



## Busworld Academy off to an interesting start

The 2013 edition of Busworld will undoubtedly be remembered as 'the Busworld of renewal. Next to the distribution of labels for innovative components and accessories – the Innovation Labels – the Busworld Academy was launched for the first time as well. To the occasion of the foundation of the Busworld Academy, three conferences were organised.

The first conference was entitled 'The implementation of e-mobility and hydrogen mobility into passenger transport' and was organized in cooperation with HyER. Representatives of the UITP and the IRU talked about his subject with Paul Jenné, Transit Bus Manager at Van Hool. The latter opened the discussion with a presentation about Van Hool's activities with regard to fuel cell buses and the current position of these vehicles in the local transport. His conclusion:



Stefan Meersseman, president of the Busworld Academy, launched the Busworld Academy in good company.

"Don't put a fuel cell on it when you don't need it." In two parallel conferences the subjects "How can transport organisations col-

laborate to build a stronger and strategic business case based on the sustainable advantages of bus and coach?" and "Safety and fire safety" were discussed.



### busworld® academy

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This conference was preceded by an official part with speeches of Redgy De Schacht, president of the BAAV, Stefan Meersseman, president of the Busworld Academy, and the mayor of the city of Kortrijk, Vincent van Quickenborne, who welcomed the Academy to his city. De Schacht described the new initiative of Busworld as a knowledge platform for the world-wide bus and coach industry. As one of the methods for sharing this knowledge he mentioned organising stakeholder meetings at various locations in the world – for example the cities where the Busworld fairs are held.

The main objective is to keep on promoting the bus as the safest and cleanest mode of transport.

Stefan Meersseman concluded that there are not enough regulations with regard to safety in Europe. "In America, young children already have to learn how to get out of a burning school bus."



## BYD is looking for a spot in Europe

An announcement during Busworld gave us insight in European growth strategy.

The quickly growing Chinese car manufacturer BYD has serious plans for the construction of a European bus assembly plant. This is not that surprising actually, seeing that it has achieved some very positive test results in the whole of Europe with its full-size, 100% electrical and single-decker E-bus.

"The criterion for the justification of the construction of a European factory was to sell about 100 buses in Europe, and we are pleased to say that we are getting there", said Isbrand Ho, managing director of BYD Europe.

In his speech today on the opening day of Busworld in Kortrijk, Belgium, Ho added: "Several tests with our E-bus in regular timetables are being conducted at the moment or have been conducted, from Tel Aviv to Helsinki. The results are all very positive. After the tests the users

stated that our claim regarding the radius of action of 250 kilometres in urban areas is too conservative. They were also able to save a lot on energy – which has a positive effect on the environment and the operating costs."

Ho also said that the location of the new assembly plant has not been decided on yet and that a number of countries are still in the running. Important criteria here are a good access to the market and an attractive business climate.

In Europe, the E-bus of BYD has already been tested in Paris, Bremen, Bonn, Madrid, Barcelona, Salzburg, Warsaw, Amsterdam, Brussels and Budapest. The tests in London are about to take off.

On the Dutch Frisian island of Schiermonnikoog the entire bus fleet has been replaced and only 100% electric buses of BYD are used. The Schiphol airport recently placed an order at BYD of 35 completely electric buses for the

transport of the passengers between the airplanes and the terminals.

The energy use of the E-bus of 12 metres amounts to around 130 kWh/100 km in urban areas. This results in a save on fuel costs of up to 80% in comparison with a bus on diesel. This figure is based on extensive practical tests, such as in the South Chinese city of Shenzhen where 200 E-buses have been driving around since January 2011. At the end of September it was calculated that in total these buses have covered 20 million kilometres with passengers. During Busworld 2013 two versions of the state-of-the-art E-bus of 12 metres are displayed. You can find one at the BYD stand (stand number 848); the other one is located outside and is available for test drives.

These two show models are to be considered as an important step. After all, they are the first electric buses that have been specially designed for the difficult climate conditions in the Northern European countries. The model at the stand is meant for testing purposes in Copenhagen (Denmark), whereas the vehicle outside will be used in Helsinki (Finland) after the fair. Both vehicles have been equipped with special features to be able to resist the chilling temperatures, including double glazing and extra heating systems.

The continent-wide test programme is the beginning of an extensive sales offensive of BYD, which is participating in a number of public tenders at the moment. The emission-free E-bus of BYD is 12 metres long and is of the same size as the traditional city buses.

In the first quarter of 2013 the E-bus of BYD received its complete European type approval. This means that the brand can now promote and sell the 100% electric buses on the European market.

## Iveco presents its new concept Ellisup

Iveco Bus chose Busworld 2013 as the location for the presentation of its new public transport concept: the Ellisup. This is actually a bus with tram-like characteristics. The only difference is that the Ellisup can just drive on the asphalt – it does not require any rails. What would be handy though for the Ellisup is a free lane on the road, a lane that it has all to itself.

The most striking detail of the Ellisup is the position of the wheels under the bus. In fact they have been installed in the front and in the back as two tandem bogies. Furthermore, each wheel has its own stub axle, which makes the bus extremely manoeuvrable. The bus is driven by an electric motor on each second wheel, but – against all odds – these engines have not been installed in the hub of the Ellisup's wheels. The engines are located on the stub axle and drive the wheel by means of a transmission. The deviser of these wheels, including

the drive, is tyre manufacturer Michelin. For the drive a lithium battery package is used, guaranteeing a durable power supply. Supercapacitors are present as well for the short-term power – in order to drive away from a stop for example. The batteries can be charged at a quick-charge station at the end of the line, via a pantograph or a secured socket on the front of the bus. Charging the battery takes about four minutes. After that, the bus is ready for its next tour.

Apart from this unique drive the bus has a number of other exceptional features, which we will not all mention here. Just visit the stand of Iveco Bus and discover everything yourself.



The Ellisup offers many unique features.

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# Busworld Academy focusses on fire prevention

## Getting out needs to be more important than stepping in in order to limit image damage

**It might sound contradictory, but bus and coach constructors and companies should be focusing more on the way they step out of their vehicle instead of its accessibility. Only an efficient and quick approach can limit the consequences of a raging bus fire. Most of the times it only takes 2 to 3 minutes for a vehicle to be in a complete blaze and within that time span all passengers – also the less mobile ones – need to be evacuated.**

Bus fires are often a topic of interest in the media and inflict irreparable image damage to the companies involved as well as to the bus and coach sector in general. More than once the consequences are catastrophic and dozens of people lose their life because they were not able to leave the bus in time. During a workshop of Busworld Academy several experts talked about the impact of bus and coach fires. They gave advice as to how one can act preventatively and proactively in order to avoid victims, vehicle loss or image damage. During the workshop the airline sector was mentioned several times, because there the travellers are extensively informed about the risks and numerous measures have been taken in order to detect and extinguish possible fires.

### Leaving before the dramatic 'flash-over'

"By paying attention to technology, design, training and information provision disasters can be prevented and the impact of bus and coach fires can be reduced", Joey Peoples stated. "Fire suppression has become an actual science, whereby – unfortunately – there are no easy or magical solutions available. By means of automatic fire detection and suppression we can limit the number of human interventions and in this way, the driver can focus on safely pulling over to the side of the road and evacuating



In two to three minutes a bus can be completely on fire. In suchlike cases action needs to be taken quickly. The participants in the workshop of Busworld Academy could not agree more.

the passengers. We also need to realize that scarce intervention time is often lost because of the fact that the driver is not able to see the engine compartment and consequently does not realise that his bus is on fire. It has happened more than once that bus operators are alerted to danger by vehicles that are driving behind them.

Furthermore, we should also make a distinction between fires in buses and fires in coaches. The engine of city buses is under a much heavier load and therefore the risk is substantially bigger as well." Former fire officer and safety manager Mike Hagan added that most of the fires originate in the engine compartment. As soon as white smoke is coming out of there, it is already too late and a 'flash-over' is about to take place. The flames immediately spread to the interior of the bus and feast on the seats, textile floor and wall covering, curtains and so on.

"This is why most of the times buses are already completely burnt out when the fire brigade arrives. A fire-retardant interior can offer some extra evacuation time, but it is of crucial importance that all the passengers are evacuated as soon as possible. We have to make sure that passengers are sufficiently alert, that they are familiar with the emergency

procedures, that they know where the emergency exits are located and that they can open them. Nowadays, bus and coach constructors pay a lot of attention to the accessibility of their vehicles, but I would suggest that they do it the other way around and focus more on quickly getting out of the bus or coach."

### Informing and organising 'safety drills'

Later on, Peter Lawrence stated that making sure that everyone can leave the bus properly is a much bigger challenge for the constructors of high-deck coaches and double-decker buses than it is for the low-floor bus constructors. "It is extremely important to make the passengers familiar with the evacuation options. Travellers need to be stimulated to notify the driver if they smell or hear something abnormal." The speaker also emphasised the importance of 'safety drills' and suggested that bus and coach companies donate their scrapped vehicles to the fire brigade and the emergency services to use them as realistic practice material. As a result of numerous bus fires in China, James Wang insisted on a more efficient functioning of emergency exits and emergency doors, which can rarely be opened from outside. Various incidents in China have led to a ban on bus drives by

night by the government. The same government has also prohibited the use of sleeper buses and has forbidden double decker buses to drive on the motorways. In order to visualise several technical aspects as to fire safety facilities in a more powerful way, Frederik Rosen introduced the P label. This label is given to products and all kinds of components that have undergone strict tests. During subsequent examinations the impact of various incidents, such as vibrations, shocks, rust formation and short circuits,

were evaluated in the light of fire safety. On the basis of the P label the necessary adjustments were also suggested to the current UN ECE 107 regulation. Dominiek Viaene (European Burn Casualties Association) wrapped up the workshop by pointing out the consequences of burns. He too mentioned that it is absolutely necessary to – after the example of the airline companies – give more and better information to the passengers with regard to the evacuation process.

### 20 tips in 2 minutes

- During the fire prevention workshop different things were suggested in order to enable a quick evacuation within 2 minutes. You can find an overview of the different suggestions below.
- Turning off all air-conditioning and ventilation systems as soon as a risk of fire or an actual fire is detected.
- Pulling over to the side where it is safe.
- Turning off the engine.
- Designing a preventative maintenance scheme whereby attention is given to potential fire risks.
- Informing the passengers before the start of every coach trip.
- Developing information and evacuation programmes for associations, schools etc.
- Centralising the research of bus fires and bus catastrophes in order to get a comprehensive overview and to be able to look for solutions together.
- Providing a sufficient amount of easily accessible emergency exits, so everybody is able to leave the vehicle when one or more emergency exits are blocked.
- Guaranteeing that the emergency exits can be easily opened.
- Clear signalisation of the emergency exits that is recognisable for everybody, by means of uniform pictograms.

- Paying more attention to the options for getting out instead of for getting in.
- Teaching the passengers how to break a window by means of the emergency hammer.
- Hanging up emergency hammers near the corners of the windows so the passengers know that they need to hit the corner of the window in order to crush it.
- Telling the passengers where the emergency exits are located.
- Telling the passengers that are seated next to an emergency exit how they should open it.
- Teaching the police and the emergency services how they need to open an emergency door or an emergency window from the outside and clearly visualise this method on the vehicle itself.
- Encouraging passengers to inform the driver and travel guide in case of abnormal smells or sounds.
- Making sure that the emergency windows can be opened from the outside as well.
- Preventing less mobile passengers from taking a seat in places where they might hamper the smooth evacuation of the other passengers.
- Making sure that less mobile passengers are seated near the emergency exits.

## Flemish bus patrimony is still becoming more environment-friendly, but without BRT

**Flanders wants to keep on making its vehicle fleet greener. To this end, 123 new hybrid buses will soon be bought. This will bring the total amount in the De Lijn fleet to about 200. At the same time pilot projects will be started up with hydrogen-powered buses in Antwerp and with electric buses in Bruges. However, not a single word was said about the durable, green and internationally successful Bus Rapid Transit (BRT) projects.**

"We are in need of an integrated mobility network in which the different modes of transport are included." This was said by the Flemish minister for transport Hilde Crevits during the Busworld Academy workshop around durable mobility and alternative, green fuel. "By investing in new technological applications such as diesel hybrid buses, hydrogen-powered buses and electric vehicles and at the same time investing in the road infrastructure, road maintenance and facilities such as the MOBIB card for users of public transport, we want to keep on taking steps forward." Minister Crevits further explained how De Lijn focused on making its fleet more

environment-friendly over the past few years. Four years ago, only 44 hybrid buses were bowling along in Flanders and, by means of test, one fuel cell bus. With the upcoming order of 123 hybrid buses the green fleet of De Lijn will consist of more than two hundred vehicles. Furthermore, a pilot project will be launched in Antwerp involving five hydrogen-powered buses that are to 'fuel up' at Solvay, located in the port. In addition to all of this a project with three low-noise electrically driven city buses will be started up next year in the historical city centre of Bruges. Other initiatives by means of which the Flemish government and De Lijn want to reduce the ecological footprint of the public transport include an eco-driving course for all the bus operators of De Lijn. The aim is to realise a significant fuel save and at the same time increase the comfort of the passengers by no longer slamming on the brakes or accelerating too quickly. The speech of minister Crevits immediately followed the presentation of the TransMilenio Bus Rapid Transit (BRT) project in the Colombian city of Bogotá, a topic that is very much alive with the



Flemish minister of transport Hilde Crevits gave an overview of all the initiatives of the Flemish government to make the mobility more environment-friendly.

Flemish bus companies and has been mentioned several times as the alternative to the controversial express tram projects of De Lijn in the provinces of Limburg and West-Flanders.

### TransMilenio: subway in the form of a bus

"Bogotá has a perfect 'subway in the form of a bus'. The system is called TransMilenio. With 2 million travellers per day and 50,000 per hour during rush hours we really benefit from the subway-like system. The entire TransMilenio

network, including the feeder lines and minibuses, is responsible for the transport of 6 million people every day", Andes Arboleda said.

"In order to turn the BRT project into a huge success we set up eleven bus lines on specific corridors or separate bus lanes. We have 1462 high-frequency articulated and bi-articulated buses and 715 feeder buses that transport the travellers to the nine main stations and junctions every day. At the moment most of the vehicles are equipped with Euro2 and Euro5 engines, but we are planning the purchase of green, hybrid and electric buses on the long term. We are also working on a tram network, but that's still way in the future.

The challenges that TransMilenio is currently facing are ample. The fleet, which still includes about 760 buses of more than thirty years old, needs to be updated. The entire network, grafted onto the BRT lines, needs to be optimised and should consequently lead to less buses being required. Along the BRT network the stops and the transfer options need to be revised and improved in order to be able to offer a service provision of the highest quality possible.



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Lay-out and printing: Ally Graph-x  
Publisher: Luc Glorieux