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 their 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: “Don’t put a fuel cell on it when you don’t need it.” In two parallel conferences the subjects “How can transport organisations collaborate to build a stronger and strategic business case based on the sustainable advantages of bus and coach?” and “Safety and fire safety” were discussed.

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-deck E-bus.

The criterion for the justification of the construction of a European factory was considered as an important step. After all, many countries are making efforts to integrate the E-bus as the traditional city buses. “The benefits of this are clear,” said Isbrand Ho, managing director of BYD Europe. “The E-bus reduces 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, Brisels 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 for 55 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.

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.”
**Busworld Academy focusses on fire prevention**

Getting out needs to be more important than stepping in 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 5 minutes for a bus 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 passengers, 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 preventively and proactively in order to avoid victims, vehicle loss or image damage. During the workshop the airline sector was mentioned, too, 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 ‘swish’**

‘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’, José Peoples stated. ‘Fire suppression has become an actual science, whereby – unfortunately – there are no easy or magical solutions available. By means of training we can at least suppress the limitation we can make 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 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 realize 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 ‘flashover’ is about to take place. The flames immediately spread to the exterior of the bus and heat on the seats, textile ceiling 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 constructor. ‘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 punctual and professional handling of abnormal smells or sounds.

‘The passenger should therefore be informed about the importance of evacuation options and be able to use them as realistic practice material. As a result of numerous bus fires in China, James Wang insisted on a more punctual and professional handling of abnormal smells or sounds.’

Dominiek Viaene (European Burn 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.

**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 brought into service. 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 successfully Bus Rapid Transit (BRT) projects.

“We are in need of an integrated mobility network in which the different modes of transport are included,” was this said by the Flemish minister for transport Hilde Crevits during the Busworld Academy workshop on BRT for a double decker and alternative green fuel. “By investing in new technological applications such as diesel hybrid buses, hydrogen-powered buses and electric buses we are gearing up to the time when we will be able to think about the integration of 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 the 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 250 two-floor vehicles. Furthermore, a pilot project will be launched in Antwerp involving five hydrogen-powered buses that are to be fuelled up at Solvo, located in the port. In addition to all 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 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 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 in the past 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 Euro4 engines, but we are planning the purchase of new vehicles with bi-articulated buses and electric battery on the long term. We are also working on a tram network, but that’s still way in the future.”

The commuter line TransMilenio is currently facing many problems. The fleet, which still includes about 760 buses of more than thirty years old, needs to be updated. The entire network, upgraded in the year 2000, needs to be reviewed and improved in order to be able to offer a service provision of the highest quality possible. Were evaluated in the light of fire safety. On the basis of the failures the label necessary adjustments were also suggested to the current UN ECE 107 regulation.

Dominator Vlaanderen (European Burn Causality 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 just 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.
- 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.

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