

## Reduce railway noise at source >

# THE GERMAN TRANSPORT FORUM

## Our mission

Mobility is one of the most important factors for growth and prosperity in Germany and Europe. To safeguard and develop mobility, over 170 German and European companies and associations have joined forces in the German Transport Forum.

The German Transport Forum is the only multimodal transport industry association in Europe. As a lobby for all modes of transport, we provide an impetus into the political decision-making process. In our dealings with decision-makers in Berlin and Brussels, we advocate competition and an end to bureaucratic hurdles.

In the continuous dialogue with politicians, scientists, the media and the general public, the German Transport Forum is both a competent knowledge manager and a politically independent platform. We see ourselves as an »advocate for mobility« and we campaign energetically for an integrated transport system that is efficient, customer-focussed, affordable, economic in its use of resources, and environmentally friendly.

## Our aims

Our overall aim is to enhance public awareness of the economic, political and social potential of mobility and to improve the framework conditions for the transport industry. This includes:

- Safeguarding Germany as a transport location through a future-proof infrastructure, the dismantling of bureaucratic hurdles and fair competition;
- The creation of demand-driven transport infrastructure through public investment at a consistently high level and with the involvement of private partners;
- Intelligent networking through standardised interfaces and the smooth exchange of data;
- The promotion of environmental compatibility, energy efficiency and safety through innovation and technical progress.

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# REDUCE RAILWAY NOISE AT SOURCE

- Noise reduction at source is the most efficient measure
- Increase subsidies for the retrofitting of composite brakes on goods wagons
- Support Europe-wide upgrade programme

## Summary

A modern society presupposes the division of labour and mobility. But this also causes noise. If the further increases in traffic volumes to be expected in the future are to be tolerated, it is essential to reduce noise as far as possible. The German Federal Government has committed itself to this with National Traffic Noise Protection Packages I and II. The noise remediation programme for the federal railroads in Germany succeeded in also defusing some of the noise issues in rail freight.

Measures taken at source, i.e. on the wheel, on the track or at the point of wheel-rail contact, have the potential to cut noise emissions everywhere in an efficient manner. Of all the technical solutions available, the conversion of goods wagon brake systems to composite brake blocks is the most effective. However, without public funding there is no incentive to retrofit the existing wagon fleet. At the same time it is imperative that funding is sufficient to prevent the »first movers« suffering from distortions of competition.

Rail freight services are organised on a European basis. The presence of just a small number of »noisy« goods wagons on the track could cancel out the efforts of German operators. Hence if the amount of noise generated by rail transport is to be reduced significantly, an additional Europe-wide approach with harmonised framework conditions and European funding is required. 800 million euros invested across Europe in quieter brake systems would have the effect of halving noise emissions by rail goods wagons Europe-wide. This is a lot less than the estimated 10 billion euro cost of erecting noise barriers just within the core network of the Trans-European Transport Networks (TEN-T).

## Halve noise emissions with composite brakes

Measures to reduce noise at source are particularly effective since, unlike noise barriers, they work everywhere. Hence they should be the priority when it comes to noise reduction measures. In rail transport, a proven, approved technology is available for new wagons in the form of K block composite brakes. The K block prevents the running surface of the wheels from becoming rough and thus reduces the rolling noise of goods wagons by around ten decibels, which is perceived by the human ear as a halving of the noise level. The best basis for retrofitting the existing rail freight fleet would be to install the LL block, which has not yet been approved without time limit. Compared with the K block, installation of the LL block does not require total modification of the braking mechanism, nor does it require any time-consuming design-specific recertification of the brake system, making it a lot cheaper. Under the lead of

the International Union of Railways (UIC) 29 European railways, wagon keepers and other partners from industry are actively speeding up the European approval procedure for LL blocks.

The K block has been used on new goods wagons since 2001 and since mid-2006 it has been mandatory. However it is the huge size of the existing rail freight fleet that constitutes the real challenge. It would cost about 300 million euros to retrofit the approx. 180,000 goods wagons used on the railways of Germany and needing to be upgraded with the LL block and well over a billion euros with the K block.

### **Step up support measures**

Under the latest plans based on the key points agreed between the German Federal Government and DB AG in July 2011 to introduce noise-differentiated track access charges, it is assumed for costing purposes that the upgrade programme will entail retrofitting the LL block and that the upgrade will be financed half by the rail sector and half by the public purse. The maximum sum earmarked for this purpose by the German Federal Government currently stands at 152 million euros. The rail freight companies will pay for their half of the cost through by levying a noise surcharge on the track access charges.

The rail sector will also have to finance significantly higher operating costs, as wheel sets fitted with composite brakes wear out more quickly than the present cast iron brake blocks, so that the maintenance intervals for upgraded goods wagons would have to be shortened. This effect is virtually identical with both K and LL blocks. As a result, measures aimed at improving noise protection will make rail freight more expensive even if the full cost of upgrading the wagons is funded. Bearing in mind the higher running costs, the actual funding rate reduces to 15-20%.

Against this background it is important to ensure that funding for the conversion of goods wagons is sufficient, consistent and direct. The funding provisions should be designed in such a way that in Germany maximum funding of the available block technology is possible for all goods wagon keepers on a non-discriminatory basis and that the strategy of noise reduction at source is thus consistently applied.

### **Further refine noise-differentiated track access charges**

The German Transport Forum therefore expressly welcomes the public contribution towards promoting wagon upgrades with the introduction of the noise-differentiated track access charging system on 9 December 2012. Like the German Federal Government's »Quiet Rhine« pilot and innovation programme, which is coming to an end, this system is aimed at eliminating noise at source. Whereas the noise barriers have a purely local effect and are also an eyesore, implementation of the new system will benefit everyone who lives close to lines used by freight trains. The more goods wagons can be retrofitted as soon as possible, the greater the noise-reducing effect will be.

To tailor the funding conditions consistently to the requirements of rail freight, the insights gained from upgrading the first wagons must continuously flow into the further development of future funding programmes. Moreover, the aim of retrofitting a substantial number of wagons can only be achieved if adequate funds are made available for the years to come.

The noise-differentiated track access charging system (NDTACS) due to come into effect on 9 December 2012 is an important first step towards significantly reducing

noise emissions. As the NDTACS evolves, the higher operating costs of converted and new goods vehicles should equally be taken into account. In addition, the success of the NDTACS depends on the LL block being approved without time limit, as this technology does not require any major modifications to the wagons.

If the railway bonus is to be reduced or abolished in Germany, as announced in the coalition agreement of October 2009, it is likely that both noise abatement and noise prevention will become significantly more expensive, as the permitted upper limits on sound emissions for new and extended lines will become more stringent. As a result, construction projects are likely to be delayed due to the additional finance requirements. This will have the effect of curtailing the expansion of rail infrastructure that is essential to achieve transport policy objectives. It is all the more important to invest directly and comprehensively in reducing railway noise at source.

### **Initiate European solution**

Rail freight services are organised on a European basis. Accordingly, the goods wagons that roll on German track are composed of a mixture of wagons from different European wagon keepers. Such success at retrofitting wagons as is achieved in Germany could therefore be cancelled out by just a few noisy goods wagons from other European wagon keepers that are transported in the same train. In the medium term the Federal Government must therefore work towards a common European solution to promote noise protection measures at source in order to better address the requirements of cross-border transport and the associated international fluctuation of goods wagons. In parallel to this, efforts should be made to harmonise as far as possible the framework conditions, for example, noise-differentiated track access charging systems and funding programmes, in the Member States with pragmatic and unbureaucratic solutions; this will offer the wagon keepers a more reliable basis for planning the upgrade of their internationally deployed wagons.

An EU-funded European-wide upgrade programme would avoid distortions of competition in Europe and alleviate the problem of noise across Europe. The cost of this will depend on the brake block technology used and the underlying cost estimates, but for approx. 400,000 goods wagons this has been estimated at between 800 million euros (LL blocks) and 2.4 billion euros (K blocks) – a clear saving compared with the estimated 10 billion euros it would cost to erect noise barriers along the TEN-T core network.

If noise reduction is to be achieved efficiently while traffic is actually increasing and if we want to ensure that freight transport has the support of the public, then it is imperative that the conversion of brake systems on goods wagons in Germany and Europe is adequately funded.

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