

# DAF IN ACTION

NO.1 2018



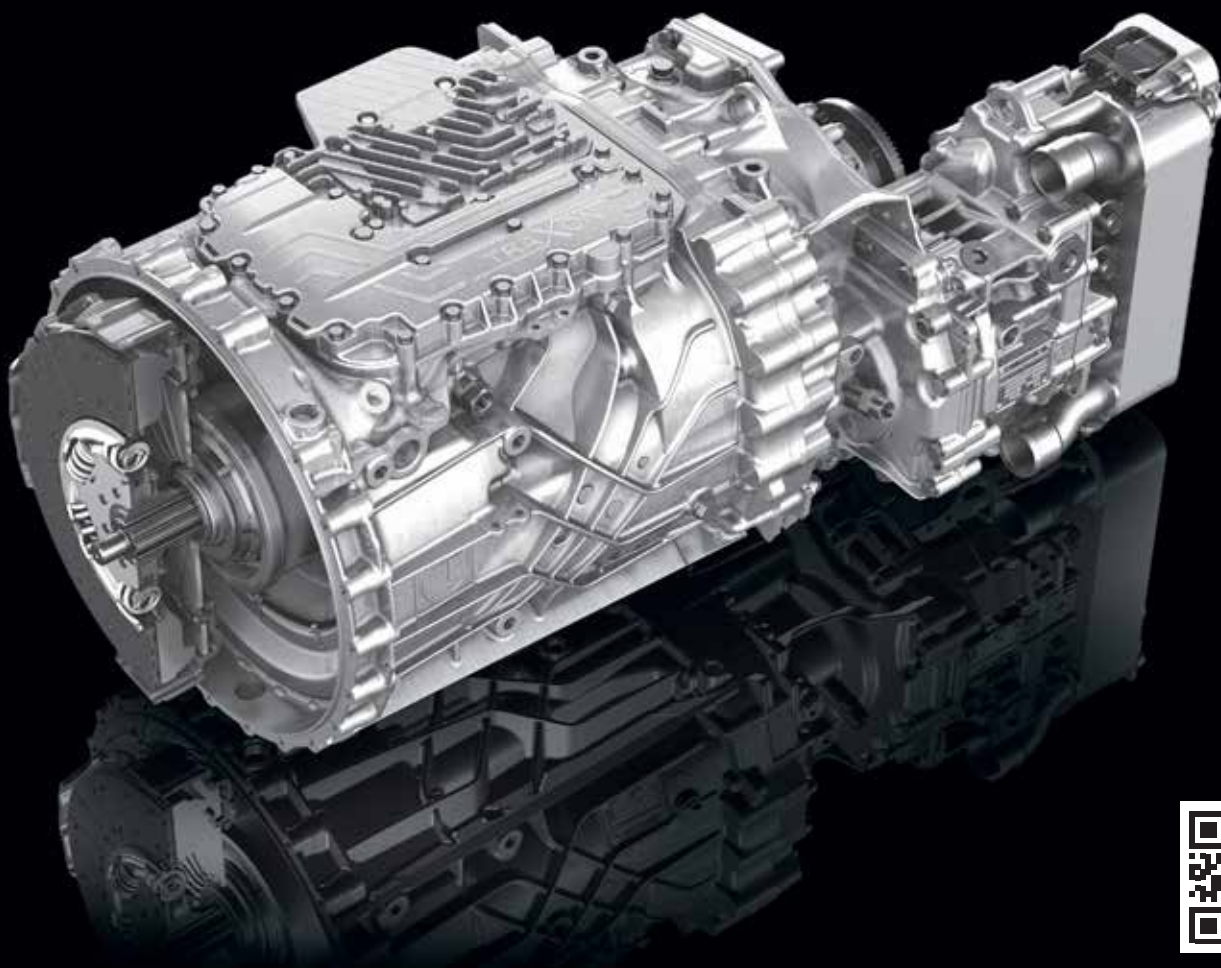
**NEW CF AND NEW XF**  
INTERNATIONAL  
TRUCK OF THE YEAR 2018!

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**DAF**

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**Thank you!**

It was with great pleasure that we introduced the New CF and New XF in Birmingham in May 2017. The new trucks deliver up to 7% better fuel economy, increased payload of up to 100 kgs, have extended maintenance intervals and provide an excellent driving experience. These statements may seem bold, but they have been validated time and again by you or your colleagues. In this issue of DAF in Action you can read more about their experiences.

Another exciting note is that at the end of November we were awarded the most prestigious prize in the truck industry: that of 'International Truck of the Year 2018'. The jury members commented that "With the introduction of the New CF and XF series, DAF has delivered a medium and heavy duty truck range that sets a new standard in terms of driveline efficiency and overall performance".

The 'International Truck of the Year 2018' award does not just belong to DAF, but also to our DAF dealer organization and most importantly, to you, our business partners that use our trucks and services to drive your success. I close by thanking you for the confidence you put in us every day, as it inspires us to do even better tomorrow.

Kind regards,

Preston Feight, president



**Colophon:**

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## DAF New CF and New XF:

# International Truck of the Year 2018

'International Truck of the Year' is without doubt the most prestigious title that any truck manufacturer can hope to win. "The most important criterion is the contribution that the winning truck makes to improving the efficiency of road transport", explains jury chairman Gianenrico Griffini. "That is why this award is so special, in addition to the fact that the jury's decision is based on the opinions of no fewer than 23 leading transport journalists and magazines from all across Europe."

BY **ROB VAN GOOL**



**The 'International Truck of the Year 2018' award was presented by the chairman of the jury, Gianenrico Griffini, to Preston Feight, president of DAF Trucks, during the press day at the Solutrans trade fair in Lyon, France**

Each year the announcement of 'International Truck of the Year' in an exciting moment, and this year was no exception at the Solutrans transport trade fair in the French city of Lyon. "The rules dictate that the prize be awarded to the truck or model introduced to the market during the past 12 months that has made the most significant contribution to transport efficiency. After all, that is what the business of road transport is all about these days", says Gianenrico Griffini. "A long list of criteria is used when making the decision, such as technological innovation,

driver comfort, safety, driving characteristics, fuel consumption, environmental 'footprint' and, of course, 'Total Cost of Ownership'."

### **DAF New CF & XF win first prize**

Why were the DAF New CF & XF awarded the title 'International Truck of the Year 2018'? Griffini is keen to explain: "The new driveline, based on the optimised MX-11 and MX-13 six-cylinder in-line engines – complete with the new ZF Traxon 12-speed



**With the introduction of the New XF/CF, DAF has delivered a series of medium and heavyweight trucks that set a new standard in terms of the energy efficiency of the driveline and overall performance”**



gearbox – and the new DAF rear axles result in improved driving characteristics, lower fuel consumption and seamless gear-shifting. The members of the jury appreciate the manner in which DAF has endeavoured to squeeze the maximum amount of energy out of every drop of diesel. This has been achieved through improved combustion, less internal friction in the engine, ‘down speeding’, improved ‘predictive controls’, a new electronic architecture and reductions in the weight of components like the aftertreatment system.” According to Griffini, the IToY jury lauds the advanced features of the New CF & XF driveline, which allow the truck to operate longer in the ‘Eco-Roll’ modus. This is due to the improved integration of the engine and the automatic gearbox with the latest GPS-based Predictive Cruise Control functions.

**More recognition for efforts of truck industry**

The award was presented for the 32nd time in its history. Like his colleagues, Gianenrico Griffini has witnessed at first hand an incredible evolution in commercial trucks over the past few years. “The evolution is very impressive”, he says. “Compare a truck from 10 or 15 years ago with a modern one and you quickly see the progress that has been made in terms of emissions, fuel efficiency, safety and driver comfort. In my opinion the truck industry should be getting far more recognition for its efforts.”

**A new standard**

Gianenrico Griffini sums up the jury’s choice as follows: “With the introduction of the New XF/CF, DAF has delivered a series of medium and heavyweight trucks that set a new standard in terms of the energy efficiency of the driveline and overall performance. The DAF team can be very proud of its ground-breaking trucks!” ■



1988 **DAF 95**



1998 **DAF 95XF**



2002 **DAF LF**



2007 **DAF XF105**



2018 **DAF NEW CF & XF**

**It all began in 1976**

The ‘International Truck of the Year’ award first saw the light of day back in 1976 in Great Britain when the editor of ‘Truck Magazine’, the late Pat Kennett, decided to put the new Seddon Atkinson SA200 through its paces. He found it to be highly innovative and ahead of its competitors when it came to comfort and safety. And so the idea was born to create an award that recognised the latest technical developments in commercial vehicle design and truck technology, especially with regard to the benefits they could offer to operators and drivers. Pat’s idea was enthusiastically embraced by the publisher of Truck Magazine, Andrew Frankl, and together they decided to create the ‘Truck of the Year’ award. In 1977 Seddon Atkinson was the first truck manufacturer to receive the award. The following year it became known as the International Truck of the Year award, after Kennett and Frankl went in search of European colleagues who shared their enthusiasm for the idea. Today the jury consists of 23 members selected from the leading truck magazines in Europe. In recent years the IToY group has extended its sphere of influence by appointing ‘associate members’ in fast-growing truck markets like China, India, South Africa, Australia, Brazil, Japan and Iran.

INTERNATIONAL TRUCK OF THE YEAR



## DAF delivers 500<sup>th</sup> truck to Jordan

The 500<sup>th</sup> truck to be delivered to Jordan is part of an order for 50 trucks placed by Euro Shipping Services (ESS) in Amman. ESS is a large intermodal hauler that specialises in shipping, freight forwarding, container cargo, general cargo, air freight and warehousing. The decision to opt for the CF85 is no coincidence either, according to owners Issam Sacca and Mahmoud Omran: "We know that DAFs are extremely efficient as regards fuel consumption, which is one of the reasons why it has an incredibly favourable 'Total Cost of Ownership'. But also in terms of safety, reliability and sturdiness, the CF85 is without doubt the truck that we want to add to our fleet of 90 vehicles. And we have great faith too in the aftersales support and the extra services provided by the local DAF dealer, Manaseer." ■

Three years after entering the Jordan market, DAF Trucks has delivered its 500<sup>th</sup> truck to Jordan. The delivery of this DAF CF85 4x2 Euro3 is indicative of the strength of the DAF brand in Jordan. The Dutch manufacturer is now the market leader in the heavy segment with a market share of over 25%.

## Appointments to DAF Board of Management

**A number of changes were recently made to the Board of Management at DAF Trucks N.V.**

Harry Wolters was promoted to Director of European Sales. Harry Wolters joined DAF in 1996. He has held positions of increasing responsibility including manager of the Eindhoven Truck Factory and Human Resources Director and was appointed as Director Operations in October 2014. In his new role Harry Wolters will remain a member of the DAF Board of Management.

Jos Habets was appointed to Director Operations. He joined DAF in 1998. Jos Habets has held several positions of increasing responsibility including Manager Business Economics and DAF Group Controller, before his promotion to Finance Director and member of the Board of Management in 2010.

Harald Seidel was promoted to Finance Director. Harald Seidel joined DAF in 2001. He has held several positions of increasing responsibility including Controller of PACCAR Parts Europe and Controller of Marketing & Sales before being promoted to Group Controller in 2016. Harald Seidel has joined the DAF Board of Management. ■



Harry Wolters (left), Jos Habets (middle) and Harald Seidel (right).



## IRIZAR i8 'INTERNATIONAL COACH OF THE YEAR 2018'



This year at Busworld – one of the world's largest international public transport exhibitions – the tri-axle, 14-metre-long Irizar i8 coach was chosen as 'International Coach of the Year 2018'. The award was also a nod of recognition to DAF, given the fact that the Irizar i8 is fitted with the PACCAR MX-13 engine designed and built by DAF. "When it comes to price, residual value, fuel efficiency and operational costs the Irizar i8 is quite simply the new standard," according to the jury.

Both DAF Trucks and the DAF New LF were in the winning circle at the '2017 Commercial Fleet Awards'. From left to right: Phil Moon, DAF Trucks Marketing Manager; John Mabey, PACCAR Financial; Adam Bates, DAF Trucks UK Fleet Parts Sales Manager; Ian Grant, DAF Trucks Fleet Sales Director.



## DAF wins two prestigious 'Commercial Fleet Awards'

DAF Trucks won two prestigious prizes at the 2017 Commercial Fleet Awards gala. DAF Trucks was chosen as 'Truck Fleet Manufacturer of the Year', while the DAF LF series took home the title of 'Commercial Fleet Truck of the Year'. It is the third year in a row that DAF Trucks has come away from the Commercial Fleet Award gala with an award for the LF series and the title of 'Truck Fleet Manufacturer of the Year'.

"These awards mean a lot to us because the jury is made up of leading British fleet managers who know the needs of the sector inside out", according to Richard Zink, director of Marketing & Sales and a member of the board at DAF Trucks. "The awards underline the high quality of our vehicles and services. Together they combine to provide the lowest total cost of ownership and the highest possible level of transport efficiency to our customers, and they benefit from these qualities every single day." The Commercial Fleet Awards is an initiative of the leading British 'Commercial Fleet' magazine. ■



## DAF Trucks Paris opens its doors

DAF's new dealer, DAF Trucks Paris, recently opened for business on the city's busiest traffic interchange just south of Paris. The premises covers 13,000 square metres and boasts all of the latest technology and tools, including brake testing equipment and eleven ramps. A computerised spare parts inventory ensures optimal availability of parts. The dealer is strategically located only ten minutes from Orly Airport and is easy to access from the motorways that circle the French capital. ■

## Expansion of CF and XF series and the new LF:

# DAF pulls out all the stops again

The Dutch truck manufacturer is adding no fewer than eleven tractor and rigid axle configurations to the popular CF and XF series, which were given a complete overhaul earlier this year. At the same time DAF is also introducing the new LF, which now shares many of the innovations to be found in the CF and XF series and will help to further strengthen the position of the brand in the distribution segment.

BY **ROB VAN GOOL**



That DAF has managed to overhaul its entire product programme over a period of only six months is nothing short of a tour de force, as the French might say. While the changes with regard to appearance could be attributed to little more than a radical facelift, the word 'new' simply has to be used to describe the extensive changes under the hood in the CF and XF. New engines, new TraXon gearboxes and new rear axles are testimony to this fact, and these are but a few of the long list of innovations that have been added. New vehicle software, a completely new and even more

compact EAS and a new climate control system in the cabin that makes clever use of the residual heat in the massive engine block. DAF has gone to great lengths to ensure that every single component in their trucks has been adjusted to get the maximum out of every drop of diesel oil consumed.

### **7% lower fuel consumption**

At the introduction of the new series of multi-axle vehicles to the international press, Raoul Wijnands, DAF's Testing manager, had no difficulty pointing out the benefits of the large-scale overhaul: reductions in weight of up to 300 kg,

service intervals every 200,000 kilometres and – last but not least – savings of 7% on fuel consumption for long-haul transport. 'This is the biggest step we have ever taken', according to DAF and their claim has been corroborated by an international test recently carried out by one of DAF's Hungarian clients, Révész. "Over a distance of more than 3,000 kilometres, the new XF delivered savings of 7.3% on fuel consumption compared to the previous generation, which was already extremely efficient", according to a proud Wijnands.





The DAF programme was expanded to include new axle configurations that will allow individual transporters to order customised trucks.



One of the most important innovations is the new trailing axle, which is available on both tractors and rigs and facilitates optimum manoeuvrability.



### Higher payload, lower fuel consumption

The market appears to have wholeheartedly embraced the new generation of DAF trucks. Initially the plan had been to carry on producing the existing generation of trucks, but now the DAF factories are concentrating their efforts exclusively on rolling out the newest generation to meet the growing demand. This has also proven to be the best moment for expanding the programme to include the new axle configurations that will allow individual transporters to order customised trucks. For instance by offering a completely new

steering axle with an electric hydraulic steering system for optimum manoeuvrability, a lower weight (30 kg), improved reliability as a result of having less parts and even more savings on fuel consumption. Because the intelligent steering pump now only operates when required, as opposed to constantly.

Another new feature is the dual-mounted trailing axle for higher payload capacity. A new axle housing with optimised bearings delivers a weight reduction of 25 kg, while savings on fuel amount to two-tenths of one per cent. Probably the greatest benefit, however, is to be found in the

static load capacity of 34 tons. This is highly valuable when loading and unloading heavy containers.

### New models for the construction industry

DAF also has something new to offer to those clients whose work often sees them travelling on less forgiving terrain. For example, the new double-driven tandem set (26 tons) with hub reduction, in which the new axle housing and faster ratios perfectly match the philosophy that DAF is applying to the entire series, i.e. 'down speeding' of the engines. ►

# DAF lubricants - save money and time

The Premium and Xtreme ranges have all been designed, developed and tested for DAF Trucks by Chevron Lubricants, one of the largest producers of quality oils in the world. They have been designed with clear objectives. Save operators money and time by delivering optimised protection and performance for all moving parts of the driveline. Resulting in reduced fuel consumption, lower CO<sub>2</sub> emissions and extended drain intervals.



**DAF Xtreme 75W-85**  
**DAF Xtreme 75W-90**  
Fuel saving DAF axle oil

**DAF Xtreme 75W-80**  
**DAF Premium 75W-80**  
Fuel saving DAF gear box oil

**DAF Xtreme LD-FE 5W-30**  
**DAF Xtreme LD-FE 10W-30**  
**DAF Xtreme FE 10W-30**  
Fuel saving DAF engine oils

**DAF Xtreme Longlife Coolant**





**“A BMW 1-series in the VW Golf segment”, was how one DAF spokesperson classified the new LF.**

This means that they can now operate at much lower RPM, which further improves fuel efficiency and – of major benefit to the driver – results in an amazingly low noise level.

According to the DAF crew in Eindhoven, the new

CF 8x4 rigid is up to 300 kg lighter than its predecessor, not to mention the fact that the oil in the new tandem axles only needs to be changed once every three years or after 450,000 kilometres.

To stay with the construction sector for a moment: DAF is now also producing a lightweight 8x4 chassis for the CF for the continent, particularly suitable for cement mixers. With two 7.1-ton steering axles and a 19-ton tandem with single reduction, the chassis comes in at a mere 9 tons on the weighing scales and that is absolutely unique in the market. It's not that long since regular tractors weighed that much.

### **Incredible peace and quiet on board**

The driving experience offered by the new CF and XF models easily matches the excellent performance of their siblings launched earlier in the year. DAF is renowned for its superior driving characteristics, including excellent stability and easy steering with lots of ‘feel’, and the new models live up to this reputation too. The most outstanding feature is the peace and quiet on board. The new generation of PACCAR MX-11 and MX-13 engines offer

more power and torque and allow the trucks to cruise at 85 km/h while the rev counter doesn't even reach 1000 revs per minute.

This in turn facilitates a very relaxed driving experience. The new TraXon gearboxes work very comfortably and an added, extra clever feature are the shifting strategies that are built-in as standard. With the simple push of a button the driver can adjust the gearbox behaviour to match the driving conditions: liquid transport, off-road or long-distance haulage. The transmission is also fitted with special programmes for heavy transport and Ecocombis, but these are automatically selected when after two gear changes the gear box becomes aware of the need to pull a heavier load. Smart and practical, just like the ‘battery energy motoring system’ and ‘tyre pressure monitoring’ that constantly monitor the batteries and the tyre pressure.

### **New clothes for the smallest child**

Of course, the smallest child in the family has not escaped the wave of innovation running through DAF either. The New LF shares several features with its bigger brothers, although the second window in the door on the passenger side is exclusive to DAF's distribution truck. However, it does

profit from the new colours in the interior, the extra information on the central display on the dashboard and the additional torque that allows the engine – in combination with the faster drivelines – to

operate at a lower rev count and so reduce fuel consumption by up to 6% in the new generation.

### **New engine**

A major revelation during the presentation to the international media in Spain was the new 3.8 litre PACCAR PX-4 engine. Operating at 115 kW/152 hp and 127 kW/172 hp it occupies a place at the basic end of the programme, but that is absolutely nothing to be ashamed of. The PX-4 is exclusively available in the 7.5-ton segment and is sure to be a hit with transporters who are specialised in light distribution work but who also expect their truck to still be in excellent condition after 5 or 10 years. ‘A BMW 1-series in the VW Golf segment’, was how one DAF spokesperson classified the new LF and its new powertrain. With its shorter wheelbase and excellent manoeuvrability, the LF and its ‘little’ PX-4 stole the show in Spain. The multi-axle versions from the CF and XF-series also made a big impression. ■



To find out more about DAF's new product programme go to [www.daf.com/inaction](http://www.daf.com/inaction)

## Révész Group:

# “DAF has kept its promise!”

Révész Group is one of the leading transport and logistics companies in Hungary. It was set up in the 1980s by Balint Révész, who is still the firm's CEO today. He has seen the family business grow to become the market leader in Eastern Europe in the bulk transport of gas and liquids and an important player in the area of logistics service.



Zoltán Sipos: “DAF knows how to combine all of our demands to perfection”

DAF enjoys a special relationship with the Révész Group: in 2015 the Prime Minister of the Netherlands, Mark Rutte, handed over the keys of the millionth DAF to be built in Eindhoven to owner and CEO, Bálint Révész.



The basis for the firm's transport activities is formed by a fleet of over 450 trucks, the majority of which display the DAF badge on their grille. Zoltán Sipos, director of Lerton Trans Ltd, a subsidiary of the Révész group, explains why the company decided to choose the Dutch truck manufacturer. "Our trucks cover an average of 130,000 kilometres each year, and so reliability and low operational costs are crucial factors for us when determining our choice of manufacturer. Driver comfort is also an important concern; our drivers are often out on the road for days on end, so they deserve a good bed, plenty of space and a comfortable driving experience. DAF knows how to combine all of these demands to perfection."

#### Price-performance

A few months ago the Révész group ordered 400 New DAF CFs and New DAF XFs as replacements for their existing vehicles and in order to expand their fleet. Even though Révész has been a loyal DAF customer for years, it was by no means a foregone conclusion that DAF would get the order. Sipos: "We compared many manufacturers with each other, as we always do for our big orders. DAF offered the best price-performance ratio and also had the best score with regard to low operational costs."

#### Comparison test

An important part of the acquisition process was the comparison test conducted between the New XF and its already extremely efficient forerunner. "No better test than out on the road," according to Sipos. "When DAF introduced the New CF and New XF it promised a saving of 7% on fuel consumption compared to the previous models. Sounds attractive, but would they make good on their promise? We decided to do an extensive test over a distance of 3,500 km, from the Netherlands to Hungary and back again. DAF lived up to its promise: the test showed that the New XF was 7.3% more efficient than its predecessor."

#### From CF to XF

"Up until now our fleet consisted mostly of CF trucks", says Gábor Maczkó, director of Révész Trans Ltd. "This was primarily because of the trucks' very low weight. After all, in the bulk and tank transport business every kilo counts. DAF has now reduced the weight of its top-of-the-range XF and so we have decided to switch to the XF Super Space Cab. This will offer our drivers even more space and comfort, and the business itself will benefit from the lowest fuel consumption costs around and from the increased overall transport efficiency. Two birds with one stone in other words. Not to mention the fact that our drivers are very enthusiastic about the very impressive engine torque and the driving experience as a whole." ■



**A test carried out by Révész showed that the New XF delivers savings of 7.3% on fuel."**





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With a lower consumption.**



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\* Comparative tests made by Goodyear GIC\*L on size 315/70R22.5 show that new Goodyear FUELMAX S and FUELMAX D steer and drive tires offer an improvement in rolling resistance of up to 6% and 10% respectively vs. Goodyear Marathon LHS II + and LHD II + tires.



**MADE TO FEEL GOOD.**

## Platooning - the DAF way:

# “The driver will always be needed”



Platooning with trucks is getting more and more attention. However, while all of the parties involved agree on the ultimate objective, there is still much discussion as to how this should be achieved. This has led to a distorted picture among transporters and drivers. DAF attaches great importance to a clear and realistic vision.

BY **BERT ROOZENDAAL**

For the entire truck industry, the primary reason for platooning is the greater fuel efficiency it delivers and the resulting reduction in emissions. All parties agree that platooning contributes to road safety, more efficient road usage and improved traffic flow.

### **0.3 seconds**

DAF is an industry leader in truck platooning. It is the only truck manufacturer that has managed to put three intercommunicating trucks driving on the road together at time intervals of 0.3 seconds per truck. That equates to a mere 6.6 metres between each 'platooning' vehicle! The resulting suction effect leads to savings of at least 10% on

fuel for the truck at the rear. The first truck also manages to save on fuel because the truck immediately behind it cancels out much of the air turbulence produced by the leading vehicle. During its research, DAF also discovered that the suction effect at 0.3 seconds is much the same at 0.5 and 0.8 second intervals.

### **Role of driver**

DAF also believes that platooning has the potential to reduce fuel consumption, improve traffic flow, enable safer driving and achieve greater transport efficiency. Unique to the vision at DAF is the role of the driver. Platooning is meant to assist the driver, not replace him. ▶

**At a time interval of 0.3 seconds, the rear of the leading truck fills the entire windscreen.**



### **Alert**

DAF aims to keep a driver on board its vehicles at all times. “And if you want to keep a driver alert, then he or she must have something to do”, according to engineer Menno Beenackers, platooning project manager at DAF. “We believe that the best way of guaranteeing this is by allowing the driver to actually drive the vehicle, with or without the help of electronic aids in the steering wheel that prompt the driver to make adjustments or that enable the truck to do so itself. This is an extension of the developments that have already been made in the electronics in our current vehicles. It represents another step in helping the driver to do what he’s supposed to do: ensure that he and the truck arrive safely at their destination. This is the second phase in our four-phase plan that covers every step from full driver control to self-driving trucks. Drivers can now even let go of the steering wheel momentarily, like in a Tesla. But that is still a long way from self-driving vehicles. We will be addressing that in phase three.”

### **Challenges**

The above appears to answer the question as to whether the time interval of 0.3 seconds is set to become the standard on the road. Not yet, according to DAF. Because the fact that DAF has

been able to successfully test this means that its engineers also know exactly what other challenges are waiting around the corner. One of these challenges becomes very obvious when we climb on board for a test drive: the entire windscreen is filled with the vehicle in front. That is not a very comfortable situation for a driver. “We believe it is best to address this in the fourth phase”, says Beenackers. “Then the trucks behind the leading truck will all be self-driving, i.e. either driverless or with no intervention on the part of the driver. However, I don’t see this kind of autonomous driving happening any time soon, particularly given the meagre benefits and the amount of technology required. I think that for the moment we will be working with time intervals of 0.5 to 0.8 seconds between vehicles where the driver still has full control.”

### **Legislation**

Thanks to platooning, trucks can drive closely together in convoy and thus contribute to the more efficient use of our roads, including the efficient transport of goods. “However, this also requires agreements and legislation at a European level on what is to be regarded as a safe time interval between vehicles when platooning,” according to Beenackers. “That has yet to be agreed: most European countries already have their own legislation on distance between vehicles, but there is still no European standard. Sometimes the recommended distance is described as 50 metres, sometimes as two seconds, and sometimes it is entirely at the discretion of the local police. Platooning is going to require universal legislation.”

### **Communication protocol**


Another obstacle looming on the horizon is the need for a universal communication protocol. The ACEA believes that

multi-brand platooning will be a reality by 2023. However, that means that all trucks, regardless of make, will have to be able to ‘talk’ to each other. And that’s not all. The question of how platoons will actually be formed still has to be answered too. Most trucks will continue to join the motorway as individual vehicles before attempting to form platoons in ad hoc fashion with other trucks. Of course, it is also possible that some transport companies will send out three vehicles at a time that can then form a platoon together on the motorway. There is nothing that rules out transporters cooperating with each other, too.

### **Legal framework**

In short, there are still plenty of questions to be answered before platooning becomes a full-blown reality. The answers will be forthcoming, of course, but it will take some time. After all, in addition to perfecting the systems and making them compatible with each other, a legal framework will also have to be agreed upon. In other words: what are the rules of the game going to be? This is a question that affects society as a whole and that will require answers from politicians, with the industry fulfilling a purely advisory role. The process will become more relevant the more energy-efficient and environment-friendly we aim to become. At the moment the assumption is that platoons will be made up of two to three tractors/trailers. But more would be better. Or if the platoons were made up of EcoCombis. Maybe a shorter time interval of 0.3 seconds will prove more efficient, although this can only be achieved with self-driving vehicles because only an electronic device can react quickly enough in such a short timespan if the need arises. This is not just a matter of finding the right software. It also requires acceptance by the general public. ■






## DAF Trucks take part in platooning test in England

DAF Trucks is taking part in a two-year-long test of truck platooning in England that is being carried out by the British Transport Research Laboratory (TRL). Together with its partners, TNO, Ricardo PLC and DHL, DAF Trucks was selected by the British Ministry of Transport to conduct truck platooning tests with Highways England on various routes on the British motorway network. The first platooning DAF test trucks are scheduled for trials in the UK in the coming months.

With the truck platooning test the British authorities hope to learn more about this innovation and to see how it might contribute to improving road transport efficiency.



Heino and Thies Anhalt: "The new XF is a premium vehicle that is setting new technological standards."

## Anhalt Logistics

# Case proved

In its own words, liquid transport specialist Anhalt Logistics offers its customers 'liquid solutions'. The newest DAF XF generation makes an important contribution to ensuring the smooth flow of services to the firm's customers.

When introducing the new generation of vehicles DAF promised a saving of no less than 7% on fuel consumption - a promise that was sure to grab the attention of most transport companies. Of course, such a promise would soon beg the question: is it true? At Anhalt Logistics in Germany, instructor Ove Thomsen and driver Marco Bielefeld decided to find out for themselves if the new driveline lived up to its promise. They did so by making several trips from the north of Germany to Thüringen, a route they were used to driving with another

brand of truck, which consumed around 28 litres per 100 kilometers.

### Low revs

"At the start we were surprised at the low RPM's in the new XF", adds Bielefeld. "It was also very unusual to discover that when going uphill the truck would reduce rpm's by itself. And then the power when it accelerated again – we were really impressed." Even more impressive in Thomsen's opinion were the figures for fuel consumption: "Less than 23 litres per 100 kilometres under the same

circumstances compared to the other truck. That's a difference of 5 litres!"

Bielefeld: "After three days we were used to the low revs, which incidentally also contribute to the relaxed feel of the cabin. Going up through the gears is so smooth that you sometimes don't even notice it. And the suspension is better too, as is the truck's performance on the road."

### Interior

The tastefully designed interior didn't take as much getting used to. "When you step on board a DAF you want to get down to

work straight away”, says Bielefeld. “DAF knows exactly what drivers want. Everything is where you would expect it to be and within easy reach. And the sliding table is still brilliant.” Bielefeld is also full of praise for the comfortable seats and the spacious bed.



**Instructor Ove Thomsen:**  
**“Out of the seven different European truck manufacturers, I would always pick DAF.”**

**New standards**

Both of the directors, Heino and Thies Anhalt, are also very enthusiastic about the truck’s performance. Not surprisingly, therefore, they have ordered 100 new XFs for delivery over the next twelve months. “We have been driving DAFs since the 1990s. At the time the reasons for doing so were more of a practical nature. The trucks didn’t have too much in the way of electronics, they were reliable and the cabin was spacious”, says Heino Anhalt. “Today, in 2017, the newest generation of XFs has developed from being a robust and uncomplicated truck into a premium vehicle that is now setting new standards

in terms of technology. While at the same time retaining important qualities like robustness and reliability.”

**Family tradition**

Appreciation of the firm’s drivers is one of the cornerstones of the family tradition at Anhalt. Both directors spent the first three years of their careers at the firm out on the road and these days not a year goes by without them taking at least one long trip that has them behind the wheel for several days. “That gives us a better idea of our customers’ needs, as well as a chance to see the kinds of challenges our

drivers have to face”, says Heino Anhalt. In the day-to-day running of affairs, Anhalt Logistics does all it can to keep its drivers happy. “They can drive to Sweden or Spain if they wish, or work shorter routes so that they can return home each night”, according to Thies Anhalt. “All they have to do is ask.”

**Full range of services**

Anhalt Logistics offers a full range of services to its customers. In addition to the transport of chemicals and foodstuffs, the firm’s maintenance and rental activities have also become very important. “Around 25 per cent of the fleet, including the drivers, is chartered out to other companies”, explains Thies Anhalt. “Our drivers have to have two hearts. One for the Anhalt team and all the benefits that accrue from being an employee, and one for our customers and their products with whom they need to be able to identify, too.”

**White**

The charter vehicles can be identified by their white colour and subtle Anhalt logo. The customer can add their own brand name too if he wishes. At the company premises in Rehde Flehden-Bargen, the two white DAF XFs from the new series are the first to catch the eye, with the rest of the fleet painted in the more familiar Anhalt metallic blue. Far more important than the colours, however, are the intrinsic qualities of the company, its drivers and the vehicles. Qualities they will never need to worry about at Anhalt Logistics. ■

**The charter vehicles can be identified by their white colour and subtle Anhalt logo. The customer can add its own brand name too if he wishes.**



# 1500 kilometres of pure enjoyment

There is a significant shortage of drivers all over Europe at the moment and drivers are becoming increasingly involved in the decision-making process when buying a new truck. Journalist Iep van der Meer drove an XF Super Space Cab from Spain to the Netherlands and found out why DAF's flagship is the truck of choice among international drivers.

BY IEP VAN DER MEER



'Aires de Montélimar', in the early morning light.

It is 7 a.m. and I have just woken up after a very comfortable night's sleep in my Super Space Cab cabin. The comfortable thick mattress and superb climate control in the cabin have meant that I have slept so well

that I almost have to look twice to make sure I am not at home in my own bed. With the alarm having put a stop to my dreaming, I check my iPhone to see where I am. 'Aires de Montélimar' I read on the

screen, about 700 kilometres from the Luxembourg border. That's my next port of call because I want to get out of France before the Sunday curfew on trucks kicks in and grounds me for twenty-four hours.



Peace and comfort in the Super Space Cab.

I should be able to cover that distance without too much trouble, and so I allow myself the time to have a nice breakfast of fresh croissants and excellent coffee at the Rasta service station.

### Steady as she goes

I departed from Sitges in Spain yesterday in 'my' DAF XF530 FAN complete with trailer. A terrific combination that is fully kitted out in the new DAF 'Pure Excellence' style. After getting the necessary instructions, I drive out of the town along the boulevard and head for the motorway. Priority number one is to get to the French border without delay. Fortunately, this leg of the journey is a relatively quiet one, apart from the busy Friday evening traffic around Barcelona. I quickly find myself leaving Spain and heading into windy France. Outside the Mistral is whipping up a storm, but in my DAF it's steady as she goes.

### Good news for the boss

The latest generation of DAFs feels like an old friend and the truck is a pleasure to drive thanks to its 530 hp/390 kW MX engine and the new Traxon gearbox.

I switch to Predictive Cruise Control, setting the under- and overspeed to five kilometres an hour. This keeps the truck driving at a steady and efficient speed. And that is good news for the boss... The cruise control also activates the EcoRoll, accelerates when going uphill and takes its foot off the pedal whenever possible. The software is now so advanced that I even notice the DAF switching to EcoRoll all by itself, even when on a slight incline. The computer will do this when it calculates that the truck has enough kinetic energy to allow it to roll over the top of a hill without accelerating. With all due respect, I don't think there's a driver anywhere who can do that any better.

### Relaxed

It may take some getting used to at first for some drivers, but it is amazing to see how superbly the technology manages the performance of the vehicle. Thanks to predictive shifting the driveline is always ready at the right time, while when going downhill the MX engine brake is proof, if needed, that a retarder is superfluous to requirements now. The technology is so advanced, in fact, that it will even decide to shift down a gear if the truck's speed needs adjusting while travelling downhill. It all combines to ensure a very relaxed driving experience and no shortage of comfort, not forgetting the excellent fuel economy figures. This is confirmed by the Driver Performance Assistant on the dashboard, aka the DAF driver's very own digital coach. The DPA rewards me with a green thumbs-up and an outstanding score of 94%.

### Permanent

The new DAF generation is equipped with all of the most modern systems, and it is

also worth pointing out that the trucks are fitted with ACC active cruise control as standard. I have always been a big supporter of this safety system because it keeps a permanent eye on the trucks in front, even when the driver looks away for a moment or two.

### Comfortable

The kilometres fly by and the peace and quiet of the cabin is very relaxing, to say the least. The same could be said about the whole vehicle actually. The air suspension makes the truck behave not unlike a big long-distance coach. The radio, the navigation and even the telephone are all fully integrated and that makes life so much easier. The new climate control system is also a major plus. It is much more user-friendly and also works in combination with the parking heater. DAF has set this up rather cleverly because when you turn it on it automatically uses the residual heat from the engine. That means free heat and you can't get any better than that.

After spending the night on the Belgium-Luxembourg border I arrive on Sunday morning at the gates to the DAF factory in Eindhoven. My truck has the right colours so security just waves me on through! ■



A fantastic combination.

# New cab paint facility: Most modern in the world

144 metres long, 58 metres wide and 26 metres high. You simply can't miss it when you are driving on the motorway from Antwerp to Liège: DAF's new cab paint facility in Westerlo, the most modern of its kind in the world. Ready to match DAF's equally grand ambitions.



The new cab paint facility is 144 metres long, 58 metres wide and 26 metres high and it can be seen from the motorway from Antwerp to Liège.

**Photo left: the robots follow the contours of the cabin up close, which reduces 'overspray' to a minimum.**



**Photo right: the new transportation system is also a major innovation: it can actually turn the cabins in the baths.**





In 1966 DAF opened a new factory in Westerlo, where - in addition to its high quality cabs - it also produces its highly efficient axles. Today DAF Westerlo employs 2,600 staff, making it one of the biggest employers in the region.

### **50% growth in capacity**

DAF expects the demand for trucks in Europe to grow over the coming years. In addition, the Dutch truck manufacturer intends to increase its share of the European market in the heavy class to 20%. Additionally, if as a truck manufacturer you wish to extend your success beyond the borders of Europe, there is really only one option: to invest in extra production capacity. This has resulted in the building of the new cabin painting facility at DAF Trucks Vlaanderen, an investment of over €100 million. The result: a 50% production increase over the current factory. Or more specifically: 330 cabins are now being sprayed every day, giving a total of 70,000 a year. And in 3,000 different colours!

### **Most modern of its kind in the world**

DAF's new cabin painting facility is one of the most modern of its kind in the world. For example, the spray nozzles in the ultramodern painting robots can operate at a rate of 50,000 revolutions per minute. The robots follow the contours of the cabin up close, which reduces 'overspray' to a minimum. The result is less wastage of paint and solvents, which is good not only for DAF but also for the environment.

**The opening of the new cab paint facility was performed by the Belgian Deputy Prime Minister, Kris Peeters, and Mark Pigott, PACCAR Executive Chairman.**

### **Focus on the environment**

In addition to quality and efficiency, DAF has also focused on the environment in the design of its new cab paint facility. For example, DAF invested in the latest technologies for cleaning the fumes emitted by the spray booths and ovens. By compressing the air, it will contain a relatively large amount of solvents and these are then automatically incinerated at a temperature of between 700 and 800 degrees, without having to burn any gas. The incineration process also produces enough energy to heat the baths. This new solution results in reduced energy consumption and lower CO<sub>2</sub> emissions. In fact, the only thing that is emitted is water vapour.

### **Innovative transportation system**

The new transportation system is also a major innovation: it can actually turn the cabins in the baths. This means that less residue is left behind, which leads to improved quality and efficiency. It almost goes without saying that the whole process is very environment-friendly.

### **Building upon a strong tradition**

The opening of the new cab paint facility was performed by the Belgian Vice Prime Minister, Kris Peeters, and Mark Pigott, PACCAR Executive Chairman. "This important investment continues a strong tradition of setting the industry standard in product quality, customer service and environmental leadership", according to Pigott. "Over the past 15 years PACCAR and DAF have invested more than €600 million in our cab and axle plant. We look forward to a very bright future in Belgium."

### **"Next chapter in rich history"**

"I want to congratulate DAF Trucks with this investment in an innovative and sustainable cab paint facility", said Vice Prime Minister Kris Peeters during the official opening ceremony. "This represents another wonderful chapter in the company's already rich history." ■



# DAF 2600:

## forefather of the international truck

When it was first introduced in 1962 the DAF 2600 caused a sensation at that year's trade fair in Amsterdam. No wonder, as DAF's new truck was one of the first to be designed around the driver: excellent ergonomics, outstanding all-round visibility, suspension seats and a sleeper cab with bunk beds. And fifty years later, the DAF 2600 is still the blueprint for international trucks.

BY **HENK DE LANGE**



There it stands glistening in the sun: the imposing DAF 2600 owned by Roland Slenders, complete with tri-axle DAF trailer. One of the later models - from 1970 - which he has restored himself. For Slenders this is not just another 2600. This is the actual truck that his father, Frans, drove in the 70s when he worked for the Jan Kuijken firm.

### **Special**

"The 2600 was in service up until 1983 when it was decided to park it up for good, having clocked up 1.2 million kilometres", says Slenders, who is also a truck driver himself. "When the Jan Kuijken firm was dissolved a few years ago, I was allowed to purchase the truck. It took me years to restore it, but this could well be the best-preserved 2600 around now. The fact that

my father drove it makes it even more special."

### **Sugar beet**

Frans (75 and fit as a fiddle) likes talking about the time he spent behind the wheel of 'his' 2600. "Between October and January I carried loads of sugar beet in the Netherlands. For the rest of the year I transported steel and concrete sheeting to





Back in the 1960s the covers of the DAF brochures were designed by the Dutch illustrator Charles Burki. Original illustrations of his are worth a lot of money these days and, not surprisingly, are much sought after.

foreign destinations,” he says. “Back then it wasn’t unusual to carry loads of up to 30 tons. With only 230 hp!” During his last sugar beet run, just before the 2600 was about to be taken out of service, the engine threw a rod. “The show had to go on and we didn’t have a replacement truck”, Slenders Sr. recalls. “So the dealer spent a whole night installing a replacement engine. As it turned out this was very fortunate for my son, Roland, because the engine in the truck is still as good as new.”

### Long days

Before the invention of the tachograph, long days on the road were not unusual. Frans Slenders describes a regular working day: “Head off at two o’clock in the morning and drive for an hour-and-a-half to pick up a load of concrete sheeting destined for a project in Luxembourg. It would take a few hours to load the truck, so I would have to wait until 5 a.m. before I could set off with my 30 tons of concrete and head for the Belgian Ardennes.

With only 230 hp – which actually wasn’t bad for the time - it was sometimes hard to go any faster than 20 km/h on steep hills, so the journey to Luxembourg often took as long as seven hours. When I arrived in the afternoon it would take another few hours to unload everything before I could go and pick up a load of steel a few kilometres further down the road. The drive back took another six or seven hours, so I would arrive home at around 10 p.m. after a 22-hour working day.”

### Blanket

Today it is almost hard to believe Frans Slenders’s story. “And still no one complained”, he says. “Not me anyway, because my 2600 was very spacious and comfortable for the time. Okay, it was very noisy in the cabin, but it was a bit more bearable when I put a blanket over the engine tunnel. And the bed was fine, even though my clothes sometimes froze to the steel frame at night.”

### Two fingers

The story about father and son Slenders and their DAF 2600 would not be complete without taking a ride in the truck. The suspension seat is surprisingly comfortable and there is ample space in the cabin. Okay, you can’t stand up, like in the XF Super Space Cab, but that’s a minor complaint. Roland Slenders starts the engine and it rumbles nicely as it comes to life. With literally no more than two fingers on the steering wheel, he steers the combination out onto the road.

The performance of the 2600 is lively to put it mildly. It reacts immediately to the accelerator and takes no time at all to reach its top speed of 100 km/h (no speed limiter). “This is not really playing fair to be honest,” says Slenders, “because the truck is only lightly loaded, but in its day this truck, with its 230 hp, was up there with the best of them, as long as you didn’t have to venture into the mountains too often.” Eventually we arrive at the shed where the truck is kept. Father and son are happy to pose for a photo in front of their 2600, both of them looking suitably pleased and proud. “I remember sitting in the passenger seat while my father drove this truck”, says Slenders Jr. “Now the roles are reversed. You can’t ask for more than that, can you?” ■

**Father and son Slenders: pleased and proud.**



## Richard Zink, Director Marketing & Sales:

# ‘Connectivity is the future’

Facebook, What's App, Instagram – in today's world everyone is 'connected'. And the concept of 'connectivity' has also made its entry into the transport sector. Although the idea has been around for some time already, the interest in fleet management systems is now growing rapidly, especially since getting the most returns per kilometre has become priority number one for most operators. Nowhere is this more apparent than in the popularity of DAF Connect.

BY **ROB VAN GOOL & HENK DE LANGE**



**According to Richard Zink, the value of DAF Connect is not determined primarily by its technical functionalities. He believes it has more to do with a certain way of thinking. “How can I increase my returns per kilometre?”**

It comes as no surprise to Richard Zink, member of DAF's Board of Management and responsible for Marketing & Sales, that more and more of his clients are starting to tick 'DAF Connect' on their list of options. "What is the most important aspect of the transport business today? Delivering on time and at the lowest cost possible," is how he sums it up. "With DAF Connect every operator can monitor their fleet on a computer or laptop from anywhere in the world. Whether you want to check the performance of the entire fleet or of individual drivers, or alter the schedule or payloads, it can all be done online and in real-time with DAF Connect. Experience has shown us that clients who have already invested in this innovative system are saving around €1,300 a year. And that's per truck, not per fleet. Imagine your savings when you have a fleet consisting of dozens or even hundreds of trucks."

### **Rapid development**

DAF Connect is going through a phase of rapid development. While detailed reports on fuel consumption and fleet utilisation are already standard features on the menu, the operator can now also monitor the scores

from the Driver Performance Assistant on screen, which helps the driver to drive more efficiently and more safely and which is fitted as standard in every new DAF. The number of functionalities and options continues to grow. For example, the home base now receives a signal automatically if and when a truck suffers a serious technical malfunction. A similar signal is sent when the fuel gauge drops by more than 15% in a short space of time... an opportune moment to call the driver and ask them to check whether someone is siphoning diesel oil from their truck...

### **Improving uptime**

According to Richard Zink, the value of DAF Connect is not determined primarily by its technical functionalities. He believes it has more to do with a certain way of thinking. "How can I increase my returns per kilometre? How can I get my drivers to drive more economically? How can I optimise the use of my trucks? How can I improve uptime? These are the kinds of questions that DAF Connect can answer, and therein lies its greatest strength, one that will continue to grow in the future. Operators who choose to use DAF Connect will definitely be ready for the future.



## DAF Connect fleet management system

The innovative fleet management system DAF Connect provides the transport operator with current information on the performance of its vehicles and drivers chauffeurs. Information on location, fuel consumption, mileage, capacity utilisation and downtime are presented on an online dashboard that can be adjusted to suit individual needs. The user-friendly dashboard can also be used to request fuel consumption reports. DAF Connect makes it possible to compare current and recent information on vehicles and drivers. The 'Live Fleet' function provides the fleet manager with a wide range of information on the location of vehicles, routes and journey times that they can then programme themselves.

It won't be long before the dealer will be contacting customers automatically to fix a date for preventive maintenance. And DAF's International Truck Service will be using DAF Connect to provide an even higher level of service. A win-win situation!" Maximum vehicle availability, lower operational costs and optimal logistic efficiency – the advantages of DAF Connect are self-evident. "Want to improve efficiency? Then you must first choose DAF and then DAF Connect", says Zink. "And we also offer solutions for mixed fleets. Thanks to its unique and open platform, DAF Connect is perfectly prepared for that. I'd know what I'd choose if I was an operator!" ■



### Vonk & Co: "More and more options"

**The Dutch firm Vonk & Co is one of DAF Connect's launching customers. "For us it is a crucial instrument for improving the efficiency of our company", says fleet manager John van Hatterm. "It is extremely user-friendly and there are more and more options being added."**

Vonk & Co is an international transport company with its head office in the Dutch town of Tiel. The firm is specialised in the transport of domestic appliances. The goods are first transported from Germany, Austria and Italy to the company's central depot, from where they are distributed to retailers and consumers.

"DAF Connect is fitted in our XFs and LFs", explains Van Hatterm. "The more kilometres we clock up, the more data we receive. That makes it easier for us to compare and to analyse. Why is one truck using more fuel than another? Is it because of different routes or drivers, or because of different idling times? DAF Connect gives us the answers to these questions and we have already been able to cut back on costs as a result."



To find out more about DAF Connect go to [www.daf.com/inaction](http://www.daf.com/inaction)

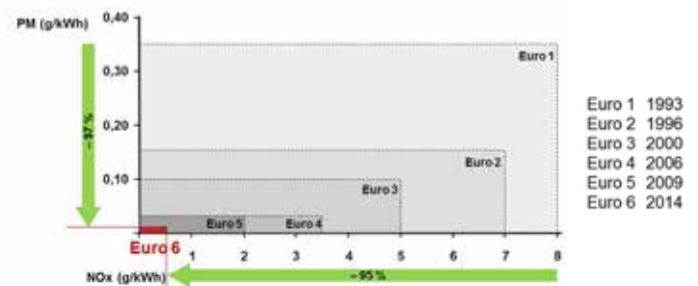
# DPF filter need changing? Then choose a DAF refurbished filter!

## Literally as good as new

The introduction in 2012 of DAF's Euro 6 vehicle series clearly demonstrated once again just how much progress has been made in relation to emissions in a very short space of time: for example, a modern Euro 6 truck discharges 97% fewer particles than a Euro 1 truck from 1993.



### Emission regulations



The enormous reduction in emissions (see the tiny red block in the graph above) can for a large part be attributed to the Diesel Particle Filter in every Euro 6 DAF.

### Residue

The filter prevents the soot particles that result from the combustion process from being released into the air. Regular and fully automatic 'regeneration' ensures that the filter does not become blocked up. Sounds complicated maybe, but what it means is that the particles in the filter are burned, leaving only ash behind. The entire process usually takes place while the truck is out on the road and the driver doesn't even notice a thing.

### Unscheduled downtime

After a period of time (and hundred of thousands of kilometres) the filter will contain so much ash that it will have to be

replaced. A full filter can have a negative effect on the vehicle's performance. In the worst case it can even lead to unscheduled downtime. And nobody wants that.

### Refurbished filter

When a Diesel Particle Filter needs to be changed, 99% of all operators choose to fit a refurbished filter. A DAF refurbished filter is literally as good as new, but costs far less than a new one. DAF is very meticulous about the refurbishing process: the filter is inspected carefully, tested and then validated using a step-by-step plan. A DAF refurbished filter is always preferable to an 'ordinary' cleaned filter, as it is impossible to

know how thorough the cleaning process has been.

### When?

Changing a DAF Diesel Particle Filter is part of the regular maintenance on a truck, so there is no need for a separate visit to the garage. Exactly when a filter needs to be changed depends on usage and type of engine (see chart). You can always consult your DAF dealer if you need more information. ■

	MX Engine	PX Engine
1	3 years max. 200.000 km	5 years
2	3 years max. 500.000 km	5 years
3	max. 500.000 km	5 years

## PACCAR WORLD



### PACCAR Innovation Center in Silicon Valley

PACCAR recently opened its 'PACCAR Innovation Center' right in the middle of Silicon Valley – in Sunnyvale, California to be precise. This centre coordinates all 'next generation' product development activities and conducts research into new technologies such as autonomous vehicles, truck platooning, truck connectivity and electrification of the driveline. The centre boasts the most modern research facilities and work stations. "The location in Silicon Valley was a deliberate choice," according to Darrin Siver, PACCAR senior vice-president. "It is the perfect place from which to build on our relationships with other technology firms." ■

### Limited Edition Icon

Recently, a limited edition of the iconic Peterbilt Model 389 was launched to mark the 150th anniversary of the Canadian Confederation. The Peterbilt was treated to a makeover that has only made the truck even more impressive. For example, the chrome grille drew its inspiration from the 1950s Peterbilt 351 and the special 'Canada 150' logo appears on the upright exhaust stacks, the chrome bumper and the leather seats. This extraordinary truck also features exceptional chrome accents, including on the sun visor, while the footplate, tanks and mudguards are all polished to perfection. The final touch is provided by the exclusive red colour called, naturally, 'Legendary Canadian'. ■



### Performance-driven: Michael Shank Racing impresses with Kenworth T680 trucks

**The world of car racing is all about precision and reliability. And for Michael Shank Racing that applies not only to their two Acura NSX GT3 racing cars but also to the two Kenworth T680s that are used to transport the cars to circuits all around the USA.**

"The most important criteria in our search for new trucks were safety and reliability", says team owner Michael Shank. "I also wanted a truck with an aerodynamic look. We are heavily supported in what we do by sponsors and an automobile manufacturer and they set high standards for our organisation, image and professionalism. The T680 reinforces that image: it delivers the performance and look that we require. In addition, the T680 is a very comfortable working environment for our drivers, who often have to sleep in the cabin." ■



# Hyperloop transport

## Air cargo in a vacuum

Transporting passengers or cargo in a tube at speeds of up to 1000 km/h – that is exactly what the Hyperloop aims to do. Elon Musk's idea involves a transport shuttle operating inside a near-vacuum environment. Amsterdam to Berlin in 60 minutes! Made feasible by Dutch expertise.

BY **BERT ROOZENDAAL**

It is the absence of air resistance that makes the system so energy-efficient and capable of speeds of up to 1000 km/h. Musk does not plan to develop the Hyperloop himself. That is why he announced a competition to find the most suitable concept: the Hyperloop Pod Competition (HPC). The winning design was the one submitted by students from the Technical University in Delft, The Netherlands, a design that actually deviates to a significant extent from Musk's original idea. He had been thinking about a system where shuttles were propelled by air compressors, while the students in Delft came up with a MagLev system using a linear induction motor. The Hyperloop may not be ready to go into

production just yet, but the principle has been proven to be workable and it has enormous potential for the transport sector.

### Never caught on

However futuristic it might sound, there is nothing new about the idea of electromagnetic propulsion. Many will remember Siemens' MagLev train. And in the Netherlands there was a lot of interest in a similar project back in 1973, one in which DAF was also involved. However, with the exception of a 26-kilometre long stretch of railway in Shanghai, the concept has never really caught on. The biggest problems: the high maintenance costs in relation to time saved, the noise factor and

the relatively marginal gains in terms of energy.

### Near-vacuum

And this is what makes the TU Delft idea of housing the MagLev train in a near-vacuum so appealing: all three of the aforementioned problems can be solved in one fell swoop. Furthermore, wear and tear is reduced to a minimum, as the capsule is not exposed to the elements; drag is almost zero, which means that energy consumption is one tenth of that of a traditional train; and thanks to the tube, noise levels can also be reduced significantly. A perfect vacuum would of course be even better, but that is much more difficult to achieve, technologically



**The Delft Hyperloop uses a lightweight capsule that floats on four skis above an aluminium plate.**

**On a mile-long test run the TU Delft shuttle reached a speed of 94 km/h. This might not sound like much but it represented one of the first ever test runs in which magnetic levitation technology was used in combination with a vacuum.**

**The TU Delft won the Hyperloop Pod Competition not because of the speeds they managed to reach but because of the concept as a whole.**

speaking, is more vulnerable and is also a lot more expensive because of the energy requirements.

### Lightweight capsule

The Delft Hyperloop uses a lightweight capsule that floats on four skis above an aluminium plate. The students' shuttle is kept on course by the guiding rail in the middle. Both the levitation and stability of the shuttle are generated by extremely strong permanent Neodymium magnets. Magnets placed on the sides prevent contact with the guiding rail. The magnets in the skis provide both levitation and propulsion. Together the tube and the shuttle form a linear motor that is the same length as the line itself. When there's no electrical power, nothing happens: the pod will remain on its skis. However, the aluminium plate contains electromagnetic coils and when these are activated the magnetic fields in the pod and the rail repel each other causing the shuttle to levitate. Propulsion is achieved by using smart electronics to turn the electromagnets on and off so that the shuttle is propelled continuously forward by its own permanent magnets. Given the almost frictionless nature of the process, very little energy is required to reach high speeds.



This presents tremendous opportunities for connecting cities with each other. Need to get to meetings in Amsterdam, Paris and Cologne all in the same day? No problem: all three journeys can be done in a total of three hours! Want to work in Hamburg but live in Berlin? Easy as pie.

### Goods

Elon Musk originally aimed his project at passenger transport. But the Delft students also see its value for the transportation of goods. In fact, this is actually easier to achieve. The shuttle would not even need to be airtight. You could compare it to the trains in the channel tunnel, where the passenger cars are hermetically sealed but the cars carrying trucks are open. An even better scenario would be if the diameter of the tube was big enough to allow standard-sized air cargo containers to be transported in pods in the hyperloop.

### New modality

So the biggest obstacle is not the technology but rather the fact that the Hyperloop represents a new modality. We already have roads and railways; what the Hyperloop requires is a completely new infrastructure, one that could replace high-speed trains and relieve the pressure on our airspace. However, this requires brave choices and a strong political will. According to the team in Delft, installing one kilometre of Hyperloop is no more expensive than laying down one kilometre of normal railway track. At the same time, the level of energy required to run the system is at least ten times lower, as are the maintenance costs, while the speeds are potentially three times higher. Particularly in relation to lighter goods, the Hyperloop represents a serious alternative to air freight transport. ■

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