

10 days and 10 NIGHTS

When desert rally teams arrive at their bivouac after an 8-10 hour, 500km race, they go to bed - and their technicians go to work. In the desert, racing teams such as Mammoet Rallysport take the garage with them. Driver and team owner Maartin van den Brink explains

The Mammoet Rallysport team has won the Morocco Desert Challenge three times, and last year came third in the Silk Way Rally after winning two stages. Both are to prepare for the biggest event, the Dakar Rally, which was held in Africa until 2008, when organisers moved it to South America for safety reasons. This year we will start with a new team: my 16-year-old son Mitchel, who also participated in Morocco and the Silk Way, has won special dispensation to race, as he is below the minimum age of 18. He will be the youngest ever driver in the Dakar Rally when we start in Lima, Peru on 6 January.

We have a team of 22; all are volunteers. I work 50% of the time racing; the rest of the year I manage a demolition company. Our technicians work for local Renault and Volvo dealers. We prepare the trucks after work and on Saturdays.

Half of each truck is built in the Czech Republic by MKR Racing. Renault Trucks Lyon supports us by supplying the cabin, engine and axles. The

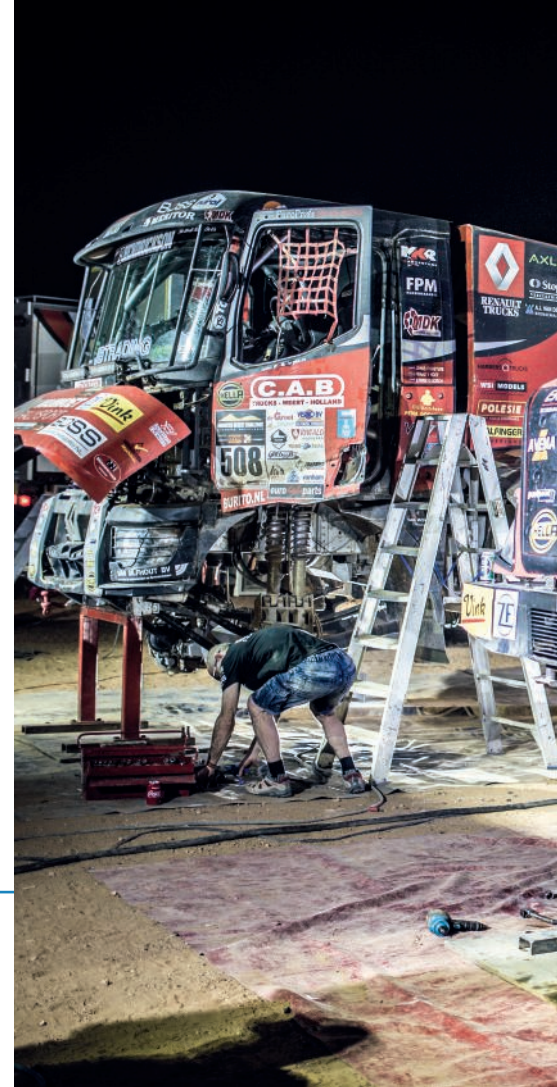
trucks are powered by twinned Volvo D13 engines, each rated about 490bhp, together producing about 4,700Nm torque. That makes them very quick. The driveshaft runs through a seven-speed ZF automatic gearbox with engine retarder. As driver, I use the automatic programme until we come to corners, when I change gears myself using a paddle-changer mounted on the steering wheel. The transfer case is a ZF VG 2000, and we run Axletec military-specification 5000 series axles.

We drive two race trucks in the T4.2 modified category. They are the K-range, which you see all over Europe, and a bonnet truck that we named 'Sherpa' that is more common in the military and in the Middle East and Africa. That has a better weight distribution: 50-50 front to back. In that, I'm sitting 1.4m behind the front axle, in the middle of the truck, so I have better control and can drive faster. But Renault Trucks Lyon supports us, and it demands that we race with the K truck.

In each truck is the driver, a mechanic and the navigator. The second truck is a back-up that helps

FACT

If the exhaust reaches 900°C, MKR's automatic temperature safety system will reduce engine horsepower until it cools down



the lead truck if there is a problem. Three other K trucks support the team, running from bivouac to bivouac. They have all of the spare parts that are needed to repair the trucks.

For racing, we carry very little. In the back, each truck carries a 270kg water cooler, which is normally mounted in the cab, but moved to the



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back for weight distribution, and compressed air bottles powering the automatic tyre inflation/deflation system, as well as two spare wheels. We have nothing else, and must survive with that. We make lots of repairs using cable ties.

We can change two flat tyres; after that, we need to wait for the second truck. If we require

assistance from the bivouac, we'd be disqualified. So if something goes wrong, we have to think, 'how can I make a repair, or how can I bypass the problem, so we can get the truck back to the bivouac?'

A race stage means driving for 8-10 hours over some 500km. We usually arrive at 8-9pm at the bivouac. There we see the support trucks, which have the tools for the mechanics to start to service and repair the trucks. Repair takes all night, until about 6am. At 7am we continue, and the mechanics sleep in a camper that drives them to the next bivouac.

Our team has 12 mechanics: six for each truck. For the safety of the mechanics, at night-time the trucks are mounted on rigid frames with wheels off. They start by checking everything: driveline, brakes, tyres, suspension, water cooling. If we have had an accident during the race, there will be more problems; sometimes welding is required. In the support truck we have everything required for mechanics to do the same work that they

would in the normal shop, but they have to do it in the desert on sand and stones, so it is not so easy as at home. Last year in Morocco, we even had to change the injectors, so they opened the head and did that, all in the desert.

There are two mechanics for each truck just for the wheels. Every day we change the tyres. For our lead sponsor, Mammoet, the biggest heavy lift company in the world, we are testing the 1,400mm-diameter Michelins. Off-road trucks are allowed to drive them at up to 110kph at 7bar. We drive at 140kph at pressures ranging from 1.5-4bar. That's very hard work for the tyres, so we spend €3,000 per truck every day to replace them.

Sometimes the brake discs get so hot they are totally red: that means 600-700°C. If you stop the vehicle to help another driver during a race, or stop by the finish, that risks melting the CTI seal on the axle. If they fail, the planetary gearbox oil will leak out, as well as compressed air in the tyres. Sometimes people don't understand why, when the truck reaches the finish, I push out the navigator and keep driving - it's to cool the brakes down. Otherwise the truck will catch fire, grass underneath the truck will ignite and we will have a really big problem.

As MKR Racing makes diesel cooling systems, we are also testing one for Mammoet. In a race situation, the course can be 50°C in the sun, so the diesel will get very hot, which is bad for the engine; MKR's system cools it to 37°C. We also use MKR's automatic temperature safety system; if the exhaust reaches 900°C, the system will reduce engine horsepower until it cools down. MKR works with Renault on engine mapping.

However, we installed an automatic tyre inflation system ourselves on the Hutchinson wheels that the trucks use. It allows us to drive at 5bar through a river; then, 30 seconds later, reduce the pressure to drive up dunes at 2bar; then, soon after, increase pressures again to 4bar to resist punctures on gravel roads. Sometimes the technicians will have to remove the hubs because of a leak in the tyre inflation system.

After every rally, the truck is completely rebuilt. We take it back to MKR, which takes out and opens up the engine, gearbox and transfer case, and installs a new driveshaft, bearings, hubs and planetary gear. That way, we're ready to race again. ■