



MAN Trucknology® Days 2017: Connected Performance

Munich, March 28, 2017

The main focuses of the three-day MAN Trucknology Days event were the innovations introduced on MAN trucks at the start of the year. At its in-house exhibition, MAN made around 170 vehicles from many different sectors available to view and drive.

- **MAN exhibited its industry expertise in long-haul transport, urban distribution transport, construction, heavy-duty transport, forestry & agriculture and municipal & fire brigade services**
- **MAN TGE for the first time at the Trucknology Days**
- **91 exhibitors**
- **7,000 visitors over three days**

MAN Truck & Bus
Dachauer Straße 667
D-80995 Munich

Should any questions arise, please contact:
Gregor Jentzsch
Phone: +49 89 1580-2001
Presse-man@man.eu
www.mantruckandbus.com/press

MAN has been running the Trucknology Days as an in-house exhibition since 2008: an event where information meets fascination. Around 7,000 international visitors attended the event in Munich between 23 and 25 March 2017. There are traditionally two parts to the event: the MAN TruckForum and the test track.

At the TruckForum, MAN Services and its partners display their range of services and individual transport solutions ranging from body manufacture to subcontracting.

RIO, the new brand-name for networked logistics in the Volkswagen Truck & Bus Group, gave an insight into “connected performance” in the transportation industry in the future. RIO bundles digital services for the transportation and logistics ecosystem. For the first time ever, all parties involved in the supply chain - from the shipper to the recipient - through hauliers, carriers, loaders, materials requirement planners and drivers, can be networked via a unified information and application system which includes predictive functionality. With its Connected CoDriver, MAN is

MAN Truck & Bus is one of Europe's leading manufacturers of commercial vehicles and supplier of transport solutions, with revenues of approximately €9 billion a year (2016). The product portfolio includes trucks, buses and diesel engines, as well as services related to passenger and cargo transport. A subsidiary of Volkswagen Truck & Bus GmbH, MAN Truck & Bus employs more than 35,000 people worldwide.



helping drivers and companies achieve a economical driving style. A trainer analyses the style and framework parameters of their driving and advises the driver.

Outside the MAN TruckForum, part of the vehicle exhibition drew attention to the Trucknology Days. Heavy-duty semitrailer tractors and heavy loading cranes on MAN platforms gave a foretaste of the big industry display on the test track. The white painted trucks were part of the 'Trucks to go' fleet, a range of pre-built, ready-to-go commercial vehicles.

The new MAN TGE makes MAN a full-range producer. With their permitted gross vehicle weights of between 3 and 5.5 tonnes, delivery vans with normal, high or super-high roofs, and chassis with single or double crew cabs have been added to the MAN model portfolio. At the TrucknologyDays, the MAN TGE was introduced to visitors as a delivery van.

On the test track, visitors could find around 120 vehicles. Experts from MAN and from the body manufacturers explained the specific product features in talks, during a test circuit and beside the vehicles themselves. Visitors had the chance to drive around 30 of the vehicles on the test track. Examples from the truck product range was available, from the compact sweeper based on the MAN TGL to tippers and a fire service vehicle on the MAN TGM platform, the MAN TGS as a tilted articulated truck, a refuse collector vehicle or a timber transporter, and many MAN TGX vehicles for long-haul or heavy-duty purposes.

The vehicle exhibition covered the following sectors: long-haul transport, urban distribution transport, construction, heavy duty transport, forestry & agriculture and municipal & fire brigade services.

Long-haul transport sector

For long-haul transport operators, the Total Costs of Ownership (TCO) are of vital importance. One element in this is the MAN TGX EfficientLine 3 semitrailer tractor that was introduced at the IAA 2016. On a tour going right across Europe and supported by TÜV SÜD, the engineers recorded potential fuel savings of 6.35% compared with the vehicle's predecessor. And the TGX EfficientLine 2 was already regarded as efficient when it came to fuel consumption. The more powerful engine associated with the introduction of the Euro 6c emissions standard and the increase in the maximum torque both contribute to the excellent driving performance. Connecting the pioneering cruise control system MAN EfficientCruise with



MAN EfficientRoll significantly improves the potential savings. The EfficientRoll free-wheeling gearbox function will come into effect on gentle inclines or slightly undulating route sections. The new generation MAN TipMatic gearbox is another key component in the design of the driveline on the EfficientLine 3, which is consistently focused on saving fuel.

At the Trucknology Days, MAN worked closely with semitrailer manufacturers to display various vehicle concepts for long trucks. When payload is a key factor, combinations of MAN tractor units and semitrailers or trailers score highly. They are designed with a permitted gross weight of 40 tonnes. One of these new concepts is the semitrailer which is 1.3 m longer, meaning it has three additional spaces for pallets. The total vehicle length is now 17.8 m instead of the 16.5 m that is standard for semitrailer units. Another version consists of a 3-axle vehicle for swap bodies with attached dolly, on which a standard semitrailer can be mounted. MAN's product range is so extensive that each of the vehicle configurations intended for long trucks can be produced with a 2-axle semitrailer tractor or a 3-axle chassis to support the carrier frame for swap bodies.

Urban distribution transport sector

Urban distribution transport means far more than a dry freight truck body on a MAN TGL platform, serving as a large delivery van. This was demonstrated by the wide range of vehicles exhibited at the Trucknology Days: refrigerated trucks, beverage bodies, dry freight truck bodies and milk collectors based on MAN TGL, TGM and TGS. Most of these come on a 2- or 3-axle chassis. Tractor trailer units are used either as tankers or silo trucks, or as heavy-duty food distribution vehicles with 1- or 2-axle Citysattel semitrailers. With tankers, the payload plays a key role in economic efficiency, because this is calculated according to the volume delivered. For this reason, MAN's focus for the tanker-silo version of the TGS series has always been on creating an uncompromising lightweight vehicle that can simultaneously handle maximum payloads. Optimising the unladen weight makes the vehicle the lightest customer-oriented semitrailer tractor for tank and silo operations in the MAN product portfolio. If all the measures are implemented, the unladen weight of the TGS-TS is no more than around 6560 kilograms.

Of special importance on drinks transporters are a low loading sill and manoeuvrability, so that the delivery points can be reached. On these vehicles in the TGM and TGS series, small tyre size and four corner air suspension are among the improvements made specifically for this



purpose. The air suspension firstly protects the fragile and easily breakable load from bumps in the road surface and, secondly, allows the vehicle to be lowered by a few centimetres for loading and unloading.

MAN supplies modified platforms as the base for milk collection vehicles. These require plenty of space on the right hand side for attaching the cabinet containing the pump and flow rate meter. This additional space on the frame has been achieved by moving the Euro 6 exhaust silencer and the diesel and AdBlue tank.

Construction sector

With over 30 vehicles, the construction sector occupied an important place at the MAN TrucknologyDays. There was a wide range of different models. Working closely with the body manufacturers, MAN was demonstrating its three-way tippers and tilting articulated trucks, crane tippers, building materials transporters, truck mixers, roll-off and set-down skip loaders and heavy-duty semitrailer tractor. One of the innovations at the TrucknologyDays was the combination of the MAN HydroDrive with the automatic transmission system TipMatic. This is the ideal configuration for when vehicles travel mainly on tarmac roads and only occasionally require additional traction. The benefit of the MAN HydroDrive hydrostatic front-axle drive really becomes evident when an off-road slope has to be negotiated without a load. A typical example of this is a tilted articulated truck which has deposited its load at the bottom of a pit. The rear axle, now under very little load, lacks traction on the incline. A benefit for the body manufacturers is that the PTO for the engine and gearbox can now be used without restriction. MAN HydroDrive is available for 2-, 3-, and 4-axle vehicles in the TGS series and for 2- and 3-axle semitrailer tractors in the TGX series.

For cranes, MAN offers specially prepared chassis in the TGS series. All expectations regarding manoeuvrability, traction and efficiency are met by the drive formula 8x4H-6. This abbreviation stands for a 4-axle MAN TGS with the required axle load to support the crane. The frame has places for mounting the supports. The HydroDrive drive system on the second front axle provides the necessary traction on construction sites. The requirement for great manoeuvrability in order to be able to position the crane on the site is met by the fact that three of the four axles are articulated: the two front axles and the lifting trailing axle. The hypoid axles and economical engines in the D26 series help to boost efficiency while travelling between the yard and the construction site.



Payload is important for truck mixers. The permissible weight for 4-axle vehicles in Germany is 32 tonnes. The lighter the chassis, the more concrete can be loaded into the drum. The MAN TGS 32.420 8x4 BB meets the sector requirements exactly: a weight-optimised frame made of high-strength steel, a lightweight but powerful 420 hp engine combined with the MAN TipMatic automated gearbox, a lightweight hypoid tandem axle assembly and a wheelbase of 2505 mm between the second and third axles ensuring compact vehicle dimensions and optimal manoeuvrability both in traffic and on the construction site. It also comes with a uniform set of tyres in 315/80 R 22.5 format on aluminium rims all round, tanks for 300 litres of diesel and 35 litres of AdBlue fluid, a spacious and clearly laid-out M cab for the driver and co-driver and a partially raised Euro 6 exhaust system behind the cab. This means that the chassis weighs just 9175 kg (excluding the driver and with the fuel tank 10% full).

Heavy-duty transport sector

MAN's heavy-duty transport solutions are always a source of fascination at the vehicle exhibition and on the test track. Whether it is a question of transporting heavy weights or bulky objects in urban areas, the MAN product range is perfectly equipped to meet these very specific requirements. Regional circumstances and different legal requirements affect the configuration of vehicles. Different payloads, wheelbases and engine outputs from the MAN TGS and TGX series can be put together as required for the tractor vehicles and semitrailer tractors. Engines from the D38 engine range, including 540 hp, 580 hp and 640 hp, and boasting high performance and torque, are installed exclusively on the MAN TGX platform.

The top-of-the-range versions have 640 hp and drive a 4-axle heavy-duty semitrailer tractor. The 4-axle MAN TGX 41.640 8x4/4 BBS combines the most powerful version of the D38 engine and the MAN TipMatic with the standard converter-clutch unit. This increases the input torque from 3000 Nm up to 4740 Nm. As a result, even the heaviest loads move off smoothly but powerfully. The converter-clutch unit enables particularly precise manoeuvring of the vehicle in tight spaces, on inclines and with heavy loads.



Forestry & Agriculture sector

For freight operators moving short timber, MAN offers some interesting vehicle concepts in its TGS and TGX series. Moving timber away from where it has been stacked can be quite challenging. If the track is muddy or there is a climb, an all-wheel drive may be essential. But when driving to the sawmill on a tarmac road, a rear wheel drive is sufficient and far more economical. MAN's solution is the switchable hydraulic front wheel drive. The MAN system, called HydroDrive, has been very well received by timber transporters ever since it was introduced in 2005, as it is so practical. What is new now is that MAN has further increased its range of options. Combining the automatic gearbox TipMatic with the MAN HydroDrive saves the driver from having to change gear.

With a self-propelled wood chipper, the operator can move about flexibly and change location quickly and easily to work through other jobs. The high engine power that is required to drive the chipper uses a powerful PTO fitted at the factory with up to 8000 Nm of torque. This saves the additional weight and expense of installing and maintaining a separate motor. The vehicle remains compact and manoeuvrable. To drive the wood chipper, MAN offers its D26 engine series with outputs of 420 hp, 460 hp and 500 hp, in combination with the new TipMatic 12 Offroad gearbox. Beyond that, in the MAN TGX series, the D38 engines range from 520 hp to 640 hp. The 6x6 chassis in the MAN TGS series have excellent all-terrain capability so that they can reach chipping sites which are often away from tarmac roads. A very compact, manoeuvrable and high-traction chassis design is the 3-axle version with all-wheel drive on the front axle and articulated trailing axle. Its axle configuration is 6x4-4. An interesting feature is the extensive modifications to the driver cabs. This means there is no need for an extra cabin from which the operator controls the crane and the chipper. The MAN Truck Modification Centre has designed various modified cabs for this purpose.

In the agricultural sector, transport tasks can be many and varied. MAN trucks can be used for transporting harvested crops, from grain to agricultural dealers, silo corn to the biogas plant, beet to the sugar refinery or potatoes to the starch plant, right from the edge of the field. In addition to this, utilising trucks for the short distances between farm, field or storage areas can also be worthwhile. They offer distinct advantages in the transportation chain compared to tractors with trailers, due to their higher payload of up to 40 tonnes, lower fuel consumption and the higher speeds typical of trucks. In most cases, these will be semitrailer tractors in the MAN TGS series, pulling trailers specially designed for agricultural use. The wide



range of vehicles in the MAN product range ensures that the right vehicle for the topography, soil conditions and transport distance can always be found. There are traditional semitrailer tractors with rear wheel drive and standard or medium-high design height. All-wheel drive semitrailer tractors in high design height with switchable or permanent front wheel drive are also available. The solution which meets in the middle is called MAN HydroDrive, with hydrostatic front wheel drive for additional traction. The engines that are fitted in the MAN TGS range from 320 hp to 500 hp.

Municipal & fire brigade sector

Approximately 20 municipal vehicles for the refuse collection, winter service, road maintenance and fire brigade sectors were on display. The range of chassis versions - usually based on MAN TGM and TGS - and body manufacturers was equally varied.

Among the sector-specific features offered by MAN, the TipMatic Collect is particularly important on refuse collector vehicles. The new automated gearbox incorporates gear shift strategies specifically designed for rear and side loaders. On the collecting round, frequent starts in order to drive just a few metres to the next collection point alternate with longer stops while the loading hydraulic system is working. The gearshift behaviour is faster and the moving-off gear is selected by the driver so the clutch is protected.

On the chassis of the side loader based on the MAN TGS, the MAN engineers have changed the layout of the complex Euro 6 exhaust technology, the diesel and AdBluetank, and the compressed-air tank. In this way, they have made space to mount the side loading device.

The snow blade, winter service spreader and loading crane are supplied by a high-performance hydraulic system. The air suspension on the rear axle that is standard on the all-wheel drive MAN TGM - with permitted gross weights from 14.1 to 15 tonnes - ensures that the de-icing agents are evenly spread. The MAN TGM also has a particularly small turning circle. This makes snow-clearing in built-up residential areas with many parked cars easier for drivers.

At the Trucknology Days, MAN was demonstrating a suction dredger on a 4-axle MAN TGS 35.480 8x4-4 BL. Suction dredgers can be used, for example, on construction sites to dig holes and trenches or expose foundations, by municipal authorities to clear blocked drains, or in horticulture and agriculture for carefully exposing root balls. Space has to be found on the 3- or 4-axle carrier vehicle from the MAN TGS series for



the ventilation system, the tank for the extracted material, the jib for the suction pipe and its extensions and the filter system for cleaning the suction air. The fans that create the vacuum are driven by the powerful vehicle engine from the D26 engine series, via the PTO.

In most parts of Germany, fire brigades are still permitted to use vehicles meeting the Euro 5 emissions standard. MAN offers a range of chassis for emergency services vehicles, meeting different emissions standards. That is why MAN is guaranteeing that production of the engine in the D08 series that is used by fire brigades will continue in the Euro 5 version until at least 2020. This engine, which does not require any additives to clean the emissions, is used in the TGL and TGM series. This flexibility is reflected in the fact that emergency services vehicles in both Euro 5 and Euro 6 versions will be on display at the Trucknology Days.

HydroDrive combined with TipMatic is also important for fire brigades and waste disposal companies as an additional product in the hydrostatic front-axle drive range. Typical vehicles for this combination are swap body trucks. A new feature for fire brigades is that the Emergency gearshift program for emergency services vehicles is also available with the new TipMatic in the MAN TGS and TGX series.

The roomy crew cab, seating a maximum of seven people, is very popular with users of municipal and fire brigade vehicles. It is available in MAN TGL and TGM series vehicles. Its four-seater bench consists of a seat with individual backrests, headrests and three-point belts. Two seats with integrated breathing apparatus can easily be accommodated in this cab. This means the crew can equip themselves en route to the incident and no time is lost when on rescue or fire-fighting missions.

MAN Trucknology® RoadShow

Since 2008, the Trucknology Days have traditionally been the starting signal for the new truck demonstration fleet at the 'MAN Trucknology® RoadShow 2017'. Nearly 52 vehicles from the TGL, TGM, TGS and TGX series will go on tour throughout Europe. They demonstrate the new features introduced in the 2017 model year in the interior and on the driveline. The complete vehicles with bodies or semitrailers will present a cross-section of the variety available in the distribution and long-haul transport, construction, heavy-duty transport, agriculture, forestry and municipal sectors. MAN sales organisations throughout Europe will present their fleets, painted in striking crimson, at events and demonstrations. Interested customers can arrange with their MAN salesperson to test drive



these vehicles for several days. In this way, they can experience MAN's competence in the sector and see for themselves how efficiently and economically transport tasks can be dealt with.

Trucks to go

The 'Trucks to go' fleet was on show in front of the Truck Forum during the Trucknology Days. These are new vehicles in the MAN TGL, TGM, TGS and TGX series, with bodies from MAN-approved body manufacturers. Anyone who is interested can download information about the 'Trucks to go' product range from the website www.man-truckstogo.com. The advantage for the customer is that they can meet short-term demand and respond to orders they receive without having to allow for the usual delivery times for vehicles. Complete vehicles such as roll-off skip loaders, three-way tippers and truck mixers or special-purpose vehicles such as refuse collector vehicles and towing vehicles are all available. This range of vehicles is available throughout Europe, painted in neutral white or in orange for municipal applications. If you enter the vehicle configuration you require, the 'Trucks to go' home page lists the appropriate vehicles. MAN has sold more than 1200 trucks in the last two years via this marketing channel.