



A view on the challenge with...

Components

Improved cooling for the brakes of the Sprinter



The Sprinter, the well-known and appealing type of train, was first used twenty-five years ago on the Dutch rail network. Since the introduction it has guaranteed safe travel for innumerable commuters. Of course the Dutch railways have gained the necessary experience over the years in the maintenance of this versatile type of train.

The Challenge

A problem often occurring appears to be the unacceptably high rise of the temperature of the brake system. The alternative, that was used at first, did indeed stop the high temperatures but lead to the components wearing out



A train leaves a beautiful wisp of smoke. Jammed brakes. It is the Haarlem to Limburg train 865. Photo by Sean Houffelaar.

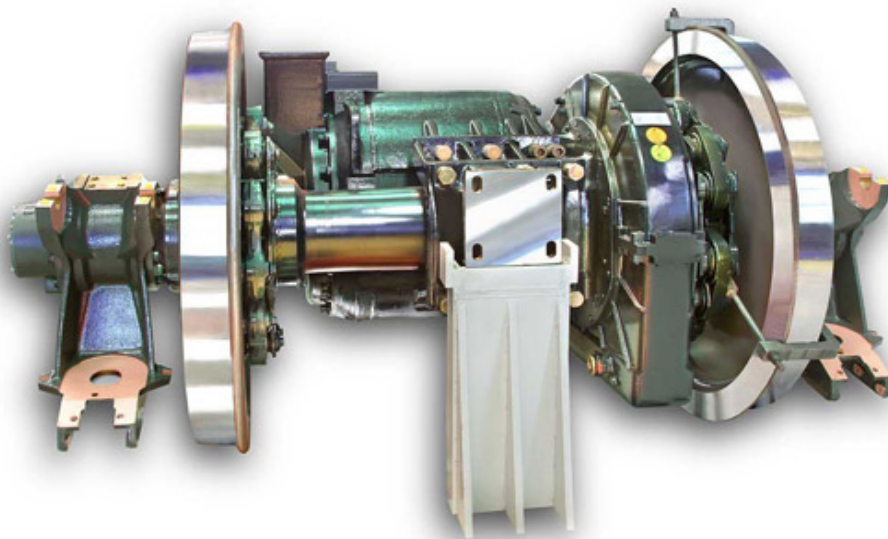
but leads to heat development whereby additionally a lot of brake fluid is released. Use is made of powerful ventilators to cool this brake system, but it appears that they cannot withstand this brake fluid. The blade housing of the ventilators slowly becomes blocked by dust whereby the power of the cooling decreases.

The brake system becomes overheated and seizes up. The latter defect has already caused many delays on the railways. As well as wanting the leaves to fall upwards in the autumn instead of downwards, the Dutch railways want a solution for this problem that will work for ten years without breaking down.

The Solution

Mulder-Hardenberg, with the supplier ETRI, has looked intensively for a feasible answer to this difficult problem. After careful stock-taking of all the conceivable factors playing a role in the braking process, a ventilator has at last been developed which complies with the extreme demands.

The new system not only has a larger cooling capacity but it appears to be almost impervious to the dust released during braking. The ventilator is so powerful that the new custom-made equipment is also used to cool the hydraulic steering.



quickly. The last held true for ordinary brake blocks, especially hardened brake blocks and even when using metal, be it the relatively soft varieties. The only technique with an adequate life span is a brake system where hard sorts of metal rub against each other. This brake system is effective and durable

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The Implementation

Lengthy and intensive consultations with the technicians from the maintenance company, Mulder-Hardenberg and others has resulted in this custom-made ventilator which is produced by ETRI. Use of the new cooling system has led to the braking problems of the Sprinter definitely becoming a thing of the past.

The result

The requirement of the Dutch railways for the cooling system to function without breakdowns for ten years can be sufficiently guaranteed. Mulder-Hardenberg and ETRI have so much confidence in this special ventilator that a life-span of about twenty years can be guaranteed. Unfortunately delays still occur but are no longer caused by seized up brakes. The Dutch railways and their maintenance companies know the value of the enthusiasm of the M-H technicians, aimed at results. The road to Mulder-Hardenberg has been well-known to the Dutch Railways for many years.

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