



Minibuses and midibuses need to be given more attention

Striving for a healthy bus cab

As buses and coaches are increasingly becoming pieces of driving technology, the driver's seat is also evolving. External factors, such as the omnipresence of roundabouts and speed ramps as well as the rising demand of public transport companies to deploy minibuses, make an ergonomic and healthy bus cab even more indispensable.

During a workshop the Dutch professional association FNV Bondgenoten stressed the importance of a healthy bus cab. From a survey of 2,100 bus and coach drivers that was taken five years ago it appeared that bus cabs or the driver's seat and its environment are only given mediocre to even bad scores. On the basis of this information FNV started up the dialogue with bus constructors and soap manufacturers.

At the same time, together with an ergonomist a simple kit was developed by means of which the drivers can evaluate the ergonomic character of their seat themselves. Thanks to the protractor, tape measure, level, mirror and assess-

ment form – all contained in the kit – they can give a preliminary, indicative score to their driver's seat. Important criteria here are, amongst others, the adjustable seat height, the distance and corner to the pedals, the horizontal forward and backward adjustability of the seat, the seating depth, the adjustability of the back of the chair and the settings of the back support.

On the assessment form the drivers can also evaluate the reflection of the windscreen as well as their range of vision to the outside, to the road surface and to the area right in front of the bus (the blind spot!). Furthermore, the accessibility of the sunblind, the setting options of the steering wheel, the storage room for their bag, the position of the passageway to the driver's seat at one metre and the headroom in the bus cab are also taken into account. "We used this evaluation system for the first time during Busworld 2011", Jack d'Hooghe says.

"When we asked an Italian bus constructor at the fair if we could inspect his



Healthy driver's seats are becoming increasingly indispensable.

bus cab, he gave us exactly 30 seconds to do so. As a result, we immediately classified this bus as 'unsaleable in the Netherlands'. In the meantime, with the support of the bus constructors, the European Bus System of the Future project was launched. Although a lot of attention is spent on innovation and technology, hardly any research is done

on the bus cab itself. It is crystal clear that we should evolve towards one single European standard instead of the current ISO, NEN and VDV norms.

In my opinion we should also take a look at some new aspects, such as safety of the driver in case of rear-end collisions, vibrations that the drivers are exposed

to and the influence of electromagnetic radiation." Thereafter, the need for possibly separate standards and criteria for the driver's seats in minibuses and midibuses was discussed. Standard buses are being more and more replaced by smaller vehicles, whose design is based on that of delivery vans. The many roundabouts and speed ramps lead to health risks due to vibrations and bouncy movements. A Dutch court recently stated that the bus is really 'sickening' to the driver. Furthermore, bus companies and public transport companies have urged for more realistic timetables whereby the driver is given the chance to step out of his driver's seat on a regular basis. Non-stop working whereby a driver needs to sit behind the steering wheel of his minibus or midibus for four to four and a half hours in a row is considered unacceptable.



Delphine, Miss Busworld

Traditions deserve to be upheld. Just like during the previous editions, one lady and one gentleman were proclaimed Miss and Mister Busworld, a title which is given to two people who made themselves useful to the Busworld fair and to the sector in general. This year, Jacobo Gutierrez, the Spanish George Clooney of Hispacold, was crowned Mister Busworld. The char-

ming Delphine Bloemen of VDL can be called Miss Busworld until 2015. Since 1 September Delphine has been head of the Benelux sale of coaches, minibuses and midibuses. Before that, she worked at the back office of VDL Benelux. Since 1991, Delphine has not missed one single edition of Busworld. In the beginning she represented LAG, thereafter Bova and now VDL.



Award for the filter of Hugo Eelbode

At Busworld 2013, Darvan has launched the Bel-air filter which you can see on stand 952 (hall 9 – Xpo entrance North). This innovative concept is capable to capture fine particles and soot from diesel engines. Exhaust fumes are being lead through a double spiral of Archimedes. The particles are being slung to the outside of the spiral by centrifugal forces and stored in the separator.

Thanks to the centrifugal principle the clean exhaust fumes can flow freely into the atmosphere, thus resulting in greener and better engine performance. The filter system has no moving parts or catalyzer, nor does it requires any additives to make it work. The system has an open gate, which means that no back pressure can occur. Even when the filter is completely full of particles, it still has an open gate so that the engine can operate normally. The filter can be cleaned without any particles escaping into the atmosphere. Bel-air doesn't only remove the fine particles and soot from the exhaust gasses, the soot can also be recycled after removing byproducts and re-used as an additive in other products such as tires, lubricants, and more.

The Bel-air filter can be installed on diesel engines as in buses, trucks, stationary equipment, agriculture, forklifts, ships ... An additional advantage is the possibility to integrate this filter in existing buses or trucks. The existing silencer is removed and replaced by the Bel-air filter in a few hours.

The prototype Bel-air filter was retrofitted in an Euro 3 bus in the beginning of 2013. Fine particles, even below 0.1 µ, could be separated from the exhaust gasses. Temperatures and pressures were monitored and registered constantly with specifically designed and installed electronics.

During Busworld, already some partnerships were signed with companies from Hong Kong, India and Malaysia. Italy and Chili are also highly interested in the technology.



Hugo Eelbode



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MAN prominently present at Busworld

Although MAN cannot be found in the catalogue, the company is very present on the exhibition itself and in the outdoor grounds. It even introduced a fairly new product, a midi city bus with Caetano bodywork to be exact. In the programme it is positioned next to the midibus with Göppel bodywork. With this development MAN has taken quite a logical step. It has realised that not every type of bus demanded by the market is going to be purchased in amounts that justify the development of an own model for that segment. The city midi bus is an example of such a segment. MAN has chosen to cooperate with four partners in Europe and a few outside of Europe as well.

The bus that was created in cooperation with Caetano is very light in weight, as the front is made from synthetic material and the roof, the side and the back from aluminium. In case of possible damage replacing parts is very easy as well, due to the fact that everything is lightly constructed and easily mounted. The Cobolt system that is used makes sure that the destructed panels can be quickly



The midi city bus of MAN.

replaced in case of any damage to the bus. It is an extremely reliable system that has been used for years in the Cobus airport buses, which are also built by Caetano. Furthermore, the bus is equipped with very compact Ventura sliding doors and an extremely practical ramp for wheelchairs.

The Lion's City Midi as the bus is called is driven by a D0836 Euro 6 engine of 290 hp. The length of the bus is 8.8 metres, the width is 2.38 metres. The bus can

accommodate 66 seated and standing passengers.

MAN is not only doing well on the European market, but it is successful outside of Europe as well. It recently closed a deal in Mexico for the delivery of 200 double-decker buses that are to be built by the Spanish bodywork constructor Ayats.

strong existing relationship."

The 7900H is a complete Volvo vehicle built on a hybrid driveline. The 12.1 metre single deck bus offers reliability and high performance, whilst the body frame is specifically designed to save weight and therefore reduce fuel consumption.

Specified with a Volvo D5K 5.1 litre 4 cylinder engine, rated at 240 hp and supported by a Volvo Electric Motor, rated

at 120 kW, with a Volvo I-Shift gearbox, the 7900H combines a number of proven Volvo systems together.

The travelling experience is further enhanced with silent boarding and take-off thanks to the hybrid engine's 'stop start' feature, where the vehicle pulls away from the bus stop in pure electric mode. The 7900H also includes electronically controlled air suspension and smooth pneumatically controlled EBS 5 braking.



Lothian Buses' Volvo 7900H.

20 more Volvo Hybrids to Lothian Buses

Lothian Buses has ordered 20 Volvo hybrid single deck 7900 buses. Set for delivery during 2014, the 20 new Volvo 7900 Hybrids will be the first Euro 6 single deck Volvo buses to enter operation.

"We successfully launched the 7900 Hybrid single deck bus last year and Lothian Buses were one of the first operators to secure an order. They have achieved significant in-service fuel savings and have been very pleased with the overall performance of the buses," explained Phil Owen, Volvo Bus Sales Director.

"As a result we were in a position to confirm an order for an additional 20 new Euro 6 standard 7900 Hybrids. This is a particularly strong endorsement of our single deck hybrid bus offering and also obviously an exciting continuation of a

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Pictures and movies
in the coach ...

How to get pictures and movies from A to Z in the coach ... that was the theme of the workshop for travel guides. 88 of them attended the activity. Bob Van Reeth (see picture) gave a basic training regarding the collection and storage of pictures, music etc. and made a practical manual available. A second workshop will deal with how to store collected materials on a cd or USB flash drive and is planned for the end of this year. A specific date has not been determined yet.

A smile for free
every time.

All about small and large buses, that is the motto of www.modellbus.info. Since the beginning of 2013 Busworld it publishes breaking stories from leading bus exhibition on a daily basis. In addition to the bigger models that are given attention at www.modellbus.info smaller models are discussed as well. The history of the Leyland Charabanc that adorns the Busworld logo has already been explained in detail there. Kimberly Verstraete and Michelle Defraeye have noticed what joy model buses can bring. They have distributing a number of model buses at the entrance of the fair and next to a 'thank you' they also got a smile for free every time.



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