



A Customer Magazine from Volvo Bus Corporation #2 2009

ON THE MOVE

More powerful and fuel efficient
– the new 13-litre engine



Hybrid double-deckers
for a greener London



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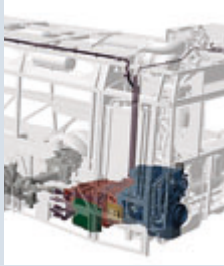
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4. Volvo's hybrid double-deckers are now making the streets of London a bit greener. To experience a ride on them, travel on bus route 141 from Palmers Green to London Bridge.



6. The Volvo bus parallel hybrid solution has several advantages compared to other bus manufacturer's hybrid systems, especially under the new European Clean and Energy Efficient Vehicles Directive.



8. The new 13-litre engine is giving more power and less fuel consumption to Volvo 9700 and Volvo 9900. See what the Norwegian company Fjord1 thinks about their upgraded coach model.



12. Veolia Transport in Stavanger has never regretted choosing Volvo Bus for managing their service and maintenance. The arrangement liberates important resources within the company.



14. India is a changing country, perhaps most obvious in the city of Bangalore. And Volvo buses have become a symbol for the city's modernisation.

We supply excellent fuel economy

The future of our world hinges on our ability in all industries to make the transition to more eco-friendly products as soon as possible. If these eco-friendly products are more cost efficient than their predecessors, the changeover will be quicker. This is the guiding principle for Volvo Buses' environmental work and we refer to it as "Green Efficiency."

When Volvo chose SCR technology to achieve Euro IV compliance, the main reason was that we could thus significantly reduce fuel consumption. Euro V allows us to further save on fuel consumption through new and improved engines combined with upgraded transmissions. In field tests, our new 13-liter engine demonstrated a 5-percent reduction in consumption compared with its predecessor.

Our Green Efficiency approach also governed the selection of hybrid technology for our city buses. Thanks to parallel hybrid technology, we can reduce fuel consumption by about 30 percent in the majority of urban traffic environments. Our field test buses in Göteborg and London, which have now been in operation for nearly six months, confirm these figures.

However, efficiency involves more than how well the bus itself functions. It is equally important that the aftermarket operates effectively with a tightly knit network of workshops and rapid deliveries of spare parts.

Moreover, it increasingly encompasses other services that help our customers become more efficient. This may involve driver training programs, analysis of customers' fuel consumption, service agreements, telematics, insurances, leasing agreements and so forth. Many of our service offerings are now bundled, so that it is clear what is included and what it costs.

Doing business with us shall be easy and profitable. With our fuel-efficient buses and our customized solutions, I am convinced that a growing number will perceive us in this way.

Håkan Karlsson
President & CEO
Volvo Bus Corporation



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The red double-decker buses of London are one of the city's strongest symbols. An equally strong commitment to save energy and reduce emissions is the reason for the introduction of the Volvo B5L Hybrid into the bus fleet.

Recent field tests show that the Volvo Hybrid buses reduce fuel consumption by as much as 30 per cent compared to diesel buses.

Text Håkan Hellström Photo Anders Nilsson



"I quite like the Volvo hybrids, they feel much smoother compared to other hybrid buses," says Arriva driver Gamin Muhammed.

Gurjit Hulait is the engineering manager at Wood Green. "The Volvo B5L Hybrid Double Decker is pretty robust and has failed as well as other hybrid buses in terms of reliability, there have been few issues so far," he says.

The red bus that keeps London's streets greener - The Volvo B5L Hybrid

North London's Green Lanes is a chaotic experience during rush hour. At the bus stop outside the popular pub The Fox, commuters get on and off a never-ending stream of red double-deckers. Noise pollution from cars and diesel buses fills the street with an aggressive roar.

All this makes the contrast from Volvo's new hybrid double-deckers all the more evident. When it arrives at the bus stop, the diesel engine shuts down completely. You are left with comforting silence that remains even as the hybrid bus leaves the stop, only using its electric motor to accelerate.

"It's fantastic how quiet it is when the diesel engine is turned off," says

Daniel Clarke, one of the commuters standing in line at the bus stop. "I can't even imagine what the difference would be if all buses were hybrids."

Hybrid pioneers

Arriva's Wood Green bus garage in Northern London is a pioneer of hybrid buses in London. In June this year, six brand new Volvo B5L Hybrid Double Decker buses arrived at the garage that has had previous experience of hybrid technology.

"We received the first hybrid buses in 2007 and now have a total of 11 hybrid double-deckers at Wood Green, including the Volvo B5L Hybrid Double Decker," says Ian Tarran,

engineering director at Arriva London. "Our experience of hybrid technology has been positive so far and all our staff, from mechanics to drivers, are pleased to be involved."

Ian Tarran sees a bright future for hybrid buses.

"The potential for fuel savings is massive," he says. "As the capital cost of the bus is reduced and the reliability improves, the interest in hybrid technology will undoubtedly grow."

Challenging route through London

The Mayor of London and Transport for London, the body responsible for London's transport system, have made the hybrid buses a key part of their strategy for more environmentally friendly solutions for public transport. There are currently 56 hybrid buses operating in London's bus fleet. To really put the Volvo B5L Hybrid Double Decker to the test, bus route 141, contracted to Arriva London, was selected. The route starts at Palmers



"I think in the future we would move even one step further, to electric buses as the technology for generator and batteries improve"

Ian Tarran, engineering director



30 per cent lower fuel consumption

The Volvo B5L Hybrid Double Decker was launched last year, at the same time as the Volvo 7700 Hybrid single-decker bus. They both utilise the Volvo I-SAM parallel hybrid system which features two power sources, a smaller than normal diesel engine and an electric motor. It is the electric motor that accelerates the bus to a speed of 15-20 km/h. When the bus is underway, the parallel hybrid system combines diesel and electric power



to maintain speed. At higher speeds, the bus uses diesel power alone. Regenerative braking energy charges the battery via the generator. Several of the Volvo hybrid auxiliary systems are powered

by independent electric motors. These measures all contribute to high fuel-savings on routes with frequent braking and acceleration, like city bus traffic. The parallel hybrid technology reduces fuel consumption and CO₂ emissions by up to 30 per cent compared to conventional diesel buses. In the hybrid configuration, the 5-litre Euro V compatible engine with SCR (selective catalytic reduction) reduces nitrogen oxide and particulate emissions by up to 40-50 percent.

Green and ends at London Bridge, with a total length of 9 kilometres and a tour frequency of 6-12 minutes.

“The average speed is about 8 kilometres per hour and a bus stops on average every 150 metres, at traffic lights, bus stops and so on. It is a rather intense and challenging route in heavy traffic and with many passengers, so the buses have to work quite hard – up to 17-19 hours per day,” says Ian Tarran.

“Field tests performed during the summer have shown that the fuel consumption of Volvo B5L Hybrid Double Decker is within our goals,” says Niklas Deras at Volvo Buses. “On route 141, the buses have the toughest cycle possible and still their fuel consumption has been reduced by just over 30 per cent compared to the regular diesel buses on route 141. The same goes for the Volvo 7700 Hybrid single-decker bus, that is currently in traffic in Gothenburg.”

“They perform well”

About 25 mechanics work at Wood Green garage.

“We share the responsibility for maintenance and repair with Volvo

Buses. They service the hybrid parts of the bus and we do everything else,” says Gurjit Hulait, engineering manager at Wood Green. “The Volvo B5L Hybrid Double Decker is pretty robust and has faired as well as other hybrid buses in terms of reliability, there have been few issues so far. Problems are always unavoidable, but Volvo has been very quick to respond.”

Arriva driver Gamin Muhammed is just on his way to start his work shift behind the wheel of a Volvo B5L Hybrid Double Decker.

“I quite like them, they feel much smoother compared to other hybrid buses, so I prefer the Volvo hybrid,” he says. “Of course there are some things that could be better in the beginning, but overall I think they are comfortable and perform well.”

“We have recently been addressing an issue with the braking response that the drivers had a problem with, but we have now updated the software to meet the standards,” says Niklas Deras at Volvo Buses.



Parallel hybrid solution provides Volvo edge over competitors

The Volvo bus hybrid solution has several advantages compared to other bus manufacturer's hybrid systems, most significantly by using the parallel hybrid technology.

Text Håkan Hellström Photo Johanna Asplund

"It is not only the parallel hybrid technology itself, but also the fact that it is an in house solution that is specifically created by and for Volvo," says Edward Jobson, environmental manager at Volvo Buses.

"Other manufacturers of hybrid buses have chosen an alternative strategy and instead purchased externally developed and manufactured hybrid systems and added them to their existing product. As a contrast, the Volvo hybrid solution is highly integrated into the bus, not only into essential parts as the gearbox, driveline and engine, but also integrated into the auxiliary systems, like air compressor, AC, power steering and electric door mechanisms," says Edward Jobson.

Reliable hybrid system

"The technology is developed by Volvo for Volvo. This means that our customers get a highly reliable hybrid system, especially developed and custom made for our buses. This provides an advantage during service and maintenance, as the service technicians meet robust

Volvo standard technology they already know and feel comfortable with."

As mentioned, Volvo Buses has chosen a different path for its hybrid buses than most competitors regarding technology, committing itself to a more reliable technical solution: the I-SAM (Integrated Starter Alternator Motor) parallel hybrid. The previous generation hybrid technology still available is the series hybrid.

Parallel advantage

"Our buses can run on the diesel combustion engine alone, if something would happen to the electric power source," says Edward Jobson. "A parallel hybrid bus can get to the end stop without it. The parallel drive train is basically less vulnerable than the serial drive train, as the two power plants can operate independently of one another or operate together," says Edward Jobson.

The advantage of the parallel hybrid technology chosen by Volvo is that the buses also operate well in suburban traffic with less frequent halts at bus stops. The reason is the mechanical coupling between the diesel engine and the driveshaft, which eliminates the inefficiency involved when converting mechanical power to electrical and back again.

"It is highly important for our customers that the buses also save fuel outside the most densely populated

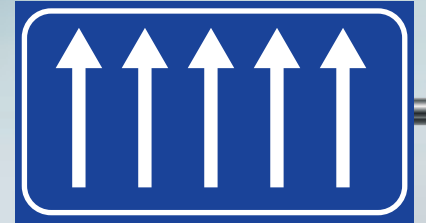
areas," says Edward Jobson. "Many of the large operators need to move the bus around to different areas during the bus's lifetime and this does not work with a technology that is suited only for the most extreme city traffic."

Sustainable economy

Edward Jobson mentions another advantage of the Volvo hybrid bus under the new European Clean and Energy Efficient Vehicles Directive, planned to come into effect from December 2010. The directive introduces sustainable economics, such as lifetime costs for energy consumption and emissions, into the criteria for procurement of vehicles by public authorities. It means that not only the purchase price of buses should be considered in procurements, but also their lifetime energy and environmental impact.

Compared to the diesel equivalent, the Volvo hybrid bus reduce fuel consumption and greenhouse gas emissions by up to 30 per cent compared to conventional diesel buses.

"Volvo hybrid buses are highly competitive on the market today and will be even more so when the directive is in force," says Edward Jobson. "Hybrid buses will be more attractive to our customers, without them having to wait for political decisions. This will also give the hybrid bus customers an advantage over their competitors who purchase regular diesel buses."



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SCENIC ROUTE – challenging journey

“The Volvo 9700 with 13-litre engine has proven to be a very strong and reliable vehicle”, says Karin Lunde Vinsrygg, traffic manager at Fjord1. “Both reliability and power is extremely important, as the coach crosses three mountain passes every time it takes the route between Bergen and Trondheim. Preliminary numbers also show that the fuel consumption has been lowered.”

Text Håkan Hellström Photo Egil Aabrekk



Driver Per-Olav Skarstein checking the oil level before heading out on the challenging journey.

The route “Ekspressbussen Bergen-Trondheim” between Norway’s second and third largest cities is truly a test of endurance and stamina for any coach. It is a nightly route of about 750 kilometres, which takes 15 hours and requires the services of three bus drivers during the trip. Fjord1 Nordfjord-Ottadalen AS, a subsidiary of the Norwegian transport corporation Fjord1, runs the route. Fjord1 also runs ferry, boat, local bus and goods services, mostly on the central west coast of Norway.

Challenging route

“Ekspressbussen Bergen-Trondheim is a very special route that has been run since 1986 and is very popular among passengers, for both long and short trips along it,” says Asgeir Myklebust, managing director of Fjord1 Nordfjord-Ottadalen AS.

During winter, the temperature can vary from +10 °C at the start in coastal

Bergen, to –35 °C when the coach travels over the Dovrefjell mountain area in the centre of Norway. It is a route in a beautiful but also very demanding landscape. Fluctuating temperatures, wet roads and steep slopes make a real challenge for the Volvo 9700.

Lower fuel consumption

“It is important for us to have a coach that provides comfort for the passengers but also is reliable and safe for the driver,” says Asgeir Myklebust. “We have very good experiences of the Volvo 9700 and the new version with the stronger 13-litre engine is no exception.”

Since February of this year, the Volvo 9700 with 13-litre engine has been running on the Ekspressbussen Bergen-Trondheim route as part of a field test.

“Even though it is a field test, we are expecting the bus to perform just as well as any other bus, and so far

we are not disappointed. We have not experienced any major problems during this time,” says Karin Lunde Vinsrygg. “Our drivers are very happy with the performance of the coach.”

Fjord1 have done a survey of the fuel consumption of the Volvo 9700 with 13-litre engine for June and July this year and compared it to the fuel consumption of a Volvo 9700 with 12-litre engine for the same period and route last year.

“The comparison shows that the fuel consumption is lower by about 3,5 per cent,” says Karin Lunde Vinsrygg.

Volvo tradition

The Volvo 9700 on the Ekspressbussen Bergen-Trondheim route is far from the first Volvo at Fjord1. The brand has a long tradition in the company.

“About 60 per cent of our buses are Volvos today and the brand has





"We have very good experiences of the Volvo 9700 and the new version with the stronger 13-litre engine is no exception."

Karin Lunde Vinsrygg and Asgeir Myklebust



always performed very well," says Asgeir Myklebust, "We are happy to contribute to the development of a new product, as we feel that our two companies have had a good relationship for many years."

Daniel Forsberg works with field tests at Volvo Buses' department of Complete Vehicle Testing.

"Field tests are a very important part of the development of a new engine," he says. "We are continuously monitoring the performance of the Volvo 9700 with 13-litre engine. A coach is a complex vehicle and there are many parameters that have to be considered."

The Ekspressbussen Bergen-Trondheim route was chosen for the field test due to its special conditions and its length.

"Frankly, we get a lot of kilometres on the road out of this test and the engine really has to prove itself," says

Daniel Forsberg. "We also get very good feedback from Fjord1 that provides useful insights to how to further improve the product."

Never tired

Per-Olav Skarstein is one of the regular and experienced drivers on the Ekspressbussen Bergen-Trondheim route.

"I've been driving on this route for ten years and never get tired of it", he says. "Sometimes it can be dramatic in the winter when the road is closed over one of the mountain passes, but the roads are generally in very good condition."

"As a driver, you want to be sure that the coach doesn't stop mid-route," he says. "The Volvo 9700 is a reliable coach. The new version with the 13-litre engine isn't noticeably different to drive than the 12-litre engine, but it does have more power when it is heading uphill."

More torque and lower fuel consumption with the new 13-litre engine

Award winning, groundbreaking and top-of-the-line. Volvo Buses' two coach models, the Volvo 9700 and Volvo 9900, have always made their mark on the competitive international coach market. Now, they are relaunched in upgraded versions, including a new, more powerful and fuel-efficient 13-litre engine.

Text Håkan Hellström Photo Volvo

The 13-litre engine, D13, replaces the previous 12-litre engine in the coach models Volvo 9700 and Volvo 9900. The new diesel engine offers improved power and driveability, but also consumes less fuel than the 12-litre engine.

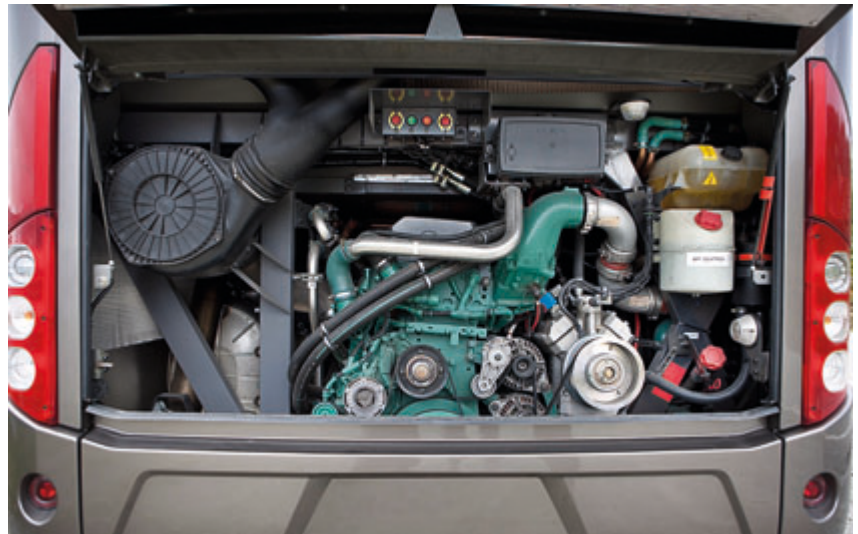
"It lowers fuel consumption by up to 5 per cent," says Dusan Prastalo, project leader at Volvo Bus.

The 13-litre engine was developed by Volvo Powertrain in close co-operation with Volvo Bus Product Development and already has several years' successful operation by Volvo trucks. It includes Volvo Group-wide and robust technology with proven high operational reliability. The design is modern and features a straight, 6-cylinder layout complete with turbo and intercooler. Many technical innovations are integrated into the engine, such as a one-piece cylinder head, overhead camshaft, 4-valve technology and electronically controlled unit injectors. The 13-litre engine is available in two different power ratings for coaches: 420 and 460 hp. The D13 meets the demands of the European emissions standard Euro V.

Improved driving performance

"The 13-litre engine is a vertically-mounted engine, while the 12-litre engine was horizontal mounted engine," says Dusan Prastalo. "A standing engine is easier to service, improving its cost-effectiveness in the aftermarket."

The 13-litre engine's weight is lower by approximately 80 kilos compared to the 12-litre engine; at the



same time the engine torque has been increased relative to the equivalent power levels in the 12. The combination of reduced weight and increased torque helps maintain a higher average speed, further increasing cost-effectiveness. A higher torque gives the engine a wider range of applications and a new gearshifting strategy keeps engine revs down to reduce fuel consumption. The response is rapid at both high and low engine revs. This means faster acceleration and better driveability with fewer gear changes. The higher torque permits faster rear axle ratios further lowering engine revs.

Next generation

The new 13-litre engine is at the heart of the upgraded Volvo 9700 and Volvo 9900.

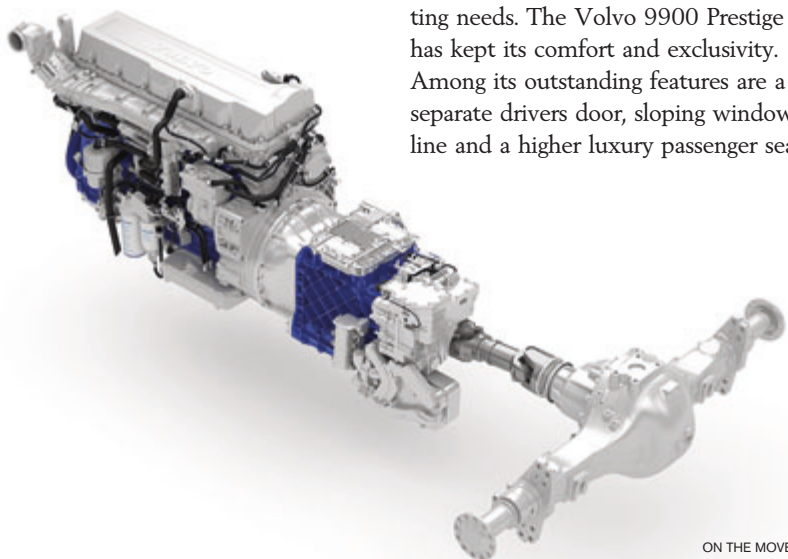
The new generation is based on the winning "Coach of the Year 2008"

concept, but further developed and fine-tuned. The concept won this prestigious award because of the best total offer, especially for its outstanding driveline, the passenger and driver experience, and ownership benefits.

"Volvo Bus has made a commitment to fuel efficient and environmentally friendly vehicles, evident in the upgraded Volvo 9700 and Volvo 9900," says Arne Sehlman, Director Market Support.

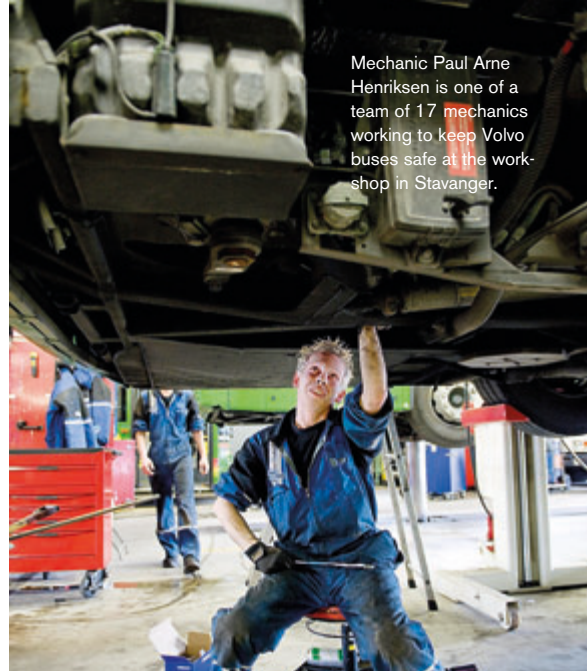
"Combined with an attractive after market offer and supported by a professional coach organisation, we are presenting two coaches that meet the demands of our customers for performance, comfort, style and life-cycle cost."

The Volvo 9700 is being presented in two new versions, the Premium and the Superior, where operators can choose from two different base specifications, matching best their operating needs. The Volvo 9900 Prestige has kept its comfort and exclusivity. Among its outstanding features are a separate drivers door, sloping window line and a higher luxury passenger seat.





Don't forget the grease! Gunnar Arne Sømme gives the rear axle an overhaul. Maintenance, repairs and replacement of parts are all part of the agreement between Volvo and Veolia.



Mechanic Paul Arne Henriksen is one of a team of 17 mechanics working to keep Volvo buses safe at the workshop in Stavanger.

Service agreement with Volvo frees up resources

A little over two years ago, Veolia Transport Sør in Norway made a choice they have never regretted. Today, Volvo not only supplies buses to the 350-strong fleet, but also is responsible for maintenance and repairs.

Text Kristin Dugstad Vestrheim Photo Jan Inge Haga

Veolia closed down three of its workshops in the county of Rogaland and decided instead to allow their Volvo dealer to take on all maintenance, inspection and repair work. Veolia chose a solution, which allows them to concentrate on their core business: transporting people to wherever they want to go.

"We ended up in a situation where we had far too many things to concentrate on," says Anders Erik Hansen, Director of Operations at Veolia Transport Sør in Stavanger. "Technical issues seemed to be demanding more

and more of us, and so we found our attention being diverted to maintenance and repairs far more often than we wanted. In the end, it became difficult to focus on what is our actual core business: providing people with a good selection of buses. The challenges and tasks we faced were simply too overwhelming for us to do them all well. But things are different now."

Lightened the mood

"We can concentrate more on our 'real' job now, and we are really pleased that

Volvo is making sure that our buses are kept in tip-top shape. We are in no doubt whatsoever that this is the best solution for us," emphasises Anders Erik Hansen. He is sure that the agreement frees up resources, which is having a positive effect in all areas of the company.

"As a transport company, what is the most important thing for us?" he throws that question open before answering it himself: "Our job is to transport people. The people are the important factor here. And thanks to

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Veolia in Stavanger

Veolia Transport Worldwide operates public transport services in 30 countries. The company's main office in Norway is in Stavanger, which employs 750 staff and uses 350 buses. There are departmental offices in several locations throughout Norway. The bus depot outside central Stavanger is home to 160 buses and one of Norway's best bus workshops for maintenance and servicing.

"We ended up in a situation where we had far too many things to concentrate on"

Anders Erik Hansen

our agreement with Volvo, we are freeing up resources to allow us to focus on people. Today, our Volvo dealer deals with the entire technical side of things; from simple maintenance and replacement of worn parts to heavier operations and damage repair. Being able to get these services from the very people who know our machinery and buses inside out has been an incredible relief to us. We have only good things to say about our agreement here at Veolia!" he enthuses.

"To sum up, we can say that things have never worked better," says Anders Erik Hansen.

One of the three Volvo workshops in the region is located just outside Stavanger. This workshop employs 17 mechanics that start work at 7 in the morning and keep going until 10 at night. Five buses can be accommodated at any one time. The shifts worked

by the mechanics provide large capacity and very efficient working.

Delivering the goods

Rune Hetland is Head of Aftermarket Sales at Rieber Thorsen, the district's Volvo dealer. The agreement between Volvo and Veolia was entered into just over two years ago. And the plan was for things to go quickly after that. Very quickly! The idea was to take 160 Volvo buses to Stavanger, and most of them were supposed to be – actually, had to be finished by the end of December 2007. When the New Year fireworks were being let off, 130 Volvo buses were lined up in the coach park just outside the town of Stavanger, all ready to roll. The delivery deadline was kept; the buses were ready and delivered before the deadline. Christmas was saved. The New Year saw the arrival of new



A good agreement for both parties. Volvo supplies buses to Veolia Transport Sør and also carries out all maintenance, servicing, repairs and replacement of parts on the buses. Rune Hetland, Head of Aftermarket Sales for Volvo dealer Rieber Thorsen, and Anders Erik Hansen, Head of Operations at Veolia Transport Sør, is both very pleased with the agreement.

buses on the roads – and a new agreement in which Volvo would supply services to Veolia.

Since then, Volvo has taken on maintenance and repairs in accordance with this agreement. A match made in heaven, if the representatives of Volvo and Veolia are to be believed.

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The Volvo buses have become a common sight in the nation's IT capital.



Driver Guru Gowda likes to decorate his bus with fresh Jasmine daily. He says, "I have been a driver since four years, but nothing compares to driving a Volvo."



Neha Shrivastava, working in Tata Consultancy Services, says, "I have been using the Volvo service since the day I joined my first job."



Volvo Buses in India – Changing the way people travel

Honks, beeps and shrill screeches – Cacophony rules Bangalore's streets during the rush hour. Impatience and restlessness is in the air. Buses, trucks, two-wheelers, cars, lorries, cyclists, pedestrians and even the odd dog, jostle for space. In this chaos, Guru Gowda, driver of Volvo KA-01-FA-1932, calmly navigates his bus towards the IT district of Whitefield.

Text Anusha Jha Rohom Photo Salim

Inside the bus the atmosphere is almost surreal. Soft music from the FM sets the ambiance and the temperature is just right. Passengers, mostly software engineers and managers, either read the newspaper or fiddle with their Blackberries and iPods. The commute of one and half hours is long, but it doesn't look like anybody minds!

Volvo Buses have today become

a common sight on Bangalore's roads. Sleek and silent, the red and orange buses symbolize the modernization of India's IT capital. Like any other Indian city Bangalore too faces the challenge of providing high quality modes of transport to its citizens. In addition, authorities need to reduce fuel consumption, decongest streets, make roads safer and reduce the stress on the infrastructure – all within a tightly allocated budget. The adoption of Volvo Buses is a step towards this direction. A significant transformation is underway as the middle and upper income segments are gradually leaving their vehicles at home and opting for public transport.

Selling success

Today, Volvo Buses is selling more buses in India than ever before. This comes as a delightful surprise at a time when the world is combating recession and commercial vehicle sales all over the world have seen a drastic dip. In 2008, Volvo sold 440 units in India and is geared to make a 50% jump in

volume this year. While the intra city bus service was introduced in around four cities last year, this year it has expanded to 12.

Akash Passey, MD, Volvo Buses, India, says, "This incredible growth stems from our good relations with our customers. They appreciate the fact that we provide long-term value. In the seven years that Volvo has been present in India, our customers have recognized the combination of quality and safety that we offer. The government has realized that they need to modernize cities and discourage the use of personal vehicles, and they can do so only by offering people a better mode of transport, such as Volvo Buses."

Symbol of modernization

The formula definitely seems to be working. Prabhu R, Business Controller at Novozymes South Asia Pvt Ltd, used to carpool with his colleagues to commute to work. But in March this year, he opted for the Volvo bus. Prabhu says, "Driving all the way from



Volvo Buses have a dedicated terminal at the Bangalore International Airport. The service has been hailed by common citizens.

Hosakerahalli to ITPL (International Technology Park Ltd) is extremely tiring. The bus does take a little more time, but it is a lot more comfortable, safe and economical!"

Popular Airport Service

One of the most popular services by Volvo Buses is the airport transfer. The new Bangalore International Airport is almost 50 kilometers from the city and hiring a cab is seen as an expensive proposition. Bangalore Metropolitan Transport Corporation (BMTC) then decided to launch a fleet of Volvo buses to the airport, the fare for which is only a fraction of the cost for a cab. The service was hailed by citizens and has now grown to become a preferred mode of transport.

Anil Bhatia, a businessman from Delhi, says, "I am glad that my friends recommended the Volvo service to me. It is very economical and I wish the Delhi airport too had such a service." The airport service is also used by the staff of airlines.

Support from the Government

Volvo Buses have been received by the Government of Karnataka with much enthusiasm. The Bangalore Metropolitan Transport Corporation (BMTC) has the distinction of being the first Indian public sector enterprise to introduce Volvo intra city buses in 2006. Policy makers understand the importance of reducing fuel consumption, decongesting roads and saving the environment, resulting in a positive and consistent uptake of Volvo Buses.

On the occasion of World Environment Day this year, R Ashoka,

Ravi Kumar says, "No mechanical brakes and no clutch, only buttons and electronic brake make this bus easy to drive. I don't feel tired even after a long day!"

Minister for Transport & Chairman, BMTC & KSRTC, said, "Providing best transport services in Karnataka has always been our aim. The BMTC has succeeded in achieving its aim by providing affordable and reliable Volvo bus services in Bangalore. These environment friendly buses consume lesser amount of fuel and emit lesser amount of exhaust gases."

More recently, 200 new Volvo buses were ordered by Bangalore city under the Jawaharlal Nehru National Urban Renewable Mission (JNNURM), a country-wide \$20billion city modernization scheme launched by the Government of India. Adding on to the current strength of 300, these buses will form the most modern bus fleet in India helping make public transport an attractive alternative while supporting development plans of the city.

Big impact

Volvo Buses have impacted many lives – all positively. Right from the

passengers to the conductors and the drivers, stories of satisfaction carry a common thread.

Ravi Kumar, driver of KA01 FA1348, airport transfer, says, "Earlier I used to drive the normal BMTC buses. When this project was launched, I was one of the drivers hand-picked for special training. When I first drove the Volvo bus, it was a special moment for my family and me. The launch had been in the news for a while, and at least for a few days, I was a hero!"

Key player in intra-city transport

Akash Passey sums it up when he says, "Till recently Volvo was known as a key player in the long distance travel segment. But today, it is also known as a credible provider of intra-city transport. Volvo's key differentiator is the fact that it provides complete solutions. Today we not only build complete buses in India, but are capable of designing an effective transport system and also plan the routes."





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1,500 buses to be delivered to Shanghai

Volvo Buses' joint-venture company, Sunwin Bus, signed a framework agreement for 1,500 buses with bus operator Bashi Group in Shanghai, China. The agreement is valued at approximately SEK 1.3 billion and the buses will be delivered up to the opening of the World Expo in Shanghai next year.

The City of Shanghai is making major investments in modernizing and streamlining its public transport prior to the World Expo, which will open on May 1, 2010. It involves raising the standard of the bus fleet by purchasing more Volvo buses and a strong investment in environmentally friendly buses from Sunwin Bus, a 50-50 joint venture between Volvo Buses and Shanghai Automotive Industry Co.

Of the framework agreement's 1,500 buses, about half will be Volvo buses, models Volvo B7RLE and Volvo B6R, and the remainder of the Sunwin brand.

Components for Volvo buses' chassis are packed in the plant in Borås, Sweden, and dispatched to the plant in Shanghai, where the chassis are mounted and the buses bodied. The same plant also manufactures the local Sunwin buses.



Volvo secures order for 90 buses for New York City

Volvo Buses' subsidiary in North America, Nova Bus, has secured an order for 90 articulated buses for New York City. The buses will be assembled at the new plant in Plattsburgh, US, which opened in June.

Serving the five boroughs of New York City, MTA New York City Transit owns and operates a fleet of over 4,500 buses – the largest bus fleet of any public agency in North America.

In recent years, Nova Bus has sold city buses only in Canada. In order to sell city buses in the US – buses that are partially financed by tax funds – the US authorities require that part of the buses be manufactured in the US. In early June, a new plant was ready in the northern part of New York State in the US and the first bus rolled out at the end of the same month. The articulated buses for New York City Transit will be assembled there, with delivery scheduled for the first half of 2010. Nova Bus will also assemble its 12-meter diesel bus and its hybrid bus at the Plattsburgh plant.

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A leading market position in reducing emissions and fuel consumption

Volvo Buses offers Euro V compatible engines that comply with the new European emissions standard, further reducing emissions. And as for Euro IV, Volvo Buses has combined this with considerably lower fuel consumption.

Text Håkan Hellström Photo Volvo

Volvo has been able to offer Euro V Incentive engines for several years, thanks to the SCR-technology (Selective Catalytic Reduction). The SCR technology enables the engine to be optimised for lowest possible fuel consumption and the ultralow particulate levels required by Euro V.

“We have been pretty aggressive in developing environmentally friendly engine technology,” says Edward Jobson, environmental manager at Volvo Buses.

“We have taken a leading market position with the D7 engine regarding fuel consumption and will now take one step further in development. The new 13-litre engine is expected to take us to a leading position in the high-powered segment as well,” says Edward Jobson.

He says the prognosis is that the latest engine upgrades for Euro V will further reduce fuel consumption by 5-6 per cent. Much of the improvement lies within the engine itself, the rest in cooling and other auxiliary systems.

Several technical solutions

While many competitors have increased fuel consumption to meet tougher emission standards, Volvo Bus has done the opposite – creating the SCR engine range with a fuel consumption reduction up to 17 per cent compared to previous engine generations.

“The latest measures for further reducing fuel consumption include a new version of our gear-shifting system I-shift for Euro V engines as well as engine installation improvements to reduce cooling losses,” says Edward Jobson. Other methods are a consistent use of fuel consumption statistics and fuel management follow-ups of buses in use. To help the customer to maximise productivity and choose the optimal bus specification for its need, Volvo Buses has developed the Bus Selector support tool.

“Other technical solutions are dynamic topography adaptation and acceleration limiter for gear boxes,” he says.

“But all is not high-tech, such measures like driver training and increased passenger capacity affects fuel consumption positively.”

“Volvo Buses will continue to follow an aggressive road map for future development of environmentally friendly and cost effective solutions.”



Edward Jobson, Environmental Manager.

Volvo delivers world's longest bus to Bogota

Volvo Buses has delivered 50 articulated buses for one of the world's largest and most efficient bus-based transport systems, the Transmilenio, in Colombia's capital city Bogota. Ten of



the buses are the longest type of bus in the world – Volvo's bi-articulated bus – at 27.2 meters long.

As a result of the use of articulated buses with high passenger capacity, it has been possible to remove a large number of smaller buses from the streets of Bogota. Combined with the decision by many of the city's inhabitants to leave their cars at home and instead take the bus, this has led to a 59-percent reduction in exhaust fumes from traffic. Volvo's articulated buses comprise a large portion of the buses in Transmilenio – some 560 of them. With an additional 40 B12MA articulated buses on order, the BRT (Bus Rapid Transfer) system has taken

a further step by purchasing for the first time ten bi-articulated buses, also based on the Volvo B12MA model.

At 27.2 meters, the bi-articulated bus is the longest in the world with a capacity to transport 240 passengers. Bi-articulated buses increase capacity in the transport system without needing to increase the number of buses.

The chassis were built in Volvo's plant in Curitiba, Brazil, and the bodies manufactured by Superpolo in Colombia, which is a subsidiary of the body builder Marcopolo. The customer is Ciudad Movil, one of the operators in Transmilenio.



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