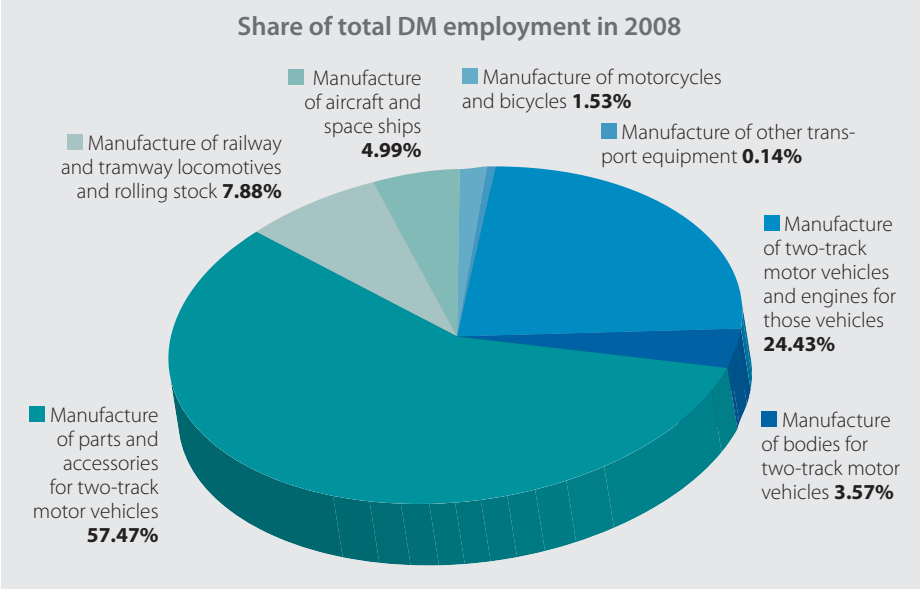


## The Number of Employees in the Sector Is Growing

The number of employees in the sector has increased more than by one-quarter, to 142 000 (121 000 NACE 34, 21 000 NACE 35), over the past five years. Most responsible for the growth of employment in the sector were manufacturers of parts for motor vehicles (by 25 000 from 2003 to 2008). Until mid-2008, most engineering companies kept raising their production and their demand for skilled workers. Some companies claimed they could not fill their orders for lack of manpower and hired people from employment agencies. Others called for permission to employ foreigners holding "green cards", a practice used, for example, in Germany in the case of IT specialists. With the advance of economic crisis and a significant decline in demand, especially in the automotive industry, companies began reducing their number. To solve the situation, some companies decided to shorten the working week.

The largest employers in this sector are car part manufacturers, accounting for approximately 57.5% of total employment within the sector, followed by vehicle manufacturers with 24.4%. The high percentage accounted for by the car part manufacturing sector is the result of growing car production in the EU and the starting of production in the new car factories of TPCA and Hyundai. As regards other transport equipment manufacturers, employment ranges around 21 000.




## Foreign Trade

Last year, transport engineering accounted for 17.92% of total manufacturing industry exports. The largest exporter within this sector is the automotive industry with a share of 99.17% (of which car manufacturers accounted for 46.82% and car part manufacturers for 40.5%). Traditionally, the largest exporter is Škoda Auto a.s. car manufacturer. As regards the manufacture of other transport equipment, the most important exporters are manufacturers of railway and tramway transport equipment, followed by aircraft manufacturers. The Czech Republic exports its products not only to EU states, but also the USA, where Czech ultralight plane manufacturers are also very successful.

In foreign trade, the largest partner of the Czech Republic is Germany, with a share of 29.11% (last year, Škoda Auto exported to that country one-sixth of its car exports). France placed second thanks to the export of cars from TPCA and Iveco (Karosa) buses. In Slovakia, too, Škoda cars are the best selling vehicles and Czech buses are also very popular there. In addition, Czech enterprises modernise tramcars and railway vehicles for Slovak customers. Škoda cars are also very popular in Poland, and Czech manufacturers have won several tenders for the supply of new tramcars for local municipal transport operators. The Czech Republic accounts for 30% of registrations for new ultralight planes in the USA.

## The Sector's Prospects

The plan for transport equipment manufacture in the Czech Republic was approximately one million vehicles. As a result of the economic crisis, this estimate fell short of the target, but even so, vehicle manufacture showed a moderate growth to 950 552 vehicles (+0.89%). The target for this year is hard to estimate. In the first quarter, car production fell by nearly 25% and lorry production by 60%. The Czech automotive industry benefited from the introduction of car scrapping incentive schemes in neighbouring states, but it is most likely that the one-million car production target will not be surmounted. Most adversely affected by the crisis are lorry manufacturers, partly as a result of declining capital construction. On the other hand, bus manufacture has gone up. Total revenues in the sector dropped by 30% in the first two months of this year.

Photo: SXC

Rail vehicle manufacture saw further amalgamation of manufacturing facilities. In 2005, ŠKODA HOLDING a.s. took control over ČKD VAGONKA a.s. (now ŠKODA VAGONKA a.s.). Last year, it took over Pars nova a.s., acquired a stake in POLL, a Czech manufacturer of electronic systems for application in power electronics, bought MOVO spol. s.r.o., and signed a contract with Wroclaw for the delivery of 28 ŠKODA 19T tramcars. ŠKODA VAGONKA a.s. will manufacture 10 suburban trains for a Slovak customer for CZK 2.5 billion (approx. EUR 100 million) and intends to participate significantly in a twelve-billion order placed by Czech Railways (ČD) for the modernisation of approximately five thousand wagons and carriages. The company has an order for the supply, by 2011, of 20 high-speed locomotives and 60 CityElefant trains (suburban units 471). Czech Railways have already taken over 40 units. Pars nova a.s. supplies Czech Railways with modernised Regionova Diesel units. The volume of orders for trolleybuses to operate both in the CR and other countries is also increasing.

The fate of the Siemens kolejová vozidla s.r.o. rail vehicle manufacturer will be decided at the end of this year.

The Aero Vodochody aircraft company is planning to become the largest aviation holding company in Central and Eastern Europe and has a chance of buying the once-famous Polish manufacturer of PZL Świdnik helicopter manufacturer. Its production programme shows a diversion from military orders to joint ventures, which account for as much as three-quarters of its total output. The most important project for many years has been its co-operation with the Sikorsky company. Today, it manufactures nearly complete helicopters. Co-operation with this company is growing steadily. It also manufactures centroplanes for Alenia's Spartan aircraft (Italy), for Boeing (USA), the European Aeronautic company EADS, and Brazil's Embraer.

Most ultralight manufacturers, too, have been severely hit by the economic crisis, especially as a result of lower sales to the USA, as a result of which some manufacturers had to cut their output by one-half.

The Czech Republic continues to be an attractive country for foreign investors. Transport engineering participates significantly in total investments in the Czech Republic, which is closely linked with the automotive industry. A favourable feature recently has been the growing importance of the manufacture of other transport equipment in connection with the necessity of innovating the rolling stock in the EU.

*The conversion of amounts to EUR was calculated using the average CNB exchange rate for 2008: 1 EUR=24.94 CZK*

■

**Territorial division of Czech exports**

| | NACE 34 (EUR ´000) | NACE 35 (EUR ´000) | Total (EUR ´000) | Share of total DM exports (%) |
|---|---|---|---|---|
| Total | 16 200 806 | 1 475 784 | 17 676 590 | |
| Germany | 4 926 991 | 218 223 | 5 145 214 | 29.11 |
| France | 1 330 869 | 108 198 | 1 439 067 | 8.14 |
| Slovakia | 1 092 692 | 106 511 | 1 199 203 | 6.78 |
| Italy | 836 224 | 24 228 | 860 452 | 4.87 |
| United Kingdom | 812 072 | 67 047 | 879 119 | 4.97 |
| Poland | 782 962 | 55 394 | 838 356 | 4.74 |
| Belgium | 648 188 | 21 802 | 669 990 | 3.79 |
| Russian Federation | 611 373 | 52 529 | 663 902 | 3.76 |
| Other countries | 11 041 371 | 653 932 | 11 695 303 | 33.84 |

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Photo: CzechTourism

# Railway Industry Scoring Success Abroad

**Marie Vopálenská,** Executive Director, Association of Czech Railway Industry
e-mail: vopalenska@acri.cz

The Czech Republic has a railway transport system built as an economically attractive and environmentally friendly alternative to road transport. Companies associated in the Association of Czech Railway Industry (ACRI) currently employ more than 22 000 people in the Czech Republic. Their annual turnover exceeds the EUR 2.8 billion, of which exports account for 42%. With their business activities they contribute significantly to the country's employment and the creation of gross domestic product.

## The World's Densest Railway Network

The Czech Republic has one of the densest railway networks worldwide. This fact derives from historical developments. Railway transport and the railway industry have a very long tradition in what is today the Czech Republic, indeed one of the longest in Europe. The current growth of railway transport is boosted by growing demand on the domestic market and primarily by a number of export deals mediated by ACRI. In 2007, ACRI members showed a 15% year-on-year increase in revenues (24% in 2006). In 2007, exports accounted for 42% of their total revenues, in comparison with 30% in 2003. These figures indicate that the foreign deals of our companies are an important factor in boosting the growth of the railway industry.

## Growing Productivity of Labour

The revenues of the companies in the railway industry are growing in relation to the number of employees. This is evidence of their higher performance and higher productivity of labour, and consequently of the companies' competitiveness. These results and facts are positive signals and at the same time evidence of the competitiveness of the railway industry as a whole. A suitable combination of investments in transport in the Czech Republic with possibilities of targeted support of the sector will create conditions for further economic and export growth. The vision is a profit-making, flexible, and high technically advanced sector that participates actively in employment, economic growth and the development of the transport system in the Czech Republic and worldwide.

## Export Achievements of Czech Companies

The largest exporter among member companies is BONATRANS GROUP a.s., which exports 95% of its output to more than 70 countries the world over. For example, the most remote states where wheels from Bohumín carry passenger trains are New Zealand and Australia. Extreme elevation differences are surmounted by trains on Czech wheels on the railway line to Tibet. Here, the Bohumín wheels have achieved their height record, which is 5 072 metres above sea level. On the other hand, they carry Euroshuttle trains under the English Channel. To complete the list of Bohumín's achievements, mention should be made of high-speed transport, which is currently much in the focus. Wheels supplied by BONATRANS GROUP a.s. helped to set a new speed record, which has been broken by the Siemens Taurus locomotive, and which is 357 km/h. The fastest trains are the ICE2 high-speed express trains in Germany.

## Further Achievements

Other member companies, too, are doing well in foreign markets. AŽD Praha s.r.o., a leading Czech manufacturer and supplier

of signalling and interlocking systems, for example, stood the test of strong international competition and was chosen to install modern control and safety systems on a 100-km section of Lithuania's Kaunas–Kybartai rail corridor. BORCAD cz supplies seats for the Swiss manufacturer Stadler to be used in FLIRT sets. In a matter of four months, they developed a special seat, which met the demanding requirements of a really discerning customer. At the same time, they obtained an order from Newag for the reconstruction of couchette cars for PKP Intercity. CZ LOKO, a.s. has modernised Diesel locomotives for Italian goods trains and built shunting locomotives for Serbia. Tramcars manufactured by ŠKODA TRANSPORTATION will cruise the streets in Wroclaw, Poland, and Latvia's capital, Riga. The company's tramcars are already plying the roads in Cagliari, Italy.

## Integrated European Railway Area

One of the main aims of the transport policy of the EU, and that of the Czech Republic, is the creation of an integrated European railway area that will make it possible for freight and passenger transport to use the advantages of Europe without frontiers, i.e. travelling without changing trains in a competitive environment. This concept also provides for a system where freight carriers will be able to transport products very quickly across all Europe.

### ASSOCIATION OF CZECH RAILWAY INDUSTRY

ACRI is an organisation associating companies active in the rail supply industry in the Czech Republic. Companies associated in ACRI currently employ more than 22 000 people in the Czech Republic. Their total annual turnover is more than EUR 2.8 billion, of which exports account for more than 42%. ACRI is a national member of the European Railway Industry Association (UNIFE).

One of the main setbacks for the creation of such an area is lack of technical and operating harmonisation. Different technical and operating standards among EU member states often make it necessary to change locomotives at the frontiers, especially in the case of freight trains, which means higher costs, longer travelling time, and undeterminable precision.

## Tradition Is Continuing

The development of the railway industry is closely linked with the development of railway transport on the European and indeed world scale. Czech companies are prepared to participate in the growth of transport engineering so as to meet the demand of railway carriers. This opens up possibilities of continuing the tradition of our companies and carry on the development of this branch of industry. ■



Photo: SXC, České dráhy (ČD) archives

# Education of Specialists for the Rail Vehicle Industry

**Josef Kolář,** Czech Technical University – Faculty of Civil Engineering, e-mail: josef.kolar@fs.cvut.cz, www.fs.cvut.cz

The name "Faculty of Civil Engineering" of the Czech Technical University (ČVUT) in Prague would suggest that the faculty concerns itself with machinery design. The range of the faculty's courses, however, is much broader, as it acquaints students also with production technology, the knowledge of which is necessary in the practical application of theory in industry. Industrial production includes fully automated serial production and piece production, as well as the manufacture of very special single pieces. Civil engineering therefore provides methods and knowledge for the manufacture of a large number of products (e.g. automobiles, rail vehicles, manufacturing machines, and energy equipment) on serial production lines or methods and knowledge for the manufacture of unique physical or medical instruments, astronomic telescopes, particle accelerators and joint prosthetics. The Faculty of Civil Engineering, ČVUT, in Prague is a theoretical and application base for nearly the entire engineering industry, to which a large number of institutes are attached, including teaching, research, development and consulting workplaces.

## Transport Engineering at the Faculty of Civil Engineering

In the area of transport and materials handling equipment, which is the concern of the Automobile, Combustion Engine, and Rail Vehicles Institute and Josef Božek Combustion Engine and Automobile Research Centre, the object of tuition and research is the construction of automobiles, combustion engines, and rail vehicles.

## Study of Rail Vehicles

In this area, ČVUT co-operates closely with industrial enterprises. In agreement with them, tuition is arranged for students who would like to specialise in the development and manufacture of rail vehicles. Besides theoretical knowledge, in the framework of construction projects, students become acquainted with the principles of designing the mechanical parts of drives, travels, and rail vehicle bodies. They may use these partial projects as subjects of their diploma theses, which, after being successfully defended, may be entered in competitions for the Siemens Prize or the Emil Škoda Prize, or the students may seek awards from the ČVUT Zvoníček Foundation. The attractiveness of the subjects and the quality of the diploma theses dealing with rail vehicles are best shown by the fact that out of approximately 30 graduates who completed the rail vehicles course of study during the past five years, four have won the Siemens Prize for their diploma theses and one was the absolute winner in the Emil Škoda Prize competition for his diploma thesis. Students with this specialisation may apply for grants in the framework of Erasmus and Leonardo programmes to study at universities in other countries, where they have an opportunity to learn foreign languages and gain expert knowledge.

## Co-operation with Industry

The Faculty of Engineering, ČVUT, in Prague, makes it possible for students who have chosen to become rail vehicle specialists, to study not only in standard courses, but also in the framework of the Individual Plan of Study – Modern Rail Vehicles, which is supported by important rail vehicle manufacturers in the Czech Republic. This enlarged tuition programme makes it possible for graduates to gain a higher level of knowledge that will enable them to become involved in specific technical projects more readily and gain expert knowledge backed by practical experience. Graduates with this specialised degree find employment in design or testing departments of rail vehicle manufacturers in the Czech Republic, where they can work on the development of tramcars (e.g. 15T ForCity model), underground railway carriages, locomotives (electric locomotive E109) and other types of modern railway vehicles. ■

# IT4Innovations Will Help Not Only in Engineering

An information technology scientific research centre named IT4Innovations is being set up in Ostrava. The results of its work will find application in various sectors, including transport engineering. The IT4Innovation Centre of excellence will combine research for academic purposes with research for the application sphere. Industrial enterprises will be able to benefit from its work for example in construction or the development of new materials.

## IT4Innovations

IT4Innovations is a project the aim of which is to build a national centre of research excellence in the area of information technology. The centre will help to bring together various scientific branches relating to information technologies and boost their development. The project is being prepared by four institutions: the VŠBI – Technical University in Ostrava, the Ostrava University, the Silesian University, and the Geonics Institute of the Academy of Sciences of the Czech Republic.

## One of the World's Most Advanced Centres

The Centre will be one of the most advanced institutions on a world scale and will become part of the European supercomputer centre network, which compute, model, and manage various projects concerning the safety and health of the population, algorithm designing for industry, and the development of new medicaments. There are only very few supercomputers of this type worldwide. As yet, Central and Eastern Europe have not had a centre of research excellence like the would-be IT4Innovations.

## Supercomputer

As part of the project, the Centre will have a supercomputer, which around the year 2013 will become one of the world's one-hundred most efficient supercomputers. The supercomputer exceeds many times the capabilities of ordinary PCs and facilitates computations which conventional computers would take months or even years to perform. The supercomputer will be connected to the European network, which will make it possible to take advantage of the entire EU supercomputer system more widely.

## Practical Benefits Not Only for Engineering

Industrial enterprises will be able to use the supercomputer, for example, in the construction and development of new materials, not only in the automotive industry, but also in engineering and the power industry. Engineering companies, such as Vítkovice Machinery Group, Saab Group, and Elmarco, world manufacturer of machines for industrial nanofibre production, are interested in participation in the project. The research work of the IT4I centre will help manufacturers to control fuel elements, industrial machines, automobiles, aircraft, and mobile phones. ■

More at **www.it4i.eu**

# VUT Scientists Are Developing an Unmanned Aerial Vehicle

Scientists at the Brno University of Technology (VUT) are completing the prototype of a pilotless aircraft called Marabou. In future, the aircraft will be used to collect information about transport and the movement of persons and guard property. A unique feature of the aircraft is that all work on it, from the initial idea to the actual prototype, has been done at the University. The project is linked with development programmes in the private sector, with several Czech companies participating.

## Maiden Flight at the End of September

Thanks to its navigation system, the aircraft can be controlled from the ground. Today, unmanned aerial vehicles are often used for military purposes. Its other uses, however, are also considered. "We are confident that Marabou will assert itself mainly in civil aviation," said Antonín Píštěk, director of the Aviation Institute, Faculty of Mechanical Engineering, VUT, who is at the head of the team of scientists and students who participated in the work on the prototype. The prototype aircraft is completed and is being prepared by technicians for its maiden flight, which will take place at the end of September or the beginning of October 2009.

## Up to a Height of 8 km

Marabou is fitted with a special jet engine, designed and made by První brněnská strojírna engineering works in Velká Bíteš. It is a Czech invention. Thanks to its power, Marabou can rise to a height of up to eight kilometres. Other components, too, for example the body and the wings, are Czech made.

## Transport Monitoring and Frontier Guarding

The aircraft could be used for transport, railway line, gas line, and power line monitoring, possibly for guarding state frontiers. A great advantage of the unmanned aerial vehicle in comparison with the currently used helicopter is primarily its very cheap operation.

## Other Achievements

The VUT Aviation Institute has been working on aircraft development since its establishment in 1993. Its teams have developed and built the KP-2U Sova (Owl) ultra-light aircraft. More than 1800 aircraft of this type have been sold, many of them to other countries. EVEKTOR in Kunovice manufactures another aircraft from the Aviation Institute, the VUT 100 Cobra, which in 2005 won the Czech Head prestigious prize for its advanced innovation. Another recent success of four aviation students at the Technical University is their participation in the finals of the Airbus international student competition. ■

More at **www.fme.vutbr.cz**

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# UNIQA and D.A.S. Co-operate in the Field of Motor Vehicle Insurance

The insurance companies UNIQA pojišťovna, a.s. and D.A.S. pojišťovna právní ochrany, a.s. have decided to pool their potential in making a new product offer to drivers in the Czech Republic. In July 2009, these insurance companies launched a strategic partnership in the framework of which they will provide a common product consisting of UNIQA's Third-party Liability and Collision Insurance and D.A.S. Vehicle Legal Protection Insurance.

## Third-party Liability and Collision Insurance

Third-party Liability Insurance is an insurance policy which the owner of a vehicle which has been issued with a registration number or a certificate of roadworthiness, is liable to take out. The policy protects the insured against the adverse financial effect of a potential claim raised by the damaged person in the case of damage caused by the operation of the insured person's vehicle. Collision Insurance is voluntary. It protects the owner of the insured vehicle against damage caused by the elements, or arising in consequence of an accident, theft, or the unauthorised use of the vehicle.

## Legal Protection Insurance

Legal Protection Insurance is an insurance product the purpose of which is to protect clients against costs incurred in court proceedings. Insurance companies providing such insurance usually cover the costs of legal representation, court expenses, etc.

## UNIQA Insurance Company

UNIQA Insurance Company has been operating in the Czech Republic for 16 years. As a universal insurance company, its offer comprises, besides all kinds of life and non-life insurance, also the complete insurance of vehicles. UNIQA is part of the prestigious UNIQA Group operating in 20 European countries, with an approximately 22% share of the Austrian insurance market.

## D.A.S.

D.A.S. is an insurance company specialising exclusively in legal protection. It has teams of lawyers and experts, whose task it is to solve complicated legal problems for clients while saving their time and money. D.A.S. is the Number One insurance company in this area on the Czech, as well as European, insurance markets. The cost of qualified legal assistance may easily climb to several thousands of euros, while Legal Protection Insurance premiums range from EUR 28 to EUR 240 per year, depending on the type of vehicle.

*More at www.das.cz and www.uniqa.cz*

■

DYNASIG

# … top-standard solutions FOR SAFER TRAFFIC …

OUR COMPANY, ESTABLISHED MORE THAN 13 YEARS AGO, IS AN IMPORTANT CZECH MANUFACTURER AND SUPPLIER OF TRAFFIC SIGNALLING EQUIPMENT, SAFETY DEVICES FOR RAILWAY TRAFFIC AND CONTROL SYSTEMS, WHICH WE ALSO EXPORT SUCCESSFULLY TO EAST- AND WEST-EUROPEAN COUNTRIES AND TO AFRICA.

**We can offer solutions and products especially in the following areas:**

***Traffic signalling***

- Development and manufacture of light signalling equipment and special traffic signage
- Environmentally friendly and economically advantageous road safety devices based on our own DynLED® patented technology

***Traffic signage***

- Designing and realisation of turn-key traffic systems, permanent traffic signage

***Applied electronics and optics***

- Development of electronic and light-optic devices, custom-made control and monitoring systems, including their subsequent manufacture
- We have a top-quality development team with extensive experience in developing and constructing equipment both as regards electronics and mechanics and design and use

**Our company is a stable and serious partner especially to the following potential users:**

- Organisations concerned with the administration and maintenance of roads and railways
- Railways
- Local authorities
- Manufacturers and sellers of municipal service equipment, building, and other machines
- Construction firms and project designers
- Police and firemen

***Our company has a well established quality control system and is accredited with ISO 9001.***

TÜV SÜD ČSN EN ISO 9001:2001

**DYNASIG, spol. s r.o.**, Popůvky 134, 664 41 Popůvky, Czech Republic
phone: +420 543 217 480, fax: +420 543 217 421, e-mail: info@dynasig.cz

**www.dynasig.cz**

# EVEKTOR – Automobile and Aircraft Development Centre

**Petr Grebeníček,** EVEKTOR, spol. s r.o., e-mail: pgrebenicek@evektor.cz, www.evektor.cz

VUT 100 Cobra

## History

Evektor was established in 1991. Since 1992 it has been active in the area of aircraft development and design and has become a leading design office of the aircraft industry in the Czech Republic as well as a reliable partner to a number of important European car manufacturers. In the late 1990s it co-operated with the Czech aircraft factory, Aero Vodochody, on the development of the small Aero Ae 270 Ibis aircraft. At that time, its experienced designers developed the plane's airframe and its systems. EVEKTOR does not limit itself to activities in the aircraft industry, although this was its core programme at the beginning of its existence. The company is becoming increasingly involved in co-operation with important European car makers (Volkswagen Group, Volvo, etc.) and other manufacturers operating in the consumer goods industry. In 1994, EVEKTOR started co-operation with Germany's Andreas STIHL. This co-operation is continuously enlarging and is now one of three pillars of EVEKTOR's business activities.

## Development in the Aircraft Industry

EVEKTOR's activities in the area of the aircraft industry go back to the very beginning of the company's existence; in fact, these activities prompted its establishment. Besides co-operation with aircraft manufacturers in the Czech Republic (Aero Vodochody) and in other countries (Marshall Aerospace in the UK, Wolsberg Aircraft in Belgium, and Vulcan Air in Italy), EVEKTOR works on its own aircraft designs. In 1996 the outcome of its efforts was the Eurostar light single-engine aircraft, which brought into the segment, where until then amateur planes prevailed, standards of certified aircraft construction. The building of more than 900 aircraft is evidence that it was a fortunate choice. With the arrival of a new category of light sport aircraft, Eurostar underwent further development, which gave rise to a new plane with 125 kg higher take-off mass, aptly named SportStar. SportStar was the first light sports aircraft certified in the USA, where it soon became a great commercial success – more than 100 SportStars were built in the first three years of its manufacture, and were not only sold in the United States, but were also exported to Australia, South America, and South Africa.

Logically, the next step was starting the development of a four-seat single-engine aircraft, named Cobra. In its development, EVEKTOR co-operates closely with the Institute of Aerospace Engineering attached to the University of Technology in Brno. Currently, EVEKTOR's core programme in the area of aircraft engineering is the development of a multipurpose twin-engine plane, EV-55 Outback, that will be able to carry up to 9 passengers or 1 800 kg of cargo. This more or less revolutionary aircraft is being developed in co-operation with members of the Association of Aircraft Manufacturers of the Czech Republic (ALV CR). The development of the EV-55 Outback aircraft has no parallel in the Czech Republic for the past 20 years in terms of technical and technological know-how. Evidence of this is the significant financial assistance made available for the development of

Photo: EVEKTOR archives

the EV-55 aircraft by the Ministry of Industry and Trade of the Czech Republic in the form of a grant.

## Development in the Automotive Industry

Since 1996, we have co-operated intensively with ŠKODA AUTO, a.s. in the development of new car models. The company participates especially in the development of car interiors and bodies. A team of experienced designers work directly in the ŠKODA AUTO development centre and others are engaged in EVEKTOR's branch in Mladá Boleslav. The quality of their work is attested by their successful co-operation with car factories in the development of forming instruments for important parts of car bodies, such as mudguards, the hood, and car body side panels.

## Technical Backing

No modern development and design company can exist without modern design and computing facilities, and EVEKTOR is no exception. In the early 1990s, nearly all the company's development took place in a 2D system environment, with computing equipment involving massive investments in both programmes and hardware. Today, EVEKTOR's entire development is supported by advanced 3D systems. These sophisticated instruments make it possible to shorten the time needed for the actual development of the product to the minimum and use the most up-to-date design methods. If necessary, the rapid prototyping method is used. This method makes it possible, thanks to the 3D printing technology, to make a sample, or even a prototype

EV-55 Outback

part, within a short time limit, that can be used directly on the machine to verify its functioning. In making computer analyses, technicians use advanced programming equipment, especially for strength analyses by the finite element method, or for crash analyses.

## Participation in European Research Projects

Evidence of the high technical standard of EVEKTOR and its technicians is the company's extensive participation in research and development programmes, especially in the area of aviation, which are supported directly by the European Union, whose aim is raising the technological and technical standards of the European aircraft industry, especially as regards small aircraft, i.e. general aviation aircraft. EVEKTOR participates actively in the following research programmes: CESAR (Cost Effective Small Aircraft), ENFICA – FC (Environmentally Friendly Inter City Aircraft Powered by Fuel Cells), ARTEMIS and other programmes. ■


# ŠKODA AUTO Conquers the European Market

**David Šikula,** ŠKODA AUTO a.s., e-mail: david.sikula@skoda-auto.cz, www.skoda-auto.cz

ŠKODA AUTO Group is one of the most important economic groupings in the Czech Republic. Only few car makers worldwide can boast uninterrupted car manufacture for more than one hundred years. Indeed, the ŠKODA's way to its present-day prosperity began in 1895. The Group's core business is the manufacture of Škoda cars, but ŠKODA also makes car components, original parts, and accessories. In 2008, the Group's production programme comprised five Škoda model series and its output was 606 614 cars. In addition to cars, it also makes various important car parts, for its own use and for the use of other manufacturers within the VW concern.

## Quality without Compromise

Technical skill and perfect workmanship are attributes attached for years to the technical development of ŠKODA AUTO. The result is attractive cars on a high technical level with high quality standards that will enchant their users with their flawless functioning, reliability, and a good price/performance ratio. Long-term values of technical development are especially the manufacturer's own design, construction of both the exterior and interior, prototype manufacture and testing of whole cars and their components. In 2008, most of the work concentrated on the development of new products and care for existing models in all model series. A great challenge for technical development was the further optimisation of material costs. ŠKODA's traditional international co-operation with other development centres helped to raise the technical skills of the workers and their expertise, and consequently the technical standard of the ŠKODA AUTO development centre, the third largest such centre within the Volkswagen concern. An equally important event last year was the completion of the technological centre's new building. Confirmation of the company's ISO certificates has become a matter of course.

The Škoda trademark is traditionally one of the world's oldest racing car manufacturers. According to historical sources, Škoda automobiles have participated in international sporting events for more than a century.
On the basis of the decision of the company management at the end of 2007 and in accordance with the concern's motorsport strategy providing for the Škoda trademark to participate in the rally category, final development and testing of Škoda Fabia Super 2000 continued in 2008. In mid-2008, the car was first presented to experts. After that, Škoda Fabia Super 2000 participated successfully in the Barum Rally and Rally San Remo competitions as a pre-rally car. The main target – the award of a homologation certificate to that car - was achieved at the end of the year.

## Good Name Is the Company's Key Value

ŠKODA AUTO is aware of its exclusive position in the Czech business environment and of its steadily growing credibility within the Volkswagen concern and among rival car makers. It therefore attaches basic importance to its being perceived by the employees, trading partners, all its customers and the public in general as a successful and at the same time a transparent and open company in terms of information availability. It is aware of its long tradition and the continuous building of its good name, which it sees as a key value for the further successful development of its business activities.

## The Company Is Developing Despite the Financial Crisis

The advancing world financial and economic crisis caused a decline in demand in all im-

Photo: ŠKODA AUTO archives

portant markets and it also had an impact on the economic results of the largest Czech exporter. However, despite the negative factors, ŠKODA AUTO has maintained its financial stability and it remains a strong partner in a good liquidity position. The presentation of new products and new technical items, intensive development of existing and new models, nearing completion of a new technological centre and the confirmation of the validity of its ISO quality management certificates are activities which strengthened and enhanced the benefits of ŠKODA AUTO's technical development in 2008.

## Innovation Is a Continuing Process

From the technical development point of view, 2008 was a year marked by several important events in the history of the Škoda trademark. At its beginning, the successor of the car factory's flagship, second-generation Superb model, was presented and then put into serial production. Another important event was the termination of Octavia's rejuvenating development and putting the model into serial production at the end of the year.

## The Environment Is the Highest Priority

A clear expression of the company's responsibility for a healthy environment is its environmentally friendly models bearing the GreenLine label. In 2008, the Škoda GreenLine series was enlarged with the addition of an eco-version of the Superb model. It is driven by a 1.9 l 77 kW TDI PD DPF engine, whose combined consumption is a mere 5.1 l/100 km. The $CO_2$ exhaust fume level of 136 g/km is a remarkable feature of this car category. In all the GreenLine models, lower fuel consumption has been achieved by the choice of a suitable fuel-saving engine, a change of transmission ratios, the use of special tyres marked for their low rolling resistance and adjustment of the cars' aerodynamics. Solid particle filters are a matter of course in all GreenLine models.

## Investments in the Technological Centre

Rising demands as to technical skills of workers in ŠKODA AUTO's technical development department also require, among other things, considerable investments in the enlargement of the workspace and the purchase of the most up-to-date equipment. In December, after two years of the laying of the foundation stone, the new building of the Technological Centre was opened ceremonially and put into trial operation. The Centre, one of the largest investments made by the Volkswagen concern recently, is evidence of the recognition of the benefits it brings to Škoda's technical development. The building, situated on the left bank of the Jizera and covering an area of nearly 50 000 sq. m, is connected with the existing technological premises by a newly built bridge. The new building will house laboratories and offices for more than 500 employees. The traditional manufacturing plants of the ŠKODA AUTO mother company are located in Mladá Boleslav, Vrchlabí, and Kvasiny in the Czech Republic. The ŠKODA AUTO Group also has assembly plants in Aurangabad, India, and Kaluga, Russia.

Škoda Octavia

## Favourable Results despite the World Financial Crisis

The further broadening of Škoda's sales and service network across the world, the successful introduction of a new generation of the Škoda Superb prestigious model and the modernised version of Škoda Octavia helped to boost Škoda sales to a record high and to strengthen the trademark's position on a world scale. These results have been achieved despite the negative impact of the advancing financial crisis manifesting itself by a severe cooling down of demand in the world's key markets. In 2008, the ŠKODA AUTO Group once again managed to raise the volume of its sales. In all, the Group sold its customers 674 530 cars, a 7.1% year-on-year increase, and at the same time a new sales record.

## The Company's Vision of the Future

The company's strategic aim in terms of marketing is the further strengthening of its position in Western Europe with the simultaneous maintenance of its dominant position in Central Europe. As part of the "go east" strategy, its priority is to establish itself in the developing East European and Asian markets, among other things in the form of foreign projects and assembly works. Its strategic aim in the product area is to introduce one new model each year. To attain this aim, the company is planning further modernisation and the preparation of successors of existing models, in addition to the enlargement of its product portfolio with the addition of models in forward-looking market segments that are still vacant. Part of its strategy is also the minimisation of the impact of its products on the environment – especially by reducing exhaust fume emissions and noise.

■

# Aero Vodochody: One of the Oldest Aerospace Manufacturers in the World

**Zuzana Kučerová,** Spokeswoman, AERO Vodochody a.s., e-mail: pr@aero.cz

Aero Vodochody (further referred to as Aero), based 15 km north of the capital city of Prague, is the largest aerospace manufacturer in the Czech Republic, focusing on development, production, sales, and support of civil as well as military aerospace technology. This year, Aero celebrates 90 years.

"90 years on the aerospace market ranks us among the oldest aerospace manufacturers worldwide. We have always belonged among well-established suppliers and reflected modern trends in the aerospace industry, providing our customers with first-class services," says Igor Hulak, President of Aero Vodochody.

Since its foundation, Aero has focused on aircraft development and production, aerostructures and aircraft repairs. As early as 1919, Aero carried out the first flight of its first indigenous type – the Aero A-1. Orders followed from the Ministry of Defence for this military trainer and Aero soon became its main supplier. Aero also equipped the national Czech Airlines with highly reliable aircraft.

Since 1919, Aero has produced and delivered worldwide more than 11 000 aircraft: military as well as civilian types, subsonic as well as supersonic, in-house designed as well as licence-produced aircraft and helicopters. Today, Aero utilises its experience from the development, production and support of military and commercial aircraft in international aerostructures projects, which today represent, besides the traditional military programme, the main priority of Aero.

## Aerostructures Programme: Involved in the Entire Life Cycle of Civil and Military Projects

The Aerostructures Programme of Aero focuses on the comprehensive deliveries of aerospace technology with a high degree of product finalisation, including systems integration and testing, full quality control, supply chain management and end-to-end customer support, starting from the production transfer phase, through the implementation of customers' requirements during the production phase to after-sale support. The Programme is involved in the entire life cycle of civil and military projects, and combines the company's experience in aerospace production dating back to 1919 with the everyday practice within running serial production, using the latest technology and test methods.

Aero has gradually been expanding its portfolio of customers, representing the world's leading aerospace manufacturers. In June 2009, Aero announced a significant new contract for the design, development, and following production of the new Bombardier airliner CSeries. In 2008, the production of Embraer 170/190 door sub-assemblies for the French company Latecoere commenced as a part of the aerostructures programme of Aero, and a further major contract for deliveries of JAS-39 Gripen pylons for the Swedish Saab was signed too. Production of the S-76 helicopter continues, ready for installation of dynamic parts for the US customer, Sikorsky Aircraft Corporation, as do the deliveries of C-27J Spartan centre wing box for the Italian customer, Alenia Aeronautica, F/A-18E/F/G gun bay door for the US Boeing Company, Boeing 767 fixed leading edge assembly kits for British Spirit Aerosystems, Airbus 320/A340 sub-assemblies for the European concern, EADS, and Boeing 747 parts for Vought Aircraft Industries of the US. The Sikorsky S-76 helicopter programme includes detail part fabrication, airframe assembly, installation of hydraulic, electronic, and fuel systems and avionics, and following ground tests of the installed systems and management of more than 200 suppliers. Aero Vodochody has also produced airframes of the development phase of the S-76D model, the latest version of the S-76 helicopter. The co-operation between Sikorsky and Aero compared to most of the aerostructures programmes worldwide is unique in terms of the level of product finalisation.

## Military Programme: Long-term Partner to Air Forces Worldwide

The Military Programme is the long-term partner to several air forces, particularly the Czech Air Force, focusing on the comprehensive support of Aero-branded products – advanced training and light combat aircraft. The single-seat advanced light com-


Photo: Aero Vodochody archives

Aero is a long-term partner to the Czech Air Foce

Aero has produced more than 250 S-76 helicopters for Sikorsky

bat and two-seat advanced training L-159 aircraft represent the key elements of the complex L-159 Combat & Training System, which also includes an integrated logistic support, a ground-based training system, mission planning and debriefing equipment and other support aids. The system was developed in co-operation with leading international and national aerospace manufacturers and is well-established in service with the Czech Air Force, with the Spanish Air Force to follow soon. As a part of the national air defence system, the L-159 squadron flies a broad scale of missions, starting with advanced and operational training, through ground support to reconnaissance and air-to-air missions, regularly participating in international exercises within the NATO (Tactical Leadership Programme, NATO Air Meet, Clean Hunter or Flying Rhino). To customers of the earlier developed L-39/L-59 aircraft, the Programme offers a wide range of services, starting with service-life extension programmes, through overhauls to upgrades of all the systems of the aircraft.

## Portfolio of Companies

Aero is the sole shareholder of Technometra Radotín, a traditional manufacturer of landing gears and other aerostructures, and the Vodochody Airport, a private international airport. The potential of Aero was significantly boosted by the acquisition of Rotortech Aero Composites Ltd., a manufacturer of composites, by Penta private equity group, concluded in 2007.

## Aero Vodochody: Preferred partner in aerospace technologies

The strategic aim of Aero is to be the preferred partner in first-class projects of leading aerospace manufacturers, to participate in risk-sharing projects and offer flexible services and advanced products in the global aerospace and defence industry. Aero will keep developing its current potential organically, by innovation and investment in advanced technologies, as well as through international acquisitions, through which Aero is going to build a new European aerospace holding in the CEE region. Increasing its production capacity and pooling experience in aerospace production will help Aero offer even better services to its current customers, attract new ones and better compete with the global players on the aerospace market. ■

# World Renowned Tractors from the Czech Republic

**Ivan Kazda,** ZETOR TRACTORS a.s., e-mail: ikazda@zetortrade.cz, www.zetor.cz


Zetor, Czech tractor manufacturer, is the largest maker of this type of vehicle in the framework of the new EU states. Sixty-three years have passed since the first Zetor tractor was made, and more than 1.1 million tractors of this make have been turned out by the company since its establishment. Most of the tractors have been exported to over 90 countries of five continents.

## Important Czech Exporter

Most tractors made by Zetor go for export, the sales being mediated by Zetor Trade company. In 2008, 6 537 tractors were sold, 92% of which were made for export. In addition, 640 tractor components were exported to Brazil. Last year, Zetor tractors were sold in the Czech Republic and the Slovak Republic and in 35 export territories, the largest of them being Poland, the Scandinavian countries, the United Kingdom, Ireland, the Netherlands, Germany, and Croatia.

## The Tractors Undergo Continuous Technical Innovation

In 2009, the model line of tractors has been enlarged with types Proxima, 90 HP, versions 2WD, 4WD, cabrio, and cabin. Also, a new model line, Zetor Proxima Power, partly based on the Zetor Proxima model, was put into serial production. An essential change is the innovation of the tractor body, and a completely new feature is its four-gear transmission with 3° powershift and powershuttle. The design of the new reversing transmission increases the driver's comfort in controlling the tractor, especially as regards the starting of the machine and clutchless shifting. Both models have lower fuel consumption, are less noisy, and are marked for their long service life, while meeting the strictest environmental and emission standards.

## Key Economic Indicators

In 2008, the Zetor Group's consolidated revenues were on the level of EUR 200 million. (The consolidation whole comprises both domestic companies operating under the Zetor trademark and affiliations in other countries, i.e. Poland, Germany, France, the United Kingdom, Ireland, and the USA.) The company's estimated revenues for this year will be slightly lower, especially as a result of slacker demand for new tractors in the first half of the year in connection with the advancing world economic recession. The targets Zetor has set itself for this year are significant cost reductions, higher productivity of labour, and optimisation of internal processes with special regard to maximum comfort and flexibility in relation to customers. In 2008, the company's average workforce, not including workers hired from personnel agencies, amounted to 1084.

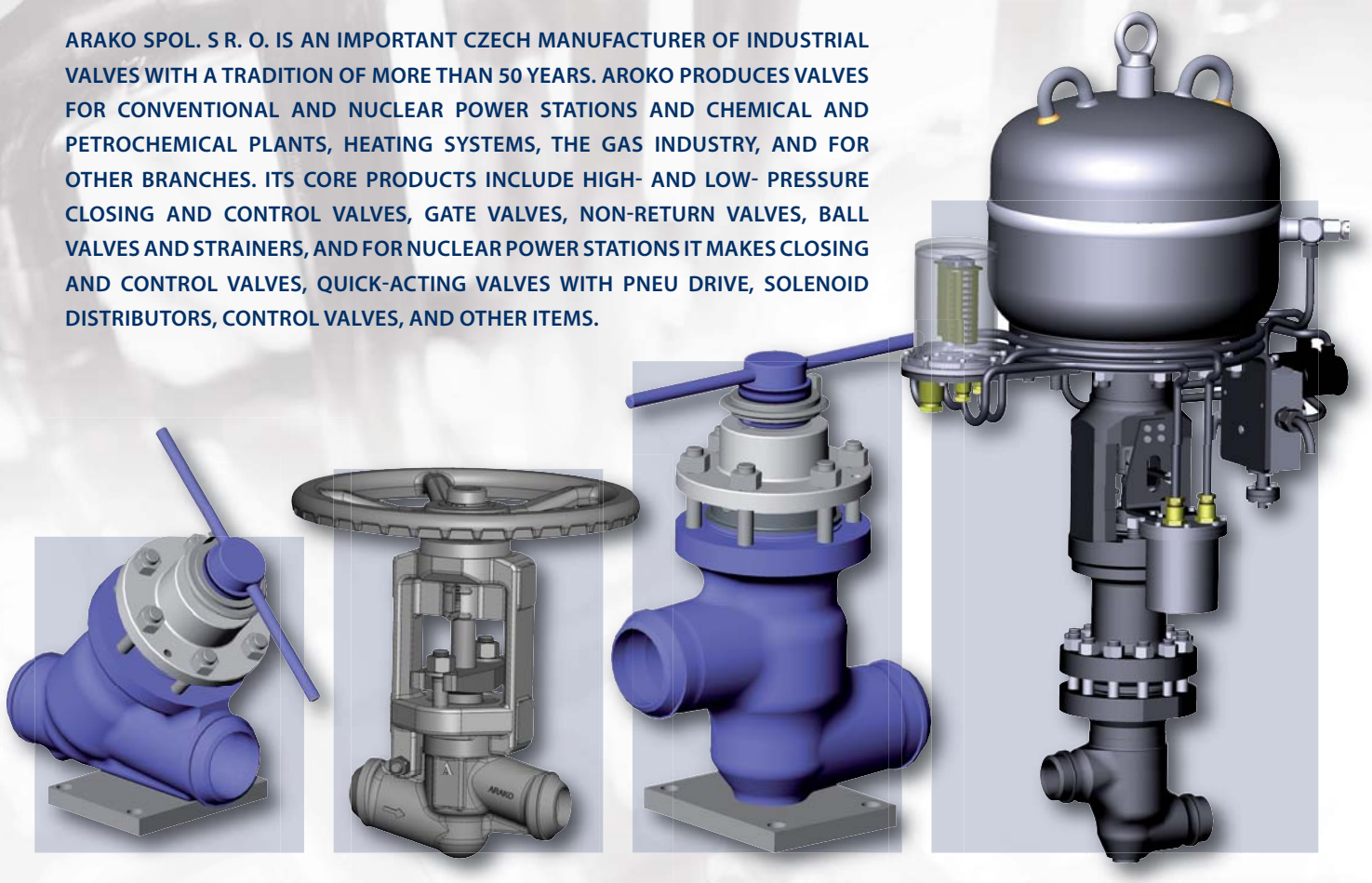
## The Presentation of New Types of Tractors Will Lead to a Production Increase

Despite a decline in production, the company managed to introduce a new type of tractor, named Proxima Power. In future years, it is planning to add another type of tractor to its production range. In 2010, Zetor envisages a low production growth in connection with higher sales of the Power models mentioned above and the launching of a new trade policy. 2011 is expected to be a year, when sales will grow massively and production will be enlarged. ■


Photo: Zetor archives

# ARAKO
INDUSTRIAL VALVES

**ARAKO SPOL. S R. O. IS AN IMPORTANT CZECH MANUFACTURER OF INDUSTRIAL VALVES WITH A TRADITION OF MORE THAN 50 YEARS. AROKO PRODUCES VALVES FOR CONVENTIONAL AND NUCLEAR POWER STATIONS AND CHEMICAL AND PETROCHEMICAL PLANTS, HEATING SYSTEMS, THE GAS INDUSTRY, AND FOR OTHER BRANCHES. ITS CORE PRODUCTS INCLUDE HIGH- AND LOW- PRESSURE CLOSING AND CONTROL VALVES, GATE VALVES, NON-RETURN VALVES, BALL VALVES AND STRAINERS, AND FOR NUCLEAR POWER STATIONS IT MAKES CLOSING AND CONTROL VALVES, QUICK-ACTING VALVES WITH PNEU DRIVE, SOLENOID DISTRIBUTORS, CONTROL VALVES, AND OTHER ITEMS.**



The company provides technical support and a high-quality guarantee and post-guarantee service for its products. Another service it offers is the re-engineering of industrial valves both in ARAKO's mother plant and in the customer's premises. It has its own development and construction department, which uses advanced CAD systems and computing methods and co-operates with external research centres. It also provides consulting services based on its experience in supplying products for nuclear and conventional engineering plants at home and abroad.

Its quality management system meets ISO 9001:2000 requirements. The certification of its quality management system was carried out by the renowned TÜV Süddeutschland organisation. The certified quality management system guarantees the quality of the industrial valves throughout the entire production process, from development and production to sale and servicing. Valves exported to the Russian Federation are certified under the GOST R system and valves for nuclear power stations comply with the OIT system.

For a number of years, ARAKO spol. s r. o. has been an authorised supplier for ČEZ, a.s., NAEK, Ukraine, Atomstrojexport, Russia, and Slovenské elektrárne ENEL, Slovakia. Its other customers operating in different branches of industry include the following companies:

**POWER INDUSTRY:**
- ČEZ, Inc., Czech Republic
- SES Tlmače, Inc., Slovakia
- Dalkia Morava, Inc., Czech Republic
- ŠKODA HOLDING, Inc., Czech Republic
- Plzeňská teplárenská, Inc. Czech Republic
- ALSTOM Power, Ltd., Czech Republic
- Michelin, heating plant United Kingdom
- Blackburn, heating plant United Kingdom
- Shen Tou, power plant China

**NUCLEAR POWER INDUSTRY:**
- ČEZ, Inc., Czech Republic
- Slovenské elektrárne, Inc., Slovakia
- OAO Atomenergoprom, Russia
- Kursk NPP, Russia
- Novovoronezh NPP, Russia
- OAO Turboatom, Ukraine
- NAEK Energoatom, Ukraine
- NEK Energoatom, Bulgaria
- Jaslovské Bohunice NPP, Slovakia
- Mochovce NPP, Slovakia
- Paks, NPP, Hungary
- Kozlodui NPP, Bulgaria
- Temelín NPP, Czech Republic
- Dukovany NPP, Czech Republic

**CHEMICAL INDUSTRY:**
- Borsodchem Rt., Hungary
- ALIACHEM Inc., Czech Republic
- Chemoprojekt, Inc., Czech Republic
- Chepos Engineering.Ltd., Czech Republic
- Linde–KCA–Dresden, Germany
- KSB AG, Germany
- Krupp Uhde GmbH, Germany

**PETROCHEMICAL INDUSTRY:**
- Moravské naftové doly Inc. Czech Republic
- MiRO Mineraloelraffinerie Oberrheim GmbH & Co. KG, Germany
- Shell & DEA Oil GmbH, Germany
- ÖMV AG, Austria

**GAS INDUSTRY:**
- Plynostav Pardubice Holding Inc. Czech Republic
- Transgas, Inc., Czech Republic
- ODS B. V., Holland

**ARAKO spol. s r. o., Hviezdoslavova 18, 746 01 OPAVA, Phone: +420 553 694 111, Fax: +420 553 694 777, E-mail: arako@arako.cz**

# Poll of Successful Companies Operating in Transport Engineering

## AGADOS, spol. s r.o.

Průmyslová 2081, 594 01 Velké Meziříčí, phone: +420 566 653 311
fax: +420 566 653 368, e-mail: obchod@agados.cz, www.agados.cz

***Number of employees:*** 180
***Contact:*** Mr Petr Ostrý
***e-mail:*** ostry@agados.cz
***Export:*** Europe, Japan, Australia

Agados s.r.o is one of the largest European manufacturers of trailers up to 750 kg and up to 3 500 kg, and a leading manufacturer in the Czech Republic. Through its branches and dealers, the company is represented in most European states and it also has a sales network in the whole of the Czech Republic. To increase its exports, the company has set up two branches – in Germany (Agados Deutschland GmbH) and in Slovakia (Agados Slovakia s.r.o.). To meet the demand for its products, in 2006 the company moved to new, larger premises. Its trading partners are chain companies, including OBI, AHOLD, MAKRO/METRO, and BAUHAUS, and contracting partners in the target countries.

***What can be transported with the help of your products?***
Our products can be used for the transport of practically everything you can imagine. That is actually the advantage of our products. If, for example, one series of trailers is selling less readily, maybe due to the current economic decline (e.g. problems of haulage contractors), the gap can be filled by higher sales of trailers used by gardeners and do-it-yourself people, who prefer saving money to lower their family budgets.

***Can you give examples of important foreign orders you received recently?***
We have won several tenders and supply our trailers for the Swedish army in the framework of their combat missions to Iraq and Somalia. On the whole, it can be said that we are very successful in public tenders invited by armies and the police throughout Europe. Very interesting are possibilities to make deliveries to Russia and Australia. We are regular suppliers of trailers for the airport in Frankfurt and have passed the first test for the delivery of trailers for the RAMIRENT machinery rental company, one of the main partners of the icehockey world championship.

***Where else in the world can users come across your products?***
Users can come across our products not only in our largest market in Europe, but also on all the other inhabited continents. Telling proof of the quality of our products, in our opinion, is the fact that our VZ - 33 B1 trailers are used by the Swedish army on their foreign combat missions. On these missions, the requirement is absolute resistance and massive construction, which the VZ-33 trailer fully meets. Our trailer was used, for example, for the transport of the McLaren Formula 1 monopost, and a real highlight was the transport of a three-piece suite for the pop singer Madonna.

## První obalová spol. s r.o.

Černokostelecká 118, 108 00 Prague 10
phone: +420 272 705 233, fax: +420 272 706 240
e-mail: jsvedova@pregis.com, www.prvni-obalova.cz

***Number of employees:*** 104
***Contact:*** Mr Petr Hettner
***e-mail:*** info.praha@pregis.com, info.brno@pregis.com
***Export packing:*** USA, Russia, Egypt, Pakistan, Australia, Iraq, Chile, Japan, Mexico, and many other destinations

První obalová spol. s r.o. is known in the Czech Republic as one of the leading companies in the area of export packing and complete related services. Its programme also includes the development of packing systems and the manufacture and processing of bubble and foam foils. One of its commercial activities is the sale of packing material. Its main customers are companies engaged in engineering, electronics, and the automotive industry.

***Where in the automotive industry is your packing used?***
For the automotive industry, we develop special packing systems and packing processes. The packing circulates throughout the manufacturing process and is used for the protection of products as they are moved from place to place. This purpose is served by plastic crates, boxes, separators, etc.

***Your company also performs export packing; can you tell us something about this service?***
Export packing is used especially in engineering. This involves mainly the manufacture of wooden boxes, corrosion protection, and the fixing of larger pieces, such as parts of production lines, machines and equipment, which are exported to different places all over the world. Such packing requires technical knowledge and experience to ensure one-hundred-per-cent protection of the goods during transport and subsequent storage, sometimes in different climatic conditions.

Agados trailers can transport practically everything


Photo: Agados archives, BVV archives

# The IEF Enters Its Second 50 Years of Existence

The International Engineering Fair (IEF) is one of the most important and the largest technological fair in Central Europe. Each year, it enjoys great popularity among exhibitors, visitors, technical enthusiasts, and journalists. The guests at the 50th Fair included distinguished figures on the Czech political scene, such as President Václav Klaus and former Prime Minister, Mirek Topolánek. Traditionally, the Fair is held in Brno at the end of the summer holidays.

## 51st IEF

The 51st International Engineering Fair will be held in Brno from 14 to 18 September 2009. As in previous years, this will be a display of new items, innovations and key trends in engineering and other branches of industry. The Fair's structure comprises nine specialised technical units, the largest and most important of which are machine tools and forming machines, materials and components for engineering, electronics, automation, gauging and measuring equipment, plastics and products of the rubber and chemical industries. A new theme of this year's event is a digital factory, i.e. a simulation of comprehensive manufacturing processes in the virtual world.

## Slovakia - a Partner to IEF

Although each year Slovakia is strongly represented at the International Engineering Fair in Brno, in 2009 its representation will be rather exceptional. The reason is that this year the Fair will be held under Slovakia's official auspices. Support and active participation in IEF 2009 has been promised by both the Ministry of Economy of the Slovak Republic and the Union of Engineering Industry of the Slovak Republic. The participation of leading Slovak State representatives is also expected. As part of Slovakia's presence as a partner country, a bilateral trade policy conference will be held, in addition to a series of technical presentations and seminars of interest to both Czech and Slovak institutions and companies.

## 2008: Most Strongly Represented were German Companies

Last year, the IEF was attended by more than 2 000 exhibitors from 29 countries, which presented their products on an area of 66 562 sq. m. More than one-third of the exhibitors were foreign companies. A full 60% of exhibitors were manufacturers, the rest being businessmen. The Fair was attended by nearly 100 000 visitors from 57 countries. Most visitors came from Slovakia, Germany, Poland, Austria, Hungary, Italy, Russia, and Belarus. Last year saw a substantially stronger representation of Asian countries, mainly China and Taiwan, as well as Russia, Spain, and France. Evidence of the interest shown in attending the 50th IEF is the fact that all roofed surfaces in the exhibition halls had been sold out long before the Fair opened.

*More information in English and German at www.bvv.cz/msv*

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### FOREIGN PARTICIPATION IN 2008

Germany 298 companies
Slovakia 90 companies
Italy 74 companies
Austria 43 companies
Switzerland 38 companies
France 26 companies
Taiwan 20 companies
China 19 companies

### BRANCH SPECIALISATION AT THE 2009 INTERNATIONAL ENGINEERING FAIR

- Mining, metallurgical, foundry, ceramics and glass-making equipment
- Materials and components for engineering
- Drives, hydraulics and pneumatics, cooling equipment and air conditioning
- Plastics, rubber products, and chemicals
- Machine tools and forming machines, tools, surface finishing and heat treatment, welding machines
- Power engineering
- Electronics, automation and gauging
- Eco-engineering
- Research, services, institutions

Václav Klaus on opening of the Fair

"I'm very glad that the Fair lives, that it is a living undertaking and not just a matter of tradition, that our engineering has once again become a dynamic part of our economy. The International Engineering Fair is clear evidence of the fact that after some wavering in the early 1990s, our engineering has caught its breath and has managed to establish itself in the world. I would like to congratulate the Fair, which is a good opportunity for people to meet and to learn about each other, and wish our business the best of success."

**Václav Klaus, President of the Czech Republic, opening of the Fair, 15 September 2008.**


IEF fairgrounds

# Exhibitions and Trade Fairs in the Area of Engineering in the Czech Republic in 2009

## MSV 2009 (IEF 2009)

**51st International Engineering Fair**
14 -18 September 2009, Výstaviště 1, 647 00 Brno
Veletrhy Brno, a.s., e-mail: msv@bvv.cz, www.bvv.cz/msv

## OFFICIAL PARTICIPATION OF THE CZECH REPUBLIC IN INTERNATIONAL EXHIBITIONS:

## EQUIP AUTO 2009

**Deliveries for the automotive industry**
13 -18 October 2009, Parc des expositions, Paris-Nord, France
COMEXPOSIUM, e-mail: sandra.vernier@comexposium.com
www.equipauto.com

## TRAKO

**8th International Railway Fair**
14 -16 October 2009, 5 Beniowskiego St, 80-382 Gdańsk, Poland
Gdańsk International Fair Co., e-mail: ewa.niemczyk@mtgsa.com.pl
www.mtgsa.compl/e4u.php/21

## VIIF 2009

**18th Vietnam International Industrial Fair**
20 -24 October 2009, 148 Giang Vo, Hanoi, Vietnam
Vietnam Exhibition Fair Centre – VEFAC
e-mail: vefac@netnam.vn, www.vietnamindustrialfair.com

## MACTECH

**The 9th International Exhibition for Machine Tools Industrial Tools, Welding, and Cutting Equipment**
22 -25 October 2009, Cairo, Egypt
Cairo International Fairground, e-mail: info@ifg-eg.com
www.ifg-eg.com/macteck

## MINISTRIES

*Ministry of Transport*
www.mdcr.cz ■ e-mail: posta@mdcr.cz

*Ministry of Industry and Trade of the Czech Republic*
www.mpo.cz ■ e-mail: mpo@mpo.cz

## ASSOCIATIONS AND UNIONS

*Association of the Aviation Manufacturers of the Czech Republic*
www.alv-cr.cz ■ e-mail: info@alv-cr.cz

*Association of the Czech Railway Industry*
www.acri.cz ■ e-mail: kanevova@acri.cz

*Automotive Industry Association*
www.autosap.cz ■ e-mail: autosap@autosap.cz

*Association of Engineering Technology*
www.sst.cz ■ e-mail: svaz@sst.cz

## UNIVERSITIES

*Czech Technical University in Prague, Faculty of Mechanical Engineering*
www3.fs.cvut.cz ■ e-mail: jiri.zapotocky@fs.cvut.cz

*Brno University of Technology , Faculty of Mechanical Engineering*
www.fme.vutbr.cz ■ e-mail: dumek@fme.vutbr.cz

*Technical University of Liberec, Faculty of Mechanical Engineering*
www.vslib.cz ■ e-mail: hana.jenikova@vslib.cz

*VŠB – Technical University of Ostrava, Faculty of Mechanical Engineering*
www.fs.vsb.cz ■ e-mail: dekanat.fs@vsb.cz

*University of West Bohemia in Plzeň, Faculty of Mechanical Engineering*
www.fst.zcu.cz ■ e-mail: hosnedl@kks.zcu.cz

## RESEARCH ORGANISATIONS AND INSTITUTES

*Research Center of Manufacturing Technology, Czech Technical University in Prague*
www.rcmt.cvut.cz ■ e-mail: info@rcmt.cvut.cz

*Institute of Manufacturing Technology, Brno University of Technology, Faculty of Mechanical Engineering*
www.fme.vutbr.cz/uinfo.html?ustav=13310&lang=1
e-mail: kocman@ust.fme.vutbr.cz

*Institute of Production Machines, Systems and Robotics, Brno University of Technology, Faculty of Mechanical Engineering*
www.fme.vutbr.cz/uinfo.html?ustav=13350&lang=1
e-mail: kolibal@uvssr.fme.vutbr.cz

Photo: CzechTourism

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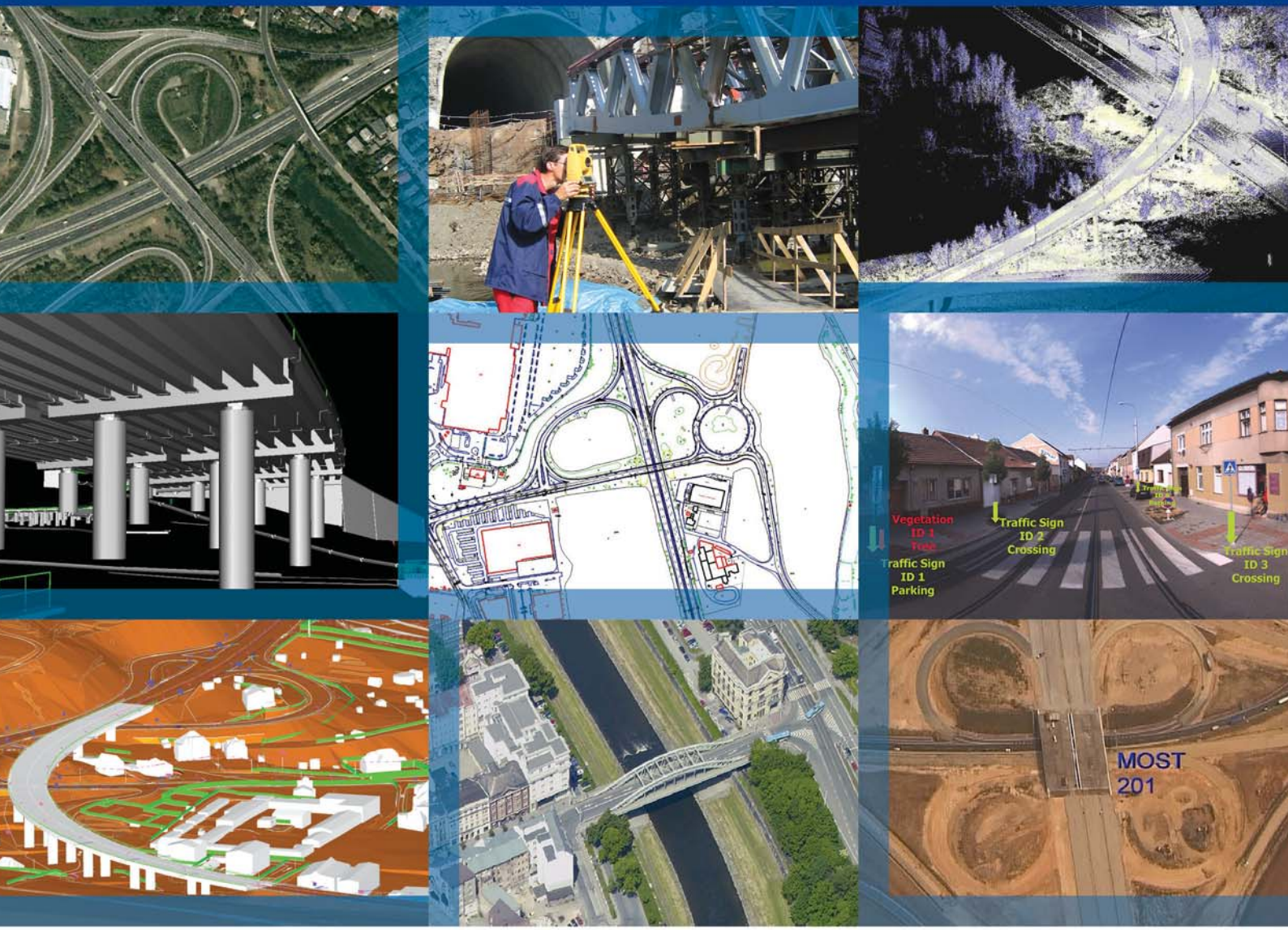


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**WH(Q) 105 CNC**
is a high-power machine with continuous control. It is used for the efficient machining of box-shaped pieces from several sides and for machining moulds and other workpieces of complicated shape.

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