Busworld Russia
fast approaching

Busworld Russia will open its doors from 25 to 27 October at the Crocus Expo Centre in Moscow. Busworld and its partners, ITEMF Expo, have attracted many leading Russian and international exhibitors to the well-appointed exhibition centre.
The Russian bus market is still strong. In the first six months of 2016, a total of 9,679 buses and coaches of all sizes were first registered.

The market is dominated by three main vehicle sizes. The smallest are minibuses, mainly around 16-20 seats. They are used on a wide variety of work, including regular services in towns and cities, operating like shared taxis.

There is another very popular segment around 8.0-10.0 tonnes gross, and dominated by PAZ, the Pavlovsky factory. Their models are all high frame with front-mounted engines, and some of them have recently been substantially modified and restyled. PAZ vehicles can be found on urban, suburban and rural services, and are also popular for factory transport.

The third segment is for full size city buses, normally around 12m long, but tri-axle buses can also be found on some routes. The market leader is LiAZ, the Likino factory, using Western driveline components like ZF axles and fully automatic gearboxes, also Western diesel engines. The LiAZ range includes articulated buses. Vehicles are now well equipped with powerful heating systems, extra insulation, closed circuit television, facilities for passengers in wheelchairs and electronic destination equipment, to name but a few.

There is a small specialised segment for massive six wheel drive truck-based buses. These retain the original truck cab but also have a large passenger carrying compartment, used to take employees to and from oil and gas fields. They can work in very rugged conditions, on unmade roads, in the far north of Russia.

The largest manufacturer in Russia by a long way is the GAZ Group. It makes minibuses in its own name, including the attractive little Next. GAZ also owns LiAZ, the Kurgan bus factory in Siberia, PAZ, and several other subsidiaries making components.

One manufacturer new to any Busworld exhibition is MZKT. This company is wholly owned by the Republic of Belarus and is best known for trucks to carry very heavy loads in difficult conditions. Now using the Volat brand, it acquired Neman Lida Buses in 2014 and now makes a range of medium and full size buses. The smaller models are based on IVECO Daily chassis for either diesel or CNG engine options. There is also a full size interurban bus with a Deutz engine.

Russian automotive component suppliers will also be well represented. Factories have been modernising and investing in new equipment. That shows in new and improved quality standards.

There is ongoing modernisation of the city bus fleets in Russia and there was a surge of investment in interurban and luxury coaches ahead of the Winter Olympics in Sochi in 2014.

Russia will host the Football World Cup in 2018. Construction of new stadia is well underway and there are high hopes of a surge in demand for buses and coaches to carry the thousands of fans expected to visit the games.

There are encouraging signs of confidence in the Russian automotive industry. At the beginning of September, “The Moscow Times” reported that AvtoVAZ, the manufacturer of Lada cars, could issue 25bn RUR (around USD386m) in additional shares by the end of the year in a bid to secure additional investment from Renault of France. It quoted Denis Le Vot, the Deputy Chairman of the AvtoVAZ Board and Renault Group Senior Vice President and Eurasia Region Chairman, as saying that, while he hoped minority shareholders would take part in the transaction, Renault would be willing to buy all of the new shares.

The Renault-Nissan-Alliance already owns 49.9% of AvtoVAZ shares but would raise its effective share as high as 70%.

AvtoVAZ reckons that the Russian market was in recession but hoped that 2016 marked the low point. A number of new models were planned for 2017 and the company was projecting an improved financial performance. Clearly, Renault has confidence in the future of the Russian automotive industry and expects recovery. If oil and gas prices rise that will be a tremendous boost to the Russian economy.
**Electric update**

*There is growing interest in all-electric buses in many parts of the world. The charge has been led by China but the main European manufacturers can now offer electric vehicles or have plans to introduce them in the near future.*

Product development has followed a number of courses. Several started with hybrid buses, typically achieving a 20-40% saving in fuel consumption. The higher initial cost can largely be recovered in savings in fuel costs over a vehicle’s lifetime.

Volvo progressively developed its hybrid models to Electric Hybrid where a bus took a fast charge of electricity from an overhead supply gantry at each end of its route. This enabled the vehicle to run in all-electric mode for up to 70% of the time, a major advantage in city centres and other sensitive areas. Since then, Volvo has built its first 100% electric buses and these have now completed more than one year’s successful operation in Gothenburg.

Some other manufacturers bypassed the hybrid stage and went straight to 100% electric drive. If vehicles have to have sufficient energy for a full day’s operation, they need batteries weighing around three tonnes which can be fully recharged overnight in a depot. The batteries not only have to supply energy to drive the vehicle, but also to provide current to heating ventilation and air conditioning systems, interior lighting, destination equipment, doors, etc.

The alternative to large all-day batteries is the use of smaller batteries which require regular topping up for five to six minutes, normally at each end of a route. More passengers can be carried within maximum gross weight limits, but there is a drawback. If vehicles are delayed on a route, they still need to be recharged, and therefore it can be difficult to maintain schedules.

One of the major issues is standardising of the electricity charging infrastructure. European standards are expected to be introduced in 2019 and international standards in 2020. However, in March this year, Irizar, Solaris, VDL and Volvo agreed to ensure the interoperability of electric buses with charging infrastructure provided by ABB, Heliox and Siemens. Their objective was to ensure an open interface between electric buses and charging infrastructure and to facilitate the introduction of electric bus systems in European cities.

The seven companies have made it clear that they are not trying to create an exclusive club. Other manufacturers and charging system suppliers are welcome to join them and to work to the same standards.

The largest fleet of electric buses in Europe to date was handed over in September by BYD and Alexander Dennis to the Deputy Mayor of London and Transport for London. They had chassis built in China by BYD and aluminium framed bodywork made by Alexander Dennis in Scotland. They had a high quality specification, with comfortable seats, USB charging points and ambient lighting. The aluminium structures helped to compensate for the weight of the batteries.

Transport for London has had previous experience of BYD buses and was impressed by the high reliability and outstanding range. They were consistently running a 16-hour shift without recharging.

There are now more than 2,000 hybrid buses running in London, out of a total operational fleet of 8,500 units. The Mayor has ambitious plans to introduce ultra low emission vehicles, especially in the central area, therefore BYD and Alexander Dennis expect that further electric buses would be on his shopping list.

It is also significant that four out of the five buses entered for the “International Bus of the Year 2017” competition were all-electric and the fifth was fuelled by compressed natural gas. The contest was won by Solaris with its Urbino Electric. That was fitting, because it was about ten years ago that Krzysztof Olszewski, co-founder of the company with his wife, Solange, had proclaimed: “diesel is dead: the future is electricity.”

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**Colombia for tourism**

A British journalist, writing recently in “The Sunday Times”, recommended Colombia as a tourist destination. He was very impressed with his experience, describing Colombia as a most magical country.

“If you want to see the real Colombia, buy a ticket to Bogota tomorrow, because it is amazing, and it is at such an optimistic moment in its history that there is a good chance you will witness something inspiring. The people are so charming, so open, so keen to welcome you, that you may have one of the best times of your life. I have.”

He was enthusiastic about the variety of landscapes, from the Caribbean coast to the inland mountains, passing through jungles where 20% of the world’s bird species live in a country that is still more than 50% forest.

“Colombia is a country of unimaginable richness in its natural heritage, and its soil. Its fertility fosters outstanding plant life – the cultivated landscapes of Europe seem sterile and exhausted in comparison. Nearly every type of climate on the planet seems to exist in this one country, and most sorts of human in its population of 48m. Diversity here is the rule, not the exception.”

He also wrote enthusiastically about the variety of food and the warm hospitality.
Looking ahead to Busworld Latin America

The very first edition of Busworld Latin America will be held in the Colombian city of Medellin from 5 to 7 December. The timing and the location are perfect.

While the media regularly reports on political and economic problems in Brazil and Venezuela, many other countries in Latin America are in good shape and are regularly investing in public transport. They are not suffering from the same obsession with trams systems as in Europe. The South Americans realised a few years ago that high capacity Bus Rapid Transit systems can be built for a fraction of the cost of tram and metro lines and that the construction time is far less.

One of the most impressive systems is Transmilenio in the Colombian capital, Bogota. Some of the major routes have two lanes in each direction. Stopping services use the inner lanes, serving central island stations while express buses can run limited stop services, overtaking in the outer lanes.

The South American market for bus and coaches is dominated by chassis manufacturers, working with wide variety of bodybuilders. Iveco, MAN, Mercedes-Benz, Scania and Volvo all have chassis assembly operations in Brazil, enabling them to benefit from free trade agreements throughout the continent.

They work with bodybuilders, some of which have very extensive product ranges. Smaller vehicles are used on rural services, school transport, and to feed passengers into Bus Rapid Transit stations.

Although most BRT systems have high floor buses, serving platforms that are level with the floor of the vehicle, there is increasing interest in low entry buses, with much of the floor only one step above the ground. Volvo has taken a leading position in this market segment, including the supply of more than 1,000 buses on its popular B7RLE chassis to Panama City.

The European manufacturers, based in Brazil, are facing competition from Chinese and Korean manufacturers, especially in markets on the western side of South America. American school buses are still popular in Central America and Russia’s GAZ Group has supplied buses to Nicaragua.

Although the vast majority of buses and coaches in Latin America are diesel powered, there is growing interest in alternative fuels. Last year, Scania received an order from the Colombian city of Cartagena for 147 buses with Euro 6 gas engines. A combination of solo and articulated buses entered service on a brand new BRT system, called Transcaribe.

There is also some political interest in all-electric buses, mainly in a bid to cut pollution. Volvo has supplied an Electric Hybrid 7900 for a two year trial in the Brazilian city of Curitiba, where it has a major factory. BYD has also been promoting its all-electric buses.

We can also expect to see coaches at Busworld Latin America. Rail networks are sparse and air services are relatively expensive. Many luxuriously-equipped coaches are used on long distance express services. These include 3- and 4-axle double deck models, some of them operating international routes. Busworld Latin America is being held in the Plaza Mayor Exhibition Halls in Medellin and promises to be a very interesting exhibition. See the separate article about Colombia. Busworld Latin America and the country are both well worth a visit.
Strong Indian bus market

The seventh edition of Busworld India will be held in Bengaluru (Bangalore) from 10 to 12 November. For the first time, Busworld and its Indian partners, Inter Ads Exhibitions, have chosen to use the Bangalore International Exhibition Centre, a modern facility in the suburb of Dasanpura Hobli. Full information on the location can be found on the Busworld website.

Demand for buses and coaches in India is strong. In the financial year from April 2015 to March 2016, there were 45,085 registrations of vehicles over 7.5 tonnes gross. That compared with 37,457 in the previous financial year but was still not as high as the record of 49,932 units in the 12 months from April 2011.

This volatility can be attributed to a number of reasons, but the main one is the periodic introduction of stimulus schemes to subsidise the purchase of new city buses. The Government is keen to encourage the scrapping of older and more polluting buses and to replace them with modern new vehicles that are much more driver and passenger friendly. Industry observers expect demand to rise in 2017 and to remain strong in the following years.

Levels of car ownership in India are rising, and that is contributing to urban congestion. There are now around 22 cars per 1,000 people which means that there is great demand for public transport, especially buses. There is a growing market for special school buses, mainly medium size vehicles, and for simple buses for employee transport.

The Government has introduced the Bus Code which took its inspiration from the European Bus Directive. It introduced new standards of specifications, making buses safer and more comfortable. It also introduced Conformity of Production with which all manufacturers must comply.

This spelled the end of many small builders who made the most basic vehicles, frequently hand built in single numbers. Re-bodying of older chassis was rife and many of those vehicles were simply not safe.

Over the last few years, features like lower floors and air suspension have become much more widespread. Power steering is now mandatory. The Government is continuing to press ahead with further safety features having recently made it mandatory for all buses to be fitted with tracking devices, CCTV’s and panic buttons that connect to the nearest police station. These measures were taken to allay the safety fears of female passengers after a particularly brutal gang rape on a bus in New Delhi in 2012.

In some cities, premium services are available from suburbs to the main business areas. Passengers can pay a higher fare for vehicles equipped with air conditioning and wi-fi connectivity.

The vast majority of buses and coaches in India are powered by diesel engines. The...
Government has progressively introduced Bharat Standards which are based on European emission limits. See the separate article on Indian emissions. However, for several years, Delhi has required all city buses to be powered by compressed natural gas, even insisting on the retrofitting of gas engines to older buses already in service.

Small numbers of hybrid buses have entered service, and that in turn has led to growing interest in all-electric vehicles. Although the capital costs are much higher, the running cost per mile is lower and the price of batteries is coming down steadily.

There is now more competition between manufacturers and that is also helping to drive up standards. Fully automatic gearboxes have become acceptable on city buses. Engines are becoming cleaner and there are significant reductions in noise, vibration and harshness. Electrical and electronic systems are continually being updated, facilitating electronic destination equipment, GPS, On-Board Diagnostics and Smart Multi-Mode Ticketing.

India has modern highways, linking all the main towns and cities. That has led to rapid expansion in express coach services. At the top end of the market, this has seen the introduction of more powerful engines, full air-conditioning, reclining seats, and many other features for the comfort and convenience of passengers.

In order to keep pace with this rapid development, Indian component and accessory suppliers have been very active. The Indian manufacturing industry is almost totally self sufficient, mainly because of the barriers of high import duties. That encourages domestic manufacturing, even of sophisticated equipment like air conditioning systems. Indian suppliers can offer attractive specifications at good quality and competitive prices.

India is also a substantial exporter of buses. In the financial year from April 2014 to March 2015, 49,365 buses and coaches over 7.5 tonnes gross went abroad. That rose to 54,187 in the following twelve months.

India is the second largest manufacturer of buses and coaches in the world (after China) and that alone makes Busworld India well worth a visit.

**India plans to tighten emissions**

Indian emission limits for diesel engines are progressive and are known as *Bharat Standards*. They are basically the same as European emission standards, but were introduced several years after Europe. For instance, *BSVI* is equivalent to Euro VI.

BSIV was required on vehicles first registered in 11 major cities from April 2011. The cities were Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad, Pune, Surat, Kanpur and Agra. Outside those cities, BS III standards prevailed.

The Government hoped to introduce BS V in 63 cities by 2015, but a major problem was the cost of upgrading refineries to produce sufficient low sulphur fuel.

At the beginning of 2016, the Government said that it intended to introduce BS VI limits for new vehicles first registered from 2020 onwards. In March this year, the leaders of 26 Indian automotive companies met the Minister for Road Transport and Highways. They told the Minister that moving from BS III to BS V would take five years and from BS V to BS VI would take six years. Part of their argument was that no other country had ever gone directly to BS VI.

The leaders asked if BS VI standards could be introduced in stages, first applying to new models from 2020, and then being applied at a later date to existing models. The Minister stood firm on his decision. The leaders pointed out that BSIV fuels contained 50 parts per million (ppm) sulphur, while BS V and BS VI grade fuel must have no more than 10ppm sulphur. They asked the Minister for assurance that BS VI fuels would be available across the whole of India by 2020.

The European manufacturers who have become established in India already have equivalent Euro VI technology, but domestic manufacturers face a major and very expensive challenge.

India relies very heavily on imported crude oil. It will be an expensive exercise modifying refineries to BS VI standards. The Government has observed that Euro VI engines have proved more economical than their predecessors and this reinforces their target of trying to reduce fuel consumption levels. The Government has even considered incentives to phase out old and inefficient buses and trucks.