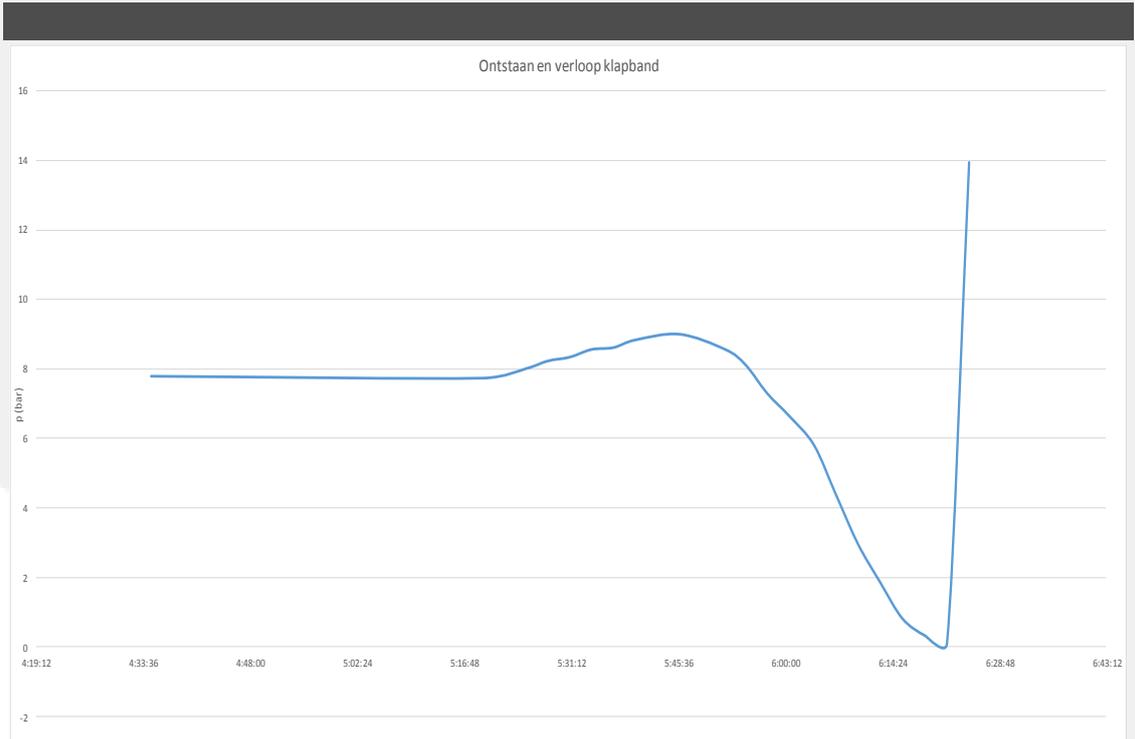




Blowouts are an important problem. Not only they are dangerous for the truck or trailer and the driver, but they can form an important risk for the life and safety of other road users. Thereby they always cause major disrupties in the planning.

Is it possible to detect the start of them in time so a blowout can be prevented?



Blowouts are created by a sudden extreme pressure in a tyre, combined with extreme global warming, weakening the rubber. The underlying cause is often a combination of heating and damage to the tyre. This implies a large distortion of the tyre when driving, implying important friction in the rubber, resulting in global warming. Eventually there will be an extreme heat that induces an extreme pressure.

The initial cause of is mostly a sudden damage making the tyre to deflate. This includes driving through a nail or another perforating object; driving at a curbstone, loosening the fixation of the tyre on the rim; ... The damage may also have an older origin, resulting in a tyre perforation.

On the graph, we show a real pressure measurement of a blowout. The truck was parked in the evening, and left upto 5h19. The pressure in the band rises till 5h33, where there are no more variation untill 5h35, then the pressure rises again. We suspect that at this moment a perforation in the tyre occurred. The pressure rises further upto 5h45, the time when the pressure starts to drop at a rate 8 bar per hour. At 5h51 this is perfectly detectable. The pressure drops further to 1 bar till 6h14. Then we expect that the tyre spins fairly formless and due to very strong friction starts heating up. At 6h24 we get a sudden pressure increase up to almost 14 bar and immediately afterwards the tyres detonated .

In this case, there are 33 minutes between the first detection of a failure and the real blowout. Our experience is that this time varies between 15 minutes and an hour and a half. **Time to act, to avoid a problem.**

